Advancing Workforce Health at the Department of Homeland Security: Protecting Those Who Protect Us

Committee on Department of Homeland Security Occupational Health and Operational Medicine Infrastructure; Board on Health Sciences Policy; Institute of Medicine

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ADVANCING WORKFORCE HEALTH AT THE DEPARTMENT OF HOMELAND SECURITY

Protecting Those Who Protect Us

Committee on Department of Homeland Security Occupational Health and Operational Medicine Infrastructure

Board on Health Sciences Policy

INSTITUTE OF MEDICINE
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The serpent has been a symbol of long life, healing, and knowledge among almost all cultures and religions since the beginning of recorded history. The serpent adopted as a logotype by the Institute of Medicine is a relief carving from ancient Greece, now held by the Staatliche Museen in Berlin.

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"Knowing is not enough; we must apply.
Willing is not enough; we must do."
—Goethe

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Reviewers

This report has been reviewed in draft form by individuals chosen for their diverse perspectives and technical expertise, in accordance with procedures approved by the National Research Council's Report Review Committee. The purpose of this independent review is to provide candid and critical comments that will assist the institution in making its published report as sound as possible and to ensure that the report meets institutional standards for objectivity, evidence, and responsiveness to the study charge. The review comments and draft manuscript remain confidential to protect the integrity of the deliberative process. We wish to thank the following individuals for their review of this report:

Jeannie Cimiotti, Rutgers University College of Nursing
Scott Deitchman, Centers for Disease Control and Prevention
Elaine Duke, Elaine Duke & Associates
Pamela A. Hymel, Walt Disney Parks and Resorts
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   Pennsylvania
Richard J. Miller, Federal Occupational Health
Dean Smith, U.S. Department of State
Terri Tanielian, RAND Corporation
Mark Tedesco, NextCare Urgent Care

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Although the reviewers listed above provided many constructive comments and suggestions, they were not asked to endorse the report's conclusions or recommendations, nor did they see the final draft of the report before its release. The review of this report was overseen by **Ellen Wright Clayton,** Vanderbilt University, and **Georges C. Benjamin,** the American Public Health Association. Appointed by the National Research Council and the Institute of Medicine, they were responsible for making certain that an independent examination of this report was carried out in accordance with institutional procedures and that all review comments were carefully considered. Responsibility for the final content of this report rests entirely with the authoring committee and the institution.

Preface

The creation of any new institution or agency can be expected to entail a phase of growth and development. When a new agency is formed in a time of crisis, its evolution is further complicated by circumstance. Furthermore, if the agency is constructed from previously existing components along with newly created entities, both designers and new leadership face major challenges, and many roadblocks can be expected. This was the context for the Department of Homeland Security (DHS) when the nation responded to the harrowing events of September 11, 2001, by forming this new cabinet secretariat. Over the past decade, the agency has been learning and evolving slowly into its adolescence, and in the course of this evolution, it recognized a need to focus special attention on its most valuable asset—its employees.

Health and medical leadership in the department's Office of Health Affairs (OHA) recognized that balancing the need for centralized authority and component agency autonomy in carrying out the full measure of its responsibilities posed particular challenges. It was critical to respect the prerogatives and character of the components while striving to instill a department-wide ethos through commonality of purpose. This balance was deemed critical to building and maintaining the quality and morale of the workforce.

With this need for balance in mind, OHA sought assistance from the Institute of Medicine (IOM) regarding how best to organize, across the department, the varied and complex programs and services designed to protect the occupational health of the DHS workforce and prepare it to fulfill its many operational missions. The committee empaneled to respond

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to this request comprised 14 members selected to represent a broad range of expertise that included occupational and environmental health, health systems management, health economics, health information technology and data management, metrics/measurement/program evaluation, workers' compensation/liability, human resources, and operational medicine. This broad range of backgrounds was necessary to bring proper attention to the task. During the course of this study, the members worked diligently to bring their expertise to bear, learning from and assisting one another to appreciate the complexity of the committee's charge. As a result, the committee was able to develop recommendations that reflect and respect the needs of the agency and the complex, multidimensional missions with which it is tasked.

It should be noted that several committee members have had previous experience serving in leadership roles within DHS. This experience proved invaluable in grounding our work. We are particularly grateful to Dr. Jeff Runge, who served as liaison from the IOM Committee on Department of Homeland Security Workforce Resilience and shared his wealth of experience from his tenure as the DHS Chief Medical Officer.

Throughout our deliberations, we sought a common understanding of the full range of responsibilities faced by the department both within and across its many component units. We examined the work of other federal agencies as well as institutions in the private sector with reasonably analogous organizational challenges. In so doing, we came not only to better appreciate the difficulties faced by DHS but also to understand a variety of ways in which the same objectives might be met. Early on we received valuable input from Dr. J. D. Polk, Acting Chief Medical Officer at DHS, who provided his insights into the problems and challenges that represent the primary needs to be addressed by OHA. Our efforts were further enhanced by input from many researchers, agency personnel, and representatives of interested groups who graciously dedicated their time to responding to our inquiries and provided their insights and perspectives during our deliberations. Appreciation also is extended to those individuals who served as reviewers of this report.

Chairing this committee has been an education and a rewarding experience, the task made much easier by the friendly and supportive atmosphere of the committee meetings. Over the course of the study, we depended greatly on the high-quality intellectual and administrative skills of the IOM staff, under the able direction of study director Autumn Downey and her colleague Frank Valliere. Their energy and commitment were evident from the outset. Their tireless efforts in developing the necessary background information, undertaking a variety of research tasks, and regularly interacting with the committee members are reflected throughout the report. Their work was ably supported by project assistant Crysti Park. Additional

thanks are owed to Rona Briere for carefully editing and improving the structure of the report.

Finally, I wish to offer thanks and acknowledgment to my fellow committee members, all of whom gave generously of their time in addressing a stimulating and challenging task. I am confident that our conclusions and recommendations will help DHS achieve its overarching goal of a healthy, safe, ready, and resilient workforce, regardless of where they serve and what their missions may be.

David H. Wegman, *Chair*
Committee on Department of Homeland Security
Occupational Health and Operational Medicine Infrastructure

Advancing Workforce Health at the Department of Homeland Security: Protecting Those Who Protect Us

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Acronyms and Abbreviations

ACOEM	American College of Occupational and Environmental Medicine
ADA	Americans with Disabilities Act
ASHA	Assistant Secretary for Health Affairs
CA POST	California Commission on Peace Officer Standards and Training
CBP	Customs and Border Protection
CDC	Centers for Disease Control and Prevention
CFR	Code of Federal Regulations
CHCO	Chief Human Capital Officer
CLMO	Component Lead Medical Officer
CMO	Chief Medical Officer
COP	continuation of pay
DASHO	Designated Agency Safety and Health Official
DHS	U.S. Department of Homeland Security
DoD	U.S. Department of Defense
DOI	U.S. Department of the Interior
DOL	U.S. Department of Labor
DoS	U.S. Department of State
DSHO	Designated Safety and Health Official
EAP	employee assistance program
eHIS	electronic health information system

EMS	emergency medical services
EMT	emergency medical technician
ePCR	electronic patient care record
FAMS	Federal Air Marshal Service
FBI	Federal Bureau of Investigation
FECA	Federal Employees' Compensation Act
FEHB	Federal Employees Health Benefits
FEMA	Federal Emergency Management Agency
FLETC	Federal Law Enforcement Training Center
FOH	Federal Occupational Health
GAO	U.S. Government Accountability Office
HHS	U.S. Department of Health and Human Services
HIT	health information technology
HRA	health risk assessment
HRM	Human Resources Management
ICE	Immigration and Customs Enforcement
IHiS	integrated health information system
IOM	Institute of Medicine
J&J	Johnson & Johnson
LTCR	Lost Time Case Rate
MLO	Medical Liaison Officer
MOU	memorandum of understanding
MQM	medical quality management
NASA	National Aeronautic and Space Administration
NCM	nurse case manager
NFTTU	National Firearms and Tactical Training Unit
NIOSH	National Institute for Occupational Safety and Health
NPPD	National Protection and Programs Directorate
NPS	U.S. National Park Service
NRC	National Research Council
OCHCO	Office of the Chief Human Capital Officer
OHA	Office of Health Affairs
OIG	Office of the Inspector General
OPM	Office of Personnel Management

OSH	occupational safety and health
OSHA	Occupational Safety and Health Administration
OWCP	Office of Workers' Compensation Programs
P&G	Procter & Gamble
POWER	Protecting Our Workers and Ensuring Reemployment
RTW	return to work
SMA	Senior Medical Advisor
SWAT	special weapons and tactics
TCR	Total Case Rate
TSA	Transportation Security Administration
TWH	Total Worker Health™
USCG	U.S. Coast Guard
USCIS	U.S. Citizenship and Immigration Services
VA	Department of Veterans Affairs
WC	workers' compensation
WHO	World Health Organization

Glossary

Absenteeism   Habitual absence from work.[1]

Chargeback   Mechanism by which costs incurred under the Federal Employees' Compensation Act (FECA) for most injuries and deaths are billed to agencies.[2]

Disability management A set of practices designed to minimize the disabling impact of injuries and health conditions that arise during the course of employment.[3]

Health promotion   A comprehensive social and political process that embraces actions directed at strengthening the skills and capabilities of individuals and changing social, environmental, and economic

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[1]IOM (Institute of Medicine). 2005. *Integrating employee health: A model program for NASA.* Washington, DC: The National Academies Press.

[2]DOL (Department of Labor). 2014. Division of Federal Employees' Compensation (DFEC) Procedure Manual. http://www.dol.gov/owcp/dfec/regs/compliance/DFECfolio/FECA-PT5/#50700 (accessed January 27, 2014).

[3]Hunt, H. A. 2009. *The evolution of disability management in North American workers' compensation programs.* Kalamazoo, MI: W.E. Upjohn Institute.

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	conditions to relieve their impact on individual and public health.[4]
Integrated employee health system	An infrastructure that would support all employee health activities; provide a way to link information about all aspects of the health of employees; and make this information available to leadership at all levels for the purposes of decision making, accountability, continuous improvement, surveillance, and other questions related to health.[5]
Lagging indicators	Retrospective measurements of system performance linked to outcomes.[6]
Leading indicators	Prospective measures linked to actions taken to prevent accidents.[7]
Medical readiness	The extent to which members of the operational workforce are free of health-related conditions that would impede their ability to participate fully in operations and achieve the goals of their mission.[8]
Medical threat assessment	A process for risk management in the context of operational medicine that involves the creation of a comprehensive mission preplan based on available intelligence and information on the nature of the response.[9]
Occupational health	An overarching term for activities aimed at maintaining and promoting workers' health,

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[4]IOM. 2005. *Integrating employee health: A model program for NASA*. Washington, DC: The National Academies Press.

[5]Adapted from Cecchine, G., E. M. Sloss, C. Nelson, G. Fisher, P. R. Sama, A. Pathak, and D. M. Adamson. 2009. *Foundation for integrating employee health activities for active duty personnel in the Department of Defense*. Santa Monica, CA: RAND Corporation.

[6]Manuele, F. A. 2013. *On the practice of safety*. Hoboken, NJ: John Wiley & Sons.

[7]Manuele, F. A. 2013. *On the practice of safety*. Hoboken, NJ: John Wiley & Sons.

[8]DoD (Department of Defense). 2013. *Joint publication 1: Doctrine for the Armed Forces of the United States*. Washington, DC: DoD.

[9]CA POST (California Commission on Peace Officer Standards and Training). 2010. *Tactical medicine: Operational programs and standardized training recommendations*. Sacramento, CA: CA POST.

ensuring the work environment is conducive to safety and health, and developing work organizations and cultures that support health and safety at work.[10]

Occupational medicine

A clinical specialty dedicated to the prevention and management of occupational injury, illness, and disability and the promotion of the health and productivity of workers, their families, and communities.[11]

Occupational safety and health

Activities aimed at ensuring safe and healthful working conditions, thus preventing work-related illness, injury, and death.[12]

Operational medicine

Preventive and responsive medical and health support services provided outside of conventional workplaces during routine, planned, and contingency operations to employees and others under an organization's control.[13]

Organizational climate

Workforce perceptions of organizational practices.[14]

Presenteeism

On-the-job productivity loss that is related to, for example, conditions such as allergies, asthma, chronic back pain, migraines, arthritis, and depression; also, productivity loss resulting

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[10]GOHNET (Global Occupational Health Network). 2003. *GOHNET newsletter*. Geneva, Switzerland: WHO. http://www.who.int/occupational_health/publications/newsletter/en/gohnet5e.pdf (accessed December 22, 2013).

[11]ACOEM (American College of Occupational and Environmental Medicine). 2013. *What is OEM?: Careers in occupational and environmental medicine*. http://www.acoem.org/OEMcareers.aspx (accessed November 8, 2013).

[12]Occupational Safety and Health Act of 1970.

[13]Adapted from Fabbri, W. 2013. Operational medicine in other organizations: FBI. Presentation at IOM Committee on DHS Occupational Health and Operational Medicine Infrastructure: Meeting 2, June 10-11, Washington, DC.

[14]Rousseau, D. M. 2011. Organizational climate and culture. In *Encyclopedia of Occupational Health and Safety*, edited by J. M. Stellman. Geneva, Switzerland: International Labour Organization. http://www.ilo.org/oshenc/part-v/psychosocial-and-organizational-factors/macro-organizational-factors/item/29-organizational-climate-and-culture?tmpl=component&print=1 (accessed December 17, 2013).

	from caregiving, lack of job satisfaction, and organization culture.[15]
Public health	All organized measures designed to prevent disease, promote health, and prolong life among the population as a whole.[16]
Resilience	The ability to withstand, recover, and grow in the face of stressors and changing demands.[17]
Workforce health protection	The full scope of occupational health and operational medicine activities carried out to sustain and protect the health and effectiveness of deployable forces and members of the workforce exposed to nontraditional environments.

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[15]IOM. 2005. *Integrating employee health: A model program for NASA*. Washington, DC: The National Academies Press.

[16]WHO (World Health Organization). 2013. *Public health*. http://www.who.int/trade/glossary/story076/en (accessed December 23, 2013).

[17]Chairman of the Joint Chiefs of Staff. 2011. *Chairman's total force fitness framework*. CJCSI 3405.01. http://www.dtic.mil/cjcs_directives/cdata/unlimit/3405_01.pdf (accessed January 27, 2014).

Summary

T he more than 200,000 men and women who make up the Department of Homeland Security (DHS) workforce have been entrusted with the ultimate responsibility—ensuring that the homeland is safe, secure, and resilient against terrorism and other hazards. Every day, these dedicated individuals take on the critical and often dangerous challenges of the DHS mission: countering terrorism and enhancing national security, securing and managing the nation's borders, enforcing and administering U.S. immigration laws, protecting cyber networks and critical infrastructure, and ensuring resilience in the face of disasters. DHS, in turn, is responsible for protecting the health, safety, and resilience of those on whom it relies to achieve this mission, as well as ensuring effective management of the medical needs of persons who, in the course of mission execution, come into DHS care or custody.

Since its creation in 2002, DHS has been aggressively addressing the management challenges of integrating seven core operating component agencies[1] and 18 supporting offices and directorates. One of those challenges is creating and sustaining a coordinated health protection infrastructure. Seeking strategic advice on how to strengthen mission readiness while better meeting the health needs of its workforce, DHS's Office of Health

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[1]DHS operating component agencies include U.S. Citizenship and Immigration Services, the U.S. Coast Guard, Customs and Border Protection, the Federal Emergency Management Agency, Immigration and Customs Enforcement, the U.S. Secret Service, and the Transportation Security Administration. Although the National Protection and Programs Directorate, which includes the Federal Protective Service, is officially a headquarters-level directorate, the committee considers it to be functionally an operating component.

1

Affairs (OHA) asked the Institute of Medicine (IOM) to provide recommendations for better integrating occupational health and operational medicine infrastructures throughout the department into a coordinated, DHS-wide system with the necessary centralized oversight authority. This report presents the findings, conclusions, and recommendations of the IOM committee empaneled to respond to this request.

A FRAMEWORK FOR WORKFORCE HEALTH PROTECTION

Protecting the homeland is physically and mentally demanding and entails many inherent risks, necessitating a DHS workforce that is mission ready. Among other things, mission readiness depends on (1) a workforce that is medically ready (free of health-related conditions that would impede its ability to participate fully in operations and achieve mission goals), and (2) the capability, through an operational medicine program, to provide medical support for the workforce and others who come under the protection or control of DHS[2] during routine, planned, and contingency operations.

Meeting these two requirements necessitates implementing an overarching workforce health protection strategy encompassing occupational health and operational medicine functions that serve to promote, protect, and restore the physical and mental well-being of the workforce. To guide such a strategy, the committee developed a workforce health protection framework in which the essential and interconnected functions necessary to support an operational workforce are defined within two pillars:

1. *Ensure medical readiness* through injury and illness prevention, readiness assessment, disability management, and health promotion functions (occupational health).
2. *Provide medical support for operations* through medical threat assessment, preventive medicine, ambulatory medical care, and emergency medical services functions (operational medicine).

The function of measurement and evaluation spans both pillars and serves as a foundation for the framework, which is designed to achieve

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[2]Throughout this report, the concept of operational medicine is addressed primarily in terms of how DHS is prepared to care for its employees in field and other operational settings. The committee recognizes that the department is often required to provide emergency and urgent care to those in its custody and, in some cases, members of the public. The principles and recommendations for operational care outlined in this report are equally applicable to care provided to nonemployees.

- a prevention-focused approach to workplace injury and illness;
- ongoing readiness assessment to ensure an individual's continued ability to carry out his/her responsibilities fully and safely;
- proactive medical case management to restore employees to a state of health and readiness as rapidly as possible;
- adequate and effective medical support services available when needed;
- promotion of physical fitness and healthy lifestyle choices to optimize human performance and readiness; and
- ongoing measurement and evaluation for decision making, accountability, situational awareness, and continuous quality improvement.

The underlying infrastructure that serves to integrate these functions includes the doctrine (plans, policies, and standards), organizational constructs (reporting structures, governance mechanisms), and resources (qualified personnel, budgets, information management systems) that enable mission capability.

WORKFORCE HEALTH PROTECTION AT DHS

With its strong focus on securing national borders and protecting critical infrastructure against acts of terrorism and other hazards, DHS often is referred to as a "guns, guards, and gates" organization—about half of its workforce is made up of law enforcement and security personnel. The other major operational arm of the DHS workforce comprises rescue and emergency response personnel. This large operational workforce with diverse worksites and mission requirements poses significant challenges for agency programs designed to keep workers, as well as others for whom the department assumes responsibility, healthy and safe. DHS has the highest rate of occupational injury and illness of all cabinet-level federal agencies, in part a result of the hazardous nature of the work being performed, but also indicating the need for stronger health protection systems and programs. In fiscal year 2011, the actuarial liability[3] for workers' compensation at DHS surpassed $2 billion—4.4 percent of the department's overall appropriation. Furthermore, data from the 2012 Federal Employee Viewpoint Survey[4] reveal that only 62 percent of DHS employees felt protected

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[3]Actuarial liability is the projected amount that the Department of Labor would have to pay to cover all existing cases to resolution of the injury or death if an agency ceased to exist today. DHS is ultimately responsible for these costs.

[4]This survey, administered by the Office of Personnel Management, is a tool that measures employees' perceptions of whether, and to what extent, conditions characterizing successful organizations are present in their agency (http://www.fedview.opm.gov).

from health and safety hazards on the job—a significantly lower proportion than the government-wide average of 77 percent.

Protection of the health and safety of the workforce, DHS's most important asset, must be a key role and responsibility of agency leadership. At headquarters, responsibility for workforce health protection currently is divided between OHA and the Office of the Chief Human Capital Officer. The Secretary of DHS has delegated authority to the Assistant Secretary for Health Affairs, who is also the DHS Chief Medical Officer (CMO), for exercising oversight over all medical and public health activities. Yet several key health functions that intersect with personnel programs, including occupational safety and health, workers' compensation (specifically, return-to-work/disability management), and health promotion, are being overseen by the Chief Human Capital Officer, with little or no strategic input from the CMO. Current OHA activities related to workforce health protection focus primarily on programs for medical quality management, operational medical support, medical countermeasures, and employee resilience.

It should be noted that occupational injury and illness rates are not uniformly high across DHS's component agencies. This variability reflects both differing missions and operational conditions and differences among employee health, safety, and medical programs. The components have developed varying infrastructures and policies for carrying out the key workforce health protection functions; the administration of programs that support these functions is segregated in some and aligned in others.

The committee concludes that the current workforce health protection infrastructure at DHS is fragmented and uneven across the component agencies. Although some components, such as the Coast Guard, have a comprehensive occupational health and operational medicine infrastructure, others have not dedicated sufficient resources to providing their employees with even the most basic occupational health support services, let alone what is required to carry out the functions necessary to ensure mission readiness. Given the myriad potential impacts of this shortfall—mission failure, employee turnover and low morale, high health-related costs, liabilities—strengthening workforce health protection is critically important to achieving readiness and meeting mission requirements.

OPPORTUNITIES TO ADVANCE WORKFORCE HEALTH AT DHS

Through a review and assessment of the current occupational health and operational medicine infrastructure at DHS, the committee identified a number of opportunities for the department to significantly improve its mission readiness by promoting and sustaining the health, safety, and resilience of its workforce. Acknowledging the diversity among the DHS component agencies, the committee does not endorse a fully centralized approach to

the management and execution of workforce health protection programs. Many health, safety, and medical challenges are unique to individual agencies, and the components should have the flexibility to address these unique needs through programs tailored to their operational requirements. At the same time, however, there is a need and clear role for an empowered centralized health authority at DHS, with continuing support from the Secretary, to provide for and oversee the implementation of policies, standards, and programs designed to protect employee health and safety, promote efficiency and interoperability, and achieve cost savings. This authority also needs to serve as an advocate for workforce health protection, communicating clearly that these health- and safety-related functions are essential to mission readiness. Maintaining the health, safety, and resilience of every man and woman in the DHS workforce—whether they execute or support the mission—must be an organizational priority.

Strategic Alignment Through Committed Leadership

Assessments of employee health and safety programs in both the private and public sectors have demonstrated significant increases in employee morale, efficiency, and effectiveness with the implementation of robust programs fully supported by leadership. The committee believes that strong leadership providing clear direction is essential to both the design and delivery of the health, safety, and medical policies and programs of a large, diverse organization such as DHS. A formal strategy, guided by a vision statement directly linked to the organizational mission, can provide that direction while also demonstrating the commitment of senior leadership. Although a DHS Workforce Strategy was issued for fiscal years 2011-2016, this strategy does not address the promotion and protection of employee health, safety, and resilience as a critical means of sustaining an engaged workforce. The committee found no evidence that the Secretary of DHS has made such a clear and high-level statement of the value of protecting and enhancing the health and safety of the workforce. The committee concludes that DHS lacks a unified vision and strategy for ensuring the delivery of key health, safety, and medical support services across DHS in an efficient and coordinated manner.

> **Recommendation 1:** *Demonstrate leadership commitment to employee health, safety, and resilience through a unified workforce health protection strategy.*
>
> **The Secretary of the Department of Homeland Security (DHS) should demonstrate a robust commitment to the safety, health, and resilience of the workforce, essential to mission readiness, by adopting and**

promoting a unified workforce health protection strategy. To guide this strategy, the committee recommends the adoption of the same vision statement proposed by the Institute of Medicine Committee on Department of Homeland Security Workforce Resilience:

"A ready, resilient and sustainable DHS workforce working to ensure a safe, secure, and resilient nation." (IOM, 2013, p. 65)

Visible leadership commitment to this vision, demonstrated routinely across all levels of DHS, is essential to success. Heads of federal agencies have ultimate responsibility for their employees. Therefore, the strategy should communicate the Secretary's commitment to the health, safety, and resilience of those charged with achieving the DHS mission, while holding leadership of the operating components accountable for implementing and adequately resourcing workforce health protection programs that are consistent with DHS policies and standards.

Organizational Alignment and Coordination

The fragmentation of workforce health protection functions and the absence of formal mechanisms for coordination and communication have resulted in siloed workforce health protection functions, contributing to inefficiency, a lack of accountability and transparency, and missed opportunities to achieve synergy through integration. The committee concluded that achieving the vision of a ready and resilient DHS workforce will require the organizational alignment of health, safety, and medical functions and resources throughout the department.

Alignment of Headquarters Oversight Functions

The committee was asked to consider the centralized oversight authority necessary to ensure an integrated workforce health protection infrastructure. Although many organizations with effective integrated health and safety programs employ a lead official who is not a physician, DHS is responsible for numerous operational medicine programs in addition to traditional workplace health, safety, and compensation programs. Thus, the committee believes there would be significant benefit to having a CMO, supported by a multidisciplinary team with collective backgrounds spanning occupational health, operational medicine, and health systems management, lead an aligned health protection infrastructure. Although the Secretary has delegated authority to the CMO for exercising oversight over all medical and public health activities for DHS, the CMO lacks visibility and strategic input on workforce health protection functions currently

administered through the Office of the Chief Human Capital Officer and within component agencies. The resulting ambiguity regarding the authority of the CMO to exercise the delegated oversight responsibility has compromised the CMO's ability to align critical health protection functions across DHS for coordinated execution.

> **Recommendation 2:** *Align and integrate all occupational health and operational medicine functions under the Chief Medical Officer.*
>
> **The Secretary of the Department of Homeland Security (DHS) should design and implement a single reporting structure that effectively aligns and integrates all DHS employee health- and safety-related functions. The Secretary should designate and empower the Chief Medical Officer as the lead agency official responsible for establishing DHS-wide health, safety, and medical policies, standards, and programs and ensuring that component agency programs are implemented in a manner consistent with these policies and standards.**

Implementation of this new aligned reporting structure will require reallocation of positions from the Office of the Chief Human Capital Officer to OHA. Additionally, alignment of occupational safety and health programs under the CMO will require that the CMO be designated as or report (directly or indirectly) to the Designated Agency Safety and Health Official.[5] Responsibilities for the CMO in this aligned reporting structure should include but are not limited to

- promulgating department-wide policies and standards for integrating and coordinating all occupational health and operational medicine functions, including occupational safety and health, fitness for duty, disability management, and health promotion;
- developing a process for ensuring the implementation of DHS-wide health, safety, and medical standards;
- providing advice and guidance to the Secretary and component agency leadership on all matters related to health, safety, and medicine;
- overseeing component agencies' medical quality assurance programs and ensuring that all DHS and outsourced providers of medical services are appropriately educated and trained and routinely

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[5]The Designated Agency Safety and Health Official is designated by the head of a government agency as the individual responsible for its occupational safety and health program. As specified by Executive Order 12196 (1980), this person should have "sufficient authority to represent the interest and support of the agency head."

       evaluated through credentialing, baseline training requirements, and a standardized competency assessment process;

- analyzing resource allocations and requesting budgetary adjustments as necessary; and
- submitting an annual measurement and evaluation report to the Secretary on the health, safety, and readiness of the DHS workforce.

Recommendation 3: *Ensure that the Chief Medical Officer has authority commensurate with the position's responsibilities.*

The Secretary of the Department of Homeland Security (DHS) should review the organizational context of the Chief Medical Officer (CMO) position and make necessary changes to ensure that the CMO has adequate authority, influence, and resources to carry out the essential function of ensuring the health, safety, and readiness of the more than 200,000 members of the DHS workforce.

To empower the CMO, the DHS Secretary should clearly establish, through both policy (revision of Delegation #5001) and action (holding component heads accountable for compliance with policies and standards promulgated through OHA), that the CMO has oversight responsibility for all DHS health and safety programs. Further, the CMO should be included as a member of DHS enterprise-wide governing bodies, such as Investment Review and/or Program Review Boards. The organizational context of the CMO position should support these interactions and should be evaluated in this regard.

Organizational Alignment Within DHS Component Agencies

Within the component agencies, the degree of organizational alignment varies widely. In components with aligned or partially aligned organizational structures in which health, safety, and/or medical programs and functions are collocated, the committee found evidence of increased information sharing and synergy. With the notable exception of the Coast Guard, however, component agencies lack a single point of accountability for all health, safety, and medical activities. Fragmentation of workforce health protection functions at the component level not only limits intracomponent coordination but also poses challenges for oversight at the headquarters level. The committee concludes that the current fragmented structure and distribution of health, safety, and medical authorities within DHS component agencies impedes the CMO's ability to orchestrate a comprehensive and integrated workforce health protection strategy. Having a single point

of accountability for health, safety, and medical functions within each of the components would enhance the effectiveness of the CMO.

> **Recommendation 4:** *Establish Component Lead Medical Officers to align and integrate occupational health and operational medicine functions.*
>
> **The Secretary of the Department of Homeland Security (DHS) should direct each component agency head to design and implement a single reporting structure that effectively aligns and integrates all component occupational health and operational medicine functions, and assign oversight responsibility for these functions to a Component Lead Medical Officer. That individual would be responsible for ensuring that these functions are implemented in a manner consistent with DHS-wide standards and policies. The Component Lead Medical Officer, through a clear position description, should be held responsible for the following:**
>
> - **reporting to the component head and/or component Designated Safety and Health Official on the execution of health, safety, and medical policies and programs within the component;**
> - **applying the policies and standards promulgated by the Chief Medical Officer (CMO) in the context of the unique operational requirements of the component;**
> - **developing a reporting structure and coordination processes to ensure the integration of occupational safety and health, medical, workers' compensation, and health promotion efforts; and**
> - **ensuring that a federal medical officer, under the guidance of the CMO, is responsible for all component health, safety, and medical services, including those services provided by contract and/or interagency agreement.**

Establishment of a Coordinated Approach to Workforce Health Protection Across DHS

To promote integration, the CMO requires mechanisms for ensuring that critical programs are standardized and implemented consistently across DHS. Until recently, the CMO has had limited visibility on health and medical programs and challenges within component agencies. This lack of visibility has interfered with the CMO's ability to monitor the readiness of the DHS workforce and to address department-wide health and medical issues through policy and program initiatives. The committee heard throughout

its information-gathering process that directives and proposed standards from OHA are disconnected from the needs and realities of the component agencies. The committee concludes that a mechanism is needed to enable the CMO to engage components in the development of medical and public health policy and to provide senior-level direction for an integrated DHS workforce health protection strategy.

Recommendation 5: *Establish a Medical and Readiness Committee to promote information sharing and integration.*

The Chief Medical Officer (CMO) should establish and chair a Medical and Readiness Committee with membership comprising the Component Lead Medical Officers to promote information sharing and integration. Responsibilities of the proposed committee should include but not be limited to

- **recommending and validating department-wide health and medical standards;**
- **providing briefs on the specific health and medical issues/needs of the components;**
- **identifying best practices and sharing lessons learned;**
- **advising the CMO on resource needs for program implementation and execution;**
- **contributing subject-matter expertise to aid the CMO in providing medical guidance to the Secretary and component leadership;**
- **identifying and sharing education and training resources to help all component agencies achieve strategic goals;**
- **identifying opportunities to achieve efficiencies through consolidation and centralization of common services, including outsourced services (see Recommendation 9); and**
- **developing new tools and recommending core metrics for evaluation and trend analysis of health and medical programs (see Recommendation 10).**

The committee envisions the Medical and Readiness Committee as the key to the development of department-wide medical standards and policies responsive to the operational requirements of the components. The proposed committee would create formal channels for information sharing among components and the CMO, promoting both horizontal and vertical integration. However, although the proposed committee would play a key advisory role, the CMO should retain sole authority for setting DHS-wide medical policy.

A Governance Framework for Enterprise-Level Integration

Workforce health protection is a critical element of an agency's mission support architecture and needs to function as part of a larger management system that also includes human resources, financial management, information systems and communications, acquisition planning and management, facilities management, and logistics. These elements together enable mission execution. Despite its clear role in mission support, however, workforce health protection has not been fully integrated into the DHS management infrastructure.

DHS headquarters and component agencies share responsibilities for complex programs supporting the health, safety, and mission readiness of the workforce, as well as providing for the medical needs of those who come under DHS control or protection during operations. Many workforce health protection functions span the intersection of health and human resources and therefore require coordination between the CMO and the Chief Human Capital Officer. Input from other members of the DHS management team[6] may be required to ensure appropriate resourcing and management of occupational health and operational medicine programs. The committee found, however, that governance mechanisms put in place to facilitate the coordinated development of department-wide policy and practices related to employee health and safety are not currently functioning.

> **Recommendation 6:** *Create a governance framework to engage Department of Homeland Security management officials and component leadership in employee health, safety, and resilience to support mission readiness.*
>
> **The Secretary of the Department of Homeland Security (DHS) should develop and implement an effective governance framework for workforce health, safety, resilience, and readiness programs to ensure coordination, collaboration, and participation of DHS management and component leadership. This framework should include reconstitution of the existing, but inactive, Health, Safety, and Medical Council.**

DHS's Health, Safety, and Medical Council was established to facilitate a coordinated approach to achieving health, safety, and medical program objectives. Although it has not been active in recent years, the committee believes that its reconstitution with the participation of the CMO, key

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[6]The management team (located within the Management Directorate) consists of the Chief Human Capital Officer, Chief Financial Officer, Chief Procurement Officer, Chief Information Officer, Chief Security Officer, and Chief Administrative Services Officer, and it is led by the Under Secretary for Management.

members of the DHS management team, and component leadership[7] is critical to achieve department-wide consensus on strategies for addressing overarching and cross-cutting health, safety, and medical issues, as well as to engage component leadership in the development and implementation of policies that support the readiness of their workforce. Additionally, this senior-level Council would be responsible for managing the department-wide portfolio of health protection programs—assessing and prioritizing investments, eliminating redundancies among programs, and ensuring program alignment. In its vetting and decision-making process, the council should draw on recommendations and other information provided by program-level committees, including but not limited to the Medical and Readiness Committee proposed in Recommendation 5 and the Safety Managers Committee.

Functional Alignment

The committee noted significant variability in the implementation and resourcing of workforce health protection programs across DHS. Although variability is not unexpected for such a large and diverse organization, the committee identified the paucity of global health and medical policies and standards designed to set clear expectations and ensure that core quality and performance requirements are met by all components as a major barrier to the realization of an integrated health protection infrastructure.

A Common Approach to Ensuring Medical Readiness

Mission readiness depends on a workforce that is medically ready. The committee found that mechanisms for assessing, promoting, and sustaining medical readiness vary widely across DHS, and the CMO has promulgated few standards and policies designed to ensure consistency and interoperability. The committee concludes that a common approach to medical readiness is needed to enable the disparate component agencies to achieve appropriate mission readiness outcomes.

Recommendation 7: *Develop a common employment life-cycle-based framework for achieving mission readiness.*

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[7]Component representatives on the Health, Safety, and Medical Council should have decision-making authority. Components should therefore be represented by agency heads or component Designated Safety and Health Officials, who by definition have sufficient authority to represent the agency head.

The Chief Medical Officer should establish a common approach to identifying and mitigating limitations on individual readiness, to be implemented by the components and adapted as necessary. Such an approach should include

- **developing health-related functional standards (including specific medical standards when mission-critical) for job series that are common across multiple component agencies, allowing flexibility for reasonable modification where justified by unique duty requirements within components;**
- **monitoring, assessing, and promoting individual readiness across the entire employment life cycle, from entry into the workforce to the time of separation or retirement; and**
- **reestablishing readiness, to the extent feasible, when individuals are identified as having limitations.**

Job performance requirements[8] will drive the evaluation of readiness; it follows, then, that the frequency and content of job-related health and fitness evaluations should be consistent for similar job series across the department. Additionally, one of the main objectives of an employment life-cycle approach is the early identification of health-related conditions that impede individuals' ability to carry out the responsibilities of their position fully and safely, so that they can be returned to a state of mission readiness. To meet this objective, components should establish early intervention and injury/illness case management programs that operate in close coordination with fitness-for-duty, injury/illness prevention, health promotion, and workers' compensation programs.

A Comprehensive Capability for Providing Medical Support for Operations

Federal agencies are equally responsible for the health and safety of workers operating in the field and those stationed in more conventional workspaces. Operational medicine programs are a means by which occupational health and medical services are made available to those operating outside of conventional workspaces, and are essential to mission readiness. The lack of access to basic preventive and responsive medical services in field situations can result in preventable illness or injury, lost productivity, and logistical challenges that lead to mission failure. Additionally, the provision of timely and quality medical treatment to those in DHS care or custody is a legal responsibility of the department, and failure to meet this

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[8]Derived from a job task analysis validated by an occupational health professional.

requirement may expose DHS to liability. The committee concluded that current operational medical support services are not adequately meeting the medical and operational needs of the DHS workforce and those in DHS care or custody. The CMO, working with relevant component agencies, should institute additional measures to ensure that all DHS components conducting operations outside of conventional workspaces meet standards of oversight and performance consistent with those of other public safety agencies.

Recommendation 8: *Establish a comprehensive operational medicine capability to ensure consistent, high-quality medical support during operations.*

The Chief Medical Officer (CMO), with input from the Medical and Readiness Committee, should establish a coordinated, department-wide operational medicine capability to ensure that timely and effective preventive and responsive medical services are available to all component employees and others under Department of Homeland Security (DHS) control during routine, planned, and contingency operations. To achieve this capability, the CMO should

- **ensure that all DHS and outsourced providers of medical support for operations are appropriately educated and trained and routinely evaluated through centralized credentialing, baseline training requirements, and a standardized competency assessment process;**
- **develop baseline treatment protocols to be applied by all component medical providers, and authorize component-specific treatment exceeding the baseline;**
- **develop, mandate, and maintain uniform reporting methods and system performance criteria for all operational medicine activities across the department to ensure the quality of medical care rendered to all patients;**
- **identify and provide programmatic support to address significant deficiencies in human (staffing levels and skill sets) and physical resources required to ensure that the medical support needs of the workforce and their non-DHS charges are met; and**

- delegate component-level implementation and oversight[9] of operational medical support to the Component Lead Medical Officers.

Medical support for all routine, planned, and contingency operations, including those activities in which care of persons in custody is anticipated, should be explicitly addressed in component operational plans. The CMO should review such plans to ensure the engagement of medical personnel trained and equipped in a manner appropriate to the mission. Additionally, the CMO should assess compliance with policy and protocol and the quality of care rendered to all patients according to prospectively determined outcome measures. Although responsibility for execution of the operational medicine program should be delegated to Component Lead Medical Officers, the Secretary should hold component agency heads accountable for the effectiveness of such programs and their compliance with department-wide policies and standards.

Centralization of Common Services

Because of the wide variation among their missions, each of the component agencies has specific needs that are best served by support programs tailored to its operational functions. However, some common services should be centralized to promote efficiency and interoperability while ensuring the necessary level of service quality.

Recommendation 9: *Centralize common services to ensure quality and to achieve efficiencies and interoperability.*

To ensure that health, safety, and medical programs at the component level are effective, efficient, and of high quality, the Office of Health Affairs should develop and deliver certain health-related services common to all components. Centralized common services, to be recommended by the proposed Medical and Readiness Committee and approved by the Chief Medical Officer, should be adopted and implemented by the components unless a component-developed business case demonstrates otherwise. These actions would facilitate integration, department-wide

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[9]The committee noted extensive contractor involvement in the direction of medical operations in some components. The role of contractors in the direction and oversight of medical operations should be delineated more clearly following analysis by the DHS General Counsel to ensure compliance with legal requirements set by the Federal Acquisition Regulations regarding inherently governmental functions.

efficiencies, and evaluation against common objectives using common standards and metrics.

The authority of the CMO to centralize common health-related services for purposes of quality, efficiency, and interoperability should be clearly articulated in the revised *Delegation to the Assistant Secretary for Health Affairs and Chief Medical Officer*. Common services the CMO should consider centralizing include but are not limited to

- medical quality management, including credentialing, maintenance of certification, and licensure;
- health information management capabilities as outlined in Recommendation 11;
- health professions education and training;
- medical logistics, including purchasing and distribution;
- public health services and consultations (e.g., immunization programs, travel medicine, risk communication, wellness programs); and
- requirements and technical oversight for contracts, interagency agreements, and memorandums of understanding with outside entities providing health and medical services to DHS and its component agencies.

Health and Safety Information Management

The CMO must be able to brief the Secretary regarding the health, safety, and readiness of the DHS workforce and to advocate for needed investments in prevention and health protection programs. Requisite to carrying out this charge is the capability to maintain situational awareness regarding the health and medical status of the DHS workforce and the major health and safety risks that impede readiness. This capability currently does not exist at OHA or anywhere else within the department. The September 2013 report of the IOM Committee on Department of Homeland Security Workforce Resilience identifies as a major gap the lack of a strategy, framework, and common set of metrics to support a comprehensive evaluation of workforce readiness and resilience. The findings of the present committee support that conclusion and also highlight the inadequacy of the current health and safety information management infrastructure, including the department's informatics capability. Without such a system, integration of the DHS health protection infrastructure cannot be achieved.

Recommendation 10: *Collect core metrics for accountability, continuous quality improvement, and readiness assessment.*

The Chief Medical Officer, in collaboration with the proposed Component Lead Medical Officers, should develop a common core set of performance and outcome metrics to allow analysis of activities, outcomes, and trends in the areas of workplace safety and health, workforce medical readiness, and quality of medical services. Ongoing monitoring and analysis of these metrics as part of a measurement and evaluation framework are essential to drive continuous improvement and accountability.

An informatics and information technology capability is essential for implementation of the measurement and evaluation framework described in Recommendation 10 and for information sharing and knowledge management.

Recommendation 11: *Establish a health and safety informatics and information technology infrastructure.*

The Health, Safety, and Medical Council should charter a Health and Safety Informatics and Information Technology Governance Board to develop and oversee the implementation of a strategic plan for building a health and safety informatics and information technology infrastructure. The Governance Board should be led by a Chief Medical Information Officer designated by the Chief Medical Officer (CMO), and should include representatives from the offices of the CMO and the Chief Information Officer, as well as each of the components. The strategic plan should be reviewed and approved by the CMO; the Health, Safety, and Medical Council; and department leadership.

The Governance Board should be supported by an operational-level Steering Committee to manage the implementation of the strategic plan, and both the Governance Board and the Steering Committee should be supported by appropriate experts in health and safety informatics and information technology from within DHS and other federal agencies. Lead agencies from which to seek expert guidance might include, but are not limited to, the National Library of Medicine, the Office of the National Coordinator for Health Information Technology, the Agency for Healthcare Research and Quality, and the Patient-Centered Outcomes Research Institute.

The strategic plan should provide the blueprint for a robust health and safety informatics and information technology infrastructure incorporating medical, public health, and consumer informatics capabilities. Elements of the plan should include

- a workforce strategy for relevant informatics and information technology personnel, including requisite responsibilities;
- a knowledge management structure within each unit and, where relevant, across the department; and
- a business case analysis demonstrating the return on investment.

CONCLUDING THOUGHTS

The DHS mission to protect the homeland is of critical importance, but the ability to achieve that mission is undermined by a workforce health protection infrastructure that is marginalized, fragmented, and uneven. The fragmented DHS health protection system is just one instance of an overarching management problem that the organization has worked diligently to overcome since its inception. DHS is not the first federal agency

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BOX S-1
Summary of Recommendations for Integrating
Workforce Health Protection at DHS

1. Demonstrate leadership commitment to employee health, safety, and resilience through a unified workforce health protection strategy.
2. Align and integrate all occupational health and operational medicine functions under the Chief Medical Officer.
3. Ensure that the Chief Medical Officer has authority commensurate with the position's responsibilities.
4. Establish Component Lead Medical Officers to align and integrate occupational health and operational medicine functions.
5. Establish a Medical and Readiness Committee to promote information sharing and integration.
6. Create a governance framework to engage Department of Homeland Security management officials and component leadership in employee health, safety, and resilience to support mission readiness.
7. Develop a common employment life-cycle-based framework for achieving mission readiness.
8. Establish a comprehensive operational medicine capability to ensure consistent, high-quality medical support during operations.
9. Centralize common services to ensure quality and to achieve efficiencies and interoperability.
10. Collect core metrics for accountability, continuous quality improvement, and readiness assessment.
11. Establish a health and safety informatics and information technology infrastructure.

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to struggle with these considerable challenges; the Department of Defense (DoD) has worked for almost 70 years to overcome the culture and communication barriers to joint operations. Despite considerable progress, this is an ongoing process at DoD, and the same will be true for DHS for some time into the future. Through its recommendations (summarized in Box S-1), the committee has attempted to provide a foundation and a path forward for an integrated health protection infrastructure encompassing the programs, tools, and resources needed to enable the DHS workforce to fulfill the homeland security mission. In essence, the goal is to do on a smaller scale what the Homeland Security Act sought to accomplish more than 10 years ago—to weave the key functions and activities entailed in protecting the homeland into a unified, cohesive enterprise. To this end, the mission-ready DHS of the future will require an empowered and resourced CMO who, through partnership with the component agencies, institutes policies and global standards that permeate the entire organization to ensure the health, safety, and resilience of its workforce. Finally, if DHS is to meet the needs of its diverse workforce in the face of continuously evolving challenges, it will require a health protection infrastructure that remains agile; adoption of a learning health system approach will allow DHS to transform information into knowledge, which can be used to drive health system change in accordance with evidence-based best practices.

REFERENCE

IOM (Institute of Medicine). 2013. *A ready and resilient workforce for the Department of Homeland Security: Protecting America's front line*. Washington, DC: The National Academies Press.

1

Introduction

"The greatest asset of any organization is its workforce—without the people, the vision cannot be achieved or the mission accomplished."

—*General James B. Peake (IOM, 2013, p. xv)*

The more than 200,000 men and women who make up the Department of Homeland Security (DHS) workforce have been entrusted with the ultimate responsibility—ensuring a homeland that is safe, secure, and resilient against terrorism and other hazards. Every day, these dedicated individuals take on the critical and often dangerous challenges of the DHS mission: countering terrorism and enhancing national security, securing and managing the nation's borders, enforcing and administering U.S. immigration laws, protecting cyber networks and critical infrastructure, and ensuring resilience in the face of disasters (DHS, 2010b). DHS, in turn, is responsible for protecting the health, safety, and resilience of those on whom it relies to achieve this mission, as well as ensuring effective management of the medical needs of persons who, in the course of mission execution, come into DHS care or custody.

Since its creation more than a decade ago, DHS has been aggressively addressing the management challenges of integrating seven core operating component agencies[1] and 18 supporting offices and directorates (DHS, 2010a; DHS OIG, 2012; GAO, 2012). One of those challenges is creating and sustaining a coordinated health protection infrastructure to support this heavily operational workforce. Seeking strategic advice on how to

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[1] DHS operating component agencies include U.S. Citizenship and Immigration Services, the U.S. Coast Guard, Customs and Border Protection, the Federal Emergency Management Agency, Immigration and Customs Enforcement, the U.S. Secret Service, and the Transportation Security Administration. Although the National Protection and Programs Directorate, which includes the Federal Protective Service, is officially a headquarters-level directorate, the committee considers it to be functionally an operating component.

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strengthen mission readiness while better meeting the needs of its workforce, DHS's Office of Health Affairs (OHA) asked the Institute of Medicine (IOM) to provide recommendations for better integrating occupational health and operational medicine infrastructures throughout the department into a coordinated, DHS-wide system with the necessary centralized oversight authority. This report presents the findings, conclusions, and recommendations of the IOM committee empaneled to respond to this request.

BACKGROUND AND RATIONALE FOR THE STUDY

In DHS's early years, the creation of an integrated and coordinated medical infrastructure was impeded by the absence of a centralized departmental entity with responsibility and authority for ensuring that the health of the entire DHS workforce was adequately promoted and protected (Lowell, 2005). OHA did not come into existence until 5 years after DHS was created, and as a result, many health- and medical-related activities fell, of necessity, to other headquarters offices—predominantly those with responsibility for managing the department's human resources (Polk, 2013). Although human capital offices often play a critical role in the administration of workforce health protection programs, human resources personnel lack the medical and public health expertise necessary to guide the development of a coordinated health infrastructure.

Even after the creation of OHA and the Chief Medical Officer (CMO) position, a comprehensive understanding of the health needs of the DHS workforce remained elusive. Mechanisms were never put in place to ensure that employee health information would flow to the new centralized health authority for the department, nor was the CMO adequately empowered to ensure a coordinated approach to health risk reduction and effective health services department-wide. As a result, the CMO can see trailing indicators of the ineffectiveness of the current system but lacks the visibility and influence at the component agency level to know how best to direct resources for DHS-wide initiatives to address root causes.

Some component agencies, such as the Secret Service and the Coast Guard, have been in existence for more than a century and brought with them to DHS robust and effective workforce protection policies and processes. However, most component agencies are still working to put those kinds of systems in place. As a consequence, workforce health protection and medical services programs vary significantly across DHS, with little coordination and integration. The result has been preventable morbidity and mortality, avoidable liabilities, and inefficiency.

Evidence for this variability is seen in such traditional lagging indicators[2] as the Total Case Rate and Lost Time Case Rate,[3] which are standardized measures of the incidence of workplace injury and illness. Table 1-1 presents these data for 2012 for component agencies within DHS and other government agencies whose employees face similar workplace hazards. Although some differences in these metrics can be attributed to differences in missions and work environments, the rates vary significantly even among DHS agencies whose employees may face similar hazards (e.g., Immigration and Customs Enforcement and the Secret Service). DHS has the highest agency-wide Total Case Rate of all cabinet-level federal agencies (5.62 per 100 employees in 2012), and with a Total Case Rate of 9.44, Customs and Border Protection has the highest rate of any federal agency (OSHA, 2013). By comparison, these rates are significantly higher than those reported for hazardous private-sector occupations such as manufacturing (4.3), construction (3.7), and natural resources and mining (3.8), but comparable with those reported for public safety occupations at the state and local levels (6.5 and 10.4, respectively) (BLS, 2013).

High injury and illness rates have resulted in significant workers' compensation costs for DHS, as shown in Table 1-2, which presents annual chargeback totals[4] for DHS component agencies for 2010. For comparison purposes, data also are supplied for other cabinet-level departments. Because component workforces vary considerably in size, total costs can be

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[2]*Lagging indicators* are retrospective measurements of system performance linked to outcomes; these are the traditional measures of safety performance, such as occupational injury and illness rates and costs (Manuele, 2013). These indicators, however, have a key limitation: "While lagging indicators give information of direct concern to management, the workforce, and the public, they can only be used for improvement after the fact" (NRC, 2009, p. 8). Recent years have seen a shift in emphasis toward what have been termed *leading indicators*—in the safety context, prospective measures linked to actions taken to prevent accidents (Manuele, 2013).

[3]*Total Case Rate* represents the total number of workers' compensation claims submitted by an agency to the Department of Labor's Office of Workers' Compensation Programs per 100 employees. *Lost Time Case Rate* represents the number of claims resulting in lost workdays per 100 employees. These rates are calculated by dividing the number of total or lost-time workers' compensation cases by the number of employees and multiplying by 100, for a rate per 100 employees (OSHA, 2013).

[4]Workers' compensation chargeback costs are the dollar amounts that an employing agency must pay back to the Department of Labor's Division of Federal Employees' Compensation annually for all expenses related to workers' compensation cases from that agency for the prior year. The Division of Federal Employees' Compensation covers the costs associated with medical bills, lost wages (after 45 days), and schedule awards (for loss of, or loss of use of, body parts or functions) and then is reimbursed by the employing agency. It should be noted, however, that because annual chargeback costs reflect payments during that fiscal year for all open cases, regardless of when the injury occurred, this indicator is not very sensitive to recent improvements in prevention efforts.

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TABLE 1-1 Federal Injury and Illness Statistics for Fiscal Year 2012 for DHS and Other Selected Federal Agencies

Department or Agency	Employees	Total Cases	Total Case Rate	Lost Time Cases	Lost Time Case Rate	Fatalities
Department of Homeland Security	**198,542**	**11,156**	**5.62**	**4,779**	**2.41**	**6**
Citizenship and Immigration Services	11,193	238	2.13	143	1.28	0
Customs and Border Protection	60,177	5,683	9.44	2,336	3.88	3
Immigration and Customs Enforcement	20,353	975	4.79	384	1.89	0
Federal Emergency Management Agency	17,083	281	1.64	122	0.71	2
Federal Law Enforcement Training Center	1,167	54	4.63	15	1.29	0
Transportation Security Administration	65,209	2,938	4.51	1,412	2.17	0
U.S. Coast Guard	8,935	279	3.12	200	2.24	1
U.S. Secret Service	6,821	143	2.1	47	0.69	0
DHS Other	7,604	565	7.43	120	1.58	0
Department of Justice	**116,910**	**4,517**	**3.86**	**2,563**	**2.19**	**2**
Bureau of Alcohol, Tobacco, Firearms, and Explosives	4,847	171	3.53	49	1.01	1
Bureau of Prisons	38,055	2,558	6.72	1,760	4.62	1
Drug Enforcement Administration	9,757	287	2.94	76	0.78	0
Federal Bureau of Investigation	35,776	932	2.61	447	1.25	0
U.S. Marshals Service	5,754	412	7.16	140	2.43	0

Department of the Interior*	80,764	4,215	5.22	1,482	1.83	9
Bureau of Indian Affairs	9,016	493	5.47	264	2.93	2
Bureau of Land Management	12,372	875	7.07	197	1.59	0
Bureau of Reclamation	5,477	230	4.2	58	1.06	0
Fish and Wildlife Service	10,407	473	4.55	103	0.99	1
National Park Service	27,982	1,798	6.43	761	2.72	6
Office of Surface Mining and Enforcement	512	15	2.93	7	1.37	0
U.S. Geological Survey	9,379	261	2.78	52	0.55	0

*Some Department of the Interior agencies (e.g., the Bureau of Land Management and National Park Service), like those within DHS, have notable populations of law enforcement personnel (e.g., national park rangers) and firefighters. Additionally, many Department of the Interior employees work in remote, austere areas and may face environmental hazards similar to those encountered by DHS employees. However, the proportions of employee populations in high-risk occupations may differ among these agencies, making direct comparisons of injury rates across departments problematic.

SOURCE: Data extracted from Department of Labor Occupational Safety and Health Administration Federal Agency Programs website in February 2013 (OSHA, 2013).

TABLE 1-2 Workers' Compensation Costs by Federal Agency for 2010

Agency	2010 Annual Chargeback Total	Actuarial Liability
Department of Homeland Security	**$160,502,455**	**$1,937,837,000**
Customs and Border Protection	$62,650,987	$773,590,146
Transportation Security Administration	$42,871,729	$506,554,266
Immigration and Customs Enforcement	$18,530,776	$211,097,509
U.S. Coast Guard	$8,862,047	$108,590,146
Federal Emergency Management Agency	$5,431,753	$59,464,544
Citizenship and Immigration Services	$3,620,462	$43,173,691
Federal Law Enforcement Training Center	$1,937,018	$20,843,114
Department of Veterans Affairs	**$182,212,000**	**$1,862,264,500**
Department of Justice	**$104,573,000**	**$1,314,109,000**
Department of Transportation	**$97,687,000**	**$976,754,100**
Department of Agriculture	**$72,876,000**	**$881,454,200**

NOTE: The committee could not be provided with data on Secret Service chargeback and actuarial liability costs.
SOURCE: Data on DHS workers' compensation costs were supplied to the committee by the DHS Workers' Compensation Program Manager and Policy Advisor (e-mail communication, Department of Homeland Security, response to IOM inquiry regarding department statistics: Chargeback totals and actuarial liability, February 20, 2013). The chargeback data for other federal agencies were extracted from Department of Labor (2013), and actuarial liability data were collected from http://www.dol.gov/ocfo/media/reports/20111005a.pdf (accessed December 19, 2013).

misleading; therefore, per capita chargeback costs for DHS component agencies are shown in Figure 1-1. In fiscal year 2011, the actuarial liability for DHS—the projected amount that DHS would have to reimburse the Department of Labor to cover all previously existing cases to resolution if the agency ceased to exist today—surpassed $2 billion.[5] These costs represent a significant diversion of resources that might otherwise be devoted to achieving DHS's mission.

Concerns about DHS's current health protection systems and programs are further raised by the perceptions of the workforce regarding the health and safety aspects of working conditions, as captured in recent results of the Federal Employee Viewpoint Survey.[6] In 2012, only 62 percent of DHS em-

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[5]E-mail communication, Department of Homeland Security, response to IOM inquiry regarding department statistics: Chargeback totals and actuarial liability, February 13, 2013.

[6]This survey, administered by the Office of Personnel Management, is a tool that measures employees' perception of whether, and to what extent, conditions characterizing successful organizations are present in their agency. In 2012, the survey was offered to nearly 1.5 million federal employees, with a response rate of 46.1 percent. The data collected were weighted to produce survey estimates that accurately represent the survey population (OPM, 2012b).
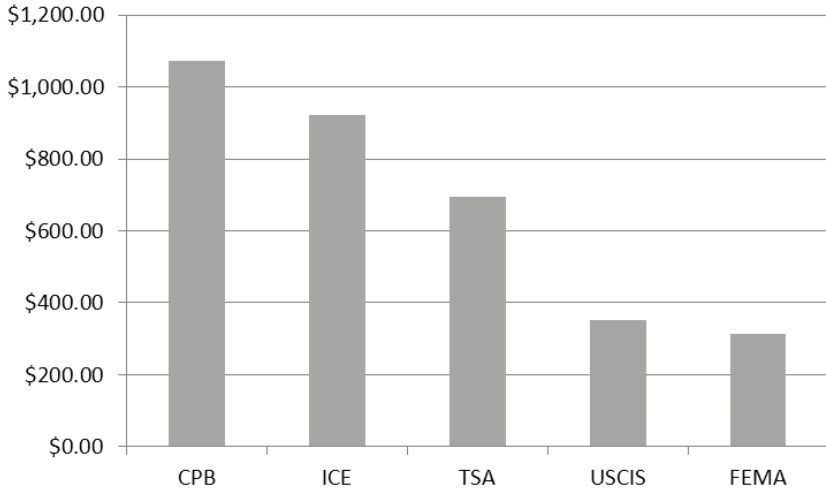
FIGURE 1-1 Fiscal year 2010 per capita chargeback costs.
NOTES: Data on Secret Service workers' compensation costs could not be provided to the committee. Data for the Coast Guard are not depicted because of difficulties in obtaining an accurate estimate of the size of the Federal Employees' Compensation Act–eligible workforce for that agency. CBP = Customs and Border Protection; FEMA = Federal Emergency Management Agency; ICE = Immigration and Customs Enforcement; TSA = Transportation Security Administration; USCIS = U.S. Citizenship and Immigration Services.

ployees indicated that they felt "protected from health and safety hazards on the job"—a significantly lower proportion than the government-wide average of 77 percent (OPM, 2012a). Although this figure represents an improvement relative to 2006, when just over half of DHS employees (53 percent) responded positively (OPM, 2011), there has been no sustained improvement in this area since 2008. For comparison purposes, other federal agencies with significant populations of public safety personnel, such as the Department of Justice and the Department of the Interior, had positive response rates closer to the government-wide average—74 and 79.2 percent, respectively, in 2012 (OPM, 2012b). The perception that employees are not adequately cared for and protected affects morale at DHS—a subject of past congressional hearings (U.S. House of Representatives, 2012)—and suggests inadequate attention in this area on the part of DHS leadership.

Box 1-1 provides a summary of the challenges related to workforce health protection at DHS discussed above and others that were highlighted by the sponsor during the presentation of the committee's charge.

BOX 1-1
Summary of Key Challenges Related to
Workforce Health Protection at DHS

- The Office of Health Affairs was created 5 years after DHS was formed. After the Chief Medical Officer (CMO) position was created, mechanisms were never put in place to ensure that employee health information would flow to this new centralized health authority for the department (in part as the result of a lack of standardized reporting metrics and interoperable health information management systems).
- Responsibility for oversight of workforce health protection functions is split between the Office of Health Affairs and the Office of the Chief Human Capital Officer. Mechanisms to ensure adequate coordination between these two offices are not functioning effectively. Moreover, the CMO has little visibility and strategic input on health functions overseen by the Chief Human Capital Officer, including those for which he or she has delegated oversight authority.
- The health protection infrastructures of the component agencies, like the agencies themselves, are at different stages of maturity, resulting in a lack of uniformity in core competencies for employee health and safety programs across DHS.
- Mechanisms to promote coordination and integration among component medical programs have only recently been introduced.
- Injury and illness rates at DHS are higher than those at other federal agencies, associated annual workers' compensation liability exceeds $150 million in chargeback costs, and many DHS employees do not feel protected from health and safety hazards on the job. These observations indicate that some component occupational health programs are not operating optimally.
- Emergency room visits to address medical needs for detainees exceeded $12 million in fiscal year 2011, indicating that operational medicine programs are not adequately addressing the needs of those in DHS care or custody.

STUDY CHARGE AND SCOPE

Seeking strategic advice on how to strengthen mission readiness and protect the DHS workforce, OHA asked the IOM to review and assess the agency's current occupational health and operational medicine infrastructure and, based on models and best practices from within and outside DHS, to provide recommendations for achieving an integrated, DHS-wide health protection infrastructure with the necessary centralized oversight authority (see Box 1-2 for the committee's complete statement of task). While the study was sponsored by OHA, Senior Counselor to former Secretary Napolitano Judge Alice Hill spoke with the committee and expressed the support and appreciation of the Office of the Secretary.

BOX 1-2
Committee on Department of Homeland Security Occupational Health and Operational Medicine Infrastructure

Statement of Task

An ad hoc committee will review and assess the current agency-wide occupational health and operational medicine infrastructure at the Department of Homeland Security (DHS) and provide recommendations on how infrastructures within component agencies can be better integrated into a coordinated, DHS-wide system with the necessary centralized oversight authority. Specifically, the committee will

- Review and assess DHS's current occupational health and operational medicine infrastructure.
- Explore the occupational health and operational medicine infrastructures established in other relevant federal agencies and organizations.
- Identify the key functions of an integrated occupational health and operational medicine infrastructure.
- Consider the necessary department oversight authority that will be required to ensure an integrated infrastructure.
- Identify quality metrics that may be used for evidence-based quality improvements.
- Perform case studies to explore the potential impacts of an integrated infrastructure, including the estimated cost savings.

In addressing the task, the committee will prioritize recommendations on short- and long-term measures DHS can adopt in order to optimize its mission readiness by assuring the health, safety, and resilience of its workforce; consideration will also be given to the impact of such measures on the agency's liability and health care costs.

As described in the section on terminology below, the definition of operational medicine adopted by the committee encompasses health and medical support provided to persons in DHS care and custody during routine, planned, and contingency operations. However, assessment of health care provided to detainees within Immigration and Customs Enforcement detainment facilities, as well as the adequacy of the facilities themselves, was not considered to be within the scope of this study. Similarly, the provision of medical support to the American public during disasters and other applicable scenarios is the responsibility of the Department of Health and Human Services and as such was not addressed for this study

except as applicable under the committee's adopted definition of operational medicine.

STUDY APPROACH

The committee had two objectives for the information-gathering phase of the study that were prerequisite to the development of its recommendations: (1) to collect information on the organizational structure, governance mechanisms, and policy background related to workforce health protection at DHS; and (2) to obtain the corresponding information for other government and private organizations that have successfully managed the same kinds of organizational and operational challenges faced by DHS and that might serve as models or sources of best practices.

To meet these objectives, the committee gathered information through a variety of means. First, it held three information-gathering meetings that were open to the public. The initial meeting, held in March 2013, focused on obtaining contextual background information from DHS, both at the headquarters level and from multiple component agencies on their medical infrastructures. Input was sought from the U.S. Office of Personnel Management on legal and regulatory issues relating to medical evaluation and clearance programs, and a representative from Federal Occupational Health[7] presented on the outsourced occupational health services that agency provides to other federal agencies. In June 2013, the committee held a 2-day workshop at which it heard from experts representing DHS, other federal agencies, and private industry on occupational medicine, workers' compensation programs, occupational safety and health, medical standards and clearance programs, operational medicine, and DHS's Medical Liaison Officer Program. A third meeting, held in July 2013, was devoted to the issue of organizational effectiveness at DHS. Agendas for these meetings can be found in Appendix F.

The committee received public submissions of materials for its consideration at its meetings and by e-mail throughout the course of the study.[8] A website was created to provide information to the public about the study and to facilitate communication with the committee.[9] Throughout the study process, the committee reviewed publicly available literature, and also requested documents and information from DHS to better inform

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[7]Federal Occupational Health is a nonappropriated agency within the U.S. Department of Health and Human Services and is the largest provider of occupational health and wellness services to the federal government (FOH, 2013).

[8]A list of materials submitted to the committee's public access file can be requested from the National Academies' Public Access Records Office via http://www8.nationalacademies.org/cp/ManageRequest.aspx?key=49507.

[9]See http://www.iom.edu/DHSocchealthopmed.

its deliberations. To assess the extent of variability of and ensure a fair comparison across component agency programs, the committee drafted standardized lists of questions soliciting detailed information on the agencies' medical, occupational safety and health, workers' compensation, and wellness programs. The question lists (which can be found in Appendix D) were provided to component agency program managers, who were asked to submit written responses.[10] The committee used the responses received in reviewing and assessing the current occupational health and operational medicine infrastructure at DHS, as described in Chapter 4 and throughout the report.

In 2012, OHA also asked the IOM to convene a committee to review its current workforce resilience efforts, identify gaps, and provide recommendations for a 5-year workforce resilience strategic plan (IOM, 2013). That committee began its work in December 2012 and publicly released its report, *A Ready and Resilient Workforce for the Department of Homeland Security*, in September 2013.[11] Recognizing the interconnectedness of workforce health and resilience, the present committee carefully reviewed the report and recommendations of the IOM Committee on Department of Homeland Security Workforce Resilience, which it took into consideration in developing its own recommendations (see Box 1-3 for the statement of task and recommendations of the IOM Committee on Department of Homeland Security Workforce Resilience).

Case Studies

In developing the case studies of integrated infrastructure required by its charge (see Box 1-2), the committee was guided by references made by then Deputy CMO J. D. Polk to health systems in other federal agencies (e.g., the National Aeronautics and Space Administration and the Department of Defense). In addition to federal agencies, the committee examined other large public and private organizations with multiple centers or business units to identify mechanisms by which integration can be promoted. The committee also looked at agencies within DHS for examples of program integration that could be applied within other components. Brief descriptions of the organizations examined by the committee are presented in Appendix E; these descriptions reflect information obtained from a review of the available literature and from invited testimony by company or agency representatives. Based on an analysis of the information thus gathered, the

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[10]Written responses to the question lists were included in the study's public access file.

[11]The report of the IOM Committee on Department of Homeland Security Workforce Resilience is freely available to download from the National Academies Press website: http://www.nap.edu/catalog.php?record_id=18407 (accessed January 22, 2014).

**BOX 1-3
Committee on Department of Homeland
Security Workforce Resilience**

Statement of Task

An ad hoc committee will conduct a study and prepare a report on how to improve the resilience (physical and mental well-being) of the Department of Homeland Security (DHS) workforce and identify the elements of a 5-year strategic plan for the DHS *Together* program. The report will build on existing analysis of current capabilities, best-known practices, and gaps in current resilience programs.
Specifically, the committee will

- Explore existing tools for improved workforce resilience, including a review of employer resilience programs which includes, but not exclusively, military and law enforcement.
  - Assess current policies, programs, activities, and resources that address employee resilience across DHS.
- Identify resilience gaps in the DHS workforce and recommend activities to close those gaps.
- Develop the elements of a 5-year strategic plan with year-by-year recommended activities to close those gaps.
  - Priority activities will be identified based on potential impact, to enable DHS to make choices based on the value of the activity.
- Identify measures and metrics to track continuous improvements and to mark successful implementation of DHS *Together* and the improving resilience of the DHS workforce.

Summary of Recommendations

1. Develop and promote a unified strategy and common vision of workforce readiness and resilience in DHS.
2. Clarify and expand the roles and responsibilities for workforce readiness and resilience in DHS.
3. Review and align responsibility and accountability for workforce readiness and resilience in DHS.
4. Establish a sustainable leadership development program in DHS.
5. Improve organizational communication to enhance esprit de corps; cultivate a culture of readiness and resilience; and align public perception of DHS with its accomplishments.
6. Develop and implement a measurement and evaluation strategy for continuous improvement of workforce readiness and resilience in DHS.
7. Implement a 5-year strategic plan for workforce readiness and resilience in DHS.

committee identified three cases of exemplary integrated workforce health systems—Johnson & Johnson, the U.S. Department of the Interior, and the Federal Air Marshal Service—that warranted more detailed examination and helped inform the committee's recommendations. Within this report, these organizations are highlighted as case studies, each of which provides a detailed description of the organization's approach and the benefits realized through integration, including the potential for cost savings when such information was available.

Study Challenges and Limitations

Despite its best efforts to conduct a thorough assessment of the current DHS occupational health and operational medicine infrastructure, the committee experienced difficulties during its information-gathering process, including

- variability in responses to the committee's question lists, resulting in uneven levels of information on component health protection programs; and
- lack of access to some relevant information (e.g., policies, medical standards, business cases), either because documents were deemed for official use only as a result of security concerns or because policies and plans, such as plans to implement a DHS-wide electronic health system, were still under development.

The committee was not asked to conduct a comparison of DHS's component agencies and instead focused its efforts and this report on higher-level challenges related to integration of the DHS health protection infrastructure. More detailed and uniform information on component programs, however, would have enabled the committee to address some aspects of its task (e.g., identification of quality metrics, estimation of cost savings) with greater specificity.

Guiding Principle

Early in the study process, the committee converged around the principle that the primary questions related to integrating the occupational health and operational medicine infrastructure in this extremely large organization are best understood as public health challenges. The committee conducted its review through this lens, applying a concept of public health akin to that defined by the World Health Organization (WHO) (2013), which describes public health as follows:

Public health refers to all organized measures (whether public or private) to prevent disease, promote health, and prolong life among the population as a whole. Its activities aim to provide conditions in which people can be healthy and focus on entire populations, not on individual patients or diseases. Thus, public health is concerned with the total system and not only the eradication of a particular disease.

WHO (2013) describes three main functions critical to the public health enterprise:

- assessment and monitoring of the health of populations at risk to identify health problems and priorities;
- formulation of policies designed to solve local and wider health problems and priorities; and
- assurance that the population has access to appropriate and cost-effective care, including health promotion and disease prevention services.

As described (and in practice), the public health infrastructure of an organization is by its very nature a *multidisciplinary* activity. It is not limited to medical professionals but requires such other skills as safety engineering, industrial hygiene, health education, labor relations, human resources, and fiscal management. Because of this multidisciplinary nature, the development of an integrated infrastructure is a difficult task requiring that a wide range of stakeholders join together to achieve a common purpose or mission; also required are clarity of mission, clear role definitions, and coherent and accountable leadership. Guided by these assumptions, the committee investigated the coherence and comprehensiveness of the health protection system within DHS, paying close attention to the existence of related initiatives and their effect on the health of the department's employees.

TERMINOLOGY USED IN THIS REPORT

For purposes of this report, the committee considers that DHS consists of seven operating component agencies (Federal Emergency Management Agency, Citizenship and Immigration Services, Customs and Border Protection, Immigration and Customs Enforcement, Transportation Security Administration, U.S. Secret Service, and U.S. Coast Guard), directorates (National Protection and Programs Directorate, Science and Technology Directorate, Management Directorate), centers (Federal Law Enforcement Training Center, Center for Domestic Preparedness), and offices (e.g., Health Affairs, Policy). *Component* or *component agency* refers to one of the seven operating component agencies along with the National Protection

and Programs Directorate, which, since the transfer of the Federal Protective Service from Immigration and Customs Enforcement in 2009, is increasingly serving an operational role. *Subcomponent* refers to agencies and offices located within component agencies. For example, the Federal Air Marshal Service is a subcomponent agency within the Transportation Security Administration.

Myriad terms can be used to classify the activities that encompass employee health promotion and protection efforts. The same term often may have different meanings for different people and organizations, and likewise, different terms frequently are used interchangeably. Even when terms are sufficiently different that they cannot be used interchangeably, there may be significant overlap in activities that are categorized under one term or another, making clear distinctions impractical. This committee was tasked with assessing the occupational health and operational medicine infrastructure at DHS. While recognizing the existence of various acceptable definitions for these and other related terms, the following definitions are used in this report.

Occupational Health

The committee views *occupational health* as an overarching term that encompasses a variety of important areas of concern for ensuring a safe, healthy, and resilient workforce. The consensus definition of the International Labour Organization/WHO Joint Committee on Occupational Health (1950) reads:

> Occupational health should aim at the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations; the prevention amongst workers of departures from health caused by their working conditions; the protection of workers in their employment from risks resulting from factors adverse to health; the placing and maintenance of the worker in an occupational environment adapted to his physiological and psychological capabilities; and, to summarize: the adaptation of work to man and of each man to his job.

In 1995, the 12th session of the Joint Committee added to this definition a consensus statement, reading:

> The main focus in occupational health is on three different objectives: (i) the maintenance and promotion of workers' health and working capacity; (ii) the improvement of working environment and work to become conducive to safety and health; and (iii) development of work organizations and working cultures in a direction which supports health and safety at work and in doing so also promotes a positive social climate and smooth operation and may enhance productivity of the undertakings. The concept

of working culture is intended in this context to mean a reflection of the essential value systems adopted by the undertaking concerned. Such a culture is reflected in practice in the managerial systems, personnel policy, principles for participation, training policies and quality management of the undertaking. (Coppee, 1998)

Integral to this definition is the concept that occupational health practices should not be reactive but proactive in terms of ensuring employee health. The definition highlights the importance of prevention of injury and illness due to working conditions and other adverse health factors, health promotion, and the development of an organizational culture that values such practices. For the purposes of this report, the term *occupational health* encompasses occupational safety and health (including safety, industrial hygiene, and ergonomics), health promotion, and disability management (early intervention and return-to-work) activities. Thus, the scope of occupational health spans the three levels of prevention—primary, secondary, and tertiary—that form the hierarchy of prevention:

> Primary prevention is based on measures designed to promote general optimum health or specific protection against disease agents or the establishment of barriers against agents in the environment. Secondary prevention is prompt and adequate treatment of the pathogenic process as soon as it is detectable. Tertiary prevention is corrective therapy, when the disease has advanced beyond its early stages, in order to prevent sequelae and limit disability, or, if too advanced, to address rehabilitation needs. (Leavell and Clark, 1958)

Occupational Safety and Health

Practitioners in the field of *occupational safety and health* work to prevent work-related illness, injury, and death. According to the Occupational Safety and Health Act,[12] an injury or illness is considered "to be work-related if an event or exposure in the work environment either caused or contributed to the resulting condition or significantly aggravated a pre-existing injury or illness." Occupational safety and health specialties include occupational safety (or safety engineering), industrial hygiene, and ergonomics.

Occupational Medicine

The American College of Occupational and Environmental Medicine (ACOEM) defines *occupational medicine* as a clinical specialty dedicated

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[12]Public Law 91-596.

to the "prevention and management of occupational and environmental injury, illness, and disability, and the promotion of health and productivity of workers, their families, and communities" (ACOEM, 2013a). "The major role of the occupational and environmental physician is to evaluate the interaction between work and health" (ACOEM, 2013b). Occupational and environmental medicine physicians must understand their role not only as the director of a medical program but also as an integral part of a business organization, and therefore must understand problems from both management and employee perspectives. ACOEM (2013b) outlines five qualifications of the occupational and environmental medicine physician essential to ensuring employee health; he or she must:

1. have a general knowledge of worksite operations and be familiar with toxic properties of materials used by employees, and the potential hazards and stressors of work processes;
2. be qualified to determine an employee's physical and emotional fitness for work;
3. be capable of diagnosing and treating occupational and environmental diseases and competently handling injuries;
4. possess knowledge of rehabilitation methods, health education techniques, sanitation, workers' compensation laws, regulatory requirements (local, state, and federal), and systems for maintaining medical records; and
5. be able to organize and manage the delivery of health services.

Occupational health nurses also play an important role in promoting, sustaining, and restoring worker health. They may span the occupational medicine and occupational safety and health fields, helping to ensure integration of these functions. According to the American Association of Occupational Health Nurses, modern roles for these nurses include case management, counseling and crisis intervention, health promotion and health risk reduction, support for legal and regulatory compliance, and identification of worker and workplace hazards (AAOHN, 2012).

Operational Medicine

For purposes of this report, *operational medicine* is defined as preventive and responsive medical and health support services provided outside of conventional workplaces during routine, planned, and contingency operations to employees and others under an organization's control.[13]

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[13]This definition of operational medicine was adapted from that used by the Federal Bureau of Investigation (FBI) and is consistent with DHS's use of the term.

Throughout this report, the concept of operational medicine is addressed primarily in terms of how DHS is prepared to care for its employees in field and other operational settings. However, the committee recognizes that DHS often is required to provide emergency and urgent care to those in its custody and, in some cases, to members of the public. While recommendations related strictly to those in DHS custody are beyond the scope of this study, the committee believes that the principles and recommendations for operational care in this report are equally applicable to care provided to nonemployees.

Operational medicine draws on several medical disciplines: occupational medicine, preventive medicine, primary care, and emergency medicine. Although people commonly interpret operational medicine as emergency medical services, it entails far more than such care—preventive and ambulatory medical care, as well as medical threat and resource assessments, are also important elements of operational medicine.

Figure 1-2 depicts the relationship among occupational health, occupational medicine, occupational safety and health, and operational medicine as defined by the committee. Occupational medicine and occupational safety and health can be seen as subsets of the activities that fall within the broader category of occupational health, with significant overlap between them. As discussed above, while the primary focus of operational medicine programs generally is protection of the operational workforce, medical support services also are provided as needed to allied law enforcement officers, subjects in custody, and other third parties who find themselves
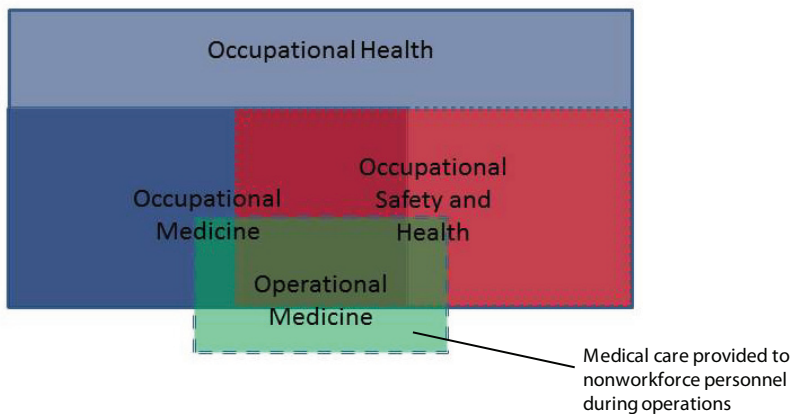
FIGURE 1-2 Relationship among occupational health, occupational medicine, and operational medicine.

within a control area of an operation; thus, operational medicine does not fall entirely within the domain of occupational health.

Workforce Health Protection and Medical Readiness

An operational workforce has unique health requirements related to its ability to carry out its mission. In acknowledgment of these needs, the committee defines *workforce health protection* broadly as the full scope of occupational health and operational medicine activities carried out to sustain and protect the health and effectiveness of deployable forces and members of the workforce exposed to nontraditional environments. This definition does not exclude nonoperational members of the workforce; the effectiveness of the operational workforce is dependent on those who perform critical support functions. This concept is expanded in Chapter 3.

Adapted from the concept used by the Military Health System, *medical readiness* is the extent to which members of the workforce are free of health-related conditions that would impede their ability to participate fully in operations and achieve the goals of their mission. The concept of medical readiness applies not only to personnel whose job description incorporates response duties but also to temporary employees, volunteers, and other departmental personnel who volunteer for response missions beyond their usual job description.

Integrated Employee Health System

The committee found the definition of an *integrated employee health system* provided by Cecchine and colleagues (2009) in a recent study on integrating employee health activities at the Department of Defense to be useful and adapted it for application to DHS. For the purposes of this report, the committee defines an integrated employee health system as an infrastructure that would support all employee health activities; provide a way to link information about all aspects of the health of employees; and make this information available to leadership at all levels for the purposes of decision making, accountability, continuous quality improvement, and surveillance.

ORGANIZATION OF THE REPORT

This report is organized into nine chapters that collectively characterize an integrated approach to workforce health protection and delineate steps DHS can take to integrate its occupational health and operational medicine infrastructure to better support its workforce and others whose medical needs become the responsibility of DHS during the course of operations.

Chapter 2 describes DHS's overall mission and organizational structure, health and safety challenges, and health protection mission and the organizational structure of its health system. Chapter 3 presents a framework for a health system that supports an operational workforce, identifying key functions, models for integrating those functions, and characteristics of successful integrated programs. Chapter 4 describes the current occupational health and operational medicine infrastructure within DHS, including both gaps and best practices. Chapters 5 through 8 present the committee's recommendations, organized according to four elements the committee identified as essential to successful integration of workforce health programs. Chapter 5 addresses the importance of leadership commitment to workforce health. Chapter 6 provides recommendations on organizational alignment to support integration of the key functions of health protection. Chapter 7 deals with strategies for alignment of the critical functions that support mission readiness. Chapter 8 focuses on the role of information management in the implementation of integrated health protection. Finally, Chapter 9 provides some considerations for implementation of the committee's recommendations, including priorities and projected benefits.

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The DHS Workplace and Health System

Consisting of more than 200,000 men and women working to achieve the overarching mission of ensuring that the U.S. homeland remains safe and secure, the Department of Homeland Security (DHS) is the third largest employer in the federal government, after the Department of Defense and the Department of Veterans Affairs. This large, complex government agency has faced a mix of political, structural, and managerial challenges since its founding that have hindered its maturation into a cohesive and unified organization. An understanding of the historical context of the department and the difficulties it has previously encountered and continues to face is requisite to visualizing a path toward an integrated capability for workforce health protection. This chapter provides a brief history of the agency and describes, in turn, its mission and current organizational structure, the health and safety challenges faced by its workforce, its health protection mission, and the organization of its health system.

A BRIEF HISTORY OF DHS

In the wake of the terrorist attacks of September 11, 2001, President George W. Bush signed into law the Homeland Security Act of 2002,[1] creating a new cabinet-level agency—the Department of Homeland Security—whose purpose was to coordinate and unify national homeland security efforts previously scattered throughout the federal government. The Homeland Security Act brought all or part of 22 different federal departments

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[1]Public Law 107-296.

and agencies together under the DHS umbrella (see Figure 2-1), making the creation of DHS one of the largest—and certainly the most complex—public-sector mergers in American history (Frumkin, 2003; GAO, 2003; Shenon, 2002). Critical functions of the new agency, organized under directorates established by the Homeland Security Act, included information analysis and infrastructure protection, border and transportation security, emergency preparedness and response, research and development, and management of the DHS enterprise.

From its inception, DHS faced two major challenges: (1) the need to merge a disparate set of agencies in different stages of maturity, some of which had long-established cultures; and (2) the very limited amount of time allowed to plan and accomplish this complex merger. The creation of a new government agency through a merger process requires significant strategic planning and resource investment to ensure that missions are not disrupted, responsibilities and authorities are clearly delineated, and employees do not become disengaged but instead are united by shared values and common missions that are actively communicated by leadership (Frumkin, 2003; Partnership for Public Service and Booz Allen Hamilton, 2011). The Homeland Security Act mandated that DHS be up and running within 60 days of the legislation's enactment. This mandate left little time to merge basic human resources functions (e.g., hiring and payroll systems), and even less to fully integrate existing, ingrained cultures and processes across components (GAO, 2003). A further complication was that some agencies were disaggregated and distributed among several new agencies within DHS, leading to potential disruption in employees' sense of organizational identity (GAO, 2003; Partnership for Public Service and Booz Allen Hamilton, 2011). For example, the Immigration and Naturalization Service, previously part of the Department of Justice, was split among three DHS agencies—U.S. Citizenship and Immigration Services (USCIS), Customs and Border Protection (CBP), and Immigration and Customs Enforcement (ICE).

The organizational challenges associated with the creation of DHS were recognized from the outset. "It's going to take years in order to get this department fully integrated—you're talking about bringing together 22 different entities, each with a longstanding tradition and its own culture," said Comptroller General David M. Walker, who directed the Government Accountability Office (GAO), in a 2002 *New York Times* article written shortly after the decision to create DHS was made (Shenon, 2002). More than 10 years later, challenges related to employee dissatisfaction and integration of DHS management functions remain under GAO scrutiny (GAO, 2012a,b). Although every DHS Secretary has strived toward the vision of a unified enterprise, the vision of "one DHS" has not yet been achieved (McCaul, 2012).
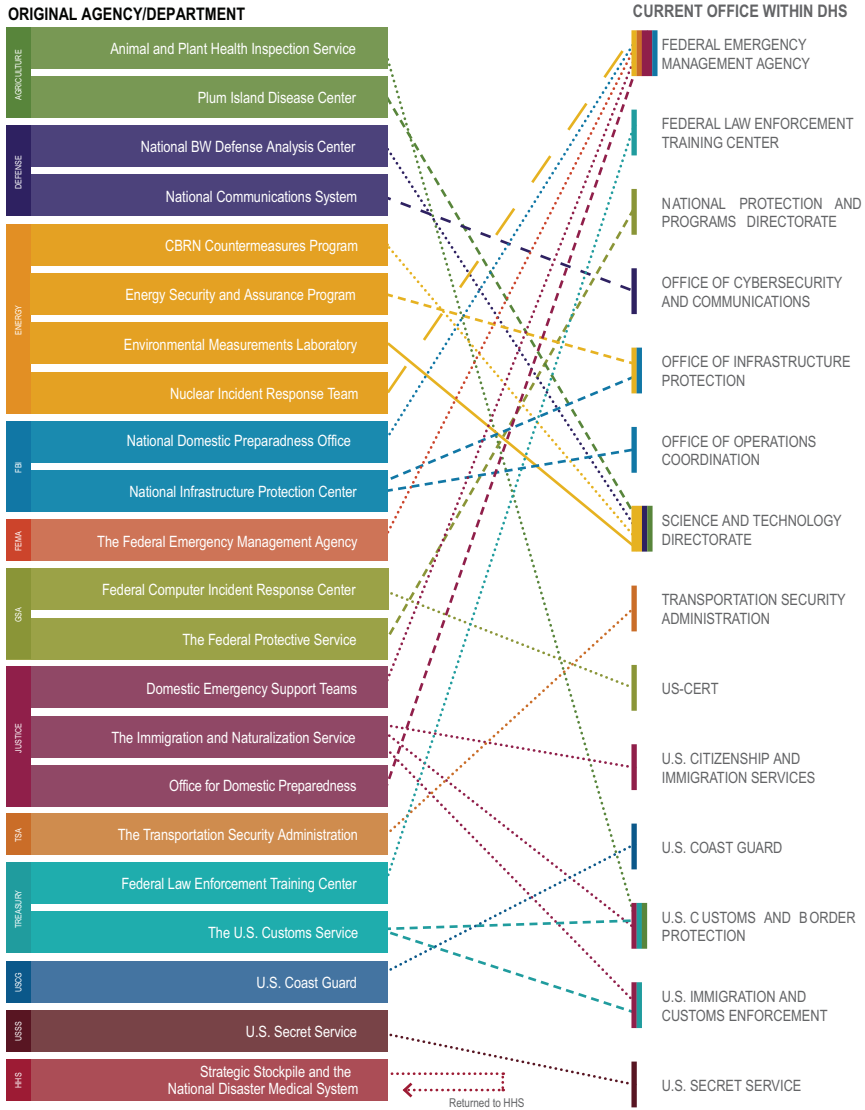
FIGURE 2-1 Entities that became part of the Department of Homeland Security.
NOTE: HHS = U.S. Department of Health and Human Services; US-CERT = U.S.
Computer Emergency Readiness Team.
SOURCE: Partnership for Public Service and Booz Allen Hamilton, 2011.

Challenges faced by the newly created department did not originate from within DHS alone. Beyond the organizational complexities, the political context in which DHS operated posed additional difficulties. With the Homeland Security Act, Congress sought to streamline homeland protection efforts, but the legislative branch failed to follow suit by streamlining its own oversight functions (NPR, 2010). Although House and Senate Committees on Homeland Security were created and have primary jurisdiction over DHS, many of the components that were assimilated into the new department had previously been associated with other committees, none of which were willing to relinquish jurisdiction and authority (Partnership for Public Service and Booz Allen Hamilton, 2011). In 2004, 88 committees and subcommittees had oversight over DHS (Kean and Hamilton, 2004). Since then, rather than being consolidated, that number has grown to more than 100 (NPR, 2010). In addition to the significant amount of time required to respond to so many congressional committees (for example, more than 5,000 briefings were held in 2007-2008 [NPR, 2010]), the manifold and sometimes opposing direction from the various committees, subcommittees, and caucuses has made it difficult for DHS to identify key priorities to guide programmatic and budgetary decision making. The report of the 9/11 Commission cites the fragmented nature of congressional oversight as one of the largest obstacles to the successful development of DHS (Kean and Hamilton, 2004).

DHS MISSION AND ORGANIZATION

The events of September 11, 2001, irrevocably altered the U.S. approach to homeland protection. The threat of attack on U.S. soil from sources both domestic and foreign necessitated a wide-ranging but coordinated homeland security team to complement the armed forces that had served as the cornerstone of the U.S. defensive strategy. With recognition of the broader nature of threats to U.S. security, the operational landscape for the homeland security workforce has evolved. Securing the homeland against 21st-century threats goes beyond preventing terrorist attacks to include preparing and planning for emergencies; investing in strong early event recognition, response, and recovery capabilities; and protecting the nation's systems for trade and travel. Box 2-1 presents DHS's multifaceted mission statement.

The breadth of the DHS mission is reflected in the diversity of its component agencies. The five core DHS missions described in Box 2-1 are carried out by the department's seven operating component agencies (CBP,

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BOX 2-1
Department of Homeland Security Missions

1. **Prevent terrorism and enhance security:** Protecting the American people from terrorist threats is our founding principle and our highest priority. The Department of Homeland Security's counterterrorism responsibilities focus on three goals: (1) Prevent terrorist attacks; (2) Prevent the unauthorized acquisition, importation, movement, or use of chemical, biological, radiological, and nuclear materials and capabilities within the United States; and (3) Reduce the vulnerability of critical infrastructure and key resources, essential leadership, and major events to terrorist attacks and other hazards.
2. **Secure and manage our borders:** The Department of Homeland Security secures the nation's air, land, and sea borders to prevent illegal activity while facilitating lawful travel and trade. The department's border security and management efforts focus on three interrelated goals: (1) Effectively secure U.S. air, land, and sea points of entry; (2) Safeguard and streamline lawful trade and travel; and (3) Disrupt and dismantle transnational criminal and terrorist organizations.
3. **Enforce and administer our immigration laws:** The department is focused on smart and effective enforcement of U.S. immigration laws while streamlining and facilitating the legal immigration process.
4. **Safeguard and secure cyberspace:** The department has the lead for the federal government for securing civilian government computer systems and works with industry and state, local, tribal, and territorial governments to secure critical infrastructure and information systems. The department works to: analyze and reduces cyber threats and vulnerabilities; distribute threat warnings; and coordinate the response to cyber incidents to ensure that our computers, networks, and cyber systems remain safe.
5. **Ensure resilience to disasters:** The Department of Homeland Security provides the coordinated, comprehensive federal response in the event of a terrorist attack, natural disaster or other large-scale emergency while working with federal, state, local, and private sector partners to ensure a swift and effective recovery effort. The department builds a ready and resilient nation through efforts to bolster information sharing and collaboration; provide grants, plans, and training to our homeland security and law enforcement partners; and facilitate rebuilding and recovery along the Gulf Coast.

SOURCE: http://www.dhs.gov/our-mission (accessed January 17, 2014).

USCIS, the U.S. Coast Guard,[2] the Federal Emergency Management Agency [FEMA], ICE, the U.S. Secret Service, and the Transportation Security

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[2]The Coast Guard's primary missions are domestic in nature (e.g., drug interdiction, maritime law enforcement, environmental stewardship, search and rescue), but the Coast Guard also is one of the five armed forces of the United States. During wartime or at the pleasure of the President, the Coast Guard can be called upon to operate as a component service of the

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BOX 2-2
Brief Descriptions of the Missions of Selected DHS
Component and Subcomponent Agencies

Components:
- Customs and Border Protection: Keeping terrorists and their weapons out of the United States, securing the nation's borders, and facilitating lawful international trade and travel while enforcing hundreds of U.S. laws and regulations, including immigration and drug laws.
  - o Office of Border Patrol: Securing the nation's border from the illegal entry of goods and people outside of officially established entry points.
  - o Office of Field Operations: Enforcing customs, duties, and tariffs to support the lawful operation of official ports of entry and to prevent all types of smuggling and unauthorized entry.
  - o Office of Air & Marine: Operating an extensive network of aviation and marine interdiction and surveillance assets to supplement and support the work of other Customs and Border Patrol operations.
- Immigration and Customs Enforcement: Promoting homeland security and public safety through the criminal and civil enforcement of federal laws governing border control, customs, trade, and immigration.
- U.S. Citizenship and Immigration Services: Helping to realize America's promise as a nation of immigrants by providing accurate and useful information as needed, granting immigration and citizenship benefits, promoting awareness and understanding of citizenship, and ensuring the integrity of the nation's immigration system.
- U.S. Coast Guard: Safeguarding U.S. maritime interests in the heartland, in the nation's ports, at sea, and around the globe. By law, the Coast Guard has 11 missions: ports, waterways, and coastal security; drug interdiction; aids to navigation; search and rescue; living marine resources; marine safety; defense readiness; migrant interdiction; marine environmental protection; ice operations; and other law enforcement.
- Federal Emergency Management Agency: Supporting citizens and first responders to ensure that the nation works together to build, sustain, and improve its capability to prepare for, protect against, respond to, recover from, and mitigate all hazards.
- U.S. Secret Service: Safeguarding the nation's financial infrastructure and payment systems to preserve the integrity of the economy, and protecting national leaders, visiting heads of state and government, designated sites, and national special security events.
- Transportation Security Administration: Protecting the nation's transportation systems to ensure freedom of movement for people and commerce.

Administration [TSA]) and 18 supporting offices and directorates, each with distinct roles (see Box 2-2). The department is led by a number of

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U.S. Department of the Navy, and authority over its forces can be transferred to the Department of Defense.

o   Federal Air Marshal Service: Promoting confidence in the nation's civil aviation system through the effective deployment of Federal Air Marshals to detect, deter, and defeat hostile acts targeting U.S. air carriers, airports, passengers, and crews.

Major Headquarters Activities

- Science and Technology Directorate: Strengthening America's security and resiliency by providing knowledge products and innovative technology solutions for the homeland security enterprise.
- National Protection and Programs Directorate: Leading the national effort to protect and enhance the resilience of the nation's physical and cyber infrastructure.
  o   Federal Protective Service: Ensuring the physical security of the government's public buildings and assets.
- Office of Health Affairs: Advising, promoting, integrating, and enabling a safe and secure workforce and nation in pursuit of national health security.
- Office of Intelligence and Analysis: Equipping the homeland security enterprise with the intelligence and information needed to keep the homeland safe, secure, and resilient.
- Domestic Nuclear Detection Office: Implementing domestic nuclear detection efforts for a managed and coordinated response to radiological and nuclear threats, as well as integrating federal nuclear forensics programs and coordinating the development of the global nuclear detection and reporting architecture, with partners from federal, state, local, and international governments and the private sector.
- Federal Law Enforcement Training Center: Training those who protect the homeland by serving as an interagency law enforcement training organization for 91 federal agencies and providing services to state, local, tribal, and international law enforcement agencies.
- Management Directorate*: Ensuring that DHS employees have well-defined responsibilities and that managers and their employees have efficient means of communicating with one another, with other governmental and nongovernmental bodies, and with the public they serve.

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*The Management Directorate includes the DHS Chief Administrative Services Officer, Chief Financial Officer, Chief Human Capital Officer, Chief Information Officer, Chief Procurement Officer, and Chief Security Officer.
SOURCES: www.cbp.gov; www.ice.gov; www.uscis.gov; www.uscg.mil; www.fema.gov; www.secretservice.gov; www.tsa.gov; www.dhs.gov; www.fletc.gov.

presidentially appointed and Senate-confirmed leaders, including the DHS Secretary, Deputy Secretary, Under Secretaries, Assistant Secretaries, and component agency heads. Figure 2-2 shows the current organization of the DHS superstructure.
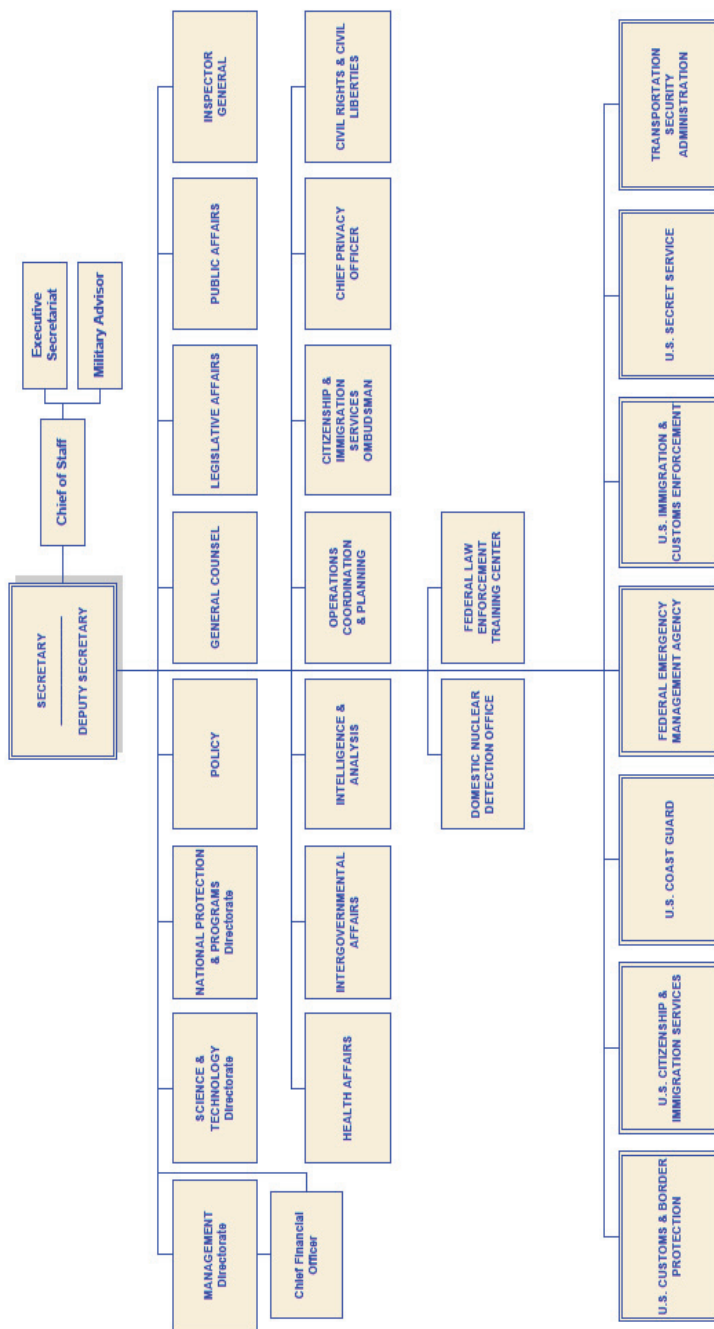
FIGURE 2-2 DHS organizational chart.
SOURCE: http://www.dhs.gov/xlibrary/assets/dhs-orgchart.pdf (accessed January 17, 2014).

Table 2-1 shows the distribution of the more than 200,000 DHS employees by component agency. Notably, these numbers do not include contracted staff, whose number has been difficult to track. In 2011, approximately 100,000 contractors were estimated to work for DHS—about half the size of the department's federal workforce (Reilly, 2011). This heavy dependence on a contractor workforce has raised concerns that

TABLE 2-1 Workforce Size by Component (as of June 2013)

Component	Number of Employees	Additional Information
Transportation Security Administration	64,147	
Customs and Border Protection	59,436	
U.S. Coast Guard	~46,581	Includes approximately 38,000 active-duty personnel, but not the 8,000 reservists and 35,000 auxiliary (civilian volunteer) Coast Guard personnel.
Immigration and Customs Enforcement	19,774	
Federal Emergency Management Agency	15,081	Only 4,925 are permanent full-time employees. The vast majority of the FEMA workforce are reservists, nonpermanent full- and part-time employees available to assist in disaster response and recovery.
U.S. Citizenship and Immigration Services	12,430	
U.S. Secret Service	6,524	
DHS Headquarters	3,281	
National Protection and Programs Directorate	2,801	
Federal Law Enforcement Training Center	1,116	
Office of the Inspector General	731	
Science and Technology Directorate	466	
Domestic Nuclear Detection Office	112	

SOURCE: OPM, 2013.

contractors may be performing inherently governmental functions[3] and also poses considerable management challenges. For example, special attention must be paid to ensuring that contractors meet minimum requirements set by the department (e.g., fitness-for-duty standards). Although contracted companies are responsible for the health and safety of their workers, DHS still has the responsibility of providing them with a safe and healthful work environment. Specific issues related to contracted medical providers are discussed in Chapter 6 of this report.

HEALTH AND SAFETY CHALLENGES AT DHS

With its heavy focus on securing the nation's borders and protecting critical infrastructure, DHS often is referred to as a "guns, guards, and gates" organization—about half of its workforce is made up of law enforcement and security personnel.[4] The number of law enforcement officers at DHS (~50,000) is only slightly smaller than the number employed by the Department of Justice (GAO, 2006); these two departments account for the vast majority of the federal law enforcement workforce in the United States. Within DHS, law enforcement officers are employed by nearly every operational component but are concentrated primarily within CBP (largely the Office of Border Patrol and the Office of Field Operations), followed by ICE. One headquarters component, the National Protection and Programs Directorate, also has a notable law enforcement workforce. The Federal Protective Service, located within the National Protection and Programs Directorate, employs approximately 900 law enforcement security officers, criminal investigators, police officers, and support personnel, in addition to 15,000 contracted guard staff, to secure federal buildings and safeguard their occupants (DHS, 2013a).

The other major operational arm of the DHS workforce comprises rescue and emergency response personnel, employed primarily by FEMA and the Coast Guard. The size of the emergency response workforce is variable. FEMA's permanent full-time staff is relatively small (~5,000), but its workforce can swell considerably through the activation of its approximately 10,000 reservists[5] in the event of a disaster (OPM, 2013). The

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[3]In a letter to then Secretary Napolitano, Senators Collins and Lieberman voiced such concern, stating that "the sheer number of DHS contractors currently on board again raises the question of whether DHS itself is in charge of its programs and policies, or whether it inappropriately has ceded core decisions to contractors" (HSGAC, 2010).

[4]TSA's approximately 50,000 transportation security officers, although considered security personnel for the purposes of this report, are not classified as federal law enforcement officers and do not carry weapons on duty. Contracted security personnel are not included in this statistic.

[5]Temporary federal employees, previously called disaster assistance employees.

Coast Guard is a hybrid organization that has a strong search-and-rescue function but also has responsibility for carrying out domestic (maritime) law enforcement operations. A comparatively small but essential population within the DHS operational workforce is made up of those working in the area of critical infrastructure protection (e.g., cyber security and protection of financial systems). Nonoperational members of the DHS workforce include policy personnel, who often hold high-level security clearances, and mission support personnel.

The DHS workplace is as varied as its workforce, with employees stationed in all 50 states and more than 75 countries (Napolitano, 2013). Many of those employees operate in the field on a daily basis, often in austere and remote environments, facing a variety of unavoidable hazards while carrying out their missions. Others can be deployed with relatively little notice to areas where working conditions may be more hazardous or medical services less accessible than is the case at their usual workplace (e.g., overseas or a disaster site). From Border Patrol stations stretching across the vast and hazardous expanse of the southwest U.S. border to Coast Guard stations in the remote Alaskan arctic, DHS employees can be found in some of the most challenging work environments, contending with extreme temperatures, dangerous wildlife, communicable diseases, and armed assailants.

DHS's large operational workforce poses significant challenges for agency programs designed to keep workers healthy and safe. In contrast to more traditional or fixed workplaces, where hazards often can be eliminated through effective planning, engineering, and constant vigilance, threats to employee health and safety are inherent to many operational environments and can be controlled only to a limited extent. In addition to the work environment, demands of the job themselves can present health risks. In addition to predictable risks from firearms and vehicle collisions, research has demonstrated that jobs such as law enforcement are associated with a higher prevalence of suicide, cardiovascular disease, depressive symptoms, and metabolic disorder than are many other occupations (Hartley et al., 2007; Rajaratnam et al., 2011; Violanti et al., 1996, 2008, 2009).

Cultures ingrained in certain workforce populations can add to these already formidable challenges. For example, law enforcement personnel may avoid help-seeking behavior (e.g., utilizing employee assistance programs and other counseling services) because of perceived stigma, and high-level policy personnel may do the same because of concern about losing their security clearance (IOM, 2012, 2013). The critical nature of the DHS mission requires that certain levels of unavoidable risk be accepted. Still, the department cannot fulfill its mission requirements unless those who operate daily on its front lines function at a high level, and it must therefore find

ways to ensure that the health, safety, and resilience of its most valuable asset are protected to the extent possible.

THE HEALTH PROTECTION MISSION AT DHS

Health protection functions at DHS can be divided into two general categories—externally focused public health activities to protect the American public against weapons of mass destruction, natural disasters, and other health threats; and internally focused activities to protect the health of the DHS workforce and those in their care. As this committee was tasked with evaluating the latter set of functions, the following sections focus primarily on the health protection mission at DHS as it pertains to the DHS workforce and the department's direct health services, both past and present.

Creation of a Centralized Focus on Health

In 2004, then Secretary Tom Ridge requested a review of DHS's medical readiness responsibilities and capabilities. The subsequent report (Lowell, 2005) indicated that workforce health programs were fragmented and implemented unevenly across components, lacked visibility and authority, and were inadequately staffed. Specific deficiencies noted in the report included communication and training on occupational safety and health policy and programs, use of and training in personal protective equipment, medical support for field operating units, training in self-aid/buddy care, and evaluations for fitness to deploy. To address these deficiencies, the report called for the development of a centralized medical infrastructure to coordinate the department's medical activities, serve as a medical point of contact for the DHS Secretary and other federal agencies, facilitate medical risk communications, develop medical policy and oversight mechanisms, and promote consideration of medical issues in operational planning and decision making. The report recommended further that an organizational entity be given responsibilities and resources for oversight of a DHS workforce health protection program encompassing occupational safety and health, medical monitoring, and medical support to field operating units. While progress has been made toward the development of a centralized medical infrastructure with the creation of OHA and the CMO position, the recommended alignment of occupational safety and health and medical programs was never implemented, and the committee found that many of the deficiencies noted in that report have yet to be addressed.

Creation of the DHS Chief Medical Officer Position

In 2005, shortly after succeeding Ridge, Secretary Michael Chertoff undertook a second-stage review of DHS—a systematic evaluation of the department's operations, policies, and structures. Among the findings of this review was the need to focus and consolidate the department's preparedness efforts. To this end, Secretary Chertoff (2005) announced the creation of a Chief Medical Officer (CMO) position. This position was codified by the Post-Katrina Emergency Management Reform Act of 2006,[6] which outlined five primary responsibilities for the CMO:

- to serve as principal advisor to the DHS Secretary and the head of FEMA on medical and public health issues;
- to coordinate DHS's biodefense activities;
- to ensure internal and external coordination of DHS's medical preparedness and response activities, including training, exercises, and equipment support;
- to serve as the primary DHS point of contact on medical and public health issues for governments (federal, state, local, and tribal), the medical community, and all other relevant parties within and outside of DHS; and
- to discharge DHS's responsibilities related to Project BioShield[7] (in coordination with the Under Secretary for Science and Technology).

Creation of the Office of Health Affairs

On January 18, 2007, Secretary Chertoff announced the creation of the Office of Health Affairs (OHA) as part of a larger departmental reorganization. The mission of the new office was to serve as DHS's principal authority for all medical and public health matters, working with other federal agencies and the private sector to take the lead in the DHS role in "developing, supporting, measuring and refining a scientifically rigorous, intelligence-based medical and biodefense architecture to ensure the public health and medical security of our Nation" (Krohmer, 2007). One of the goals for the new office was to ensure that DHS employees are supported by an effective occupational safety and health program. Although such a program was already being administered from the Office of Safety and

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[6]Public Law 109-295.
[7]Project BioShield was a 2004 legislated initiative to develop and make available medical countermeasures (e.g., drugs and vaccines) to defend against chemical, biological, radiological, and nuclear attacks.

Environmental Programs,[8] OHA's Office of Component Medical Services[9] sought to integrate occupational medicine into the existing program and act as a high-level advocate for safety and health issues. In the current organization of OHA, these functions now fall under the Workforce Health and Medical Support Division.

In 2008, Secretary Chertoff further clarified the authority of the DHS CMO by issuing Delegation #5001, *Delegation to the Assistant Secretary for Health Affairs and Chief Medical Officer* (see Appendix B) (DHS, 2008). That document vested authority in the CMO for exercising oversight over all medical and public health activities of DHS, including but not limited to

- leading the department's biodefense activities;
- providing medical guidance for the department's personnel programs, including fitness-for-duty and return-to-work programs, drug testing, health screening and monitoring, preplacement evaluations, immunizations, medical surveillance, medical record keeping, deployment physicals, and medical exam protocols;
- performing medical credentialing and developing quality assurance and clinical policy, requirements, standards, and metrics for all human and veterinary clinical activities within DHS;
- ensuring an effective coordinated medical response to natural or manmade disasters or acts of terrorism;
- leading the development of strategy, policy, and requirements for any DHS funding mechanisms for medical and public health activities; and
- entering into agreements and contracts to discharge the authorities, duties, and responsibilities of OHA.

The Current Health Protection Mission at DHS

The focus of OHA, mirroring that of the entire department, has shifted from protection against acts of terrorism to a broader all-hazards approach. This shift is reflected in OHA's mission and goals. Today, OHA's mission is "to advise, promote, integrate, and enable a safe and secure workforce and nation in pursuit of national health security" (DHS, 2013b). Notably

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[8]Initially, a departmental occupational safety and health program, as required by presidential executive order, was located in the Office of Administration under the oversight of the Under Secretary for Management, who was the Designated Agency Safety and Health Official.

[9]In its initial configuration, OHA was divided into three offices—Weapons of Mass Destruction and Biodefense, Medical Readiness, and Component Services—with the first two being focused on public health activities relating to chemical, biological, radiological, and nuclear attacks and natural disasters. The Office of Component Services was responsible for medical oversight of health care delivery throughout the department.

BOX 2-3
OHA Goals and Strategic Objectives

Goal 1: Provide expert health and medical advice to DHS leadership
Strategic Objective 1.1 Anticipate, inform, and advise the Secretary, FEMA Administrator and other DHS officials on medical and health issues
Strategic Objective 1.2 Provide the Department with expertise in medicine, public health, veterinary medicine, toxicology, and biological sciences
Strategic Objective 1.3 Provide policies and guidance to DHS Components regarding the quality and standards of health care offered by DHS

Goal 2: Build national resilience against health incidents
Strategic Objective 2.1 Mitigate consequences of biological and chemical events through early detection
Strategic Objective 2.2 Enhance preparedness through capabilities development
Strategic Objective 2.3 Inform national planning and policy
Strategic Objective 2.4 Provide situational awareness of health incidents, specifically unusual biological events
Strategic Objective 2.5 Engage international partners in focused health security priorities

Goal 3: Enhance national and DHS medical first responder capabilities
Strategic Objective 3.1 Facilitate the integration of the emergency medical services (EMS) community into federal, state, local, territorial, and tribal disaster preparedness activities
Strategic Objective 3.2 Provide standards and guidelines to DHS EMS providers for delivery of EMS services

Goal 4: Protect the DHS workforce against health threats
Strategic Objective 4.1 Unify and standardize occupational health and workforce protection activities across the department
Strategic Objective 4.2 Build resilience across the DHS workforce
Strategic Objective 4.3 Support DHS operational medical forces

SOURCE: OHA Strategic Framework (DHS, 2010).

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absent from OHA's current mission and goals is the strong language that previously described its role as the "principal medical authority" for DHS.

A 2010 strategic framework released by OHA defines four overarching goals, each with strategic objectives, to help guide its mission (see Box 2-3). Although Goal 2 is focused solely on the externally facing public health activities of OHA, the other three goals relate to the medical infrastructure within DHS and therefore were of interest to this committee. In addressing its task, the committee sought to examine the current capability of DHS to achieve these goals.

ORGANIZATION OF THE DHS HEALTH SYSTEM

Although DHS headquarters has an oversight and facilitation role, management and administration of occupational health and operational medicine programs is decentralized such that each component agency controls its own organizational structure and assets. The subsections below describe the organizational structure of the DHS health system at the headquarters and component levels. Component-specific descriptions of health program organization, including organizational charts, are included in Appendix A.

Headquarters Level

Although the 2008 *Delegation to the Assistant Secretary for Health Affairs and Chief Medical Officer* assigned the CMO authority for exercising oversight over all medical and public health activities of DHS, responsibility for workforce health protection functions at the department level is divided between two mission support offices: OHA and the Office of the Chief Human Capital Officer (OCHCO), with the latter being located within the Management Directorate. OHA, led by the CMO, consists of two divisions: (1) Health Threats Resilience, which focuses on externally facing public health activities such as BioWatch; and (2) Workforce Health and Medical Support. The latter division is further divided into four branches: the Occupational Health Branch, which focuses on the medical aspects of department-wide occupational health, including medical countermeasures, medical standards, implementation of a DHS-wide electronic health information system, and workforce resilience; the Medical Quality Assurance Branch, which provides medical guidance, credentialing, and quality assurance standards; the Medical First Responder Coordination Branch, which facilitates operational medical support for mission-essential personnel, coordinates medical first responder readiness for catastrophic incidents, and represents DHS to the medical first responder community (DHS, 2013c); and the Medical Liaison Officer (MLO) Branch, which was created only recently and supports the MLO program, and was implemented to facilitate coordination between OHA and the components (Patrick, 2013). The MLO program is discussed further in Chapter 4.

Several key health functions that intersect with personnel programs, including occupational safety and health, workers' compensation, return-to-work/disability management, and health promotion, are being administered and overseen by the Chief Human Capital Officer, who is the DHS Designated Agency Safety and Health Official. The division of occupational health functions between OHA and OCHCO is described in Table 2-2. As shown in Figure 2-3, the Designated Agency Safety and Health Official

TABLE 2-2 Division of Responsibilities for Occupational Health Activities Between the Office of Health Affairs and the Office of the Chief Human Capital Officer

Responsibility	Office of Health Affairs (OHA)	Office of the Chief Human Capital Officer (OCHCO)
Occupational safety and health	OHA provides guidance and support for medical aspects of DHS health and safety programs, and consults as needed for accident investigations.	OCHCO leads the development of policy, standards, requirements, and metrics related to DHS health and safety programs. It also conducts trend analyses and evaluations of component agency programs.
Workers' compensation/return to work	Despite having delegated oversight authority for return-to-work programs, OHA is currently inactive in this area. OHA is not involved in the administration of workers' compensation programs.	The DHS Workers' Compensation Program Manager and Policy Advisor within OCHCO provides guidance to component agencies on workers' compensation programs, and recently initiated a contracted DHS workers' compensation medical case management program to facilitate return to work.
Fitness for duty	OHA has responsibility for developing medical standards and recently established a medical review board to discuss standards and potentially to adjudicate cases. To date, OHA has issued no fitness-for-duty standards. Although a process was initiated to develop a "gun carrier" minimum medical standard, the process stalled and has yet to be revisited.	All medical standards for employment that must go to the U.S. Office of Personnel Management for approval go through the Office of Hiring Reform and Staffing Policy within OCHCO.
Wellness and resilience	OHA created the DHS*Together* program in 2009 in response to a charge from Secretary Napolitano to develop an employee resilience program. This program has been reviewed elsewhere (IOM, 2012, 2013).	Human Capital Policy and Program staff provide information and guidance to component agencies on the implementation of wellness programs and are in the process of issuing a policy on baseline requirements for such programs.
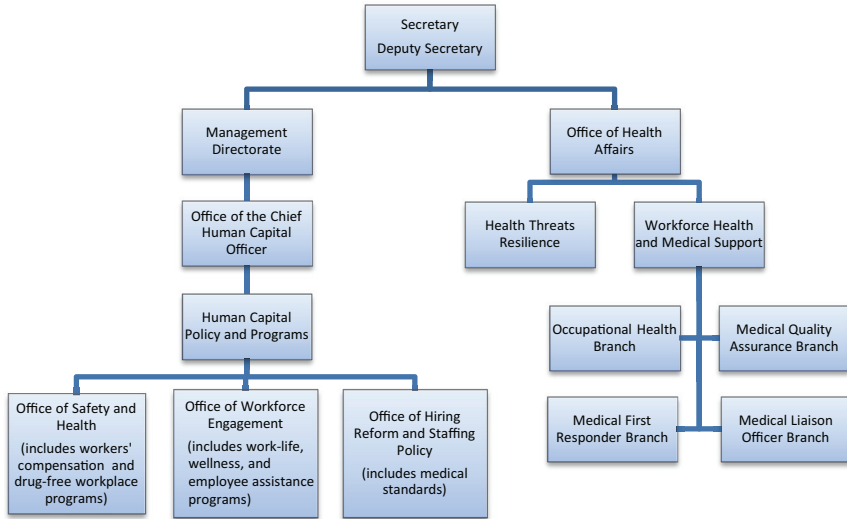
FIGURE 2-3 Organization of DHS headquarters health functions.
NOTES: There are six primary offices within Human Capital and Policy Programs, but only those with health-related functions are included in this figure. The Chief Human Capital Officer serves as the Designated Agency Safety and Health Official, and the Chief Medical Officer leads the Office of Health Affairs.

and CMO are in different reporting chains that do not intersect until the Deputy Secretary level.

Several headquarters-level directorates and centers have health and medical staff or programs specific to their needs. The National Protection and Programs Directorate's Human Capital Office has both medical (e.g., fitness-for-duty) and occupational safety and health programs. The Science and Technology Directorate has an Environmental Safety and Health Branch, and one of its facilities, Plum Island Animal Disease Center, has its own fire department that is integrated with the local emergency medical services system. The Federal Law Enforcement Training Center has an Environmental and Safety Division, an Office of Organizational Health, and health clinics at each training center that provide services to students and staff.

Component Agencies

Component agencies have evolved different organizational structures to support occupational health and operational medicine functions. Described in more detail in Appendix A, workforce health protection programs are segregated in some components and centralized in others, with

organizational placement differing across the components. Although occupational health programs tend to fall within organizational units dealing with management issues (often human capital or administration), operational medicine programs at DHS are divided between management units and operational units, such as the Office of Border Patrol at CBP or Response and Recovery at FEMA. Even when all health and medical programs fall within a single management unit, programs often are segregated among different offices, and, with the notable exception of the Coast Guard, the committee found that generally no single person has sole responsibility for oversight and coordination of all health, safety, and medical programs. The implications of this segregation of health programs within and across agencies for the integration of health protection functions at DHS are discussed further in Chapter 4.

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3

A Comprehensive Framework for Ensuring the Health of an Operational Workforce

When Congress passed the Occupational Safety and Health Act of 1970[1] with the intent of ensuring safe and healthful working conditions in the United States, it found that "personal injuries and illnesses arising out of work situations impose a substantial burden upon, and are a hindrance to, interstate commerce in terms of lost production, wage loss, medical expenses, and disability compensation payments" (Sec. 2). In recent years, the impacts of poor health and injuries on productivity, profit, and the readiness of a workforce to accomplish its basic mission have been strong driving forces for new workplace initiatives designed to improve employee health and safety. Beyond that motivation, however, the committee asserts that safe and healthful working conditions are a matter not only of workforce effectiveness but also of basic civil rights and expectations.

As described in previous chapters, a significant proportion of the Department of Homeland Security (DHS) workforce operates outside of conventional workspaces on a routine or recurring basis, creating challenges to protecting employee health not encountered in most other federal agencies. A comprehensive approach to workforce health protection at DHS must be responsive to these challenges. This chapter delineates a comprehensive framework for ensuring the health of an operational workforce. It then details in turn the key functions that support the two pillars of this framework—medical readiness and medical support for operations. The final section addresses the integration of essential workforce health

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[1] 29 USC 651.

protection functions that underpins the entire framework and is vital if the functions are to be carried out successfully.

WORKFORCE HEALTH PROTECTION AND MISSION SUCCESS

Former DHS Deputy Secretary Lute (2013), addressing the Institute of Medicine (IOM) Committee on Department of Homeland Security Workforce Resilience, said that homeland security is not about unity of command but unity of effort. The DHS workforce, although highly diverse, is united by its common mission—to create a safe, secure, resilient homeland where the American way of life can thrive (Lute, 2013). The ability to fulfill that mission depends on the mission readiness of the DHS workforce. A workforce that is mission ready is physically capable, mentally prepared, trained, equipped, and adequately supported for the job. Protecting the homeland can be physically and mentally demanding, with many inherent risks. Consequently, mission readiness depends, in part,[2] on

- a workforce that is medically ready (free of health-related conditions that would impede the ability to participate fully in operations and achieve the goals of its mission); and
- the capability to provide medical support to the workforce during planned and contingency operations.

Workforce health protection, as an overarching strategy for promoting, protecting, and restoring the physical and mental well-being of the workforce, addresses both of these requirements. It encompasses a broad set of activities focused on promotion, prevention, surveillance, detection, early intervention, treatment, recovery, and reintegration. The health protection program must be more, however, than the sum of its parts. Like the agency itself, workforce health protection must be about unity of effort if it is to be effective.

A FRAMEWORK FOR ENSURING THE HEALTH OF AN OPERATIONAL WORKFORCE

In its statement of task, the committee was asked to identify the key functions of an integrated occupational health and operational medicine infrastructure. It did so by examining and identifying commonalities in the major elements of employee health protection and promotion programs of public and private organizations. While recognizing the limitations of

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[2]There are many other determinants of mission readiness that are beyond the scope of this report.

Workforce Health Protection Framework	
Ensuring Medical Readiness[a]	**Providing Medical Support for Operations**[b]
Key Functions: 1. Injury and Illness Prevention 2. Readiness Assessment 3. Disability Management 4. Health Promotion	Key Functions: 5. Medical Threat Assessment 6. Preventive Medicine 7. Ambulatory Medical Care 8. Emergency Medical Services
9. Measurement and Evaluation	

FIGURE 3-1 A two-pillar framework with nine essential functions that support the health of an operational workforce.

[a]Medical readiness is the extent to which members of the operational workforce are free of health-related conditions that would impede their ability to participate fully in operations and achieve the goals of their mission.

[b]Medical support for operations consists of preventive and responsive medical and health support services provided outside of conventional workplaces during routine, planned, and contingency operations to employees and others under the organization's control.

applying Department of Defense (DoD) models to a civilian government agency, the committee found the DoD force health protection concept (DoD, 2004) useful in framing the key functions of workforce health protection for DHS. The committee therefore adapted the DoD force health protection model to derive a framework for ensuring the health of a civilian operational workforce (see Figure 3-1).

The two pillars of this framework reflect the two medical requirements for mission readiness: medical readiness and operational medical support. In total, as shown in Figure 3-1, the committee identified nine essential and interconnected functions of workforce health protection that support an operational workforce. Measurement and evaluation spans both pillars and serves as a foundation for the framework. Without measurement and evaluation, the medical readiness and medical response capability of the DHS workforce cannot be assessed, reported, or improved.

A unified strategy for workforce health protection will integrate and therefore ensure coordination of the nine key functions, resulting in

- a prevention-focused approach to workplace injury and illness that creates a safe, supportive working environment;
- ongoing readiness assessment to ensure an individual's continued ability to carry out his/her responsibilities fully and safely;

- proactive medical case management to restore employees to a state of health and readiness as rapidly as possible;
- adequate and effective preventive and responsive medical support services available when needed;
- promotion of physical fitness and healthy lifestyle choices to optimize human performance and readiness; and
- ongoing measurement and evaluation for decision making, accountability, situational awareness, and continuous quality improvement.

The underlying infrastructure that serves to integrate these functions includes the doctrine (plans, policies, and standards), organizational constructs (reporting structures, governance mechanisms), and resources (qualified personnel, budgets, information management systems) that enable mission capability.

ENSURING MEDICAL READINESS

The subsections below provide a description of the four key functions for ensuring medical readiness that form the first pillar of the workforce health protection framework presented above (see Figure 3-1) and explain their importance. The remainder of the framework is discussed later in the chapter.

Injury and Illness Prevention

In the Occupational Safety and Health Act of 1970, "Congress declares it to be its purpose and policy … to assure so far as possible every working man and woman in the Nation safe and healthful working conditions ... by encouraging employers and employees in their efforts to reduce the number of occupational safety and health hazards at their places of employment, and to stimulate employers and employees to institute new and to perfect existing programs for providing safe and healthful working conditions." To achieve this purpose, it has since 1970 been customary and expected practice for all but the smallest public and private employers to establish and implement comprehensive occupational safety and health programs.

Occupational safety and health programs facilitate risk management—a continuous, multistep process designed to reduce risks to health, mission, and property. The three main elements of risk management are (1) hazard identification, (2) risk assessment, and (3) risk control. Hazards are identified by observation (through workplace inspections and job hazard analyses) or from past experiences (e.g., root cause and trend analyses following injuries and illnesses). Once a hazard has been identified, a risk assessment process is used to determine the likelihood that the hazard

will cause a mishap and the severity (human health and property damage) should a mishap occur. This information is used in the assignment of risk assessment categories, which indicate the level to which risks from a hazard should be managed. Risks can be controlled through (1) engineering controls, (2) administrative procedures/work practices (e.g., training, standard operating procedures, posted signs, vaccination), and (3) the use of personal protective and other safety equipment (USCG, 2013). In operational settings, tension can exist between occupational safety and health objectives and mission requirements. Operational risk management enables risk-based decision making, the goal of which is to control risks to acceptable levels consistent with the organization's mission—minimizing risk without compromising mission success.

Occupational safety professionals are often focused on the prevention of traumatic injuries and workplace fatalities through mitigation of safety hazards, whereas industrial hygienists provide expertise on the identification and control of health hazards from acute or chronic exposure to chemical, biological, and physical agents. Ergonomists are concerned with ensuring that the design of workspaces, equipment, and work tasks suits the individual worker so as to prevent disorders resulting from cumulative trauma, most notably musculoskeletal disorders (NRC, 2000). Although occupational safety and health program staff have an important role to play in providing guidance and performing evaluations to ensure compliance with policy and regulations, risk management is considered a primary responsibility of those most familiar with their workplace hazards—individuals and operational units at the local level (The Conference Board, 2003). A centralized oversight entity cannot predict safety and health risks for each worksite and so must provide employees with the tools and information to make sound risk management decisions.

Requirements for Federal Agency Occupational Safety and Health Programs

Section 19 of the Occupational Safety and Health Act of 1970 requires that all federal employees be provided with "safe and healthful places and conditions of employment." To this end, the act assigns responsibility for establishing and maintaining "an effective and comprehensive occupational safety and health program" to heads of federal agencies. Further roles and responsibilities for federal agency occupational safety and health programs are delineated in Federal Executive Order 12196[3]—*Occupational Safety and Health Programs for Federal Employees* (1980)—which requires

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[3]Executive Order 12196—*Occupational Safety and Health Programs for Federal Employees*, 45 FR 12769, 3 CFR, 1980 Comp., p. 145. Feb. 26, 1980.

federal agencies to apply occupational safety and health practices that are required of nongovernmental activities regulated by the Occupational Safety and Health Administration (OSHA) and outlines several basic administrative controls to support this compliance. All of the items delineated in that executive order bear on the subject of the present analysis, but two specific requirements placed on federal agencies merit special mention: "designate an agency official with sufficient authority to represent the interest and support of the agency head to be responsible for the … program," and "operate an occupational safety and health management information system." As required by Executive Order 12196, the Code of Federal Regulations, Title 29, part 1960 (29 CFR 1960) specifies the basic program elements that all federal agency occupational safety and health programs should encompass. Provisions built into those elements give agencies the flexibility needed to implement programs tailored to their organizational and mission requirements.

Federal agencies must submit annual reports of occupational injuries and illnesses to the Bureau of Labor Statistics and OSHA. The Bureau of Labor Statistics uses this information to generate aggregated injury and illness data from across the federal government; OSHA uses it to target federal agencies for compliance inspections (29 CFR 1960). OSHA administers citations but does not fine federal agencies for failure to comply with regulations and standards (OSHA, 2013).

Despite the above regulations, tens of thousands of injuries and illnesses, many of which are preventable, continue to occur each year in federal workplaces. The annual government-wide workers' compensation costs associated with these events total almost $3.0 billion (OWCP, 2013). To address this burden, President Obama established a 4-year Protecting Our Workers and Ensuring Reemployment (POWER) initiative in July 2010 (Obama, 2010). The POWER initiative requires all executive departments and agencies, through aggressive performance targets, root cause analysis, and adoption of proven safety and health management programs, to improve their performance in workplace safety and health in seven areas:

- reducing total injury and illness case rates,
- reducing lost time injury and illness case rates,
- analyzing lost time injury and illness data,
- increasing the timely filing of workers' compensation claims,
- increasing the timely filing of wage-loss claims,
- reducing lost production day rates, and
- speeding employees' return to work in cases of serious injury or illness.

Through these objectives, the POWER initiative places shared responsibility for employee health on the occupational safety and health programs designed to prevent injury and illness and on disability management programs responsible for helping injured and ill employees return to work as quickly as possible.

Best Practices in Occupational Safety and Health

Best practices in occupational safety and health can be viewed as features of a systematic approach that leads to highly effective control of injuries, illnesses, and disability and thereby to a healthier workforce. Such a systematic approach—called by some an occupational safety and health management system or, in OSHA's terms, an injury and illness prevention program—provides a "flexible, commonsense, proven tool to find and fix hazards *before* injuries, illnesses, or deaths occur" (Hagemann, 2013). OSHA has identified six core elements essential to an injury and illness prevention program: management leadership, employee participation, hazard identification, hazard prevention and control, education and training, and program evaluation and improvement (Hagemann, 2013). The importance of these elements to the effectiveness of occupational safety and health programs is supported by research on the characteristics of an occupational safety and health management system that appear to lead to the greatest improvement in safety and health outcomes (Shannon et al., 1997).

Medical Countermeasures Programs

Medical countermeasures programs, which span the fields of occupational medicine and occupational safety and health, are critical not only to ensuring public health but also to preventing illness among federal employees who serve in operational capacities. The anthrax mailings in 2001, the severe acute respiratory syndrome (SARS) epidemic in 2003, and the H1N1 influenza pandemic in 2009 highlighted the importance of preparedness planning for large-scale chemical, biological, radiological, and nuclear events that can threaten both public health and business operations across the globe. Workplace plans to ensure continuity of business operations are particularly important for those members of the workforce who are considered mission-essential personnel; strategies for distribution and dispensing of medical countermeasures[4] to prevent and mitigate the health effects of

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[4]Medical countermeasures include biologics (e.g., vaccines, antimicrobials, antibody preparations), nonbiologic materials and devices (e.g., ventilators, diagnostic devices, personal protective equipment such as face masks and gloves), and public health interventions (e.g., contact and transmission interventions, social distancing, community shielding).

chemical, biological, radiological, and nuclear hazards are critical elements of such contingency plans. Agencies that play a key role in the federal response to chemical, biological, radiological, and nuclear events, including the Department of Health and Human Services and DHS, are required by executive order (Obama, 2009) to have in place programs that enable the capability to dispense medical countermeasures to their workforce rapidly following such an attack to ensure that mission-essential functions of federal agencies are not disrupted.

Readiness Assessment

Workers in many occupations may, in the course of their daily operations, be required to perform work that is arduous and/or hazardous in nature. Not only must they be capable of performing those duties, but they must be able to so without posing a threat to their own health and well-being or that of others. Key to ensuring this capability is readiness assessment, which includes developing medical and physical ability standards and conducting fitness-for-duty and fitness-for-deployment evaluations.

Medical and Physical Ability Standards

There is no one accepted method for the development of medical and physical ability standards; however, two criteria (i.e., fitness-for-duty drivers) generally are considered: (1) essential job tasks, and (2) the environmental conditions and circumstances under which those tasks must be performed. These criteria are identified through a job task analysis, which can be conducted internally or contracted out and ideally involves human resources and medical personnel, as well as individuals currently employed in that occupation. The California Commission on Peace Officer Standards and Training recommends a variety of techniques for conducting job task analyses, including "review of current job descriptions, interviews with supervisors and employees, development and administration of questionnaires, use of daily job diaries by employees, [and] review of records (e.g., police reports, critical incident reports)." Also recommended is the use of someone experienced in conducting such analyses and consultation with "several employees under a range of conditions" whenever possible (Goldberg et al., 2004, p. 23). Generally, the resulting list of essential job functions is not comprehensive but focuses on those tasks that impact a physician's determination of an individual's ability to do the job.

The development of medical and physical ability standards from the results of a job task analysis is not a simple process of identifying disqualifying medical and physical conditions. For most conditions, simply having the condition does not preclude an individual from being able to perform

essential job tasks, as the condition's impact can depend on its degree or severity. Generally, medical and physical ability standards provide guidance to physicians on how to conduct a thorough examination (by body system) and how to quantify safety risks associated with having a given condition. The standards are subject to much interpretation, and individualized assessments are always required. Additionally, the standards and guidance for fitness for duty need to be maintained as living documents, reviewed and updated periodically, because the evidence base (research and experience) changes over time.

For legal defensibility, medical and physical ability standards need to be closely linked to the essential tasks of a job; consequently, standards developed by one organization cannot necessarily be applied to the jobs of another. For example, the American College of Occupational and Environmental Medicine's consensus guidance developed for medical evaluation of patrol officers may not be universally applicable across all law enforcement officer positions given the diversity of their functions. Essential job tasks for special weapons and tactics (SWAT) team members may be very different from those for patrol officers. Similarly, medical standards for 1811 series[5] criminal investigators at the Federal Bureau of Investigation (FBI) may or may not be applicable to 1811 series investigators at Immigration and Customs Enforcement (ICE) if they are performing different tasks or operating under different conditions. At the same time, however, sharing of medical standards for the purpose of adaptation, particularly for those agencies with employees under the same job series, could reduce the burden (financial and labor) of setting standards and lead to increased uniformity. For example, the FBI and the National Park Service have already developed medical standards for federal law enforcement officers that could be adapted by other agencies. Given that the FBI's process for developing these standards cost approximately $3.5 million (Wade, 2013), this represents a valuable opportunity for interagency collaboration to improve efficiency across the government.

Medical and physical qualification for federal positions The authority for federal agencies to establish medical evaluation and clearance programs is accorded by Title 5, part 339 of the Code of Federal Regulations (5 CFR 339). Such programs are justified under the regulation as a means of protecting the health of employees whose work poses significant health and safety risks to themselves or others due to occupational or environmental exposures or other demands. The regulation does impose some constraints

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[5]The 1811 series is the Office of Personnel Management job series for criminal investigators in the federal government.

on federal agencies to ensure that fitness for duty is evaluated on a case-by-case basis:

- The agency is required to grant a waiver when the evidence indicates that an applicant or employee who does not meet the medical or physical standards can, with or without reasonable accommodation, perform the essential functions of the job without endangering him/herself or others.
- Applicants cannot be disqualified from a position based on medical history alone; medical history may be disqualifying only if (1) the medical condition is disqualifying, (2) there is a possibility of its recurrence, and (3) recurrence poses a significant risk of harm to themselves or others.

The Office of Personnel Management (OPM) is responsible for establishing or approving medical standards for government-wide occupations (5 CFR 339). However, when a job series is associated predominantly with a single federal agency (i.e., more than half of all those employed under that job series are employed within a single agency), that agency may establish medical standards for the position without OPM approval. An example of the latter is the border patrol agent job series (GL-1896), which is exclusive to CBP. Agencies do not need OPM approval to establish physical standards, but in accordance with 5 CFR 339, the requirements must be supported by the essential duties of the position and clearly articulated in the position description.

Waivers As noted above, 5 CFR 339 requires that agencies grant a waiver when an individual does not meet medical or physical standards but demonstrates evidence of being able to perform the essential functions of the job safely. Employers can grant waivers but impose restrictions on duty as part of a risk management solution that keeps people on the job who have demonstrated their performance capability. For example, someone diagnosed with major depressive disorder may be granted a waiver on condition of demonstrating active treatment and submitting to annual evaluations (McMillan, 2013)—an important accommodation as the incidence of mental health disorders continues to increase. Waiver processes grant employing agencies considerable flexibility and can help address concerns about how to handle medical issues uncovered during periodic evaluations—concerns that may deter employers from instituting regular medical evaluations. A fair waiver process also can help build trust if employees understand that a diagnosis will not necessarily mean the loss of their job. As described above, line personnel who are intimately familiar with the requirements of the job ideally are involved in decisions regarding waivers, in

consultation with knowledgeable medical authorities. A waiver guide, as is used in some DoD agencies, can help ensure consistency in waiver decisions.

Fitness-for-Duty Evaluations

Fitness-for-duty evaluations compare an individual's medical status and physical abilities against established medical and physical qualifications. Standards and guidance materials ensure that such practices are transparent, fair, and evidence based. For example, the National Fire Protection Association 1582 Standard on Comprehensive Occupational Medical Program for Fire Departments[6] requires that candidates undergo a medical evaluation (to include a medical history, medical examination, and laboratory testing) prior to employment and annually thereafter, the purpose of which is to identify medical conditions that may interfere with the individual's ability to perform the essential job tasks safely. The standard divides medical conditions into two categories—those that *would* preclude a team member from safely performing essential job tasks in training or operational environments, and those that *could* do so, depending on the degree or severity of the condition. The ability of applicants and incumbents with medical conditions in the latter category to perform essential job tasks safely must be assessed before a determination regarding employment can be made.

Similar guidance materials for medical evaluation of law enforcement officers have been issued by the American College of Occupational and Environmental Medicine (ACOEM, 2010)[7] and the California Commission on Peace Officer Standards and Training (Goldberg et al., 2004). Commonalities among such standards and guidance include

- ensuring compliance with applicable law and regulations, most notably the Americans with Disabilities Act;
- linking medical conditions with the ability to perform essential job tasks safely;
- promoting individualized assessments (as opposed to stipulating categorical exclusionary criteria); and
- clarifying the roles of the medical review officer and the hiring authority.

Fitness-for-duty evaluation is a risk management process; evidence regarding the immediacy, severity, and likelihood of a risk must be considered.

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[6]Because fire departments are completely decentralized and there is no central authority over local jurisdictions, adoption of the standard cannot be enforced.

[7]The American College of Occupational and Environmental Medicine's guidance is still under development and currently addresses only a few of the planned medical evaluation topics.

However, a determination that a candidate is unable to perform an essential job function because of a disability is not sufficient grounds for an unfit determination. The Americans with Disabilities Act requires that reasonable accommodations be considered on a case-by-case basis. Such accommodations could include "restructuring a job by reallocating or redistributing marginal job functions; altering when or how an essential function is performed; permitting use of accrued paid leave or unpaid leave for necessary treatment; modifying examinations, training materials or policies; [and] acquisition or modification of equipment and devices" (Goldberg et al., 2004, p. 10). To evaluate risk and the potential for its mitigation effectively, evaluating physicians need to be familiar with the essential tasks and demands of the job. This requirement necessitates highly detailed position descriptions, particularly if the medical evaluation is outsourced to someone unfamiliar with the job requirements.

Fitness-for-duty evaluations for positions with medical or physical qualifications may be conducted prior to employment (postoffer but preplacement), periodically throughout employment, or on an as-needed basis during employment. In the latter case, such evaluations may be performed when indicated by noted declines or failures in on-the-job performance, following notification by an employee of a change in health status (e.g., a new diagnosis), and after occupational or personal injury or illness that may temporarily or permanently affect an employee's ability to perform essential job functions safely. The latter case provides a good reason for ensuring that fitness-for-duty and disability management activities are integrated. When an individual who is required to meet medical qualification standards is injured (on or off the job), it is necessary to assess whether the injury will result in permanent, partial, or total disability. In the case of personal illness, extended leave of absence (as permitted under the Family and Medical Leave Act) may also indicate a need for fitness-for-duty evaluation (McMillan, 2013).

When a potentially problematic medical condition is identified during a fitness-for-duty evaluation, a common next step is follow-up with the individual's treating physician regarding medical records related to management of the condition. If the individual is an employee, he/she may be placed on restricted duty until a determination is made. The amount of time an individual is allowed to remain on limited duty before the case is sent for a determination will likely vary depending on the circumstances. In the military, up to 2 years may pass before someone on limited duty is sent before a medical review board. In the FBI, the average interval is closer to 3 years (Wade, 2013).

There is no standardized clearance process for fitness for duty. The party that makes determinations regarding reasonable accommodation and employability varies across organizations. In some cases, it may be

an occupational health nurse or a medical review officer (internal or outsourced), and in other cases, a medical review board. A medical review board is used by DoD, the FBI (which calls it a Medical Mandates Evaluation Board), and the Secret Service to make determinations on reasonable accommodation and employability. Notably, medical personnel frequently advise such boards, but voting members often are senior line officers and administrative personnel. It is important to note that fitness-for-duty determination is a process that spans human resources and medical responsibilities, and consequently it requires significant coordination between these two entities.

Concerns Regarding Medical Standards and Fitness-for-Duty Evaluations

Throughout its information-gathering process, the committee heard of several concerns regarding fitness-for-duty evaluations from both organization and employee perspectives. Medical and administrative personnel often are concerned about the constraints and liabilities associated with the Americans with Disabilities Act (ADA) or the Rehabilitation Act (for federal agencies). Both laws prohibit discrimination against those with handicaps or disabilities and have significantly impacted fitness-for-duty evaluations. For example, ADA prohibits preemployment evaluations; instead, employers must make a job offer contingent on meeting medical and/or physical qualifications. ADA also requires an employer to consider whether reasonable accommodations can be made for otherwise qualified individuals with disabilities (employees or applicants) without causing undue hardship for agency operations. ADA and the Rehabilitation Act allow employees to sue[8] federal agencies if they are removed from their position on medical grounds, and if the agency fails to meet the burden of proof demonstrating that the employee has a disqualifying medical condition and that the condition poses a reasonable probability of substantial harm.[9] These concerns were discussed with the committee by FBI Medical Director Dr. David Wade (2013), who noted that to protect the agency from that litigious environment, a solid job task analysis must be implemented with rigor and with a scientific methodology.

Employees are concerned about protection of their personal medical information and the application of fitness-for-duty evaluation for punitive purposes. For example, psychological fitness-for-duty evaluations sometimes

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[8]The Equal Employment Opportunity Commission is the entity responsible for enforcing federal laws against employment discrimination. Equal employment opportunity suits can be filed if employees feel they have been subjected to discrimination based on their disability status (EEOC, 2013).

[9]*Slater v. DHS*, 2008 MSPB 73 (U.S. Merit Systems Protection Board, 2008).

are ordered as a means of dealing with disruptive behavior (Spottswood, 2013). Union representatives from the Border Patrol and the Federal Protective Service expressed concern about the potential for uneven application of fitness-for-duty evaluation based solely on performance (Shigg, 2013; Wright, 2013). However, they agreed that performance-based standards are necessary to ensure that an employee can capably perform on the job when decreased performance is noticed or upon return to duty following an injury. Both also expressed concern that regular medical examinations have led to systematic abuses in the past and do not accurately gauge an employee's ability to do the job; from the union's perspective, they stated, regular medical examination would be a nonstarter. Acknowledging psychological fitness-for-duty evaluations as a serious intrusion into employees' privacy, Dr. Wade (2013) indicated that policies have been put in place at the FBI prohibiting the use of psychological fitness-for-duty evaluations for punitive purposes.

Consistent, transparent processes, detailed position descriptions, and clear policies that set expectations from the start of employment can help address concerns regarding uneven or punitive use of fitness-for-duty evaluations. More important, to build trust and employee engagement, it is critical that fitness-for-duty programs be designed and promoted as part of an overarching strategy for protecting the health and safety of the workforce and ensuring mission success.

Fitness-for-Deployment Evaluations

Given the health and safety risks faced by workers during deployment to remote and/or hazardous settings (e.g., disaster sites), 5 CFR 339 grants federal agencies the authority to require medical evaluation and clearance prior to deployment for disaster response and recovery work and other planned or contingency operations. For some positions, medical clearance may be a condition of employment, but predeployment clearance programs can also be instituted and applied to employees whose positions are not subject to medical standards.[10] The Department of State, for example, has a medical clearance program that determines the posts to which members of the Foreign Service can deploy, but does not have medical standards per se (Rosenfarb, 2013). Predeployment evaluations are particularly critical for volunteers or those in positions not subject to medical standards because no prior information on the health status of such individuals may be known. Multiple organizations examined by the committee, including the Texas Task Force One urban search and rescue team (Minson, 2013) and

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[10]A relevant example at DHS is predeployment screening and clearance for federal employees who volunteer to deploy as part of the DHS Surge Capacity Force.

the American Red Cross (Smith, 2013), conduct predeployment health assessments using questionnaires.

To mitigate health risks to volunteers, the American Red Cross has developed a system for prescreening volunteer responders. During the application process, potential responders provide an overview of their general health by completing a health status record, which is reviewed and compared with a Physical Capacity Grid that details the capacities necessary for successfully performing 30 different basic tasks entailed in relief operations (Smith, 2013). This process determines the type of job a volunteer can do. The American Red Cross also has developed 15 hardship codes describing common physical, environmental, and emotional situations that may affect individuals on a relief operation. Specific assignments that match the responder's hardship code need to be discussed with the individual before assignment. Medical restrictions also may be applied that limit the types of disasters for which the responder can be deployed (Smith, 2013). Prior to deployment, a preassignment health questionnaire, consisting of yes/no questions, is completed to ensure that health status records are up to date. Any "yes" response is referred to a reviewer who conducts a health interview with the responder; the responder may then be cleared for deployment or denied for medical reasons.

In May 2010, Federal Occupational Health (FOH)[11] proposed a similar program for the Federal Emergency Management Agency (FEMA) to address medical clearance for deployment. Viewing deployment readiness as a safety issue as opposed to an accommodation/employability issue, FOH asserted that environmental conditions (including medical infrastructure at disaster sites, power status, accessibility for those with handicaps, expected ambient temperature, and international sites/ability to medically evacuate) should serve as the major determining factors in clearance for specific deployments. FOH proposed a color-coded system as a means of indicating the types of environmental conditions under which a person can deploy based on the results of a health assessment (FOH, 2010). The proposed system takes into account environmental changes that can occur at disaster sites, enabling employees who may not be cleared to deploy under harsh environmental conditions to deploy later when the environment is more suitable to their status. FOH (2010, p. 1) believes that this approach "would satisfy ADA concerns while helping to ensure we are safely using all skilled employees." To date, such a program has not been implemented.

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[11]FOH is a nonappropriated agency within the U.S. Department of Health and Human Services. It is the largest provider of occupational health and wellness services to the federal government.

Disability Management

Disability management has been defined as "a set of practices designed to minimize the disabling impact of injuries and health conditions that arise during the course of employment" (Hunt, 2009, p. 1). Emerging as a tactic for combating rising workers' compensation costs, disability management has two primary goals: ensuring continued employment for workers with disabilities and lowering employers' disability costs (Hunt, 2009). Whereas the provision of workers' compensation benefits addresses the administrative process of ensuring the financial protection of employees who acquire a disability in the course of performing their job, disability management focuses on preventing the worsening of an injury or illness and turnover for disability reasons (Hunt, 2009). The ultimate goal is to ensure timely reintegration of employees into the workforce (return to work). Since the introduction of this concept in the 1970s, principles of disability management have become increasingly commonplace in existing workers' compensation programs to help organizations meet these goals.

The Federal Employees' Compensation Act (FECA) provides workers' compensation benefits (including wage-loss benefits and vocational rehabilitation) to all civilian federal employees who are injured or become ill in the course of performing their job. The act is administered by the Office of Workers' Compensation Programs (OWCP) in the Department of Labor (DOL), which is the sole entity with the authority to approve or deny a workers' compensation claim. For traumatic injuries, claims generally are adjudicated by OWCP within 45 days of receipt; this 45-day period is called the continuation-of-pay (COP) period. During this time, employing agencies are responsible for continuing to pay an employee's salary without requiring the employee to charge sick or annual leave. COP does not apply to occupational disease or recurrence cases (DFEC, 2012). Employing agencies are responsible for advising employees on the process for completing and submitting claims.[12]

In addition to the administrative aspects of helping injured and ill employees navigate the workers' compensation claims process, employing agencies are responsible for those aspects of the medical case management process focused on limiting disability and reintegrating injured and recovering employees into the workforce. Support for reintegration may entail providing "light"-duty work when possible or helping to find a new position for employees that are unable to continue carrying out the duties of their old position. OWCP roles in this area include assigning a nurse case manager to ensure provision of appropriate medical care and assist

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[12]Many agencies have begun using eCOMP, a free, Web-based portal provided by DOL, for the electronic filing of FECA claim forms.

in return to work, providing referral to a medical specialist for a second opinion as necessary, and providing referral for vocational rehabilitation services when an employee is unable to return to his/her previous position (DFEC, 2013).

Return to work can prove difficult under FECA, and more so the longer an employee is away from work. As explained to the committee, FECA "was set up intentionally to be 'non-adversarial,' but in return gives enormously generous benefits to the injured worker" (Crowley, 2013), in most cases providing 75 percent of the worker's date-of-injury salary tax free, with no cap on the amount of compensation or the time for which it is provided. Under FECA, employees have the right to choose their own physician, who determines their ability to work. While an agency can request that DOL refer an injured worker for a second opinion with a physician of DOL's choosing, it is up to DOL to determine whether doing so is warranted. When a second opinion contradicts the initial determination and is contested by the primary physician, it must then go to an independent medical examiner—a process that can take years (Crowley, 2013). Additionally, following a "total person concept," if workers have not returned to work and suffer a non-work-related injury, they are eligible to remain on workers' compensation (Crowley, 2013).

As described earlier, President Obama's POWER initiative was established to help address the burden of occupational injuries and illnesses on employees, agencies, and the federal government as a whole, in part through return-to-work efforts. The last four of the seven performance areas under POWER relate to workers' compensation and return to work: increasing the timely filing of workers' compensation claims, increasing the timely filing of wage-loss claims, reducing lost production day rates, and speeding employees' return to work in cases of serious injury or illness (Obama, 2010). Although the first two of these areas would appear to be solely administrative in nature, early filing of workers' compensation claims may translate to earlier intervention to support return-to-work efforts (Tritz, 2013).

The 14 agencies subject to the speeding return to work POWER goal (including DHS) must participate as members in the POWER Return To Work Council, which was chartered to assist OWCP in identifying strategies that could help federal agencies increase return-to-work rates. Council members generally are senior officials with oversight of agency workers' compensation programs. As part of these efforts, DOL initiated a study on best practices in return to work. The Council reviewed the results of that study, and the following five practices it deemed useful to the

greatest number of agencies were developed into a DOL (2013) guidance document[13]:

- [have] early contact with injured workers,
- provide modified work positions for short-term injuries,
- communicate within the agency,
- review periodic roll cases and discuss with OWCP, and
- present disability costs to directors and operational managers.

Increasing evidence from the literature shows that early intervention programs can improve return-to-work outcomes for injured workers (Carroll et al., 2010; DOL, 2013; Hoefsmit et al., 2012). In a quantitative study of FECA cases from 2005 to 2010, Maxwell and colleagues (2013, p. x) found that "injured workers who did not return to work quickly (without wage loss relative to their pre-injury earnings) were unlikely to return to work within three years of the reported date of the injury or illness." The Washington State Department of Labor and Industries found that while most injured workers return from disability within 6 weeks, those who remain on disability at 3 months are already 50 percent more likely to remain on disability at 1 year (Franklin, 2013).

Different agencies have established different methods for ensuring early intervention, including 24-hour hotlines for reporting and the use of agency nurse case managers who initiate contact with an injured or ill employee weeks before a DOL nurse case manager is assigned to the case. Agency nurse case managers may be able to help identify limited-duty positions, which can reduce the COP period and associated workers' compensation costs (Mitchell, 2013). In Chapter 4, a case study of the Federal Air Marshal Service expands on how agency nurse case managers can also serve to integrate workers' compensation, medical, safety, and operational programs.

Health Promotion

A medically ready workforce must start with employees who are fit and healthy, both physically and mentally. The process of ensuring a fit and healthy operational workforce begins prior to employment with the setting of expectations and, when appropriate, through physical fitness testing, and continues until retirement through organizational health and wellness programs. For most civilian jobs, participation in health promotion programs is voluntary, but mandatory periodic fitness testing and health

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[13]Additional information on return to work is available at http://www.dol.gov/odep/return-to-work/index.htm (accessed January 22, 2014).

screening may be justified and legally defensible for certain safety- and security-sensitive positions.[14]

Elements of Workplace Health Promotion Programs

Workplace health promotion programs often are tailored to the needs of the workforce, and consequently their elements may vary. However, a comprehensive worksite health promotion program is described in *Healthy People 2010* (HHS, 2000) as including the following elements:

- health education that focuses on skill development and lifestyle behavior change in addition to information dissemination and awareness building, preferably tailored to employees' interests and needs;
- supportive social and physical work environments, including established norms for healthy behavior and policies that promote health and reduce the risk of disease, such as worksite smoking policies, healthy nutrition alternatives in the cafeteria and vending services, and opportunities for obtaining regular physical activity;
- integration of the worksite program into the organization's administrative structure;
- related programs, such as employee assistance programs; and
- screening programs, preferably linked to medical care service delivery to ensure follow-up and appropriate treatment as necessary and to encourage adherence.

Health screening programs, which may include a health risk assessment,[15] identify an individual's health risks based on physiological data (e.g., weight, blood pressure, cholesterol) and lifestyle factors (e.g., smoking, alcohol intake, exercise, diet). Educational materials, recommendations for lifestyle changes, and implementation plans can then be developed based on those risks, taking into consideration the person's current life circumstances.

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[14]Safety- and security-sensitive positions include "positions that involve law enforcement, national security, the protection of life and property, public health or safety, or other functions requiring a high degree of trust and confidence" (Executive Order 12564).

[15]A health risk assessment is a tool or process for "the assessment of personal health habits and risk factors (which may be supplemented by biomedical measurements of physiologic health); a quantitative estimation or qualitative assessment of future risk of death and other adverse health outcomes; and provision of feedback in the form of educational messages and counseling that describe ways in which changing one or more behavioral risk factors might alter the risk of disease or death" (Soler et al., 2010, p. s238).

TABLE 3-1 Individual- and Organization-Level Impacts of Workplace Health Promotion Programs

Individual-Level Impacts	Organization-Level Impacts
• Improve fitness, health, and resilience • Decrease disease risk factors (e.g., body mass index, blood pressure, cholesterol) • Prevent occupational injuries • Decrease recovery time from injury and illness • Increase job satisfaction	• Improve mission readiness • Reduce absenteeism and increase productivity • Reduce health-related costs • Reduce turnover for medical reasons • Improve morale

Although often neglected, mental health promotion is of critical importance. According to the Substance Abuse and Mental Health Services Administration, an estimated 19.6 percent of U.S. adults suffer from mental illness[16] each year (SAMHSA, 2012). Mental health disorders affect the workplace, and the workplace can affect mental health; such disorders are increasingly becoming a cause of reduced productivity, morale, and engagement (Harnois and Gabriel, 2000; IOM, 2013). A 2009 survey of 34,622 employees from 6 American companies found depression (first) and anxiety (fifth) to be among the top five most costly health conditions to employers in terms of annual medical, drug, absenteeism,[17] and presenteeism[18] costs (Loeppke et al., 2009). The suffering caused by mental disorders can be exacerbated by the additional burden of stigma associated with such disorders, which may prevent affected individuals from seeking help (IOM, 2013). The workplace also can be a major source of stress on employees. Although stress is not considered a mental health disorder, it, too, can impact productivity, morale, and engagement. Employee stress or work-life management and resilience programs, including employee assistance programs, can help employees manage stress and find additional professional help as needed.[19]

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[16]The Substance Abuse and Mental Health Services Administration (SAMHSA, 2012) defines mental illness as "currently or at any time in the past year having had a diagnosable mental, behavioral, or emotional disorder (excluding developmental and substance use disorders) of sufficient duration to meet diagnostic criteria specified within the *Diagnostic and Statistical Manual of Mental Disorders*."

[17]Absenteeism is defined as habitual absence from work (IOM, 2005).

[18]Presenteeism is defined as "on-the-job productivity loss that is illness related; for example, problems such as allergies, asthma, chronic back pain, migraines, arthritis, and depression; also related to productivity loss resulting from caregiving, lack of job satisfaction, and organizational culture" (IOM, 2005).

[19]For additional information on such programs and their importance, see IOM, 2013.

Benefits of Workplace Health Promotion Programs

Health promotion programs can provide benefits at both the individual and organizational levels (see Table 3-1). At the individual level, physical fitness and a healthy lifestyle can reduce risk factors, such as high body mass index, blood pressure, and cholesterol, associated with chronic disease. These benefits may be especially important for individuals in occupations associated with higher-than-average rates of chronic illness, such as law enforcement. Healthier workers also may be less likely to be injured on the job, and when occupational injuries do occur, they may be less severe and take less time to resolve in healthy individuals (Musich, 2001). At the organizational level, programs that improve the health of the workforce can reduce occupational injury and illness rates and improve productivity by reducing use of sick leave, presenteeism, and turnover for medical reasons (Chapman, 2012). In addition to the reductions in associated costs (e.g., direct health care, workers' compensation, and disability costs, as well as costs associated with recruitment and training of replacement staff), the end result is high-functioning personnel who are available for mission duties. An additional potential benefit of workplace health promotion programs—one that is less easily measured but equally important—is improved morale: when employees feel valued and taken care of by their employer, job satisfaction and engagement may increase, driving cohesion, loyalty, and esprit de corps (Berry et al., 2011; Lowe et al., 2003).

Financial constraints often are cited as a major barrier to the establishment of workplace health promotion and wellness programs, but such rationales are short-sighted; the return on investment in worker health can more than justify the costs. Return-on-investment estimates vary across studies and are difficult to derive because of the challenges integrating savings data from multiple cost sources (e.g., absenteeism, presenteeism, health care plan costs, and workers' compensation and disability costs). Nonetheless, a recent meta-analysis by researchers at Harvard University showed that on average, employers saved $3.27 on health care costs for every $1 spent on health promotion programs (Baicker et al., 2010).

The benefits of health promotion programs may be even greater when such programs target employees in jobs that are physically demanding and inherently hazardous. For example, a study by Leffer and Grizzell (2010) showed that establishment of a physician-organized wellness regime at a county fire department was associated with a statistically significant 40 percent reduction in the injury rate relative to the baseline period during the first 9-month intervention period, and by the second intervention year,

this reduction reached 60 percent.[20] Firefighters were encouraged to perform 30 minutes of cardiovascular exercise 4 or 5 days a week (using plans developed according to their life circumstances) and received individualized recommendations for addressing health risks identified during counseling or indicated by biometric data.

Workplace Health Promotion Programs in Federal Government Settings

Federal employees can choose from among more than 200 health plans under the Federal Employees Health Benefits (FEHB) Program. Under FEHB law,[21] the Office of Personnel Management (OPM) has the authority to negotiate contracts with private health insurance carriers for the entire federal government. As part of this negotiation process, premiums and benefits are set annually, so federal employers cannot offer such incentives as reduced health plan rates to employees participating in health promotion programs. Although OPM has encouraged contracted carriers to offer health promotion and wellness programs, including health risk assessments (OPM, 2011), such programs may vary significantly among carriers and are neither targeted to specific agency employee populations nor integrated into operations at federal worksites—shortcomings that may diminish their effectiveness. Many agencies therefore are supplementing health plan wellness benefits with worksite health promotion programs. These programs may or may not be comprehensive and can be developed and implemented internally or outsourced. For example, some agencies have established interagency agreements with FOH for an integrated health, wellness, and work-life program called FedStrive. In other cases, agencies outsource specific elements of wellness programs, such as employee assistance program services.

Another important difference between federal health promotion programs and their counterparts in private industry relates to data access. Utilization data on health benefits commonly are used to identify top health risks and cost contributors in employee populations; this information can then be used to target interventions and to measure program impacts. Although OPM recently started collecting health care utilization data from carriers and has created a data warehouse as an initial step in the analysis of such data (OPM, 2010), this information currently is not made available

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[20]The intervention, which was compliant with National Fire Protection Association (NFPA) Standard 1582 on a Comprehensive Occupational Medical Program for Fire Departments, entailed a stress test, collection of biometric data (e.g., body mass index, blood pressure, cholesterol), and one-on-one counseling with the consulting physician.

[21]Public Law 86-382.

to individual federal agencies.[22] Thus, federal agencies cannot use metrics related to health care utilization to target interventions or evaluate the performance of prevention programs. However, return-on-investment models may still be developed from estimated savings associated with changes in population risk profiles (Goetzel, 2013).

PROVIDING MEDICAL SUPPORT FOR OPERATIONS

The second pillar of a comprehensive workforce health protection framework is the capability to provide medical support to the workforce during operations. Activities of the employees of an agency or private organization that are conducted in areas remote from conventional medical support raise the issue of how to provide those services in the event of a work-related illness or injury. Operational medicine programs make occupational safety and health and medical services available to workers operating outside conventional workspaces, and they are essential to mission readiness.

The concept of embedding medical support within operational units stems from practices long used by the military to render initial essential stabilizing medical care for battle injuries during the critical few minutes after an injury occurs so as to preserve life and limb. The military also has long recognized the value of having medical support available to prevent and treat disease and nonbattle injuries in order to maintain the operational status of deployed forces. Although battle injuries are the leading cause of deaths in theater, most hospital admissions in deployed operational settings are associated with disease and nonbattle injuries (DoD, 2004). Thus preventive medicine, urgent care, and emergency or tactical medical services are all essential functions of embedded medical support for force sustainment.

The laws and regulations that govern medical practice in civilian settings differ substantially from the authorities that can be granted in the military. Military combat medics such as 18 Deltas[23] have wide latitude in rendering medical care, whereas civilian emergency medical technicians (EMTs) and paramedics must be licensed and work under a directing physician using approved protocols. Despite these differences, the strategy of

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[22]In the future, agencies may be able to access separate databases containing their own health care utilization and health risk data (Goetzel, 2013).

[23]18 Delta is the DoD designation for a U.S. Army Special Forces Medical Specialist, a corpsman who can work independently in austere environments and is trained and authorized to perform advanced procedures and provide care. These personnel receive approximately 1 year of additional training; civilian emergency medical services (EMS) personnel typically do not receive this type of training.

BOX 3-1
Operational Medicine at the Federal
Bureau of Investigation (FBI)

The FBI's operational medical program is housed within the Office of Medical Services' Health Care Programs Unit. Originally based on the military special forces model, the program was created to provide support to FBI tactical operations. The FBI currently employs approximately 400 operational medicine personnel, with a ratio of 4:1 basic life support to advanced life support capabilities. FBI operational medicine covers three broad classifications of operations:

1. Tactical medical operations: The majority of operational medicine activity supports FBI SWAT teams in all 56 field offices and the Hostage Rescue Team based in Quantico, Virginia.
2. Specialized team support: A number of teams require embedded medical treatment capabilities, either by statute or by bureau policy (e.g., teams that collect evidence in hazardous environments; teams that deal with chemical, biological, radiological, and nuclear agents; aviation assets that transport subjects by aircraft; technical dive team units).
3. Baseline capacities: Over the last 3 years, the FBI has instituted a baseline capacity that mirrors the Department of Defense tactical combat casualty care program through the creation of the Care Under Fire course. All new agents receive this training, and an effort currently is under way to provide this training for the remaining 11,000 FBI Special Agents.

The FBI's operational medical program operates similarly to a low-call-volume emergency medical services department, dependent on a high level of oversight, simulation, and skills currency training. While the Office of Medical Services provides general program oversight, quality assurance for the program is provided through a variety of means. Credentialing of all operational medical staff is documented and monitored through the use of a centralized electronic credentialing system. All medical encounters are recorded on paper, scanned, and reviewed; in the future, an electronic patient care record may be used for this purpose. Reports that involve an employee become part of the employee's health record; there are separate repositories for nonemployees, depending on whether they are bystanders or subjects of an investigation (Fabbri, 2013).

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embedding medical support within operational units has been adopted in several civilian settings, most notably law enforcement.

Characterizations of operational medicine often center on one of its functions—tactical medicine, defined as "the provision of field medical care during high-risk, extended duration and mission-driven law enforcement operations, often rendered under functionally austere conditions" (Tang,

2013). Such care is similar to that delivered by conventional emergency medical services (EMS) personnel, "modified for the realities of the tactical environment" (Heck and Pierluisi, 2001, p. 403). How this support is provided varies; although some organizations employ personnel whose sole job is to provide medical support during an operation, others utilize law enforcement officers who are able to provide medical support as a collateral duty. Within the federal government, the FBI has developed an extensive program for providing operational medical support to its law enforcement workforce, as outlined in Box 3-1.

Operational medicine is not restricted to the practice of embedding medical practitioners in deployable tactical law enforcement teams, and the elements of an operational medicine program can vary substantially depending on the mission requirements. Like tactical law enforcement teams, rescue teams may have embedded staff to provide medical support to team members and members of the public in emergency situations (see, for example, the description of the National Park Service's operational medicine program in Box 3-2). Physicians, nurses, and physician assistants stationed in fixed facilities in remote duty outposts may also provide operational medical support. GE Energy, for example, has employees stationed in some of the most remote parts of the world and is responsible for their health and safety (see Appendix E for additional details). In such cases, the distinction between operational medicine and travel medicine as part of an occupational medicine program can become blurred and may be merely a matter of semantics.

Although embedded medical personnel generally are employees of the organization in which they are embedded, fixed facilities and the associated medical staff may be owned by the organization or outsourced (to medical services contractors or through agreements with local health system providers). To achieve their mission, some organizations have created advanced-scope positions requiring additional specialized training to fulfill specific needs; examples include the National Park Service's Parkmedic and Remote Emergency Medical Responder and the Secret Service's Emergency Services Specialist (Ross, 2013; Stair, 2013). Despite the variability in the composition of operational medicine programs, the key functions are generally the same—threat assessment, preventive medicine, ambulatory medical support, and emergency medical support.

Medical Threat Assessment

As discussed in relation to occupational safety and health, risk management is a continuous, multistep process designed to reduce risks to health, mission, and property. Management of risk also is important in the context of operational medicine and is achieved in part through medical threat

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BOX 3-2
Operational Medicine in the National Park Service

The National Park Service (NPS) manages 9.2 percent of U.S. lands, spanning a wide variety of ecosystems, biomes, and climates. Each year, its 28,000 employees and 120,000 volunteers work not only to conserve and protect these lands but also to protect the 280-300 million visitors to U.S. national parks. To the latter end, the NPS Organic Act (16 USC 1-4) grants NPS the authorities to provide emergency services to visitors and employees. Approximately 75 percent of NPS law enforcement personnel are rangers, whose official job duties include not only law enforcement but also search and rescue and emergency medical services (EMS).

To exercise these authorities, NPS has created an EMS system consisting of 137 EMS programs and 2,286 EMS providers, overseen by four national medical directors that provide overall guidance. Within this system, NPS has created six levels of practice—Emergency Medical Responder, Remote Emergency Medical Responder, Emergency Medical Technician, Advanced Emergency Medical Technician, Parkmedic, and Paramedic—with differing scopes of practice. NPS provides specialized training programs for advanced-scope positions—Remote Emergency Medical Responder and Parkmedic—carried out in high-altitude locations, similar to conditions these personnel will face, and all skills testing is conducted out in the elements. Additionally, NPS operates three medical clinics, providing both emergency care for visitors and employees and routine care for visitors; owns 117 ambulances, 290 intercept vehicles, and more than 4,000 automated external defibrillators; and manages more than 290 memorandums of understanding and memorandums of agreement with local hospitals. Each year, NPS responds to approximately 90,000 calls, about 15,000 of which become patient encounters, providing basic and advanced life support and cardiac, trauma, and medical support, and conducts more than 10,000 patient transports via ground, air, and vessel.

In 2008, NPS implemented an electronic patient care record to create a more evidence-based practice. This system has enabled quality assurance and improvement, refinement of existing and creation of new protocols and procedures, epidemiological surveillance, risk management, and increased notification and communication abilities. NPS also engages in operational leadership—its term for risk management—whereby a green-amber-red model is used to help determine risks associated with operations.

While the program is not congressionally funded, Department of the Interior leadership has found it to be an important, indeed necessary component of the agency's operations. Each year, money is shifted from other operations to ensure consistent funding. In addition, although technically the government is not allowed to bill, the three NPS clinics function as a Blue Cross Blue Shield preferred provider organization, enabling them to seek cost recovery.

SOURCE: Ross, 2013.

BOX 3-3
Medical Care of In-Custody Individuals

    In addition to ensuring the health of those conducting missions and bystanders caught in the mission's perimeter, medical support during operations extends to ensuring the health and welfare of those taken into custody. This is an ethical imperative, as assuming custody for an individual transfers responsibility for safety from that individual to the agency assuming custody. U.S. legal requirements recognize and safeguard this imperative. Federal courts have held that pretrial medical care, whether in prison or other custody, is required by the Fourteenth Amendment (*Wagner v. Bay City,* 227 F.3d 316 [5th Circuit 2000]). Further, Mulry and colleagues (2008, pp. 123-124) contend that "the withholding of adequate medical care may be viewed as excessive force, an unconstitutional act in violation of the Fourth Amendment right to be free of unconstitutional seizure."

NOTE: The definition of operational medicine adopted by the committee encompasses health and medical support provided to persons in DHS care and custody during routine, planned, and contingency operations. However, assessment of health care provided to detainees within Immigration and Customs Enforcement detainment facilities, as well as the adequacy of the facilities themselves, was not considered to be within the scope of this study.

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assessment, which involves the creation of a comprehensive mission pre-plan. The California Commission on Peace Officer Standards and Training (CA POST, 2010, p. 12) recommends that medical threat assessment "be conducted based on available intelligence and information on the nature of the response … [and] incorporated into the tactical plan for the specific mission," serving as a significant resource for the operations commander. At the committee's second meeting, Dr. Nelson Tang, Medical Director for ICE and the Secret Service,[24] suggested that threat assessment should include examination of a variety of issues, including expected contingencies, expected responses, source of resources, and the destination for casualties resulting from the event (Tang, 2013). Answering such questions prior to an operation will assist in the development of both preventive and responsive medical support plans, protecting the health of the workforce and those affected by operations, including individuals in custody (see Box 3-3).

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[24]Dr. Tang is Director of the Division of Special Operations and Chief Medical Officer at the Johns Hopkins Center for Law Enforcement Medicine. Several federal agencies, including ICE and the Secret Service, have contracts with this center to provide medical direction for operational medicine programs.

Preventive Medicine and Ambulatory Medical Care

The goal of operational medicine is to support the operational workforce in successful completion of the mission. Operational units often are small, so that illness or injury of members can adversely impact the unit's mission; thus, the preventive medicine and ambulatory medical care functions are critical to mission success. Preventive medicine functions begin before the mission occurs (e.g., administering predeployment vaccinations, promoting understanding of nutrition issues and sleep/rest cycles), but also continue throughout operations (e.g., food and water hygiene, field sanitation, control of disease vectors). Preventive medicine requirements can be influenced by preoperation threat assessments.

Operational medicine programs often include specialized training in preventive and nonemergency medical care functions because EMS providers traditionally are not trained in these areas. Routine medical problems such as gastrointestinal illnesses, bronchitis, and sports-type injuries (e.g., sprains and strains) usually would be handled through outpatient clinics or hospital visits in traditional work settings, but during operations or when members of the workforce are operating in austere environments, it may be that such resources are absent or cannot be utilized for security reasons.

Emergency Medical Support

Emergency medical support during operations commonly, though not always, is provided by EMTs (basic life support) and paramedics (advanced life support). Notable differences between EMS in conventional settings and during operations include challenging environmental conditions, the length of time until patients can be transferred to definitive care, and in some cases, the requirement to work while "under fire." Both additional training and expanded protocols are required to provide medical support beyond the conventional role of EMS personnel. Some agencies, including the National Park Service, the FBI, the Secret Service, and Customs and Border Protection (CBP), have developed advanced-capability paramedic positions to ensure the availability of properly trained medical support personnel for the unique challenges and demands associated with their operational missions. This additional training typically includes both simple outpatient treatment skills and more advanced measures to support seriously ill or injured persons when evacuation to a conventional medical facility is delayed. In some programs, all operational team members are trained in "self-care" to provide initial life- and limb-saving treatment prior to evacuation to a definitive hospital facility.

MEASUREMENT AND EVALUATION

Measurement is critical to understanding organizational needs. However, data collection alone is not enough; the data must be used to drive individual and organizational performance. If impact is not measured, success cannot be distinguished from failure.

Spanning both pillars of the framework outlined in this chapter, measurement and evaluation is essential to developing, implementing, and continuously improving programs designed to address the other eight key functions of an integrated workforce health protection framework (see Figure 3-1). According to the World Health Organization (WHO), "a healthy workplace is one in which workers and managers collaborate to use a continual improvement process to protect and promote the health, safety and well-being of workers and the sustainability of the workplace" (Burton, 2010, p. 61). Measurement and evaluation is essential to this process. A system for measurement and evaluation supports multiple key organizational functions, including

- decision making,
- accountability,
- quality improvement, and
- surveillance.

These functions have been termed the "four faces of measurement" (IOM, 2005, p. 151). Processes for measurement and evaluation should be integral to any intervention program, health-related or otherwise. The objective to be met by the measurement will drive the approach to data collection, aggregation, analysis, and reporting.

Needs Assessments

First and foremost, creation and implementation of any new policy or program, including those related to workforce health protection, should be based on a comprehensive understanding of the issues involved; such understanding should be derived from a detailed needs assessment of the current situation. Developing a comprehensive picture of workforce health status and needs will require integration of information from diverse data sets that may include

- human resources data (e.g., absenteeism records or number of resignations);
- occupational health and safety data (e.g., accidents or risk assessments);

- financial data (e.g., the cost of replacing employees who are on long-term disability leave); and
- health data (e.g., common health problems among the workforce) (WHO, 2005).

In addition to enabling the creation of policy and programs based on organizational needs, data derived from such assessments will establish baselines against which program outcomes can be compared to evaluate success and drive continuous improvement.

Approaches to Measurement

The recent IOM report on DHS workforce resilience[25] includes the recommendation that DHS "design and implement an ongoing measurement and evaluation process … [which] will support planning, assessment, execution, evaluation, and continuous quality improvement" (IOM, 2013, p. 153). A chapter devoted to measurement and evaluation focuses on the Donabedian (1966) model as an organizing framework for DHS. This model encompasses measurements of structure, process, and outcome and has long served as a standard model for evaluating and assessing health services and quality of care. Structural measures address basic program architecture and critical components, including leadership engagement, policies and procedures, and environmental support; process measures help assess how well the program is being implemented (e.g., utilization and satisfaction); and outcome measures examine the extent to which objectives and goals are achieved within a given period. The present committee identified three primary types of outcome measures that should be monitored in a metric-driven health protection system: health, financial, and productivity. Examples of potential outcomes of interest in each of these categories are provided in Box 3-4.

Within the field of occupational safety and health, a common approach to measurement has focused on lagging and leading indicators. *Lagging indicators* are retrospective measurements of system performance linked to outcomes; these are the traditional measures of safety performance, such as OSHA statistics and costs (Manuele, 2013). These indicators, however, have a key limitation: "While lagging indicators give information of direct concern to management, the workforce, and the public, they can only be used for improvement after the fact" (NRC, 2009, p. 8). Recent years have seen a shift toward what have been termed *leading indicators*—in the safety

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[25]For additional information, see http://www.iom.edu/Reports/2013/A-Ready-and-Resilient-Workforce-for-the-Department-of-Homeland-Security-Protecting-Americas-Front-Line.aspx (accessed January 22, 2014).

BOX 3-4
Outcome Measures for an Integrated Workforce
Health Protection Infrastructure

Health Outcomes
- Injury and illness rates
- Health risk reduction
- Health care utilization

Financial Outcomes
- Workers' compensation costs
- Health care costs
- Disability costs

Productivity Outcomes
- Absenteeism (sick leave utilization)
- Presenteeism
- Mission opportunities lost
- Employee turnover

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context, prospective measures linked to actions taken to prevent accidents (Manuele, 2013).

The importance of using leading indicators to evaluate individual performance cannot be overstated. Attempts to evaluate individual performance based on lagging indicators may create perverse incentives, encouraging individuals to make outcomes look good and not necessarily to improve underlying performance (for example, an objective to decrease the number of workers' compensation claims may lead to claim suppression). The use of leading indicators allows for evaluation of what individuals are doing to address an issue, while lagging indicators enable program evaluation and inform continuous improvement processes.

Workforce Perceptions of Safety

Measures of organizational climate examine workforce perceptions of organizational practices, such that those most familiar with the work environment are involved in its evaluation (Rousseau, 2011). Surveys of organizational climate focus on a wide variety of issues affecting the workforce and workplace. They take the pulse of the organization, providing insight into potential problem areas and creating opportunities for soliciting employee input and targeting interventions. Each year, OPM administers

the Federal Employee Viewpoint Survey to measure "employees' perceptions of whether, and to what extent, conditions characterizing successful organizations are present in their agencies" (OPM, 2012, p. 2). Responses to the survey are grouped into several indices—including leadership and knowledge management, results-oriented performance culture, talent management, job satisfaction, employee engagement, and global satisfaction—providing useful information to agency leaders on challenges within their organizations that must be addressed to improve performance (OPM, 2012). However, the survey contains few items related to workforce perceptions of health and safety. Likewise, DHS reported to the committee that it currently conducts no medical and health climate surveys (Polk, 2013). Nonetheless, measures do exist with which to gauge workforce perceptions of safety and health in the workplace. Safety climate surveys such as the Zohar (1980) scale, which has been widely used and validated over the past 30 years, provide an important leading indicator and encourage the development of preventive interventions.

INTEGRATION OF ESSENTIAL WORKFORCE
HEALTH PROTECTION FUNCTIONS

Most large employers have programs that address many of the key functions discussed in this chapter. Often, however, these programs operate in silos, divorced from each other both organizationally and strategically. Consequently, in the face of the numerous challenges associated with employee health (e.g., rising health care costs associated with chronic diseases, workers' compensation costs, injury rates), employers may not know where to direct resources and interventions, and important information may not flow from one silo to another. With such fragmented systems, the result often is the introduction of multiple independent solutions that do not benefit from the synergy generated by a unified strategy (Goetzel, 2005). The solution is "strategic and systematic integration of distinct environmental, health, and safety policies and programs into a continuum of activities that enhances the overall health and well-being of the workforce, and prevents work-related injuries and illnesses" (Hymel et al., 2011, p. 695).

Characteristics of Integrated Health Systems

In a recent study on integrating employee health activities at DoD, Cecchine and colleagues (2009) define an *integrated employee health system* as "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 DoD for the purposes of decision-making,

accountability, improvement, surveillance, and other questions related to health." Through an examination of integrated workforce health systems (described in the sections below), the committee identified four beneficial characteristics of such systems:

1. Harmonization: Through the creation of common standards, processes, and metrics, integration helps ensure consistency across large, complex organizations.
2. Interoperability: Integration encourages interoperability, enabling the individual components of the system to work together and take advantage of components of other systems, including people, equipment, technology, and information.
3. Efficiency: As with most workplace programs, health services face resource constraints. Integrated systems can lead to greater efficiency by creating economies of scale and reducing duplication of effort.
4. Synergy: When programs work in concert, their overall effectiveness often surpasses their individual effects.

Models for Integrating Workforce Health Protection Functions

Integration of relevant systems is one of the "essential elements of effective workplace programs and policies for improving worker health and well-being" identified by the National Institute for Occupational Safety and Health (NIOSH, 2008). According to the NIOSH framework, "programs should reflect a comprehensive view of health," and the integration of relevant systems is one of the keys to creating this view (NIOSH, 2008, p. 2). As a first step toward integration, NIOSH suggests creating an inventory and evaluating existing programs and policies to determine their worth and potential connections. NIOSH (2008, p. 2) recommends "integrat[ing] separately managed programs into a comprehensive health-focused system and coordinat[ing] them with an overall health and safety management system." In recent years, several organizations—including the National Business Group on Health, NIOSH, and the Harvard Center for Work, Health, and Well-being—have released documented approaches to integrating employee health programs.

National Business Group on Health's Employer Toolkit and Guide

In 2005, the IOM released a report in response to a National Aeronautics and Space Administration (NASA) request for recommendations on options for future worksite preventive health programs and ways to create healthier workplace environments that are conducive to more active

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BOX 3-5
Recommendations for Integrating Employee Health

To disseminate the recommendations of an Institute of Medicine (IOM) report on integrating employee health programs at NASA (IOM, 2005) to a wider audience, the National Business Group on Health published an employer toolkit for improving employee health. The following keys to success were generalized from the IOM committee's recommendations:

1. Make health a core value, linked to your overall mission.
2. Realize the goal by offering tangible, well-supported, integrated programs.
3. Encourage consistency across all programs, in all locations, with consistent data and evaluation.
4. Develop a data-based approach to policy, planning, and programming; create a standardized "health and performance" full-cost accounting; incorporate essential elements of integrated health programs in contracting requirements.
5. Recruit supervisors and managers to help make the links for employees between health, productivity, and the success of the organization.
6. Obtain, understand, and apply health care cost and utilization data to optimize programs.
7. Offer a basic health assessment tool, like a health risk appraisal (HRA), to all employees.
8. Coordinate and integrate all individual and organization-wide health policies and programs.
9. Promote, then provide or make available, health screenings to minimize risks.
10. Evaluate every program to ensure it's effective and has enough resources.
11. Employ a framework for measurement offering direct access to the data you collect.
12. Collaborate across departments, divisions, regions, and job types.
13. Assemble a data management team from key areas for ongoing measurement and evaluation.
14. Establish system-wide data architecture and technology.
15. Learn from your mistakes and successes. View all of your health promotion efforts as opportunities to gather research on what does and doesn't work.

SOURCE: NBGH, 2006.

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lifestyles. The IOM Committee to Assess Worksite Preventive Health Program Needs for NASA Employees recommended that NASA adopt an integrated management systems approach to employee health to support the agency's missions and goals. The National Business Group on Health, seeking to share the key findings and recommendations from that report

so that other employers could benefit from the study results, published its *Improving Health: An Employer Toolkit*, in 2006. The toolkit recommendations, adapted from those made by the IOM committee to NASA, are presented in Box 3-5. More recently, the National Business Group on Health published an employer guide on *Integrating Wellness and Occupational Health and Safety in the Workplace*, which provides a rationale and strategies for an integrated approach (NBGH, 2013).

NIOSH's Total Worker Health™

Stemming from the earlier Steps to a Healthier U.S. Workforce initiative, which focused on improving worker health by integrating health protection and health promotion functions, NIOSH's Total Worker Health (TWH) program was launched in 2011 based on three seminal papers that grew out of the previous initiative. In 2012, these seminal papers were updated and published in a research compendium aimed at reviewing the current evidence base and establishing a scientific rationale for using an integrated approach to the protection and promotion of worker health (NIOSH, 2012). NIOSH defines TWH as a "strategy integrating occupational safety and health protection with health promotion to prevent worker injury and illness and to advance health and well-being" (CDC, 2013). Whereas workplace health promotion and safety programs have traditionally been compartmentalized, the goal of TWH is to promote integration and "support the development and adoption of ground-breaking research and best practices of integrative approaches that address health risk from both the work environment (physical and organizational) and individual behavior" (CDC, 2013). As part of this initiative, the Centers for Disease Control and Prevention (CDC) created an extensive website providing a wealth of information on integration, including peer-reviewed literature and other resources, guidelines for implementation, promising practices, scorecards and measurement tools, and links to Centers of Excellence funded by NIOSH.[26]

Harvard Center for Work, Health, and Well-being's SafeWell Practice Guidelines

In collaboration with Dartmouth-Hitchcock Health Care, the Harvard Center for Work, Health, and Well-being created the SafeWell Practice Guidelines "to provide a model and resources for comprehensive approaches to worker health that integrate and coordinate efforts to promote

[26]Additional information on TWH and online resources are available at http://www.cdc.gov/niosh/TWH (accessed January 22, 2014).

healthy behaviors, ensure a safe and healthy work environment, and pro-
vide resources for balancing work and life" (McLellan et al., 2012, p. 1).
Identifying a link between employee health and well-being and organiza-
tional success, the guidelines promote a vision of an integrated workforce
health system, positing that "effective workplace health programs imple-
ment programs, policies, practices, and benefits designed to promote health
among individual workers in healthy, safe, and productive workplaces"
(McLellan et al., 2012, p. 5). In creating an integrated approach, McLellan
and colleagues (2012) recommend adherence to three important principles:

1. a systems-level approach that coordinates programs, policies, and
    practices;
2. coordination of occupational safety and health, worksite health
    promotion, and human resources; and
3. programs, policies, and practices that address the work environ-
    ment/organization and worker health and well-being.

Essential to this endeavor is a foundation of organizational leadership and
commitment and a strategy for evaluation and continuous improvement.

Real-World Models from Public- and Private-Sector Organizations

Throughout the course of this study, the committee examined a number
of successful organizational workforce health protection programs in both
the public and private sectors. The committee found that the implementa-
tion of workforce health programs varied, encompassing completely decen-
tralized, completely centralized, and hybrid approaches. See Appendix E for
brief descriptions of the organizations examined, including the Smithsonian
Institution, NASA, DoD, the Department of the Interior, the Department
of State, Johns Hopkins University and Medical Institutions, Johnson &
Johnson (J&J), Procter & Gamble (P&G), and Superior Energy Services.
Because of similarities in organizational and operational challenges faced by
DHS and the Department of the Interior, the committee examined in par-
ticular detail the means by which integration of workforce health protection
functions across Department of the Interior bureaus is achieved; this case
study is presented in Box 3-6.

Requirements for Successful Integrated Employee Health Programs

The committee was asked to examine occupational health and op-
erational medicine infrastructures established within and outside of gov-
ernment; to identify key functions of an integrated infrastructure; and
ultimately to provide recommendations on how infrastructures within

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BOX 3-6
Integrating Workforce Health Across a Diverse Federal
Organization: A Case Study of the Department of the Interior

Though significantly smaller than DHS, the Department of the Interior (DOI) is constructed in a similar fashion, with eight bureaus carrying out widely diverse missions, housed under a centralized headquarters entity. At the headquarters level, the Office of Occupational Safety and Health is responsible for "ensur[ing] the health, safety, and well-being of [DOI] employees and visitors" (DOI, 2008). To achieve this mission, the Office of Occupational Safety and Health developed the Safety and Health Strategic Plan, outlining overarching goals and strategies intended to provide broad direction to the bureaus and used to hold managers and executives accountable for ensuring the health and safety of the workforce. The six goals are as follows:

1. Enhance the Role of Leadership and Management in Promoting a Culture of Safety.
2. Enhance Employee Inclusion, Participation, and Engagement in Achieving Safety and Health Commitments.
3. Prevent Exposure to Hazards and Mitigate Risk through Recognition and Prevention Programs and Processes.
4. Enhance Internal Evaluation and Analysis Processes to Validate the Effectiveness of the Safety and Health Program.
5. Improve Occupational Safety and Health Training and Awareness throughout the Department.
6. Implement and Continuously Improve the Occupational Safety and Health Program.

DOI has taken multiple steps to ensure integration, both among bureaus and between the bureaus and headquarters. To ensure vertical integration between headquarters and the bureaus, Designated Agency Safety and Health Officials (DASHOs) within each bureau, together with the departmental DASHO, make up the department's DASHO Council, which meets "in an ad hoc fashion to discuss appropriate activities, actions and initiatives to further the Departmental Safety and Health Program" (DOI, 1996). Additionally, DOI formed the Safety and Occupational Health Council, bringing together bureau safety and health managers to coordinate bureau activities and "serve as an advisory body on program matters to the Departmental DASHO and the DASHO Council" (DOI, 2012, p. 2).

DOI also has taken steps to ensure horizontal alignment of all workforce health protection functions at the headquarters level, including placement of the Occupational Health and Medical Programs Division under the Office of Occupational Safety and Health, organizationally aligning these functions within a single reporting structure. The department's medical functions are centralized within this headquarters division, which focuses on overarching policy concerns and program development, advocating for a team approach to decision making and implementation within the bureaus (Garbe, 2013). Although primary responsibilities for workforce health functions have been aligned within the Office of Occupational

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BOX 3-6 Continued

Safety and Health, the Office of Human Resources continues to play a supporting role by maintaining employee occupational health records and ensuring that appropriate workers' compensation forms are completed and processed (DOI, 2009).

Implementation of workforce health programs is left to the discretion of each bureau, within broad guidelines established by the headquarters-level program. All of the department's occupational medicine, health, and safety procedures are outlined in the *Occupational Medicine Program Handbook*, including information on establishing or changing physical qualification standards, conducting preplacement and periodic examinations for the purpose of medical clearance, carrying out medical surveillance processes, and implementing specific standards for various classes of positions (DOI, 2009). Also included is detailed guidance on medical employability determinations and medical examination procedures, including preplacement medical evaluations and ongoing medical surveillance.

A primary example of how DOI has approached integration across diverse components, and especially relevant to DHS, is the creation and enforcement of overarching medical standards and clearance processes. Similar to DHS, DOI employs a wide variety of operational staff, including approximately 7,000 law enforcement officers and 15,000 wildland firefighters. Other operational staff include onshore and offshore inspectors (e.g., surface mining, offshore oil and gas operations), large vessel crews, divers, pilots/aviators, and drill rig operators, among others. For each of these positions, DOI has published Office of Personnel Management (OPM)-approved medical standards.* These standards were developed through a team approach, which included subject-matter experts in safety, human resources, and medicine at both the department and bureau levels, as well as individuals working in the positions for which standards were being developed and union representation as appropriate (Garbe, 2013). The process involved not only discussion of the areas of interest, including accident and illness statistics, but also real-time observation of employment conditions and job duty performance in the operational setting.

Implementation of position-specific standards and of programs designed to ensure that such standards are being met is left to the bureaus, allowing for wide

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component agencies can be better integrated into a coordinated, DHS-wide system. In this chapter, the committee has identified nine key functions essential to ensuring workforce health. Integration of these functions, as demonstrated by many of the organizations examined, has helped achieve success in ensuring workforce health.

As noted by the WHO (2008, p. 1), "integration is best seen as a continuum rather than as two extremes of integrated/not integrated." With this point in mind, the committee viewed integration of health systems from the perspective of *alignment*—"the degree to which an organization's design, strategy, and culture are cooperating to achieve the same desired goals"

discretion and creativity based on the bureau's needs and capacities within the boundaries of good medical practice (Garbe, 2013). DOI headquarters steps in only when implementation in one bureau may jeopardize the legal defensibility of the standard in another bureau. Dr. Bob Garbe (2013), Chief of the Division of Occupational Health and Medical Programs, provided the committee with two examples of alternative approaches to implementation. The National Park Service, which employs approximately 5,000 law enforcement officers, operates a centralized medical clearance program with a single national contract medical provider. Every NPS law enforcement officer undergoes periodic medical clearance examinations through contracted examiners, the results of which are reviewed by a small group of physicians also employed by the contractor. Results are sent to the agency as cleared or not cleared. Alternatively, the Fish and Wildlife Service, many of whose operational employees are dispersed in rurally remote areas, uses a voucher system. Employees are provided with a clearance form that they bring to a local physician of their choice who conducts the examination and provides the clearance. The former approach, which has been in effect for more than 10 years, is viewed as highly successful. The latter approach, though taken out of necessity, is seen as potentially problematic, as it increases the risk for errors of omission or commission and the potential for data of lesser quality.

Because DOI, like DHS, is a loose amalgam of diverse bureaus, largely independently funded and with their own leadership, the headquarters-level program has found it difficult to ensure consistent implementation of comprehensive programs across bureaus. However, the headquarters office has played a strong coordinating and integrating role, bringing together individuals from all levels in the development of department-wide standards, ensuring that bureau-specific standards meet departmental standards, advocating for strengthening of programs based on best practices, and assisting bureaus in the design of their programs.

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*All of DOI's standards can be found in Tab 12 of the *Occupational Medicine Program Handbook*, available at http://elips.doi.gov/ELIPS/DocView.aspx?id=3478 (accessed January 22, 2014).

(Semler, 1997, p. 23). When applied to workforce health functions, this perspective can help organizations achieve their goals for a healthy, safe, and ultimately high-functioning and productive workforce. In its examination of the organizations discussed in this chapter and in Appendix E, the committee identified four elements that are essential for successful integration of workforce health programs: leadership commitment to workforce health, organizational alignment and coordination, functional alignment, and information management. As further discussed in Chapter 4, these four elements served as the organizing framework for the recommendations presented in Chapters 5-8.

Leadership Commitment to Workforce Health

Creating a common core culture focused on health and safety (discussed in the next section) has been key to the success of many of the programs examined for this study. The creation of such a culture begins with a vision of a healthy, safe, and resilient workforce, put forth by organizational leadership committed to achieving this vision and ultimately reaching down to every employee in the organization (Cecchine et al., 2009). Leadership commitment is crucial to the creation, expansion, and sustainability of workforce health programs; without vocal and active leadership, such programs may not be viewed as a priority by management or the workforce as a whole. For example, the successful workforce health program at the Smithsonian Institution began in 2007, when then Secretary Lawrence Small set a zero-injury goal for the organization, articulating the importance of safety to its leadership. In 2009, Secretary G. Wayne Clough institutionalized leadership's commitment to workforce health by specifically including related goals in the Smithsonian's strategic plan for fiscal years 2010-2015.[27] Each year, Dr. Clough serves as the opening speaker at the kickoff event for the Smithsonian's National Safety Month (Duval, 2013), thereby demonstrating visible commitment to the health of his employees.

In addition to providing support, leadership involvement in the creation, implementation, and improvement of programs and policies related to employee health and safety can be invaluable to building a lasting program with significant impact. This point is demonstrated by P&G, which recognized the importance of creating a health and wellness program (Vibrant Living) that was integrated with the rest of the organization (Christensen, 2013). Key leaders from human resources, manufacturing, and research and development, as well as regional officers, were involved during every step of the program design, fostering not only leadership buy-in but also ownership of the program and its goals. Leadership commitment and involvement do not begin and end with top-tier leadership. For example, Vibrant Living, whose vision for the workforce is "the healthiest, most engaged people in the world," continues to engage leadership at all levels through its steering team, whose members include both functional (medical, human resources, manufacturing, research and development) and regional business leaders.

Finally, creating avenues for communication is critical. As discussed above, communication with leaders at all levels helped foster a sense of ownership in P&G's health and wellness program from the start. Organizations

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[27]The strategic plan includes an objective to "attract, maintain, and optimize a productive, motivated, and creative workforce," with one of the strategies for meeting this goal being to "encourage and maintain an organizational culture that embraces safety, health, and wellness" (Smithsonian Institution, 2010, p. 20).

can spend much time and effort on creating and implementing a program, but even the best programs are worth little if employees do not participate. P&G is working to brand its health programs globally with inviting names, such as Vibrant Living, that encourage their utilization (Christensen, 2013). Similarly, Superior Energy communicates its commitment to employee health through both words and actions, constantly promoting its wellness program, offering time allowances for health-related activities, and creating an incentive program. As a result, the company has seen a strong and growing interest in its wellness program in recent years (Minson, 2013).

Organizational Alignment and Coordination

All of the organizations the committee examined took steps to ensure coordination of essential workforce health protection functions, although the approaches taken to these ends varied. The Smithsonian Institution, the Department of the Interior, and Johns Hopkins all combined workforce health protection functions into a single reporting structure, while other organizations, such as NASA, P&G, and J&J, housed functions in separate reporting structures and instituted measures to ensure alignment through systematic communication and coordination.

Successfully integrated programs provide avenues for ensuring appropriate communication and coordination. Communication is especially critical in organizations where the workforce health functions are not organizationally aligned into a single reporting structure. For example, while the P&G Global Medical program is located within human resources, the industrial hygiene, safety, and environment program is housed separately under manufacturing; however, systems are in place to ensure timely information sharing between the two and coordination as necessary (Christensen, 2013). J&J is similarly organized and created the Environmental Health and Safety Leadership Council to bring Global Health and occupational safety and health leadership together to address high-level issues related to the creation of organizational policies and standards. Similar teams operate at the business unit level, bringing together occupational health physicians and/or nurses; site safety managers; and wellness, employee assistance, and industrial hygiene professionals (Isaac, 2013).

Functional Alignment

Standards and global policies are necessary in decentralized organizations to ensure that operational units are meeting established requirements for workforce health throughout the organization (Isaac, 2013). It is also critical for organizations, especially those that are decentralized, to monitor their components' adherence to such standards. J&J currently has

27 global standards, 2 of which are related directly to employee health and 3 to safety. It also has created globally harmonized procedures, such as tobacco-free sites, wellness programs, occupational health programs, and an employee assistance program, to ensure that its operating companies can meet these standards. Auditing processes, such as the Management Action and Assessment Review System, help ensure that standards are being met and identify areas for improvement within business units. Sites are required to conduct an annual self-assessment against J&J standards, with a joint assessment being performed by Global Health Services every 3 years.

Through its global framework, P&G has instituted an employee health and wellness policy designed to ensure that all of its employees will have access to occupational health services locally, wherever they are located, either directly through P&G clinics or through a contracted provider (Christensen, 2013). Consistent standards, procedures, and training exist across all P&G subsidiaries and worksites. From evidence-based standards of practice built on guidance from best-in-class global health organizations, P&G has created 20 health-related standards spanning six domains. P&G uses an audit tool to ensure that its sites are meeting its standards and a global medical scorecard to track outcomes, allowing for measures of overall organizational health and return on investment.

It is important to note that the establishment of overarching standards does not necessarily imply a heavy-handed approach from the top with respect to how component organizations and worksites implement programs to meet the standards. For example, the Department of the Interior provided standards and guidance to its eight component bureaus but, in so doing, recognized the wide variety of their responsibilities and missions. Therefore, program implementation is left to each bureau, with broad latitude in how the standards are met.

Information Management

Consistent with findings from previous studies (Cecchine et al., 2009; IOM, 2005), information management has been critical to the success of the integrated employee health programs examined by the committee. The development of any new program should be based on organizational needs, as determined by metric-based assessments, so that programs and interventions can be appropriately designed and targeted. This process may entail collecting health risk data through voluntary health risk assessments, as was done prior to the development of intervention strategies at the Smithsonian Institution (Duval, 2013). For an operational workforce, data on patient encounters in the field may be needed to guide agency medical programs—an approach taken by the National Park Service to address injury prevention and risk management activities (Ross, 2013).

Once a program is in place, measurement and evaluation, discussed earlier, helps ensure program effectiveness and drive continuous improvement. Continuous improvement processes across large, decentralized organizations require standardized metrics and data collection tools. J&J has developed several metrics and tools for evaluating program effectiveness. The Global Health Assessment Tool, for example, enables tracking whether business units are meeting program goals and objectives (Isaac, 2013). In 2012, J&J instituted the Occupational Health Index, which examines compliance, quality, satisfaction, and efficiencies on a quarterly and annual basis (Isaac, 2013). J&J currently is developing the Health and Productivity Index, which combines health, productivity, well-being, and "culture of health" and program sustainability measures. Upon implementation, it will generate a scorecard allowing for benchmarking against other companies and correlations with business and financial value (Isaac, 2013).

Although necessary, metrics and data collection tools are not sufficient to support a comprehensive measurement and evaluation framework. Given the multidisciplinary nature of workforce health protection programs and the complexity of the data that must be integrated to inform decision making, information management systems designed for interoperability are needed to drive coordination among functions and ultimately provide a means for managing and integrating organizational knowledge. For example, the National Park Service's electronic patient care record allows for system-wide epidemiological surveillance and real-time communication with other entities (e.g., public health, risk management) (Ross, 2013). The Smithsonian, by combining its workers' compensation and injury reporting forms into a single automated system, enabled the immediate sharing of information between human resources and safety components. This system has facilitated case management, allowing for early involvement of nurse case managers in potential workers' compensation cases (Duval, 2013). Prior to implementation of this system, more than 7 months may have been required for full injury/illness reports to reach the medical office. Similarly, at the Johns Hopkins Institution, an integrated workers' compensation claims management system promoting a collaborative approach among safety professionals, adjusters, and medical and nursing professionals resulted in a 73 percent reduction in lost time claims over a 10-year period (Bernacki and Tsai, 2003).

A Common Core Culture Dedicated to Health

Ultimately, the commitment to workforce health must be ingrained throughout an organization, from high-level leadership to the frontline workforce. The four requirements for successful integrated employee health programs outlined in the preceding section—leadership commitment to

BOX 3-7
Case Study:
Creating a Culture of Health at Johnson & Johnson (J&J)

J&J has long recognized the importance of protecting its employees' health, first installing an employee health clinic and gym at its original facility in 1886. As the company has grown and become increasingly decentralized—currently operating more than 275 companies in 60 countries with approximately 128,700 employees (J&J, 2013)—its focus on ensuring employee health has remained. In 1995, J&J began to centralize health services in its U.S.-based companies, bringing employee health, wellness, occupational medicine, disability management, benefit plan design, and employee assistance activities under a single umbrella: the J&J Health and Wellness Program (Isaac, 2013; Ozminkowski et al., 2002). Realizing success with this model, J&J currently is working to centralize global health services under the corporate umbrella as well (Isaac, 2013). J&J believes such centralization will help the company reach its ultimate goal of reducing the burden of disease and creating a competitive advantage.

J&J leadership understood that creation of programs was not enough to ensure sustainable organizational change; it was necessary to change the way workforce health is viewed throughout the organization, to create a "culture of health" (Isaac, 2013). The first step was not simply to bring programs together, but to integrate three primary functions:

1. protection: keeping people safe, ensuring compliance with required regulations, and providing quality care to all employees;
2. prevention: keeping the well well and managing the ill and injured; and
3. performance: linking health-related processes and programs to overarching operational success.

Linking protection, prevention, and performance was the key, J&J believed, to building a sustainable culture focused on the health and well-being of its workforce, and therefore creating lasting change. To achieve such change, J&J's health strategy focused on five pillars—leadership commitment, enterprise programs, policy and procedures, engagement and participation, and measurement and outcomes—deemed essential to creation of such a culture:

- ***Leadership commitment:*** The importance of leadership to the establishment, integration, and maintenance of any long-term strategy cannot be overstated. Senior leadership set goals for health programs, to be pursued by all operational units. These goals, updated every 5 years, are functionally integrated into the organization and evaluated as part of overall organizational performance through inclusion in the company's annual public report. However, the importance of leadership to creating a culture does not begin and end with senior leadership, but relies on leaders at all levels. Accordingly, J&J instituted mandatory 1-day training for senior and high-potential leaders focused on demonstrating the importance of health

not only to the individual but also to unit productivity and the company as a whole. J&J also recruited middle managers to be "health champions" on the ground, acting as "ambassadors to health" in the workplace.

- *Enterprise programs:* Workforce health must be viewed coherently and as part of the overall organizational strategic plan. To this end, J&J integrated service delivery with innovative solutions that focus on prevention, behavior modification, and linkage to benefit design. The result was a single system that brings together occupational health and disease management, mental health and well-being, healthy lifestyle programs, and health education and awareness programs. J&J's integrated health program takes a multimodal approach, providing face-to-face support at the worksite or close to home, Web-based and telephonic tools and resources, and environmental support, thus offering a choice of value-added services that meet people where they are in the health continuum.

- *Policy and procedures:* Centralized policies and procedures that allow for a standardized approach throughout the enterprise were deemed integral to J&J's program. J&J currently has 27 global standards, two of which are directly related to health. Standardized procedures, or "toolkits," support worldwide program implementation. To ensure that operating companies are maintaining these global standards, an auditing process has been put in place. Each business unit must complete an annual self-assessment, and Global Health Services visits each unit every 3 years for a joint assessment.

- *Engagement and participation:* A program is valuable only if it is being used. Program design at J&J is based on a variety of factors relating to need, from employee input to medical surveillance data. Communication strategies are developed to ensure that the workforce knows of their availability. Utilization rates are tracked to determine the success of communication strategies and to support decisions on which programs should be expanded or terminated.

- *Measurement and outcomes:* Recognizing the importance of the final result, J&J's approach is to "measure outcomes, not effort." To enable an in-depth look at the effectiveness of its approach to workforce health, J&J developed the Global Health Assessment Tool. Through this tool, each unit completes an annual self-assessment of how it is meeting the goals and objectives of J&J's health programs. Based on this assessment, each site receives an action plan, a recommendation, or a certification of success in meeting each goal. In 2012, J&J instituted another ongoing measurement tool, the Occupational Health Index, to examine on a quarterly and annual basis compliance, quality, satisfaction, and efficiencies). Currently under development, the Health and Performance Index combines health, productivity, well-being, and culture of health and program sustainability measures, generating a scorecard that will allow for benchmarking against other companies and correlations to business and financial value.

BOX 3-7 Continued

The results of J&J's integrated approach are encouraging. In an early study examining the impact of the program on health care utilization and expenditures, Ozminkowski and colleagues (2002) followed employees for up to 5 years prior to program implementation and 4 years after. They found that the program had resulted in fewer inpatient hospital days, mental health visits, and outpatient and doctor's office visits, yielding savings of approximately $224.66 in medical expenditures per employee per year. An examination of trends over time demonstrated substantial overall increases in savings in years 3 and 4 after implementation, attributable primarily to fewer outpatient and doctor's office visits and inpatient days. A more recent study examining health care costs from 2002 to 2008 found that J&J spent approximately $565 (in 2009 dollars) less per employee per year on medical costs (inpatient, outpatient, and pharmaceutical) than 16 other similar companies with and without health and wellness programs (Henke et al., 2011). In the first quarter of 2013, 88 percent of occupational injuries and illnesses at J&J were treated in house, enabling workers' compensation claim costs for those incidents to be avoided (Isaac, 2013). During this time, 20 recordable cases, 19 restricted-work-day cases, and 17 lost-work-day cases were avoided as a result of case management, yielding a savings of nearly $1.4 million based on J&J's average salary.

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workforce health, organizational alignment and coordination, functional alignment, and information management—can help create a common core culture dedicated to maintaining and improving employee health and safety across an organization. Such a culture will unite a workforce in striving toward a common goal: a safe, healthy, and resilient workforce that is physically capable, mentally prepared, trained, equipped, and adequately supported to achieve its mission. The case study in Box 3-7 describes how a culture of health was achieved at J&J through successful integration of its health system and summarizes the measured impacts in terms of cost savings.

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4

The Current State of Workforce Health Protection at DHS

"Every DHS component and headquarters office has a noble and worthy mission to protect the American public."

—*Thad Allen, Admiral, U.S. Coast Guard (Retired) (2012)*

Whether securing the nation's borders, managing disasters, or protecting commerce and transportation systems, the component agencies of the Department of Homeland Security (DHS) work in a wide variety of ways to accomplish one ultimate mission: protecting the homeland. As a result of differences in operational requirements, as well as the fact that many of the agencies existed long before the creation of DHS, approaches to ensuring workforce health also vary among the components. Chapter 3 identifies the key functions of workforce health protection and organizes them into a framework for ensuring the health of an operational workforce. This chapter examines the current implementation of those functions across DHS at both the headquarters and component levels, including the degree of functional integration. Where sufficient information was available to the committee, gaps and successful practices are identified. The chapter concludes with an overarching analysis of opportunities to strengthen the health infrastructure at DHS, which serve as the framework for the committee's recommendations in Chapters 5-8.

ENSURING MEDICAL READINESS

As described in Chapter 3, four interrelated occupational health functions support medical readiness: injury and illness prevention, readiness assessment, disability management, and health promotion. In the sections below, each of these functions is examined in turn—first at the DHS

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headquarters and then at the component level.[1] Measurement and evaluation, as a foundational function in the committee's workforce health protection framework, is examined in the context of each of the four medical readiness functions.

Injury and Illness Prevention

Injury and illness prevention at DHS is executed primarily through occupational safety and health programs, although health promotion and fitness-for-duty activities also can help reduce occupational injuries and illnesses. According to the Occupational Safety and Health Administration's (OSHA's) *Safety and Health Program Management Guidelines*,[2] elements of an effective occupational safety and health program include management commitment and employee involvement; processes for hazard identification, prevention, and control; and safety and health training. In reviewing DHS's injury and illness prevention programs, the committee considered the representation of these key elements.

Headquarters Level

As discussed in Chapter 2, DHS's occupational safety and health program currently is administered from within the Office of the Chief Human Capital Officer (OCHCO), which is located within the Management Directorate. The Chief Human Capital Officer, as the Designated Agency Safety and Health Official,[3] has responsibility for the program and is tasked with overseeing the development of policies, instructions, standards, requirements, and metrics related to safety and health programs, as well as with providing direction and advice on safety and health matters to DHS management (DHS, 2008b). The Designated Agency Safety and Health Official should, according to Executive Order 12196 (1980),

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[1]The committee did not have an opportunity to speak with occupational health program staff at the Secret Service, despite repeated requests (it did hear from a representative on the agency's operational medicine program). Consequently, little information on medical readiness functions at the Secret Service was available for the committee to consider in its evaluation of medical readiness at DHS. Information provided here on Secret Service programs was gathered from publicly available documents and should not be viewed as a comprehensive description of those programs.

[2]Title 29, part 1926, of the Code of Federal Regulations (29 CFR 1926), subpart C, *Safety and Health Program Management Guidelines*.

[3]In accordance with DHS Management Directive 066-01 (see Appendix B), which established authority for the DHS occupational safety and health program, these responsibilities were originally delegated to the Chief Administrative Officer. However, the occupational safety and health program has been detailed to OCHCO, with permanent transfer awaiting the passage of a federal operating budget.

have "sufficient authority to represent the interest and support of the agency head."[4] The committee believes the Chief Human Capital Officer has this authority. Nonetheless, given the significant safety and health challenges faced by DHS, the committee is concerned about the organizational distance between the Chief Human Capital Officer and the Chief Medical Officer (CMO), who shares responsibility for employee health, safety, and medical programs and has the appropriate background to provide the strategic direction needed to advance workforce health at DHS. The committee is concerned that, without an advocate for workforce health to advise the Designated Agency Safety and Health Official, health, safety, and medical programs will not receive the necessary focus and resources. The Chief Human Capital Officer declined a request to speak with the committee about DHS's safety and health program,[5] so the committee was unable to ask about her ability to provide the program with the focus and resources befitting its importance.

The department-level occupational safety and health program is staffed by two occupational safety and health managers (including the DHS Safety Manager) and an industrial hygienist (Anderson, 2013). OCHCO provides guidance for component programs through the DHS Safety and Health Manual in accordance with the requirements set forth in Title 29, part 1960, of the Code of Federal Regulations (29 CFR 1960), *Basic Program Elements for Federal Occupational Safety and Health*. Another responsibility of the office is to ensure that DHS and its component agencies comply with the standards set forth in the Occupational Safety and Health Act; to this end, the office audits component programs annually. The office also engages in injury and illness prevention activities, including risk mitigation, and participates in investigations of serious accidents with component offices.

The role of the Office of Health Affairs (OHA) in the DHS occupational safety and health program generally is restricted to consulting on policy development and participating in medical aspects of accident investigation, although OHA leads the department's strategy for the use of medical countermeasures (antibiotics and vaccines) to mitigate occupational exposure to biological, chemical, and radiological threats (DHS, 2011). OHA and OCHCO work together and with other DHS offices (e.g., the Office of Operations Coordination and Planning) as needed on this and other cross-cutting issues, such as planning for pandemic influenza.

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[4]Executive Order 12196, Occupational Safety and Health Programs for Federal Employees.
[5]The DHS Safety Manager attended the committee's first meeting as her designated representative and spoke with the committee about the division of responsibilities between OCHCO and the Office of Health Affairs (OHA). In response to a committee request, the Chief Human Capital Officer did submit a written statement describing her perspective on the committee's task.

Component Level

As discussed in Chapter 1, injury and illness rates vary substantially across DHS components, with Total Case Rates[6] ranging from 1.64 at the Federal Emergency Management Agency (FEMA) to 9.44 at Customs and Border Protection (CBP)[7] (OSHA, 2013). This variability reflects differences in missions and work environments, but also in the robustness of safety and health programs, as described below.

Management commitment and employee involvement   Management commitment to employee safety and health can be difficult to assess by any one factor, but often can be inferred from employee engagement in safety and health and overall program resourcing and performance (see Box 4-1). One means by which management can demonstrate a commitment to safety and health programs is through the establishment of clear policies. Some components, such as the Transportation Security Administration (TSA), have a stand-alone safety and health policy (TSA, 2009). Most have occupational safety and health manuals or handbooks containing both policies and procedures for, among other things, identification and control of safety hazards, program evaluations and inspections, mishap reporting and investigation, job safety analysis, training, medical surveillance, and infectious disease control (DHS, 2010a; FEMA, 2013; ICE, 2011; TSA, 2010; USCG, 2013).[8] Another means of demonstrating management commitment is including safety and health outcomes in performance assessments for managers and supervisors, as required by 29 CFR 1960. However, the committee noted that this requirement is not universally met across components (McEachron, 2012).

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[6]As noted in Chapter 1, Total Case Rate is a standardized measure of the incidence of occupational injuries and illnesses and represents the total number of workers' compensation claims submitted by an agency to the Department of Labor's Office of Workers' Compensation Programs per 100 employees (OSHA, 2013).

[7]The committee learned of and applauds recent CBP initiatives to reduce this notably high injury and illness rate, which is among the highest in the federal government and has shown no notable improvement in the past 5 years (Flinn, 2012). According to a headquarters safety and health evaluation (Flinn, 2012), the bulk of CBP injuries are incurred by Border Patrol agents, including a large number of relatively inexperienced agents, who operate on a daily basis under hazardous conditions, particularly along the southwest border. To address its high case rates, CBP conducted a study to determine leading root causes of injuries, is considering the implementation of physical ability standards, and recently launched a risk management program based on the Department of Defense's operational risk management process (Flinn, 2012).

[8]The committee was provided or able to obtain copies of the cited occupational safety and health manuals. Manuals for CBP and the Secret Service were not provided to the committee despite requests, and the U.S. Citizenship and Immigration Services (USCIS) does not have its own manual.

DHS employees participate in safety and health programs in several ways. Many of the components train collateral-duty safety officers to conduct workplace inspections, typically in low- or medium-risk environments. Additionally, several components, including CBP, FEMA, Immigration and Customs Enforcement (ICE), and TSA, reported to the committee that employees can participate in local/worksite safety and health committees or teams, which include a mix of management and nonmanagement employees and may include labor representatives as well. Such committees are effective at improving workplace safety because their members operate on the front lines and therefore are most familiar with the hazards involved.

Hazard identification, prevention, and control Processes for proactive hazard identification are fairly similar across DHS, although their implementation varies. This requirement is met primarily through regular safety and health inspections and job hazard analyses, which focus on hazards associated with the workplace and job processes, respectively. Most components have established procedures for job hazard analyses (also called job safety analyses), which are used to identify hazard prevention and control strategies (e.g., requirements for personal protective equipment). However, it was often unclear to the committee how the decision to conduct a job hazard analysis is made. Worksite inspections generally are conducted at least annually, and more frequently at some sites in accordance with risk estimates. Some components, such as the National Protection and Programs Directorate (NPPD), rely heavily on collateral-duty safety officers for inspections, while others, such as TSA and CBP, have numerous safety professionals embedded in field sites across the United States, in addition to collateral-duty safety officers who inspect their assigned areas on a more regular basis. As with the safety and health committees, embedded safety and health professionals are familiar with operating conditions and know local management, providing opportunities for improved hazard identification and mitigation and risk communication. In an example of good interagency collaboration, U.S. Citizenship and Immigration Services (USCIS), which lacks its own safety and health professionals, uses an interagency agreement to allow collocated (or nearby) CBP safety professionals to conduct annual inspections at USCIS offices. This type of arrangement may be beneficial for other DHS components that lack or have insufficient internal safety and health staff.

Incident reporting methods and risk communication strategies are important elements of hazard identification, prevention, and control processes. Rapid incident reporting can help ensure timely and appropriate medical evaluation and treatment for affected individuals, and also allows causes of an incident to be addressed more rapidly, thereby preventing additional incidents. Several components noted to the committee that hotlines are

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BOX 4-1
Examples of Safety and Health Performance
Through Management Commitment at the
Department of Homeland Security

Transportation Security Administration (TSA)

TSA was established in 2001 but did not develop an occupational safety and health program until 2 years later. In 2003, the agency's Total Case Rate (based on data from the Office of Workers' Compensation Programs) was 23.3 per 100 workers—more than six times the government-wide average (Segraves, 2013). Since then, TSA has been working aggressively to reduce injury and illness rates through a robust occupational safety and health program that works closely with TSA's workers' compensation program. In 2012, TSA's Total Case Rate was 4.5, representing an 81 percent decrease relative to 2005 levels (Segraves, 2013). These reductions were accomplished through

- the development and implementation of policy and training programs designed to create a culture of safety;
- assignment of Designated Occupational Safety and Health Officials at all major airports (155 total) to plan, implement, and manage airport-level health and safety programs;
- designation and training of more than 300 collateral-duty safety officers to conduct informal inspections using TSA-developed checklists;
- the development of intra-agency Optimization, Safety, and Hazard Mitigation Integrated Product Teams (with members representing safety and health, workers' compensation, and security operations, along with personnel who develop standard operating procedures);
- baseline hazard analysis of all TSA-occupied facilities;

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available for incident reporting. In some cases, the lines are only for serious incidents (e.g., involving a fatality); by contrast, TSA requires reporting of all injuries and illnesses through its hotline by the end of the shift in which an incident occurred. TSA's safety and health office reviews reported cases on a daily basis, making it possible to identify trends quickly and provide guidance to field sites when needed.

Once hazards have been identified, effective methods for risk communication can reduce their impact. Strategies for risk communication vary across DHS, encompassing printed notices, digital media (e.g., podcasts), and interpersonal communications. In a notable example of the latter, safety issues are shared at CBP during meetings of collateral-duty safety officers, facilitating risk communication (Flinn, 2012). This approach also enables sharing of best practices, which is particularly useful given the high

- targeting of mitigation efforts to airports making significant contributions to overall case numbers or exceeding benchmark levels for that fiscal year;
- aggressive injury and illness reduction targets (currently an 8 percent annual reduction, twice the level set by the President's Protecting Our Workers and Ensuring Reemployment [POWER] initiative);
- reporting of all incidents through a dedicated hotline and a requirement to initiate investigation of an incident within 24 hours; and
- implementation of a Safety Information System, which tracks data on recordable incidents and workers' compensation claims, reports of unsafe conditions and corrective actions, hazard assessments (including job hazard analyses and inspection results), safety and health risk analyses, and limited-duty assignments.

U.S. Coast Guard

Between 2003 and 2011, the Coast Guard achieved a 47 percent decrease in its Total Case Rate. The Coast Guard attributes this steady decline to proactive safety programs supported by engaged leaders who actively communicate the critical importance of safety programs. Other contributing factors include an emphasis on training and operational risk management practices, along with personnel outreach efforts (USCG, 2011c). Operational risk management is being used to integrate occupational safety and health with operations. Using a systems approach, the Coast Guard is leveraging multiple hazard assessment programs, along with a safety climate assessment, to identify deficiencies that represent threats to employee safety or interfere with readiness and mission execution (USCG, 2011b). Hazard inventories are compiled and used during mission planning to identify hazards that may be encountered during a mission and potential mitigation strategies. The ultimate goal is to have a hazard inventory for every Coast Guard mission and/or task (USCG, 2011b).

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turnover of collateral-duty safety officers (Rupard, 2013), and provides a way to augment more formal training. CBP safety and health specialists also provide quarterly briefings to field managers, directors of field operations, sector chiefs, and senior leaders at headquarters to ensure high-level awareness of injury and illness trends and progress (CBP, 2013b).

Other common elements of component occupational safety and health programs include medical surveillance, industrial hygiene, ergonomics, and immunization services. With the exception of the Coast Guard, components generally outsource these functions to a private vendor or to Federal Occupational Health.

Training and education Executive Order 12196 on federal occupational safety and health programs requires agencies to provide safety and health

training, at a minimum to supervisory employees, employees responsible for conducting occupational safety and health inspections, and all members of occupational safety and health committees. Some general training courses (e.g., those for collateral-duty safety officers) are offered at the headquarters level, but most components have developed their own courses tailored to their needs and challenges. Organizations external to DHS also can be good sources for component-tailored training and education. For example, CBP recently sent sector-level program managers to a National Safety Council training; managers returned with action plans for their specific sectors that were developed during the course (Flinn, 2012).

Measurement and Evaluation

Only a few occupational safety and health metrics are collected at the headquarters level; these are primarily those required by OSHA—Total Case Rate and Lost Time Case Rate (defined in Chapter 1). DHS's occupational safety and health office also has developed a relative program rating based on the five-point scale used for assessments during annual occupational safety and health program reviews (Anderson, 2013). Currently, case rate data are submitted to headquarters annually; in the future, however, according to the DHS Safety Manager, the data will be collected quarterly and posted on a DHS dashboard for trend analysis and reporting to leadership (Anderson, 2013). Other occupational safety and health data available to headquarters include metrics collected through the President's Protecting Our Workers and Ensuring Reemployment (POWER) initiative. POWER goal data are analyzed and posted quarterly online by the Department of Labor's Office of Workers' Compensation Programs (OWCP).

The absence of common core metrics (collected by all components) and a DHS-wide safety information reporting and record-keeping system precludes more granular data analysis at the headquarters level (Anderson, 2013). Besides case rate data, only serious accidents that require immediate reporting to OSHA (a fatality, a hospitalization, three or more people injured during the same event, or serious property damage) are reported to headquarters. All other incident data remain at the component level.

DHS component agencies also have noted that inadequate information systems impede not only trend analysis and program evaluation but also preventive activities such as tracking of hazard abatement. FEMA has requested a management information system on several occasions, but the request has not yet been approved (McEachron, 2012)—this despite the fact that management information systems are a federal agency requirement under Executive Order 12196. With its Safety Information System, TSA has been able to conduct detailed analyses of its safety data to identify airports making the most significant contribution to its overall incident rate (see

Box 4-1). This system also has enabled targeting of mitigation strategies to those sites where the greatest impact can be achieved (Segraves, 2013). The Federal Air Marshal Service (FAMS) within TSA also conducts this kind of "market share" analysis using workers' compensation and incident data to identify and target field offices contributing most to the overall agency burden (FAMS, 2013b).

Readiness Assessment

Readiness assessment provides operational commanders and DHS leadership (at both the headquarters and component levels) with information on the medical readiness of the workforce to carry out its missions. Readiness to perform a mission has two aspects—the fitness of individuals (physical and mental) to perform the essential functions of their position,[9] and the absence of injuries and illnesses that would interfere with that capability. Both must be evaluated during readiness assessment. With the exception of the Coast Guard, clearly defined requirements for readiness generally are lacking at DHS, although, as discussed below, many components use fitness-for-duty evaluations to assess whether individuals can perform their essential job tasks.

Headquarters Level

The *Delegation to the Assistant Secretary for Health Affairs and Chief Medical Officer* assigns oversight responsibility for mission readiness functions, including preplacement evaluations, medical standards, fitness-for-duty examinations, health screening and monitoring, deployment physicals, and medical exam protocols, to the CMO. Notably absent from policies and standards promulgated by OHA, however, are guidance and standards related to medical readiness. OCHCO shares responsibility for fitness-for-duty processes and medical standards. OHA's Occupational Health Branch Chief told the committee that OHA is serving in an advisory role to OCHCO, which makes the decisions on implementation of medical standards (Hope, 2013a).

OHA initiated an effort to develop a common medical standard for 1811 series law enforcement officers across DHS.[10] A job task analysis was outsourced and a concurrence process initiated to elicit component approval for the vendor recommendations, but, for reasons not clear to the committee, the process was stalled during review in OCHCO (Hope,

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[9]Defined in Chapter 3 of this report.
[10]The 1811 series is the Office of Personnel Management job series for criminal investigators in the federal government.

2013a). Since that time, senior medical advisors have come on board in multiple component agencies, and OHA is leveraging its relationship with these medical officers to elicit buy-in from the components in the development of more consistent fitness-for-duty practices.

Component Level

The committee observed significant variability in the process by which components determine whether applicants and employees can carry out their essential job functions, even for positions with similar functions (e.g., criminal investigators). In reviewing these processes, the committee examined whether components had instituted medical and/or physical capability standards and reviewed components' procedures for conducting fitness-for-duty evaluations and adjudicating cases. Where appropriate, fitness-for-deployment processes also were reviewed.

Medical and physical standards Although the committee was not given the opportunity to review them, several components—including CBP, FAMS, the Secret Service, and the Coast Guard—reported that they have implemented medical and/or physical ability standards for law enforcement and other security- and safety-sensitive positions (e.g., mechanics, firefighters). At CBP, for example, fewer than 2 percent of weapon carriers are in positions lacking job-specific medical standards, and for those positions, an existing medical standard is being applied according to the physical requirements of the position and the essential job duties documented in the position description (CBP, 2013a). A "Use of Force" study is anticipated, which will establish a baseline medical standard for this small population of weapon carriers as an alternative to establishing standards for each position individually. The committee views the development of this standard as a possible function for OHA, so that any such standard could be applied across DHS. The development of a baseline standard, however, would require close collaboration with the components that would be applying it to members of their workforce.

Some positions at DHS must meet externally regulated standards. For example, CBP's Air Interdiction Agents must meet medical examination requirements of the Federal Aviation Administration (CBP, 2013a). Likewise, all active-duty and reserve personnel[11] in the Coast Guard must meet

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[11] Regarding Coast Guard civilian personnel, preemployment, periodic, and postemployment occupational medical exams and screenings may be necessary for positions that are "arduous, hazardous, or require a specific level of fitness to protect personal and public safety or to ensure security is not compromised," including civilian law enforcement personnel (USCG, 2011d). A template medical examination record is provided in Commandant Instruction M12792.3A, *Civilian Employee Health Care and Occupational Health Program*; with the

Department of Defense (DoD) Medical Standards for Appointment, Enlistment and Induction in the Armed Forces, although additional standards have been established for positions entailing unique risks, such as aviation personnel and divers (USCG, 2011a).

FAMS reported that, in addition to medical standards resulting from a job task analysis conducted in the 2005-2006 time frame, Supplemental Medical Officer Guidelines have been developed and are maintained to facilitate consistent interpretation and application of the standards. The guidelines serve as "the historical repository of process changes based upon advances in medical science, evolution in the medical clearance process and clarification of the [standards]" (FAMS, 2013d). No other components reported using this kind of "living document" approach, although it would appear to be a useful way to ensure that standards do not become obsolete and are applied consistently.

TSA, ICE, and FEMA all indicated that they are in the process of developing medical standards for safety- and security-sensitive positions. Medical standards for transportation security officers are required by the Aviation Transportation Security Act.[12] Although not yet implemented, the standards have been developed based on the results of an outsourced job task analysis and are awaiting approval. ICE and FEMA also have begun the process of conducting job task analyses for law enforcement officer positions and incident management assistance team members, respectively (ICE, 2013; Macintyre, 2013). The committee noted that job task analyses are, as a rule, outsourced at DHS, but there appears to be no standardized process by which those analyses are performed (e.g., from what sources input is solicited [unions, human resources, OHA], what factors are considered, or how acceptable levels of risk are determined).

Several components have instituted physical ability or fitness[13] requirements for applicants and, in some cases, recurring evaluations for employees.[14] Physical requirements are not always linked to a component's

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exception of firefighters, however, it is unclear whether documented medical standards are in place for some or all of these positions to serve as a benchmark.

[12] Aviation and Transportation Security Act (ATSA), Public Law 107-71, November 19, 2001.

[13] Physical fitness and physical ability (or performance) requirements are not always synonymous. Physical fitness requirements, such as timed runs and bench presses, may be general in nature, whereas physical ability requirements are specific to required job tasks (e.g., the ability to "hold a seven pound shotgun firmly to shoulder and have sufficient hand strength to be able to operate the slide action properly") (FLETC, 2011).

[14] Assessments of physical fitness and physical ability also are conducted by the Federal Law Enforcement Training Center in the context of training programs in which DHS law enforcement officers may be required to participate on a recurring basis. Students are required to fill out self-assessments for course-specific physical performance requirements and, if applicable, to submit medical documentation on any conditions that impede their ability to participate

medical standards. At FAMS, for example, air marshals must participate in quarterly physical fitness tests, but the physical fitness program is housed in the training department, separate from the FAMS Medical Programs Division. Although participation is mandatory, there is no pass/fail cutoff.

Fitness-for-duty evaluation   The committee noted significant variability in the implementation of fitness-for-duty evaluations for readiness assessment. Only the Coast Guard, FAMS, and the Secret Service conduct periodic evaluations; in other components, fitness-for-duty evaluations are requested only when indicated by concerns regarding an employee's job performance or prior to return to duty (i.e., following an injury or illness). The Federal Protective Service recently suspended periodic medical evaluations of law enforcement officers, which had been opposed by union representatives because of concerns regarding mishandling of personal medical information and insufficient linkage to the ability to carry out essential job functions (Wright, 2013). The committee is unaware of any component other than the Coast Guard conducting exit health evaluations prior to separation.

At DHS, employing agencies determine who can conduct preplacement and employee fitness-for-duty evaluations (i.e., applicants and employees cannot choose their own medical examiner). These evaluations often are outsourced, either to Federal Occupational Health or to a private vendor. For example, CBP's Minneapolis Hiring Center arranges for all CBP candidates to undergo a medical examination from a single contract vendor—Comprehensive Health Services—which provides clinics, medical review officers, and specialty physicians (e.g., ophthalmologists). Use of a single vendor for all examinations helps ensure consistency in the process. Some agencies, such as the Coast Guard and FAMS, have sufficient numbers of physicians and occupational health nurses on staff to conduct some evaluations internally. FAMS has found that bringing this function in house can be cost-effective (FAMS, 2013a).

In the absence of documented medical standards, medical information may still be requested prior to employment or in the context of fitness-for-duty evaluations for employees. For example, applicants for some ICE positions are required to submit to a medical examination prior to mandatory physical fitness testing that is part of the application process. The examining physician determines whether it is safe for the applicant to take the fitness test. For applicants with medical conditions that might affect their ability to complete the fitness test, documentation regarding the condition must be brought to the medical examiner.

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in training. However, it is unclear what response is generated at employing agencies when students do not meet fitness or physical performance requirements.

Adjudication and waivers   Although most components outsource fitness-for-duty evaluations, some, such as FAMS, conduct their own reviews of the resulting medical information, whereas others rely on contracted medical review officers. At CBP, for example, in-house nurses evaluate all exam results and information submitted by personal physicians but refer complex cases to a contracted medical review officer for an additional medical opinion. CBP also utilizes a waiver review board consisting of field agents or officers and general counsel to evaluate the ability of a candidate to perform essential job tasks despite failing to meet medical standards. Such boards often are used to make determinations regarding employment for candidates and/or employees after considering recommendations provided by medical personnel. The Coast Guard and Secret Service also use medical evaluation or medical review boards to determine whether an individual can perform essential job functions, with or without reasonable accommodation (Secret Service, 2012; USCG, 2011a). As discussed in Chapter 3, a waivering process is required by 5 CFR 339. ICE reported to the committee that it is currently in the process of developing a waiver program.

Fitness-for-deployment evaluation   Fitness-for-deployment evaluation is one area in which the committee observed notable gaps at DHS. Only the Coast Guard has a clear and robust process for pre- and postdeployment health evaluation, although these processes are specific to military personnel. The committee was told that the Coast Guard is working on deployment health requirements for deploying civilians, and that these requirements may be applicable to other DHS components (Dollymore, 2013). Given its extensive experience with such evaluations, the Coast Guard represents a valuable resource in this area that could be tapped by other components.

At ICE, fitness for deployment is handled on a case-by-case basis if an employee brings a medical concern to the supervisor's attention. FEMA has been working on a pre- and postdeployment readiness evaluation (Crarey, 2013) for FEMA employees, as well as for DHS Surge Capacity Force volunteers.[15] When a Surge Capacity Force was deployed to the Hurricane Sandy disaster site in 2012, no predeployment medical readiness evaluations were performed (Leffer, 2013).

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[15]Employees across DHS who want to help when the need is greatest can volunteer to staff a DHS Surge Capacity Force, which can be deployed during a disaster. More than 1,100 DHS employees were deployed during Hurricane Sandy.

Measurement and Evaluation

As described above, several components evaluate the fitness for duty of individual employees or candidates; however, the committee heard from only one component that tracks the readiness of its workforce. The Coast Guard requires all active-duty/reserve personnel to maintain readiness to deploy and aligns with DoD in its definition of individual medical readiness (DoD, 2013), which encompasses six required elements: (1) an annual periodic health assessment; (2) an annual dental screening with acceptable classification status; (3) current on readiness immunizations; (4) in possession of medical equipment (e.g., gas mask insert, eyeglasses if needed); (5) completed medical readiness lab tests (e.g., HIV, blood type, tuberculosis [TB] test, pregnancy test for women, DNA specimen); and (6) having no deployment-limiting conditions (pregnancy or less than 6 weeks postpartum, dental class 3 or 4, injury/illness requiring at least 6 months' temporary limited-duty assignment). The periodic health assessment consists of

- a health risk assessment;
- clinical preventive services (e.g., vaccinations);
- Occupational Medical Surveillance and Evaluation Program review and update;
- individual medical readiness review and update; and
- problem-based examination for determination of duty status.

At the individual level, status for each of the readiness requirements is recorded. This information is then aggregated to determine the proportion of the Coast Guard workforce meeting each readiness requirement and all requirements. Workforce readiness information currently is tracked in the Coast Guard Medical Readiness Reporting System. However, future readiness tracking will be conducted through the Coast Guard's Integrated Health Information System.

To the committee's knowledge, no other DHS components have defined the requirements for readiness. Without defined requirements, workforce readiness cannot be tracked.

Disability Management

The POWER initiative has drawn attention to the need to improve return-to-work rates at DHS and across the federal government. The number of lost production days (i.e., work days lost because of workplace injury or illness per 100 full-time employees) at DHS is more than double the government-wide average (89.4 versus 35.8) (OWCP, 2013). Since injured law enforcement officers often must receive medical clearance before

returning to duty, it is expected that lost production days may be higher for agencies with large law enforcement populations (Tritz, 2013). However, lost production days at DHS still far exceed those for the Department of Justice (64.6) and the Department of the Interior (46.8), both of which have substantial law enforcement populations (OWCP, 2013). These data indicate that more timely return to work through early intervention programs is an area for improvement at DHS. Not only do such efforts return employees to their livelihoods, but they also represent significant opportunities to achieve cost savings for DHS with respect to both continuation-of-pay[16] and annual workers' compensation chargeback costs.

Headquarters Level

Although return to work is specifically identified in Delegation #5001 (DHS, 2008a) as an area for which the DHS CMO has oversight responsibility, the committee learned that OHA's role in this area currently is limited to medical consultation on an as-needed basis. Return to work/case management also was included in the 2009 memorandum of understanding (MOU) between OHA and the occupational safety and health program office as a lead program area for OHA (see Appendix B). However, the DHS Safety Manager informed the committee that the primary responsibility for medical case management at DHS headquarters lies with the workers' compensation program manager and policy advisor, located in OCHCO, and that the program will be removed from future revisions of the MOU.[17]

According to the DHS workers' compensation program manager and policy advisor, workers' compensation and disability management currently are decentralized at DHS, with 14 workers' compensation heads within components running individual programs (Myers, 2013). At the department level, the role of the workers' compensation program manager and policy advisor is to work with the components, providing support on national-level issues that may have cross-cutting effects. In response to the POWER initiative, however, DHS is moving toward a more centralized approach to disability management by establishing a blanket purchase agreement for contracted medical case management services (Myers, 2013). DHS components will have the option of buying into the program and establishing component-specific task orders, which will be managed by component

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[16] As discussed in Chapter 3, the first 45 days after a claim is filed is termed the continuation-of-pay period. During this period, the employing agency continues to pay the injured/ill employee's salary. After 45 days, OWCP takes over salary payments and then bills the agency annually (chargeback costs). Separate funds are used to cover these two sets of costs.

[17] E-mail communication, K. Anderson, DHS OCHCO, to A. Downey, Institute of Medicine, regarding proposed changes to OHA-Office of the Chief Administrative Officer Memorandum of Understanding, March 7, 2013.

workers' compensation managers. According to the performance work statement, the vendor will provide, implement, and maintain a full range of medical case management services, including certified/licensed registered nurses to act as medical case managers, a licensed medical review physician, a round-the-clock toll-free injury reporting hotline, injury care support services, support for new and historical workers' compensation cases, and an enabling information technology solution. The program is expected to begin operating in 2014. The committee was not informed of the number of components that plan to utilize this service, although the CBP workers' compensation program manager indicated that CBP's Commissioner has authorized participation (Masterson, 2013).

Although this program facilitates a proactive approach to cost containment for return to work and workers' compensation, the committee was concerned to note that this turnkey solution, as currently managed, is altogether disconnected from the internal medical infrastructure at DHS. OHA has not been involved in the development of the blanket purchase agreement,[18] and it is unclear how component-level medical authorities will oversee task orders, despite the fact that several components now have medical personnel who can serve as medical reviewing physicians. Nor is there any apparent link to the DHS safety program functions. Although a hotline will be supplied for reporting purposes, it is unclear whether the first report-of-injury calls will be shared with component safety offices.

Component Level

The committee heard from only three components——CBP, TSA, and FAMS——regarding their disability management programs. Successful initiatives of these three agencies are highlighted below, but with such limited information, the committee was unable to draw conclusions about this capability across DHS as a whole.

As discussed in Chapter 3, OWCP assigns field nurses to manage workers' compensation claims and to facilitate return to work. However, OWCP nurse case managers are not assigned until a claim has been accepted, which may be more than 45 days after the injury or illness is first reported. Since early intervention is known to improve return-to-work outcomes, two DHS agencies have implemented programs to initiate case management prior to assignment of OWCP field nurses. The two different models for component-level case management are described below; both have demonstrated success in improving return-to-work outcomes and achieving cost savings.

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[18]E-mail communication, I. Hope, DHS OHA, to A. Downey, Institute of Medicine, regarding DHS medical case management program, August 12, 2013.

Case 1: A contracted nurse case management program   In 2005, TSA initiated a pilot nurse case management program focused on bringing best practices of private industry to the agency. The program included the creation of a round-the-clock hotline, a focus on early intervention, ongoing case management to facilitate care and return to work, and the provision of limited-duty (also called light-duty) opportunities (Mitchell, 2013). When an injury or illness occurs, a contracted nurse case manager is assigned to the employee and initiates contact within 24 hours of the incident to offer support and assistance. Through ongoing contact, the nurse monitors the employee's medical condition to ensure quality medical care that facilitates medical progress and return to duty. Once implemented, the program decreased the average continuation-of-pay absence from 45 days to 12 days and reduced continuation-of-pay costs by more than 80 percent. In 2009, TSA was awarded the Theodore Roosevelt Workers' Compensation and Disability Management Award for its work on reducing the cost of injuries incurred by employees while on the job (Mitchell, 2013). The program also was identified as a return-to-work best practice in a study conducted for OWCP by EconSys (Steinberg, 2012).

Case 2: An in-house nurse case management program   FAMS, although a subcomponent of TSA, handles medical case management through its own in-house nurse case management program. FAMS nurse case managers are notified within 24 hours of a workplace injury and are available by phone around the clock to advise employees on medical follow-up (e.g., provide referrals) and suitability for airline travel (flight status). Nurse case managers then follow up with treating physicians to facilitate return to work. Currently, four nurse case managers provide 100 percent proactive management of claims, from initiation to resolution (Lewandowski and Weeks, 2013). A key aspect of the program is that the in-house case managers, who also review fitness-for-duty evaluations, are intimately familiar with FAMS job requirements and medical standards, and therefore can also facilitate parallel medical clearance processes. This dual role has prevented unsafe return to full duty for individuals cleared by OWCP (FAMS, 2013e). To avoid breaks in pay for those cleared by OWCP, FAMS nurse managers try to find them light-duty positions until medical clearance for return to full duty can be granted. FAMS medical staff also work with employees who become injured or ill outside of work to facilitate return to work for those who are removed from flight status (Lewandowski and Weeks, 2013).

Other return-to-work initiatives   Although early intervention programs such as the nurse case management programs described above may be most effective at returning injured and ill employees to work in a timely manner, return-to-work programs also should focus on removing workers from

long-standing workers' compensation case rolls. In response to separate Office of Inspector General reports on workers' compensation case management (OIG, 2007, 2012), TSA and CBP initiated programs to return employees on periodic rolls to work. CBP, for example, implemented a program whereby hiring centers consider injured workers on the periodic roll first for vacancy announcements (Masterson, 2013), although it is too early to judge the ultimate success of this initiative. TSA actively targets employees who have been on periodic rolls for 9 months or more with its Concentrated Action for Recovery, Employment and/or Case Resolution (CARE) program. This collaborative effort, which features coordination among TSA's medical director and periodic roll manager, local TSA workers' compensation coordinators, the contracted nurse case managers, and OWCP, has resulted in the resolution of 36 cases to date, achieving estimated cost savings of more than $1 million and estimated avoided future costs of nearly $30 million (Mitchell, 2013).

Measurement and Evaluation

FAMS and TSA were the only components that provided the committee with information on how they are measuring the effectiveness of their disability management programs. TSA has demonstrated the effectiveness of its contracted nurse case manager program through metrics that include average continuation-of-pay period and continuation-of-pay costs, reductions in OWCP chargeback costs, and estimated cost savings from periodic resolution of roll cases. FAMS, too, measures program effectiveness through OWCP costs but also developed a "lost mission opportunities" metric as a productivity measure with a better link to the FAMS mission (see Box 4-2). Although 2 years is not long enough to permit conclusions about trends, data from 2009-2010 show that, despite a slight increase in total incidents, FAMS achieved a 5 percent decrease in workers' compensation costs and a 20 percent decrease in lost mission opportunities, which it attributes to return-to-work efforts (FAMS, 2013b).

As DHS moves forward with its department-level medical case management program, it will need to ensure that appropriate metrics and measurement processes are established at both the component and headquarters levels to enable evaluation of program effectiveness.

Health Promotion

During the past 5 years, there has been increased emphasis on resilience and health promotion programs at DHS. One of the primary goals of the current DHS strategic plan is to enhance the DHS workforce. Listed among the four strategic objectives toward achieving this goal is to *improve*

BOX 4-2
Federal Air Marshal Service's (FAMS's) Lost Mission
Opportunities Metric: A Productivity Measure

To demonstrate to agency leadership that occupational injuries and illnesses have impacts beyond financial costs, staff of the FAMS Medical Program Section developed a Lost Mission Opportunities metric. This productivity measure estimates the number of potential FAMS flight missions that could not be executed because of injured employees out on workers' compensation or restricted duty. Thus, the metric is responsive to both injury/illness incidence rates and the effectiveness of disability management practices and is linked to the agency mission, making it a powerful communication tool. Data considered in the calculation of this metric include total number of lost and restricted duty days and average number of daily missions (from the Mission Operations Center).

SOURCE: FAMS, 2013b.

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employee health, wellness, and resilience (DHS, 2012a). Two of five key performance indicators under this objective directly address health promotion:

- Sustain established programs such as the DHS*Together* employee and organizational resilience initiative.
- Implement workplace wellness programs, including employee resilience training.

As discussed in more detail in the 2013 report of the Institute of Medicine (IOM) Committee on Department of Homeland Security Workforce Resilience, however, responsibility for health promotion is diffused across DHS (IOM, 2013), and there appears to be no coordinated approach to improving the health of the DHS workforce.

Headquarters Level

Responsibility for health promotion programs (sometimes called wellness programs)[19] at the headquarters level is divided between OHA and OCHCO, and the respective roles of each are not always clear, even to DHS staff (Hope, 2013b). OCHCO administers the department's work-life program and provides components with resources and guidance on their health promotion and employee assistance programs. OCHCO also recently initi-

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[19]For consistency, and to emphasize the health-related nature of this function, the committee uses the term *health promotion* rather than *wellness*.

ated a concurrence process for the first official DHS health and wellness policy, whose goal is to provide the department and its components with a "very general baseline" and affirm DHS's commitment to employee health and wellness. In 2009, in response to a request from Deputy Secretary Lute, OHA created the DHS*Together* program to focus on building resilience and wellness capacity throughout the department.[20] The program provides components with guidance and a limited amount of seed money for the development of tools and programs that may have wider application within DHS (IOM, 2013). Until recently, this program was a collaborative effort of OHA and OCHCO,[21] but it is now managed solely by OHA staff, and there is no clear coordination mechanism for the two offices with responsibility in this area.

Component Level

While OHA and OCHCO offer support and guidance for health promotion and resilience programs, it ultimately is left to the components to decide what level of services will be available to their workforce. The committee found that health promotion services often are combined with work-life services (financial management, legal assistance, family support), with employee assistance programs spanning these two categories and offering help with stress management, substance abuse, and mental health counseling. Common health promotion services include voluntary vaccination programs, health screening (diabetes, cholesterol, blood pressure), nutrition counseling, and online health risk assessments. In many cases, these services are outsourced to Federal Occupational Health or private contractors. Fitness is promoted in many components through fitness challenges, and in some cases by allowing employees to use work time for fitness activities;[22] fitness facilities are available at some sites (IOM, 2013).

Even though many DHS employees have physically and mentally demanding jobs, in few cases is there a clear link between health promotion efforts and readiness outcomes. In the Coast Guard, health promotion efforts are built into the mandatory annual periodic health assessment, whose

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[20]The IOM Committee on Department of Homeland Security Workforce Resilience was convened to examine this program. That committee identified a number of gaps and presented recommendations and the foundations for a 5-year strategic plan for building a more ready and resilient workforce at DHS. The committee's report is freely available for download via the National Academies Press website: http://www.nap.edu/catalog.php?record_id=18407 (accessed January 27, 2014).

[21]A staff person from OCHCO was detailed to spend 50 percent time on the program (IOM, 2013).

[22]FEMA allows employees to use 3 hours per week for fitness activities, and CBP currently is piloting a similar program (IOM, 2013).

completion is one of the Coast Guard's readiness measures. The periodic health assessment includes a health risk assessment and clinical preventive services (e.g., vaccinations), and it addresses prevention of disease and injury by focusing on prevention strategies each member can incorporate into his/her lifestyle (USCG, 2011a). FAMS currently is developing an employee health and fitness program with the goal of effecting meaningful change in both the health of its workforce and its mission readiness (FAMS, 2013c). This program is a collaborative effort of an Integrated Product Team with representation from the FAMS Medical Programs Section, the Field Operations Division, and the Law Enforcement and Industry Training Division. The program will be managed at the local level by certified trainers and will include physical fitness education and training, nutrition education, health risk assessments, sanctioned fitness events, and easily accessible online tools and resources supporting health and wellness (FAMS, 2013c).

Measurement and Evaluation

Little has been done at the component or headquarters level (within OHA or OCHCO) to understand the major health risks affecting productivity, health costs, and workforce readiness at DHS. Several components offer health risk assessments, but to the committee's knowledge, only the Coast Guard aggregates these data (for active-duty/reserve personnel only) into population health summaries that can be used to determine future programmatic needs (NMCPHC, 2012). Absent this kind of analysis, resources cannot be targeted to those risks with the largest impact, nor does DHS have the baseline information necessary to measure the effectiveness of interventions. The committee did not learn of any efforts to evaluate the effectiveness of health promotion programs or of metrics being collected for this purpose.[23] Most data collection efforts are limited to tracking of utilization. In some cases, utilization data are used to determine future program offerings.

PROVIDING MEDICAL SUPPORT FOR OPERATIONS

As discussed in Chapter 3, key functions for providing operational medical support include medical threat assessment, preventive medicine, ambulatory medical care, and emergency medical services. Because of the

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[23]The Coast Guard reported that it is waiting until its new Integrated Health Information System is implemented to establish goals and metrics and evaluate the effectiveness of health and wellness interventions. FAMS indicated that it currently is working to identify measureable quality indicators that can be used to evaluate short- and long-term outcomes of its new Employee Health and Fitness Program (FAMS, 2013c).

security-sensitive nature of such programs, however, the committee was unable to gather sufficient information to describe how each of these functions is carried out within the context of DHS operational medicine programs. In the following sections, therefore, several operational medicine programs are described more generally. This is followed by a discussion of challenges identified by the committee to the development of a coordinated DHS operational medicine capability.

Operational Medicine Programs at DHS

Headquarters Level

Among the CMO's delegated responsibilities is support for "component leadership to ensure that operations have appropriate medical support" (DHS, 2008a). OHA initiatives to this end (DHS, 2010b) include

- development of a strategy to ensure that DHS employees have robust occupational health support when they deploy in support of the DHS mission, and
- participation in planning and exercise efforts to ensure that plans and procedures provide for medical and health support to DHS responders.

Within OHA's Workforce Health and Medical Support Division is the Medical First Responder Coordination Branch, which facilitates operational medical support for mission-essential personnel. "The Branch works to identify first responder best practices; provides guidance and support for the implementation of those practices; and addresses gaps in first responder disaster planning, resources, and education" (DHS, 2013).

Within DHS are thousands of emergency medical services (EMS) providers whose primary focus is protecting the workforce during operations. Many component EMS systems were in place prior to the formation of DHS. As a result, EMS programs vary significantly across the department. OHA is working with the components represented in the Emergency Medical Services Training and Education Advisory Committee to align programs, ensure consistency with national standards, disseminate best practices and lessons learned, and improve efficiencies by sharing resources (DHS, 2012b). Through the collaborative efforts of the Emergency Medical Services Training and Education Advisory Committee, the CMO has promulgated standards and guidance materials for DHS EMS services, including the DHS Medical Services System Strategic Framework; the DHS Emergency Medical Services System Plan; and the DHS-Wide EMS Basic Life Support and Advanced Life Support Protocols, which provide floor and

ceiling standards of care for DHS EMS providers. Although this example of alignment and coordination represents a significant success for DHS, additional challenges remain for both EMS and the department's broader operational medicine capability, as discussed later in this chapter.

Component Level

Within DHS are nine components with EMS or operational medicine functions in support of their workforce: CBP, ICE, FEMA, NPPD, the Federal Law Enforcement Training Center (FLETC), TSA, Science & Technology, the Secret Service, and the Coast Guard. In USCIS, duties that fall outside of conventional workspace are carried out overseas, where employees are covered through an International Cooperative Administrative Support Services agreement with the Department of State.[24]

Customs and Border Protection   There are three primary operational offices within CBP—the Office of Border Patrol, the Office of Field Operations (Customs), and the Office of Air and Marine—all with the ability to provide medical support during operations. CBP's Advanced Training Center has its own EMS program to support training activities. In total, CBP employs approximately 1,300 EMS providers—second in number only to the Coast Guard within DHS—who are embedded in operational units to provide medical support to employees, detainees, and the public when needed (Seifarth, 2013a). The vast majority of these personnel (about 1,000) are employed by the Border Patrol. Because they often operate as a collateral duty, it has been difficult to ensure even dispersal of the medical support capability across large areas, such as the southwest border (Wilson, 2013). As a result, EMS providers are not present at all Border Patrol and Customs stations at all times. The Office of Air and Marine currently has 50 EMS providers in support of its workforce and also offers medevac capabilities.

Coordination of medical activities across the operational offices and medical direction are provided by CBP's Senior Medical Advisor, who reports directly to the Executive Director of the Joint Operations Directorate and the DHS CMO (Caneva, 2013). Medical direction is supplemented by nonfederal local medical directors because of the volume and size of the program.

Border Patrol agents work largely in high-risk and austere environments, often far from city centers and medical assistance. To address these

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[24]Some USCIS employees may be deployed temporarily to refugee areas. Refugee Corps employees who are deployed undergo Type A physicals and receive a 2-day Department of State overseas training course and a health lecture provided by Federal Occupational Health.

challenging operational realities, the Border Patrol has trained a number of specialty medical providers who are embedded within operational teams. BORSTAR, the Border Patrol Search, Trauma, and Rescue Unit, is "a highly specialized unit capable of responding to emergency search and rescue situations anywhere in the United States" (CBP, 2009, p. 1). Becoming a member of the BORSTAR unit is a collateral duty, requiring 5 weeks of academy training. Following this basic training, BORSTAR agents complete an emergency medical technician (EMT) course to be certified as a Basic EMT; some agents go on to receive additional training, including paramedic training (CBP, 2009). The BORSTAR unit works closely with Border Patrol Tactical Units (SWAT-like tactical teams) and Special Response Teams, providing medical and other support during training and operations (CBP, 2009). Currently, there are approximately 200 BORSTAR agents with minimum certification as an EMT and 24 advanced-scope practitioners who have completed a specialized austere medicine training course (Bowcutt, 2013).

Although CBP has a relatively large force of EMS providers, notably absent are medical personnel with appropriate training to handle more routine and nonemergent medical issues that arise along the southwest border and other operational areas. The committee learned that a significant personnel drain along the southern border sectors is associated with the requirement for Board Patrol agents to escort detainees to medical facilities for medical clearance (prior to turnover to ICE or Health and Human Services in the case of children) and treatment of any injuries and illnesses (Polk, 2013; Zapata, 2013). The nearest emergency departments sometimes are hours away, and the use of emergency departments for medical clearance and treatment of minor injuries has led to significant and avoidable hospital costs (approximately $13 million for emergency department visits in fiscal year 2011) (Polk, 2013; Zapata, 2013).

Immigration and Customs Enforcement   Within ICE's Management and Administration Directorate, the National Firearms and Tactical Training Unit (NFTTU) provides armory services; training; guidance; and tactical and logistical support, including medical support for operations. NFTTU's National Emergency Medical Services Program employs 50 EMTs and 3 paramedics (Davis, 2013), providing tactical medics who are embedded with ICE Special Response Teams—tactical teams "trained to conduct and/ or manage high-risk enforcement operations using specialized weapons, tactics and equipment" (ICE, 2009, p. 3). Embedded medics provide medical threat assessments in advance of operations, preventive medicine and sick call care for force sustainment, and care under fire, and assist in transporting injured persons out of the hot zone. Medical providers also can be embedded in rapid response teams to support ICE staff deployed

to disaster sites, as occurred during Hurricane Katrina (Davis and Tang, 2006). Through a partnership with the Johns Hopkins Center for Law Enforcement Medicine, ICE utilizes a contracted physician advisor to provide continuing education and training, quality assurance, and access to clinical sites (Seifarth, 2013b; Tang, 2013).

U.S. Secret Service   The Secret Service's current medical support program was conceptualized in 1999 and developed with a systems approach using the National Highway Traffic Safety Administration's criteria for EMS system development, which address training resources, medical oversight, logistics, and communications. The program provides medical support for national special security events and for protection details, both within and outside the United States. Medical direction and clinical training for practitioners are provided by the Johns Hopkins Center for Law Enforcement Medicine, which also provides referral services for occupational health issues (Stair, 2013).

To meet its operational medicine needs, particularly for national special security events, the Secret Service developed an advanced-scope Emergency Services Specialist position—paramedics trained in operational emergency medicine with a background in firefighting, hazmat, and rescue (Stair, 2013). This position enables the Secret Service to provide emergency services support in addition to emergency medicine (the capability to address hazardous materials and issues related to chemical, biological, explosive, radiological, and nuclear events, as well as rescue situations), a goal of which is to ensure greater self-sufficiency during national special security events. At national special security events, Emergency Services Specialists operate as part of three-person teams, which also include a physician and an agent, allowing them to deal with critical issues and patients where they are found. Given the small size of the Secret Service's highly trained and specialized workforce, an operational medicine capability is critical to help prevent any mission-jeopardizing personnel losses. Within its workforce, the Secret Service currently has 330 agents who are trained as EMTs, 10 of whom are advanced providers. Also notable is that all gun carriers in the Secret Service are trained as first responders as part of the core training curriculum at the U.S. Secret Service James T. Rowley Training Center (Seifarth, 2013a).

Federal Air Marshal Service and Federal Emergency Management Agency
FAMS and FEMA both employ EMS providers who can provide medical support for operations. The FAMS EMS providers have the ability to provide medical support to TSA employees at airports if, for example, a terminal must be closed off because of a security situation; during emergency situations on air flights, they may also provide emergency medical care to

members of the public. FEMA medical providers operate primarily in the context of urban search and rescue teams, providing support to team members and rescued individuals. However, these medical assets are controlled (e.g., subject to quality assurance) by the team's sponsoring agency.

Measurement and Evaluation

Continuous quality improvement in the delivery of medical support services can be facilitated by run reviews.[25] Deficiencies noted during such reviews can be used to direct future training and education efforts, thus closing the loop in the cycle of improvement. Although 100 percent run review has been easily attainable for components with low patient encounter volumes, such as ICE, others, such as CBP, have been unable to evaluate all patient encounters. With the adoption of the electronic patient care record, however, run review levels are expected to increase. The electronic patient care record also enables aggregation of other data (e.g., types of injuries, patient volume by geographic location) that can be analyzed at the headquarters or component level. This kind of data analysis could help direct training and/or resource deployment.

Challenges to a DHS Operational Medicine Capability

Among the challenges to the development of a DHS-wide operational medicine capability are the need to maintain skills and proficiency and the difficulty of advocating for appropriate resource investments.

Maintenance of Skills and Proficiency

One of the greatest challenges faced by EMS and operational medicine programs at DHS is maintaining the clinical competency of the medical providers (Seifarth, 2013a). For many providers, their role as EMTs or paramedics within their agency is a collateral duty. Additionally, since the primary medical function is force sustainment, call volumes may be very low. For example, providers in ICE's operational medicine program may encounter only nine patients on average per year (Seifarth, 2013b). In addition, team mobility poses a challenge to integrating providers into local EMS systems for continued skills training (Wilson, 2013). Despite these challenges, standards of medical care must be maintained; they are

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[25]Also called record reviews, run reviews entail reviewing patient records for "appropriateness of documentation; disease management; age-appropriate treatment and preventive care; outcome review; continuum of care review; procedures performed; and protocol management" (Medical Quality Management Instruction 248-01-001).

not subject to the mission context and operational requirements. When providers cannot meet prospectively determined standards, they must be prohibited from practicing on behalf of the department until they can reachieve those standards (Tang, 2013). Nonetheless, a liability risk arises when providers fall out of certification but are needed to provide patient care in the event of a medical emergency. In such cases, providers may act out of obligation regardless of certification status.

Some DHS providers of medical care may maintain their skills through involvement in their local community EMS system (Matthews, 2013), but DHS still must have a means of determining their competency. One of the key questions for the committee is whether the programs of DHS components are being held to different standards. Varying approaches have been taken to medical direction at DHS. At CBP, a component medical officer is providing medical direction, supplemented by local physicians across the country. Other components have outsourced medical direction. ICE and the Secret Service both use contracted medical direction provided by the Johns Hopkins Center for Law Enforcement Medicine. In the absence of a centralized policy promulgated by the DHS CMO that specifies content and benchmarks for competency assessments, different medical directors may be holding providers to different quality care standards. Of note, DHS's Medical Quality Management Directive (DHS, 2012c) and Instruction (DHS, 2012d) provide some requirements for component programs—for example, competency reviews are to be conducted at least twice per year—but do not specify assessment criteria.

Difficulty of Advocating for Appropriate Resource Investments

A second but closely related challenge reported to the committee is the difficulty of communicating the critical importance of an operational medicine capability to nonmedical component leaders who control resources. An investment is required to ensure that an adequate number of providers is available and to keep their certification up to date. Beyond the monetary investment, leadership commitment is needed to allow individuals to use work time to participate in training and clinical rotations (Tang, 2013). Border Patrol Assistant Chief David Wilson explained to the committee that with more than 1,000 EMTs and paramedics, potentially hundreds may be about to go out of certification at any given time (Wilson, 2013). In the absence of validated measures of program effectiveness and impact, convincing leadership of the need to invest resources in this capability can be a challenge. Additionally, those who understand the critical nature of such programs are not always in a position to advocate on their behalf.

INTEGRATION OF WORKFORCE HEALTH
PROTECTION FUNCTIONS AT DHS

In the preceding sections, DHS's execution of the key workforce health protection functions that make up the framework laid out in Chapter 3 is described. As asserted in that chapter, however, these key functions should not operate in silos. A review of multiple private- and public-sector organizations revealed that efficiency and synergy can be achieved through organizational and functional integration. Infrastructure that supports integration includes the doctrine (plans, policies, standards), organizational constructs (reporting structures, governance mechanisms), and resources (personnel, information management systems) that enable mission capability. Mechanisms for integration of workforce health protection functions at DHS are described below. The committee was asked to perform case studies to explore the potential impacts of an integrated infrastructure, including the estimated cost savings. In the course of its information gathering, the committee learned of a program within DHS that provides an exemplary case study of the potential benefits—to mission, to costs, and to esprit de corps—that can be achieved through an integrated workforce health protection system. This case study—of the FAMS integrated medical program—is presented at the end of this section.

Integration Across DHS Headquarters Offices

Because responsibility for workforce health protection programs currently is divided between OHA and OCHCO, mechanisms are needed to facilitate horizontal integration at the headquarters level. In accordance with DHS Management Directive 066-01 (DHS, 2008b), the CMO and the Chief Human Capital Officer serve as co-chairs of the department's Safety, Health, and Medical Council, whose purpose is to "support development of overarching safety, health and medical program policy, and the development of integrated tools and processes to support program functions" (OCAO and OHA, 2009). The Council also was intended to ensure successful coordination during an event of national significance (e.g., pandemic influenza). However, the Council currently is inactive, for reasons not clear to the committee. Prior to the departure of acting CMO J. D. Polk, there was some discussion of establishing a DHS Prevention Council in coordination with the Management Directorate that would be similar in scope to the National Prevention Council and serve a similar purpose (National Prevention Council, 2013). However, this initiative was stalled with the change in OHA leadership. On an ad hoc basis, working groups with representatives from multiple headquarters-level offices are formed to address issues with broad departmental impact. For example, OHA and

occupational safety and health staff participate in a working group with the DHS Office of Operations Coordination and Planning addressing pandemic influenza preparedness plans.

An MOU was created to delineate health program responsibilities of the Office of the Chief Administrative Officer[26] and OHA (see Appendix B). This document, dated September 30, 2009,[27] includes a list of health and medical program areas and designates the Office of the Chief Administrative Officer or OHA as having "shared, primary, or assist" responsibility for each. For example, Disaster Response is a shared responsibility, while Hazard Analysis is the primary responsibility of the Office of the Chief Administrative Officer with OHA assist. Medical Surveillance is listed as an OHA primary responsibility with Office of the Chief Administrative Officer assist. However, a footnote states that OHA responsibility is this area (and in others listed in the document) is "in an oversight role" and that the Chief Human Capital Officer "may provide services for these activities" (OCAO and OHA, 2009). It is unclear to the committee how oversight and service provision can be adequately coordinated in the absence of a functional coordination mechanism such as the Safety, Health, and Medical Council described above. In fact, the committee learned that OHA does not provide oversight for medical surveillance; monitoring of such programs for OSHA compliance is being carried out by the safety and health program staff in OCHCO.

Vertical Integration Between Headquarters and Components

Vertical integration between headquarters and components for safety and health functions is facilitated by DHS-wide policy, such as the DHS *Occupational Safety and Health Manual* (2010a), and by the DHS Safety Manager's Forum, which includes all component safety and health managers and meets periodically to discuss department-wide programs and issues of concern. OHA also has developed chartered committees (e.g., the Health Care Quality Committee) and ad hoc working groups (e.g., the Electronic Health Information System Working Group) with component representatives to facilitate vertical coordination of policy and programmatic direction. OHA global policy and standards to this end include management directives and instructions (medical quality management and medical countermeasures) and standards of care for EMS providers. More recently, Senior Medical Advisors (see Box 4-3) have been helping to address issues

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[26]The Chief Administrative Officer was the Designated Agency Safety and Health Official prior to the detailing of the safety and health program to OCHCO. The Chief Human Capital Officer has now assumed these responsibilities.

[27]Revisions to the MOU have been discussed but are currently on hold (Anderson, 2013).

BOX 4-3
The DHS Medical Liaison Officer Program

In 2011, DHS created the Medical Liaison Officer (MLO) program, whose goals are to ensure standardized and centralized medical oversight, enhance preparedness, increase medical protection, and increase health and workforce readiness. The MLO program supports Senior Medical Advisors (SMAs), physicians who report dually to the CMO and an assigned component, providing policy support and guidance on occupational health and workforce readiness issues, facilitating effective alignment of medical initiatives, and providing consistent clinical oversight throughout DHS (Patrick, 2013). SMAs create two-way information channels, conveying policies and guidance from OHA down to the component level while raising the Chief Medical Officer's awareness of components' health and medical challenges. Above all, they are advocates for workforce health protection.

There are currently five SMAs involved with the program, hired to address different areas of health or medical concern within components (e.g., fitness for duty, operational medicine). As a result, SMAs represent a broad array of background experience and training.

- Customs and Border Protection (CBP): One SMA reports directly to the Joint Operations Directorate's Executive Director, coordinating medical oversight and operational medicine activities across subcomponent agencies. A second SMA was recently hired to help integrate all occupational health functions across the Office of Human Resources Management.
- Federal Emergency Management Agency (FEMA): The SMA is stationed in the Office of Response and Recovery, reporting directly to the Associate Administrator and with access to FEMA's Deputy Administrator. The SMA's primary focus has been on fitness for duty, and he is currently working to develop medical standards and clearance processes for Incident Management Assistance Teams.
- Immigration and Customs Enforcement (ICE): The SMA is stationed in the Office of Human Capital, addressing issues related to fitness for duty, including a medical standards and waivers program.
- Transportation Security Administration (TSA): Brought in to facilitate integration of medical and health functions across the agency, the SMA is stationed in the Medical Review Programs Branch and reports directly to the Chief Human Capital Officer.

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of horizontal and vertical integration for medical programs and policies. Although this initiative is still evolving, the committee believes it has great potential to address the some of the integration challenges facing the DHS health system.

Integration Within Components

Components have used different methods to align and integrate workforce health protection functions. These methods include organizational alignment (into a single reporting structure), formation of multidisciplinary work groups (Integrated Product Teams), and information sharing through health and safety information technology systems. Examples are presented below.

In the Coast Guard, the Health Services, Safety and Environmental Health, and Work-Life offices are aligned organizationally into a single directorate, with one leader overseeing and accountable for all workforce health protection functions. Thus all health and medical policies affecting both military and civilian personnel are aligned (Dollymore, 2013). The Coast Guard currently is developing an Integrated Health Information System, which will provide for additional integration by ensuring timely electronic data capture for all workforce protection metrics currently captured by the numerous systems now in place.

In FEMA, the Safety, Health, and Medical Readiness Division creates an aligned reporting structure, facilitating integration of occupational health, environmental safety and health, and disaster operations activities (Brown, 2013; Crarey, 2013). The committee heard that this organizational configuration and regular meetings facilitate information sharing, coordination of activities, and joint planning among Branch Chiefs.

CBP has aligned all occupational health functions (although not operational medicine functions, which are managed at the subcomponent level) under the Office of Human Resources Management. However, there has been no health or medical professional with oversight responsibility to ensure functional integration. A Senior Medical Advisor recently was hired within Human Resources Management for this purpose (Caneva, 2013). CBP reported to the committee that these divisions communicate consistently to ensure coordination, although the separation of the workers' compensation and safety and health functions was noted as a disadvantage (Rupard, 2013). Interdivisional working groups, such as one established to conduct an extensive study aimed at reducing injuries and workers' compensation costs, facilitate coordination. Information technology systems also facilitate information sharing, primarily between workers' compensation and safety programs. CBP has extensive fitness-for-duty activities. The committee noted surprising separation among those coordinating preplacement evaluations, those managing fitness-for-duty evaluations for employees, and disability management functions, all of which are organizationally separated.

TSA is not organizationally aligned; its workforce health protection functions are divided between the Office of Human Capital (medical

programs) and the Office of Finance and Administration (occupational safety, health, and environment). To facilitate integration, TSA has used Integrated Product Teams, such as the Optimization, Safety, and Hazard Mitigation Integrated Product Team (comprising personnel in safety and health, workers' compensation, security operations, and development of standard operating procedures), formed to examine root causes of high injury rates and plan solutions (Segraves, 2013). Safety and health staff also partner directly with the Workers' Compensation Office, reviewing on a daily basis every injury and illness reported through the Injury Care Hotline to identify trends and provide guidance and assistance to TSA field organizations when necessary. This integration is facilitated through TSA's Safety Information System, which consolidates information on workers' compensation claims, incident analysis, safety inspections, job hazard analyses, and process risk. When an injury claim form is filed through the Safety Information System, the occupational safety and health office is immediately notified, and pertinent data are provided to each administrative function. Within TSA, FAMS has its own integrated medical program, which includes occupational safety, health and environment, as well as EMS functions. This model program, and the benefits that have been realized through integration, are discussed in Box 4-4.

OPPORTUNITIES TO ADVANCE WORKFORCE HEALTH AT DHS: GAP ANALYSIS

Although a number of successful and promising practices are identified in the sections above, the overall picture of workforce health protection at DHS is one that is marginalized, fragmented, and markedly uneven. As a result, DHS is not realizing the many benefits of integration, including increased efficiency, interoperability, and synergy. As discussed in Chapter 3, the committee examined multiple public- and private-sector organizations, and from those evaluations, as well as current best practices available in the published literature, identified four elements essential to successful integration of workforce health programs: leadership commitment to workforce health, organizational alignment and coordination, functional alignment, and information management. During its review and assessment of the current occupational health and operational medicine infrastructure at DHS (discussed throughout this and earlier chapters), the committee considered the degree to which these essential characteristics are represented. Ultimately, deficiencies in each of these areas drove the committee's recommendations in Chapters 5 through 8.

Leadership Commitment to Workforce Health

Instilling the values of safety and health into the culture of the organization was key to the success of many of the programs the committee examined. This process begins with a vision of a safe, healthy, and resilient workforce, put forth by organizational leadership committed to its realization. The gaps described throughout this chapter and summarized below indicate a need for DHS leadership to promote and resource workforce health programs, to communicate their essential role in mission readiness, and to ensure accountability across the department.

Organizational Alignment and Coordination

Organizations with integrated health systems examined by the committee took steps to ensure coordination among those with responsibility for key health protection functions, although approaches to this end varied. Some combined all workforce health protection functions into a single reporting structure, while others with segregated health protection functions instituted measures designed to ensure alignment through systematic communication and coordination. DHS has not adequately executed either of these two approaches to organizational alignment, even though there is much shared responsibility among headquarters offices and components for workforce health protection functions to support mission readiness. Most notably, the respective responsibilities of OHA and OCHCO often are unclear, and coordination mechanisms are inadequate. Vertical integration is impeded by the absence of clear health leaders at both the headquarters and component levels. Achieving optimal readiness requires close coordination of activities frequently located in separate silos at DHS headquarters and within components. The degree of organizational alignment varies across the department, and as a result, a disconnect often exists between programs that should be working hand in hand.

Functional Alignment

Large, dispersed organizations in both government and the private sector rely on standards and global policies to ensure that operational units are achieving expectations for workforce health protection throughout the organization. The committee noted significant variability in the implementation and resourcing of workforce health protection programs across DHS. Although variability is not unexpected for such a large and diverse organization, failure to ensure consistency in certain critical functions represents a liability for the agency. The committee identified a paucity of global health and medical policies and standards with which to set clear expectations and

BOX 4-4
Case Study on the Federal Air Marshal Service: Promoting and Maintaining a Culture of Health, Safety, and Readiness

The Federal Air Marshal Service (FAMS) is an operating unit of the Transportation Security Administration (TSA). Although FAMS has a history dating back to 1962, it has expanded significantly since the events of September 11, 2001. It is charged today with providing security aboard civilian commercial aircraft flying both domestically and internationally. Its agents are fully qualified and armed law enforcement officers. They provide round-the-clock coverage to fulfill this critical population safety mission and must be healthy both mentally and physically to discharge their responsibilities. Lost time due to injuries and other occupational health events can degrade the agency's capability to carry out its mission.

Accordingly, beginning in 2007, an integrated program of activities related to nurse case management, fitness for duty, and workers' compensation was initiated. This program, which is overseen by an internal medical director, was developed after extensive review of the literature and best practices in occupational safety and health in both the public and private sectors, which informed the policies and program design. The program is characterized by the use of defined standards and frequent review of program performance. The primary metrics focus on processes (e.g., timely and appropriate activities of the nurse case managers, such as ensuring contact with an injured agent within 48 hours of the injury) and outcomes (e.g., decreases in time lost due to injury, fitness of agents both individually and collectively against standards, workers' compensation costs). Ultimately, the availability of agents for mission days is the most important metric to both the program and agency leadership. Between 2009 and 2010, through the efforts of its integrated nurse case management program, FAMS achieved a 20 percent reduction in lost mission opportunities, as well as a 5 percent reduction in workers' compensation costs (approximately $500,000) (FAMS, 2013b).

The FAMS program has been highly integrated, involving daily collaboration of personnel in nurse case management; workers' compensation; and occupational safety, health, and environment. This high level of integration—promoted by leadership commitment and a strong culture of health and safety, even though the Office of Workers' Compensation Programs (OWCP) is organizationally separate from the other two groups—permits real-time injury investigations and shared communications.

An important feature of the program since its inception has been the integration of information and planning between the in-house nurse case managers and the OWCP coordinator. Clinical staff and the administrative coordinator for OWCP are collocated and meet both formally and informally on a routine basis to review individual cases and collective performance. This review includes an analysis of the types, frequency, severity, and impact of various causes of lost work time. This

information has been used to improve rehabilitation and prevention activities in a targeted manner (e.g., changing training practices), thereby reducing injuries and workers' compensation claims, speeding recovery, and improving mission readiness. Use of this information also has resulted in a reduction in costs, although the recent relocation of the OWCP coordinator from the FAMS reporting structure back to TSA central offices has disrupted communications, and increases in workers' compensation costs have since been noted.

The involvement of line supervisors was an important and early success of the program. Routine in-service education of supervisory agents is provided. Timely and concise discussion of individual cases takes place between the nurse case managers and supervisors to ensure a clear understanding of patient needs and limitations while respecting the patient's privacy and concerns regarding adverse job actions. This communication strategy has engendered strong support for the program among supervisors and consideration of individual patient needs, and enhanced the trust relationship between patients and nurse case managers.

The nurse case manager's role is critical and multifaceted. FAMS employs these occupational health nurses directly to maximize their involvement and familiarity with the agency's mission and medical requirements, as well as the needs of its employees. The nurses have demonstrated clinical acumen and developed strong patient relationships that have made them a trusted part of the workforce. This close and lasting relationship has contributed to increased communication, improved reporting, enhanced patient education and recovery planning, and more effective recovery from work-related health issues.

Another exemplary feature of the program is the Employee Health and Fitness Program, recently initiated through a partnership among the FAMS Medical Programs Section, the Field Operations Division, and TSA's Law Enforcement and Industry Training Division (FAMS, 2013c). This comprehensive employee wellness program has as its goal achieving improvements in employee health that will ensure mission readiness. The program will employ workplace illness data as well as individual health risk assessments to design and implement targeted health education (e.g., nutrition education, stress reduction, fitness knowledge) and fitness training and activities. Metrics have been developed with which to assess the program's impact on both individuals and the overall success of the agency's mission.

In summary, this integrated FAMS program has utilized medical and public health best practices to assess and improve the health of the agency's employees. It has integrated fitness-for-duty evaluation, workplace and job task assessment and modification, return-to-work practices, and workers' compensation management. It has used targeted metrics and assessments to measure and improve its performance. Finally, it has carried out an important function in ensuring that the agency can successfully fulfill its mission of providing security aboard civilian aircraft in difficult and demanding times.

the absence of mechanisms to ensure that core quality and performance requirements are being met by all components as major barriers to DHS's realization of an integrated health protection infrastructure.

Information Management

The sharing of information and knowledge throughout an organization is essential to breaking down silos and promoting integration. To this end, systematic data collection is required at the component level, along with mechanisms for consolidating information from across the enterprise. DHS has not implemented systems to meet either of these requirements. As a result, it has little in the way of a global-level view of employee health, safety, and readiness or knowledge regarding the major, cross-cutting impediments to achieving those outcomes. Unless this gap is addressed, a unified approach to advancing workforce health across the department cannot be achieved.

Organization of the Committee's Recommendations

The gaps described above represent significant barriers to DHS's ability to optimize its mission readiness by promoting and sustaining the health, safety, and resilience of its workforce. In the following chapters, the committee provides recommendations on steps DHS can take to address these gaps. The need for committed senior DHS leadership is first and foremost, as discussed in Chapter 5. The recommendations in Chapter 6 lay out a path for achieving organizational alignment through consolidated reporting structures and strong coordination mechanisms. In Chapter 7, the committee provides recommendations on how DHS can align critical functions that support mission readiness through global policies and programs that set clear expectations. Finally, in Chapter 8, recommendations focus on integration through the implementation of a systems approach to health and safety information management.

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5

Leadership Commitment
to Workforce Health

"Health programs are most effective when organizations are ideologically and practically committed to supporting them, and when their successful execution is built into the very framework of the overall mission."

—*National Business Group on Health (2006, p. 2)*

The importance of leadership commitment to the health of the workforce cannot be overstated. In contrast with the military and other organizations in which senior leadership has risen through the ranks, agency heads in civilian federal agencies are political appointees, many of whom have never worked within that organization or even the federal government. Thus they lack an intimate knowledge of workforce issues within the organization. Additionally, as political appointees, their time in office usually is quite limited, so efforts may be focused on a few key agenda items. This political reality is unlikely to change; nonetheless, a Secretary who recognizes the critical importance of a healthy, high-functioning workforce has the opportunity to enable the creation of safety and health policies and processes that can endure, eventually catalyzing the transformation to a culture of health that is itself resilient in the face of the dynamic nature of agency leadership. This chapter provides an overview of the current strategic approach to workforce health at the Department of Homeland Security (DHS) and makes the case for a new workforce health protection strategy guided by a unified vision and supported by deeply committed senior leadership.

THE NEED FOR COMMITTED LEADERSHIP

Commitment of high-level leadership is crucial to the development, implementation, and sustainability of all organizational initiatives, including those related to workforce health. As discussed in Chapter 3, leadership commitment has played an important role in the development of successful

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workforce health protection programs in the government agencies and private organizations examined by the committee. So, too, can departmental leadership committed to the workforce help institute a culture of health throughout DHS. Without committed leaders, workforce health programs may lag behind other initiatives deemed more important to leadership.

Although commitment of leaders at the highest levels is critical to creating a lasting program, such an endeavor cannot succeed without the commitment of leadership on the ground. As noted by the National Institute for Occupational Safety and Health (NIOSH) (2008, p. 1), supervisors and managers at all levels "are the direct links between the workers and upper management and will determine if the program succeeds or fails," and therefore must be engaged in the process. High-level leadership that demonstrates vocal and active commitment to protecting workforce health will help initiate a culture of health throughout the department, while leaders that interact with the workforce will help diffuse and sustain such a culture.

THE CURRENT STRATEGIC APPROACH TO WORKFORCE HEALTH AT DHS

Although merged under the DHS umbrella, component agencies operate in a decentralized manner. The desire for autonomy to fulfill unique mission requirements creates tension between components and headquarters elements. The role for departmental leadership, then, is to ensure that components unite around a common mission. As described in the *Department of Homeland Security Strategic Plan: Fiscal Years 2012-2016* (DHS, 2012, p. 2), the vision that guides the department is "a homeland that is safe, secure, and resilient against terrorism and other hazards." To ensure that this vision is realized, DHS has five specific missions: to prevent terrorism and enhance security, to secure and manage the nation's borders, to enforce and administer the nation's immigration laws, to protect cyber networks and critical infrastructure, and to build resilience to disasters (DHS, 2012). Each of the operating components contributes to one or more of these missions.

The accomplishment of these missions requires a strong and mature DHS. A 2010 DHS bottom-up review identified as one of three principal areas for focus the need "to strengthen the department's ability to execute its mission responsibilities, run itself, and account for the resources that have been entrusted to it" (DHS, 2010a, p. 2). Meeting this need requires efforts to improve management, policy, and functional integration, but also to ensure that the DHS workforce is engaged and ready to carry out the above missions. To this end, the Strategic Plan includes a goal to enhance the DHS workforce by improving employee health, wellness, and resilience. Under this goal, five expectations are listed:

- Sustain established programs like the DHS*Together* employee and organizational resilience initiative.
- Implement Workplace Wellness programs, including employee resilience training.
- Create a standardized, metrics-driven health program to support the unique needs of our operational workforce.
- Implement frontline medical programs to support operational missions, staffed and supported with appropriate training and equipment.
- Establish a department program to harness the insights and innovations of the DHS workforce. (DHS, 2012, p. 25)

Cascading from the DHS Strategic Plan are the goals laid out in the Office of Health Affairs' (OHA's) Strategic Framework, one of which is to "protect the DHS workforce against health threats" (DHS, 2010b, p. 19). Under this goal, strategic objectives for OHA include

- unifying and standardizing the occupational health and workforce health protection activities across the department, which includes consolidating occupational medicine contracts, administering a department-wide medical quality assurance program, and developing guidance for personnel programs (fitness-for-duty, return-to-work, medical screening, and immunization programs and medical exam protocols);
- building resilience across the DHS workforce; and
- supporting DHS operational medical forces.

Germaine to this report as well is OHA's goal to "provide expert health and medical advice to DHS leadership" (DHS, 2010b, p. 12). In addition to providing advice to the Secretary and the Federal Emergency Management Agency (FEMA) Administrator, as required by statute, OHA provides policies and guidance to DHS components regarding the quality and standards of the health care offered by the department to those in its workforce, as well as to those in its care or custody.

The authority of the Chief Medical Officer (CMO) to deliver on the above objectives, goals, and strategies was initially provided in DHS (2008) Delegation #5001, *Delegation to the Assistant Secretary for Health Affairs and Chief Medical Officer*. However, the committee saw no evidence that this direction has been either renewed or enforced or that the CMO is held accountable for meeting the strategic objectives intended to support the Secretary's goal of improving employee health, wellness, and resilience.

Notably absent from the DHS Strategic Plan is a strategic objective to reduce injuries and illnesses throughout the department through traditional

occupational safety and health practices—this despite the fact that DHS has the highest rate of occupational injury and illness of all cabinet-level federal agencies and that more than one-third of its employees who responded to the Federal Employee Viewpoint Survey indicated that they do not feel protected from health and safety hazards on the job (OPM, 2012). It is important to note that occupational injury and illness rates are not uniformly high across all DHS component agencies (OSHA, 2013). This variability is related to the differing missions and operational conditions faced by employees in different component agencies, but it also reflects variability in components' employee health, safety, and medical programs. The committee concludes that DHS lacks a unified vision and comprehensive strategy for ensuring the delivery of key health, safety, and medical support services department-wide in a consistent and coordinated manner. Although a DHS Workforce Strategy was issued to improve and integrate employee recruitment, development, and retention efforts (DHS, 2011), the strategy does not address the promotion and protection of employee health, safety, or resilience as a critical means of sustaining an engaged workforce.

A COMMITMENT TO WORKFORCE HEALTH

As discussed in Chapter 3, assessments of employee health and safety programs in both the private and public sectors have demonstrated significant increases in employee morale, efficiency, and effectiveness with the implementation of robust programs fully supported by leadership (Cecchine et al., 2009; Isaac, 2013). Strong leadership providing clear direction is necessary to both the design and delivery of the health, safety, and medical policies and programs of a large, diverse organization such as DHS. A formal strategy, guided by a vision statement directly linked to the organizational mission, can provide that direction while also demonstrating the commitment of top leadership to employee health, safety, and resilience. Despite strategic aspirations to improve employee health, safety, and resilience, the committee found no evidence of a defined strategic plan for achieving that outcome or processes put in place to hold department leadership accountable for doing so. The committee believes that DHS leadership should make a clear and high-level statement of the value of protecting and enhancing the health and safety of its workforce—a key role and responsibility of DHS leadership for which ultimate responsibility lies with the Secretary. Therefore, the committee believes that the Secretary should lead efforts to infuse health and safety into the DHS culture and operational framework.

> **Recommendation 1:** *Demonstrate leadership commitment to employee health, safety, and resilience through a unified workforce health protection strategy.*

The Secretary of the Department of Homeland Security (DHS) should demonstrate a robust commitment to the safety, health, and resilience of the workforce, essential to mission readiness, by adopting and promoting a unified workforce health protection strategy. To guide this strategy, the committee recommends the adoption of the same vision statement proposed by the Institute of Medicine Committee on Department of Homeland Security Workforce Resilience:

> **"A ready, resilient and sustainable DHS workforce working to ensure a safe, secure, and resilient nation." (IOM, 2013, p. 65)**

Visible leadership commitment to this vision, demonstrated routinely across all levels of DHS, is essential to success. Heads of federal agencies have ultimate responsibility for their employees. Therefore, the strategy should communicate the Secretary's commitment to the health, safety, and resilience of those charged with achieving the DHS mission, while holding leadership of the component agencies accountable for implementing and adequately resourcing workforce health protection programs that are consistent with DHS policies and standards.

Suggested Goals for a DHS Workforce Health Protection Strategy

To ensure accountability, the strategy proposed above should include specific measurable goals and objectives with associated performance metrics. The committee suggests the following goals:

- Consistently and significantly increase the number of DHS personnel who are engaged and medically ready to participate fully in operations and achieve the goals of their mission.
- Maintain an operationally ready medical workforce to support planned and contingency operations and to ensure that timely care is available to those in DHS care and others impacted by DHS operations.
- Ensure that all medical services provided by DHS employees and contracted support staff during work hours meet medical quality standards.
- Provide all DHS employees with a safe, healthy, and productive working environment.
- Support the timely recovery and return to work of injured and ill employees.
- Develop an information technology and informatics capability to enable real-time situational awareness regarding progress toward the above goals.

Implementation

Because the strategy will address issues that span health and personnel programmatic areas and will require input and buy-in from component leadership, the committee recommends that the DHS Health, Safety, and Medical Council (reconstitution of which is addressed in Recommendation 6) be charged with development of the strategy, which should then be signed, adopted, and promoted by the Secretary. The Council should, during periodic meetings, receive updates on progress toward the strategic goals and update the strategy as needs and challenges evolve. The committee believes the existing DHS Workforce Strategy could serve as a model for a workforce health protection strategy and intends the two to be complementary in helping DHS achieve its mission through development, support, and protection of its workforce.

Due diligence required in the development of a new strategic approach includes

- characterization of the current capability to deliver health, safety, and medical services in each component;
- determination of component-specific critical and ongoing health, safety, and medical program needs;
- development of a plan for closing the gaps in capability/capacity (e.g., personnel, training, licensure);
- identification of best practices that can be expanded to other operational units as appropriate;
- development and launch of a health performance metrics tool to ensure leadership accountability; and
- development of a communication strategy to convey the commitment of DHS to the health and safety of its employees.

The information in this report on the current capability of DHS to deliver health, safety, and medical services is intended to assist the Secretary in addressing several of the above requirements.

Ensuring Accountability

There are two common mechanisms by which decentralized organizations like DHS can ensure that a central vision and strategy are adopted by its component agencies: (1) centralized budgetary control, and (2) incorporation of measures of performance toward departmental strategic goals into component leadership performance evaluations. Budgetary control is not centralized at DHS; components receive separate appropriations from Congress. However, DHS does use a planning, programming, budget, and

execution process (see Figure 5-1) to link resource allocations to departmental strategic goals and objectives (DHS, 2006). In this process, the execution of departmental strategy is monitored through metrics to link expenditures with expected performance toward each of the strategic objectives. Such metrics can be included in annual performance evaluations as a means of holding department leadership, including component heads and the CMO, accountable for program execution. To ensure accountability at all levels, program-level goals and performance measures should cascade down from those at the strategic level and should be tailored to the individual's level of responsibility.
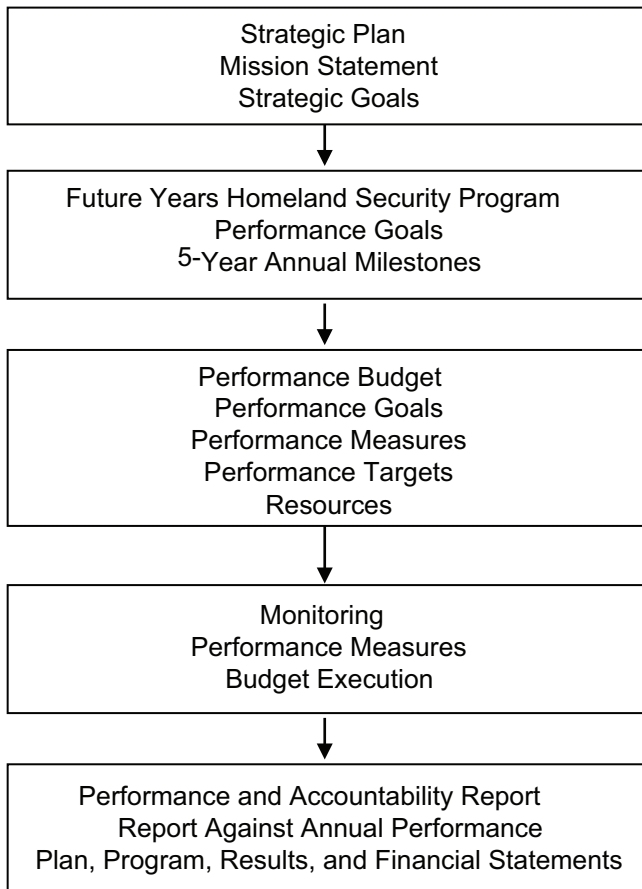

FIGURE 5-1 DHS planning, programming, budget, and execution process.
SOURCE: DHS, 2006.

The committee suggests that implementation of the proposed workforce health protection strategy follow the approach used for the DHS Workforce Strategy. DHS components should develop action plans describing component-specific activities in support of the strategic goals and objectives, using clear and measurable metrics to demonstrate progress. Component health leadership should provide reports on progress toward the achievement of component goals and objectives to the CMO and the reconstituted Health, Safety, and Medical Council. The Secretary should direct component leadership to include workforce readiness, as a key outcome of the strategy, in their performance plans.

To track successful execution of the strategic plan as required for the planning, programming, budget, and execution process and to ensure leadership accountability, DHS requires a multivariate tool for assessing performance across the department. A balanced scorecard is one example of a multivariate tool that has been used for these purposes by a number of federal agencies, especially within the Department of Defense (DoD). Originally, this tool was intended to enable business performance evaluation from four different perspectives: financial, customer, internal business, and innovation and learning (Mohamed, 2003). As Rohm (2008) explains, the intended purpose of the balanced scorecard, and therefore how it is used, varies between people and organizations. Whereas some management experts view the balanced scorecard as "simply a performance measurement framework for grouping existing measures into categories, and displaying the measures graphically," others view it as "a robust organization-wide strategic planning, management and communications system … that align[s] the work people do with organization vision and strategy, communicate[s] strategic intent throughout the organization and to external stakeholders, and provide[s] a basis for better aligning strategic objectives [action plans] with resources" (Rohm, 2008, p. 1). The committee takes that latter view, believing the balanced scorecard readily lends itself to a strategy map for the overall organization and could be used to help align DHS and its components behind a shared vision of success for occupational health and operational medicine.

Major components of a balanced scorecard system include engaged leadership; interactive communications and change management; vision and mission; core values; organizational strengths and weaknesses; customers and stakeholders; customer value proposition; strategic objectives; strategy mapping; performance measures, targets, and thresholds; strategic initiatives; performance information reporting; department and individual scorecards; rewards and recognition programs; and evaluation (Rohm, 2008, p. 2). By linking the key components through use of a balanced scorecard approach, the agency will be able to benchmark its progress and improve its performance.

There are several advantages to using a balanced scorecard approach to evaluate strategic objectives, processes, and technology. The approach enables leadership to evaluate whether objectives are being met; permits stakeholders to determine near-, mid-, and long-term objectives; and supports strategic action to match desired outcomes (Bowen, 2011). The disadvantage is that forethought is required to determine the desired metrics and link them to specific goals and objectives (Bowen, 2011). A critical issue in the use of the balanced scorecard approach is that information being tracked must be applicable to the needs of components as well as the overall department; otherwise, the metrics will be meaningless. A core set of metrics may apply to all DHS components, but some metrics applicable to the specific components and their missions may need to be developed.

The committee believes that with periodic reviews of the scorecard at the department and component levels, leadership will be held accountable and ensure action to meet selected targets, as well as to create an environment that is conducive to learning and continuous improvement. The value of a scorecard system comes from continuous refinement, discovery, and analysis. The Coast Guard's Health Services Strategic Plan (USCG, 2011) provides a useful model for the use of a balanced scorecard to track progress toward specific objectives for strategic goals (see Appendix C).[1]

Effecting Organizational Change

In large, complex organizations, there are three major forms of organizational control—first-order, second-order, and third-order. First-order control comes through direct supervision; second-order control is exerted through the use of standards (e.g., standard operating procedures); and third-order control, arguably the strongest form, is achieved through culture (Sutcliffe, 2013). All three forms of control will be necessary to ensure the DHS-wide adoption of forward-looking policies for prevention, health protection, and performance. As expressed by the Institute of Medicine's Committee on Department of Homeland Security Workforce Resilience, leadership, communication, and culture are the foundational elements needed to support DHS in its efforts to achieve its full potential (IOM, 2013). Leadership plays a vital role in creating the cultural identity (i.e., norms and values) that drives organizational performance (Gantner, 2012). Ingraining the value of a safe, healthy, resilient, and ready workforce in the

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[1] The committee does not intend to suggest that DHS should adopt the specific metrics included in the Coast Guard's measurement framework but provides it only as an example of a tool that can be used for tracking progress on strategic goals and objectives and for accountability purposes. Many of the metrics used by the Coast Guard would be specific to that agency and would not be appropriate for other DHS components.

culture of DHS will require commitment, concerted effort, and consistent communication from the Secretary regarding the vital importance of workforce health protection.

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6

Organizational Alignment and Coordination

Workforce health protection is a critical element of an agency's mission support architecture and must function as part of a larger management system that includes human resources, financial management, information systems and communications, acquisition planning and management, facilities management, and logistics; these elements together enable mission execution (Allen, 2012). Since its beginning, the Department of Homeland Security (DHS) has faced many challenges related to the horizontal and vertical integration of these various management functions (GAO, 2012a,b). In response to a 2009 charge by the Secretary to create "one DHS," the Under Secretary for Management developed an Integrated Strategy for High Risk Management that provides a plan and performance measures for horizontal and vertical integration of the department's management functions (DHS, 2013b). Despite its clear role in mission support, however, workforce health protection has not been included in larger management system integration efforts at DHS.

DHS operates using a matrix management approach whereby functional leaders (e.g., human resources) in the components receive direction both from component line leadership and from the functional leader at the DHS headquarters level (e.g., the DHS Chief Human Capital Officer). Despite the advantages of this approach, such as improved information sharing across organizational units (Ford and Randolph, 1992), challenges can arise, including confusion regarding authorities, turf battles, and loss of accountability (Bartlett and Ghoshal, 1990). At DHS, ensuring employee health under a matrix management structure is further complicated by the absence of a single leader for health functions at both the headquarters and,

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in most cases, the component level. This chapter presents the committee's recommendations for how DHS can achieve organizational alignment and coordination to support the integration of its workforce health protection functions.

ALIGNMENT OF HEADQUARTERS OVERSIGHT FUNCTIONS

The committee was asked to consider the centralized department oversight authority required to ensure an integrated health protection infrastructure. Based on its assessment (described in detail in Chapter 4), the committee concludes that (1) the fragmentation of workforce health protection functions and the lack of sufficient delegation of authority to the Chief Medical Officer (CMO) have resulted in ambiguity and uncertainty regarding roles and responsibilities; and (2) the absence of formal mechanisms for coordination and communication has resulted in stovepiped workforce health protection functions, contributing to inefficiency, a lack of accountability and transparency, and missed opportunities to achieve synergy through integration. To realize the vision of a ready and resilient workforce (IOM, 2013), DHS needs to align its resources with its strategic objectives, develop performance metrics, and hold its health and line leadership accountable for the health of its employees. Meeting these needs is extraordinarily difficult in a fragmented organization. It is not enough to ensure that the key operational functions exist; the organizational construct needs to support their integration. In the following sections, the committee presents different authority structure models derived from an analysis of successful systems in other organizations and its findings on the integration challenges associated with the current model at DHS. Based on an analysis of alternative oversight mechanisms to better promote integration, including both segregated and aligned approaches,[1] the committee concludes that achieving an integrated health protection system will require organizational alignment such that there is oversight from a centralized health authority who can serve as an advocate for workforce health protection.

Models for Oversight Mechanisms to Promote Health System Integration

Integrated management systems for workforce health are multidisciplinary in nature, requiring input from those with expertise in health,

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[1]As the committee uses these terms, *segregated* refers to an approach whereby employee health-related responsibilities are split between two headquarters-level offices (Office of Health Affairs [OHA] and Office of the Chief Human Capital Officer [OCHCO]), whereas *aligned* refers to a reporting structure whereby managers for all health-related functions report directly to a single leader within one office.

safety, human resources, legal requirements, and operations. Consequently, it can be challenging to determine the optimal arrangement of responsibilities for health protection functions across multiple stakeholder entities. In the course of this study, the committee examined the organizational and authority structures for employee health programs in multiple public- and private-sector organizations to identify general mechanisms for ensuring integration (described in more detail in Appendix E). From this assessment, two general mechanisms emerged: (1) shared oversight of segregated functions, and (2) aligned reporting structures. Both have advantages and disadvantages. Determining how best to divide responsibility for different functions is a major challenge associated with the segregated model, whereas determining optimal organizational context (leadership and organizational placement) can be difficult with an aligned model. These two models are discussed in more detail below. Although the committee tried to include a diverse set of organizations in its analysis, it acknowledges that other models might have been identified with a larger sample.

Model 1: Shared Oversight of Segregated Functions

In several of the organizations reviewed by the committee (e.g., Johnson & Johnson [J&J], Procter & Gamble [P&G], the National Aeronautics and Space Administration [NASA], and the Department of Defense [DoD]), employee health and wellness programs are organizationally segregated from safety programs, and integration is achieved through coordinated, global policies and standards that apply across all component agencies (or business units) and are developed by an oversight council that brings the heads of both groups together. The committee noted that under this model, safety functions, which are inherently operational in nature, often are overseen by operational units (e.g., supply chain operations, mission assurance).

At J&J, employee health and wellness programs (including health promotion, mental health, travel health, medical surveillance, and health clinic services) are aligned and integrated under the global medical director, but safety (injury prevention) and industrial hygiene programs are managed separately. The global medical director reports through human resources, while the head of safety reports through supply chain operations. To ensure integration of global policies and standards, both sit on an Environmental Health and Safety Leadership Council (Isaac, 2013).[2] Similarly, at NASA, safety falls under the Safety and Mission Assurance Directorate, but all other employee health protection and promotion functions (e.g., occupational health, environmental health, health physics, physical fitness and health promotion, workers' compensation, and employee assistance)

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[2]The health system at P&G is organized similarly to that of J&J.

fall under the Office of the Chief Health and Medical Officer. Both report directly to the NASA Administrator (NASA, 2013).[3] The Chief Health and Medical Officer—who is also the NASA Designated Agency Safety and Health Official (DASHO)—and the Chief Safety and Mission Assurance Officer are both members of the Mission Support Council, which facilitates senior management involvement in and oversight of NASA's occupational safety and health program (NASA, 2012). At DoD, responsibilities for workforce health protection fall under two separate Under Secretaries of Defense (USDs): the USD for Acquisition, Technology and Logistics and the USD for Personnel and Readiness. The Office of the USD for Acquisition, Technology and Logistics has primary responsibility for safety and occupational health policy, while the Office of the USD for Personnel and Readiness is responsible for DoD's medical programs and for programs and budget related to occupational health aspects of the Defense Health Program. The Defense Safety Oversight Council, which is chaired by the USD for Personnel and Readiness, helps ensure coordination among these offices (Cecchine et al., 2009).

Model 2: Aligned Reporting Structures

In the second model, workforce health protection functions, including safety, are aligned into a single reporting structure. Organizations with aligned health protection functions that were reviewed by the committee included the Department of the Interior (DOI), the Smithsonian Institution, and the Johns Hopkins Medical Institution and University. It should be noted that workers' compensation is included in this aligned structure only for the Johns Hopkins system; in the other two cases, this function is managed within human resources, although DOI occupational medicine personnel offer support for such programs by conducting case reviews (DOI, 2013). Neither DOI nor the Smithsonian has a designated CMO or medical director, although both organizations employ physicians to direct occupational health programs that are part of the aligned health protection reporting structures.

At DOI, occupational safety and health and occupational medicine functions are aligned within the Office of Occupational Safety and Health, the director of which is also the Executive Director of the DOI DASHO Council—a high-level decision-making body comprising the department DASHO and the bureau-level DASHOs. The Smithsonian aligns occupational health, safety, environmental management, and fire protection under the Director for the Office of Safety, Health and Environmental Management. At Johns Hopkins, a large multicenter academic and medical institution, the

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[3]The NASA Administrator is the agency head.

safety, occupational medicine, environmental health, workers' compensation, and employee assistance programs are all aligned under the Executive Director for Health, Safety and Environment, who is also the Chair of the Joint Committee for Health, Safety and Environment and the Occupational Medicine Division Director (Bernacki, 1999).

The Current DHS Oversight Model for Workforce Health Protection Functions

As described in earlier chapters and delineated in Table 2-2 in Chapter 2, current workforce health protection and promotion activities at the DHS headquarters level are divided between two mission support offices: the Office of Health Affairs (OHA) and the Office of the Chief Human Capital Officer (OCHCO), the latter being located within the Management Directorate. Briefly, health protection responsibilities under the CMO encompass primarily medical quality management, medical support for operations, medical countermeasures, employee resilience programs, and medical readiness functions, whereas programs located within OCHCO include occupational safety and health, workers' compensation, disability management, and health promotion. This organizational and authority structure most closely resembles the segregated model described above, although the division of health and medical functions between offices is a notable difference (for example, medical surveillance and medical case management are overseen from within OCHCO, but other medical functions are the responsibility of the CMO). Even in other organizations examined by the committee where safety (and in some cases, industrial hygiene) is overseen by an operational unit, medical functions are generally collocated. Additionally, in contrast with the organizations described above employing a segregated model, safety functions at DHS currently are not overseen by an operational entity.

Like other organizations with segregated employee health protection programs, DHS established an oversight council to promote functional integration. A 2008 DHS Directive (066-01; see Appendix B) directed the formation of a DHS Safety, Health, and Medical Council to facilitate the coordinated formulation of department-wide health, safety, and medical program policy and the development of integrated tools and standardized processes to support program functions (OCAO and OHA, 2009). The Council was to be co-chaired by the CMO and the DASHO—currently the

Chief Human Capital Officer[4]—and attended by the component Designated Safety and Health Officials (DSHOs).[5] However, the committee learned that the Council has been inactive for more than a year (Anderson, 2013), although no explanation was provided as to the reason for this.

Integration Challenges Associated with the Current DHS Health System Model

As discussed in earlier chapters, the Secretary has delegated authority to the Assistant Secretary for Health Affairs, who is also the DHS CMO, to exercise oversight over all of the department's medical and public health activities (see Appendix B for a full description of the authorities vested in the CMO under Delegation #5001). This delegation was initiated in 2008 and has not been reviewed or revised to reflect more than 5 years of experience and changing circumstances. A memorandum of understanding was put in place in September 2009 (see Appendix B) to delineate more clearly the responsibilities of OHA and the Office of the Chief Administrative Officer (whose responsibilities have now been assumed by the Chief Human Capital Officer). However, the matrix designating lead and shared responsibilities for each program was found to be inaccurate with regard to actual current responsibilities. For example, health promotion is listed as an OHA responsibility, but policy and guidance for health promotion currently are led by the Human Capital Policy and Programs Division within OCHCO.[6] A revision process was initiated but was interrupted by management turnover within OHA.[7]

The memorandum of understanding lists several functions for which the CMO has primary responsibility in an oversight role, but the provision of services themselves may be carried out through OCHCO (OCAO and

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[4]Under Directive 066-01, the DHS Safety, Health, and Medical Council was to be co-chaired by the CMO and the Chief Administrative Officer, who initially served as the DASHO for the department. When the DHS occupational safety and health program was detailed from the Office of the Chief Administrative Officer to OCHCO, the Chief Human Capital Officer assumed the title of DASHO and the attendant responsibilities.

[5]The committee found that the organizational placement of the DSHOs varied across DHS, but as defined by Executive Order 12196, these officials are responsible for agency occupational safety and health programs and must have "sufficient authority to represent the interest and support of the agency head."

[6]At former Secretary Napolitano's request, OHA established a workforce resilience program, which the Institute of Medicine (IOM) Committee on Department of Homeland Security Workforce Resilience found to be isolated from other workforce health promotion initiatives run by OCHCO.

[7]E-mail communication, K. Anderson, DHS OCHCO, to A. Downey, Institute of Medicine, regarding proposed changes to OHA-Office of the Chief Administrative Officer memorandum of understanding, March 7, 2013.

OHA, 2009). In the absence of formal mechanisms for interaction between the two offices, it is unclear how the intersection of these responsibilities can be managed effectively. A current initiative to improve medical case management at DHS provides an example of how the CMO lacks visibility and strategic input with respect to the health-related functions currently administered through OCHCO, including medical functions for which the CMO has delegated oversight authority. The committee learned that a department-wide program to facilitate early medical case management for employees who have filed workers' compensation claims is being established and will be managed at the headquarters level by the Workers' Compensation Program Manager and Policy Advisor within OCHCO (Myers, 2013). Despite the fact that oversight authority for return to work was delegated to the CMO, OHA is not involved in the administration of this program.[8] As there are no medical personnel within OCHCO, a contracted medical officer will be responsible for medical oversight of case managers (DHS, 2013a). Reliance on contracted medical support for functions that could be overseen by in-house medical authorities contributes to a lack of role clarity for the CMO, diminishes the authority of the position, and poses a barrier to ensuring integration of outsourced functions into an overarching DHS health protection strategy and system.

Although personnel from OHA and the occupational safety and health (OSH) office continue to collaborate on policy development, accident investigation, and preparedness planning in the absence of formal and regular coordination mechanisms (Anderson, 2013), such interaction occurs on an ad hoc basis, resulting in redundancy and missed opportunities for synergy. During testimony at the committee's first meeting, the DHS Safety Manager commented that OHA and the OSH office sometimes "lean forward simultaneously and start in parallel directions on something that comes up…. Our chief people ask us the same question that their people do. We both end up working on the answer independently and needlessly" (Anderson, 2013). Such inefficiencies could be reduced by high-level coordination through established governance mechanisms (e.g., the Health, Safety, and Medical Council) and through the development of a unified strategic approach to workforce health protection. A unified approach would need to be guided by a clear picture of employee health status and needs throughout the department and would require executive-level decision making regarding strategic prioritization and resourcing. It is not clear how this could be achieved in the absence of communication between the DASHO and the CMO.

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[8] E-mail communication, I. Hope, DHS OHA, to A. Downey, Institute of Medicine, regarding medical case management program, August 12, 2013.

Based on the challenges described above (and in more detail in Chapter 4), the committee concludes that the current segregated system for workforce health protection is not functioning optimally. Revision of key policy documents (the 2008 delegation and memorandum of understanding) and reconstitution of the Health, Safety, and Medical Council would help improve coordination between offices, but the committee is concerned that, in the absence of additional accountability mechanisms, DHS will not achieve lasting change. Increased accountability through organizational transformation is necessary to promote health system integration and ensure mission readiness at DHS.

Alternative Oversight Mechanisms to Promote Health System Integration at DHS

The committee considered two alternative oversight mechanisms that could facilitate improved integration: (1) leaving health protection responsibilities segregated but reorganizing reporting structures such that someone with sufficient authority would have responsibility for ensuring coordination between the CMO and the Chief Human Capital Officer; or (2) aligning all workforce health protection functions into a single reporting structure.

There is currently significant organizational distance between the two offices with oversight responsibility for workforce health protection functions (OHA and OCHCO), with reporting structures remaining separate until the Deputy Secretary level. As a result, the CMO and Chief Human Capital Officer are not held accountable for coordinating efforts, including ensuring the functioning of formal governance mechanisms such as the DHS Health, Safety, and Medical Council. According to the DHS Chief Human Capital Officer, "Inefficiencies that do arise are usually due to a difference in executive prioritization and program resourcing that result from the alignment of OHA under the CMO and OSH/OCHCO within the Management Directorate."[9] This observation is consistent with the committee's findings, and it is this imbalance of prioritization and resourcing that is key to understanding many current challenges with health system integration at DHS. Consequently, the committee considered whether a segregated health protection infrastructure would be more effective with placement of

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[9]E-mail communication, K. Emerson, DHS OCHCO, to A. Downey, Institute of Medicine, regarding integration of occupational health and operational medicine infrastructures at DHS, December 24, 2013.

the CMO in the Management Directorate[10] at the same level as the Chief Human Capital Officer, with the Under Secretary for Management overseeing both offices and holding the CMO and Chief Human Capital Officer accountable for coordination. This arrangement would be consistent with the DHS Chief Human Capital Officer's suggestion that "improved 'integration' could be achieved through an organizational structure in which the occupational health and operational medicine personnel currently placed in OHA could be moved 'closer' to the OSH office, with a shared upper-level executive somewhere below the current level."[11]

The main advantage of this approach is that it would reduce the organizational distance between the CMO and the Chief Human Capital Officer in a way that would be less disruptive than organizational alignment of workforce health protection functions, because responsibilities within OCHCO and OHA would remain the same and reporting relationships would change only for the CMO. Synergy resulting from the close association of occupational safety and health, health promotion, and disability management with human resource functions such as benefits and labor relations would be preserved. However, the committee also sees several disadvantages to this segregated model. First, it would place the Under Secretary for Management in the position of having to be a constant arbiter between entities (OHA and OCHCO) that have diverse missions, goals/objectives, and priorities. The segregated approach could be successful only if formal and regular coordination mechanisms were established at the senior leadership (i.e., CMO and Chief Human Capital Officer) and program (e.g., occupational health) levels. Establishment of these mechanisms would in turn depend on the institution of clear accountability measures, enforcement of which would fall to the Under Secretary for Management. Success would also depend on the development of a coordinated strategic approach informed by baseline data on core health-related metrics. In contrast to other organizations utilizing the segregated approach, DHS has not established such measures, and the information management systems required for data collection and analysis are not yet in place.

In addition to the above challenges, the segregated approach would perpetuate an artificial divide between key occupational health functions that should be operating seamlessly in conjunction with one another. For

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[10]It should be noted that OHA is responsible for many activities beyond workforce health protection (e.g., biodefense-related activities), which may make placement of the CMO within the Management Directorate undesirable. However, the committee was not asked to examine responsibilities of the CMO outside of those related to occupational health and operational medicine, and therefore cannot speak to that issue.

[11]E-mail communication, K. Emerson, DHS OCHCO, to A. Downey, Institute of Medicine, regarding integration of occupational health and operational medicine infrastructures at DHS, December 24, 2013.

example, safety should be an integral component of operational medicine programs to ensure that prevention and monitoring of injuries and illnesses are applied equally in field- and facilities-based settings. Also, dividing responsibilities between offices collocated within the Management Directorate would not solve some of the current integration challenges related to lack of clarity regarding roles and responsibilities described above. In light of the inherent interconnectedness of these functions, the committee believes that an attempt to redistribute responsibilities is unlikely to result in optimal integration. Given the serious sequelae when health protection systems fail to function optimally (e.g., preventable morbidity and mortality, mission failure), deficiencies resulting from segregation of these functions would outweigh synergies achieved through integration with human resources functions.

While recognizing the disruption and other short-term challenges that would accompany organizational realignment, including potential staff resistance, the need to redefine reporting relationships, and requirements for budgetary reallocation, the committee believes that organizational alignment provides the best opportunity for successful health system integration at DHS, given the current ineffectiveness of governance mechanisms and the immaturity of supporting infrastructure, such as information management systems. This conclusion is consistent with the findings of a 2005 report on medical readiness at DHS that recommends the establishment of an entity with responsibility for both occupational safety and health and medical support for operations (Lowell, 2005). Creating a single reporting structure and consolidating responsibility for all workforce health protection functions under a single leader would better ensure functional integration and would affirm and empower an enterprise-wide approach. The comprehensive view of employee health status and needs across the department enabled by such alignment could facilitate more efficient management of resources; enhanced communication with leadership, components, and all DHS employees; more consistent performance measurement; improved accountability and transparency; and ultimately, increased organizational effectiveness and synergy.

Alignment of Headquarters Health Protection Oversight Functions

Many large organizations with effective integrated health and safety programs employ a lead official who is not a physician. In both federal organizations found by the committee to have aligned health infrastructures (DOI and the Smithsonian), physicians with responsibility for occupational health and medicine activities report to a nonmedical office director. Unlike DHS, however, neither has a CMO or equivalent position. Although the CMO, as the head of DHS's health office, is an obvious candidate to

lead an aligned health infrastructure, the committee also considered the comparative advantages and disadvantages of alignment under the Chief Human Capital Officer.

The main advantage of alignment under the Chief Human Capital Officer would be the opportunity to integrate human resources functions (e.g., employment and benefits) with health and safety functions. The role of human resources in integrated employee health management systems has increasingly been acknowledged (McLellan et al., 2012), and the ability to adjust benefits based on health-related outcome data has been shown to reduce health care utilization and costs (Bunn, 2010). Compared with private organizations that are leading the integration of health and human resources functions, however, government agencies have less flexibility to tailor benefits (which are to some degree controlled by the Office of Personnel Management), and DHS lacks the systems for data integration that would enable evidence-based adjustments to the design of benefits, so the degree of synergy that could be achieved with alignment under the Chief Human Capital Officer is limited.

In addition to the human resources aspects of health protection functions, medical and operational aspects must be considered in determining the organizational context for an aligned reporting structure. The Chief Human Capital Officer is a resource manager without line operational authority and lacks the necessary training and experience to provide medical oversight and strategic direction for an integrated health system. DHS is responsible for numerous operational medicine programs in addition to traditional occupational health, safety, and compensation programs. Given the operational and security-sensitive nature of these programs, oversight at the headquarters level cannot be outsourced. Thus, the committee believes there would be significant benefit to having a medical professional lead an integrated occupational health and operational medicine infrastructure. The committee also believes the CMO would have the professional credibility needed to unify these functions across the department's component agencies through coordination with component medical officers who are responsible for the implementation of policies and standards promulgated by the CMO (see Recommendation 4 below). Finally, the designation of the CMO as the lead agency official for workforce health protection would emphasize the central role of health and medical support in fulfilling the DHS mission, thereby raising the visibility of this vital function across the department and underscoring the Secretary's commitment to protecting the DHS workforce.

Acknowledging that the Chief Human Capital Officer has significant interests in an effective workforce health protection program, the committee believes the CMO, whose responsibilities span policy, resource management, and operations, would be better suited to providing the public health leadership required to develop and coordinate the full spectrum

of health promotion, occupational safety and health, occupational and operational medicine, and disability management functions. For this organizational arrangement to be successful, however, the CMO would need to coordinate closely with the Chief Human Capital Officer on human resources-related aspects of the workforce health protection portfolio (see Recommendation 6 on a governance framework). The CMO also would need to be supported by a multidisciplinary team of policy advisors and program management staff with collective backgrounds encompassing the range of disciplines presented in Box 6-1.

> **Recommendation 2:** *Align and integrate all occupational health and operational medicine functions under the Chief Medical Officer.*
>
> **The Secretary of the Department of Homeland Security (DHS) should design and implement a single reporting structure that effectively aligns and integrates all DHS employee health- and safety-related functions. The Secretary should designate and empower the Chief Medical Officer as the lead agency official responsible for establishing DHS-wide health, safety, and medical policies, standards, and programs and ensuring that component agency programs are implemented in a manner consistent with these policies and standards.**

It must be strongly emphasized that, although the committee is recommending alignment under the CMO, its vision for this infrastructure is that of a multidisciplinary rather than a strictly medical health protection enterprise. As articulated in its guiding principle (see Chapter 1), the committee believes a broader population health approach is necessary to ensure the promotion and protection of employee health at DHS in a holistic manner. Implementing such an approach will require a coherent strategy and a dedicated, multidisciplinary team of individuals supporting the CMO.

Responsibilities of the DHS Chief Medical Officer in an Aligned Reporting Structure

To ensure that the CMO is adequately empowered to coordinate the development, implementation, and oversight of DHS-wide policies, standards, and programs addressing the promotion and protection of the health of the DHS workforce, the Secretary should review and revise the Delegation to the Assistant Secretary for Health Affairs and Chief Medical Officer (DHS

Delegation #5001).[12] Responsibilities for the CMO should include but not be limited to

- promulgating department-wide policies and standards for integrating and coordinating all occupational health and operational medicine functions, including occupational safety and health, fitness for duty, workers' compensation and disability management,[13] and health promotion;
- developing a process for ensuring the implementation of DHS-wide health, safety, and medical standards;
- providing advice and guidance to the Secretary and component agency leadership on all matters related to health, safety, and medicine;
- overseeing component agencies' medical quality assurance programs, and ensuring that all DHS and outsourced providers of medical services are appropriately educated and trained and routinely evaluated through centralized credentialing, baseline training requirements, and a standardized competency assessment process;
- analyzing resource allocations and requesting budgetary adjustments as necessary; and
- submitting an annual measurement and evaluation report to the Secretary on the health, safety, and readiness of the DHS workforce.

The responsibilities outlined above largely are already explicitly stated or implicit in Delegation #5001. However, the committee asserts that, in addition to the position's current authority, the CMO's responsibilities should include oversight for health promotion, disability management, and occupational safety and health programs in accordance with Title 29 of the Code of Federal Regulations, part 1960 (29 CFR 1960), *Basic Program*

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[12]Related documents that should also be reviewed and revised include DHS Directive #066-01, *Safety and Health Programs* (July 25, 2008), and the Memorandum of Understanding between the Office of the Chief Administrative Officer and OHA (September 30, 2009).

[13]It is important to note here that execution of disability management functions must be closely coordinated with the administrative functions associated with workers' compensation benefits. The importance of this is highlighted by the disruptions to functional coordination between workers' compensation personnel and nurse case managers that followed the removal of the former from the Federal Air Marshal Service (FAMS) medical program reporting structure (see Box 4-4 in Chapter 4). Separating these two interconnected functions would be at cross purposes with the committee's task to advise on the creation of an integrated health protection infrastructure; thus, inherent in the committee's recommendation to integrate disability management with other health and safety functions is the alignment of all elements of workers' compensation programs, including the administration of workers' compensation benefits, under the CMO.

BOX 6-1
Suggested Competencies for the
Office of the Chief Medical Officer

The committee does not believe the DHS Chief Medical Officer (CMO) must be a board-certified occupational medicine physician to lead the implementation of a unified DHS workforce health protection strategy. However, the committee found the core competencies for Occupational and Environmental Medicine physicians of the American College of Occupational and Environmental Medicine (ACOEM, 2008) to be a useful base for developing the following competencies that should be represented *in the collective expertise of the CMO and those in his or her immediate team to support the CMO's role as primary advisor to the DHS Secretary on health and medical issues.* Although the ACOEM competencies were developed for practitioners of occupational medicine, the committee found that many of these competencies are equally applicable to the practice of operational medicine, with the caveat that special consideration must be given to experience with the unique requirements associated with operating outside of conventional workspaces.

- *Clinical Occupational and Environmental Medicine:* Knowledge and skills to provide evidence-based clinical evaluation and treatment for injuries and illnesses that are occupationally or environmentally related.
- *Tactical Emergency Medicine*: Training and experience in working with law enforcement or military operational personnel in delivering operational medical support, including sick call, urgent, and emergency health care in field or austere conditions.
- *Occupational and Operational Medicine-Related Law and Regulations:* Knowledge and skills necessary to comply with regulations important to occupational health and operational medicine. This most often includes those regulations essential to workers' compensation, accommodation of disabilities, public health, worker safety, emergency medical services, and environmental health and safety.
- *Hazard Recognition, Evaluation, and Control:* Knowledge and skills necessary to assess the risk of an adverse event from exposure to physical, chemical, or biological hazards in the workplace or environment, to include knowledge of ergonomics, industrial hygiene, and radiation safety. If there is a risk with exposure, that risk can be characterized with recommendations for control measures.
- *Environmental Health:* Knowledge and skills necessary to recognize potential environmental causes of concern to the individual as well as to community health. Environmental issues most often include air, water, or ground contamination by natural or artificial pollutants.

- *Work Fitness and Disability Integration:* Knowledge and skills to determine whether a worker can safely be at work and complete required job tasks (for additional information, see the section on readiness assessment in Chapter 3). The physician has the knowledge and skills necessary to provide guidance to the employee and employer when an employee with a disability needs to be integrated into the workplace.
- *Toxicology:* Knowledge and skills to recognize, evaluate, and treat exposures to toxins at work or in the general environment. This most often includes interpreting laboratory or environmental monitoring test results, as well as applying toxicokinetic data.
- *Disaster Preparedness and Emergency Management:* Knowledge and skills to plan for mitigation of, response to, and recovery from disasters at specific worksites as well as for the community at large. Emergency management most often includes resource mobilization; risk communication; and collaboration with local, state, or federal agencies.
- *Medical Management of Chemical, Biological, Nuclear, and Radiological Events:* Knowledge and skills to play a senior role in national-level efforts to reduce the risk of such events, recognize when a surreptitious event has occurred, and mitigate the population or individually targeted effects of these events.
- *Health and Productivity:* Ability to identify and address individual and organizational factors in the workplace in order to optimize the health of the workers and enhance productivity. These issues most often include absenteeism, presenteeism, health enhancement, and population health management.
- *Public Health, Surveillance, and Disease Prevention:* Knowledge and skills to develop, evaluate, and manage medical surveillance programs for the workplace as well as the general public. The physician has the knowledge and skills to apply primary, secondary, and tertiary preventive methods.
- *Medical Quality Management:* Knowledge and skills required to develop and manage programs designed to ensure high-quality care when measured against industry-standard norms, including credentials management, professional privileging, and medical quality assurance activities.
- *Medical System Management, Administration, and Control:* Administrative and management knowledge and skills to plan, design, implement, manage, and evaluate comprehensive occupational and environmental health and operational medicine programs and projects. Included in these skills should be the ability to communicate effectively regarding health-related issues to both internal leadership and the public.

Elements for Federal Employee Occupational Safety and Health Programs and Related Matters.

Implementing an Aligned Organizational Structure

The committee recognizes that alignment of all workforce health protection functions under the CMO would substantially increase the scope of responsibilities of that position. Transfer of responsibilities would need to be accompanied by simultaneous transfer of the budget and personnel currently allocated to execution of those functions in order to meet the demands of the increased workload. Specifically, the three headquarters-level occupational safety and health program management personnel and the DHS workers' compensation program manager and policy advisor would need to be transferred from OCHCO to OHA. Additionally, the title and responsibilities of the DASHO would have to be reassigned to ensure that the person with those responsibilities and authorities would be in the same reporting structure as the CMO and the safety program manager. According to 29 CFR 1960, *Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters*, "the headquarters [safety and health program] staff should report directly to, or have appropriate access to, the Designated Agency Safety and Health Official, in order to carry out the responsibilities under this part." With the alignment of the occupational safety and health program under the CMO, the CMO would need to be designated as or report to the DASHO. There are examples of federal agencies in which CMOs (or their equivalent) are also the DASHO (e.g., NASA, Department of State), and the committee considers this a reasonable arrangement for DHS. However, assuming that the DASHO responsibilities would be assigned to a leader with sufficient authority and budgetary influence to ensure that health and safety programs were appropriately implemented and resourced (as required by executive order), the committee views a structure where the CMO reports to the DASHO as a viable option as well.

The committee refrains from recommending specific reporting relationships within OHA but suggests that the organizational structure of the Coast Guard's Health, Safety, and Work-life Directorate (see Appendix A) could serve as an appropriate model for the alignment of occupational safety and health, health promotion, and medical services functions under a single health and medical authority. The establishment of Associate CMOs with the experience and authority to provide leadership in the execution of specific responsibilities would help offset the significant increase in the workload of the CMO.

Ensuring Adequate Oversight Authority

The committee believes the designation of a lead agency official for all occupational safety, health, and medical programs is necessary but not sufficient to achieve needed improvements in coordination and integration. The CMO, as the lead official, will require the authority, influence, and resources necessary to ensure the execution of department-wide policies and programs.

In the 2008 *Delegation to the Assistant Secretary for Health Affairs and Chief Medical Officer*, the Secretary delegated to the CMO the authority to exercise oversight over all of DHS's medical and public health activities. In the course of this study, however, it became apparent that, in practice, the CMO lacks the authority to exercise oversight over all medical and public health activities for DHS. The committee attempted to obtain clarity on the meaning of the term "oversight." Senior Advisor to the Secretary the Honorable Judge Alice Hill told the committee that "the word oversight in 2013 probably does not mean that OHA will be its most effective if it just issues directives to the components…. OHA will need to prove its value and that is how these changes will be made" (Hill, 2013). The committee agrees that OHA must lead and not just direct components, but certain critical functions, such as medical quality management, need to be standardized and implemented consistently throughout the department. When the committee asked whether OHA has the authority to ensure that components comply with the policy set forth in the Medical Quality Management Directive (see Appendix B), it was told that the directive is an unfunded mandate and that OHA provides the components with guidance and tools but lacks the authority to ensure implementation (Leslie, 2013). "It's sometimes not very clear what we have the authority to do," said Occupational Health Branch Chief Ingrid Hope during the committee's first meeting (Hope, 2013). The CMO cannot be effective in fulfilling the responsibilities of the position in the face of such ambiguity.

> **Recommendation 3:** *Ensure that the Chief Medical Officer has authority commensurate with the position's responsibilities.*
>
> **The Secretary of the Department of Homeland Security (DHS) should review the organizational context of the Chief Medical Officer (CMO) position and make necessary changes to ensure that the CMO has adequate authority, influence, and resources to carry out the essential function of ensuring the health, safety, and readiness of the more than 200,000 members of the DHS workforce.**

The committee recognizes that giving individuals more authority will not effect change unless they are also given the tools, administrative resources, and full institutional support needed to carry out their assigned responsibilities. In addition to ensuring that budget and personnel are reallocated, as described following Recommendation 2, the DHS Secretary will need to demonstrate clear support for the alignment of critical health protection functions under the CMO. To empower the CMO, the Secretary will need to establish clearly through both policy (revision of Delegation #5001) and action (holding component heads accountable for compliance with policies and standards promulgated through OHA) that the CMO has oversight responsibility for all DHS health and safety programs. Further, the CMO's role should extend beyond policy making to ensure that DHS's health and safety programs are aligned, prioritized, and implemented. To this end, the CMO should be included as a member of DHS enterprise-wide governing bodies, such as Investment Review and Program Review Boards.

The organizational context of the CMO position needs to support these interactions and should be evaluated in this regard. In some of the organizations considered by the committee (e.g., J&J, P&G), the medical director is organizationally located within human resources. This arrangement may help promote integration between health and human resources activities, which is essential to the effective management of integrated workforce health programs (McLellan et al., 2012). However, the committee does not believe this organizational arrangement would improve the effectiveness of DHS's overall health and safety policy, programs, or practices, for the following reasons:

- In those private-sector organizations, the human resources leader reports directly to the chief executive officer. Consequently, the medical director is only two levels down from the company's senior official. The committee recognizes that the DHS Deputy Secretary is responsible for the day-to-day operation of the agency, so in accordance with the structure of those private-sector organizations, the CMO should be no more than two levels below the Deputy Secretary. That would be no lower than reporting to the Under Secretary for Management, a reporting relationship that would still be consistent with the CMO's designation as an Assistant Secretary and would ensure that important health and safety issues could be raised to the Secretary unfiltered and expeditiously.
- Congress has stipulated that the DHS CMO should serve as the principal advisor to the DHS Secretary and head of FEMA on medical and public health issues.[14] To carry out this responsibility,

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[14]Post Katrina Emergency Management Reform Act.

the CMO needs greater visibility, autonomy, and influence than could be achieved within OCHCO. Moving the CMO under the Chief Human Capital Officer would reduce rather than raise the perceived importance of health and safety as an essential factor in mission readiness.

- The CMO would face competing priorities within OCHCO that would make it impossible to resource and execute the strategies and programs the committee deems necessary for DHS.

Although the committee cautions against placing the CMO under the Chief Human Capital Officer, there would be notable benefits to having the CMO, as the leader of an aligned health system, report to the Under Secretary for Management instead of reporting directly to the Deputy Secretary, as is currently the case. The committee noted that this type of organizational arrangement (i.e., a health-related office located within a management or human capital entity, at the same level as a human resources office) has been adopted by other federal agencies (e.g., Department of State and DOI). As suggested by the Chief Human Capital Officer, ensuring that health protection functions remain closely linked to related human resources functions such as benefits and labor relations enables a desirable synergy.[15] This arrangement would not only ensure close coordination between the CMO and Chief Human Capital Officer but would also facilitate increased engagement of other relevant line-of-business chiefs (e.g., Chief Human Procurement Officer, Chief Financial Officer, Chief Information Officer), thereby promoting integration of workforce health protection into the larger DHS management infrastructure and governance processes. Additionally, if the CMO were located within the Management Directorate, the Under Secretary for Management would be the logical choice for assignment as the DASHO, as the Under Secretary for Management has the necessary budgetary authority to ensure that adequate resources are allocated for program execution. However, these benefits would need to be weighed against the decreased access of the CMO to the Secretary that could accompany such a move. Given the specialized, technical nature of health and medical information, there would be a risk of information loss during translation if the Under Secretary for Management were to brief the Secretary on behalf of the CMO. It would need to be understood that the CMO was still responsible for providing guidance and updates to the Secretary on all health- and medical-related matters. Additionally, the committee acknowledges that other considerations outside the scope of this

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[15] E-mail communication, K. Emerson, DHS OCHCO, to A. Downey, Institute of Medicine, regarding integration of occupational health and operational medicine infrastructures at DHS, December 24, 2013.

study (e.g., responsibilities of the CMO beyond those related to workforce health) may be important to the decision on the best organizational placement of the CMO. Consequently, the committee cannot make a recommendation on this topic and suggests that this decision be left to the DHS Secretary after review and consideration of the benefits and disadvantages of the alternative reporting relationships for the CMO. Regardless of the CMO's organizational placement, the Secretary's clear empowerment of a strong leader in the CMO position will be required for success.

ALIGNMENT WITHIN AND AMONG OPERATIONAL COMPONENTS AND VERTICALLY WITH DHS HEADQUARTERS

Since its creation in 2002, DHS and its component agencies have struggled to retrofit a large set of distinct legacy and nascent organizational structures into a single cohesive operational and management framework that meets the diverse requirements of the DHS mission. The same is true of the organizational structures supporting health protection; each component agency has developed a different infrastructure for carrying out its health, safety, and medical functions. These functions include, but are not limited to, fitness for duty, employee assistance, health promotion, medical screening, immunizations and travel medicine, medical threat assessments, operational medicine, quality monitoring, hazard identification and remediation, injury and illness investigations, automated external defibrillator (AED) programs, ergonomics assessments, regulatory compliance, health and safety training, return-to-work programs, and reasonable accommodation. In some components, these functions are carried out internally, whereas in others, some of these services are outsourced to other federal agencies (e.g., Federal Occupational Health), private contractors, or academic organizations. The committee found that the placement of occupational health programs supporting these functions is fragmented in some agencies and centralized in others, and their organizational location differs across the components (with locations including offices of human resources, training, administration, law enforcement services, and global strategies—see the component organizational charts in Appendix A). For example, health promotion programs may be operated out of medical program offices or separate human resources offices. The same is true for workers' compensation programs. The committee was unable to gauge whether these locations in and of themselves are the cause of, or related to, inefficiency and lack of coordination within some components.

As discussed previously, the committee believes that organizational alignment of workforce health protection functions into one reporting structure would ensure effective coordination, collaboration, and accountability. While acknowledging that other options for coordination of these

functions can be effective, the committee was not provided sufficient evidence of matrix alignment to support the fragmented approach. In components with aligned or partially aligned organizational structures in which health, safety, and/or medical programs and functions are collocated, the committee found evidence of increased information sharing through regular meetings and coordination processes, encouraging communication and synergy in support of mission requirements. The case study of the integrated medical program of the Federal Air Marshal Service (FAMS) presented in Chapter 4 (see Box 4-4), demonstrates the value of organizational alignment. Notably, when the workers' compensation program management function was removed from the FAMS reporting structure, coordination with the medical unit was degraded and workers' compensation costs increased (Lewandowski and Weeks, 2013). The Coast Guard provides another example of improved integration through alignment of prevention and health protection functions under its CMO, but most other component agencies lack an equivalent single point of accountability for all health, safety, and medical activities.

Not only does fragmentation of workforce health protection functions at the component level impact intracomponent coordination, but oversight from the headquarters level also is more challenging when there is no single responsible leader or even consistency in what are considered medical, occupational safety and health, and human resources functions. Vertical integration has been less of a problem for occupational safety and health functions because well-established processes for oversight are in place to ensure compliance with regulations for federal agency occupational safety and health programs. Each component has a Designated Safety and Health Official and occupational safety and health program managers with clear responsibilities and minimum core performance metrics established by the Occupational Safety and Health Administration (OSHA). Vertical integration of medical programs has been far more challenging. Prior to the development of the Medical Liaison Officer (MLO) program, few of the components had a physician on staff, and there were few formalized routes of communication or mechanisms for information sharing between OHA and component medical and health offices.[16] The MLO program represents an encouraging step forward, but vertical integration challenges remain. The MLO program has placed Senior Medical Advisors in only four of the DHS operating components.[17] Additionally, the fragmentation of medical

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[16]The Emergency Medical Services Training and Education Advisory Committee discussed in Chapter 4 is a notable exception.

[17]OHA is working to expand the MLO program into other component agencies. As benefits are realized in those components that have piloted the program, OHA hopes this will engender interest from other components.

and health functions across component human resources, workers' compensation, occupational safety and health, medical, operational, and training offices means that even in components in which Senior Medical Advisors are located, there is still no one person accountable for medical and health activities. Senior Medical Advisors may be assigned to guide occupational health or operational medicine activities and may not have oversight over other medical programs. The result has been situations in which medical functions have been outsourced with no oversight from internal medical authorities.

The committee concludes that the current fragmented organizational structure and the distribution of health, safety, and medical authorities within DHS component agencies will impede the ability of the CMO to orchestrate a comprehensive and integrated workforce health protection strategy to ensure the health, safety, and resilience of the entire DHS workforce. The effectiveness of the CMO would be enhanced by having a single point of accountability within the operating components, an individual who could ensure the integration of component occupational health and operational medicine functions.

> **Recommendation 4:** *Establish Component Lead Medical Officers to align and integrate occupational health and operational medicine functions.*
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> **The Secretary of the Department of Homeland Security (DHS) should direct each component agency head to design and implement a single reporting structure that effectively aligns and integrates all component occupational health and operational medicine functions and assign oversight responsibility for these functions to a Component Lead Medical Officer. That individual would be responsible for ensuring that these functions are implemented in a manner consistent with DHS-wide standards and policies. The Component Lead Medical Officer, through a clear position description, should be held responsible for the following:**
>
> - **reporting to the component head and/or component Designated Safety and Health Official on the execution of health, safety, and medical policies and programs within the component;**
> - **applying the policies and standards promulgated by the Chief Medical Officer (CMO) in the context of the unique operational requirements of the component;**
> - **developing a reporting structure and coordination processes to ensure the integration of occupational safety and health,**

medical, workers' compensation, and health promotion efforts; and

- **ensuring that a federal medical officer, under the guidance of the CMO, is responsible for all component health, safety, and medical services, including those services provided by contract and/or interagency agreement.**

Because Component Lead Medical Officers (CLMOs) would need to lead the development and coordination of the full spectrum of occupational health and operational medicine programs, encompassing health promotion, occupational safety and health, occupational and operational medicine, and disability management, the same core competencies described in Box 6-1 for the CMO should be represented on their team. Initially, as the CLMOs work to become established and address pressing gaps, it will be important for the CMO to ensure that they have adequate reachback support (program management staff and subject-matter experts) within OHA.

The Case for Alignment of Health, Safety, and Medical Functions Within Components

The committee was asked to provide recommendations on how occupational health and operational medicine infrastructures within component agencies can be better integrated into a coordinated, DHS-wide system. As discussed in Recommendation 2 (alignment under the CMO), the committee acknowledges that organizational realignment of all workforce health protection functions (e.g., fitness-for-duty determinations, health promotion and monitoring, record keeping and credentialing, safety inspections, injury and illness investigation and management) into a single reporting structure will present some challenges in terms of recasting authorities, particularly for components that already have one or more medical officers. In the short term, this process may even lead to inefficiencies as adjustments are made. However, the committee believes that aligning these functions under a CLMO as proposed in Recommendation 4 would result in long-term benefits, including

- improved communication and information sharing among health, safety, and medical activities, fostering a more cohesive environment for workforce health protection to support mission readiness;
- development of a comprehensive strategy for operational integration at the component and, where appropriate, the subcomponent levels;
- improved communication with line leadership, which would ensure that health programs are driven by component mission

requirements and that line leadership is kept informed regarding the health concerns and needs of the workforce and those in care or custody;

- development of an efficient system for integration of health data for internal analysis and transmission to and from DHS headquarters;
- development of clearer roles and responsibilities and scope of authority within components;
- improved communication with DHS headquarters, with CLMOs serving as conduits for information from their respective organizations to the DHS CMO and vice versa; and
- identification of staffing and skill shortages that can be addressed by a workforce development strategy to better meet health, safety, and workforce protection requirements.

Considerations in the Designation of Component Lead Medical Officers

Component-specific circumstances (e.g., field- versus facilities-based operations) may drive the organizational location of the CLMO—a determination the committee believes would best be left to component leadership. Regardless of where in the organizational structure CLMOs are established, however, they should have high-level visibility with component operational leadership to (1) advise on the allocation of adequate financial and other resources, (2) advocate within the component for health protection as essential to mission readiness, and (3) motivate line managers to undertake appropriate prevention activities. By designating a CLMO and ensuring that the position has sufficient visibility, component leadership would set the expectation that the CLMO is the medical authority across the component, which is critical to obtaining broad support and buy-in for component health, safety, and medical programs.

In designating the CLMO, component leadership would have to decide whether to assign the title and responsibilities detailed above to a Senior Medical Advisor or to a medical officer employed independently by the component (direct hire). Senior Medical Advisors are funded through cost-sharing agreements between OHA and their assigned component, and their performance expectations are developed by the Director of the OHA Workforce Health and Medical Support Division, who receives input from component supervisors. The implications of this decision for the following possible CLMO reporting configurations should be considered:

- CLMOs would report to and their performance be monitored by both component line management and the DHS CMO centrally (Senior Medical Advisor model). The benefits of this option include continued cost sharing and a stronger link between the CLMOs

and the CMO, which might improve information exchange and increase the likelihood of component adoption of department-wide standards. However, under this arrangement, CLMOs might have more difficulty earning the trust of their component leadership than would a direct hire counterpart.

- CLMOs would report to line management within the component but have performance requirements to consult and coordinate with the DHS CMO for department-wide policy and program development and oversight. This option might increase the sense of ownership over component medical programmatic activities and improve trust between component medical and line leadership, but it could impede information sharing with the CMO if CLMOs were not held accountable for participation in coordination activities.

Challenges Associated with Dual Reporting

Regardless of which of the two above options were chosen, the CLMOs, by design, would have a dual reporting relationship under the DHS matrix management authority structure. For component operational matters, they would report to the component leadership, but for medical matters, their implementation of health and medical programs, guidelines, and practices would fall under the oversight of the CMO. This point is critical because medical authorities, not line leadership, need to set medical training and certification requirements and ensure that they are met, and oversee the quality and scope of medical practice across DHS components. DoD has successfully implemented a similar dual reporting structure between line military commands and the senior departmental health authority to ensure that force health services, capabilities, and occupational risks are fully and authoritatively considered in preparing for and executing component operations. However, this arrangement works best when, as for DoD, both component and department medical authorities are able to plan, budget, and distribute funding to support implementation of their respective component/medical policies, programs, and practices. Otherwise, dual reporting could potentially cause problems for CLMOs should the priorities of the two leaders diverge. Without the ability to fund directed programs, the CMO might face pushback from components against such unfunded mandates, and CLMOs could be left in a position of responsibility without sufficient resources for policy execution. Although some cost-sharing initiatives have been implemented and others proposed, OHA generally is unable to provide funding to help components meet medical requirements. One way to help ensure that CLMOs would receive adequate budgetary support would be for the Secretary to require that component heads, as well as

CLMOs, be held accountable for successful execution of department-wide standards and policies.

Oversight of Outsourced Health, Safety, and Medical Services

An important role for the CLMO would be to ensure that all occupational and operational medicine program activities, including those that are outsourced through contracts and interagency agreements, are overseen by a component federal medical officer under the guidance of the CMO. The responsibilities delegated to the CMO by the Secretary include assurance of the quality and efficiency of all DHS medical services. The integration of DHS medical services, including coordination of occupational safety and health, workers' compensation, and medical support for high-visibility, high-consequence, and nationally significant events, clearly falls within the responsibility of the CMO. The committee noted significant reliance on outsourced providers for occupational health and medical services (e.g., fitness-for-duty evaluations, health promotion services, ergonomics assessments, medical surveillance services). Federal Occupational Health alone provides hundreds of thousands of examinations and other various clinical services to DHS employees annually at health units across the country. The committee learned that two operational medicine programs within DHS currently are using a contracted medical director (Tang, 2013), whose scope of authority regarding programmatic direction and resource allocation is unclear.[18] Furthermore, although one of the CMO's delegated authorities is to provide medical guidance for departmental personnel programs, including return to work (DHS, 2008), the committee learned that an acquisition process has been initiated for a contracted DHS-wide medical case management program to be managed by workers' compensation program staff at both the headquarters and component levels (Myers, 2013). In addition to nurse case managers, the vendor is to provide the medical reviewing physician. The committee was informed that OHA has not been involved with the development of this program since participating in initial discussions more than 3 years ago.[19] Although the committee recognizes the value of early case management for workers' compensation claims, this contract in its current form bypasses the internal medical assets and authorities of DHS. In so doing, it potentially impedes both medical situational awareness

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[18]The role of contractors in the direction and oversight of medical operations should be delineated more clearly following analysis by DHS General Counsel to ensure compliance with legal requirements set by Federal Acquisition Regulations prohibiting contractors from carrying out inherently governmental functions, such as the supervision of federal employees.

[19]E-mail communication, I. Hope, DHS OHA, to A. Downey, Institute of Medicine, regarding a DHS medical case management program, August 12, 2013.

and integration with other workforce health protection functions, most notably occupational safety and health and fitness for duty.

The use of contracted medical direction may have arisen out of necessity in the past, but Senior Medical Advisors and a CLMO could provide in-house expertise to meet these needs. To ensure that such services are integrated into the larger DHS health protection infrastructure, technical oversight of outsourced services should be delegated to DHS medical officers at the component level. An example of these activities is monitoring revalidation of licensure for contracted medical practitioners (ICE, 2013).

Going forward, when contracted medical services are considered, they should be well delineated, task specific, and approved by the CMO. Administration of contracts and interagency agreements is the responsibility of trained procurement specialists, but a mechanism is needed to ensure that contracts and agreements are consistent with the overarching health policies and standards of the department. In private industry, stringent contract language is used to ensure that the company's professional standards and practices are met (Christensen, 2013). Accordingly, the CMO should set minimum requirements for contracts and agreements and, where appropriate, work with acquisition authorities at DHS to establish a common vehicle for use by components in procuring occupational health and medical services to achieve efficiencies unless a business case demonstrates the need for a component-specific service agreement (see Recommendation 9 on centralization of common services). Another private-industry practice applicable to DHS is to require components to report on standardized core metrics using a data collection tool such as a global scorecard (see Recommendation 10 on collecting core metrics), regardless of whether services are provided in house or outsourced (Christensen, 2013; Isaac, 2013).

Establishing a Coordinated Approach to Workforce Health Protection Across DHS

Prior to establishment of the MLO program, the CMO had limited visibility on health and medical programs and challenges within component agencies. This limited visibility interfered with the CMO's ability to address cross-cutting and department-wide health and medical issues through policy and program initiatives and to ensure that the Secretary's agenda is assimilated at the component level. The committee learned that directives and proposed standards from OHA sometimes are disconnected from the needs and realities within the component agencies (Leffer, 2013), possibly contributing to the observed uneven compliance with OHA policy, most notably the Medical Quality Management Directive (Kosh-Suber, 2012).

The committee concludes that a mechanism is needed to enable the CMO to collect information on operational requirements from the

component level, to engage components in the development of medical and public health policy, and to provide senior-level direction for an integrated DHS workforce health protection strategy. OHA already has taken laudable steps toward developing this capability with the MLO program, but the role for Senior Medical Advisors in building and sustaining an integrated health protection system has yet to be clearly defined and formalized. In addition to serving as a source of information on drivers of health and medical policy within the components, Senior Medical Advisors and other medical officers within DHS have diverse backgrounds and represent a valuable source of knowledge and experience that the CMO should tap. The committee heard that the Senior Medical Advisors meet regularly (once or twice a month) with the MLO program Branch Chief but that these meetings are attended infrequently by the CMO (Maycock, 2013). This networking among medical officers is critical to the identification of commonalities in mission requirements that could be addressed with DHS-wide health, safety, and medical policies, standards, and services, but the committee believes the network's value would best be realized through regular and formal direct interaction with the CMO. Other DHS Management Chiefs lead a council of representatives from each component that meets regularly for these purposes (e.g., the DHS Chief Human Capital Officer meets regularly with a council of Human Capital Officers from component agencies). An equivalent council of CLMOs to support and advise the CMO might facilitate a coordinated (top-down and bottom-up) approach to the development of policy, increase the agility with which emerging public health and medical issues can be addressed, and clarify the individual and collective roles of CLMOs in the department's overarching health protection strategy while generating esprit de corps.

Recommendation 5: *Establish a Medical and Readiness Committee to promote information sharing and integration.*

The Chief Medical Officer (CMO) should establish and chair a Medical and Readiness Committee with membership comprising the Component Lead Medical Officers to promote information sharing and integration. Responsibilities of the proposed committee should include, but not be limited to

- **recommending and validating department-wide health and medical standards;**
- **providing briefs on the specific health and medical issues/needs of the components;**
- **identifying best practices and sharing lessons learned;**

- **advising the CMO on resource needs for program implementation and execution;**
- **contributing subject-matter expertise to aid the CMO in providing medical guidance to the Secretary and component leadership;**
- **identifying and sharing education and training resources to help all component agencies achieve strategic goals;**
- **identifying opportunities to achieve efficiencies through consolidation and centralization of common services, including outsourced services (see Recommendation 9); and**
- **developing new tools and recommending core metrics for evaluation and trend analysis of health and medical programs (see Recommendation 10).**

As envisioned by the committee, the Medical and Readiness Committee is key to the development of department-wide medical standards and policies that are responsive to the operational requirements of the components. The proposed committee, which should meet regularly (e.g., monthly), would establish formalized channels for information sharing among components and with the CMO; the resulting horizontal and vertical integration would help ensure that the health and medical needs of all DHS employees, and those in their charge, are met while also facilitating improvements in efficiency, interoperability, and harmonization. Although the proposed committee should play a key advisory role, the CMO should retain sole authority for setting DHS-wide medical policy. The recommended membership of the Medical and Readiness Committee currently is limited to CLMOs and the CMO; however, the scope of issues that arise could necessitate its augmentation and the participation of other medical or multidisciplinary representatives from DHS headquarters or component agencies. For example, participation and regular briefings by OHA Branch Chiefs and the DHS Safety Manager could help ensure that all OHA activities are supportive of and complementary to, but not redundant with, CLMO-led activities.

The committee believes that, to promote the continued maturation of the DHS health protection infrastructure and ensure that the CMO and CLMOs have the knowledge and experience required to provide occupational and operational health leadership to DHS, the CMO and CLMOs would benefit from regular peer review and input. This review and input would support the identification of best practices implemented in other organizations and succession planning in the face of inevitable leadership turnover. The committee believes that the Medical and Readiness Committee would provide a useful vehicle for convening outside peer experts for this purpose. These experts should come from within the federal

government and might include other federal medical directors and representatives from the Office of Personnel Management who could advise on personnel-related medical issues such as fitness-for-duty policies. Such peer experts, in conjunction with DHS clinical/administrative leadership, could orient new CMOs and CLMOs on topics including but not limited to readiness assessment, continuous quality improvement, and operational medicine, as needed.

A GOVERNANCE FRAMEWORK FOR ENTERPRISE-LEVEL INTEGRATION

Governance structures are used to support collaboration and decision making on organizational plans, actions, and resource commitments, particularly when conflicting priorities among component entities must be resolved in making decisions for the good of the institution. When DHS was initially established, the Government Accountability Office designated its formation as high risk, in part because of the foreseen management challenges associated with merging 22 component agencies and the serious consequences of failing to achieve integration. In working to address these concerns, DHS has established a tiered governance structure (GAO, 2012b) to facilitate integration and oversight of interrelated programmatic activities that support mission outcomes across the department (see Figure 6-1). In this structure, which is still being implemented, governance bodies and processes are established at the program level, the portfolio level (related sets of programs), and the enterprise level. Strategic priorities flow down from higher to lower governance bodies, and issues that cannot be resolved at lower levels flow up.

Portfolio-Level Governance of Health, Safety, and Medical Programs

The committee is unclear as to whether or how workforce health protection programs would be managed within the DHS governance structure shown in Figure 6-1 but identified a need for portfolio-level governance[20] of such programs to ensure alignment and efficiency. Multiple headquarters offices and component agencies have shared responsibilities for the complex programs supporting the health, safety, and mission readiness of the workforce. Whereas heads of DHS components are responsible for the

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[20]"The 13 planned portfolios are: Benefits Administration, Continuity of Operations, Domain Awareness, Incident Management, Information Sharing and Safeguarding, Intelligence, Law Enforcement, Screening, Securing, Enterprise Financial Management, Enterprise Human Resource Management, Enterprise IT Services, and Enterprise Business Services" (GAO, 2012b, p. 15).
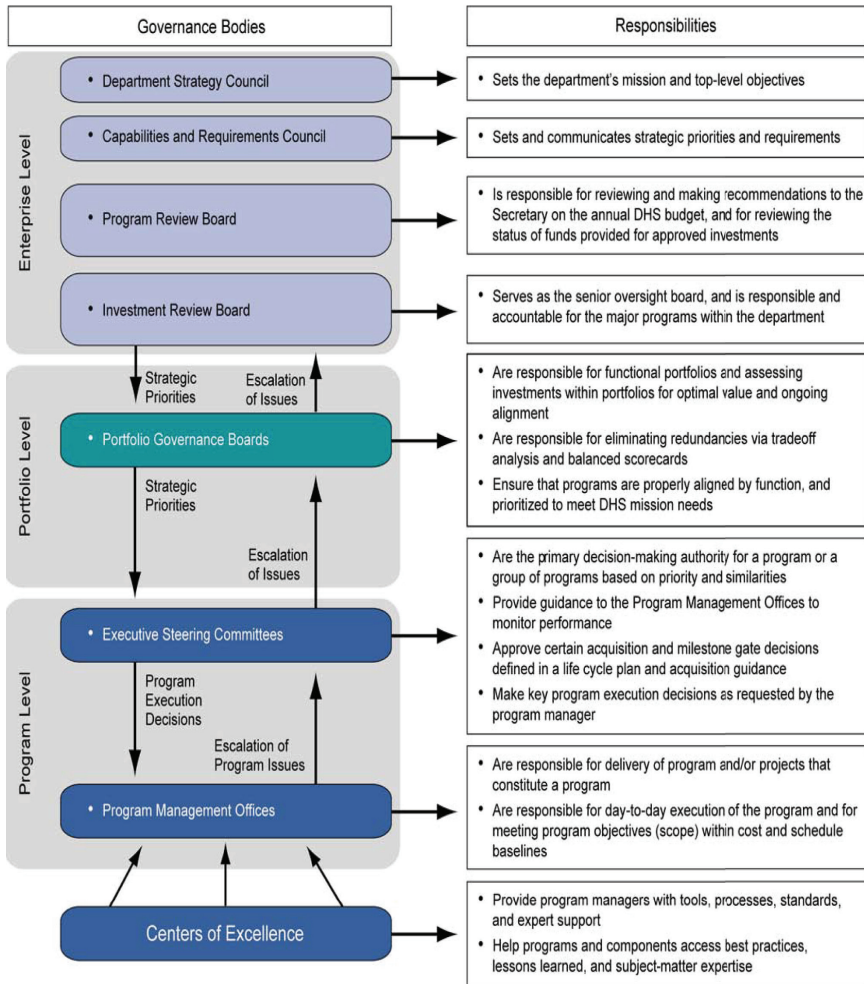
FIGURE 6-1 DHS's integrated enterprise governance structure.
SOURCE: GAO, 2012b.

health and mission readiness of all component employees, the CMO has responsibility for setting department-wide policies that promote health and mission readiness. Many workforce health protection functions span the intersection between health and human resources and therefore also require the involvement of the Chief Human Capital Officer. Input from other

members of the DHS management team[21] may be required as well to ensure adequate resourcing of occupational health and operational medicine programs and effective management of these programs within the larger DHS financial, acquisitions, and information management architecture. The DHS Health, Safety, and Medical Council was established as a governance body to facilitate the necessary ongoing coordination, collaboration, and participation of these various headquarters- and component-level stakeholders in the development of health, safety, and medical policy. However, the Council has been inactive for more than a year.

> **Recommendation 6:** *Create a governance framework to engage Department of Homeland Security management officials and component leadership in employee health, safety, and resilience to support mission readiness.*
>
> **The Secretary of the Department of Homeland Security (DHS) should develop and implement an effective governance framework for workforce health, safety, resilience, and readiness programs to ensure coordination, collaboration, and participation of DHS management and component leadership. This framework should include reconstitution of the existing, but inactive, Health, Safety, and Medical Council.**

Reinvigoration of the inactive DHS Health, Safety, and Medical Council is critical to achieve department-wide consensus on strategies for addressing overarching and cross-cutting health, safety, and medical issues, and to engage component leadership in the development of policies that support the readiness of their workforces. Council membership should include the CMO, the DASHO,[22] key members of the DHS management team, and component leadership.[23]

To function effectively, the Council will need to be part of a larger formalized governance structure. Figure 6-2 illustrates a tiered governance approach to workforce health protection.

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[21]The management team (located within the Management Directorate) consists of the Chief Human Capital Officer, Chief Financial Officer, Chief Procurement Officer, Chief Information Officer, Chief Security Officer, and Chief Administrative Services Officer and is led by the Under Secretary for Management.

[22]If the DASHO title and responsibilities are assigned to someone other than the CMO when the aligned reporting structure proposed in Recommendation 2 is created.

[23]While component leadership representatives do not have to be component heads, these individuals should have budgetary authority within their organization (e.g., DSHOs).

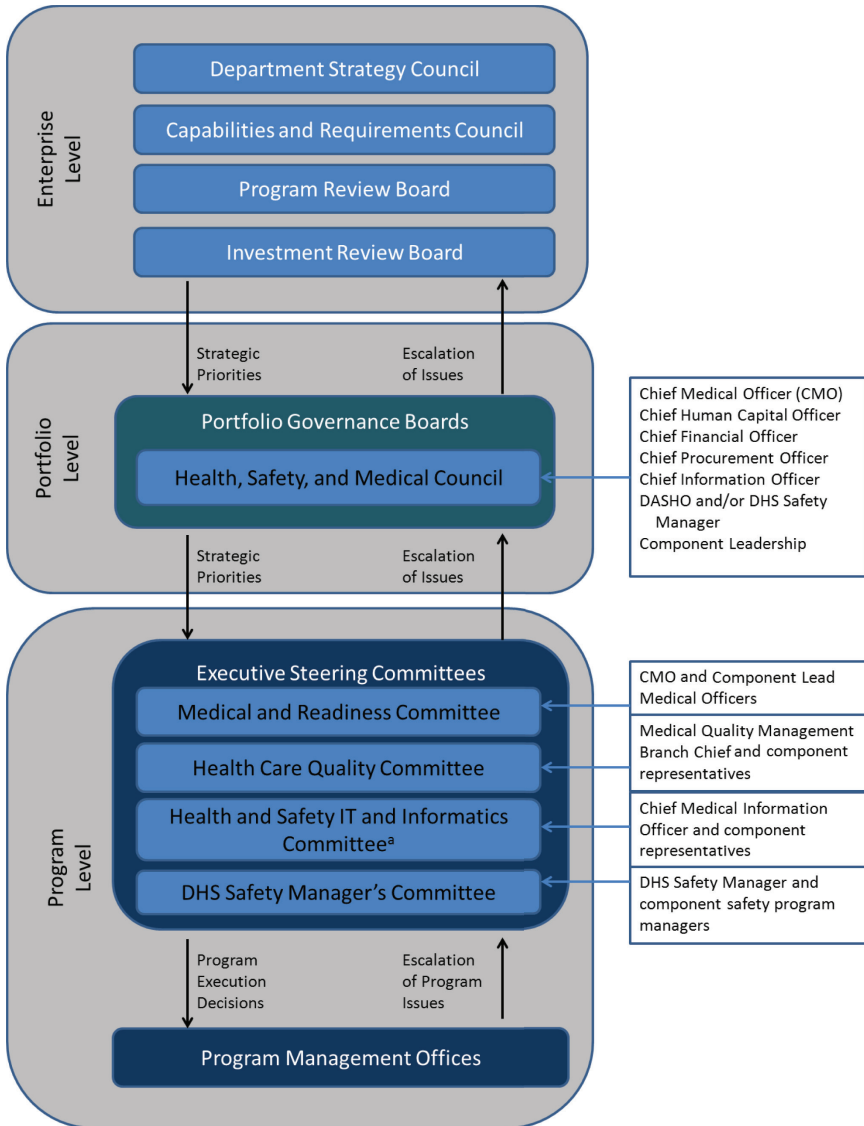**FIGURE 6-2** A proposed tiered governance framework.
    [a]Exchanges with the Health, Safety, and Medical Council would flow through the proposed Health and Safety Informatics and Information Technology Governance Board (see Recommendation 11).

Reconstitution of the Health, Safety, and Medical Council

In the framework shown in Figure 6-2, the Health, Safety, and Medical Council, which should meet quarterly or semiannually, would be responsible for assessing and prioritizing investments, eliminating redundancies among programs, and ensuring program alignment. The committee envisions that the Council could also be used as a mechanism for streamlining the issuance of management directives, a process the committee learned takes several years because of the current unwieldy mechanism for soliciting concurrence from components and other headquarters units. To ensure that the Council does not become inactive again in the future, the committee suggests that Council members be held accountable for participation through specific requirements set in their performance plans. Additionally, a clear charter from department leadership would help to ensure that the Council can effectively address cross-cutting policy issues and keep members engaged.

In its vetting and decision-making process, the Council should draw on recommendations and other information provided by program-level committees with varied subject-matter expertise, including but not limited to the Health Care Quality Committee, the Medical and Readiness Committee proposed in Recommendation 5, and the Safety Managers Committee. These committees are responsible for developing tools, standards, processes, and best practices for individual programs. Strategic decisions would be passed down to these lower-tier working bodies, which would be responsible for developing coordinated implementation plans. Execution would be overseen by the CMO and CLMOs. The CMO, who, as discussed in Recommendation 3 (CMO authority), should also sit on enterprise-level review boards, would be responsible for informing department leadership regarding resource needs for safety and health program execution, as well as potential consequences of underresourcing such programs.

Governance structures themselves need to be managed. To ensure successful implementation of the proposed governance framework, the Secretary should establish mechanisms for securing stakeholder buy-in, an implementation plan, and processes for evaluating effectiveness and capturing lessons learned (GAO, 2012b).

Enabling a Coordinated Approach to a Unified DHS Workforce Health Protection Strategy

A reinvigorated Health, Safety, and Medical Council would be instrumental in the coordinated development of the department-wide workforce health protection strategy discussed in Recommendation 1. The Council should advise the Secretary on consensus strategic objectives and

performance measures for each strategic goal, and CLMOs then should lead the development of annual operational plans detailing component-specific actions to be taken toward meeting these goals and related objectives. Updates on progress toward the Secretary's strategic vision and goals for workforce health protection, as demonstrated through the performance measures outlined in the strategy, should be presented and discussed in regular meetings of the Health, Safety, and Medical Council. The related objectives and performance measures should be reviewed by the Council continually to ensure that the strategic plan is adaptable and meets the evolving needs of the department.

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7

Functional Alignment

Chapter 2 presents the committee's framework for workforce health protection and identifies key functions of an integrated health protection infrastructure. The two pillars of this framework reflect the two medical requirements for mission readiness: (1) a workforce that is medically ready, and (2) the capability to provide medical support to the workforce during planned and contingency operations. The committee noted significant variability in the implementation and resourcing of occupational health and operational medicine programs across the Department of Homeland Security (DHS). This observation suggests a role for the centralized health and medical authorities at DHS to improve mission readiness by establishing a more uniform and unified approach to workforce health protection. This chapter provides the committee's recommendations for how DHS can align critical workforce health protection functions that support mission readiness through global policies and standards that set clear expectations.

THE NEED FOR FUNCTIONAL ALIGNMENT

When the Chief Medical Officer (CMO) position was created at DHS, the vision was to appoint a medical leader who could unify the department's fragmented health and medical system. The *Delegation to the Assistant Secretary for Health Affairs and Chief Medical Officer* granted the CMO the oversight authority needed to achieve that vision. Despite that vested authority, however, in the absence of accountability processes, the CMO has to date been largely unsuccessful in garnering sufficient support

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from component leadership to achieve a unified health system. Throughout the course of this study, the committee noted multiple examples of components taking independent approaches to health protection functions, with varying levels of success. Although components require flexibility to tailor programs to their operational realities, care must be taken to ensure that core requirements are still being met. A continued lack of consistency among critical health and medical programs creates liability risks (legal and monetary) for DHS, including but not limited to

- equal employment opportunity suits if medical standards are not adequately defensible in a court of law,
- liability associated with adverse events if medical providers are not appropriately credentialed,
- liability associated with failure to provide detainees and others for whom DHS has assumed responsibility with adequate and timely medical care, and
- workers' compensation liabilities associated with unsafe or unhealthful workplaces and inadequate processes for preventing or limiting disability.

Going forward, the Office of Health Affairs (OHA) needs to find a means to ensure that critical health protection functions are aligned across the department in such a manner that all component programs are resourced and appropriately implemented to meet core requirements set by the CMO. The coordination mechanisms recommended in Chapter 6 can support this objective by providing a means of obtaining component support. However, it is still the CMO's responsibility to set clear expectations through global policies, standards, and programs.

ENSURING THE MEDICAL READINESS OF THE DHS WORKFORCE

To meet mission requirements effectively, DHS needs to build a workforce protection capability that maximizes the number of DHS personnel who are medically ready, or free of health-related conditions that would impede their ability to participate fully in or support operations. Discussions of readiness in civilian organizations tend to focus on fitness for duty. However, a comprehensive strategy for supporting readiness needs to go beyond fitness-for-duty evaluations and address the full employment life cycle. The strategy needs to focus not only on the health and capability of employees, but also on the safety of both job processes and the work environment and the interactions among these three elements (see Figure 7-1). Occupational safety and health and occupational medicine programs, including health promotion programs, work hand in hand to prevent employees from

	People							
People	Preplacement Evaluation	Work Hardening	Readiness Assessment & Monitoring Wellness	Rescue & Injury Treatment	Absentee Minimization Wellness	Impairment Evaluation Disability Evaluation	Worker Screening & Monitoring Wellness	End of Employment Evaluation
Processes	Job Design Job Description	Job Accommodation/ Modification	Continual Risk Assignment & Mitigation	Risk Management Event Review	Job Redesign Reasonable Accommodation		Continual Risk Assessment & Mitigation	Job Obsolescence
Places	Facility Design/ Acquisition	Continual Risk Assessment & Mitigation	Workplace Screening & Monitoring	Risk Management Event Review	Engineering Adjustments		Workplace Screening & Monitoring	Decommissioning

(Vertical label between columns 3 and 4: Adverse Event)

Progression Through Life Cycle →

FIGURE 7-1 A life-cycle approach to achieving mission readiness through workforce health protection.
SOURCE: Lang, 2007.

departing from a state of readiness, while disability management programs facilitate reestablishment of readiness. Although not depicted in Figure 7-1, the life-cycle approach should also address special needs related to deployment (e.g., pre- and postdeployment assessments).

As discussed in Chapter 4, mechanisms for assessing, promoting, and sustaining medical readiness vary widely across DHS, and few standards and overarching policies have been promulgated by the CMO to ensure consistency and interoperability. Dr. J. D. Polk, former acting CMO at DHS, told the committee that a gun carrier in Immigration and Customs Enforcement (ICE) and a gun carrier in Customs and Border Protection (CBP) can be doing the same job but be held to different standards (Polk, 2013). This can be a point of contention among unions, and ultimately it may compromise the defensibility of the standards. A common life-cycle framework for approaching workforce health and resilience would provide a mechanism for ensuring that a set of disparate components can achieve the appropriate mission readiness outcomes. A life-cycle approach integrates a fragmented system and typically has the following characteristics:

- clear and explicit guidelines and expectations regarding operation and performance,
- a common approach for monitoring job-related mission readiness, and
- a proactive framework for enhancing or restoring workforce readiness.

Existing injury/illness prevention, fitness-for-duty, health promotion, medical case management, and workers' compensation programs should be integrated within this life-cycle approach.

> **Recommendation 7:** *Develop a common employment life-cycle-based framework for achieving mission readiness.*
>
> **The Chief Medical Officer should establish a common approach to identifying and mitigating limitations on individual readiness, to be implemented by the components and adapted as necessary. Such an approach should include**
>
> - **developing health-related functional standards (including specific medical standards when mission-critical) for job series that are common across multiple component agencies, allowing flexibility for reasonable modification where justified by unique duty requirements within components;**
> - **monitoring, assessing, and promoting individual readiness across the entire employment life cycle, from entry into the workforce to the time of separation or retirement; and**
> - **reestablishing readiness, to the extent feasible, when individuals are identified as having limitations.**

Job performance requirements[1] will drive the evaluation of readiness; it follows, then, that the frequency and content of job-related health and fitness evaluations should be consistent for similar job series across the department. Job-related health, fitness, and resilience should be evaluated at multiple points across the employment life cycle:

- preemployment or preplacement, to ensure that candidates meet physical and medical job requirements and to establish baselines for health and fitness;
- periodically, to ensure that employees continue to meet physical and medical job requirements and to enable the early identification of conditions that may limit individual readiness;[2]
- when triggered by injury, illness, and/or noted declines in job performance, to assess whether employees still meet physical and

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[1]Derived from a job task analysis validated by an occupational health professional.

[2]Periodic screening assessments may be voluntary or mandatory based on job requirements, and when mandatory, can be age-adjusted based on risk. Periodic assessments also should be used as opportunities to discuss health promotion and health risk mitigation strategies to prevent departure from a state of readiness.

medical job requirements and, if not, to assess their capacity to return to a state of readiness following appropriate interventions; and

- before and after deployment to sites of contingency operations, to determine the appropriateness of deploying an individual with a given health and physical capability status based on expected working conditions, and to assess the need to reestablish readiness upon return.

A Comprehensive Medical Evaluation and Clearance Process

As described to the committee by Phillip Spottswood (2013), Medical Policy and Programs Specialist at the Office of Personnel Management, a comprehensive medical evaluation and clearance program to support medical readiness would include the following elements (see Figure 7-2):

- a preplacement (postoffer) fitness-for-duty evaluation, including a medical history, to evaluate employees against approved medical standards and physical requirements and to establish baseline information that can be used to control workers' compensation costs;
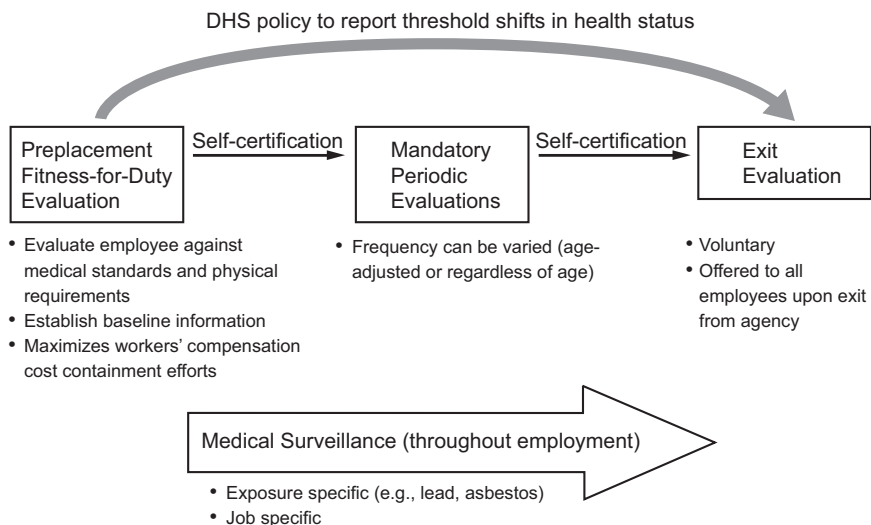

FIGURE 7-2 A comprehensive fitness-for-duty evaluation and clearance program.
NOTE: It is understood that evaluations should be consistent with employment law.
SOURCE: Adapted from Spottswood, 2013.

- mandatory periodic fitness-for-duty evaluations that can be age-adjusted or independent of age, with requirements to self-certify regarding job-related health status on an annual basis;
- a departmental policy requiring employees to report threshold shifts in health status;
- medical surveillance throughout the employment period that is both job and exposure specific; and
- a voluntary exit evaluation offered to all employees upon separation.

Framework Implementation

Standards Development

Given the committee's lack of information on the various component operational requirements, it was not possible to formulate specific recommendations regarding medical and physical ability standards. As discussed in Chapter 6, the committee believes that Component Lead Medical Officers (CLMOs) should be engaged in the recommendation and validation of such standards (see Recommendation 5 on the Medical and Readiness Committee). Soliciting component buy-in throughout the standards development process will prevent the kinds of problems experienced with past efforts to develop DHS-wide standards (Leffer, 2013). Standards development processes are discussed in detail in Chapter 3, and one model approach is provided in the committee's case study on the Department of the Interior (see Box 3-5).

Readiness Assessment

Fitness-for-duty evaluations should be functionally based and focus on physical capabilities necessary to establish readiness for a given position, based on documented fitness-for-duty requirements in a given agency. Employee health should be examined only as it relates to those requirements. Although components need flexibility in the implementation of readiness assessment processes, DHS should consider standardizing or setting minimum requirements for some aspects of implementation. The quality of readiness assessments may vary considerably depending on how they are conducted (Garbe, 2013). For example, consistency is improved when assessments are conducted internally or through a centralized contract or agreement (Garbe, 2013), as opposed to allowing individuals to choose their own examining physicians for readiness assessments. The Federal Bureau of Investigation (FBI) takes this approach, using vendors contracted through the central occupational medicine services officer to administer examinations, but reviewing results and making determinations internally (Wade, 2013).

BOX 7-1
Special Considerations Regarding Fitness
for Duty for Contracted Personnel

As a special consideration in addressing fitness for specific duties, especially deployments, the committee takes note of the extensive use of contractors in many aspects of Department of Homeland Security (DHS) operations. The government's role in the occupational health of contractor personnel has been an ongoing issue throughout the federal government, but it takes on special importance in DHS, where contractors often play an important role in critical incident response. DHS needs to actively engage other government entities in ensuring that these issues are addressed, but at a minimum, the Office of Health Affairs should provide specific minimum occupational health criteria for inclusion in various support contracts to ensure that contracted organizations address such critical issues as appropriate immunizations, requirements for meeting certain fitness-for-deployment standards, and mechanisms for obtaining necessary care during critical incident response before assigning personnel to contracted critical support positions. The Department of Defense has addressed health requirements for contracted personnel, particularly those who deploy with active-duty military personnel, through clear policies (32 CFR 158.7; DoD, 2006). Such policies could serve as models for DHS.

Special considerations regarding fitness for duty for contracted personnel are described in Box 7-1.

Early Intervention and Disability Management to Reestablish Readiness

One of the main objectives of the life-cycle approach is the early identification of any health-related conditions that impede employees' ability to carry out the responsibilities of their position fully and safely and mitigation of such limitations so as to return those employees to a state of mission readiness. Therefore, a critical requirement is the capacity to follow up on limitations identified through screening assessments. To build and sustain this capacity, components should establish early intervention and injury/illness case management programs that operate in close coordination with fitness-for-duty, injury/illness prevention, and workers' compensation programs.

Medical case managers should be established in components, or subcomponents as appropriate, to provide continuity of service, allow for deeper understanding of jobs and job requirements, and build understanding and trust between employees and case managers. Special attention

may be needed to ensure that employees injured on *and* off the job receive coaching regarding best practices in medical management to ensure their timely return to duty. Where feasible, case managers should be assigned to specific geographic locations.

Case management at the subcomponent level may be warranted when subcomponents have their own medical standards that injured employees must meet before returning to duty. For those employees who must meet medical standards, nurse case managers who are familiar with those standards can help avoid delays in medical clearance processes (Lewandowski and Weeks, 2013). In such cases, efficiencies may be realized by having medical program staff responsible for fitness-for-duty evaluations also serve as nurse case managers. If nurse case managers for disability management are separate from occupational health staff, the two groups will need to work together closely after occupational injuries to return employees to work as quickly as possible while still ensuring compliance with medical standards.

Regardless of whether medical case management programs are established internally or outsourced, care must be taken to ensure their integration into the component medical infrastructure. Workers' compensation reporting systems and occupational safety and health reporting/tracking systems need to be coupled so that trends/issues/problems can be identified rapidly and corrected, thus preventing additional injuries and illnesses (and/or enabling early recognition of nefarious acts such as use of weapons of mass destruction). Such integration may not occur if case management programs are led from workers' compensation offices that are isolated from safety and medical program offices.

MEDICAL SUPPORT FOR OPERATIONS

All federal employees are entitled to safe and healthful places and conditions of employment.[3] Federal agencies are equally responsible for workers operating in the field and those stationed in more conventional workspaces. Operational medicine programs are a means by which occupational health and medical services are made available to workers in the field and are essential to mission readiness. The dependence of the mission on a robust capability to provide medical support to the workforce during operations sets DHS apart from most other federal agencies and imposes unique requirements for a workforce health protection infrastructure.

OHA has achieved commendable progress toward the integration of emergency medical services (EMS) across DHS. The approach to integration

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[3]As required by the Occupational Safety and Health Act of 1970 and Executive Order 12196.

is well described in the DHS Emergency Medical Services Strategic Framework (DHS, 2012). Working collaboratively with nine DHS component agencies through the Emergency Medical Services Training and Education Advisory Committee, OHA has developed a centralized EMS system plan, has established standards of care through baseline basic life support and advanced life support protocols, and has acquired software for department-wide patient care reporting and tracking of EMS provider credentials. OHA also is working with the Emergency Medical Services Training and Education Advisory Committee on the development of a central EMS policy document. As a result of these efforts, improvements in efficiency, interoperability, consistency, and information sharing have been realized. Interoperability is of notable importance given the potential for joint DHS operations in support of state and local EMS assets in the event of a disaster.

Despite these laudable achievements, a comprehensive program for operational medical support needs to go beyond EMS to include the capability to address the preventive and ambulatory medical care needs of those conducting DHS operations (Heck and Pierluisi, 2001). Like a corporation that sends its employees to regions of the world with limited or low-quality medical resources, DHS has a responsibility to ensure that members of its workforce operating in remote, austere areas and those who, for security reasons, cannot readily access local medical resources have access to comprehensive medical services. Beyond moral and legal responsibilities, the lack of access to basic preventive and responsive medical services to mitigate serious medical events (e.g., infectious disease outbreaks and injuries) in field situations can result in preventable illness or injury, lost productivity, and logistical challenges that lead to mission failure.

The medical and operational needs related to those in DHS care or custody also need to be addressed by a comprehensive DHS operational medicine program. The provision of timely and quality medical treatment to those in DHS care or custody is a legal responsibility of the agency,[4] and failure to meet this requirement may expose the department to liability. Beyond liability concerns, inadequate resources to address these needs can substantially impact DHS operations. In some components, for example, the requirement for DHS law enforcement officers to escort detainees to a distant emergency department for even minor injuries and illnesses is costly in terms of both treatment for detainees and the impact on operations of the temporary unavailability of those officers. In 2011, emergency department visits for CBP detainees in the southwest border region alone cost DHS $13 million (Zapata, 2013). At the four busiest stations (out of 139), emergency department visits cost DHS $2.5 million and an estimated

[4]Federal courts have held that pretrial medical care, whether in prison or other custody, is required by the Fourteenth Amendment (*Wagner v. Bay City*, 227 F.3d 316 [5th Circuit 2000]).

90,000 lost agent hours accounting for an additional $3.9 million of agent time (Zapata, 2013).

The diversity of operational and mission requirements among DHS's component agencies prohibits a one-size-fits-all approach to the establishment of a departmental operational medicine capability. Components and subcomponents need flexibility to develop operational medicine programs that meet the requirements of their unique operating conditions. The Border Patrol's austere medicine training and protocols program (described in Chapter 4) is an example of the expansion of operational medicine capability beyond that of conventional EMS based on a unique component need. The Office of Field Operations, also within CBP but operating primarily at ports of entry, requires a different medical force capability to deal with the large number of obstetric emergencies encountered regularly (Seifarth, 2013). Yet despite this inherent variability, the committee believes the CMO should set minimum core requirements for operational medicine programs to ensure the timeliness and quality of services, consistent with the practice of other public safety agencies.

> **Recommendation 8:** *Establish a comprehensive operational medicine capability to ensure consistent, high-quality medical support during operations.*
>
> **The Chief Medical Officer (CMO), with input from the Medical and Readiness Committee, should establish a coordinated, department-wide operational medicine capability to ensure that timely and effective preventive and responsive medical services are available to all component employees and others under Department of Homeland Security (DHS) control during routine, planned, and contingency operations. To achieve this capability, the CMO should**
>
> - **ensure that all DHS and outsourced providers of medical support for operations are appropriately educated and trained, and routinely evaluated through centralized credentialing, baseline training requirements, and a standardized competency assessment process;**
> - **develop baseline treatment protocols to be applied by all component medical providers, and authorize component-specific treatment exceeding the baseline;**
> - **develop, mandate, and maintain uniform reporting methods and system performance criteria for all operational medicine activities across the department to ensure the quality of medical care rendered to all patients;**

- **identify and provide programmatic support to address significant deficiencies in human (staffing levels and skill sets) and physical resources required to ensure that the medical support needs of the workforce and their non-DHS charges are met; and**
- **delegate component-level implementation and oversight[5] of operational medical support to the Component Lead Medical Officers.**

The CMO should build on the accomplishments of the DHS Emergency Medical Services Training and Education Advisory Committee and the DHS EMS System Plan to develop a comprehensive operational medicine capability that allows flexibility for adaptation at the component (and subcomponent) level while establishing core requirements. The CMO has overall agency responsibility for medical policy development and standards setting and should assess compliance with policy and protocol and the quality of care rendered to all patients according to prospectively determined outcome measures. However, given the variability in operating conditions among components, it will be critical that the CMO delegate specific execution of the operational medicine program to the CLMOs proposed in Recommendation 4 (see Chapter 6), who would be responsible for overseeing the implementation of DHS standards and policies in the context of their component's unique requirements. To ensure that CLMOs receive the necessary level of support from their component agencies, the Secretary should hold component agency heads accountable for the effectiveness of such programs and their compliance with department-wide policies and standards.

Medical support for all routine, planned, and contingency operations, including those activities in which care of persons in custody is anticipated, should be explicitly addressed through the medical elements of an overall component operational plan. Such plans, informed by medical threat assessments, would enable the CMO to assess the capacity of components to provide timely and effective medical support during operations. The CMO should delegate responsibility for reviewing medical elements of all component operational plans to the CLMOs to ensure adequate resourcing of day-to-day and surge operations with medical personnel trained and equipped in a manner appropriate to the mission. Where deficiencies in resourcing are identified, OHA should work with components to develop plans for addressing them, considering opportunities to leverage telemedicine and other

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[5]The committee noted extensive contractor involvement in the direction of medical operations in some components. The role of contractors in the direction and oversight of medical operations should be delineated more clearly following analysis by the DHS General Counsel to ensure compliance with legal requirements set by the Federal Acquisition Regulations regarding inherently governmental functions.

existing and new technologies.[6] The Southwest Border Initiative described to the committee provides an example of how OHA can add value by offering programmatic support to address resource deficiencies. That initiative, if funded, would place medical service providers at four high-volume Border Patrol processing stations, potentially saving DHS more than $7 million in unnecessary emergency department visit costs (Zapata, 2013).

The committee heard on several occasions that securing adequate funding for operational medicine programs is a chronic challenge (Ross, 2013; Stair, 2013; Tang, 2013; Wilson, 2013). Metrics that highlight the impact of operational medicine programs on mission capability and success are critical to engendering support from top leadership. As appropriate, the CMO should set benchmarks for components to demonstrate that programs are operating effectively and efficiently. Recommended metrics for performance measurement[7] include

- number of treatment encounters conducted outside of conventional workspace;
- type of activity during which treatment was required (i.e., training vs. operational mission);
- classification of person receiving treatment (i.e., DHS employee, subject in custody, third party);
- dispositional indications of severity:
  - o number requiring hospital treatment or admission,
  - o number with vital signs meeting criteria indicating a threat to life,*
  - o number exhibiting injuries defined by protocol as incompatible with life,* and
  - o number of employees not returned to duty on the same shift;
- dispositional indications of value added:
  - o number of employees returned to duty on the same shift,
  - o number of subjects in custody remanded to processing after treatment,* and
  - o number of third-party patients treated and released.*

CENTRALIZING HEALTH SERVICES

Because of the wide variation among their missions, each of the major operating components has specific needs that are best served by support

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[6]Resources of this type are already in operation within the Coast Guard and Immigration Health Services.

[7]Indicators requiring enhanced review as sentinel events indicative of increased risk to the department are designated by an asterisk.

programs tailored to its operational functions. For this reason, the committee does not recommend that the management and execution of health, safety, and medical programs be centralized as a departmental shared service. However, some common services should be centralized to promote efficiency and interoperability while ensuring the necessary level of service quality. These include

- services that may be shared for purposes of efficiency of operations, including services not organic to the mission of the organization that can be outsourced;[8] and
- services that should be shared to optimize patient outcomes through the application of best practices and to enable effective assessments through the use of common measures and criteria. (Mandated provision of these services centrally also can help ensure that a component cannot apply undue command influence to the process or impede the process through resource restrictions.)

In medicine there are critical areas that time, experience, and public opinion have shown to be highly visible and that require the development and consistent application of common procedures, criteria, and metrics to assist senior management in assessing outcomes and the effectiveness of resource allocations against outcomes. An example for which this has been found nearly universally true is credentialing of health care providers. The basic qualifications for an emergency physician, for example, are well established nationally, but they do require assessment by medical professionals experienced in the understanding of an individual physician's record, in a dispassionate manner, separate from the hiring process. A common process for obtaining, consolidating, reviewing, and adjudicating health care providers' credentials can help ensure that any provider within the department meets at least a minimum standard.

OHA has a key role in supporting components' collective efforts to carry out the DHS mission and, in so doing, in contributing to the "one DHS" concept. Mission support programs and services represent significant investments, and in the current financially constrained operating environment in which programs must compete for funds, strategic allocation of resources and demonstration of program effectiveness are essential. DHS has been criticized for making acquisition decisions on a program-by-program and component-by-component basis (GAO, 2012). The committee found examples of such practices during its information-gathering process.

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[8]Personnel security investigations are an example of a service that some, though not all, agencies find are most cost-effectively outsourced either to a different government agency that specializes in this work or to an appropriately qualified contractor.

For example, occupational health and medical services are procured at the component and sometimes the local site level, resulting in hundreds of independent contracts and interagency agreements, with little in the way of technical oversight to ensure service quality (Kosh-Suber, 2012). By taking a functional, cross-component perspective, OHA has an opportunity to add value in this area. Centralizing common critical services would enable alignment of component mission needs with department-level goals. Although OHA has made some progress in this area (e.g., centralized credentialing of prehospital medical providers), a more formalized approach for obtaining buy-in from components should be used to accelerate the process of establishing centralized health, safety, and medical services.

> **Recommendation 9:** *Centralize common services to ensure quality and to achieve efficiencies and interoperability.*
>
> **To ensure that health, safety, and medical programs at the component level are effective, efficient, and of high quality, the Office of Health Affairs should develop and deliver certain health-related services common to all components. Centralized common services, to be recommended by the proposed Medical and Readiness Committee and approved by the Chief Medical Officer, should be adopted and implemented by the components unless a component-developed business case demonstrates otherwise. These actions would facilitate integration, department-wide efficiencies, and evaluation against common objectives using common standards and metrics.**

Recognizing that the CMO, in consultation with the proposed CLMOs, would best be able to determine which services, if centralized, would improve in both efficiency and quality, the committee did not wish to be prescriptive in this area and offers the following only as examples of services that the CMO might wish to consider centralizing:

- medical quality management, including credentialing, maintenance of certification, and licensure;
- health information management capabilities as outlined in Recommendation 11 in Chapter 8;
- health professions education and training;
- medical logistics, including purchasing and distribution;
- public health services and consultations (e.g., immunization programs, travel medicine, risk communication, wellness programs); and
- requirements development and technical oversight for contracts, interagency agreements, and memorandums of understanding with

outside entities providing health and medical services to DHS and its components.

Instead of attempting to develop a comprehensive list of services that should be centralized, the committee proposes that the CMO use the following criteria to develop a prioritized list of candidate services/programs that would appropriately be delivered with a centralized approach:

- The service is well defined and well circumscribed.
- It is not an operational aspect of the component's mission but is required in support of the mission. This latter determination could be made by either component leadership or DHS headquarters.
- OHA can develop a DHS-wide set of criteria, standards, and procedures for the provision of the service using a combination of those that are nationally accepted and those that are DHS-specific as required to meet particular departmental needs.
- Law or public opinion expects the success of the service to be demonstrable against standards.

The following are additional desirable but not required features:

- The service can be fairly costed on a standardized unit basis for the purposes of component chargeback.
- The service is not unique to DHS, and there is a track record of its being provided in a shared manner to diverse components of other organizations.

Members of the proposed Medical and Readiness Committee, as representatives of component heads, should review and prioritize services on the list and suggest additional services not anticipated by OHA. As centralized services are developed, OHA should establish parallel assessment and accountability metrics for use across the department. Such metrics could be used in performance evaluations of component heads to ensure that components are held accountable for demonstrating the achievement of an effective and efficient program.

It should be noted that the committee does not mean to imply that OHA is the only entity that could execute a shared or centralized health-related function. If there are functions that one component, or even another government agency, already operates in an exemplary manner, DHS could choose to have that agency execute this function for the entire department (or for those components opting in) using a center of excellence model (see Figure 6-1 in Chapter 6).

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8

Information Management
and Integration

A s the principal department advisor on all medical and public health
issues, the Chief Medical Officer (CMO) must be able to brief the
Secretary regarding the health, safety, and readiness of the Depart-
ment of Homeland Security (DHS) workforce and to advocate for needed
investments in prevention and health protection programs to address sub-
optimal readiness. Requisite to fulfilling this charge is the capability to
maintain situational awareness regarding the health and medical status
of the DHS workforce and the major health and safety risks that impede
readiness. Given the absence of department-level health and safety infor-
mation management systems, this capability currently does not exist in the
Office of Health Affairs (OHA), or anywhere else in the department. This
chapter presents the committee's recommendations for steps DHS can take
to establish a systems approach to information management, supported by
a robust health information technology and informatics infrastructure, that
enables evidence-based decision making, surveillance, accountability, and
continuous quality improvement.

INFORMATION AND KNOWLEDGE MANAGEMENT

Obtaining reliable and consistent information is essential to the imple-
mentation and sustainment of an integrated workforce health protection
program. This capability begins with the development of a set of standard
core measures and metrics, linked to the program goals. Such measures
and metrics allow for a better understanding of organizational needs and
outcomes at all levels. However, the mere collection of data is not enough;

the data must be aggregated, analyzed, and used to monitor the effects of the program and enable continuous improvement. This can be achieved through a focus on information management—a systematic approach involving both technological and informatics capabilities that supports information exchange. Within a large, decentralized organization such as DHS, a centralized system for information management with standardized metrics and measures will support both horizontal (across levels) and vertical (between levels) integration.

Ultimately, the ability to manage information should support a larger organizational goal: the ability to manage knowledge. Knowledge management has been defined as "the process of creating value from an organization's intangible assets" (Liebowitz, 1999, p. iii). The ability to accomplish this depends on capturing, sharing, and deploying not only data but also the knowledge and intellectual capital that reside in an organization's people, structures, and relationships (Blue Ridge Academic Health Group, 2000). Just as an infrastructure can be built to support information management, an infrastructure also can be built to support knowledge management. Often referred to as a "knowledge web," such an infrastructure connects employees with information, knowledge, and each other, helping to reduce redundancies, streamline work processes, optimize resource allocation, and facilitate relationships across a dispersed organization (Blue Ridge Academic Health Group, 2000).

Throughout its information gathering, the committee noted multiple cases in which stovepiped programs and a lack of communication and coordination mechanisms across DHS have resulted in failures of knowledge management. In the most striking example, Customs and Border Protection (CBP) reported that its occupational safety and health office had conducted a cost-benefit analysis of placing medical clinics or practitioners at some of its high-volume stations along the southwest border to help manage employee injuries and illnesses. Ultimately, CBP determined that employee utilization rates would not be high enough to justify the costs (Rupard, 2013). However, the committee subsequently heard that OHA had conducted a similar cost-benefit analysis indicating that significant cost savings could be achieved by having on-site medical care for detainees at high-volume Border Patrol stations (Zapata, 2013); these estimates did not even include collateral benefits to employees. Remarkably, neither office had been aware of the other's efforts. This example clearly demonstrates the need to establish a knowledge management system that can provide the CMO with the enterprise-level health and medical intelligence needed to address cross-cutting issues and the ability to communicate those efforts across the department.

THE NEED FOR A DHS MEASUREMENT
AND EVALUATION FRAMEWORK

In September 2013, the Institute of Medicine's (IOM's) Committee on Department of Homeland Security Workforce Resilience released its report containing recommendations for a 5-year strategic plan for the department's workforce resilience program, DHS*Together*. One of the major gaps in the program identified by that committee was the lack of a strategy, framework, and common set of metrics for use in conducting a comprehensive evaluation of workforce readiness and resilience and for evaluating and improving the effectiveness of programs that support a ready and resilient workforce. The findings of the present committee support that conclusion. The committee learned that components routinely gather safety and employee health data, albeit in an uneven and inconsistent manner. However, little of this information is transmitted to OHA. In fact, the only source of data currently received by OHA of which the committee is aware is the centralized electronic patient care record.

In a presentation to the IOM Committee on Department of Homeland Security Workforce Resilience, representatives of the Office of the Chief Human Capital Officer outlined a number of currently available DHS-wide data sources related to workforce health, readiness, and resilience (see Box 8-1). Many of these types of data will be essential to developing a comprehensive understanding of employee health status and needs; however, these data are "not actively integrated or analyzed for the purpose of measuring workforce readiness or resilience" (IOM, 2013, p. 134), and it is unclear whether or how OHA could access them. Injury and illness data (Total Case Rate and Lost Time Case Rate), although reported at least annually to the DHS occupational safety and health program staff in the Office of the Chief Human Capital Officer, as required by the Occupational Safety and Health Administration (OSHA), are not shared routinely with OHA. Attempts to collect medical quality assurance data (e.g., reports of sentinel events, frequency of clinical competency assessments), as authorized by Directive 248-01 on medical quality management, have been unsuccessful; components have begun collecting some of the required data but are not using dashboards provided by the medical quality management staff to share these data with OHA. Minimal data appear to be collected on employee health risks, even at the component level, with the notable exception of the Coast Guard, which mandates a health risk appraisal for all active-duty members.

BOX 8-1
Summary of DHS-Wide Data Sources Available to
the Office of the Chief Human Capital Officer*

Workforce demographics on age, gender, geographic location, time with agency, time in service, veteran status, job type, pay level (from the National Finance Center [NFC])

Turnover (from NFC), including intent to leave (from the Federal Employee Viewpoint Survey) and reasons for leaving (from exit surveys—response rates vary, and participation is voluntary; the Transportation Security Administration [TSA] and the Secret Service administer their own)

Sick and annual leave, although detailed information (e.g., types of sick leave) must be requested from component agencies and may be subject to privacy considerations

Federal Employee Viewpoint Survey (FEVS) results (from the Office of Personnel Management [OPM])

Equal employment opportunity (EEO) complaints—icomplaints, 462 reports to the Equal Employment Opportunity Commission (EEOC)

Workers' compensation (from the Department of Labor's [DOL's] Office of Workers' Compensation, cross-referenced with DHS component systems)

Accidents and injuries, including line-of-duty deaths (from DOL, component systems)

Health and safety program quality and implementation (on-site assessments)

The Office of the Chief Human Capital Officer relies on data calls to DHS component agencies for

- employee assistance program (EAP) reports,
- suicide numbers,
- employee relations cases, and
- cross-referencing for other measures.

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*As presented to the Institute of Medicine Committee on Department of Homeland Security Workforce Resilience (IOM, 2013, p. 135).
SOURCE: Green, 2013.

A SYSTEMS APPROACH TO DATA COLLECTION

Although alignment of workforce health protection programs into a single reporting structure under the CMO, as suggested in the committee's Recommendation 2 (Chapter 6), would help address data sharing among headquarters entities, a systems approach is needed to collect and integrate data from across the department (see Figure 8-1). This type of approach, which entails data collection and analysis at four nested levels (individual, group, component, and department), supports both horizontal and vertical integration. Both forms of integration depend on the establishment of a common set of core metrics, which can be used for comparison across components and enable data aggregation for population-level analyses. Another important aspect of this approach is the consistent collection of data over time for longitudinal analysis (trending) to support continuous improvement.

In the absence of a comprehensive, standardized system with which to measure the performance of DHS's occupational safety and health, occupational medicine, operational medicine, health promotion, and workers' compensation programs, it is not possible to determine whether each component agency is managing its safety risk in an acceptable manner and whether occupational health programs are meeting objectives for improving workforce health and readiness. Thus, there is no means of ensuring
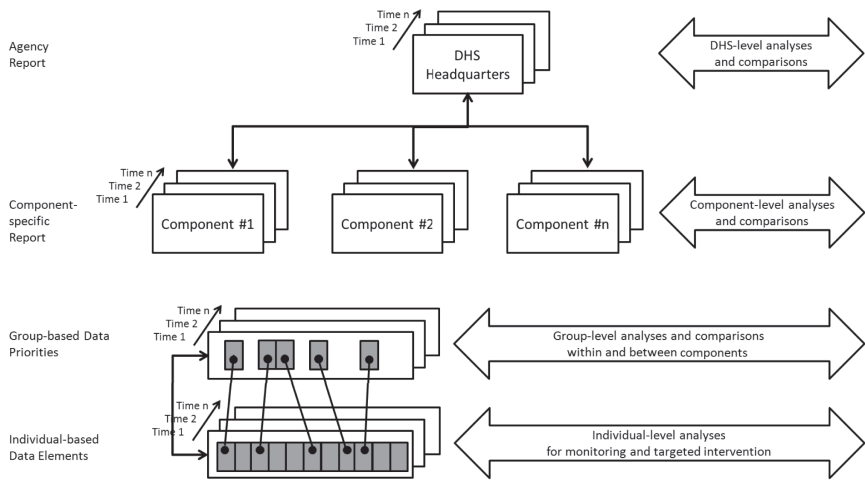

FIGURE 8-1 A systems approach to data management.
SOURCE: Adapted from IOM, 2005.

accountability, and those with responsibilities for workforce health, safety, and readiness are unable to make evidence-based decisions on investments in programs and infrastructure or to assess and improve the quality of programs and services.

> **Recommendation 10:** *Collect core metrics for accountability, continuous quality improvement, and readiness assessment.*
>
> **The Chief Medical Officer, in collaboration with the proposed Component Lead Medical Officers, should develop a common core set of performance and outcome metrics to allow analysis of activities, outcomes, and trends in the areas of workplace safety and health, workforce medical readiness, and quality of medical services. Ongoing monitoring and analysis of these metrics as part of a measurement and evaluation framework are essential to drive continuous improvement and accountability.**

In accordance with the recommendation of the IOM Committee on Department of Homeland Security Workforce Resilience to "develop and implement a measurement and evaluation strategy for continuous improvement of workforce readiness and resilience" (IOM, 2013, p. 153), the present committee believes that in developing a common surveillance and analytic framework, DHS also should include workplace safety and health, workforce medical readiness, and the quality of medical services to ensure the health, safety, resilience, and readiness of its workforce. In addition to measures of resilience discussed in that prior IOM report, DHS, using a systems approach as discussed above, should identify and collect the following types of metrics:

- Occupational safety and health metrics, including both leading (process) and lagging (outcome) indicators, should be used to identify and track progress toward the mitigation of health and safety hazards. An example of a leading indicator recommended by the committee is safety climate survey scores, which have been linked with employee compliance with and participation in health and safety programs (Clarke, 2006; Johnson, 2007; Payne et al., 2009; Zohar, 1980).

- Workers' compensation metrics should be used primarily to evaluate the past performance of health protection programs and target future risk reduction efforts (e.g., by site or by hazard type).[1]
- Occupational medicine metrics should be used to help maintain and track the fitness-for-duty status of employees and should clearly link occupational medicine programs to mission readiness.
- Operational medicine metrics should include process and quality measures, and they also should demonstrate the value of having medical support available to those engaged in DHS operations, highlighting the impact of operational medicine programs on mission capability.
- Health promotion metrics should include aggregated, deidentified population health data and utilization rates, and they should be used to inform the creation and continuance of health promotion programs (see Box 8-2 for unique opportunities to collect such data at DHS).
- Workforce readiness metrics should be used to provide an overarching picture of workforce health and readiness to complete the mission. This will require component agencies to define the requirements for readiness.[2]

Common Core Metrics

The committee was asked to identify metrics that could be used for evidence-based quality improvement. A challenge associated with this task was the lack of information provided to the committee on the health risks (disease and injury) that are shared across DHS. Before such commonalities can be identified, the major health and safety hazards must be understood within the components. Since few metrics are being aggregated at the headquarters level, it is unclear what information is being collected and analyzed by individual components. Some, such as the Transportation Security Administration (TSA) and, more recently, CBP, have conducted thorough investigations to determine root causes for high injury rates. Such analyses should be conducted by all DHS components so that targeted mitigation

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[1] It is important that occupational injury and illness incidence rates and workers' compensation data not be used to evaluate the performance of individual employees or managers, nor should incentives be related to these metrics. Such evaluations and incentives invite individuals to suppress reporting of injuries and illnesses, thus diminishing the usefulness of these data for both evaluation and injury and illness surveillance purposes.

[2] As discussed in Chapter 4, to the committee's knowledge, only the Coast Guard has defined requirements for individual readiness (based on alignment with Department of Defense policy), which can be monitored for individuals but also aggregated to measure the proportion of the component workforce that is classified as medically ready.

BOX 8-2
Measuring Employee Health at DHS

Data with which to monitor employee health and support federal workplace health promotion programs can be difficult to generate. Although the Office of Personnel Management has begun to collect health care utilization data from group insurance carriers, such data currently are not made available to federal agencies. Health risk assessments are another common source of health risk data. Although such assessments are mandated by military organizations, including the Coast Guard, as part of readiness assessments, civilian government employees cannot be required to participate. As a result, low response rates are a problem in civilian federal agencies offering health risk assessments, raising questions about the cost-effectiveness of such programs and the representativeness of the data thus procured.

Department of Homeland Security (DHS) does, however, have a ready source of employee health data that currently is not being fully exploited. Because of the security- and safety-sensitive nature of their jobs, a large proportion of the DHS workforce is required to submit to preplacement and, in some cases, periodic medical examinations. Such evaluations are a valuable source of population health data if processes, such as deidentification, are instituted to aggregate the data appropriately. For outsourced medical examinations, requirements for the provision of such data can be written into contracts and interagency agreements. For example, the Federal Air Marshal Service (FAMS), which uses Federal Occupational Health (FOH) for its mandatory medical exams, provides FOH with queries for extracting population health information; FOH then generates reports with deidentified aggregated data based on those queries. FAMS is planning to use these data to guide its new employee health and wellness program.

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mechanisms can be put in place. Once component agencies have a better understanding of their major health risks, shared challenges can be identified and used to develop a robust set of core metrics. Common reporting standards/metrics would enable OHA and the DHS occupational safety and health program management staff to track the effectiveness of quality improvement activities and to provide more effective support (e.g., advising on best practices) and oversight of component efforts.

Recognizing that DHS and its component agencies will ultimately be in the best position to determine which metrics will be of most value to the department after conducting analyses such as those described above, the committee identified a number of metrics relevant to DHS that should, at a minimum, be included in this effort (see Table 8-1). These metrics should be collected as noted and trended annually to identify improved or deteriorating performance and to set goals for achieving superior performance. If such data are to be used to compare performance across components,

TABLE 8-1 Suggested Core Metrics for Tracking Departmental and Component Health, Safety, and Readiness

Function	Metric	Purpose
Occupational safety and health	• Occupational Safety and Health Administration (OSHA) recordable incident rate per year	• To assist in identifying workplace hazards and assessing the effectiveness of safety interventions
	• Lost Time Case Rate	• To assist in identifying workplace hazards and assessing the effectiveness of safety interventions
	• Safety climate[a] index scores by site	• To gauge workforce perception of workplace safety and health as a leading indicator of injury risk
	• Number of serious[b] hazards identified and corrected	• To serve as a leading indicator of occupational safety and health program effectiveness
	• Percentage of job series with current job safety analysis[c]	• To serve as an indicator of supervisory commitment to job safety and health
Workers' compensation	• Temporary/total disability days[d] per 1,000 workers per year	• To assist in evaluating mission readiness
	• Medical and indemnity cost[d] per $100 payroll	• To provide incentives to prevent and respond quickly to workplace hazards
Operational medicine	• Number of employee treatment encounters outside of the conventional workspace per 1,000 operational person days and per 1,000 training days	• To assist in determining trends in medical readiness and mission safety
	• Percent of deployed personnel receiving predeployment assessments	• To gauge fitness for duty of deployed personnel
	• Number of employees who return to duty during the same shift per 100 injured employees	• To assess the effectiveness of on-location medical intervention and to demonstrate the value of operational medicine programs to line leadership
	• Percentage of operations that have an effective after-action plan	• To serve as a leading indicator for assessing operational readiness

TABLE 8-1 Continued

Function	Metric	Purpose
Occupational medicine	• Percent of required job-related health assessments performed per year	• To serve as a leading indicator to ensure the capability to carry out essential job tasks and reduce injuries and illnesses
	• Percent of deploying personnel receiving preventive medicine guidance	• To serve as a process measure for assessing the implementation of a preventive medicine program
Health promotion	• Influenza immunizations per 1,000 employees per year[e]	• To reduce absenteeism related to influenza
Workforce readiness	• Number of employees per 100 who are identified as not mission ready[f]	• To monitor and provide operational leadership with information on the current state of workforce operational readiness
	• Readiness assessments per 100 workers with more than 7 lost workdays	• To serve as a leading indicator for assessing operational readiness
	• Median and mean disability days per employee identified as not mission ready	• To assess operational readiness
	• Provision of modified work per 100 workers with more than 7 lost workdays	• To assess operational readiness and measure the success of return-to-work programs

[a]Safety climate scales examine employee perceptions of safety in the workplace, with research supporting a strong link between safety climate and employee compliance with and participation in safety programs (Clarke, 2006; Johnson, 2007; Payne et al., 2009; Zohar, 1980).

[b]"The word *serious* as used in *serious hazard*, *serious violation,* or *serious condition* means a hazard, violation or condition such that there is a substantial probability that death or serious physical harm could result" (*Occupational Safety and Health Act of 1970,* 91st Congress, S.2193 [December 29, 1970]).

[c]The Occupational Safety and Health Administration (OSHA) (2002) recommends conducting job hazard analyses to determine and establish proper work procedures and to eliminate and prevent hazards.

[d]Recommended Employer Measures of Productivity, Absence and Quality (EMPAQ) metric (NBGH, 2013).

[e]CDC (2013) recommends tracking influenza immunizations and assessing their effect on productivity.

[f]Based on a component-developed definition of mission readiness.

some of the metrics (e.g., OSHA recordable injuries, temporary/total disability days per 1,000 workers) should be analyzed in a manner consistent with the risk entailed in the entity. For example, DHS components whose employees perform hazardous tasks would have higher accident frequency and lost time injury rates than components whose employees perform less hazardous tasks. To adjust for this difference, a weighting factor should be applied to the data to allow fair cross-organizational comparison.

Data Collection Tools and Accountability

A systems approach to data collection, as described above, necessitates standardized data collection tools. Scorecards and other global assessment tools have been used extensively in private industry (e.g., Procter & Gamble, Johnson & Johnson) to collect data from business units and aggregate them in a way that enables trending for individual business units and monitoring of organization-level outcomes for benchmarking purposes. These auditing tools, which include process and outcome measures that have been established a priori (like those described in Table 8-1), also enable decentralized organizations to hold heads of component business units accountable for compliance with global standards and policies (IOM, 2005). In the implementation of a common surveillance and analytic framework, DHS should develop a global assessment tool for the purpose of performance monitoring and accountability.

ENABLING HEALTH SYSTEM INTEGRATION AND CONTINUOUS IMPROVEMENT THROUGH INFORMATION MANAGEMENT SYSTEMS

The ability to transform data into actionable information is a critical capability. A number of achievements in informatics and health information technology (HIT) can serve as a foundation for this capability. Over the past two decades, for example, the Department of Veterans Affairs (VA) has transformed the quality and safety of patient care at its numerous clinics and hospitals through the implementation of its electronic health record system, VISTA. The VA is now using the data from these records to perform system evaluations and institute quality improvements. A study by the Center for Information Technology Leadership showed that between 1997 and 2007, estimated cost savings from the VA's investment in HIT exceeded $3 billion (Byrne et al., 2010).

Health Information Management at DHS

In considering the requirements for health information management within DHS, it is necessary to address two related but clearly different requirements that parallel the issues already discussed with regard to operational medicine services versus occupational health and safety. In support of operational medicine services, a system with characteristics most consistent with a traditional electronic health record is required so that treatment provided to anyone receiving care from DHS providers can be documented. This system would support further care of the patient, enable ongoing quality assurance, and provide complete medical records for legal purposes. The second requirement is a longitudinal health record to support occupational health, including readiness assessment. This record is, by definition, not a complete electronic health record, as it should be used only to document those health issues that are relevant to employment, addressing primarily capabilities specifically relevant to duties and deployments. There will likely be some overlap between these records as employees become patients in operational settings, but the two types of records are not synonymous. DHS's ongoing exploration efforts demonstrate recognition of these two separate needs.

To address the latter need, OHA has initiated an acquisition process for a department-wide electronic Health Information System (eHIS). Despite repeated requests, however, the committee had difficulty obtaining information on DHS's strategic approach to health information management using the proposed system. As of this writing, funding for the system has not been approved. OHA is still assessing feasibility and capabilities and has contracted for an evaluation of existing systems to determine the cost-effectiveness of agency-wide implementation. A working group comprising representatives from OHA, the Office of the Chief Human Capital Officer, and other DHS components identified the following mission and capability needs for the eHIS[3]:

- ensure that staff are medically suitable for their assigned or volunteered duties (e.g., job and environment);
- provide for the execution of an efficient DHS-wide fitness-for-duty and limited-duty program;
- enable efficient dispensing, tracking, and follow-up for medical countermeasures;
- lower occupational health costs across the department; and

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[3]E-mail communication, I. Hope, DHS OHA, to A. Downey, Institute of Medicine, regarding DHS mission needs capabilities identified-mission needs statement, March 27, 2013.

- unify and standardize occupational health and workforce health protection activities across the department.

If funding for the eHIS is approved, data integrated using the system may include preemployment medical history information, fitness-for-duty examination reports, position descriptions with physical requirements, and medical restrictions for work-related injuries. Such information could be used for multiple purposes, including adjudication of workers' compensation claims and tracking of medical readiness.

OHA has already acquired an electronic patient care record (ePCR) system to address the first requirement described above. All DHS components with emergency medical services (EMS)/paramedic personnel have been given access to the system and the opportunity to be trained in its use. Allowing DHS to consolidate all patient records, the ePCR system already has been adopted by a number of operational medicine units, including those in Immigration and Customs Enforcement (ICE) and the Federal Air Marshal Service (FAMS), as well as some within CBP and the Federal Emergency Management Agency (FEMA). By spring 2014, all DHS components, including the Coast Guard, are expected to have adopted the system. A function to be added to the ePCR system is a personnel management module that will track credentialing of EMS/paramedic providers. Although the ePCR can be loaded on mobile devices, a lack of hardware to support that function means that paper records remain a part of the patient encounter process, and this information must be transferred to the electronic system later, creating opportunities for error. The ePCR system enables OHA to query aggregate patient encounter data from across the department for both surveillance (e.g., volume and types of encounters) and quality assurance (run review) purposes. However, it is unclear what role the ePCR investment plays in a comprehensive HIT/informatics strategy or how patient record information (for DHS employees) will be integrated with the eHIS should that system be implemented in the future.

At the individual component level, the Coast Guard, working with the VA and the Office of the National Coordinator for Health Information Technology, is building an integrated health information system (IHiS) based on the commercial Epic electronic health record system for traditional clinical care environments. Its functionalities will include ambulatory care, urgent care, dental care, physical therapy, optometry, behavioral health, occupational health, immunizations, audiology, radiology, pharmacy, laboratory, and a patient portal (McCann, 2012). In addition to individual case management capabilities, the IHiS will enable disease management capabilities that can then broaden into data analysis for public health initiatives. The IHiS will consolidate many of the electronic reporting systems currently used by the Coast Guard for medical readiness reporting and deployment

health-related information. The Department of State also will be adopting the Coast Guard's IHiS. The only other component currently adopting an electronic health record is ICE, which recently awarded a contract for such a system to support comprehensive medical services management for detainees. It is not clear whether this system will also be used to track the health records of ICE employees.

Information technology systems for occupational safety and health vary considerably across DHS, and there is no department-wide system that allows safety and workers' compensation data to be aggregated at the headquarters level. Some components use spreadsheets to track this information, while others, such as TSA, have sophisticated safety information systems that track reported injury/illness and workers' compensation claims, as well as leading indicators such as information from safety inspections and job hazard analyses.

Although DHS is moving toward an enterprise approach to HIT, the committee did not find evidence that the department is fully aware of the informatics capability required to maximize the potential of an integrated health information management system. Two OHA staff members are trained in nursing informatics, and a third is familiar with the use of clinical informatics systems for medical quality assurance processes. However, this informatics capability does not appear to be represented at the component level, with the exception of the Coast Guard, which has a Chief Medical Information Officer. The lack of health informatics expertise across DHS may help to explain the lack of success of the Medical Quality Management (MQM) program. Headquarters MQM staff have been working with components to establish systems and processes that will enable structured/standardized data collection, reporting, and analysis for purposes of continuous quality improvement. Yet components, which rely primarily on outsourced medical service providers, appear not to have the personnel or expertise necessary to adopt such practices and have yet to use the MQM-provided dashboards for these purposes.

Building a Robust DHS Health and Safety Information Management Capability

Across DHS, health information and communication technology is viewed primarily as a strictly tactical resource. This perspective is too narrow to meet the current and future mission requirements of the various DHS components. The fields of medical and public health informatics and their application to clinical and public health programs are critical to DHS going forward. Components are engaged with clinical care, preventive medicine, and occupational medicine to varying degrees, but the development of health information management applications, data repositories,

and communications capabilities is spotty at best. Integration through health information management will not be achieved until this capability exists throughout the department.

> **Recommendation 11:** *Establish a health and safety informatics and information technology infrastructure.*
>
> **The Health, Safety, and Medical Council should charter a Health and Safety Informatics and Information Technology Governance Board to develop and oversee the implementation of a strategic plan for building a health and safety informatics and information technology infrastructure. The Governance Board should be led by a Chief Medical Information Officer designated by the Chief Medical Officer (CMO) and should include representatives from the offices of the CMO and the Chief Information Officer, as well as each of the components. The strategic plan should be reviewed and approved by the CMO; the Health, Safety, and Medical Council; and department leadership.**
>
> **The Governance Board should be supported by an operational-level Steering Committee to manage the implementation of the strategic plan, and both the Governance Board and the Steering Committee should be supported by appropriate experts in health and safety informatics and information technology from within DHS and other federal agencies. Lead agencies from which to seek expert guidance might include, but are not limited to, the National Library of Medicine, the Office of the National Coordinator for Health Information Technology, the Agency for Healthcare Research and Quality, and the Patient-Centered Outcomes Research Institute.**

An informatics and information technology capability is essential for implementation of the measurement and evaluation framework described in Recommendation 10, and Recommendation 11 is meant to complement efforts currently under way at DHS. Building on the work already accomplished by a DHS eHIS working group, the proposed strategic plan should provide the blueprint for a robust health and safety informatics and information technology infrastructure incorporating medical, public health, and consumer informatics capabilities, and it should be consistent with the overarching DHS information technology strategy. Elements of the plan should include

- a workforce strategy for relevant informatics and information technology personnel, including requisite responsibilities;

- a knowledge management structure within each unit and, where relevant, across the department; and
- a business case analysis demonstrating the return on investment.

Key features of the development and implementation of this plan should include

- engagement of front-line providers and other current stakeholders knowledgeable in informatics and information technology systems to identify needs, available resources, desired future capabilities, and alignment with DHS strategic objectives;
- assurance, through ongoing engagement with the DHS Chief Information Officer, that the DHS health information strategy and all systems are developed in a manner consistent with the department's overall information strategy and integrated with departmental efforts/systems wherever appropriate;
- an expert advisory board to offer feedback and strategic advice over time until no longer needed;
- ongoing evaluation of any unintended consequences of and barriers to implementation, and the development of strategies for resolving these issues; and
- designation, as a collateral duty initially, of a Chief Medical Information Officer to serve as a point person in OHA.

Although the committee believes that DHS should move to an electronic health information system, it does not have the necessary information to recommend the adoption of a single DHS-wide system over other alternatives. It may be that there is no single system that could meet all the needs of an organization as complex as DHS. Rather, the committee sees the need for an intellectual and technological infrastructure that can move to functional interoperability as the system matures and the agency gets a better sense of what can be achieved.

Considerations for Interoperability and Data Integration

With the exception of the Coast Guard, DHS provides little in the way of health care to employees outside of medical support as part of an operational medicine program. Consequently, its information management needs center on occupational safety and health data sources. Commercial occupational health management software, in contrast to more traditional electronic health records, is designed to facilitate the integration of occupational safety, health, industrial hygiene, environmental, and ergonomics

data into a single system to enable surveillance and risk management, as well as standardized data management, across the enterprise.

Regardless of the type of system ultimately adopted, DHS will need to address data integration at both the individual and population levels. At the individual level, records from diverse sources (e.g., medical treatment, absenteeism, fitness for duty, workers' compensation claims) need to be linked to provide a better view of the "whole individual." In the long term, this approach will enable targeted, evidence-based interventions to address individual employee health, which may be more effective than more general population health promotion measures (Bunn et al., 2010). Aggregation of individual data to the population level (in a deidentified form) will allow DHS to develop a global view of the health status of its employee population, identifying and monitoring progress toward mitigation of major health risks.

To address data integration at the systems level, DHS needs to consider interoperability with vendor and legacy component data management systems. It is important to note that some component agencies, including TSA and the Coast Guard, have already invested heavily in systems for health information management. In addition to integrating data sources internally, the proposed strategic plan should address mechanisms for integrating data collected by vendors providing outsourced health services (e.g., preplacement and fitness-for-duty evaluations; clinical services, including vaccinations; medical surveillance; and nurse case management). For example, Federal Occupational Health (FOH) has initiated an acquisition process for its own occupational health management system to integrate patient data (e.g., medical clearance, medical surveillance, vaccination status) with administrative information. Components contracting with FOH will have access to their own data within the planned system, but OHA will need to consider how such data can be collected into a DHS-wide system if integration is to be successful. Likewise, the vendor for the forthcoming DHS medical case management program is tasked with providing its own information technology solution, and it is unclear how these data will be integrated into the proposed DHS eHIS.

Perhaps the greatest challenge today is the integration of quality and safety dimensions into the informatics and information technology enterprise. This is a national challenge not limited to DHS, but success in this area will pay major dividends (see IOM, 2011).

Building an Informatics Capability

In addition to HIT specialists, DHS will need internal personnel with core competencies in clinical and public health informatics if it is to successfully transform information management to support health maintenance;

fitness-for-duty evaluation; and management of injuries, illnesses, and disabilities across the spectrum of DHS workforces and missions. Informatics specialists will need to be integrated with those charged with managing quality and safety to realize improvements in communications and coordination; standardization, harmonization, and interoperability; and efficiency.[4] The change called for will not be a minor one for a department as complex and diverse as DHS. DHS will need to undertake three related cultural and organizational transitions with respect to informatics and HIT:

- a shift from viewing information technology as a "fix" to recognizing the opportunities provided by informatics expertise as an ongoing strategic resource;
- a shift from viewing informatics and HIT leadership as overseeing a peripheral support group to seeing them as key players in conducting strategic planning, designing solutions, and advising departmental leadership; and
- a shift from relying on information technology staff to be both informaticians and information technologists to making a sustained investment in both information technology and informatics specialists.

These transitions will require medical and nursing officers who not only recognize the importance of informatics but also are trained in clinical informatics to support direct patient applications, as well as in public health informatics to support both individual health and wellness programs and population health monitoring and evaluation. In light of current staffing, external consultants will be needed initially to augment the currently insufficient informatics expertise within the department. However, DHS should initiate an education and training program as part of a workforce strategy designed to ensure that sufficient expertise will be available internally to meet general workforce requirements for clinical and public health informatics, as well as to build expertise in informatics areas specific to DHS missions (e.g., telemedicine for care of detainees at border areas, fitness-for-duty health programs monitored via electronic health records throughout the world). Continuing education will be needed as well to maintain cutting-edge knowledge and skills as technology and expectations continue to evolve. Newer educational technologies should be considered for addressing aspects of this challenge (Blue Ridge Academic Health Group, 2013).

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[4]See Blue Ridge Report 12, October 2008, available for free download at http://www.whsc.emory.edu/blueridge/publications/archive/blue_ridge_report_12_2008.pdf (accessed August 21, 2013).

Ultimately, Chief Medical and/or Chief Nursing Information Officers should be prominently located in the organizational charts of each of the components, and a coordinating council should be established to enable these leaders to interact with one another and jointly with line leadership within DHS. Engagement of senior DHS leaders should be undertaken through intermittent briefings to ensure that sufficient financial and staffing resources are allocated to the effort.

Implementation Challenges

Although ultimately beneficial, the implementation of an electronic health and safety information management system will be costly and disruptive in the near term, as evidenced by the continued delays and challenges encountered by the Coast Guard with implementation of its IHiS 2 years after awarding the initial contract to Epic (Janda, 2011). However DHS proceeds with the implementation of future systems, the Coast Guard's recent experience should be leveraged to identify lessons learned and opportunities for efficiency that may help DHS in those efforts.

Given the up-front investment costs and implementation challenges, the decision on the best approach going forward will require a series of business cases for each component, followed by a business case addressing whether common systems would be most effective across the department. The benefits of an electronic health record may be obvious for the Coast Guard and the detainee health services unit within ICE, both of which have longitudinal health services missions such that the loss of paper records as a consequence of patients moving within the system could result in missed diagnoses or other inappropriate care. For other components, however, an electronic health record could actually increase expenses for various reasons that could be explored in a business case. The committee did not have the manpower or time to develop these cost-analysis business cases, and it notes that OHA and other entities are in the process of doing so; the committee fully supports these efforts.

Oversight of the Implementation of Information Management Systems

To address the kinds of challenges discussed above, the proposed strategic plan should outline roles and responsibilities, as well as coordination mechanisms, for an oversight and coordination structure in the spirit of the Government Accountability Office (GAO)-described integrated enterprise governance structure illustrated earlier in this report (see Figure 6-1 in Chapter 6). This structure would suggest, and the committee recommends, two groups. The charge for the first group, at the level of a portfolio governance board, would be to establish policies and procedures needed to

achieve an integrated, first-rate informatics and HIT operation *over time.* This group would need to include representation from key stakeholders (a senior staff representative from each component) to ensure buy-in for recommended policies. The second group, at the level of a steering committee, would provide oversight of operations, including needs, implementation, and ongoing operational effectiveness (e.g., data management considerations). This group would need to consist of informaticians, users, and health information technicians close to the front lines. Because informatics and HIT continue to evolve, the committee believes DHS should create a Health Information and Informatics Advisory Group consisting of experts from across government that would work iteratively with leaders of both the governance board and the steering committee. The goal of these interrelated groups would be to meet the operational and management information and communication needs of individual components while exploiting opportunities for collective benefit where appropriate. All of these efforts need to be undertaken from the perspective of a value-driven learning health system, in which continuous learning supports evidence-based practices and continuous improvement (IOM, 2012).

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Considerations for Implementation

In the last decade, the Department of Homeland Security (DHS) has made considerable progress toward addressing the complex management challenges that accompanied its formation, including the need to transform disparate component health protection infrastructures into a coordinated and interconnected system. Still, additional hurdles remain that must be overcome if DHS is to achieve the mature health system required by its workforce and those in its care and custody. Advancing workforce health at DHS will require up-front investments, political will, and stakeholder buy-in across all levels of the organization—knowing even where to begin can be its own challenge—but the potential benefits are considerable. This chapter outlines some final considerations for implementation of the committee's recommendations, including projected benefits and priorities.

IMPACT OF AN INTEGRATED HEALTH
PROTECTION INFRASTRUCTURE

The committee was asked to consider the impact of its recommendations on mission readiness, health care costs, and liability at DHS. Clearly, concern for the health and safety of the workforce and those in DHS's care, not cost savings, should drive changes to the department's health protection infrastructure. Nonetheless, the committee recognizes that in the current fiscally constrained operating environment, adoption of its recommendations may require a strong business case. Although the committee lacked the information (e.g., investment costs) and time needed to conduct a formal impact analysis for the implementation of its recommendations, projected

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BOX 9-1
Projected Benefits to DHS of an Integrated
Health Protection Infrastructure

Mission Impacts
- Increased availability for missions
- Improved interoperability for better coordination during planned and contingency operations

Cost Savings
- Reduced costs associated with injuries, including workers' compensation costs
- Reduced costs associated with emergency room visits for detainees
- Cost savings from economies of scale (e.g., bulk purchasing and contracted services)

Liability
- Increased protection against equal employment opportunity suits
- Fewer lawsuits due to detainees not receiving appropriate care and fewer citations from the DHS Office for Civil Rights and Civil Liberties
- Reduced liability associated with provision of medical services by improperly credentialed providers

Other Benefits
- Improved morale
- Improved employee health

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benefits (summarized in Box 9-1) are described below and may be of use to DHS in the development of more rigorous business cases.

Mission Impacts

Given the operational nature of DHS, mission success depends on the availability of employees to participate in routine, planned, and contingency operations. It follows that workforce health and safety are essential factors in mission readiness. Although impacts of employee health programs often are measured in terms of decreased costs and injury rates, mission availability is a powerful measure of the combined effectiveness of preventive, curative, and rehabilitative interventions. Implementation of an employment life-cycle approach to mission readiness (Recommendation 7) and a comprehensive operational medicine program (Recommendation 8), both of which emphasize prevention, medical treatment, and rehabilitation, would

enable DHS to increase the number of employees available to participate in operations. For example, the Federal Air Marshal Service (FAMS), which described to the committee an approach consistent with the employment life-cycle framework shown in Figure 7-1 (Chapter 7), reported a 20 percent reduction in the number of mission opportunities lost between 2009 and 2010 (FAMS, 2013).

In addition to employee injuries and illnesses, the medical needs of detainees[1] impact mission availability. A business case for the Southwest Border Initiative proposed by the Office of Health Affairs (OHA)[2] demonstrated that a considerable number of agent-hours (approximately 90,000 agent-hours/year for just the four busiest southwest border stations) are lost because of the need to escort detainees to the emergency room (Zapata, 2013). A comprehensive operational medicine program addressing the health and medical needs of detainees in addition to those of DHS employees could have significant mission impacts.

Improved interoperability is another mission-related impact that could be achieved through a more integrated health system, particularly as it relates to operational medicine functions (Recommendation 8). Components often have different mission spaces, but for the specific conditions under which they must coordinate and collaborate, interoperability can be critical (Hill, 2013). Examples include disaster scenarios and custody transfer of detainees between agencies. DHS has already made progress in this area with harmonized treatment protocols and interoperable patient record systems, but additional mechanisms promoting interoperability will likely emerge as Component Lead Medical Officers (Recommendation 4) develop a stronger understanding of common challenges through the Medical and Readiness Committee (Recommendation 5).

Cost Savings

During its examination of health protection programs at DHS and other public and private organizations, the committee learned of many ways (e.g., injury prevention, disability management, health risk reduction) in which employers are achieving cost savings through employee health protection and promotion initiatives. Although pioneering companies such as Johnson & Johnson have had integrated employee health programs in place for more than a decade (Isaac, 2013), more widespread adoption of integrated

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[1] Refers only to medical needs of detainees prior to transfer to Immigration and Customs Enforcement (ICE) detainment facilities.

[2] As described in more detail in Chapter 7, the proposed Southwest Border Initiative would place medical providers at four of the busiest Border Patrol stations along the southwest border to provide screening and medical treatment services to detainees, and if needed, DHS employees.

approaches has really just begun. Consequently, although data on cost savings and return on investment may be available for individual interventions (e.g., worksite wellness programs), the committee found few evaluations of the cost impacts of implementing integrated workforce health protection programs. Navistar, Inc., a commercial manufacturing company, has measured cost savings associated with the efforts of its integrated Health, Safety, Security and Productivity unit. While average national health care expenditures have been increasing, Navistar has experienced net decreases in health care costs over the past decade, with similar trends in workers' compensation and disability costs (a 38 percent reduction from 2002 to 2008) (Bunn et al., 2010). At Johnson & Johnson, the implementation of its integrated Health & Wellness Program[3] resulted in savings of approximately $224.66 per employee per year as a result of reduced medical claims costs (outpatient, inpatient, and mental health visits) over the 4-year program period, with the most pronounced cost savings being realized in program years 3 and 4 (Ozminkowski et al., 2002).

Savings data such as those reported by Johnson & Johnson cannot simply be projected onto DHS, but even more modest per capita cost savings certainly could have dramatic impacts for a workforce of more than 200,000 employees. However, a major challenge for DHS and other government agencies is the centralized management of federal employee health benefits through the U.S. Office of Personnel Management. Lack of access to health care utilization and cost data impedes not only the identification of needed interventions and their targeting to an organization's major health risks, but also the use of reductions in health care costs (outside of those associated with workers' compensation) as benchmarks or as financial incentives for individual agencies to invest in employee health. As a result, measurable cost savings to DHS are limited primarily to workers' compensation costs, which can be very slow to respond to interventions, although continuation-of-pay costs[4] are more responsive to improvements in injury prevention and disability management practices. To address this issue, occupational health program staff at the Smithsonian linked sick day utilization to productivity and institutional savings. By comparing projected and actual sick day utilization rates, the organization was able to demonstrate savings associated with its occupational health program in terms of

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[3]Johnson & Johnson's "shared services concept" for its Health and Wellness Program entailed integrating employee health promotion, disability management, employee assistance, and occupational medicine programs. Safety and industrial hygiene programs were managed separately (Ozminkowski et al., 2002).

[4]Continuation-of-pay costs represent the wage replacement costs paid by the employing agency for the first 45 days that a federal employee is out on workers' compensation (see Chapter 3).

manpower (106 full-time employees) and cost ($9.54 million) over a 3-year period (Duval, 2013).

The intensive efforts undertaken at the Transportation Security Administration (TSA) to reduce occupational injuries and return injured employees to work in a timely manner[5] provide an example of the magnitude of savings that can be achieved just in workers' compensation costs through investment in workforce health protection initiatives. Between 2005 and 2012, TSA reduced workers' compensation claims by 78 percent, achieving an 81 percent reduction in continuation-of-pay costs and a 19 percent reduction in chargeback costs. In 2012, TSA's combined annual continuation-of-pay and chargeback costs were approximately $18 million less than in 2005 when efforts began (Mitchell, 2013). Although the committee was not provided with the total continuation-of-pay costs for DHS, its chargeback costs in 2010 exceeded $160 million[6] (see Table 1-2 in Chapter 1 for a breakdown of these costs by component agency). An integrated approach to injury/illness prevention, workers' compensation cost containment, and disability management[7] that produced even a modest percentage decrease in chargeback costs at DHS could result in savings of millions of dollars. These data are consistent with reports in the literature showing reductions in workers' compensation costs associated with integrated approaches to occupational injury prevention and case management (Bernacki and Tsai, 2003). At the Johns Hopkins Institution (including the hospital and university), an integrated workers' compensation claims management system that promoted a collaborative approach involving safety professionals, adjusters, and medical and nursing professionals resulted in a 73 percent reduction in lost time claims over a 10-year period. Total workers' compensation costs per $100 of payroll decreased by 54 percent over that same period (Bernacki and Tsai, 2003).

Another important opportunity for DHS to achieve cost savings that was described to the committee is a proposed initiative aimed at reducing costs associated with emergency room visits. As described above, DHS currently lacks the medical assets required to address the health needs of detainees along the southwest border. In addition to lost productivity associated with escorting detainees to the nearest hospital for health screening and even minor treatment needs, the emergency room costs themselves are significant—approximately $13 million in fiscal year 2011 (Zapata, 2013). To reduce these direct and indirect costs, the committee supports expansion

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[5]These efforts are described in detail in Chapter 4.

[6]E-mail communication, G. Myers, DHS Workers' Compensation Program Manager and Policy Advisor, to A. Downey, Institute of Medicine, regarding department statistics: chargeback totals and actuarial liability, February 20, 2013.

[7]As described in Chapter 4, both TSA and FAMS have developed this kind of integrated approach, although the two approaches differ in terms of in- versus outsourcing.

of the DHS operational medicine capability (Recommendation 8) as described for the Southwest Border Initiative.

The specific examples provided above demonstrate the potential for achieving future cost savings at DHS, but lasting cost containment can be realized only by continuously striving toward improvements in efficiency and effectiveness. To this end, it will be necessary to refocus efforts periodically on mission-critical work, ensure accountability, and partner with financial leadership to ensure that plans and policies are supported by business cases. Centralization of services (Recommendation 9) could facilitate savings through efficiencies related to economies of scale (e.g., bulk purchasing of common medical supplies) and consolidation of contracted services where appropriate.

Liability

Beyond liability in terms of health-related costs, the committee identified several other liability risks associated with failure to ensure that core competencies are met for safety, health, and medical programs. Equal employment opportunity suits may be brought against the department when individuals believe they have been inappropriately denied employment based on a medical condition.[8] Ensuring consistency in health-related employment standards for job series that are shared across DHS (Recommendation 7) could improve the legal defensibility of such standards, resulting in dismissal of complaints and associated cost avoidance. Further, DHS is legally responsible for providing medical treatment to individuals in its custody (Mulry et al., 2008). An operational medicine capability (Recommendation 8) that ensures that in-custody individuals receive timely and appropriate medical care could help avoid lawsuits brought by detainees and their families, as well as citations from the DHS Office for Civil Rights and Civil Liberties. Finally, under 6 USC 320, "each Federal Agency with responsibilities under the National Response Plan shall ensure that incident management personnel, emergency response providers, and other personnel (including temporary personnel) and resources likely needed to respond to a natural disaster, act of terrorism, or other manmade disaster are credentialed and typed." Additionally, many courts have held health care organizations liable for negligent credentialing of medical providers in their employ (*Darling v. Charleston Hospital*, 1965; *Columbia/JFK Medical Center v. Sanguonchitte*, 2006; *Frigo v. Silver Cross Hospital and Medical Center*, 2007; *Larson v. Wasemiller*, 2007; *Archuleta v. St. Mark's Hospital*,

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[8]Americans with Disabilities Act of 1990.

2010; *Moreno v. Quintana*, 2010).[9] In addition to reducing the potential for liability arising from the actions of inappropriately credentialed providers, centralized credentialing (Recommendations 2 and 8) would, as part of the medical oversight functions of OHA, help ensure that medical providers employed or contracted by DHS component agencies are held to common standards for education, certification, and currency.

Other Benefits

Since its inception, DHS has been working to address concerns regarding low morale, job satisfaction, and employee engagement through a range of management strategies (GAO, 2012). Employee morale is measured through the Federal Employee Viewpoint Survey, which also showed that DHS is 14 percentage points behind the government-wide average in the proportion of respondents indicating that they feel protected from health and safety hazards on the job (OPM, 2012). Given that the root causes of employee morale issues at DHS likely are complex and cannot be attributed to any one problem, implementation of a departmental strategy that communicates a clear and visible emphasis on the importance of employee health and safety is one means by which DHS could demonstrate concern for its workforce. Although supporting data are limited and often anecdotal, links between the effectiveness of occupational health programs and employee morale have been reported (Behm, 2009; OSHA, 2002).

In addition to the aforementioned benefits, an important but often forgotten impact of strengthening the DHS health protection infrastructure as recommended by the committee is the potential for improvements in employee health. People spend a large proportion of their lives in the workplace; consequently, employee health initiatives can have major impacts on employees' own well-being. Aside from the benefits to the department as a whole, all DHS employees deserve a working environment that is supportive of their health and safety.

PRIORITIES FOR IMPLEMENTING AN INTEGRATED HEALTH PROTECTION INFRASTRUCTURE

The committee was asked to prioritize recommendations for long- and short-term measures DHS can adopt to optimize its mission readiness by ensuring the health, safety, and resilience of its workforce. The committee

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[9]The case law the committee reviewed relates to negligent credentialing by hospitals. However, the committee believes that because DHS employs medical staff who provide services to both employees and people in custody, failure to ensure proper credentialing could increase the potential for liability claims in this area as well.

believes that each of the recommendations offered in this report is critical to the development of an integrated health protection infrastructure and that planning for implementation of all the recommendations should be incorporated into the next DHS planning, programming, budget, and execution cycle (see Figure 5-1 in Chapter 5). At the same time, the committee also recognizes that some steps must be initiated, and in some cases completed, before others. The committee was not asked to provide a timeline or implementation plan and does not have the insight to do so; implementation of its recommendations may be protracted because of necessary lead time, resource limitations, and the complexity of managing enterprise-wide change. Nonetheless, Figure 9-1 shows the committee's recommendations in the

Near Term (≤1 yr)
- Develop a unified workforce health strategy. (R1)
- Align/integrate occupational health and operational medicine functions under the Chief Medical Officer (CMO). (R2)
- Align responsibility and authority for the CMO. (R3)
- Establish Component Lead Medical Officers. (R4, phase 1)
- Revitalize the Health, Safety, and Medical Council, and establish a governance framework. (R6)
- Establish a Health and Safety Informatics and Information Technology Governance Board and expert advisory board, and develop a strategic plan for building a health and safety informatics and information technology infrastructure. (R11, phase 1)

Mid-Term (2-3 yrs)
- Align and integrate occupational safety and health and operational medicine functions within components. (R4, phase 2)
- Establish a Medical and Readiness Committee. (R5)
- Develop core metrics at the department and component levels to establish requirements; measure the baseline. (R10, phase 1)
- Build an informatics capability. (R11, phase 2)

Long Term (≤5 yrs)
- Develop a common employment life-cycle framework for achieving mission readiness. (R7)
- Establish a comprehensive DHS operational medicine capability. (R8)
- Centralize common health and medical services. (R9)
- Track and evaluate core metrics for accountability, continuous quality improvement, and readiness assessment. (R10, phase 2)
- Conduct ongoing evaluation of progress toward implementing a health and safety informatics and information technology infrastructure. (R11, phase 3)

FIGURE 9-1 Suggested timeline for implementation of the committee's recommendations.
NOTES: Recommendations (R1-R11) are grouped according to priority for completion, recognizing that many of the mid- and long-term recommendations will need to be initiated in the near term but completed in the mid-/long term. Time frame estimates associated with the near-, mid-, and long-term categories should be interpreted as time from entry into the DHS planning, programming, budget, and execution cycle.

context of the near, mid-, and far terms. The implementation of some recommendations—for example, establishing a health and safety informatics and information technology infrastructure—may span multiple years and will need to be undertaken in phases, whereas others can be completed within more discrete time periods.

Integration of the DHS health protection system will require, fundamentally, a significant culture change and a willingness to function and act like a single agency with a common mission focus. The committee believes that the first priority is therefore to gain the commitment of core leadership at the component and headquarters (i.e., Chief Medical Officer, Chief Human Capital Officer, Chief Financial Officer) levels to a standard change management and governance process, clarifying the importance of workforce health to mission success and each party's accountability for employee health and safety. Absent such unity of vision, the committee's other recommendations are unlikely to be embraced.

The committee noted the specific mention of workplace wellness programs as a priority in the DHS Strategic Plan. Although the committee includes promotion of individual readiness as part of its life-cycle approach to workforce health and readiness (Recommendation 7), it is concerned about an undue emphasis on wellness while the DHS workforce faces significant challenges related to health protection (i.e., injury and illness prevention). Moreover, the committee does not believe that meaningful, data-driven health promotion efforts are currently possible across much of DHS, given the lack of data and analysis tools to support a clear understanding of the major health risks facing the department's employees. Accordingly, the committee suggests that the implementation of health promotion programs be considered a long-term goal at DHS.

CONCLUDING THOUGHTS

The DHS mission to protect the homeland is of critical importance, but the ability to achieve that mission is undermined by a workforce health protection infrastructure that is marginalized, fragmented, and uneven. The fragmented DHS health protection system is just one instance of an overarching management problem that the organization has worked diligently to overcome since its inception. DHS is not the first federal agency to struggle with these considerable challenges; the Department of Defense (DoD) has worked for almost 70 years to overcome the culture and communication barriers to joint operations. Despite considerable progress, this is an ongoing process at DoD, and the same will be true for DHS for some time into the future. Through its recommendations (summarized in Box 9-2), the committee has attempted to provide a foundation and a path forward for an integrated health protection infrastructure encompassing the

programs, tools, and resources needed to enable the DHS workforce to fulfill the homeland security mission. In essence, the goal is to do on a smaller scale what the Homeland Security Act sought to accomplish more than 10 years ago—to weave the key functions and activities entailed in protecting the homeland into a unified, cohesive enterprise. To this end, the mission-ready DHS of the future will require an empowered and resourced Chief Medical Officer who, through partnership with the component agencies,

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BOX 9-2
Summary of Key Findings, Conclusions,
and Recommendations for Integrating
Workforce Health Protection at DHS

Chapter 5: Leadership Commitment to Workforce Health

Recommendation 1: *Demonstrate leadership commitment to employee health, safety, and resilience through a unified workforce health protection strategy.*

Key Findings:
- Vocal and active commitment from leaders at all levels has been integral to creating successful workforce health protection programs and developing a culture of health in the organizations examined by the committee. Such programs have been found to lead to increases in employee morale, efficiency, and effectiveness.
- DHS has the highest rate of occupational injury and illness of all cabinet-level federal agencies, and more than one-third of DHS employees responding to the 2012 Federal Employee Viewpoint Survey say they do not feel protected from health and safety hazards on the job.
- The DHS Strategic Plan lacks a strategic objective to reduce injuries and illnesses.
- The DHS Workforce Strategy, issued to improve and integrate employee recruitment, development, and retention efforts, does not address the promotion and protection of employee health, safety, or resilience as a critical means of sustaining an engaged workforce.
- Despite strategic aspirations to improve employee health, safety, and resilience, the committee found no evidence of a defined strategic plan for achieving those outcomes or of processes put in place to hold department leadership accountable for doing so.
- The committee saw little evidence that the Chief Medical Officer (CMO) is held accountable for achieving the strategic objectives intended to support the Secretary's goal of improving employee health, wellness, and resilience.

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institutes policies and global standards that permeate the entire organization to ensure the health, safety, and resilience of its workforce. Finally, if DHS is to meet the needs of its diverse workforce in the face of continuously evolving challenges, it will require a health protection infrastructure that remains agile. Adoption of a learning health system approach will allow DHS to transform information into knowledge, which in turn can be used to drive health system change based on evidence-based best practices.

Conclusions:
- DHS lacks a unified vision and comprehensive strategy for ensuring the delivery of key health, safety, and medical support services department-wide in a consistent and coordinated manner.
- A formal strategy, guided by a vision statement directly linked to the organizational mission, could provide direction while also demonstrating the commitment of top leadership to employee health, safety, and resilience.
- To ensure accountability at all levels, program-level goals and performance measures should cascade down from those at the strategic level and should be tailored to the individual's level of responsibility.

Chapter 6: Organizational Alignment and Coordination

Recommendation 2: *Align and integrate all occupational health and operational medicine functions under the Chief Medical Officer.*

Key Findings:
- DHS continues to face challenges related to horizontal and vertical integration of key management functions. Workforce health protection has not been included in larger management system integration efforts at DHS.
- Current workforce health protection and promotion activities at the DHS headquarters level are divided between two mission support offices: the Office of Health Affairs (OHA) and the Office of the Chief Human Capital Officer, the latter being located within the Management Directorate.
- The CMO lacks visibility and strategic input with respect to the workforce health protection functions currently administered at the headquarters level through the Office of the Chief Human Capital Officer; the result is a lack of role clarity for the CMO.
- The DHS Safety, Health, and Medical Council, co-chaired by the CMO and Designated Agency Safety and Health Official (DASHO) (currently the Chief Human Capital Officer) was established in 2008 to facilitate the coordinated formulation of department-wide health, safety, and medical program policy and the development of integrated tools and standardized processes to support program functions. However, the Council has been inactive for more than a year.

BOX 9-2 Continued

- Interactions between OHA and the occupational safety and health personnel occur on an ad hoc basis, resulting in missed opportunities and redundancies.
- In several organizations external to DHS, medical programs are organizationally segregated from occupational safety and health programs. This approach can be effective when the two operations are strategically aligned and appropriate mechanisms are in place and functioning to ensure effective coordination, including oversight of both units by a single governing entity. Such alignment has not occurred at DHS.
- Although a memorandum of understanding was put in place in September 2009 to delineate the responsibilities of OHA and the DASHO's office, the matrix designating lead and shared responsibilities for each program was found to be inaccurate (with regard to actual current responsibilities) and out-of-date. A revision process was initiated, but was interrupted by management turnover within OHA.

Conclusions:
- The fragmentation of workforce health protection functions and the lack of sufficient delegation of authority to the CMO have resulted in ambiguity and uncertainty regarding roles and responsibilities.
- The absence of formal mechanisms for coordination and communication has resulted in stovepiped workforce health protection functions, contributing to inefficiency, a lack of accountability and transparency, and missed opportunities to achieve synergy through integration.
- DHS needs to align its resources with its strategic objectives, develop performance metrics, and hold its health and line leadership accountable for occupational health and operational medicine outcomes.

Recommendation 3: *Ensure that the Chief Medical Officer has authority commensurate with the position's responsibilities.*

Key Findings:
- Authority has been delegated to the CMO to exercise oversight over all DHS medical and public health activities; however, this delegation has not been reviewed or revised since its enactment in 2008.
- Despite being delegated the authority to exercise oversight over all medical and public health activities for DHS, in practice the CMO lacks this authority.
- OHA provides the components with guidance and tools but lacks the authority to ensure implementation.

Conclusions:
- Ambiguity in the CMO's authority to exercise oversight has contributed to a lack of role clarity and impedes the CMO's ability to align critical health protection functions across DHS for integrated execution.

- The establishment of a single health, safety, and medical entity would support two of the Secretary's departmental objectives: (1) unifying and integrating management functions to better serve DHS missions, goals, and employees; and (2) improving employee safety, wellness, and resilience.
- Establishing such an entity also would enable more efficient management of resources; enhanced communication with leadership, components, and all DHS employees; more consistent performance measurement; improved accountability and transparency; and ultimately, increased organizational effectiveness and synergy.

Recommendation 4: *Establish Component Lead Medical Officers to align and integrate occupational health and operational medicine functions.*

Key Findings:
- The current workforce health protection infrastructure at DHS is highly fragmented and markedly uneven across the component agencies.
- DHS and its component agencies have struggled to retrofit a large set of distinct legacy and nascent organizational structures into a single cohesive operational and management framework that meets the diverse requirements of the DHS mission. The same is true of the organizational structures supporting health protection; component agency infrastructures for carrying out health, safety, and medical functions vary widely.
- Placement of occupational health programs supporting essential functions is fragmented in some agencies and centralized in others, and the organizational location of health-related programs differs across the components.
- In DHS components with aligned or partially aligned organizational structures in which health, safety, and/or medical programs and functions are collocated, the committee found evidence of increased information sharing through regular meetings and coordination processes, encouraging communication and synergy in support of mission requirements.
- Vertical integration of medical programs has been challenging because of the lack of formal mechanisms for this purpose. The Medical Liaison Officer (MLO) program has begun to address this issue by creating more formalized channels of communication and mechanisms for vertical information sharing. However, challenges in this area remain, as only four of the operating components currently have Senior Medical Advisors, and fragmentation still exists within the components, often separating Senior Medical Advisors from some of the essential functions identified by the committee.
- In some instances, medical functions have been outsourced with no oversight from internal medical authorities.

BOX 9-2 Continued

Conclusions:
- Oversight from the headquarters level is more challenging when there is no single responsible leader or even consistency in what are considered medical, occupational safety and health, and human resources functions.
- The current fragmented organizational structure and the distribution of health, safety, and medical authorities within DHS component agencies will impede the ability of the CMO to orchestrate a comprehensive and integrated workforce health protection strategy to ensure the health, safety, and resilience of the entire DHS workforce.
- The effectiveness of the CMO would be enhanced by having a single point of accountability within the operating components who could ensure the integration of component occupational health and operational medicine functions.

Recommendation 5: *Establish a Medical and Readiness Committee to promote information sharing and integration.*

Key Findings:
- Prior to establishment of the MLO program, the CMO had limited visibility on health and medical programs and challenges within component agencies. This limited visibility impeded the CMO's ability to address cross-cutting and department-wide health and medical issues through policy and program initiatives and to ensure that the Secretary's agenda is assimilated at the component level.
- The role for Senior Medical Advisors in building and sustaining an integrated health protection system has yet to be clearly defined and formalized.
- Directives and proposed standards from OHA have sometimes been disconnected from the needs and realities within the component agencies, potentially contributing to uneven compliance with OHA policy.

Conclusions:
- A mechanism is needed to enable the CMO to collect information on operational requirements from the component level, to engage components in the development of medical and public health policy, and to provide senior-level direction for an integrated DHS workforce health protection strategy.
- Networking among component medical officers is critical and would best be realized through regular and formal direct interaction with the CMO.

Recommendation 6: *Create a governance framework to engage Department of Homeland Security management officials and component leadership in employee health, safety, and resilience to support mission readiness.*

Key Findings:
- The Government Accountability Office designated DHS's formation as high risk, in part because of the foreseen management challenges associ-

ated with merging 22 component agencies and the serious consequences of failing to achieve integration. In working to address these concerns, DHS has established a tiered governance structure to facilitate integration and oversight of interrelated programmatic activities that support mission outcomes across the department. The committee is unclear as to whether or how workforce health protection programs would be managed within the existing DHS governance structure.

- Multiple headquarters offices and component agencies have shared responsibilities for the complex programs supporting the health, safety, and mission readiness of the DHS workforce.
- The DHS Health, Safety, and Medical Council was established as a governance body to facilitate the necessary ongoing coordination, collaboration, and participation of these various headquarters- and component-level stakeholders in the development of health, safety, and medical policy. However, the Council has been inactive for more than a year.
- When the CMO position was created at DHS, the vision was to appoint a medical leader who could unify the department's fragmented health and medical system. The *Delegation to the Assistant Secretary for Health Affairs and Chief Medical Officer* granted the CMO the oversight authority needed to achieve that vision. In the absence of accountability processes, however, the CMO has to date been largely unsuccessful in garnering sufficient support from component leadership to achieve a unified health system.

Conclusions:
- Portfolio-level governance of workforce health protection programs would help ensure alignment and efficiency.
- Many workforce health protection functions span the intersection between health and human resources and therefore also require the involvement of the Chief Human Capital Officer. Input from other members of the DHS management team may be required as well to ensure adequate resourcing of occupational health and operational medicine programs and effective management of these programs within the larger DHS financial, acquisitions, and information management architecture.
- Reinvigoration of the inactive Health, Safety, and Medical Council is critical to achieve DHS-wide consensus on strategies for addressing overarching and cross-cutting health, safety, and medical issues and to engage component leadership in the development of policies that support the readiness of their workforces. To function effectively, the Council will need to be part of a larger formalized governance structure.

Chapter 7: Functional Alignment

Recommendation 7: *Develop a common employment life-cycle-based framework for achieving mission readiness.*

BOX 9-2 Continued

Key Findings:
- Mechanisms for assessing, promoting, and sustaining medical readiness vary widely across DHS.
- Few standards and overarching policies related to medical readiness have been promulgated by the CMO, creating risk of liability associated with equal employment opportunity suits (if medical standards are not adequately defensible in a court of law) and inadequate processes for preventing or limiting disability.

Conclusions:
- A comprehensive strategy for supporting readiness needs to address the full employment life cycle, focusing not only on the health and capability of employees but also on the safety of both job processes and the work environment and the interactions among these three elements.
- A common life-cycle framework for approaching workforce health and resilience would provide a mechanism for ensuring that a set of disparate components can achieve the appropriate mission readiness outcomes.

Recommendation 8: *Establish a comprehensive operational medicine capability to ensure consistent, high-quality medical support during operations.*

Key Findings:
- Working collaboratively with nine DHS component agencies through the Emergency Medical Services Training and Education Advisory Committee, OHA has developed a centralized emergency medical services (EMS) system plan, established standards of care through baseline basic life support and advanced life support protocols, and acquired software for DHS-wide patient care reporting and tracking of EMS provider credentials.
- The requirement for DHS law enforcement officers to escort detainees to a distant emergency department for even minor injuries and illnesses is costly in terms of both treatment for detainees and the impact on operations of the temporary unavailability of those officers. In 2011, emergency department visits for detainees in the custody of Customs and Border Protection (CBP) in southwest border region alone cost DHS $13 million.

Conclusions:
- OHA has achieved commendable progress toward the integration of EMS across DHS.
- A comprehensive program for operational medical support needs to go beyond EMS to include the capability to address the preventive and ambulatory medical care needs of those conducting DHS operations.
- DHS has a responsibility to ensure that members of its workforce operating in remote, austere areas and those who, for security reasons, cannot readily access local medical resources have access to comprehensive medical services. Beyond moral and legal responsibilities, the lack of access to basic preventive and responsive medical services to mitigate

serious medical events (e.g., infectious disease outbreaks and injuries) in field situations can result in preventable illness or injury, lost productivity, and logistical challenges that lead to mission failure.

- The medical and operational needs related to those in DHS care or custody need to be addressed by a comprehensive DHS operational medicine program.
- The diversity of operational and mission requirements among DHS's component agencies prohibits a one-size-fits-all approach to the establishment of a departmental operational medicine capability. Components and subcomponents need flexibility to develop operational medicine programs that meet the requirements of their unique operating conditions.

Recommendation 9: *Centralize common services to ensure quality and to achieve efficiencies and interoperability.*

Key Findings:
- OHA has a key role in supporting components' collective efforts to carry out the DHS mission and in so doing, in contributing to the "one DHS" concept.
- DHS has been criticized for making acquisition decisions on a program-by-program and component-by-component basis. For example, occupational health and medical services are procured at the component and sometimes the local site level, resulting in hundreds of independent contracts and interagency agreements, with little in the way of technical oversight to ensure service quality.
- DHS relies heavily on outsourced providers for occupational health and medical services (e.g., fitness-for-duty evaluations, health promotion services, ergonomics assessments, medical surveillance services).

Conclusions:
- Because of the wide variation among their missions, each of the major operating components has specific needs that are best served by support programs tailored to its operational functions. However, some common services should be centralized to promote efficiency and interoperability while ensuring the necessary level of service quality.
- Centralizing common critical services enables alignment of component mission needs with department-level goals. A more formalized approach for obtaining buy-in from components should be used to accelerate the process of establishing centralized health, safety, and medical services.
- A mechanism is needed to ensure that contracts and agreements are consistent with the overarching health policies and standards of the department.

Chapter 8: Information Management and Integration

Recommendation 10: *Collect core metrics for accountability, continuous quality improvement, and readiness assessment.*

BOX 9-2 Continued

Key Findings:

- Stovepiped programs and a lack of communication and coordination mechanisms across DHS have resulted in failures of knowledge management.
- DHS lacks a strategy, framework, and common set of metrics for use in conducting a comprehensive evaluation of workforce readiness and resilience, and for evaluating and improving the effectiveness of programs that support a ready and resilient workforce.
- Components routinely gather safety and employee health data, albeit in an uneven and inconsistent manner; however, little of this information is transmitted to OHA. The only source of data currently received by OHA of which the committee is aware is the centralized electronic patient care record.
- Injury and illness data (Total Case Rate and Lost Time Case Rate), while reported at least annually to the DHS occupational safety and health program staff in the Office of the Chief Human Capital Officer as required by the Occupational Safety and Health Administration (OSHA), are not shared routinely with OHA.
- Attempts to collect medical quality assurance data (e.g., reports of sentinel events, frequency of clinical competency assessments), as authorized by Directive 248-01 on medical quality management (MQM), have been unsuccessful. Components have begun collecting some of the required data, but are not using dashboards provided by the MQM staff to share these data with OHA.
- Minimal data appear to be collected on employee health risks, even at the component level, with the notable exception of the Coast Guard, which mandates a health risk appraisal for all active-duty members.

Conclusions:

- Obtaining reliable and consistent information is essential to the implementation and sustainment of an integrated workforce health protection program. This can be achieved through a focus on information management—a systematic approach involving both technological and informatics capabilities that supports information exchange.
- Within a large, decentralized organization such as DHS, a centralized system for information management with standardized metrics and measures will support both horizontal (across levels) and vertical (between levels) integration.
- A systems approach is needed to collect and integrate data from across the department. This type of approach, which entails data collection and analysis at four nested levels (individual, group, component, and department), supports both horizontal and vertical integration.
- In the absence of a comprehensive, standardized system with which to measure the performance of DHS's occupational safety and health, occupational medicine, operational medicine, health promotion, and workers' compensation programs, it is not possible to determine whether each

component agency is managing its safety risk in an acceptable manner and whether occupational health programs are meeting objectives for improving workforce health and readiness. Thus, there is no means of ensuring accountability, and those with responsibilities for workforce health, safety, and readiness are unable to make evidence-based decisions on investments in programs and infrastructure or to assess and improve the quality of programs and services.

Recommendation 11: *Establish a health and safety informatics and information technology infrastructure.*

Key Findings:
- Over the past two decades, the Department of Veterans Affairs (VA) has transformed the quality and safety of patient care at its numerous clinics and hospitals through the implementation of its electronic health record (EHR) system, VISTA. VA's investment in health information technology (HIT) saved more than $3 billion in health care costs between 1997 and 2007.
- OHA has initiated an acquisition process for a DHS-wide electronic Health Information System (eHIS). The committee had difficulty obtaining information on DHS's strategic approach to health information management using the proposed system. Funding for the system has yet to be approved. OHA is currently assessing feasibility and capabilities and has contracted for an evaluation of existing systems to determine the cost-effectiveness of agency-wide implementation.
- A working group comprising representatives from OHA, the Office of the Chief Human Capital Officer, and other DHS components identified the following five mission and capability needs for the eHIS: (1) ensure that staff are medically suitable for their assigned or volunteered duties (e.g., job and environment); (2) provide for the execution of an efficient DHS-wide fitness-for-duty and limited-duty program; (3) enable efficient dispensing, tracking, and follow-up for medical countermeasures; (4) lower occupational health costs across the department; and (5) unify and standardize occupational health and workforce health protection activities across the department.
- OHA has already acquired an electronic patient care record (ePCR) system, allowing DHS to consolidate all patient records. All DHS components with EMS personnel have been given access to the system, and it already has been adopted by a number of operational medicine units. By spring 2014, all DHS components are expected to have adopted the system. However, it is unclear what role the ePCR investment plays in a comprehensive HIT/informatics strategy or how patient record information (for DHS employees) will be integrated with the eHIS should that system be implemented in the future.
- The Coast Guard, working with the VA and the Office of the National Coordinator for Health Information Technology, is building an integrated health information system (IHiS) based on the commercial Epic EHR sys-

continued

BOX 9-2 Continued

tem for traditional clinical care environments. Immigration and Customs Enforcement (ICE) also recently awarded a contract for such a system to support comprehensive medical services management for detainees.

- Information technology systems for occupational safety and health vary considerably across DHS, and there is no DHS-wide system that allows safety and workers' compensation data to be aggregated at the headquarters level. Tracking of this information varies among components, from the use of spreadsheets to sophisticated safety information systems (such as that used by the Transportation Security Administration [TSA]).

- Although DHS is moving toward an enterprise approach to HIT, the committee found no evidence that the department is fully aware of the informatics capability required to maximize the potential of an integrated health information management system. Two OHA staff members are trained in nursing informatics, and a third is familiar with the use of clinical informatics systems for medical quality assurance processes. However, this informatics capability does not appear to be represented at the component level, with the exception of the Coast Guard, which has a Chief Medical Information Officer.

- Headquarters MQM staff have been working with components to establish systems and processes that will enable structured/standardized data collection, reporting, and analysis for purposes of continuous quality improvement. Yet components, which rely primarily on outsourced medical service providers, appear not to have the personnel or expertise necessary to adopt such practices and, as noted above, have yet to use the dashboards provided by MQM staff for these purposes.

Conclusions:

- In support of operational medicine services, a system is required to document treatment provided to anyone receiving care from DHS providers.

- A longitudinal health record to support occupational health, including readiness assessment, is required to document health issues that are relevant to employment, addressing primarily capabilities specific to job duties and deployments.

- The lack of health informatics expertise across DHS may help explain the lack of success of the MQM program.

- Across DHS, health information and communication technology is viewed primarily as a strictly tactical resource. This perspective is too narrow to meet the current and future mission requirements of the various DHS components.

- Components are engaged with clinical care, preventive medicine, and occupational medicine to varying degrees, but the development of health information management applications, data repositories, and communications capabilities is spotty at best. Integration through health information management will not be achieved until this capability exists throughout the department.

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Appendix A

Department of Homeland Security Component Agency Health Protection Program Descriptions

D HS component agencies approach workforce health protection in a variety of ways. In this appendix, the committee provides brief descriptions of the organizational structures for component agency health protection programs.

CUSTOMS AND BORDER PROTECTION (CBP)

Occupational health programs, including fitness for duty, workers' compensation, employee assistance programs (EAPs) and wellness, and occupational safety and health, are all located within CBP's Office of Human Resources Management but divided among different divisions (e.g., Benefits, Medical and Worklife Division, Occupational Safety and Health Division). Operational medicine programs, however, are managed at the subcomponent level based on needs in the different operating environments. The Office of Border Patrol, Office of Field Operations, Office of Air and Marine, and Office of Training and Development each have separate emergency medical services (EMS) and operational medicine programs.
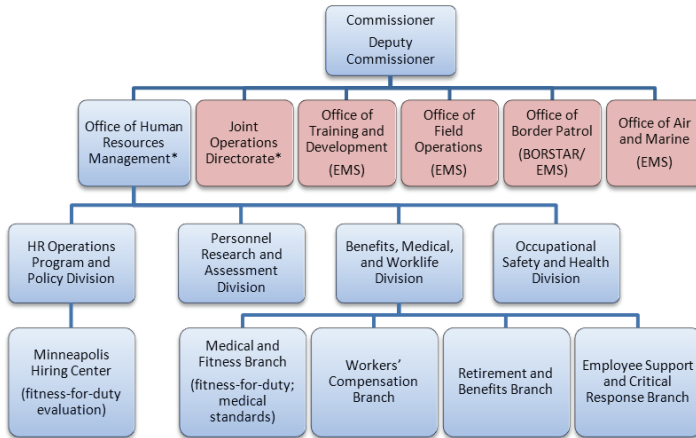
FIGURE A-1 Organization of CBP health functions.
NOTE: *Denotes location of DHS Senior Medical Advisor (SMA).

IMMIGRATION AND CUSTOMS ENFORCEMENT (ICE)

Responsibilities for workforce health at ICE fall under two primary offices within the Management and Administration Directorate: the Office of the Chief Financial Officer (CFO) and the National Firearms & Tactical Training Unit. Within the Office of the CFO, occupational health programs are segregated: the Office of Asset Administration has responsibility for occupational safety and health programs, and the Office of Human Capital has responsibility for ICE's medical programs (e.g., fitness for duty). Operational medicine programs are based in the National Firearms & Tactical Training Unit. The ICE Health Service Corps, housed within the Enforcement & Removal Operations Directorate, is staffed by more than 900 U.S. Public Health Service physicians and is responsible for the agency's detainee health care program but is not involved with workforce health functions.
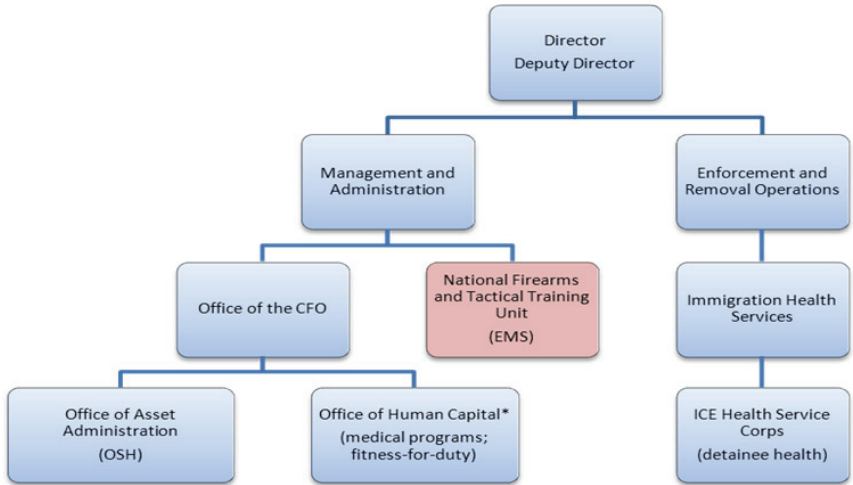
FIGURE A-2 Organization of ICE health functions.
NOTE: *Denotes location of DHS Senior Medical Advisor (SMA).

FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)

FEMA's workforce health programs are housed primarily within the Mission Support Bureau, divided between the Office of the Chief Component Human Capital Officer (workers' compensation, medical standards, drug-free workplace, and some EAP/wellness programs) and the Office of the Chief Administrative Officer. The Safety, Health, and Medical Readiness Division sits within the latter and is divided into three branches: (1) Occupational Health, which focuses on wellness initiatives, vaccination programs, infectious disease prevention, ergonomics, EAP, medical countermeasures, and travel preparedness activities; (2) Disaster Operations, which manages a cadre of safety officers who assess disaster sites for hazards and Occupational Safety and Health Administration (OSHA) compliance and manage other safety and health services for deployed personnel; and (3) Environmental Safety and Health, which runs the agency's occupational safety and health program. Operational medicine at FEMA is associated primarily with urban search and rescue programs, run out of the Office of Response and Recovery. FEMA also controls the Mt. Weather Emergency Operational Center, which has its own fire department integrated with the local EMS system.
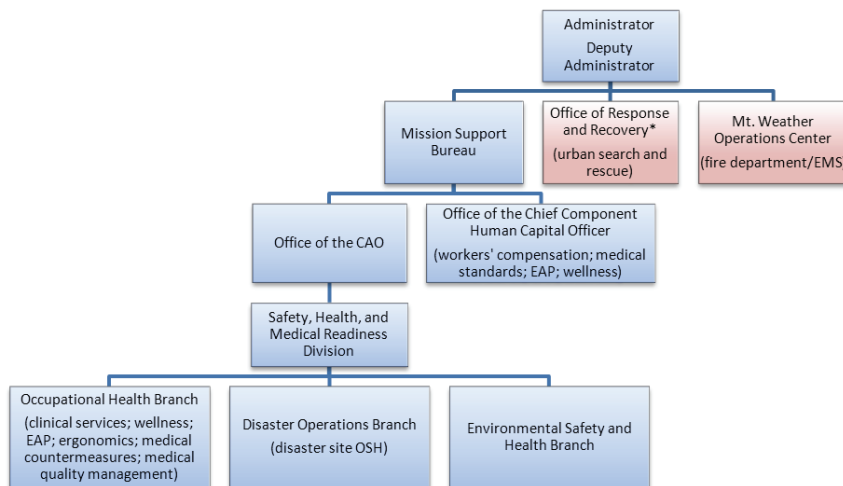
FIGURE A-3 Organization of FEMA health functions.
NOTE: *Denotes location of DHS Senior Medical Advisor (SMA).

TRANSPORTATION SECURITY ADMINISTRATION (TSA)

Occupational safety and health and medical programs are segregated at TSA. The Medical Review Programs Branch, which oversees reasonable accommodation, alcohol- and drug-free workplace, workers' compensation, EAP/wellness, and medical certification programs, sits in the Office of Human Capital. Occupational Safety, Health and Environment (OSHE) administers TSA's occupational safety and health program and is housed under the Office of the Chief Administrative Officer, which sits in Finance and Administration.

The Federal Air Marshal Service (FAMS), a subcomponent of TSA, operates its own medical program almost fully independently of TSA. This program includes nurse case management, fitness for duty, and occupational safety and health integrated into a single program overseen by an internal medical director, who also provides medical direction for the FAMS operational medicine program. The FAMS medical program initially included workers' compensation, but this function is now administered from the TSA Medical Review Programs Branch.
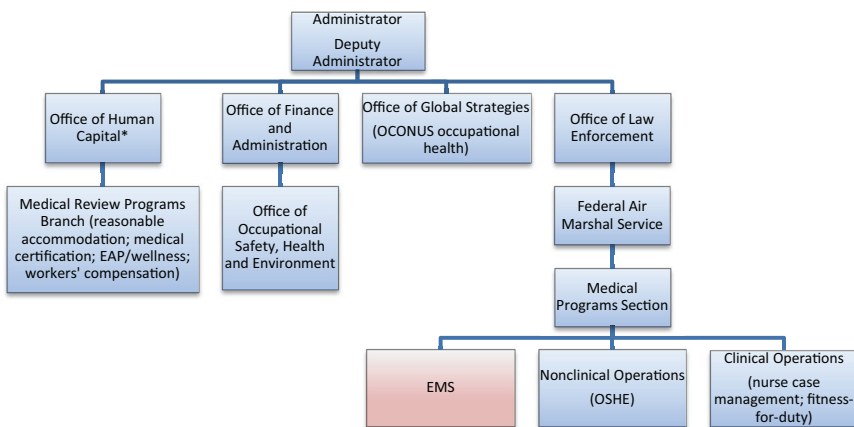
FIGURE A-4 Organization of TSA health functions.
NOTE: *Denotes location of DHS Senior Medical Advisor (SMA).

U.S. CITIZENSHIP AND IMMIGRATION SERVICES (USCIS)

Occupational health services at USCIS fall within the Management Directorate, split between the Emergency Management and Safety Branch (occupational safety and health programs) and the Office of Human Capital and Training (workers' compensation, worklife and worksite wellness programs). Primarily office based, USCIS has no operational medicine program.

FIGURE A-5 Organization of USCIS health functions.

U.S. SECRET SERVICE

Workforce health functions for the Secret Service are housed within the Office of Human Resources and Training. They include safety and health, medical review, and operational medicine programs, with the latter being administered through the Rowley Training Center, under the Office of Training.
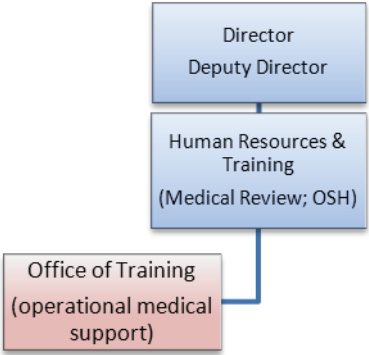
FIGURE A-6 Organization of U.S. Secret Service health functions.

U.S. COAST GUARD

Within the Coast Guard, all workforce health protection functions are organizationally aligned under the Director of Health, Safety, and Work-life, who is the Coast Guard Surgeon General and Chief Safety Officer and oversees the activities of the directorate's three offices. The Office of Health Services includes the Operational Medicine and Medical Readiness Division, the Health Systems Management Division, and the Quality and Performance Improvement Division. Health promotion and employee and family support services fall under the Office of Work-life. Aviation, afloat and shore safety, and environmental health fall under the Office of Safety and Environmental Health. This organizational structure was implemented to improve integration of activities and prevent stovepiping.
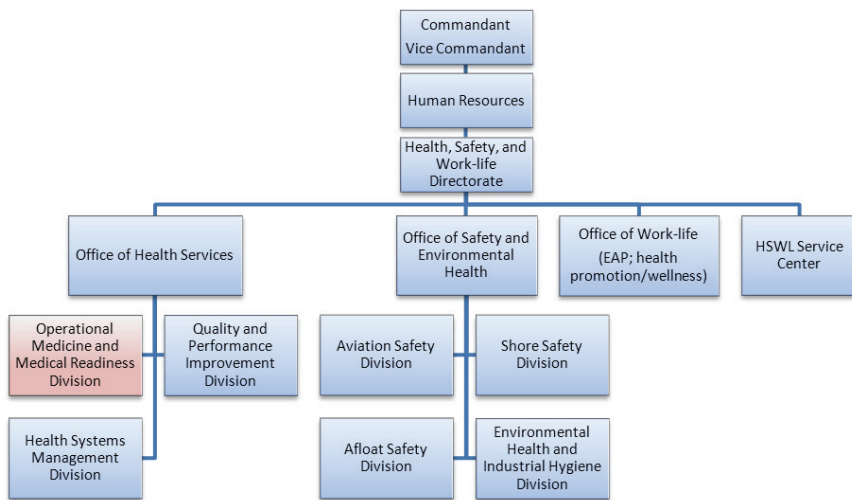
FIGURE A-7 Organization of U.S. Coast Guard health functions.

Appendix B

Referenced Policy Documents

Throughout this report, the committee references a number of Department of Homeland Security (DHS) and Office of Personnel Management (OPM) policy documents used to inform its work. This appendix provides these documents for the reader's reference.

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Department of Homeland Security
DHS Delegation Number: 5001
Revision Number: 00
Issue Date: 07/24/2008

DELEGATION TO THE ASSISTANT SECRETARY FOR HEALTH AFFAIRS AND CHIEF MEDICAL OFFICER

I.   Purpose

This delegation vests authority in the Assistant Secretary for Health Affairs and Chief Medical Officer to execute and administer the programs and responsibilities set forth herein.

II.   Delegation

Subject to my oversight, direction, and guidance, I hereby delegate to the Assistant Secretary for Health Affairs and Chief Medical Officer the authority to exercise oversight over all medical and public health activities of the Department of Homeland Security (DHS). This authority shall include, but not be limited to:

Biodefense Activities

   A.   Leading the Department's biodefense activities, to include oversight and management responsibility for implementation of Homeland Security Presidential Directive 10, *Biodefense for the 21st Century*, consistent with formal DHS planning processes, end-to-end planning for biological attacks, bio-surveillance integration, operational early warning systems, veterinary, food and agro-defense,and, in collaboration with the Directorate for Science and Technology, guiding and informing medical countermeasure requirements.

   B.   Managing the Department's operational biodefense programs, to include BioWatch, the National Biosurveillance Integration System, and successor programs, as well as operational chemical detection programs, including the Rapidly Deployable Chemical Detection System.

   C.   Providing oversight and management of the Department's implementation of Homeland Security Presidential Directive - 9, Defense of United States Agriculture and Food, integrating the efforts of other DHS Components, and coordinating those efforts with appropriate Federal Departments and agencies, tribal, state and local governments, and the private sector.

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Component Medical Services

D.   Providing medical guidance for the Department's personnel programs, including fitness-for-duty, return-to-work, drug testing, health screening and monitoring, pre-placement evaluations, immunizations, medical surveillance, medical recordkeeping, deployment physicals, and medical exam protocols.

E.   Medical credentialing and development of quality assurance and clinical policy, requirements, standards, and metrics for all human and veterinary clinical activities within DHS. This includes responsibility for the professional oversight of medical activities by medical service personnel within or detailed to the Department, including any credentialing or de-credentialing activities within DHS, as well as responsibility as the senior intra-departmental medical review authority for determinations regarding whether the standard of care has been met when there are claims or allegations of improper or substandard healthcare against the Department or any of its Components, employees, detailees, or contractors.

F.   Except for Officers of the U.S. Public Health Service (USPHS) assigned to the United States Coast Guard (USCG), serving as the single official liaison between DHS and the Department of Health and Human Services (HHS) for administration of personnel actions between DHS and HHS related to USPHS Commissioned Corps Officers. Individual Components retain authority for funding, determination of specific duties, and supervision of USPHS officers detailed to them. A Component utilizing a USPHS officer shall also be responsible for resourcing and providing support to the Office of the General Counsel for the handling and payment of claims arising out of the service of USPHS officers to that Component.

Operations Support

G.   Assuring an effective coordinated medical response to natural or man-made disasters or acts of terrorism. This authority shall include, but is not limited to:

  1.   Supporting the Department, including FEMA and its regional components, in providing medical advice and assistance in developing response requirements related to chemical, biological, nuclear, or radiological agents or mass casualty events.

  2.   Supporting the National Operations Center, National Response Coordination Center, and Component leadership to ensure that operations have appropriate medical support, to specifically include coordination of medical activities for any level of incident with biological or medical consequences.

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H.   Leading the development of strategy, policy, and requirements for any DHS funding mechanisms for medical and public health activities, including assistance programs related thereto. Policy derived in the course of these activities will be developed jointly with the DHS Office of Policy and in coordination with the DHS Office of Occupational Safety and Environmental Programs.

I.   Entering into agreements and contracts to discharge the authorities, duties, and responsibilities of the Office of Health Affairs or activities associated with this delegation, to include:

1.   In coordination with the Chief Financial Officer, the Chief Procurement Officer, and the Office of the General Counsel entering into grants, cooperative agreements, interagency agreements, and contracts and distribute funds as necessary.

2.   In coordination with the Chief Procurement Officer and the Office of the General Counsel, entering into work agreements, joint sponsorships, contracts, or any other agreements with the Department of Energy regarding the use of the national laboratories or sites.

3.   Entering into Memoranda of Understanding and Memoranda of Agreement.

4.   Contracting with one or more Federally funded research and development centers to accomplish the duties of the Office of Health Affairs.

5.   In coordination with the Under Secretary for Management and the Office of the General Counsel, Regulatory Affairs, issuing necessary regulations.

III. Limitations

A.   This delegation is not intended to supplant or supersede statutory responsibilities of other DHS Components or other Federal departments or agencies. Nothing in this delegation shall be construed as superseding or circumventing the authorities vested:

1.   by Title VII of the Homeland Security Act in the Under Secretary for Management regarding procurement and grants;

2.   by Title VIII of the Homeland Security Act in the Under Secretary for Science and Technology; and

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Revision # 00

3.   by Title I of the Homeland Security Act in the General Counsel. Nothing in this delegation provides the authority to contract for legal services.

B.   Exercise of the authorities delineated in Section II shall be coordinated with other Department Components and other federal departments and agencies where appropriate.

C.   With respect to the USCG's medical program, including Commissioned Corps Officers of the USPHS assigned to the USCG, exercise of the authorities listed in Section II.D, II.E, and II.F will account for military policy, requirements, and standards, including the requirements of consistency and interoperability with the military services of the Department of Defense. Perceived conflicts with military policy, requirements, surveillance capabilities, standards or metrics that cannot be resolved at lower levels will be resolved by the Secretary or his/her designee.

To the extent that previously exercised authority consistent with this order may require verification, it is hereby affirmed and ratified.

IV. Re-delegation

Unless re-delegation is otherwise prohibited by law, the authorities delegated herein may be re-delegated in writing to an appropriate subordinate official of the Assistant Secretary for Health Affairs and Chief Medical Officer and to Component heads.

V.   Authorities
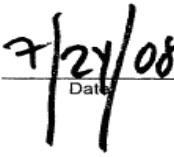
A.   Homeland Security Act of 2002, Public Law 107-296, 116 Stat. 2135 (2002), as amended

B.   Post-Katrina Emergency Management Reform Act of 2006, Public Law 109-295, 120 Stat. 1355 (2006)

C.   Implementing Recommendations of the 9/11 Commission Act of 2007 Public Law 110-53, 121 Stat. 266 (2007)

D.   Title 5, United States Code, Section 301, "Department regulations"

E.   Title 6, United States Code, Section 321(e), "Chief Medical Officer"

F.   Title 6, United States Code, Section 195b, "National Biosurveillance Center"

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VI. Office of Primary Interest

The Office of the Assistant Secretary for Health Affairs and Chief Medical Officer is the office of primary interest in this delegation.

_____   7/24/08
Michael Chertoff   Date
Secretary

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Delegation # 5001
Revision # 00

Department of Homeland Security
DHS Directives System
Directive Number: 066-01
Revision Number: 00
Issue Date: 07/25/2008

SAFETY AND HEALTH
PROGRAMS

I.   Purpose

This Directive establishes the Department of Homeland Security (DHS) policy, responsibilities and requirements regarding safety and health programs.

II.   Scope

A.   This Directive applies throughout DHS.

B.   Military personnel and uniquely military equipment, systems, and operations are not covered by Executive Order (E.O.) 12196 and, therefore, are not within the scope of this Directive. The scope does include U.S. Coast Guard civilian personnel, equipment, operations and worksites that are not characterized as uniquely military.

C.   DHS Management Directive 5200.1, Occupational Safety and Health Programs, is hereby canceled.

III.   Authorities

A.   Title 29, United States Code, Section 668, "Programs of Federal agencies"

B.   E.O. 12196, "Occupational safety and health programs for Federal employees"

C.   Title 29, Code of Federal Regulations (CFR), Part 1960, "Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters"

D.   Title 41, CFR, Chapter 102, "Federal Management Regulation"

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IV. **Responsibilities**

A.   The ***Under Secretary for Management*** is responsible for establishing a Departmental safety and health program, delegating authority as required for efficient program execution, and integrating safety and health principles into the management of the Department's operations.

B.   The ***Chief Administrative Officer*** serves as the Designated Agency Safety and Health Official (DASHO) for the Department; oversees the development of policy, instructions, standards, requirements and metrics related to safety and health programs; provides direction and advice to DHS management for safety and health matters, including radiation, aviation, and marine safety; and, serves as Co-Chair on the Department's Safety, Health, and Medical Council. The Council determines collective actions necessary to achieve safety, health, and medical program objectives and assists top management with program coordination and oversight through the DASHO.

C.   The ***Assistant Secretary for Health Affairs*** oversees the development of policies, standards, requirements and metrics for medical services and related programs; provides medical guidance for personnel programs; and, serves as Co-Chair on the Department's Safety, Health, and Medical Council.

D.   The ***Chief Human Capital Officer*** ensures that safety, health, and medical principles and best practices are incorporated into all aspects of personnel management, including, but not limited to; performance measures, position descriptions, pre-placement evaluations, health-related worker screening and physical qualification monitoring, absentee minimization, and workers' injury/compensation/disability management. The Chief Human Capital Officer also serves on the Department's Safety, Health, and Medical Council.

E.   ***Component heads*** are responsible for establishing and maintaining effective and comprehensive safety and health programs for their respective Components and organizations consistent with this Directive. Component heads shall serve as or designate a Designated Safety and Health Official (DSHO), with sufficient authority and responsibility to represent effectively the interest and support of the Component head in the management and administration of the Component safety and health program.

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F.   ***Component DSHOs*** provide operational program management and oversight for safety and health programs, and develop policy, instructions, standards, requirements and metrics related to safety and health programs within the Component. For the purposes of the DHS Safety and Health Program, a Component DSHO has the same responsibilities as a DASHO, as described under 29 CFR 1960, serving within their Component organization. DHSOs for the following Components will also serve as members on the Department's Safety, Health, and Medical Council:

- United States Citizenship and Immigration Services
- United States Coast Guard
- United States Customs and Border Protection
- Domestic Nuclear Detection Office
- Federal Emergency Management Agency
- Federal Law Enforcement Training Center
- United States Immigration and Customs Enforcement
- Science and Technology
- United States Secret Service
- Transportation Security Administration.

G.   The ***Director, Occupational Safety and Environmental Programs*** coordinates the development of safety and health policy and procedures for the Department, develops goals for program performance, and provides direction and support for safety and health programs.

H.   The ***Department Safety and Health Manager*** serves as the principal safety and health officer of the Department; manages an effective and comprehensive Department safety and health program; conducts program management evaluations or audits of Component safety and health programs; develops and assists management in implementing Departmental policy, programs, initiatives, and other management actions to promote safer, healthier work environments; and chairs the DHS Safety and Health Manager's Committee. The Committee recommends goals and objectives for safety and health programs, coordinates the development of policy and programs to address safety and health issues, identifies opportunities to leverage resources for effective and efficient safety and health program management, and reviews the effectiveness of safety and health programs.

I.   ***Component Safety and Health Managers*** serve as the principal safety and health program officers of their Components and:

1.   Manage an effective and comprehensive Component safety and health program.

2.   Conduct safety and health program evaluations of their Component programs.

3.   Develop and assist management in implementing Component policy, programs, initiatives, and other management actions to reduce safety and health risks and promote safer, healthier, work environments.

4.   Report occupational fatalities or catastrophic accidents in less than eight hours to the Department Safety and Health Manager.

5.   Serve on the DHS Safety and Health Manager's Committee.

J.   The ***Safety and Health Manager*** in the Office of the Chief Administrative Officer, Administrative Operations (OCAO/AO) serves as the principal safety and health officer for the Office of the Secretary and the following Components:

- Ombudsman, Citizenship and Immigration Services
- Civil Rights and Civil Liberties
- Office of Counternarcotics Enforcement
- Executive Secretariat
- Office of the General Counsel
- Gulf Coast Region
- Office of Health Affairs
- Office of Inspector General
- Office of Intelligence and Analysis
- Office of Legislative Affairs
- Management
- Military Advisor's Office
- National Protection and Programs Directorate
- Office of Operations Coordination
- Office of Policy
- Chief Privacy Officer
- Office of Public Affairs.

The OCAO/AO Safety and Health Manager manages an effective and comprehensive safety and health program for the Office of the Secretary and these Components; conducts safety inspections of their work areas; develops and assists management in implementing policy, programs, initiatives, and other management actions to promote safer, healthier work environments in the Office of the Secretary and these Components; and serves on the DHS Safety and Health Manager's Committee.

K.   ***Managers and Supervisors*** are responsible for:

1.   Implementing, maintaining and operating safety and health programs.

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2.   Assuring employees are furnished a safe work environment and suitable equipment.

3.   Assuring all employees receive training in safe and healthful practices, principles of risk management, and the safeguards associated with their work.

4.   Encouraging employee performance that demonstrates positive safety and health behavior, and rewarding outstanding safety or health performance.

5.   Assuring employees comply with DHS safety rules, standards, and policies, including the use of personal protective equipment.

6.   Assuring prompt, accurate reporting of injuries, illnesses and fatalities.

7.   Identifying workplace hazards, assessing risks, promptly reducing risks, and correcting unsafe conditions and practices in order to safeguard employees, visitors, property, and operations.

L.   ***DHS Employees*** are responsible for:

1.   Performing their duties in a safe and healthful manner.

2.   Complying with the Occupational Safety and Health Act, and DHS safety and health requirements.

3.   Immediately reporting all accidental fatalities, injuries, illnesses, property losses and mission degradation incidents as well as hazards or unsafe acts to others at imminent risk and to their supervisor or other competent authority for appropriate action.

V.   Policy and Requirements

A.   Manage safety and health risks and exercise the tenets of operational risk management.

B.   Provide a safe and healthful work environment for employees, contractors, and the visiting public.

C.   Protect the public from risk of accidental death, injury, illness, or property damage resulting from DHS activities.

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D.   Support safety and health programs in order to protect personnel from accidental death, injury, or illness, and to prevent or minimize accidental property loss and mission interruption.

E.   Use safety and health considerations and resources in mission planning and execution across all departmental operations, including acquisition, procurement, logistics, facility management, and human capital management, and operations.

VI. Questions

Any questions or concerns regarding this Directive should be addressed to the Office of the Chief Administrative Officer.

_____   _____
              Elaine C. Duke   7/25/08
        Under Secretary for Management   Date

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MEMORANDUM OF UNDERSTANDING

between the

OFFICE OF THE CHIEF ADMINISTRATIVE OFFICER

and the

OFFICE OF HEALTH AFFAIRS

I. PURPOSE

The purpose of this Memorandum of Understanding (MOU) between the Office of the Chief Administrative Officer (OCAO) and the Office of Health Affairs (OHA) is to delineate the areas of responsibility for administration and execution of the Department of Homeland Security's (DHS) Occupational Safety, Occupational Health, and Occupational Medicine Programs.

This MOU sets forth the basic principles and guidelines under which the parties will work together to develop tools to track occupational injuries and illnesses, establish programs that effectively reduce work-related injuries and illnesses, and establish processes and procedures to communicate and effectively manage risk.

In addition, this MOU will delineate emergency procedures and shared responsibilities necessary to guarantee the successful coordination of the safety, health and medical response to an event.

Through this MOU, the parties agree to delineate specific areas of responsibility and formalize their respective office's collaboration to achieve the goal of improving the safety and health of DHS employees.

II. BACKGROUND

The role of the DHS Safety and Health Program, as described in Directive 066-01 is to support mission effectiveness and the protection of people and resources by identifying, evaluating, and managing safety and health risks. The Office of Health Affairs, as described in Delegation 5001, has oversight over all medical and public health activities of DHS, and, as stated in Title 6, United States Code (U.S.C.), Section 321e, is the Principal Advisor to the Secretary of Homeland Security on medical and public health issues for medical issues related to natural disasters, acts of terrorism and other man-made disasters and ensures internal and external coordination of all medical preparedness and response activities of the Department.

In furtherance of the DHS Safety and Health Program, the Chief Administrative Officer (CAO) is responsible for serving as the principal occupational safety, health, and environmental officer for DHS, and for leading a team that is responsible for managing all aspects of the Department's occupational safety and health programs. The Assistant Secretary for Health Affairs (ASHA) provides medical guidance for personnel programs, including fitness-for-duty, return-to-work,

drug testing, health screening and monitoring, pre-placement evaluations, immunizations, medical surveillance, medical recordkeeping, deployment physicals, and medical exam protocols. The ASHA also oversees the development of policies, procedures, standards, requirements and metrics for medical services and related programs. In addition, the ASHA oversees quality assurance, credentialing and all Operational Medicine Programs.

The ASHA is the primary policy advisor to the Secretary on occupational medicine and public health aspects of the occupational safety and health program, and is charged with developing and maintaining consistent medical standards, guidance, policy, requirements and metrics for DHS employees. The ASHA's authority extends to entering into agreements and contracts to discharge the authorities, duties and responsibilities of the Office of Health Affairs, which includes the procurement of medical countermeasures to protect the DHS workforce. The overlapping responsibilities between the CAO and the ASHA require a balance of resources and definition of management processes within the Department to optimize occupational safety, health, and medical program performance.

The Department's overarching occupational safety and health policy is to provide DHS personnel safe and healthful employment; to comply with the requirements of applicable safety and occupational health laws, Executive Orders, and regulations; and to protect the public from risk of death, injury, illness, or property damage as a result of DHS activities. At a minimum, DHS must maintain comprehensive and effective safety and health programs that meet the requirements of Section 19 of the Occupational Safety and Health Act of 1970, as amended; Executive Order (E.O.) 12196, as amended; and 29 Code of Federal Regulations (CFR) Part 1960.

In accordance with existing policy, DHS must:

- Provide support and adequate resources for occupational safety and health programs and safety risk management at all levels;

- Ensure that accidental fatalities, injuries, occupational illnesses, and incidents involving property loss or mission degradation are investigated and analyzed in accordance with Departmental directives, and that appropriate measures are taken to control risks and reduce the probability of recurrence;

- Ensure that employees are not subject to restraint, interference, coercion, discrimination, or reprisal for exercising their rights under E.O. 12196, 29 CFR Part 1960, or for participating in Component safety and health programs;

- Provide safety and risk management education and training for managers and employees, and professional development education, training, and appropriate supplies and equipment for full time and collateral duty safety and health staff, committee/council members, and other employees with safety and health duties and responsibilities; and

- Ensure response to employee reports of hazardous conditions and require inspections of hazardous conditions in accordance with E.O. 12196.

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For the purposes of this MOU, occupational medicine is understood to include those program areas that require specialized medical expertise, such as employee immunizations, medical exam protocols, medication dispensing protocols, deployment physicals, post deployment medical monitoring, post exposure prophylaxis and similar programs. Occupational health programs are those program areas that require knowledge in a combination of areas including traditional medical expertise, public health mitigation, hazard analysis, engineering control measures, protective equipment, and hazard communication.

III. OBJECTIVES AND PROGRAM ELEMENTS

Based on programmatic responsibilities for OCAO and OHA, three levels of program integration are required to optimize program performance and efficiency. First, OCAO and OHA must work collaboratively on several fronts to address common occupational safety, health, and medical issues affecting the DHS working community. One of these areas includes the establishment of a senior level Safety, Health, and Medical Council for the development of overarching safety, health, and medical program policy, and the development of integrated tools and processes to support program functions. Second, there are other areas where it is clearly necessary that both organizations' input is critical, and support as needed must be made available to cooperatively manage program activities to focus resources, ensure that appropriate policies and guidelines are established, and ensure proper oversight is given to Component programs. These program areas include, but are not limited to, activities such as hearing conservation, accident investigation, and respiratory protection, which require both safety and medical expertise. Coordination may best occur by designating cooperatively an OCAO and OHA lead, and creating a taskforce of members of both organizations to provide guidance and recommendations. Third, there are other program areas that are clearly within the purview of one organization. For example, OHA, in an oversight role, provides medical guidance, standards, policy, requirements, and metrics for all human medical activities within the Department, including those activities that involve the provision of services being performed by a DHS Component such as drug testing and deployment physicals. Appendix A provides a program matrix that illustrates these relationships. This MOU delineates program areas of responsibility, identifies areas that may overlap, and explains the processes for conflict resolution when these boundaries are unclear and difficult to resolve.

A. Shared Responsibilities

OCAO and OHA will work collaboratively:

1. To establish a senior level DHS Safety, Health, and Medical Council to support, guide, and monitor the performance of Department-wide safety, health, and medical programs.

2. Delineate emergency procedures necessary for council co leads to generate the successful coordination during an event. Procedures should include:
   a. Direct communication procedures
   b. Event notification procedures

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    c. Pre release Concurrence procedures

  3. To develop overarching policy that addresses occupational safety, health, and medical issues in the Department.

B. OCAO's Responsibilities

OCAO will:

  1. Develop policy, standards, requirements, and metrics related to occupational safety and health programs, such as, but not limited to: fire and life safety, electrical safety, fall protection, construction safety, radiation safety, motor vehicle safety, bloodborne pathogens, hearing conservation, respiratory protection, chemical hygiene, lead, asbestos, indoor air quality, and ergonomics. These programs will incorporate input and medical guidance from OHA and the ASHA.

  2. Provide operational program management and oversight for occupational safety and health programs. Typical management and oversight functions include evaluating injury and illness trends, conducting program evaluations and inspections, providing program advice and counsel, and developing and implementing program initiatives to promote occupational safety and health. Procure and write all policy and guidance for Personal Protective Equipment, with OHA input. Provide input to OHA on the policies, guidance and procurement of Medical Counter Measures.

  3. Provide guidance and support, when requested by OHA, for occupational health and medical program areas for which the ASHA has a leadership role. Guidance and support may include reviewing draft policies, providing advice and counsel, participating in planning sessions, and supporting program evaluations.

  4. Coordinate safety, health, medical, and legal expertise to advise the Under Secretary for Management on an acquisition strategy for a Departmental OSH-related information infrastructure.

C. OHA's Responsibilities

OHA will:

  1. Develop policy, standards, requirements, and metrics for medical services and related programs, including fitness-for-duty, return-to-work, drug testing, health screening and monitoring, pre-placement evaluations, immunizations, medical surveillance, medical recordkeeping, deployment physicals, medical exam protocols, and automated external defibrillators and cardiopulmonary resuscitation programs.

  2. Provide guidance, protocols and support to DHS components and offices for all medications, medical programs, and medical countermeasures.

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3. Provide operational program management and oversight for medical services and related programs. Typical management and oversight functions include authoring department wide medical protocols, creating medical programs, evaluating trends, conducting program evaluations and inspections, providing program advice and counsel, and developing and implementing program initiatives.

4. Coordinate all safety, health, medical and legal information related to medical decision-making to support DHS Department-wide policy and acquisition strategies of medical equipment, medications, and medical supplies and medical information architectures. Procure and write all policy and guidance for Medical Counter Measures with OCAO input. Provide input to OCAO on the policies, guidance and procurement of personal protective equipment.

5. Provide guidance and support, when requested by OCAO for occupational safety and health program areas for which the CAO has a leadership role. Guidance and support may include reviewing draft policies, providing advice and counsel, participating in planning sessions, and supporting program evaluations.

D. Individual Responsibilities of the CAO and the ASHA

The CAO will:

1. Co-Chair the DHS Safety, Health, and Medical Council;

2. Represent the Department, when requested, on the Federal Advisory Council on Occupational Safety and Health; and

3. Serve as the Designated Agency Safety and Health Official (DASHO) for the Department. The DASHO, whose responsibilities are defined in E.O. 12196 and 29 CFR Part 1960, provides executive leadership in the development, promulgation, and implementation of occupational safety and health policies and procedures.

The ASHA will:

1. Co-Chair the DHS Safety, Health, and Medical Council; and

2. Serve as the primary policy advisor to the Secretary and to the DASHO on occupational medicine and health aspects of the occupational safety and health program.

IV. IMPLEMENTATION OF AGREEMENT

A. In order to enable close and effective collaboration, it is agreed that the scope of cooperative activity will be reviewed annually. Both the CAO and ASHA will designate managers to implement and coordinate this MOU. The designated managers shall meet on a regular basis to discuss and direct activities conducted under the MOU.

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B. In the event of any disagreement arising between the parties to this MOU, the Parties shall use their best efforts to negotiate a resolution in good faith. If the disagreement cannot be resolved at the operating level, the dispute will be elevated to successively higher levels of management up to, and including, the Secretary.

V. EFFECTIVE DATE

This MOU is effective upon signature of the Parties.
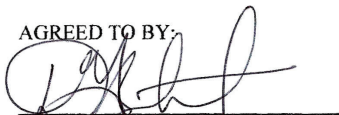
VI. AMENDMENTS

This MOU may be modified or amended by written agreement among the Parties hereto.

VII. TERMINATION

This MOU may be terminated by mutual agreement of both Parties.

AGREED TO BY:

_____
Mr. Donald G. Bathurst
Chief Administrative Officer

Office of the Chief Administrative Officer
U.S. Department of Homeland Security

On this date: 30 Sep 09

_____
Jon Krohmer, MD
Principal Deputy Assistant Secretary and
  Deputy Chief Medical Officer
Office of Health Affairs
U.S. Department of Homeland Security

On this date: 30 Sept 09

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Appendix A
Occupational Safety and Health Program
Responsibility Matrix

Program	Office of the Chief Administrative Officer	Office of Health Affairs
Shared Program Areas		
Safety, Health, and Medical Council	S	S
Safety, Health, and Medical Programs Policy	S	S
Disaster Response	S	S
Emergency Preparedness	S	S
Primary Lead Programs		
Facility Inspections	P	A
OSHA Compliance	P	A
Information System Development and Management*	P	A
Hazard Analysis	P	A
Accident Investigation	P	A
Risk Management	P	A
Industrial Hygiene	P	A
Bloodborne Pathogens	P	A
Asbestos Programs	P	A
Lead Programs	P	A
Hearing Conservation	P	A
Indoor Air Quality	P	A
Laboratory Safety	P	A
Personal Protective Equipment and Respiratory Protection	P	A
Medical Counter Measures	A	P
Ergonomics	P	A
Job Design	P	A
System and Process Safety	P	A
Medical Surveillance*	A	P
Return-to-Work/Case Management*	A	P
Pre-Placement Evaluations*	A	P
End of Employment Evaluations*	A	P
Job Accommodation/Modification*	A	P
Work Hardening*	A	P
AEDs and CPR	A	P
Medical Surveillance	A	P
Occupational Medicine Program Policy	A	P
Occupational Medicine Program Oversight and Auditing	A	P
Occupational Medicine Program Management	A	P
Occupational Medicine Program Training and	A	P

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Education

Independent Program Areas

Safety Program Policy	P	
Safety Program Oversight and Monitoring	P	
Safety Program Management	P	
Safety Program Training and Education	P	
Facility Planning	P	
Motor Vehicle Safety	P	
Fire and Life Safety	P	
HAZWOPER	P	
Radiation Safety	P	
Chemical Hygiene	P	
Hazard Communication	P	
Confined Spaces	P	
Administrative and Engineering Controls	P	
System and Process Safety	P	
Construction Safety	P	
Medical Program Policy		P
Medical Program Oversight and Auditing		P
Medical Program Management		P
Medical Program Training and Education		P
Medical Recordkeeping*		P
Occupational Injury Treatment		P
Disability Management*		P
Deployment Physicals*		P
Medical Exam Protocols*		P
EAP Services*		P
Immunizations		P
Fitness-for-Duty*		P
Drug Testing*		P
Health Screening and Monitoring		P
Health Promotion and Management		P
Medication Policy		P

* The ASHA plays an oversight role in these activities, providing medical guidance, standards, policy, requirements, and metrics. Therefore, any reference to the ASHA as having primary responsibility for these activities refers to the ASHA's primary responsibility in an oversight role. The Chief Human Capital Officer (CHCO) may provide services for these activities under CHCO's authority and the ASHA will communicate with the CHCO where the authorities and responsibilities of the CHCO intersect with the ASHA's oversight responsibilities. If necessary, the ASHA and the CHCO may enter into a separate agreement regarding responsibilities with respect to the noted activities.

Key:

P   **Primary Responsibility**
S   **Shared**
A   **Assist**

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Department of Homeland Security
DHS Directives System
Directive Number: 248-01
Revision Number: 00
Issue Date: 10/02/2009

MEDICAL QUALITY MANAGEMENT

I. Purpose

This Directive establishes the policy on Medical Quality Management (MQM) for the Department of Homeland Security (DHS).

II. Scope

A. With the exception of the United States Coast Guard (USCG), as further stated below, this Directive applies to policies and programs related to the provision of medical services by all DHS health care providers.

B. This Directive does not apply to:

1. Health services provided by, for, or on behalf of the United States Coast Guard (USCG) that are in alignment and compliant with Department of Defense, TRICARE, and USCG Commandant Directives and Instructions related to the provision of health services.

2. Individual medical decisions made with respect to individual patients.

III. Authorities

A. Title 6, United States Code, § 321e, "Chief Medical Officer"

B. DHS Delegation 5001, "Delegation to the Assistant Secretary for Health Affairs and Chief Medical Officer"

IV. Definitions

A. **Certification:** The external verification of the competencies that an individual has achieved; typically involves an external process such as the National Registry for Emergency Medical Technicians, National Commission on Certification of Physician Assistants, or a Board recognized by the American Board of Medical Specialties, the American Board of Nursing Specialties, or the American Dental Association.

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B.   **Credentialing:** The process by which an organization assesses the qualifications and background of professional or paraprofessional personnel prior to permitting the person to practice designated medical services/skills on behalf of the organization. Such assessment includes the primary verification of professionals' or para-professionals' education, licenses or certifications/registrations. It does not include the issuing of licenses, certifications or registrations to professionals and paraprofessionals for the practice of designated medical health services.

C.   **Health Care Provider:** An organization or person who delivers authorized health care in a systematic way to individuals or groups in need of health care services, including any employees assigned to provide professional or para-professional healthcare services as a part of their DHS duties. This term also applies to detailees from other federal agencies and contractors whenever the purpose of the detail/contract includes performance of healthcare services.

D.   **License:** The permission granted to an individual by a State or U.S. Territory or Possession to perform certain medical activities.

E.   **MQM Program:** A program which provides for measurement of system performance and adjustments through training and/or policy to improve quality.

V. Responsibilities

A.   **The Assistant Secretary for Health Affairs and Chief Medical Officer (ASHA/CMO):**

    1.   Provides oversight of medical professional activities within DHS, and ensures this Directive is appropriately implemented within Components providing health services.

    2.   Ensures consistent application of MQM Programs across the Department.

    3.   Performs credentialing on behalf of DHS for those personnel (or applicants) whose position descriptions explicitly require that the individual or applicant have the duties/qualifications to provide designated medical services. Specific duty assignments remain solely within the purview of the employing Component.

    4.   Develops a Centralized Credentials Management System.

B.   **The Component Heads:**

    1.   Exercise oversight of the implementation of this Directive within

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their Components and ensure consistent application.

2.   Ensure detailees and contractors have the qualifications (licenses, certifications and/or registrations) necessary to perform designated medical services before they are permitted to deliver health care services for, or on behalf of, the Department.

VI. Policy and Requirements

A.   All Components providing health services maintain an active and effective MQM Program. The ASHA/CMO oversees Component MQM Programs through the Office of Health Affairs.

B.   Component MQM Programs include a quality assurance and improvement program that includes oversight, peer review, risk management, patient safety, and training; and documentation of organizational structures, standard of care, health care policies, and protocols.

C.   Component MQM Programs seek ASHA/CMO credentialing of DHS medical services personnel and applicants for positions in the Component with position descriptions that include the requirement that the personnel or applicants have the duties/qualifications to provide designated medical services.

D.   Detailees from other federal agencies. Components rely upon the detailing federal agency's credentialing of the detailee. Components request verification of the detailing federal agency's credentialing and provide copy to the ASHA/CMO.

E.   Records created by, for, or on behalf of DHS as part of a MQM Program are maintained and protected in compliance with applicable Federal law including the Privacy Act of 1974 (5 U.S.C. §552a).

VII. Questions

Address any questions or issues related to this Directive to the Office of Health Affairs.

_____   10/02/2009
Elaine C. Duke   Date
Under Secretary for Management

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Office of Personnel Management

well as to other noncompetitive appointments, and to conversion to career or career-conditional employment.

[33 FR 12429, Sept. 4, 1968, as amended at 57 FR 10124, Mar. 24, 1992]

Subpart B [Reserved]

Subpart C—Consideration for Appointment

§ 338.301 Competitive service appointment.

Agencies must ensure that employees who are given competitive service appointments meet the requirements included in the Office of Personnel Management's Operating Manual: Qualification Standards for General Schedule Positions. The Operating Manual is available to the public for review at agency personnel offices and Federal depository libraries, and for purchase from the Government Printing Office.

[62 FR 44535, Aug. 22, 1997]

Subparts D–E [Reserved]

Subpart F—Age Requirements

§ 338.601 Prohibition of maximum-age requirements.

A maximum-age requirement may not be applied in either competitive or noncompetitive examinations for positions in the competitive service except as provided by:

(a) Section 3307 of title 5, United States Code; or

(b) Public Law 93–259 which authorizes OPM to establish a maximum-age requirement after determining that age is an occupational qualification necessary to the performance of the duties of the position.

[40 FR 42734, Sept. 16, 1975]

PART 339—MEDICAL QUALIFICATION DETERMINATIONS

Subpart A—General

Sec.
339.101 Coverage.
339.102 Purpose and effect.
339.103 Compliance with EEOC regulations.
339.104 Definitions.

§ 339.102

Subpart B—Physical and Medical Qualifications

339.201 Disqualification by OPM.
339.202 Medical standards.
339.203 Physical requirements.
339.204 Waiver of standards and requirements.
339.205 Medical evaluation programs.
339.206 Disqualification on the basis of medical history.

Subpart C—Medical Examinations

339.301 Authority to require an examination.
339.302 Authority to offer examinations.
339.303 Examination procedures.
339.304 Payment for examination.
339.305 Records and reports.
339.306 Processing medical eligibility determinations on certificates of eligibles.

AUTHORITY: 5 U.S.C. 3301, 3302, 5112; E.O. 9830, February 24, 1947.

SOURCE: 54 FR 9763, Mar. 8, 1989, unless otherwise noted.

Subpart A—General

§ 339.101 Coverage.

This part applies to all applicants for and employees in competitive service positions; and to excepted service employees when medical issues arise in connection with an OPM regulation which governs a particular personnel decision, for example, removal of a preference eligible employee in the excepted service under part 752.

§ 339.102 Purpose and effect.

(a) This part defines the circumstances under which medical documentation may be acquired and examinations and evaluations conducted to determine the nature of a medical condition which may affect safe and efficient performance.

(b) Personnel decisions based wholly or in part on the review of medical documentation and the results of medical examinations and evaluations shall be made in accordance with appropriate parts of this title.

(c) Failure to meet a properly established medical standard or physical requirement under this part means that the individual is not qualified for the position unless a waiver or reasonable

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accommodation is indicated, as described in §§ 339.103 and 339.204. An employee's refusal to be examined in accordance with a proper agency order authorized under this part is grounds for appropriate disciplinary or adverse action.

[54 FR 9763, Mar. 8, 1989, as amended at 60 FR 3061, Jan. 13, 1995]

§ 339.103 Compliance with EEOC regulations.

Actions under this part must be consistent with 29 CFR 1613. 701 *et seq*. Particularly relevant to medical qualification determinations are § 1613.704 (requiring reasonable accommodation of individuals with handicaps); § 1613.705 (prohibiting use of employment criteria that screen out individuals with handicaps unless shown to be related to the job in question) and § 1614.706 (prohibiting pre-employment inquiries related to handicap and pre-employment medical examinations, except under specified circumstances). In addition, use of the term "qualified" in these regulations shall be interpreted consistently with § 1613.702(f), which provides that a "qualified handicapped person" is a handicapped person "who, with or without reasonable accommodation, can perform the essential functions of the position in question without endangering the health and safety of the individual or others."

§ 339.104 Definitions.

For purposes of this part—

Accommodation means *reasonable accommodation* as described in 29 CFR 1613.704.

Arduous of hazardous positions means positions that are dangerous or physically demanding to such a degree that an incumbent's medical condition is necessarily an important consideration in determining ability to perform safely and efficiently.

Medical condition means health impairment which results from injury or disease, including psychiatric disease.

Medical documentation or *documentation of a medical condition* means a statement from a licensed physician or other appropriate practitioner which provides information the agency considers necessary to enable it to make an employment decision. To be accept-

able, the diagnosis or clinical impression must be justified according to established diagnostic criteria and the conclusions and recommendations must not be inconsistent with generally accepted professional standards. The determination that the diagnosis meets these criteria is made by or in coordination with a physician or, if appropriate, a practitioner of the same discipline as the one who issued the statement. An acceptable diagnosis must include the following information, or parts identified by the agency as necessary and relevant:

(a) The history of the medical conditions, including references to findings from previous examinations, treatment, and responses to treatment;

(b) Clinical findings from the most recent medical evaluation, including any of the following which have been obtained: Findings of physical examination; results of laboratory tests; X-rays; EKG's and other special evaluations or diagnostic procedures; and, in the case of psychiatric evaluation of psychological assessment, the findings of a mental status examination and the results of psychological tests, if appropriate;

(c) Diagnosis, including the current clinical status;

(d) Prognosis, including plans for future treatment and an estimate of the expected date of full or partial recovery;

(e) An explanation of the impact of the medical condition on overall health and activities, including the basis for any conclusion that restrictions or accommodations are or are not warranted, and where they are warranted, an explanation of their therapeutic of risk avoiding value;

(f) An explanation of the medical basis for any conclusion which indicates the likelihood that the individual is or is not expected to suffer sudden or subtle incapacitation by carrying out, with or without accommodation, the tasks or duties of a specific position;

(g) Narrative explanation of the medical basis for any conclusion that the medical condition has or has not become static or well stabilized and the

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likelihood that the individual may experience sudden or subtle incapacitation as a result of the medical condition. In this context, "static or well-stabilized medical condition" means a medical condition which is not likely to change as a consequence of the natural progression of the condition, specifically as a result of the normal aging process, or in response to the work environment or the work itself. "Subtle incapacitation" means gradual, initially imperceptible impairment of physical or mental function whether reversible or not which is likely to result in performance or conduct deficiencies. "Sudden incapacitation" means abrupt onset of loss of control of physical or mental function.

Medical evaluation program means a program of recurring medical examinations or tests established by written agency policy or directive, to safeguard the health of employees whose work may subject them or others to significant health or safety risks due to occupational or environmental exposure or demands.

Medical standard is a written description of the medical requirements for a *particular occupation* based on a determination that a certian level of fitness of health status is required for successful performance.

Physical requirement is a written description of job-related physical abilities which are normally considered essential for successful performance in a *specific position*.

Physician means a licensed Doctor of Medicine or Doctor of Osteopathy, or a physician who is serving on active duty in the uniformed services and is designated by the uniformed service to conduct examinations under this part.

Practitioner means a person providing health services who is not a medical doctor, but who is certified by a national organization and licensed by a State to provide the service in question.

Subpart B—Physical and Medical Qualifications

§ 339.201 Disqualification by OPM.

Subject to subpart C of part 731 of this chapter, OPM may deny an applicant examination, deny an eligible ap-

pointment, and instruct an agency to remove an appointee by reason of physical or mental unfitness for the position for which he or she has applied, or to which he or she has been appointed. An OPM decision under this section is separate and distinct from a determination of disability under § 831.502, 844.103, 844.202, or subpart L of part 831 of this title, and does not necessarily entitle the employee to disability retirement under sections 8337 or 8451 of title 5, United States Code.

§ 339.202 Medical standards.

OPM may establish or approve medical standards for a Governmentwide occupation (*i.e.,* an occupation common to more than one agency). An agency may establish medical standards for positions that predominate in that agency (*i.e.,* where the agency has 50 percent or more of the positions in a particular occupation). Such standards must be justified on the basis that the duties of the position are arduous or hazardous, or require a certain level of health status or fitness because the nature of the positions involve a high degree of responsibility toward the public or sensitive national security concerns. The rationale for establishing the standard must be documented. Standards established by OPM or an agency must be:

(a) Established by written directive and uniformly applied,

(b) Directly related to the actual requirements of the position.

[54 FR 9763, Mar. 8, 1989, as amended at 66 FR 66710, Dec. 27, 2001]

§ 339.203 Physical requirements.

Agencies are authorized to establish physical requirements for individual positions without OPM approval when such requirements are considered essential for successful job performance. The requirements must be clearly supported by the actual duties of the position and documented in the position description.

§ 339.204 Waiver of standards and requirements.

Agencies must waive a medical standard or physical requirement established under this part when there is sufficient evidence that an applicant or

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employee, with or without reasonable accommodation, can perform the essential duties of the position without endangering the health and safety of the individual or others.

§ 339.205 Medical evaluation programs.

Agencies may establish periodic examination or immunization programs by written policies or directives to safeguard the health of employees whose work may subject them or others to significant health or safety risks due to occupational or environmental exposure or demands. The need for a medical evaluation program must be clearly supported by the nature of the work. The specific positions covered must be identified and the applicants or incumbents notified in writing of the reasons for including the positions in the program.

§ 339.206 Disqualification on the basis of medical history.

A candidate may not be disqualified for any position solely on the basis of medical history. For positions with medical standards or physical requirements, or positions subject to medical evaluation programs, a history of a particular medical problem may result in medical disqualification only if the condition at issue is itself disqualifying, recurrence cannot medically be ruled out, and the duties of the position are such that a recurrence would pose a reasonable probability of substantial harm.

Subpart C—Medical Examinations

§ 339.301 Authority to require an examination.

(a) A routine preappointment examination is appropriate only for a position which has specific medical standards, physical requirements, or is covered by a medical evaluation program established under these regulations.

(b) Subject to § 339.103 of this part, an agency may require an individual who has applied for or occupies a position which has medical standards or physical requirements or which is part of an established medical evaluation program, to report for a medical examination:

(1) Prior to appointment or selection (including reemployment on the basis of full or partial recovery from a medical condition);

(2) On a regularly recurring, periodic basis after appointment; or

(3) Whenever there is a direct question about an employee's continued capacity to meet the physical or medical requirements of a position.

(c) An agency may require an employee who has applied for or is receiving continuation of pay or compensation as a result of an on-the-job injury or disease to report for an examination to determine medical limitations that may affect placement decisions.

(d) An agency may require an employee who is released from his or her competitive level in a reduction in force to undergo a relevant medical evaluation if the position to which the employee has reassignment rights has medical standards or specific physical requirements which are different from those required in the employee's current position.

(e)(1) An agency may order a psychiatric examination (including a psychological assessment) only when:

(i) The result of a current general medical examination which the agency has the authority to order under this section indicates no physical explanation for behavior or actions which may affect the safe and efficient performance of the individual or others, or

(ii) A phychiatric examination is specifically called for in a position having medical standards or subject to a medical evaluation program established under this part.

(2) A psychiatric examination or psychological assessment authorized under (i) or (ii) above must be conducted in accordance with accepted professional standards, by a licensed practitioner or physician authorized to conduct such examinations, and may only be used to make legitimate inquiry into a person's mental fitness to successfully perform the duties of his or her position without undue hazard to the individual or others.

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§ 339.302 Authority to offer examinations.

An agency may, at its option, offer a medical examination (including a psychiatric evaluation) in any situation where the agency needs additional medical documentation to make an informed management decision. This may include situations where an individual requests for medical reasons a change in duty status, assignment, working conditions, or any other benefit or special treatment (including reasonable accommodation or reemployment on the basis of full or partial recovery from a medical condition) or where the individual has a performance or conduct problem which may require agency action. Reasons for offering an examination must be documented. An offer of an examination shall be carried out and used in accordance with 29 CFR 1613.706.

§ 339.303 Examination procedures.

(a) When an agency orders or offers a medical examination under this subpart, it must inform the applicant or employee in writing of its reasons for doing so and the consequences of failure to cooperate. (A single notification is sufficient to cover a series of regularly recurring or periodic examinations ordered under this subpart.)

(b) The agency designates the examining physician or other appropriate practitioner, but must offer the individual an opportunity to submit medical documentation from his or her personal physician or practitioner. The agency must review and consider all such documentation supplied by the individual's personal physician or practitioner.

§ 339.304 Payment for examination.

Agencies shall pay for all examinations ordered or offered under this subpart, whether conducted by the agency's physician or the applicant's or employee's physician. Applicants and employees must pay for a medical examination conducted by a private physician (or practitioner) where the purpose of the examination is to secure a benefit sought by the applicant or employee.

§ 339.305 Records and reports.

(a) Agencies will receive and maintain all medical documentation and records of examinations obtained under this part in accordance with instructions provided by OPM, under provisions of 5 CFR part 293, subpart E.

(b) The report of an examination conducted under this subpart must be made available to the applicant or employee under the provisions of part 297 of this chapter.

(c) Agencies must forward to the Office of Workers' Compensation Programs (OWCP), Department of Labor, a copy of all medical documentation and reports of examinations of individuals who are receiving or have applied for injury compensation benefits including continuation of pay. The agency must also report to the OWCP the failure of such individuals to report for examinations that the agency orders under this subpart. When the individual has applied for disability retirement, this information must be forwarded to OPM.

§ 339.306 Processing medical eligibility determinations on certificates of eligibles.

(a) In accordance with the provisions of this part, agencies are authorized to medically disqualify a nonpreference eligible. A nonpreference eligible so disqualified has a right to a higher level review of the determination within the agency.

(b) OPM must approve the sufficiency of the agency's reasons to:

(1) Medically disqualify or pass over a preference eligible on a certificate in place of a nonpreference eligible,

(2) Medically disqualify or pass over a 30 percent or more compensably disabled veteran for a position in the U.S. Postal Service in favor of a nonpreference eligible,

(3) Medically disqualify a 30 percent or more compensably disabled veteran for assignment to another position in a reduction in force, or

(4) Medically disqualify a 30 percent or more disabled veteran for non-competitive appointment.

Appendix C

Performance Measure Framework and Balanced Scorecard Example

Throughout this report, the committee recognizes the need for the Department of Homeland Security (DHS) to take a strategic approach to planning for and management of workforce health protection. An important part of strategic planning is aligning activities with the department's vision and strategy and ensuring the ability to monitor progress and adjust accordingly based on predetermined measures and metrics. Although the committee recognizes that there are multiple approaches DHS can take to these ends, this appendix provides as an example the performance measure framework and balanced scorecard currently used by the U.S. Coast Guard[1] for tracking progress on strategic goals and objectives and for accountability purposes. Ultimately, the committee believes DHS will be in the best position to determine which approach to take and what metrics to use.

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[1]USCG (U.S. Coast Guard). 2011. *Office of health services strategic plan (2011-2015).* Washington, DC: USCG.

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Performance Measure Framework

Measurement Focus

In light of these major initiatives the following information is intended to provide a framework to monitor success as this Strategic Plan is carried out, enabling value creation opportunities and building momentum toward organizational excellence. *Notes are provided in parenthesis (red text) below to link them with existing measure in the Balanced Scorecard.*

Quad Aim	Strategic Imperative	Performance Measure(s)	Initiatives
Medical Readiness	Individual Medical Readiness Family Readiness	Readiness compliance (S1 measure) EHR Utilization Work-Life Survey	• Reserve Health Readiness Program (RHRP) for Periodic Health Assessment & Dental Screening for Reservists (S1 measure) • Track/identify deployment limiting conditions (S1 measure) • Patient Centered Medical Home Implementation (SG 3 measure) • Epic Electronic Health Record Implementation (SG 1,3,4,5 measures) • Work-Life Family Readiness programs
	Healthy workforce (Psychological)	Identify % completed of post deployment health medical needs	• Conduct/track Pre and post deployment assessments (PDHA, PDHRA) (S2 measure) • Others to be developed • Operational Stress Continuum adoption (SG 1 measure)
Population Health	Engaging workforce in healthy behaviors	Influenza management Adopt HEDIS measures Percentage of population over fat	• Maintain influenza prevention program (S1 measure) • Monitor tobacco use • Monitor weight program • Integrate health lifestyle program • HEDIS Women's health measures • Identify and prepare for other emerging health threats • Implement Population Health Portal access (IP 5 measure) • Quad Aim/PCMH - Population Health (SG 1 measure)
Experience of Care	Evidence-based care 24/7 access to your team (C2 measure)	Enrollee Preventive Health metric HEDIS Index Internal/external EPIC/MRRS Number of referrals by clinic provider (F1 measure) External Accreditation (C3 measure)	• Develop system wide policy for access to Medical Home • Effective Appointment template Management (F1 measure) • Monitor Medical Home initiative • Identify elements of patient behavior, e.g. primary & specialty care visits per member per year • Adopt NCQA Certification of Medical Home (tentative)
	Case Management Personal relationship with your provider	Effectiveness of care for complex Med/Social problems Satisfaction with health care (C1 measure)	• Continue Patient Satisfaction Survey and Peer Review; medical Encounter Review System (MERS) (S3, C1, IP3 measures) • Implement Medical Home • Continue HSWL SC Case Management Program

	Strategic Imperative	Performance Measure(s)	Initiatives
Per Capita Cost (Responsible Stewardship)	Optimize all product lines by using standard business planning processes	CG-11/HSWL Budget Execution/Performances Enrollment utilization of ER services Reduce PMPM costs for healthcare Identify provider excess capacity for reallocation of responsibilities	• Approval of clinic business plan submission • Maximize opportunities to identify and implement solutions that gain efficiency • Develop/implement staffing standard (R3 measure) • Ensure AFC-57 FRMM Compliance (R1 measure) • Adhere to AFC-57 Budget Model
	CFO Act compliance	Achieve Audit Compliance in Financial Processes (F2 measure)	• Complete Electronic billing MOU with DoD • Achieve MERHCF billing (F1 measure) • Achieve OHI Billing Capability (F1 measure) • Resolve weaknesses identified within DoD MTF claims processing • Identify and counter internal weaknesses in business processes (F2 measure)
Learning & Growing	Functional EHR	Implementation of CG EHR (IP7 measure) Provider satisfaction with EHR	• Sustain EHR • Maintain HIPAA Compliace • Conduct MIS Program Review Board • Enhance Coding Accuracy • Conduct periodic Staff Satisfaction surveys
	Using research to improve performance	Product and Product Services	• Implement an in-house IRB
	Fully capable CG workforce	Complete EHR Training	• Monitor training database (IP4 measure) • Track organizational competency development • Complete Health Service Corps Analysis • Identify IT enhancements to support provider effectiveness • Improve deployment capability for contingency response • Add professional training courses

Balanced Scorecard

Balanced Scorecard

The balanced scorecard is a strategic planning and management tool that is used to align business activities to the vision and strategy of the organization, improve internal and external communications, and monitor organization performance against strategic goals. The balanced scorecard suggests that we view the organization from four perspectives, and to develop metrics, collect data and analyze it relative to each of these perspectives:

The Learning & Growth Perspective

This perspective includes employee training and corporate cultural attitudes related to both individual and corporate self-improvement. In a knowledge-worker organization, people -- the only repository of knowledge -- are the main resource. In the current climate of rapid technological change, it is becoming necessary for workers to be in a continuous learning mode. Learning and growth constitute the essential foundation for success of any knowledge-worker organization.

The Business Process Perspective

This perspective refers to internal business processes. Metrics based on this perspective allow us to know how well the business activities are running, and whether our products and services conform to customer requirements (the mission).

The Customer Perspective

Recent management philosophy has shown an increasing realization of the importance of customer focus and customer satisfaction in any business. These are leading indicators: if customers are not satisfied, they will eventually find other suppliers that will meet their needs. Our healthcare delivery system must adhere to the same principles to satisfy beneficiaries and to develop processes that are efficient and effective.

The Financial Perspective

Timely and accurate funding data will always be a priority, and we must do whatever is necessary to provide it. With the implementation of the Epic® Electronic Medical Record, standardized business planning and other initiatives, it is hoped that more of the processing can be centralized and where possible automated. There is a major organizational emphasis on financials to maintain the ability to meet operational mission requirements. There is a need to include additional financial-related data, such as risk assessment and cost-benefit data, in this category

The following two sections seek to: (1) provide some clarity on measures being developed and how the intersect with the Balanced Scorecard perspectives, and (2) provide a visual Strategy Map to help illustrate how our activities are influenced within the perspectives.

Measures of Primary Emphasis

Balanced Scorecard Perspectives	Strategic Goal 1 Provide for a Medically Ready & Protected Coast Guard Active Duty & Reserve Member Workforce	Strategic Goal 2 Maintain & develop an operational response capability & operationally ready Coast Guard Medical Force	Strategic Goal 3 Provide quality, accessible & efficient care	Strategic Goal 4 Create Chief Financial Officer (CFO) compliant Coast Guard Health Care Financial Management System and an overall increased emphasis on business planning for the Coast Guard's Organic Health Care Delivery System	Strategic Goal 5 Achieve full operational capability & modernization of Coast Guard Mission Support
Customer Perspectives	Readiness Compliance Internal/external EPIC/MRRS Percentage of population over fat	Deploy with CG and DoD assets in training environments	Satisfaction with health care Number of referrals by clinic provider	Staffing Standard	Patient Centered Medical Home implementation
Internal Process Perspective	Post deployment health medical needs Enrollee Preventive Health metric MRRS/CGBI data feeds, monitoring, and communication	Track and manage CG/DoD deployments to ensure breadth of knowledge across the organization	Work-Life Survey Effectiveness of care for complex Med/Social problems HEDIS Index Adopt HEDIS measures HSWL SC HPAP surveys	External Accreditation (AAAHC/NCQA) Internal QA process (HPAP) Regional Practice Business Planning Process/Budget Build	Influenza management PCMH/EHR Maintain achieved gains of HSWL SC implementation Leverage regional practice concept for accountability, communication, standardization
Learning and Growth	EHR Utilization PCMH implementation training	Implementation of CG EHR Complete EHR Training Develop Training tracking database and proactively manage training quotas	Provider satisfaction with EHR	Tracking and reconciliation of training quotas Tracking/optimizing utilization of training quotas	HSWL FO Guide/Org Man
Financial Perspective	Prioritize funding to Readiness programs for ensured continuity	Dedicate deployment/training quotas targeting operational experiences	Enrollment utilization of ER services	Achieve Audit Compliance in Financial Processes	CG-11/HSWL Budget Execution/Performances

Appendix D

Questions for the Department of Homeland Security Components

Given the wide variation in approaches to workforce health throughout the Department of Homeland Security (DHS), the committee recognized the need for a set of standard information from each of the component agencies to help inform its work. The question lists presented in this appendix were constructed to help the committee draw comparisons among component agency medical, occupational safety and health, and workers' compensation programs. These lists were disseminated to staff with responsibility for these functions in each of the components.

QUESTIONS TO ASSESS DHS MEDICAL PROGRAMS

1. **Planning, Accountability, and Leadership Commitment**

   A. Do you have an overarching strategic plan for the health protection and well-being of your employees? If yes, please provide the plan. If this is not possible, what are the main elements and/or goals outlined in the plan?

   B. Do you have an action plan that lays out how your organization will work toward those goals, with specific measurable outcomes? What metrics are used to evaluate performance? Who set them? Do you have a scorecard or other tool to track those metrics so that performance can be evaluated?

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C. Who in your organization is held accountable for progress toward those goals? How is accountability achieved (e.g., incorporated into a performance plan)?

D. Please name ways by which your organization ensures that managers above the level of line supervision demonstrate a commitment beyond paper promises to the health and well-being of the workforce (e.g., actively participate in communication strategies designed to promote worker health and safety by discussing the importance of such initiatives at workplace events and publicly recognizing and celebrating positive results).

2. **Policies**

A. Do you have published guidance and standard operating procedures (SOPs) for the health protection and well-being of your employees? If yes, can you provide the policy? Does the policy/guidance cover:

- Medical surveillance/monitoring for exposure to known health hazards
- Infectious disease prevention
- Travel medicine
- Medical readiness/fitness for duty
- Medical quality assurance
- Medical case management and return to work
- Wellness/health promotion

B. How do you ensure compliance with such policies/SOPs?

C. Do you have a policy requiring sites to comply with all relevant health-related laws and regulations (with specification of the applicable laws and regulations for a given site)?

D. Do you have a policy and SOP for addressing medical aspects of crisis management for any potential major hazard (e.g., infectious disease epidemic, natural disaster, terrorist attack)?

3. **Standards**

A. For which positions in your organization are medical and/or physical fitness standards in place? What process was used to set those standards? How often are they reviewed and updated? What is the process for doing this?

    B. Are there any law enforcement or other safety and security sensi-tive positions in your organization for which standards have not yet been developed or are in the process of being developed? If so, which?

    C. For which positions in your organization are there standards for certification/licensure/registry? How is compliance with those stan-dards being tracked?

4. Programs

Save a Life

    A. Do you have safe and effective systems for basic life support at all worksites, including automated external defibrillators (AEDs) and emergency medical services (EMS)?

    B. Do you have a system to ensure advanced life support (e.g., ad-vanced cardiac life support) is available at a worksite within a set amount of time from when an alert is issued? If so, what is that set amount of time?

    C. What processes do you use to prevent occupational infections?

Medical Quality Assurance

    A. Does your organization have an active, documented medical quality management (MQM) program? If not, why not (e.g., health ser-vices are not provided to employees, lack of funding or personnel to run such a program)?

    B. If so, what are the main elements of your MQM program? Please describe briefly how your organization addresses any of the fol-lowing processes that are a part of your MQM program:

- Ensuring medical providers (contracted or in-house) are appro-priately qualified (e.g., licensed, certified, or registered).
- Reporting adverse or sentinel events (unexpected effects of treat-ment or medical support that result in harm to the patient) and near misses. Are such reports provided to: your organization's medical program office, the OIG, or OHA within a set amount of time after the event occurs?
- Investigation of adverse or sentinel events and near misses (Who is responsible for this? How are they conducted? Do you do a root cause analysis? What is done with the results?).
- Performance improvement (What metrics are you using and what performance goals or standards do you benchmark against? Do

you have a quality improvement committee that guides and as-
sesses performance improvement activities?)

- Clinical competency assessment for health services providers (How is this done and how frequently?)

Can you provide a copy of documentation describing your MQM program?

C. What, if any, medical quality assurance information (e.g., reports of adverse/sentinel events, status reports on corrective actions after an adverse/sentinel event, performance improvement reports) do you report to the Office of Health Affairs (OHA) (e.g., through the OHA MQM mailbox)? If none, why not? What are the largest barriers to doing so? How long after a sentinel event resulting in a patient death occurs is it reported to OHA?

D. For contracted health services or those supplied through inter-agency agreement (e.g., with Federal Occupational Health), how do you assure contractor/provider compliance with DHS policy and contract requirements (i.e., medical providers meet professional criteria and certification/licensure requirements, clinical competency of service providers is regularly assessed, adverse/sentinel events and near miss occurrences are reported)? Is the vendor required to supply a quality assurance report? How frequently? Who is responsible for reviewing such reports? Are requirements set forth in the DHS MQM instruction incorporated into contracts/interagency agreements for health services?

Medical Qualification

A. How do you determine which jobs have a demonstrated need for medical qualification (e.g., How do you determine which jobs to do job task analyses for)? Who performs these? How are the job task analyses used to develop medical standards?

B. Do you have a *documented* medical qualification process for each job requiring qualification (e.g., law enforcement, buggy/forklift operator, respirator users, firefighters, emergency response personnel, confined space workers)? What is this process (e.g., submission of medical history forms, medical examination [in-house or contracted], evaluation by medical review officer or board [in-house or contracted])? Is it applied only prior to employment or also periodically? If the latter, how frequently?

C. Do you have documentation that all employees in those roles are medically qualified? How is medical qualification status tracked for those that must meet medical standards?

D. Do you have a documented policy requiring those who must meet medical standards to notify the appropriate personnel regarding a change in their health status (e.g., new diagnosis) or the addition of any new drugs to their regimen? Who would need to be notified of such changes? What is the process for someone updating their health status records?

E. What process is used to adjudicate fitness-for-duty cases for current employees?

F. What, if any, process does your organization use to determine if someone is medically qualified for deployment (deployment considered as temporary transfer of an employee during an operation to a site where working conditions may be more hazardous or medical services less accessible than at that employee's usual workplace, like overseas or to a disaster site)?

Medical Surveillance/Monitoring: (Skip if all medical surveillance is handled by your component's safety office)

A. How do you ensure/track that all employees exposed to known health hazards are monitored regularly? Is medical surveillance conducted in-house or contracted out? If the latter, to whom? How are results collected from the vendor?

B. Besides those exposures requiring monitoring per OSHA, what other exposures (e.g., tuberculosis) do you monitor? What process was used to determine the need for such monitoring?

C. Is medical surveillance data aggregated and used to identify population-level health risks?

D. Does your organization have an ergonomics program? Who has responsibility for this program? Do you perform symptom surveys? Do you have a mechanism for early reporting and prompt medical attention? How do you address identified ergonomics problems?

Employee Health and Wellness: (If handled by another office in your component, please provide contact information for the best person to address these questions)

A. Does your component have an employee Health and Wellness program? Is it an in-house program or contracted? What are the key elements of that program designed to address and improve employee health? Does it include

- Employee assistance programs or other counseling services?
- Work time for physical fitness, access to a fitness center, and/or onsite fitness classes/programs?

- Health screening/health risk assessment for personal medical issues (e.g., blood pressure, body mass index (BMI), cholesterol, smoking, alcohol intake and other behavioral health risks)?
- Voluntary vaccination program (e.g., flu)?
- Others?

B. Was an appropriately certified/credentialed physician or other medical personnel involved in the design of the program? What are their qualifications?

C. Do you track utilization of these services? How is utilization data used?

D. If your program includes a health risk assessment (HRA) or voluntary vaccination program, what IT system do you use (if any) to track HRA results or vaccination status for employees?

E. What metrics are used to track employee health and wellness in your component? How do you evaluate the effectiveness of health and wellness interventions? Are there documented goals for the program? If so, what are they?

F. How does your organization incentivize or encourage a healthy lifestyle?

G. Does your component conduct and document a health needs analysis that involves medical and HR personnel in order to identify and address the top health issues in your workforce? If so, which of the following health data sources are utilized for this needs analysis: employee assistance data, wellness program participation data, documented behavioral health and lifestyle risks, available workers' compensation and safety data, sick leave utilization data? Based on this analysis, are recommendations made to your organization's leadership on next steps (e.g., future programs) to address the health needs of your organization's workforce?

H. Is information from medical qualification processes used to track the health status of employees who must meet medical standards? For example, if someone is hired with controlled diabetes, is the status of his/her diabetes checked during future medical screenings? Is that information used to tailor individual health promotion interventions? Are these data aggregated to get a sense of the health risks in your component's workforce (e.g., risk from diabetes)? If so, are these data used to drive population level interventions?

I. Is your organization's employee health and wellness program coordinated in any way with occupational medicine and/or occupational safety and health programs? If so, how?

5. **Metrics and Performance (output, outcome and quality measures and systems in place for tracking, analysis, and communication)**

   A. What performance measures do you rely upon to determine whether your employees are adequately protected from workplace health hazards?
   B. What metrics do you rely upon to determine whether your employees are medically fit to perform their jobs?
   C. What performance reports/scorecards containing summaries of tracked metrics are prepared? Who receives the results? How often?
   D. Are metric summaries analyzed to determine future training or program needs?

6. **Organizational Structure and Integration with Operations**

   A. What organizational steps have been taken to ensure that safety, workers' compensation/return to work, wellness, and medical programs are fully coordinated within your component and responsibilities clearly delineated?
   B. Does your office participate in committees/councils or working groups with representatives from medical, wellness/health promotion, workers compensation, and/or OSH programs? Who leads this group? How often does it meet? How is it working to ensure coordination among these different activities?
   C. Do you feel that the current placement of workforce health protection functions across your component's organizational structure interferes with coordination and integration of such functions? If so, what are the major barriers to coordination and integration?
   D. Who provides medical oversight for your component agency? To whom do they report? How/when do medical program staff interface with safety and workers' compensation personnel?
   E. Do you use an integrated health risk assessment process (i.e., team-based approach utilizing medical, safety, human resources, and operations personnel) to survey worksites and identify the major health risks to the workforce at that site? If so, are these surveys conducted periodically?

7. **Resources (budgets, technologies, facilities, and personnel levels/ expertise to support safety and health objectives)**

   A. Please describe staffing levels and skill sets within your component's medical programs office. Do any medical program personnel

    in your organization have expertise in health or medical informatics? If so, how many? Do you have a chief medical information officer? What are the most pressing personnel needs?

B. What medical/health services personnel are available at your agency field sites?

C. Does your component have an electronic health information system to track employee health information (medical qualification/fitness-for-duty status, health risk data)? If not, how is this information tracked (e.g., spreadsheets, database)?

D. What other investments has your organization made in health information and communications technology? Does your component have the necessary health information technology (software and hardware) to ensure situational awareness and support continuous improvement? If not, what is needed?

E. How is the budget for your component's medical program set? Who makes this decision? What was your component's most recent budget for medical programs?

OCCUPATIONAL SAFETY AND HEALTH QUESTIONS

1. Strategic Planning and Management Commitment

A. Does your organization have any document (e.g., strategic plan) that lays out specific goals/objectives related to the safety and health of your workforce?

B. If so, what are the goals or elements of the plan? Or, can you provide us with a copy?

C. Who in your organization is held accountable for progress toward those goals (or if none are defined within your organization, toward the President's Protecting Our Workers and Ensuring Reemployment [POWER] goals)? How is accountability achieved (e.g., incorporated into a performance plan)? What metrics are used to evaluate performance of those held accountable?

D. How is the Designated Safety and Health Official engaged in ensuring the safety and health of the workforce as required by your organization's occupational safety and health (OSH) policy (ensuring adequate budget and personnel for program implementation, establishing goals, priorities and strategies for reducing injuries and illnesses, evaluating your OSH program)?

E. Please name ways by which your organization ensures that managers above the level of line supervision demonstrate a commitment beyond paper promises to the implementation of your occupational

safety and health program (e.g., Do managers have safety as part of their performance plan? Do they serve on safety committees/councils?).

2. Standards and Policies

A. Does your organization have a handbook or manual specifying requirements, policies, standards, and procedures set by your occupational safety and health program? If so, can you provide us with a copy of it?

B. If not (or in addition to), do you have policies and standard operating procedures that detail the way you comply with the safety and health requirements set by your component or DHS? If so, can you provide copies of these?

C. Which of the following does your manual/SOPs address: identification and control of safety hazards; identification and control of health (e.g., infectious disease) hazards; mishap reporting, job safety/hazard analysis; medical surveillance?

D. For which of these areas does your organization have specific mandatory requirements/standards: periodic job safety analysis; exposure limits for identified health hazards; professional credentials and certification? Has your organization developed and received approval for any standards besides those set by OSHA? If so, please give examples. If not included in the agency manual/handbook, can you provide copies of any relevant standards?

E. Who was responsible for developing and approving each of these standards/requirements? By what process were they developed?

F. How often is your program audited for compliance with policies/standards dictated in your OSH handbook/manual internally? Externally (by DHS HQ)? How is the evaluation scored (e.g., use of worksheet with a rating system)? Who receives the results?

G. Can you provide a copy of a recent audit (including any self-assessments that were provided during the evaluation) along with an explanation of actions taken to address any deficiencies that were identified?

H. Who is responsible for ensuring that the standards in use by component organizations are consistent throughout DHS?

3.   Hazard Identification and Control Programs

   A. What jobs in your organization have job safety/hazard and ergonomic analyses on file? Who conducts these and who approves them? How are they used?

   B. Does your organization have an ergonomics program? Who has responsibility for this program? Do you perform symptom surveys? Do you have a mechanism for early reporting and prompt medical attention? How do you address identified ergonomics problems?

   C. How often are site safety inspections performed internally? Externally? Who participates in these? Do Collateral Duty Safety Officers or Safety Specialists (in-house or contracted?) conduct OSHA-required annual site inspections?

   D. Who receives the results of site safety inspections?

   E. What processes are in place to notify the site OSH office that a workplace injury/illness has occurred? Is there a 24-hour hotline available for reporting an injury or illness? How is the HQ OSH office notified about injuries/illnesses?

   F. When safety or health hazards have been identified and reported (during inspections or by employees), who is responsible for determining whether there is a hazard that requires correction? Who is responsible for addressing identified hazards? How are the responsible persons held accountable?

   G. Does your organization maintain a list of identified hazards with workplans, assigned responsibilities and timelines for their correction?

   H. When does a report of workplace injury or illness trigger a job safety and health assessment? How soon after a workplace injury or illness report is filed is a job safety and health assessment performed?

   I. How do you ensure/track that all employees exposed to known health risks (OSHA required or other site-specific exposures as identified by OSH) are monitored regularly? Is medical surveillance conducted in-house or contracted out? If the latter, to whom? How are results collected from the vendor?

   J. Besides those exposures requiring monitoring per OSHA, what other exposures (e.g., tuberculosis) do you monitor? What process was used to determine the need for such monitoring?

   K. Is medical surveillance data aggregated and used to identify population-level health risks?

4. **Employee Involvement**

   A. Do you provide employees with a chance to participate in your occupational safety and health programs? If so, by what methods (e.g., membership on joint employer/employee safety committee, participation in safety inspections)?

5. **Education and Training**

   A. Do you provide training on safety and health to all employees? How many hours of occupational safety and health training are required each year for employees, supervisors, and managers?
   B. Do you have a training program for CDSOs? Was it developed in-house or contracted out? How many hours of training do you require CDSOs to take annually?
   C. How is the effectiveness of occupational safety and health training assessed?

6. **Metrics and Evaluation**

   A. Besides TCR and LTCR, what lagging indicators of safety and health performance do you document and track on a regular basis?
   B. What leading indicators of safety and health performance (measures of injury/illness prevention) do you document and track on a regular basis? Does your organization conduct a safety climate survey? If so, which do you use (can you provide a copy)? Who fills this out?
   C. How are performance metrics collected/tracked (input and storage of data)? When safety and health services are provided by contract, how is the data collected from the vendor and integrated with data collected in-house?
   D. How are summary reports generated from the tracked injury and illness data? Do these reports include both OSHA-recordable injury/illness data and injury/illness data from workers' comp claims? How often are reports generated?
   E. Who is responsible for evaluating these reports? Who receives such reports? How often are such reports shared with field office management? Component management? DHS HQ Safety Office?
   F. Can you provide examples of when corrective action was taken on the basis of such reports?
   G. Are you able to electronically query your injury and illness data to get information regarding a particular kind of injury or illness,

about injuries and illnesses at specific locations, or for specific types of employees? Have any such reports been used to set in motion a hazard analysis? If so, can you give one or more examples?

H. Has OSHA conducted a workplace inspection in any of your organization's workplaces in the past year? Can you provide copies of a recent OSHA inspection report? How did your organization respond to this report?

7. Resources

A. Please describe staffing levels and skill sets within your HQ Safety and Health Office. Does your organization have a Safety and Occupational Health Specialist (GS-0018 series) on staff? Industrial Hygienist (GS-0690 series)? Health physicist? Exercise physiologist?

B. Please describe staffing levels and skill sets for safety activities at your field sites. How many CDSOs does your organization have for the purpose of identifying safety and health hazards at the local workplace sites?

C. Do you feel your organization is adequately staffed and funded for each of the following program elements: worksite inspections, employee training, job safety analysis, periodic medical surveillance? What are the most pressing personnel or resource needs?

D. What IT system is used for (1) filing/tracking workers' compensation claims; (2) tracking and analyzing safety data; (3) tracking and analyzing medical surveillance data? Are these systems linked in any way?

E. Do you feel your organization has the necessary information technology in place to support all program needs? If not, what are the most pressing IT needs?

8. Coordination and Integration

A. How is your safety and health program (hazard identification and mitigation, medical surveillance, job safety analysis) coordinated with other employee health protection programs (e.g., medical programs like fitness for duty, wellness, workers' compensation case management, return to work)? For example do you have committees, councils, workgroups, or common reporting chains to ensure coordination? How do IT systems support this coordination?

B. When these working groups cannot reach consensus on important issues, how are final decisions made?

C. Do you feel that the current placement of workforce health protection functions across your component's organizational structure interferes with coordination and integration of such functions? If so, what are the major barriers to coordination and integration?

QUESTIONS FOR WORKERS' COMPENSATION PROGRAM STAFF

1. **Workers' Comp (WC) Claims Management**

A. Does your office handle assignment of light duty and return to work in addition to WC claims management? If not, who in your organization oversees these functions?

B. Do you have SOPs or a manual with procedures for handling workers' comp claims? If so, can you provide us with a copy?

C. Do you feel your organization is adequately staffed and funded for WC claims management? What are your most pressing personnel or resource needs?

D. Are WC claims filed electronically in your organization? If so, using what system? Are claims tracked in the same system? If not, how are they tracked?

E. Does the filing of a WC claim result in automatic notification to the OSH office that there has been a workplace injury or illness? If not, how does that office become aware that an injury or illness has occurred?

F. Do you assign WC costs to the local site level?

G. Does your organization review chargeback reports for accuracy? If so, how often (e.g., annually, quarterly)?

2. **Case Management and Return to Work (RTW)**

A. Do you have SOPs or a manual with procedures for getting injured employees back to work? If so, can you provide us with a copy?

B. When a WC claim is filed, is someone assigned to communicate with the employee and the employee's physician to begin plans for return to work? Does this depend on the nature of the injury or illness? If so, how? How soon after a workplace injury or illness report is filed is contact initiated?

C. Does your organization have a nurse case management program for this purpose? If so, are nurse case managers employees of your organization or contracted staff? If the latter, which vendor do you use?

D. Does anybody have responsibility for contacting an employee who has been out for more than a few days with a workplace injury or illness but who has not submitted a WC claim? If so, who is that and how soon after the injury occurs is contact made?

E. What IT system is used to track work status (at work or off work)/medical status and progress (i.e., when the employee is expected to return to work and whether working a modified or regular job) of an injured worker over time?

F. Who determines if a modified job is available for someone who has not fully recovered? At what point does a person on WC for an extended time lose his or her job?

G. Who is responsible for ensuring a returning employee meets any applicable medical standards? What happens if the Department of Labor clears an employee for return to work but the employee doesn't meet the medical standards for the position?

H. Does your RTW process include modified work, restricted hours, task rotation, and/or functional rehabilitation?

Appendix E

Public- and Private-Sector Approaches to Workforce Health Protection

The committee reviewed several relevant examples of public- (government) and private-sector approaches to workforce health protection during the course of the study. Those examples are discussed briefly in this appendix.

APPROACHES IN FEDERAL AGENCIES

Smithsonian Institution

The Smithsonian Institution is the world's largest museum and research complex, comprising 19 museums and galleries; the National Zoological Park; 9 research facilities; 184 affiliate museums; and the Museum Support Center, which serves as a storage, research, and conservation facility. In 2005, to address the Secretary's goal of a zero-injury workplace, and in accordance with the idea that "safe employees stay well and well employees stay safe," safety and employee health programs were organizationally aligned under the Office of Safety, Health, and Environmental Management (OSHEM) (Duval, 2013). Museums and other entities belonging to the Smithsonian Institution do not have their own health and safety staff; therefore, OSHEM provides centralized services in addition to its role of establishing policies and standards (Duval, 2013). The director of OSHEM reports to the director of Facilities, Engineering and Operations, who serves as the Designated Agency Safety and Health Official (DASHO) and reports directly to the Undersecretary for Finance and Administration (Duval, 2013; Smithsonian Institution, 2006).

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National Aeronautics and Space Administration

The National Aeronautics and Space Administration (NASA) conducts its work in four primary areas: aeronautics, human exploration and operations, science, and space technology. To ensure the health of its workforce, NASA aligned all health and medical activities, including aerospace medicine, occupational medicine, environmental health, health physics, physical fitness and health promotion, workers' compensation, and employee assistance, under the Chief Health and Medical Officer (CHMO), who also serves as the DASHO (NASA, 2010b). Designated as NASA's Health and Medical Technical Authority, the CHMO is independent of programs and projects, including the Mission Support Directorate under which Human Capital Management resides. This independence allows for "a check and balance to ensure all NASA programs and projects are developed and managed in a way that does not jeopardize the health and well being of NASA personnel," and enables the CHMO to enforce standards that must be met by all programs and projects (NASA, 2010a). A second independent office, the Office of Safety and Mission Assurance, has responsibility for NASA's occupational safety program (NASA, 2013). The two office chiefs report directly to the Chief of Staff and come together on the Agency Mission Support Council,[1] which "serves as the executive board responsible for addressing the NASA occupational safety and health program" (NASA, 2012).

Department of the Interior

The Department of the Interior (DOI) comprises eight bureaus with a wide variety of responsibilities, including the management and conservation of most federal lands and natural resources. Within its ranks, DOI employs approximately 7,000 law enforcement officers and 15,000 wildland firefighters (Garbe, 2013). Organizationally, DOI has aligned most of its workforce health protection reporting structures at the departmental level, placing its Occupational Health and Medical Programs Division within the Office of Occupational Safety and Health. It was reported to the committee that integration of these functions has increased the emphasis on safety within the department's medical programs (Garbe, 2013). The Office of Occupational Safety and Health sits organizationally alongside the Office of Civil Rights, the Office of Human Resources, and the Office of Strategic Employee and Organization Development, all of which fall under the direction of the Deputy Assistant Secretary for Human Capital and Diversity (DOI, 2013). Human Resources plays a supporting role by maintaining employee occupational health records and ensuring that

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[1]Also referred to as the Operations Management Council.

appropriate workers' compensation forms are completed and processed in coordination with the Office of Occupational Safety and Health (DOI, 2009). The Office of Occupational Safety and Health provides guidance to the component agencies through the *Occupational Medicine Handbook*, which covers all of the occupational health issues in which the department is involved, including safety, industrial hygiene, and medical clearance. The department-level program focuses on overarching policy concerns and program development. Program implementation is left to the bureaus within broad guidelines established by headquarters (Garbe, 2013).

To assist in coordination among the bureaus and vertically between headquarters and the bureaus, DOI created a number of councils and working groups. The DOI Safety and Occupational Health Council brings together bureau safety and health managers and serves as an advisory body to the DOI DASHO and the DASHO Council (DOI, 2012). The DASHO Council, comprising the departmental DASHO and bureau DASHOs, "provide[s] executive level bureau and office involvement in the formulation of policy and the management of the Departmental Safety and Health Program … [and] determine[s] collective action to achieve the Departmental Occupational Safety and Health Strategic Plan" (DOI, 1996). More information on DOI's approach to workforce health protection is presented in the DOI case study in Chapter 3, Box 3-6.

Department of State

The Department of State (DoS) is responsible for U.S. foreign relations. Given its international mission, a large proportion of the workforce is stationed overseas. Health protection functions fall within the purview of the Office of Medical Services (OMS), Bureau of Administration, Bureau of Overseas Building Operations, and Bureau of Human Resources, all of which are organizationally aligned under the Under Secretary for Management. Led by the Medical Director, who also serves as the DASHO, OMS has as its primary function addressing the health needs of DoS employees stationed overseas, although health services also are made available to members of other federal agencies posted overseas, such as DHS and the Federal Bureau of Investigation (FBI) (Quillin, 2013). OMS's overseas health units provide a wide variety of services to the workforce, including occupational health services, travel immunizations, routine care, direct primary care, and chronic health care. OMS also leads departmental emergency preparedness, operational medicine, and medical clearance programs. Safety and health functions are carried out domestically by the Domestic Environmental and Safety Division in the Bureau of Administration and overseas by the Office of Safety, Health and Environmental Management (OSHE) in the Bureau of Overseas Building Operations (DoS, 2012). Through the DASHO and

DASHO Operations Office, OMS works closely with both to coordinate departmental occupational safety and health efforts (DoS, 2012; Quillin, 2013). Whereas global health, medical, and occupational safety and health functions are aligned through OMS and the Medical Director, other health-related functions, including workers' compensation and some wellness issues, fall under Human Resources.

Department of Defense

The Department of Defense (DoD) is the largest U.S. government agency, with more than 1.4 million active-duty service members and 718,000 civilian personnel (DoD, 2013a). The department is composed primarily of four military branches—the Army, Navy, Marine Corps, and Air Force—with the ability for a fifth, the U.S. Coast Guard, to operate under DoD during times of war. A number of additional defense agencies function under the Office of the Secretary of Defense.

Differing from civilian organizations, DoD is responsible for the complete health care of active-duty personnel, which is provided through its managed health care system, TRICARE, and in military treatment facilities (Cecchine et al., 2009). DoD also faces unique challenges, such as ensuring the safety and health of service members who are deployed, operating uniquely military equipment, facing mental and physical exposures not traditionally encountered during the course of employment, and often working outside of traditional work hours (Cecchine et al., 2009).

At the headquarters level, responsibilities for workforce health protection fall under two separate Under Secretaries of Defense: the Under Secretary of Defense for Acquisition, Technology and Logistics and the Under Secretary of Defense for Personnel and Readiness. The Office of the Under Secretary of Defense for Acquisition, Technology and Logistics is responsible primarily for occupational safety and health policy, focusing on a variety of areas including ergonomics, hearing conservation, industrial hygiene, fire and emergency medical services (EMS), and occupational medicine. The Office of the Under Secretary of Defense for Personnel and Readiness is responsible for DoD's medical programs, including the budget and administration of the Defense Health Program (Cecchine et al., 2009). Under Personnel and Readiness, the Deputy Assistant Secretary of Defense for Clinical and Program Policy is responsible for occupational health programs outside of deployed theater, including standards and procedures that govern DoD clinical programs, clinical informatics, medical standards for accessions and separations, military public health, women's health issues, quality management, DoD health and fitness promotion, medical ethics, mental health policy, patient advocacy, graduate medical education programs, and patient safety (Cecchine et al., 2009; DoD, 2014a). The

Deputy Assistant Secretary of Defense for Force Health Protection and Readiness is responsible for deployment medicine, force health protection, medical readiness, international health agreements, deployment-related health policy, theater information systems, humanitarian and health missions, and national disaster support (Cecchine et al., 2009; DoD, 2014b). These two offices are brought together by a number of working groups, including members from across the Office of the Secretary of Defense, the joint staff, and the branches. Chartered in 2003, the Defense Safety Oversight Council, chaired by the Under Secretary of Defense for Personnel and Readiness, helps integrate the offices and "provide[s] governance on DoD-wide efforts to reduce preventable mishaps." (DoD, 2013b)

APPROACHES IN PRIVATE INDUSTRY

General Electric Energy

General Electric (GE) is composed of three primary divisions: GE Energy, GE Technology Infrastructure, and GE Capital. GE Energy has a workforce of 110,000 employees operating in 140 countries, generating about half of the world's energy, filtering 10-15 percent of the world's water, and creating technologies for and providing services to the oil and gas industries. Employees take approximately 100,000 overseas business trips to 185 countries each year, many in remote and challenging work environments, such as Angola in Southwest Africa, Siberia, and the Amazon. To address its global operational scope, GE Energy created its traveler health program, aligning preproject planning, pretravel health assessment, wellness programs, eLearning tools, health incident planning, remote site medical services, and prevention activities. GE Energy spends significant time and resources on planning and assessment to ensure that it can protect the health and well-being of employees deployed to hazardous work environments. Before project bids are made, GE Energy engages in the Intent to Order process, examining the risks associated with a bid, including the level of access to medical care in the region, before determining whether a bid should be made and how it should be priced. Once a bid has been priced, during the postbid Order to Remittance process, risk assessments are conducted for each task on a variety of potential issues, including biological, chemical, radioactive, physical, and stress risks, to determine potential impacts. As part of the planning process, specific incidents also are planned for, including a variety of incidents that could require routine, minor acute, urgent, and chronic care. Every trip and employee also is assessed before deployment. Medical Services staff conduct pretravel employee health assessments and make occupational medical preparations that encompass vaccines, chemoprophylaxis, and diagnostic and treatment

kits. Individuals are assessed to ensure that they are not at risk and have access to whatever they need as a result of a medical condition before they deploy (Hoffman, 2013).

Through use of a centralized ticketing system, employees are not issued tickets for travel to non-Western countries until a health assessment has been conducted. GE has more than 100 on-site clinics that provide employees with medical services; these clinics must be able to handle minor acute, chronic, urgent, and emergency medical problems, including plans for evacuation. With work being conducted in many remote areas, however, it is also important to ensure access to medical care where an on-site clinic is not feasible. To this end, GE prequalifies providers and works with third-party providers such as International SOS, Europ Assistance, Advanced Medical, and Best Doctors to ensure that employees have access to quality medical care wherever they deploy. GE often engages in cooperative agreements with other companies with employees in the region for the provision or sharing of services. In recent years, telemedicine and cloud-based medical records have increasingly been used to support medical services in remote destinations (Hoffman, 2013).

Procter & Gamble

Procter & Gamble (P&G) is the largest nonfood consumer products business in the United States and the largest household and personal care business in developing markets, with more than 300 brands sold in 180 countries and a workforce consisting of 121,000 employees working in approximately 70 countries (P&G, 2013). Workforce health has been a concern for the company since 1919, when P&G hired its first full-time physician. Today, P&G provides health services to its employees through 180 clinics in 46 countries, employing 489 full- and part-time occupational health nurses, physicians, and administrative personnel in its Global Medical program. The P&G Global Employee Health & Wellness Policy ensures that a workforce health framework is in place, using an audit and report process and a global medical scorecard to ensure compliance with corporate standards for all sites, consistent procedures and training, and compliance with all health-related laws and regulations. Through the Vibrant Living program, Global Medical has consolidated all health and wellness activities into a single global program, instituting a health and wellness policy designed to ensure that all employees will have access to occupational health services locally, wherever they are located, either directly through P&G clinics or through a contracted provider. Global Medical also has created a steering team for Vibrant Living, bringing together leadership from both functional (human resources, manufacturing, research and development) and regional offices to help inform the direction of the program. Whereas

Global Medical is located within Human Resources, the Industrial Hygiene, Safety, and Environment program is housed separately under Manufacturing. However, systems and processes are in place to ensure timely information sharing between the two and coordination as necessary, including a shared oversight council. Global Medical also works closely with Global Security on travel medicine and executive protection (Christensen, 2013).

Superior Energy Services

Superior Energy Services provides a variety of specialized services to oil and gas operations, including those focused on responding to disasters and fires and mitigating risk. At the heart of Superior Energy is a team of 600 response employees, supported by 15,000 employees, which can quickly deploy to respond to disasters, assess sites, mitigate further risks, and provide operational support to private and government contractors. With operations in widely varying environments, Superior Energy saw a need to take an all-encompassing view of health for its team members operating in an international environment, who often travel directly from one international site to the next without returning home. Accordingly, the company consolidated functions related to occupational safety and health, fitness for duty, wellness, and return to work, and created standardized protocols and procedures company-wide. However, because of the international scope of its operations and the variety of regulations with which it must comply, Superior Energy has taken a hybrid approach. The standards it has created are not overly prescriptive, leaving sufficient flexibility to meet local needs. The company employs 24 physicians as part of its global medical direction cohort, operating in 17 global offices on 6 continents, with systems in place to ensure collaboration and coordination (Minson, 2013).

Johnson & Johnson

Johnson & Johnson (J&J) is the world's sixth largest consumer health company, employing approximately 128,700 people worldwide. J&J consists of more than 275 operating companies, small and large, in 60 countries, each with its own leadership structures (J&J, 2013). Because of this decentralized nature, delivery of health services to employees is a challenge. Since 1995, J&J has taken a fully integrated approach to employee health and wellness services in the United States and Puerto Rico, centralizing occupational medicine, disability management, benefit plan design, mental well-being, and wellness activities under a single umbrella. With the success of this model, J&J currently is working to centralize all global medical services under the corporate umbrella as well. These services have been centralized under the Vice President of Global Health Services, who reports

through human resources, but occupational safety and health remains separate, reporting though supply chain operations. To ensure coordination between these functions, J&J created the Environmental Health and Safety Leadership Council, bringing leadership together to address high-level, cross-cutting issues related to the creation of organizational policies and standards. Similar teams operate at the local level, bringing together occupational health physicians and/or nurses; site safety managers; and wellness, employee assistance, and industrial hygiene professionals (Isaac, 2013). More information on the J&J approach to workforce health protection is presented in the J&J case study in Chapter 3, Box 3-7.

Johns Hopkins Institution

Johns Hopkins, a large, multicenter academic and medical institution, consists of The Johns Hopkins University and the Johns Hopkins Health System, employing more than 53,000 faculty and staff among the university, six academic and community hospitals, and four suburban health care and surgery centers (Johns Hopkins, 2011). In 1991, all activities related to occupational safety and health were consolidated into a single office, bringing together four independent entities—the Office of Workers' Compensation, Occupational Health Services, the Office of Safety and Environmental Health, and the Employee Assistance Program—under a single office, Health, Safety and Environment (HSE). The activities of HSE are carried out by nine departments: Safety Management, Biosafety, Radiation Safety, Environmental Health Services, Workers' Compensation Office, Workers' Compensation Clinic, Faculty and Staff Assistance Program, and Occupational Health Services. The Director of HSE also chairs the Joint Committee for Health, Safety and Environment, reporting directly to the CEO of Johns Hopkins Medicine and the President of Johns Hopkins Health System. The objective of this joint structure is the management of risk in three primary areas: "(1) risk related to non-compliance with federal and state regulations, (2) risk related to workers' compensation losses and; (3) risk related to working in a potentially hazardous environment" (Bernacki, 1999). Of particular note, the alignment of workers' compensation with other health-related functions brought a philosophical change to claims management: "all individuals who were stakeholders (e.g., safety professionals, medical and nursing professionals, adjusters, and attorneys) were expected to add their expertise and became active participants in the claims process…. The program adopted a nonadversarial stance, encouraged early reporting, patient advocacy, facilitation of care, and preventive measures as primary strategies in managing claims" (Bernacki and Tsai, 2003, p. 510).

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Appendix F

Committee Meeting Agendas[1]

**Held by the Committee on
Department of Homeland Security
Occupational Health and Operational Medicine Infrastructure
(March 2013-August 2013)**

**MEETING ONE: MARCH 5, 2013
National Academy of Sciences Building
2101 Constitution Avenue, NW, Room 120, Washington, DC 20418**

OPEN SESSION

10:45 - 11:00 am   Welcome and Introductions

                      David Wegman, Committee Chair

11:00 - 11:40 am   The Charge to the Committee

                      *J. D. Polk, Principal Deputy Assistant Secretary/
                          Deputy Chief Medical Officer, Office of Health
                          Affairs, DHS*

11:40 am -
12:00 pm   Committee Questions and Discussion

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[1]This appendix contains agendas for meetings held in open session only. Meetings four, six, and seven were executive sessions for deliberative purposes, and are therefore not included in this appendix.

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12:00 - 12:30 pm	Overview of the Medical Liaison Officer Program and Operational Medicine
	Richard Patrick, Division Director (Acting), Workforce Health and Medical Support Division, Office of Health Affairs, DHS
12:30 - 12:45 pm	Committee Questions and Discussion
12:45 - 1:45 pm	Lunch
1:45 - 2:15 pm	Occupational Health at DHS Headquarters
	Ingrid Hope, Occupational Health Branch Chief (Acting), Workforce Health and Medical Support Division, Office of Health Affairs, DHS
	Karl Anderson, Department Safety and Health Manager, Chief Human Capital Office, DHS
	Jacquelyn Kosh-Suber, Medical Quality Assurance Branch Chief, Workforce Health and Medical Support Division, Office of Health Affairs, DHS
	Camille Carraway, Industrial Hygiene Program Manager, Chief Human Capital Office, DHS
2:15 - 2:30 pm	Committee Questions and Discussion
2:30 - 2:50 pm	Federal Occupational Health Services
	Gene Migliaccio, Director, Federal Occupational Health, U.S. Department of Health and Human Services
	Herman Ellis, Clinical Services Director, Federal Occupational Health, U.S. Department of Health and Human Services
2:50 - 3:00 pm	Committee Questions and Discussion
3:00 - 3:10 pm	Break

3:10 - 4:00 pm	DHS Component Agency Infrastructure

Joseph M. Gerhart, Assistant Director, Safety and Health, Office of Asset Administration, Immigration and Customs Enforcement, DHS

CAPT Jeffrey Salvon-Harman, Chief, Operational Medicine and Medical Readiness Policy, U.S. Coast Guard, DHS

Patrick Crarey, Health and Medical Readiness Branch Chief, Safety Heath & Medical Readiness Division, Federal Emergency Management Agency, DHS

David McMillan, Medical Liaison Officer, Immigration and Customs Enforcement, DHS

CDR Melburn Dayton, Chief, Environmental Health and Industrial Hygiene, U.S. Coast Guard, DHS

David Shaler, Medical Unit Supervisor, Human Resources Management -Benefits, Medical, & Worklife Division, Customs and Border Protection, DHS

4:00 - 4:20 pm	Committee Questions and Discussion
4:20 - 4:50 pm	Medical Evaluation and Clearance Programs

Phillip Spottswood, Medical Policy and Programs, U.S. Office of Personnel Management

4:50 - 5:00 pm	Committee Questions and Discussion
5:00 - 5:15 pm	Public Comment
5:15 pm	Closing Comments/Adjourn Open Session

David Wegman, Committee Chair

MEETING TWO: JUNE 10-11, 2013
National Academy of Sciences Building
2101 Constitution Avenue, NW, Lecture Room, Washington, DC 20418

Overarching Workshop Goal

Provide information to address the statement of task, including

1. Current state of the occupational health and operational medicine (OH/OM) infrastructure across DHS (gaps and challenges)
2. Needs for centralized OH/OM oversight authority at DHS; potential models from other organizations
3. Best practices and essential elements for success of occupational safety and health, occupational medicine, and operational medicine programs, including models for integrating and coordinating activities
4. Metrics to establish baselines and monitor continuous improvement through program evaluation across headquarters and component agencies

Monday, June 10, 2013

OPEN SESSION

8:00 - 8:10 am   Welcome and Introductions

                       Michael Silverstein, Acting Committee Chair

WORKSHOP SESSION 1: OCCUPATIONAL MEDICINE

Session Moderator: Cherryl Christensen
Session Objectives:
Based on current DHS practices and those of other organizations, provide information to assess OHA success in guiding and evaluating

- quality assurance mechanisms for DHS clinical services providers, and
- implementation of consistent component occupational medicine programs (e.g., drug testing, medical surveillance, immunization, health screening and monitoring) as authorized in DHS Delegation #5001.

8:10 - 9:00 am   Occupational Medicine at Department of Homeland Security Headquarters

Latousha Leslie, Medical Quality Management Analyst, Workforce Health and Medical Support Division, Office of Health Affairs, U.S. Department of Homeland Security

Ingrid Hope (Q&A only), Occupational Health Branch Chief, Workforce Health and Medical Support Division, Office of Health Affairs, U.S. Department of Homeland Security

William Seifarth (Q&A only), EMS Program Manager, Workforce Health and Medical Support Division, Office of Health Affairs, U.S. Department of Homeland Security

9:00 - 10:15 am   Occupational Medicine at Other Federal Agencies

David Wade, Chief Medical Officer, Federal Bureau of Investigation, U.S. Department of Justice

Jules Duval, Associate Director, Occupational Health Services, Office of Safety, Health and Environmental Management, Smithsonian Institution

Wayne Quillin, Director, DASHO Operations Office, Office of Medical Services, U.S. Department of State

10:15 - 11:10 am   Occupational Medicine in Private Industry

Fikry Isaac, Vice President, Global Health Services, Johnson & Johnson; Chief Medical Officer, Wellness & Prevention, Inc.

Matthew Minson, Medical Director, Superior Energy Services

11:10 - 11:30 am   A Strategic Measurement and Evaluation Framework
                     to Support Worker Health

> *Ron Goetzel, Vice President, Consulting and Applied
>   Research, Analytic Consulting and Research
>   Services, Truven Health Analytics*

11:30 am -
12:30 pm   Lunch

WORKSHOP SESSION 2:
WORKERS' COMPENSATION PROGRAMS

Session Moderator: Les Boden
Session Objectives:
In comparison with best practices from other organizations, provide
information to assess the effectiveness of current processes at DHS
for controlling workers' compensation (WC) costs through claims
management, disability prevention, and return-to-work processes,
including

- role of the Office of Health Affairs (OHA) in informing these
  activities through medical guidance to WC personnel from DHS
  component agencies, DHS headquarters, and the Department of
  Labor; and
- procedures for data collection using uniform metrics to establish
  baselines, identify trends, and evaluate programs.

12:30 - 12:50 pm   Workers' Compensation for Federal Employees

> *Julia Tritz, Chief, Branch of Technical Assistance,
>   Division of Federal Employees' Compensation,
>   Office of Workers' Compensation Programs, U.S.
>   Department of Labor*

12:50 - 1:50 pm   Workers' Compensation Programs at DHS

> *Mark Masterson, Director, Workers' Compensation
>   Programs, Customs and Border Protection, U.S.
>   Department of Homeland Security*

> *Gary Myers, Program Manager and Policy Advisor,
>   Workers' Compensation Program, U.S.
>   Department of Homeland Security*

> *Melvin Mitchell, Human Resources Specialist, Workers' Compensation Programs, Office of Human Capital, Transportation Security Administration, U.S. Department of Homeland Security*

1:50 - 2:30 pm   Workers' Compensation: Lessons from Other Organizations

> *Daisy Crowley, Army Program Manager for Workers' Compensation, Department of Army, U.S. Department of Defense*

> *Gary Franklin, Medical Director, Washington State Department of Labor & Industries*

2:30 - 3:10 pm   KEYNOTE ADDRESS

> *Alice Hill, Senior Counselor to Secretary Napolitano, U.S. Department of Homeland Security*

3:10 - 3:20 pm   Break

WORKSHOP SESSION 3: OCCUPATIONAL SAFETY AND HEALTH PROGRAMS

Session Moderator: Janie Gittleman
Session Objectives:
Provide information to assess the effectiveness of the current division of occupational health and safety responsibilities at DHS (delineated in Directive 066-01 and the memorandum of understanding between OHA and Office of the Chief Administrative Officer [OCAO]) for ensuring implementation and oversight of component safety and health programs, taking into consideration

- compliance with Occupational Safety and Health Administration (OSHA) federal agency requirements,
- best practices from other organizations, and
- perceived gaps in health and safety protections for DHS workers.

3:20 - 3:40 pm   Safety Management Systems

Mark Hagemann, Director, Office of Safety Systems
Occupational Safety and Health Administration

Greg Barber (Q&A only), *Office of Federal Agency*
Programs, Occupational Safety and Health
Administration

3:40 - 4:00 pm   Voluntary Protection Programs

Thomas Crawford (by teleconference), Chief,
Environmental, Safety and Health Solutions
Division, National Security Agency

Peter Monti (by teleconference), Chief, Risk
Management Systems Branch, National Security
Agency

4:00 - 5:00 pm   Occupational Safety and Health at DHS

Douglas Rupard, Safety Manager, Division of
Occupational Safety and Health, Customs and
Border Protection, U.S. Department of Homeland
Security

Bronson Brown Director, Safety, Heath & Medical
Readiness Division, Federal Emergency
Management Agency, U.S. Department of
Homeland Security

Jill Segraves, Director, Occupational Safety,
Health, & Environment, Transportation Security
Administration, U.S. Department of Homeland
Security

Karl Anderson (Q&A only), *Department Safety*
and Health Manager, Chief Human Capital
Office, U.S. Department of Homeland Security

5:00 - 5:30 pm   Union Perspectives

                        Terrence Shigg, Health and Safety Director, National
                        *   Border Patrol Council*

                        David Wright, AFGE Local 918, Inspector, Federal
                        *   Protective Service, National Protection and*
                        *   Programs Directorate, U.S. Department of*
                        *   Homeland Security*

5:30 pm   Closing Comments/Adjourn Open Session

                        Michael Silverstein, Acting Committee Chair

Tuesday, June 11, 2013

OPEN SESSION

8:00 - 8:10 am   Welcome and Introductions

                        Michael Silverstein, Acting Committee Chair

WORKSHOP SESSION 4: MEDICAL STANDARDS
AND CLEARANCE PROGRAMS

Session Moderator: Bill Lang
Session Objectives:
Provide information to assess whether OHA has, in accordance with
Delegation #5001, adequately provided guidance to the DHS personnel
programs on implementation of processes to ensure a medically ready
force, including
- development of consistent and legally defensible medical standards,
- pre-employment and deployment evaluations, and
- fitness-for-duty assessments.

8:10 - 8:30 am   The Need for Medical Standards and Clearance
                        Programs

                        Marc Leffer, Chief, Medical Affairs/Strategic
                        *   Development, Federal Occupational Health, U.S.*
                        *   Department of Health and Human Services*

8:30 - 9:10 am   Medical Standards and Clearances at DHS

                        David McMillan, Medical Liaison Officer,
                        Immigration and Customs Enforcement,
                        U.S. Department of Homeland Security

                        Anthony Macintyre, Medical Liaison Officer, Federal
                        Emergency Management Agency, U.S. Department
                        of Homeland Security

9:10 - 10:30 am   Other Agency Practices for Medical Standards and
                        Clearances

                        Chuck Rosenfarb, Deputy Medical Director, Office
                        of Medical Services, U.S. Department of State

                        Matthew Minson, Medical Director, Texas
                        Engineering Extension Program Emergency
                        Response & Rescue Division Urban Search and
                        Rescue, Texas A&M University

                        Bob Garbe (by teleconference), Chief, Division of
                        Occupational Health and Medical Programs,
                        Office of Occupational Safety and Health, U.S.
                        Department of the Interior

                        Nancy Smith, Manager, Staff Deployment Center,
                        American Red Cross

10:30 - 10:45 am   Q&A on OPM Recommendations

                        Phillip Spottswood (by teleconference),
                        Medical Policy and Programs, U.S. Office of
                        Personnel Management

WORKSHOP SESSION 5: OPERATIONAL MEDICINE

Session Moderator: Bill Fabbri
Session Objectives:
Based on current DHS practices and those of other organizations, provide information to assess to what extent OHA has provided adequate guidance, support, and oversight to component agencies in order to ensure consistency and interoperability among operational medicine programs across DHS such that:

- adequate medical support is available to law enforcement and other responder personnel within DHS during operations, and
- detainees are provided access to timely and cost-effective medical attention prior to transfer of custody.

10:45 am -
12:00 pm   Operational Medicine at DHS

William Seifarth, EMS Program Manager, Workforce Health and Medical Support Division, Office of Health Affairs, U.S. Department of Homeland Security

Randy Stair, Supervisory Emergency Services Specialist Program Manager, Emergency Services, U.S. Secret Service, U.S. Department of Homeland Security

Dominic Bowcutt, Paramedic, BORSTAR, Customs and Border Protection, U.S. Department of Homeland Security

David Wilson (panel discussion only), Assistant Chief, Office of Border Patrol Customs and Border Protection, U.S. Department of Homeland Security

David Davis (panel discussion only), Deputy Assistant Director, National Firearms and Tactical Training Unit, Immigrations and Customs Enforcement, U.S. Department of Homeland Security

Medical Oversight of DHS Operational Medicine
Programs

*Duane Caneva, Medical Liaison Officer, Customs
and Border Protection, U.S. Department of
Homeland Security*

*Nelson Tang, Director, Division of Special
Operations, Department of Emergency
Medicine; Chief Medical Officer, Center for
Law Enforcement Medicine, The Johns Hopkins
Medical Institutions*

12:00 - 12:20 pm   Panel Discussion on Operational Medicine at DHS

12:20 - 1:10 pm   Lunch

1:10 - 1:45 pm   Medical Infrastructure Needs for Detainees

*Monique Grame, Assistant Chief Patrol Agent,
U.S. Border Patrol Headquarters, Policy Branch,
Customs and Border Protection, U.S. Department
of Homeland Security*

*Iván Zapata, Southwest Border Program Manager
Office of Health Affairs, U.S. Department of
Homeland Security*

*Duane Caneva (Q&A only), Medical Liaison Officer,
Customs and Border Protection, U.S. Department
of Homeland Security*

1:45 - 3:10 pm   Operational Medicine in Other Organizations

*William Fabbri, Director, Emergency Medical
Support Program Federal Bureau of Investigation,
U.S. Department of Justice*

*Benjamin Hoffman, Chief Medical Officer,
GE Energy*

> *Dean Ross, Deputy Chief, Law Enforcement,*
> *Security and Emergency Services, National Park*
> *Service, U.S. Department of the Interior*

3:10 - 4:00 pm   KEYNOTE ADDRESS
David Weil, Professor, Everett W. Lord
 Distinguished Faculty Scholar, Markets, Public
 Policy and Law, Boston University School of
 Management

4:00 - 4:15 pm   Break

WORKSHOP SESSION 6: THE MEDICAL LIAISON OFFICER PROGRAM

Session Moderator: Craig Vanderwagen
Session Objectives:
Provide information to determine whether the Medical Liaison Officer (MLO) program is helping to achieve:

- integration of occupational and operational medicine activities within component agencies; and
- coordination of component medical activities with the Office of Health Affairs to ensure consistency across DHS.

4:15 - 5:00 pm   Panel Discussion on the MLO Program

> *Duane Caneva, Medical Liaison Officer, Customs*
> *and Border Protection, U.S. Department of*
> *Homeland Security*

> *David McMillan, Medical Liaison Officer,*
> *Immigration and Customs Enforcement, U.S.*
> *Department of Homeland Security*

> *Anthony Macintyre, Medical Liaison Officer, Federal*
> *Emergency Management Agency, U.S. Department*
> *of Homeland Security*

> *Jeffrey Sherman, Medical Liaison Officer,*
> *Transportation Security Administration, U.S.*
> *Department of Homeland Security*

LTC Brett Maycock, MLO Branch Chief, Workforce Health and Medical Support Division, Office of Health Affairs, U.S. Department of Homeland Security

5:00 - 5:15 pm   Public Comment Period

5:15 pm   Closing Comments/Adjourn Open Session

Michael Silverstein, Acting Committee Chair

MEETING THREE: JULY 8, 2013
Keck Building
500 Fifth Street, NW, Room 101, Washington, DC 20001

10:30 - 10:45 am   Welcome and Introductions

David Wegman, Committee Chair

10:45 - 11:30 am   Organizational Effectiveness at DHS: Designing to Deliver

Kathleen Sutcliffe (by teleconference)
Gilbert and Ruth Whitaker Professor of Business Administration, Professor of Management and Organizations, Stephen M. Ross School of Business, University of Michigan

11:30 am   Adjourn Open Session

David Wegman, Committee Chair

MEETING FIVE: AUGUST 27, 2013
(By Teleconference)

11:50 am -
12:00 pm   Welcome and Introductions

David Wegman, Committee Chair

12:00 - 1:00 pm	Overview of the Federal Air Marshal Service Medical Program

Christine Lewandowski, Supervisory Occupational Health Nurse, Office for Law Enforcement, FAMS Medical Programs Section, Federal Air Marshal Service, TSA

Daniel Weeks, Medical Officer, Office for Law Enforcement, FAMS Medical Programs Section, Federal Air Marshal Service, TSA

1:00 - 2:00 pm	Committee Questions and Discussion
2:00 pm	Adjourn Open Session

Appendix G

Committee Biosketches

David H. Wegman, M.D., M.Sc. (*Chair*), was named University of Massachusetts emeritus professor of work environment in 2009 after serving a 5-year term as dean of the School of Health and Environment. Prior to serving as dean, he was founding chair of the Department of Work Environment, which was established in 1987. He also serves as adjunct professor at the Harvard School of Public Health. Previously he served as director of the Division of Occupational and Environmental Health at the University of California, Los Angeles, School of Public Health, and on the faculty at the Harvard School of Public Health. Dr. Wegman has focused his research on epidemiologic studies of occupational respiratory disease, musculoskeletal disorders, and cancer and has published more than 200 articles in the scientific literature. He has also written on public health and policy issues concerning hazard and health surveillance, methods of exposure assessment for epidemiologic studies, the development of alternatives to regulation, and the use of participatory methods to study occupational health risks. He is co-editor with Dr. Barry Levy of one of the standard textbooks in the field of occupational health, *Occupational Health: Recognition and Prevention of Work-Related Disease*. His recent work focused on health and safety risks among construction workers involved in the building of the Third Harbor Tunnel and the underground Central Artery in Boston, and on the relationship between work risks and age among both child laborers and older adults. Dr. Wegman served as treasurer of the International Epidemiological Association and as a member of the Board of Directors of the International Commission on Occupational Health and as chair of its Scientific Committee on Epidemiology in Occupational Health. He has been

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an active participant in a number of National Academies expert panels and was appointed as member of the Standing Committee on Human-Systems Integration (now the Board on Human Systems Integration) in 2010 and the Committee on Aerospace Medicine and the Medicine of Extreme Environments in 2011. He recently completed service as Chair of the National Research Council (NRC) Committees on Human Factors in Home Health Care and on the Review of the National Institute of Disability and Rehabilitation Research Portfolio and Outcomes. He previously has served as chair of the NRC-Institute of Medicine (IOM) Committee on Review of NIOSH Research Programs, the NRC-IOM Committees on Health and Safety Needs of Older Workers, and the Health and Safety Consequences of Child Labor. He has been a member of the NRC Committee on Occupational Health on Worker Health and Safety on Offshore Wind Farms, NRC Committee on Mine Safety: Essential Components of Self-Escape, NRC-IOM Committee to Review the NIOSH Respiratory Disease Program, the Committee on Musculoskeletal Disorders and Work, the IOM Committees to Review the Health Consequences of Service During the Persian Gulf War and to Review Gender Differences in Susceptibility to Environmental Factors. Dr. Wegman's government service has included serving as chair of the U.S. Mine Safety and Health Administration's Advisory Committee on the Elimination of Pneumoconiosis Among Coal Mine Workers, as a member of the Occupational Safety and Health Administration (OSHA) Standards Advisory Committee on Metal Working Fluids, and as a consultant to the director of the National Institute for Occupational Safety and Health (NIOSH) on the agency's extramural research program and on research concerning aging and work. He has also served on the National Toxicology Program's Board of Scientific Counselors, the NIOSH Board of Scientific Counselors, and the Environmental Protection Agency (EPA) Scientific Advisory Board. He serves as chair of the Epidemiology Review Board for DuPont Corporation and is past chair of the Occupational Health Advisory Board for the United Auto Workers and General Motors Corporation. Dr. Wegman is an associate editor for the *American Journal of Industrial Medicine* and a member of the editorial boards of the *Epidemiology Monitor*, the *International Journal of Occupational and Environmental Health*, *Environmental Health* (online), and *New Solutions*. He received his B.A. from Swarthmore College and his M.D. and M.Sc. from Harvard University and is board certified in preventive medicine (occupational medicine).

Edward Bernacki, M.D., M.P.H., is currently executive director of Health, Safety & Environment and director of the Division of Occupational Medicine at Johns Hopkins University. In this capacity, he manages more than 50 occupational health and employee clinics for the university and for various corporations across the country manned by Hopkins nurse practitioners

and physician assistants. The department contracts with more than 500 companies in the mid-Atlantic region, covering nearly 300,000 employees. Dr. Bernacki is responsible for managing the health and safety programs that protect Johns Hopkins' 39,000 employees, and he and his staff have managed to cut the university's workers' compensation costs by more than $4 million annually through innovative programs in ergonomics-based injury prevention and better management of patient care. Dr. Bernacki's areas of expertise include occupational and environmental health and safety, repetitive stress disorders, health systems management, health information technology, and workers' compensation. He previously served as president of the American College of Occupational and Environmental Medicine (ACOEM).

Leslie Boden, Ph.D., is professor of environmental health, Boston University School of Public Health. Dr. Boden is an economist, and much of his research has focused on describing the economic and human consequences of injuries and illnesses and identifying ways of minimizing those consequences. Over the past several years, Dr. Boden has published studies measuring the income lost by injured workers and the adequacy of workers' compensation benefits. With Boston University School of Public Health colleague Lee Strunin, he has also published several studies of the postinjury experiences of injured workers and their families. More recently, Dr. Boden has developed new estimates of underreporting of workplace injuries. He has also written on occupational safety and health regulation, medical screening, gender inequality, and the legal and public health use of scientific information. From 1988 to 1997, Dr. Boden served on the Mine Health Research Advisory Committee of the Department of Health and Human Services, which he chaired for 6 years. In 2001-2002, he was a member of the Worker Advocacy Advisory Group, which advised the Department of Energy on occupational disease compensation. He was a member of the Institute of Medicine (IOM)/National Research Council (NRC) Committee to Review NIOSH Research Programs: Traumatic Injury. He is currently a member of the Scientific Advisory Board of the Institute of Work and Health and is also an advisor for the National Economic and Social Rights Initiative.

Tom Cairns, D.B.A., M.S., is a principal and chief career coach for the Cairns Blaner Group, to which he returned in June 2009 after serving a presidential appointment as chief human capital officer (CHCO) for the U.S. Department of Homeland Security (DHS) under Presidents George W. Bush and Barack Obama. As CHCO for DHS, Dr. Cairns was responsible for human resource management and training for more than 200,000 employees. He also is currently an associate professor of business and

management at Azusa Pacific University. Prior to founding the Cairns Blaner Group in 2007, he was senior vice president, human resources for NBC and NBC Universal, a division of General Electric Company. Dr. Cairns spent 30 years at General Electric managing local, regional, and national human resource organizations. He has demonstrated success in leading human resource organizations in the private and public sectors, supporting executives in a high-performance culture. He is acknowledged for creating and staffing complex organizations that consistently deliver business results. His expertise includes talent management, career coaching, executive development, organization design and staffing, employee and labor relations, and mergers and acquisitions. He is currently a member of the President's Advisory Council at Nova Southeastern University, and previously served on the Board of Trustees for The Kings University, as accreditation commissioner for the Transnational Association of Christian Colleges and Schools, on the Board of Directors for Workplace Hollywood and Teen Challenge, and as a local and national member of the Society for Human Resource Management and the American Society for Training and Development. He was also a member of the United States Air Force. Dr. Cairns holds a doctorate in business administration and an M.S. in human resource management from Nova Southeastern University and a B.S. in commerce from Rider University. He has received additional training from General Electric's Management Development Institute in Six Sigma, change management, facilitation, advanced human resources management, positive management leadership; master certification in high-performance systems from Belgard, Fisher, Raynor, Inc.; and certification in predictive index from Praendix, Inc. Dr. Cairns has authored, co-authored, and presented numerous articles on human resource management and leadership and serves on the editorial advisory board for *Employment Relations Today*.

Richard H. Carmona, M.D., M.P.H., FACS, born to a poor Hispanic family in New York City, experienced homelessness, hunger, and health disparities during his youth. These experiences sensitized him to the relationships among culture, health, education, and economic status and shaped his future. After dropping out of high school, Dr. Carmona enlisted in the U.S. Army, earned his general equivalency diploma, and went on to become a combat-decorated Special Forces Vietnam veteran. He then attended Bronx Community College of the City University of New York through an open enrollment program for veterans, receiving an associate of arts degree. He subsequently received B.S. and M.D. degrees from the University of California, San Francisco. At the University of California Medical School, Dr. Carmona was awarded the prestigious gold-headed cane as top graduate. Trained in general and vascular surgery, Dr. Carmona also completed a National Institutes of Health–sponsored fellowship in trauma, burns,

and critical care. He was then recruited jointly by the Tucson (Arizona) Medical Center and the University of Arizona to start and direct Arizona's first regional trauma care system. He went on to become chairman of the State of Arizona Southern Regional Emergency Medical System and a professor of surgery, public health, and family and community medicine at the University of Arizona. He is also a fellow of the American College of Surgeons. Public health came as a second career after Dr. Carmona returned to graduate school while working in order to complete a master's degree in public health at the University of Arizona. His interest in public health stemmed from the realization that most of his patients' illnesses and injuries were completely preventable. He also has served for more than 25 years with the Pima County Sheriff's Department in Tucson, including as deputy sheriff, detective, SWAT team leader, and department surgeon. He is one of the most highly decorated police officers in Arizona, and his numerous awards include the National Top Cop Award, the National SWAT Officer of the Year, and the National Tactical EMS Award. Dr. Carmona is a nationally recognized SWAT expert and has published extensively on SWAT training and tactics, forensics, and tactical emergency medical support. Dr. Carmona also has served as a medical director of police and fire departments and is a fully qualified peace officer with expertise in special operations and emergency preparedness, including weapons of mass destruction. In 2002 he was nominated by the President and unanimously confirmed by the U.S. Senate to become the 17th Surgeon General of the United States. Dr. Carmona was selected because of his extensive experience in public health, clinical sciences, health care management, and preparedness and his commitment to prevention as an effective means to improve public health and reduce health care costs while improving the quality and quantity of life. As Surgeon General, he focused on prevention, preparedness, health disparities, health literacy, and global health to include health diplomacy. He also issued many landmark Surgeon General communications during his tenure, including the definitive Surgeon General's Report on the dangers of secondhand smoke. Dr. Carmona has published extensively and received numerous awards, decorations, and local and national recognitions for his achievements. A strong supporter of community service, he has served on community and public and private national boards and provided leadership to many diverse organizations. In 2006, Dr. Carmona successfully completed the statutory 4-year term of the U.S. Surgeon General and was named to the position of vice chairman for Canyon Ranch, the country's leading health and wellness company for more than 30 years. He also serves as chief executive officer of the company's Health division and oversees health strategy and policy for all Canyon Ranch businesses. He is president of the nonprofit Canyon Ranch Institute, the first distinguished professor of public health at the University of Arizona's Zuckerman College of Public

Health, a professor of surgery and pharmacy at the University of Arizona, and the dean's distinguished professor of health promotion and entrepreneurship at the Ohio State University College of Nursing.

Cherryl Christensen, D.O., M.S., FACOEM, is currently corporate medical director at Procter & Gamble (P&G) Company. In her role at P&G, she has overall responsibility for on-site health programs for 130,000 employees in more than 80 countries, including the global medical network, the global employee assistance program, travel medicine, and executive health, delivering services to P&G employees in 190 clinics around the world. She is also on the board of directors of the Global Health Benefits Institute and the Cigna Medical Advisors Council. She serves on the faculty at the University of Cincinnati College of Medicine as an adjunct clinical professor of occupational medicine. Dr. Christensen came to P&G after completing her residency in occupational and environmental medicine and serving on the staff at University of Cincinnati Hospitals in the Department of Occupational and Environmental Medicine for 7 years. Previously, she worked at the U.S. Navy Environmental Health Center, Occupational Medicine Division, in Norfolk, Virginia, where she developed worldwide occupational health standards, reviewed complex disability claims, inspected occupational medicine clinics, lectured extensively on professional topics, performed health hazard evaluations, and represented Navy occupational medicine on selected issues to outside organizations. Dr. Christensen began her work in occupational medicine as medical officer at Norfolk Naval Shipyard, Portsmouth, Virginia, where she was responsible for providing primary, emergency, and occupational medical care (fitness-for-duty, disability, and surveillance evaluations) for 12,000 employees. She received her doctorate in osteopathic medicine and surgery from the College of Osteopathic Medicine and Surgery in Des Moines, Iowa, and an M.S. in environmental health from the University of Cincinnati College of Medicine. She is board certified in occupational and environmental medicine.

Don E. Detmer, M.D., M.A., is professor emeritus and professor of medical education in the Department of Public Health Sciences of the School of Medicine at the University of Virginia, Charlottesville. He is also visiting professor at the Centre for Health Informatics and Multi-professional Education at University College London. Currently, he serves as a member of the National Quality Forum's Common Formats Expert Panel, as well as other advisory boards. Dr. Detmer most recently served as medical director for advocacy and health policy for the American College of Surgeons. Previously, he was president and chief executive officer of the American Medical Informatics Association from 2004 to 2009. Dr. Detmer earned an M.D. from the University of Kansas and an M.A. from Cambridge University.

He trained as a surgical resident at Johns Hopkins Hospital and Duke University Medical Center. He served as inaugural health policy fellow at the IOM, where he fostered the development of the Robert Wood Johnson Health Policy Fellows Program. Dr. Detmer was elected to IOM membership in 1991 and chaired the landmark 1991 IOM report on computer-based patient records. Also in 1991, he began an 11-year term on the IOM's Board on Health Care Services, including 8 years as chair. He served on the IOM committees that issued the seminal reports *To Err Is Human: Building a Safer Health Care System* (2000) and *Crossing the Quality Chasm: A New Health Care System for the 21st Century* (2001). He chaired the IOM Membership Committee from 2009 to 2011 and received the IOM Walsh McDermott Award in 2009. Most recently, he served on the IOM Committee on the Future Information Architectures, Processes, and Strategies for the Centers for Medicare & Medicaid Services and the IOM Committee on Patient Safety and Health Information Technology.

Ellen P. Embrey is president and chief executive officer of Stratitia, Inc., a strategy and management consulting firm specializing in supporting clients that serve the health care, national security, and information technology sectors. She also is a counselor in The Cohen Group, a firm that provides global business consulting services and advice on tactical and strategic opportunities in virtually every market. Ms. Embrey has extensive executive and program leadership experience in the executive branch of the federal government. In her last federal role, she served as assistant secretary of defense (health affairs) and director, TRICARE Management Activity during the presidential transition period in 2009-2010. In that capacity, she led and managed the Military Health System, a $47 billion/year defense health program employing more than 200,000 health professionals serving more than 9.6 million service members, retirees, and their families in more than 70 hospitals and 500 clinics and laboratories around the globe. As deputy assistant secretary of defense (force health protection and readiness), Ms. Embrey orchestrated significant improvements in Department of Defense (DoD) policies and programs during 2002-2009, affecting deployment and combat casualty medicine, health promotion and preventive medicine, medical readiness, and public health emergency preparedness and response. As DoD's "line of action" lead for addressing traumatic brain injury (TBI) and posttraumatic stress disorder (PTSD), she led collaborative efforts to identify gaps and prioritize investments in TBI and PTSD research, align clinical best practices of DoD and the Department of Veterans Affairs (VA), and establish new U.S. *International Classification of Diseases* (ICD)-9 codes for TBI diagnoses and treatment based on DoD/VA experience. At the secretary of defense's request, Ms. Embrey led a landmark study of sexual assault in the military, making recommendations that led to widespread

reforms in this area across the Department. Throughout 2001, during the presidential transition period, she served as assistant secretary of defense for reserve affairs, shaping policies affecting the readiness and use of the National Guard and Reserves in both federal and state status. From 2000 to 2001, she served as chief of staff of that office, and from 1998 to 2001 as deputy assistant secretary of defense for military assistance to civil authorities, developing policies that shaped the role of the National Guard and Reserve components in supporting homeland security, disaster preparedness, and national disaster response capabilities, including advising the President on such matters in the days and weeks following September 11, 2001. Over her distinguished 35-year federal career, Ms. Embrey received many awards, the highest of which include two Secretary of Defense Distinguished Civilian Service Awards (2001 and 2004) and two Presidential Meritorious Executive Rank Awards (2006 and 2009).

William Fabbri, M.D., FACEP, is medical director of the Emergency Medical Support Program, Office of Medical Services, at the Federal Bureau of Investigation (FBI). His duties include those of principal advisor to the FBI for medical support of contingency operations. The Emergency Medical Support Program provides emergency, primary care, and preventive medicine services during complex or prolonged investigative and crisis response missions of the FBI, both domestically and overseas. The program employs FBI special agents cross-trained as flight and critical care registered nurses, physician assistants, and advanced capability paramedics, supervised by federal physicians. This capability has been used in major investigations including the bombing of the *USS Cole*; the terrorist attacks of September 11, 2001; and the anthrax investigations in Florida, New Jersey, New York, and Washington, DC, as well as in support of large-scale law enforcement operations in New Orleans following Hurricane Katrina and in Puerto Rico during operation Guardshack. Dr. Fabbri is a graduate of New York Medical College, subsequently training in general surgery at Boston City Hospital and in emergency medicine at Johns Hopkins Hospital. He is a board-certified specialist in emergency medicine and has served in both field- and hospital-based capacities in industrial and transportation accidents, natural disasters, and law enforcement critical incidents. Previous positions held include attending physician at an academic trauma center, community hospital assistant director of emergency services, regional emergency medical system consult physician, state emergency medical services regional chairperson, urban search and rescue team physician, and supervising Air National Guard flight surgeon.

Janie Gittleman, Ph.D., M.R.P., is currently chief of Occupational Safety, Health & Environmental Compliance (FAC-3A) Mission Services, Office of

Facilities and Services, Defense Intelligence Agency. Previously, Dr. Gittleman was associate director for safety and health research at the Center to Preserve Workers' Rights (CPWR)-Center for Construction Research and Training (the National Construction Center funded by the National Institute for Occupational Safety and Health [NIOSH]). There she oversaw and conducted intra- and extramural research on construction safety and health for a decade. Prior to her work at CPWR, she served as a NIOSH-based public health officer and senior scientist for the Office of the Secretary of Health during the September 11, 2001, and anthrax events. There she developed and reviewed state-based proposals for bioterrorism resources and developed benchmarks for evaluating the use of funds. While at NIOSH, she also served as branch chief of the Hearing Loss Prevention and Surveillance Branches at the Pittsburgh Research Laboratory. Early in her career, Dr. Gittleman conducted health hazard evaluations nationwide and participated in the Epidemic Intelligence Service (EIS) program of the Centers for Disease Control and Prevention (CDC). As an EIS officer, she oversaw and managed the Adult Blood Lead Epidemiology and Surveillance Program, tracking adult lead exposures both in the United States and abroad. Her most recent funded research and publications have been focused on safety climate, performance metrics, and fall prevention. Dr. Gittleman serves on numerous national committees and workgroups, including the Science Board of the American Public Health Association, the Bureau of Labor Statistics' Data Advisory Group, and the National Occupational Research Agenda (NORA) Construction Sector Council. She is a reviewer for journals in the field of occupational safety and health research and chairs numerous CDC grant review committees. She received her master of regional planning degree in health planning and a Ph.D. in occupational epidemiology from Cornell University.

William "Bill" L. Lang, M.D., M.P.H., is a distinguished graduate of the U.S. Military Academy at West Point. He completed his M.D. degree at the Uniformed Services University of the Health Sciences and a family practice residency at Madigan Army Medical Center, Fort Lewis, Washington, becoming a board-certified family physician. After residency, Dr. Lang joined the faculty of the military's largest family practice training program at Fort Bragg, North Carolina, receiving academic appointments at both the University of North Carolina and the Uniformed Services University of the Health Sciences. He also had collateral assignments supporting the Army's 82nd Airborne Division and the Joint Special Operations Command. While assigned at Fort Bragg, he attended the University of North Carolina at Chapel Hill, School of Public Health, receiving a master of health care administration degree. Dr. Lang's next assignment was as the physician member of "Task Force Mercury," chartered by the Army Surgeon General

to develop the Army's approach to managing medical information in the 21st century. The resulting document became the basis for information management policy and doctrine for Army medicine over the next decade. Dr. Lang then served for 3 years as Army White House physician, and subsequently as physician consultant for medical information management on the staff of the Army surgeon general, with simultaneous duty as director of clinical information requirements for DoD. During this time, he was co-lead in developing the clinical and operational requirements and funding strategy for the military's global electronic health record. In late 2000, Dr. Lang returned to the White House Medical Unit as deputy director and deputy physician to the President, becoming director of the Medical Unit in 2006. In these positions, he served as chief operating officer, responsible for day-to-day worldwide operations, including personnel and budget, for both classified and unclassified programs. Here his responsibilities included coordinating medical preparations for White House travel around the world; emergency/urgent health care services for White House visitors and the 5,000 White House staff members; occupational health services for the White House staff; and medical aspects of planning/response for mass casualty, terrorism, pandemic, and weapons of mass destruction events, supporting White House operations. Dr. Lang retired from the Army in 2008 as a colonel after 29 years of service. His final assignment, in which he continued in civilian service after retirement, was as associate chief medical officer for component services, Department of Homeland Security. In this position, he was the lead consultant to the senior leadership of the Department for public health and medical issues affecting their operations and staff. Additionally, he was responsible for departmental-level support of the medical aspects of occupational safety and health programs, force health protection (including chemical/biological/radiological preparedness), and operational medical support. Since leaving government service, Dr. Lang has provided independent consulting services and served as a senior director for a major international health information service; he currently provides direct care support and medical advisory services for a private corporation in New York.

Michael A. Silverstein, M.D., M.P.H., recently retired from his post as assistant director for industrial safety and health in the Washington State Department of Labor and Industries after directing the state's occupational safety and health program for 10 years. Dr. Silverstein is currently a clinical professor of environmental and occupational health at the University of Washington, School of Public Health. He previously held positions in the Washington State Department of Health as state health officer and epidemiologist and spent 2 years in Washington, DC, as director of policy for the Occupational Safety and Health Administration (OSHA). For 15 years

before this, he was assistant director for occupational health and safety with the United Automobile Workers Union in Detroit. Dr. Silverstein has practiced family and occupational medicine in Michigan and California. He holds degrees from Harvard University; Stanford Medical School; and the University of Michigan, School of Public Health. He is board certified as a specialist in occupational medicine. He has been an active member of several professional associations, including the American Public Health Association, where he served as chairman of the occupational safety and health section, and the American College of Occupational and Environmental Medicine, where he was a member of the Ethics Committee. He spent 2 years as chair of the National Advisory Committee on Occupational Safety and Health (NACOSH). Dr. Silverstein has authored numerous scientific research and policy articles, including recent publications on the regulatory process, the aging workforce, the future of OSHA, and asbestos cancer risk assessment. He has served on several IOM committees, including the Committee on Aerospace Medicine and Medicine of Extreme Environments, the Committee on NASA's Research on Human Health Risks, the Committee to Review NASA's Space Flight Standards, the Committee to Review the NIOSH Hearing Loss Research program, the Committee on the Health and Safety Needs of Older Workers, and the Committee on Health and Safety Implications of Child Labor, as well as the Transportation Research Board's Committee on Offshore Windfarm Worker Safety.

David N. Sundwall, M.D., is a primary care physician and professor of public health (clinical) at the University of Utah, School of Medicine. Dr. Sundwall served as executive director of the Utah Department of Health from January 2005 to January 2011, during which time he was also chair of the Utah Health Information Technology (HIT) Governance Consortium. Previously, he was president and subsequently senior medical and scientific officer of the American Clinical Laboratory Association. Before that he was vice president and medical director of American Healthcare Systems. His experience in the federal government includes serving as administrator, Health Resources and Services Administration (HRSA), U.S. Department of Health and Human Services; assistant surgeon general in the Commissioned Corps of the U.S. Public Health Service; and director of health and human resources staff for the U.S. Senate Labor and Human Resources Committee. He currently serves as vice chair of the federal Medicaid and Children's Health Insurance Program (CHIP) Payment and Access Commission. Dr. Sundwall is a member of the IOM Committee on Health Threats Resilience, and previously served on the Planning Committee on Workforce Resiliency Programs and the Committee on Integrating Primary Care and Public Health. He is a member of the Utah Medical Association, the American Academy of Family Physicians, the Association of State and Territorial

Health Officials (ASTHO) Alumni Society, the Utah Public Health Association, and the Reserve Officers Association. Dr. Sundwall earned his B.A. at the University of Utah and his M.D. at the University of Utah, College of Medicine, and completed further medical training at the Harvard Family Medicine Residency Program.

RADM (ret.) W. Craig Vanderwagen, M.D., is a senior partner with Martin, Blanck & Associates, a health care consulting firm that provides critical assistance to private-sector clients focused on federal health care delivery systems and services and public health programs. He is also a founder and director of East West Protection, LLC, a company dedicated to developing and delivering integrated solutions to protect communities and sovereign countries from the threat of weapons of mass destruction and natural pandemics. From August 2006 to July 2009, Dr. Vanderwagen was the founding assistant secretary for preparedness and response (ASPR), U.S. Department of Health and Human Services. In this role, he was responsible for the leadership and development of a new organization whose mission was to prepare the nation for response to and recovery from public health and other health disasters, whether natural or manmade. Dr. Vanderwagen had a distinguished 28-year career in public service as a commissioned officer in the U.S. Public Health Service. Before becoming assistant secretary, he deployed multiple times to disaster environments, including serving in Louisiana after Hurricane Katrina. He also served as lead public health official and senior officer aboard the *USNS Mercy* in Indonesia after the tsunami of 2005, director of primary care and public health for the Ministry of Health in Iraq in 2004, consultant to the Pan American Health Organization in Honduras after Hurricane Mitch in 1999, and medical director for Project Provide Refuge (joint Department of Defense-HHS Kosovar refugee assistance) in 1999. Dr. Vanderwagen's deployments were in addition to his duties in the Public Health Service, where he retired as the agency's chief medical officer after 25 years of service. During his career with Indian Health Service, he provided leadership in the uses of electronic health records and implementation of and the use of best practices to combat chronic diseases and was an early supporter of and the agency's lead negotiator for a majority of the early Self Governance Compacts. Dr. Vanderwagen serves on multiple boards of directors addressing infectious diseases, disaster medicine, and public health preparedness. He is currently chair of the International Centre for Infectious Diseases and is an advisor to the International Federation of Biosafety Associations. He received a B.S. from Calvin College and an M.D. from Michigan State University College of Human Medicine.