

# Chapter 7

## ARMY OCCUPATIONAL HEALTH PROGRAM MANAGEMENT

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## INTRODUCTION

The Army Occupational and Environmental Health Program (AOEHP), which supports soldiers and civilian employees in deployed and garrison settings, has three basic roles.<sup>1,2</sup> The first role is to protect the health of soldiers and civilian workers. AOEHP goals are centered on primary prevention, that is, preventing occupational injuries and illnesses from occurring. This includes identifying and managing the hazards associated with routine daily work and appropriately responding to unusual and unexpected hazards. The second AOEHP role is to ensure that military commands are in legal compliance with occupational health laws

and regulations, including federal, state, and local statutes and those of foreign countries where appropriate. The third AOEHP role is to assist in the identification and appropriate follow-up of those who have suffered injuries or illnesses or experienced exposures that may put them at increased risk of disease in the future. For civilian employees, this includes advising local commanders on the implementation of Federal Employees' Compensation Act (FECA) provisions through targeted efforts to prevent injuries and illnesses in worker populations at risk and to reduce compensation claims and costs, disability, and time off work.<sup>3</sup>

## PROGRAM OVERVIEW

Legters and Llewellyn described military medicine as dealing with "risk (threat) assessment, prevention, and medical evacuation and clinical management of diseases and injuries resulting from military occupational exposures."<sup>4</sup> Any training and mission-related work done by soldiers on fixed installations and in deployed settings may be associated with potentially harmful exposures. Therefore, the AOEHP has responsibility for protecting and preserving the health of soldiers, and thereby supporting the continued readiness of soldiers to fight and do their jobs. In contrast, the industrial base of the Department of Defense (DoD) is complex and includes government-owned and -operated facilities, government-owned/contractor-operated facilities, and contractor-owned and -operated facilities. This unique organizational structure provides the DoD and Department of the Army (DA) flexibility in meeting mission requirements by providing the capability to quickly ramp up production from peacetime to wartime levels. In these various configurations, personnel who provide AOEHP services must clearly understand what their responsibilities are regarding the workers, the industrial plants themselves, and the industrial processes inside the plants. Additionally, contingency considerations for ramping up production present unique challenges because existing heating, ventilation and air-conditioning systems and engineering controls may be inadequate to support an accelerated production process.

The program elements of a military occupational health program are varied but generally include reproductive health hazards, immunizations, hazard communication, illness and absence monitoring, vision protection, respiratory protection, hearing protection, medical surveillance for known hazards, and control of infections and blood-borne pathogens, among others. Reviews of occupational health programs are

performed by the Occupational Safety and Health Administration (OSHA) and the Joint Commission. In addition, the Army inspector general team reviews surety medicine support, and installation-level occupational health services are reviewed by staff from the Army Surgeon General's Office, the regional health commands, and the Army Materiel Command. The Army Public Health Center, located at Aberdeen Proving Ground, Maryland, provides occupational health staff assistance visits.<sup>1,2</sup>

AOEHP personnel include military and civilian physicians, physician assistants, nurse practitioners, nurses, occupational health technicians, industrial hygienists, and industrial hygiene technicians. The skill sets and competencies of AOEHP staff members have expanded greatly over the last 25 years, as seen, for example, in physician residency training programs in occupational and environmental medicine (OEM). OEM residents must spend more time in clinical rotations, gain greater clinical competence, and demonstrate attainment of these clinical competencies and proficiencies before graduating from a residency program and taking the American Board of Medical Specialties examination. This increased emphasis on clinical competence was driven in part by the expansion of the American College of Occupational and Environmental Medicine core competencies in OEM.<sup>5-7</sup> Further, the utilization of primary care physicians, nurse practitioners, and physician assistants to support the clinical aspects of OEM programs poses challenges, such as ensuring that providers have the requisite skills and competencies, and that they participate in quality assurance programs with peer review as part of normal clinical business practice. This change was largely driven by the American Board of Medical Specialties in response to the general public's demand for improvements in the overall quality of clinical care in America that occurred in 2012.<sup>6,7</sup>

Beyond the basic practice of occupational medicine, military-specific hazards and operational environments pose unique challenges for providers entering military occupational medicine. AOEHP providers must understand how the practice of military occupational medicine is different from the practice of occupational medicine taught in civilian medical schools and OEM residency programs. This includes understanding military hazards, the health problems they pose, the immediate medical treatment needed following exposure, and requirements for follow-up of those exposed.

Transitioning from civilian to military occupational medicine involves a steep learning curve. For physicians who trained in civilian OEM residency programs, the period of time required to become independently

competent in the practice of military occupational medicine has been estimated by senior Army occupational medicine physicians to range from 6 to 24 months.<sup>5</sup> One reason for this is the limited opportunities to take courses required for military providers. In addition to military administrative courses, such as those related to security, these providers must become competent in the clinical identification and management of casualties exposed to chemical warfare agents, biological warfare agents, radiation incidents, and laser injuries. They must also be able to assume the role of medical advisor to an installation commander, serving as a public health emergency officer or as the on-the-scene commander of a toxic chemical incident or infectious disease outbreak.

## DEPARTMENT OF DEFENSE PROGRAM STRUCTURE AND MANAGEMENT

### Office of the Secretary of Defense

The governance of military occupational health is shared by multiple DoD organizations.<sup>8(p14)</sup> At the secretary of defense level, two offices are responsible for overseeing occupational and environmental health: the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD [AT&L]) and the Office of the Under Secretary of Defense for Personnel and Readiness (USD [P&R]).

Historically, safety programs were viewed as installation functions related to USD (AT&L), while occupational and environmental health was considered a medical function overseen by USD (P&R). Environmental and occupational health functions have now been placed under USD (AT&L).<sup>8(p15)</sup> However, oversight of program execution and funding for the occupational and environmental health program resides in USD (P&R).<sup>8(p15)</sup> Combatant commanders, with mission and geographic responsibilities under the Unified Command Plan, and the military services also have responsibility for implementation and execution of the occupational health program in their areas.<sup>8</sup> The services have parallel systems for occupational health with separate monitoring, surveillance and reporting systems, and policy guidance.

The National Safety Council partnered with DoD in a 2001 review of the DoD's safety and occupational health management systems.<sup>9</sup> The study focused leadership attention on quantifiable safety goals and safety metrics. These data were readily available because of OSHA-mandated reporting requirements. The National Safety Council highlighted the need for an effective DoD-wide safety and occupational health management system that would ensure coordinated policy, advocacy, and oversight of safety and

occupational health.<sup>8(p16)</sup><sup>9</sup> In response, the secretary of defense established the Defense Safety Oversight Council (DSOC), chaired by USD (P&R).<sup>8(p16)</sup> The DSOC oversees safety policy and initiatives within DoD. In a 2006 policy memorandum,<sup>10</sup> the secretary of defense delegated responsibility for injury and accident prevention to the USD (P&R) and established performance goals for reducing preventable accidents.

With representatives from all the military services and the joint staff, the DSOC facilitates coordination between USD (AT&L) and USD (P&R) on policy implementation and program execution for safety, occupational, and environmental health programs.<sup>8(p17)</sup> It also helps to prioritize program management efforts and troubleshoot problem areas. DSOC coordination facilitates development of common goals and expedites policy development and oversight of program execution.<sup>8(p17)</sup> In 2016, there were several joint services working groups that facilitated the work of USD (AT&L) and USD (P&R).

DoD directive 4715.1E, *Environment, Safety and Occupational Health (ESOH)*, issued in March 2005,<sup>11</sup> addresses the division of occupational health program management within the Office of the Secretary of Defense by defining responsibilities for safety and occupational health for both USD (AT&L) and USD (P&R). Designed to protect DoD personnel from accidental death, injury, or occupational illness,<sup>8(p19)</sup> the directive applies to pollution prevention, compliance, conservation, restoration, munitions response, safety, occupational health, environmental health, explosives safety, fire and emergency services, pest management, environmental technology, and international activities.

DoD Directive 4715.1E recognizes that no single organization exercises authority over all safety and occupational health activities and that parallel program

management and coordination is a major challenge.<sup>8(p19)</sup> The directive appointed USD (AT&L) to oversee DoD environmental, safety, and occupational health programs and to establish goals, objectives, guidance, and procedures for safety and occupational health aspects of the DoD mission. It also appointed the assistant deputy undersecretary of defense for installations and environment as the designated safety and occupational health official. The USD (AT&L) was also assigned the responsibility for issuing environmental, safety, and occupational health policy and management guidance for DoD components in planning, programming, and budgeting for occupational health.<sup>8(p19)</sup>

For occupational health, USD (AT&L) sets policy, while USD (P&R) manages the relevant program and budget execution. Safety largely remains within the purview of USD (AT&L), except that 4715.1E designates USD (P&R) as the chairman of the DSOC, a mechanism intended to promote coordination at a high level in the Office of the Secretary of Defense.<sup>8(p21)</sup>

#### ***Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics***

The USD (AT&L)<sup>8(p15)</sup> has oversight for military installations and the environment; operational energy plans and programs; major weapon systems; missile defense programs; space and intelligence programs; nuclear, chemical, and biological defense programs; and nuclear programs. Within AT&L, there is a deputy assistant undersecretary for environment, safety, and occupational health, who is primarily responsible for environmental and occupational health policy development and program oversight.<sup>8(p15)</sup> This office is also responsible for DoD instructions on safety and occupational and environmental health, including DoD Instruction 6055.01, *DoD Safety and Occupational Health (SOH) Program*;<sup>12</sup> DoD Instruction 6055.05, *Occupational and Environmental Health (OEH)*;<sup>13</sup> and DoD Instruction 6055.05-M, *Occupational Medical Examinations and Surveillance Manual*.<sup>14</sup>

Several integrated product teams have been established to support this office for installations in the United States, overseas, and deployed settings. One of these, the Occupational and Environmental Health Integrated Product Team, is charged with developing data management systems and integrating them with existing information management systems, primarily the Defense Occupational and Environmental Health Readiness System (DOEHRS) and the new Military Health System (MHS) GENESIS electronic medical record.<sup>15</sup> The Occupational and Environmental Health Integrated Product Team establishes and prioritizes requirements for MHS data systems and for electronic health record integration.<sup>8(p23)</sup>

#### ***Office of the Under Secretary of Defense for Personnel and Readiness***

The USD (P&R) provides staff advice and assistance to the secretary of defense on total force management; National Guard and Reserve affairs; the MHS; readiness and training; military and civilian personnel requirements; morale, welfare, and recreation; and quality of life.<sup>8(p23)</sup>

#### ***Office of the Assistant Secretary of Defense for Health Affairs***

The Assistant Secretary of Defense for Health Affairs (ASD HA) is responsible for administering the MHS,<sup>8(p18)</sup> which provides care to uniformed and civilian DoD healthcare beneficiaries in the United States and around the world. It encompasses fixed and deployed medical treatment facilities, and weaves together healthcare delivery, medical education, public health, private sector partnerships, and medical research and development. In addition to providing healthcare services, the MHS is prepared to support military operations, natural disasters, and humanitarian crises worldwide.<sup>16</sup>

A change in MHS governance occurred in 2013 when the TRICARE Management Agency was eliminated and replaced by the Defense Health Agency (DHA).<sup>16</sup> ASD HA oversees the DHA and controls both funding and policy development. Subject matter experts from the services support policy development by serving on working groups within ASD HA.

The ASD HA has adopted the use of the “balanced scorecard” for strategic planning to set goals for the MHS and establish benchmarks for accountability. The MHS balanced scorecard has six main focus areas: resources, learning and growth, internal process, customers, finance, and stakeholders.<sup>17</sup> The MHS balanced scorecard has continually evolved. It now includes MHS activities and healthcare quality measures, and is currently being used by all the services.<sup>17</sup>

#### ***Defense Health Agency***

The DHA director is responsible for integration of service policy and program execution across all the services, including implementation, management, and evaluation of direct care provided in medical treatment facilities.<sup>16</sup> The DHA establishes quality performance measures in medical treatment facilities and oversees execution and evaluation of clinical programs for cost effectiveness and return on investment.

The DHA has several directorates, including medical logistics, health information technology, public health, finance, medical education, and research and

development.<sup>16</sup> The public health directorate's goal is to move the MHS to a "system of health," focusing on prevention of disease, disability, and death. The plan is to increase effectiveness and decrease costs through consolidation of functions. The public health directorate includes branches for armed forces health surveillance, immunization, veterinary care, and deployment

health.<sup>16</sup> The deployment health branch monitors the medical readiness status of all DoD personnel, ensuring the force is medically ready to deploy. Medical readiness involves tracking of deployment readiness in the whole force, including periodic health assessments, deployment-limiting conditions, dental readiness, and immunizations.<sup>16</sup>

## ARMY OCCUPATIONAL AND ENVIRONMENTAL HEALTH PROGRAM MANAGEMENT

The AOEHP organizational structure is like that of the DoD. The assistant secretary of the Army for installations and environment and the deputy assistant secretary of the Army for environment, safety, and occupational health have primary responsibility for integrating DoD directives and policies into Army policies, doctrine, and guidance.<sup>8(p24)</sup> The assistant secretary of the Army for installations and environment, as executive agent for the DoD occupational health program, is tasked to "establish goals, policies, priorities, and oversight for the Army OEH programs."<sup>8(p24)</sup> This office also coordinates initiatives with the DSOC and collects occupational health performance metrics, which it reports to DoD.<sup>8(p24)</sup>

### The Army Surgeon General and Army Medical Command Structure

The Army surgeon general is commander of the Army Medical Command (MEDCOM) and is responsible for occupational health program funding and oversight of program execution. The surgeon general's role is to advise the secretary of the Army and Army chief of staff on occupational health issues.<sup>1,18</sup> Further, the surgeon general is responsible for developing policy for medical care to prevent disability from occupational injuries and illnesses and for executing the medical aspects of the AOEHP.<sup>8</sup>

A 2015 MEDCOM reorganization resulted in the elimination of the US Army Public Health Command, and its command element was moved into MEDCOM headquarters as the deputy. The remainder of the Army Public Health Command became the APHC, a field operating activity of the DCS PH.<sup>19</sup> The public health regional commands were also eliminated in the reorganization.

The DCS PH promotes readiness and prevents disease, injury, and disability in soldiers, military retirees, their families, veterans, and DA civilian employees.<sup>19</sup> It also oversees mission execution for veterinary and public health services for the Army. DCS PH has four directorates, public health, System for Health, Ready and Resilient, and veterinary services, that participate in public health planning, strategy, policy and guidance promulgation, and oversight across the Army and MEDCOM.<sup>19</sup>

The public health directorate establishes policies and regulations related to preventive and occupational medicine.<sup>19</sup> It coordinates with DHA regarding epidemiology and disease surveillance, and standardizes quality assurance for occupational health programs throughout the Army Medical Department. The directorate also participates in MEDCOM efforts to improve the quality of clinical public health practice, focusing on identifying and addressing emerging public health issues such as the Ebola and Zika viruses.

### The Army Public Health Center

The APHC provides unique operational and strategic services and expertise to the Army and DoD.<sup>18</sup> The APHC assists in developing public health programs, products, and services; conducts technical studies and consultations; augments policy development; monitors public health program and service quality; leads process improvements; develops technical guidance; participates in national and international groups and missions; facilitates public health staffing training; and oversees nonappropriated fund management and business practice operations for veterinary and occupational health clinics across the DoD.<sup>18</sup>

The APHC provides support for comprehensive health surveillance including the implementation of the DOEHRS. The APHC provides feedback to installation and combatant commanders on their efforts to manage or eliminate occupational and environmental health risks. The APHC is also the executive agent for deployment occupational and environmental health. APHC staff recommend priorities for public health mission execution and collect data on performance indicators and measures of mission effectiveness.

The clinical public health and epidemiology directorate at the APHC supports occupational and environmental health programs and services executed Army-wide.<sup>20</sup> The directorate is comprised of occupational medicine, environmental medicine, hearing and vision, surety medicine, disease epidemiology, injury prevention, professional medical education, behavioral health, and public health nursing divisions.<sup>19</sup>

The APHC's OEM division supports installation-level occupational and environmental health programs both in the United States and overseas, including assessment of threats encountered on the battlefield. The division provides soldiers and their commanders with information products and consultative services to address service member concerns and mitigate health risk.<sup>19</sup> The OEM division provides medical and epidemiological expertise to evaluate and communicate health risk related to environmental exposures.<sup>19</sup> It also

conducts research and development of clinical practice guidelines for occupational and environmental hazards, and supports residency training of physicians in occupational medicine.<sup>5</sup>

The APHC has developed the Public Health Management System to track performance metrics for installation, regional, and headquarters public health programs. This system enables collection, review, and analysis of hearing, vision, industrial hygiene, and occupational health program data.

## OCCUPATIONAL AND ENVIRONMENTAL HEALTH PROGRAM QUALITY

A new direction in medicine is to incorporate quality measures into healthcare delivery, including outcomes measurements that have evolved from the managed care system.<sup>20-24</sup> DoD and service leaders, as well as military medical treatment facility commanders, are driving changes to lower costs.<sup>16</sup> Outcomes management has flourished in the clinical setting.<sup>20</sup> National databases are being developed that permit use of information and analysis of data that focus on clinical, financial, and health outcomes. This permits researchers to assess the impact of medical interventions on health outcomes, thus providing decision-makers information on cost effectiveness.<sup>21,22</sup> Outcomes management is critically important to occupational medicine in justifying resource needs.

### Process and Outcome Measures

Clinical performance measures include both process and outcome measures.<sup>23,24</sup> The patient administration and resource management divisions of a military medical treatment facility collect information on the clinical performance of each provider to assess whether or not the relative value unit performance standards were met and to track the return on investment for occupational health clinical care.<sup>20</sup> Occupational health professionals need feedback on their performance to develop high-quality, cost-efficient healthcare.<sup>20</sup> Regulatory agencies develop policy based on data-driven information obtained from measures of clinical performance.<sup>22</sup> It is important for OEM physicians to understand which process and health outcomes indicators are being tracked, as well as the limitations of the data being collected and analyzed.<sup>22,24</sup> Process measures include completion percentages for surveillance programs and worksite visits; outcomes measures include disability costs and lost workdays.<sup>23,24</sup>

The Joint Commission and the American Board of Medical Specialties have focused on performance improvement in healthcare outcomes, moving away from examining work processes alone. Medical treat-

ment facilities must track healthcare outcomes that occur as a result of specific interventions using an evidence-based approach. For example, childhood immunization has successfully reduced the prevalence, new incident cases, and number of carriers of hepatitis B in the general population.

Metrics that can be used to measure healthcare cost savings from employee health and wellness programs include workers' compensation claim costs; participation in health promotion and wellness programs (leading measures); and decreases in health risks, disability, and medical costs (lagging indicators).<sup>24</sup> Table 7-1 lists more examples. It is helpful to have leading and lagging indicators that are aligned with realistic performance goals. Employee health maintenance programs can reduce costs by preventing trips to the emergency department for injuries, hospitalizations, and certain procedures. Individuals with health risk factors such as smoking, stress, and depression can be identified and offered preventive interventions that help ensure access to care and offer health risk management. Health promotion and wellness programs should be aligned with the clinic quality improvement efforts, in which high-risk and frequent occurrences are identified and targeted for intervention. The return on these investments usually occurs in the second year of intervention rather than the first year.

Army occupational health clinics complete an annual report of various process and outcome metrics and submit the information to the APHC. For example, process measures related to the hearing program include hearing test completion percentages and number of referrals to audiology for evaluation of hearing loss. Examples of outcome measures of performance for the hearing program include the number of accepted hearing loss claims and total compensation costs for hearing loss claims. These measures reflect the success of the installation injury prevention program and FECA case management efforts. Other examples of clinical outcome measures in occupational health are overall injury and illness rates, tuberculosis transmission

rates, and cases of lead poisoning. These outcome measures (ie, case rates) may require risk adjustment for confounders, including the severity of disease, demographics, and comorbid conditions related to cost measures.

**Data Quality and Risk Adjustment**

Concerns about data sources, adjustments, and attributable risks have been raised and should be carefully addressed.<sup>24</sup> The health outcomes data must be analyzed with scientific rigor to provide proper conclusions about the success of occupational health programs. Healthcare outcomes analysis relies on well-developed and integrated data information systems that allow program managers to continuously improve patient care. Until recently, the Army used self-reported performance data and health outcomes metrics to assess program performance. The move to centrally available data, including data captured in the military electronic medical record and civilian employee medical record, and use of health outcomes tracked by the federal workers’ compensation program provides more reliable and accurate information on health outcomes. Data derived in this manner has higher levels of clinical validity and reliability.

Also, APHC program managers with oversight responsibility can get access to the MHS Standard Inpatient and Outpatient Data Repository by requesting an online account through the armed forces health surveillance branch of DHA. Installation-specific, de-identified epidemiology data can be obtained from the repository for review and analysis. Analysis of these data can show how a particular organization is doing compared with the Army average in preventing injuries and illnesses. After adjusted for confounders, the data can be analyzed to assess which subgroups in the population have the highest risk of developing injuries or illnesses.

**Existing Performance Measurement Systems**

The Joint Commission has incorporated outcomes performance measurement into the accreditation process. Medical treatment facilities must develop performance measurement systems that track their performance in relation to a specified outcome.<sup>24</sup> The performance measure must address at least one dimension of care. The system must have an operational, automated, ongoing database that allows calculation of performance measures, and it must be able to assess the accuracy and completeness of the performance measure data elements and remove the effect of patient confounders by risk adjustment or stratification.<sup>24</sup> The system must also be able to deliver, on a timely basis,

statistically valid performance information useful in comparing the healthcare facility with others and against national standards.<sup>24</sup>

**Functional Health Status and Quality of Life Instruments**

There is a paradigm shift away from disease to an emphasis on patient health and helping people live longer and enhancing the quality of their life. Improvements can be measured as gain in life expectancy and better quality of life.<sup>25</sup> Patient outcome measures are a focal point for public health and can be used in decisions about allocation of public health resources. The Department of Labor is now focusing on patient outcomes and functional status, and quality of life is now used as a standard measure of clinical outcomes.<sup>25</sup>

**Occupational Health Program Assessment Tools and Quality Improvement**

The APHC and the Navy and Marine Corps Public Health Center have developed self-assessment tools to permit any installation occupational health program manager to assess how well each element of their program is being executed. In addition to patient satisfaction questionnaires, the program manager can use

**TABLE 7-1  
LEADING AND LAGGING INDICATORS OF  
EMPLOYEE HEALTH PROGRAMS**

<b>Leading Indicators</b>	<b>Examples</b>
Program enrollment	Initial enrollment
Continuing engagement and tool usage	Session attendance, program completion
Medication adherence	Cardiovascular medications taken
Behavior change	Smoking cessation classes, nutrition, stress
Access to care	Met access standards
Patient satisfaction	80% or better on customer satisfaction scores
<b>Lagging Indicators</b>	<b>Examples</b>
Functional status	ADLs, full duty, light duty
Quality of life	Well-being index
Absenteeism	Days not present for work
Morbidity	Injury rates and disability costs trends
Healthcare claims cost	FECA medical cost trends

ADLs: activities of daily living  
FECA: Federal Employees’ Compensation Act

the occupational health program status report to do a program assessment and see how their occupational health program compares with other programs in the Army. The results of the self-assessment and comparison with the service averages will help program managers identify areas needing improvement, and serve as a baseline for tracking success in both process and outcome measures.

Additionally, program evaluations are periodically conducted by the Joint Commission, the service inspector general's staff, the surgeon general's staff, or the regional commander's staff. These reports outline the strengths of the program and areas for improvement. Program managers can obtain copies of prior evaluations of their occupational health program, and clinic staff can use them to prioritize work efforts. Program managers should become familiar with the Joint Com-

mission environment of care checklist for their facility because it includes many elements of the occupational health program that are evaluated.

Occupational health program managers must prepare a business plan that identifies program goals and objectives and both process and outcome measures for each program element. The business plan must be signed by the chief of occupational health, the chief of preventive medicine/public health, the installation commander, and the medical treatment facility commander. Also, the program manager must ensure that the occupational health clinic is included in the facility's public health or preventive medicine service quality improvement program. The selected process and outcome measures should then be evaluated on a periodic basis and reported on at the hospital quality improvement meetings.

## **OCCUPATIONAL HEALTH PROGRAM PERSONNEL**

### **Role of the Surgeon General's Consultant in Occupational and Environmental Medicine**

The consultant to the Army surgeon general in OEM is the subject matter expert and is expected to be well versed in the technical and policy aspects of the specialty. He or she is the acknowledged professional and technical leader of area of concentration 60D (occupational medicine officers), which includes managing the human capital inventory and recommending changes. The consultant's opinion will form the basis of the surgeon general's or Army response to OEM questions, and the consultant may represent the Army for OEM issues in external venues and liaise with other services and agencies. This will touch on many aspects of AMEDD's function. The consultant also serves as a staff officer to the surgeon general, which involves reviewing line-of-duty determinations, waivers for accession, unresolved cases, and policies.

### ***The Human Capital Distribution Plan***

The Human Capital Distribution Plan is the basis for assignments for AMEDD officers. This annual process relies on established business rules to implement a justifiable and equitable distribution of all AMEDD officers. As inventory manager for the distribution of 60D officers, the OEM consultant works to solve long-term and short-term staffing problems. The consultant identifies service member needs, desires, and family considerations that affect the assignment process, education, promotions, and command selections. The OEM consultant works closely with the preventive medicine consultant and the Medical Corps branch

manager to prepare an annual list of recommendations for fill, which is then reviewed by regional commands and medical treatment facilities. If there is nonoccurrence, the OEM consultant and representatives from regional medical commands, major subordinate commands, US Army Europe, and the 8th Army attend a conference presided over by the deputy surgeon general. Each position is discussed and decisions are reached on disputed positions.

The OEM consultant provides Human Resources Command a list of officers who are leaving the service and those changing assignments, including the losing unit, gaining unit, and report date. For colonels, command surgeons, or other key personnel, the consultant discusses assignments with the chief of staff or deputy commander for clinical services to confirm releases and replacements are acceptable. The OEM consultant also participates in the accession of occupational medicine physicians by writing recommendations to the accession board following review of applicant credentials, resume, and work experience.

### ***Managing Authorizations and Requirements***

The MEDCOM manpower office manages requirements and authorizations for active duty officers and executes the annual MEDCOM Manpower Review Program. The OEM consultant may request changes in the number of 60D authorizations on the MEDCOM Table of Distribution and Allowances, but a 60D can only be added by either converting an existing authorization in another specialty to a 60D or by documenting that a new mission has been added to the specialty (a new mission is one that has not been previously tasked



to the specialty nor previously staffed by MEDCOM). The deputy surgeon general must also support the addition. The OEM consultant is also afforded the opportunity to comment on any proposed decreases to the 60D authorizations.

### Roles of Providers

The AMEDD Personnel Proponency Directorate establishes how many officers are needed and how many should be trained and brought into the Army at any given time. Primary care physicians, physician assistants, and nurse practitioners are utilized to provide clinical care services for the occupational health program at locations where organic occupational medicine staff are not assigned or the population served does not require an active duty occupational medicine physician. OEM physicians and industrial hygiene, safety, optometry, ergonomics, and audiology services may also be obtained from the surrounding local market on a fee-for-service basis or through contract support.

Assessing and treating injuries and illnesses is a major part of the occupational health clinic workload. In general, the occupational health nurse begins emergency care on sick or injured soldiers and civilian employees. Occupational health nurses, who are able to work without direct physician supervision, ensure that the clinic's policy and procedure manual includes a set of standard medical directives covering routine and emergency situations that are written and cosigned by the supervising occupational health physician, occupational health nurse-in-charge, and usually the chief nurse of the supervising medical treatment facility. If the installation has worksites with major health hazards, such as toxic industrial chemicals or chemical warfare agents, the emergency response plan should include medical response guidance for each hazard present. The nature and extent of nursing care provided by the occupational health clinic must be formally determined by the installation, bearing in mind that the degree of treatment rendered by a nurse is limited by the nurse practice act in the state where the nurse is licensed. The occupational health clinic manager should check with the state nurse licensing board regarding rules for prescribing drugs.

Military and civilian OEM physicians may need to treat occupational illnesses and injuries, direct the occupational health nurse, perform preplacement and periodic history and physical exams, and perform exposure evaluations and OSHA-mandated surveillance examinations. The OEM physician collects epidemiological information on injuries and illnesses and initiates countermeasures to prevent future injuries and illnesses in high-risk populations.

### Army Staffing Assessment Model for Civilian Occupational Health Providers

A supplement to the Army Staffing Assessment Model was developed that addresses civilian employee staffing requirements for preventive medicine, including the occupational health program. In addition to the number of employees on an installation, the professional staff needed by an occupational health clinic varies according to the type and number of different operations occurring on base, hazards of the operations being performed, number of personnel exposed to significant chemical and physical hazards, number of preplacement and periodic medical surveillance examinations being performed, number of fitness for duty and ability to work determinations, number of workers' compensation cases being actively managed, and the specific numbers of employees and soldiers enrolled in the various elements of the occupational health program (eg, hearing, vision, respiratory protection). Other factors that affect the resource staffing model include:

- the types and complexity of encounters;
- administrative requirements in terms of meeting attendance (safety, infection control, workers' compensation case management, environment of care, quality improvement);
- site visits done with or without coordination with safety and industrial hygiene staff;
- patient education activities;
- coordination with state and local health departments;
- support for disaster preparedness and response activities;
- public health emergency officer duties;
- marketing of occupational health services; and
- attendance at hospital and medical center executive meetings.

A separate component of the staffing model accounts for regional-level staff support and headquarters-level support, which are added into the overall service requirements for occupational health staff.

The occupational health program manager must engage early and often with the chief of resource management at the local hospital and medical center to ensure model assumptions are correct and that authorizations and requirements are consistent with staffing requirements predicted by the model. The program manager can check with the business operations directorate at the APHC to verify the numbers. The OEM consultant to the surgeon general can facilitate the process if necessary to ensure staffing needs are met once the shortfalls are identified.

Staffing for the Army occupational health program was recently increased through the DoD planning, programming, and budgeting process for occupational health and industrial hygiene personnel: approximately \$50 million was earmarked in the 2010 to 2014 DoD budget plan for occupational health nurses, nurse practitioners, physicians, and industrial hygienists. With these resources made available, the installation occupational health program manager should review authorized and required personnel and compare authorizations with the on-board personnel strength. If there is a shortfall in personnel required to support the mission, the program manager should contact the occupational medicine division at the APHC to arrange for funding to obtain needed personnel.

### **Making the Case for More Occupational Health Personnel**

If shortfalls in civilian personnel staffing exist, the occupational health program manager must work with the medical treatment facility's resource manager to get approval from the program budget advisory committee to hire the needed personnel. This inherently represents a long and drawn-out process when the occupational health program is competing with other sections within preventive medicine and with other hospital departments for limited resources. The program manager must show in the justification why the additional personnel are needed and why occupational health should get the resources rather than other deserving programs in the hospital.

Successful strategies include demonstrating the beginning of a new requirement that did not previously exist, the existence of a new OSHA or other regulatory citation demonstrating the clinic or installation did not meet standards, or the existence of an increased health and safety risk with associated risk of adverse health outcomes because of personnel shortfalls. Additionally, the occupational health program manager should remind the budget committee that DoD funding is specifically appropriated annually for the operations and maintenance of occupational health programs. The key to success is how well statements are backed up with supporting facts and the quality of briefings to senior leaders in the chain of command, including the chief of resource management, chief of finance, chief of logistics, deputy hospital commander for resource management, and hospital commander.

### **Recruiting and Retaining Occupational Health Personnel**

Once hiring new staff is approved, the occupational health program manager must ensure the job descriptions are current, including the latest training and

qualification requirements for education, work experience, and specialized training. The regional personnel office then approves the job description and grades the position before the job announcement is posted.

Recruiting new occupational health providers to the specialty is a key role and responsibility of OEM providers in the Army. This role is currently critical as much of the OEM provider workforce reaches retirement age. Outreach on the part of current military and civilian OEM providers will help recruit top candidates. Workforce retention is just as important, and retaining top-quality personnel has become more difficult due to recent changes in the job market.

### **Training, Competencies, and Milestones for Physician Professional Development**

Occupational medicine physicians must receive specific training in biostatistics and epidemiology, industrial toxicology, physiology, radiation, hearing protection, effects of environmental conditions such as altitude and high pressure, occupational safety, industrial hygiene, dermatology, psychiatric and psychological factors, respiratory diseases, biologic monitoring, ergonomics, management practices, and environmental health. In addition, all physicians must learn about administrative requirements related to the federal workers' compensation program, OSHA-mandated surveillance examinations, Department of Transportation commercial driver medical examiner training and certification, and medical review officer requirements.

The training of physicians in occupational medicine has advanced in the last 10 years from teaching residents about the Accreditation Council for Graduate Medical Education core and specialty-specific competencies that were developed by the American College of Occupational and Environmental Medicine. Beyond the basic competencies, the American College of Occupational and Environmental Medicine has developed in-depth competencies for practitioners at every level of care from novice to expert.<sup>6</sup> This laid the groundwork for the development of milestones in the training of OEM physicians as they advance in the field. Residencies in OEM must demonstrate that trainees attain the milestones and certify that they have sufficient competence to practice independently without direct supervision.<sup>7</sup>

Army occupational health providers must take both phases of the AMEDD Center and School Fundamentals of Occupational Health Course, the Hearing Conservation Supervisors Course, and the National Institute for Occupational Safety and Health Spirometry Course. They must also attend training to become public health emergency officers with the

following courses: Medical Management of Chemical and Biological Casualties, Toxic Chemical Training or Medical Support Personnel, Combat Casualty Care, and Advanced Trauma Life Support.

Occupational health program managers also need management skills to organize, plan, measure, and refine the implementation of the occupational health program. Two sources of military-relevant, case-based management training are the Fundamentals of Occupational Medicine Course, which offers scenarios and

interactive exercises to help attendees develop and refine their management skills, and the 2-week Management of Preventive Medicine Course, also offered at the AMEDD Center and School, which provides attendees with interactive case studies that address commonly encountered problems in preventive medicine and public health at the installation level. Additional resources are available for junior officers who must supervise civilian employees, including a 40-hour civilian supervisors' course and a junior officer leadership course.

## FUNDING

### **Budgeting**

The occupational health program manager must actively manage the program budget and be an honest broker regarding budget needs and expenditures of funds. Each department of public health or preventive medicine service will get an annual projected budget from the resource management office at the military hospital. The occupational health program manager must review prior year funding and personnel levels and determine whether funding and staffing levels have been adequate in the past, based on mission needs and unique circumstances locally. He or she must establish a budget based on prior year execution and decide whether more or less money is needed in the upcoming fiscal year. The department chief or chief of preventive medicine will expect input from the occupational health program manager regarding travel, services, personnel, supplies, and equipment.

The travel budget should cover the costs of staff assistance visits to one or more outlying occupational health clinics. Travel may be required for medical and nursing personnel to attend certification and recertification courses to maintain licensure or privileging in the specialty. OSHA requires occupational health providers to attend occupational health training annually. State nursing and medical licensing boards also require medical professionals to attend training and document attendance with training completion certificates that list the continuing medical education (CME) and continuing education units (CEUs) earned. Most providers must earn a minimum of 50 CMEs or CEUs every 2 years. Travel and per diem costs may be reduced in the future as more training becomes available online and through distributed learning.

Personnel costs for all civilian employees must be included in the occupational health budget unless some other bill-payer is supporting the additional staffing. The occupational health program manager should check with resource management to ensure sufficient

funds are programmed to cover salary costs, benefits, performance awards, and step increases for civilian personnel. If the clinic employs contractors to operate ambulances or provide other acute or ambulatory care services, these personnel costs and related overhead costs for awards and training must also be included in the budget.

The occupational health program manager must also identify supplies and consumables used in the clinic and include these costs in the budget request. Supply costs for consumables such as paper, ink cartridges, staples, books, reading materials, and information pamphlets must be included in the budget based on historical usage with an increase to adjust for inflation. Ideally, these purchases can be made at year-end when remaining funds can be used appropriately for planned purchases. The purchase of office and medical supplies, including small items such as blood pressure cuffs and pulse oximeters, allow the program manager to use funds judiciously and ensure supplies do not run out at the start of the fiscal year if there is a delay in congressional approval of the federal budget. Further, if there are funds left at the end of the fiscal year, it may be prudent to pay ahead on contracts that span the current and next fiscal year.

The occupational health program manager can take advantage of available funds at the local treatment facility or medical center by adding larger purchases (over \$3,000) to the hospital consolidated equipment list for purchases maintained by resource management. Among the purchases that should be considered for the occupational health clinic are an electrocardiogram machine, spirometer, audiometer and hearing booth, slit lamp, and automated, adjustable examination table with height, seat, and torso/head angle adjustments. Often the hospital does a bulk purchase of computers, printers, fax machines, desk-top projectors and screens, and the occupational health clinic should work with resource management to ensure all clinic needs are met. Lastly, equipment maintenance costs must be identified and included in the facility's equipment maintenance list.

## Sources of Funding

The occupational health program manager must be aware of other sources of funding that might be available to support the program. The chief of occupational health should collaborate with the resource manager at the hospital or medical center so that the occupational health program needs are identified and validated. It is important for the program manager to frequently visit key decision-makers regarding the budget and keep them updated about changes in mission requirements and enhancements. Further, if the mission in any area has expanded, the resource manager must be made aware of the changes. Often, funding may be available centrally to support the program expansion. Large equipment needs and other unmet personnel or financial requirements must be justified and clearly explained to the finance manager. At the midpoint of the fiscal year, the program manager should update the resource manager regarding budget execution, identify new unmet needs, and validate previously identified unfunded requirements. Two months before the end of the fiscal year, it is wise to coordinate with the resource manager and identify items to be added to the year-end funding list.

The APHC exercises oversight of occupational health program funding execution and has funded public health improvement initiatives for many years. Often the occupational health program manager may be able to secure funding through APHC. Also, the local installation safety and environmental offices receive funding that has historically been used to support safety and occupational health training and personnel. Specific funds for safety glasses and tobacco cessation products have been made available in the past.

## Expanding Service Delivery

The occupational health program manager may be able to develop support agreements with other organizations needing services within the local area, but it is critical to coordinate with the chief of public health/

preventive medicine, the hospital resource manager, the deputy chief for administration, and the chief of the patient administration before any agreements are made. There are restrictions on what services can be provided and to whom; for instance, contractors are not usually eligible for care in the occupational health clinic unless the provision of care and funding are included in the original contract (this commonly occurs when there are no private occupational health services in the area). Everyone is eligible for emergency services, but routine ambulatory care in the occupational health clinic is not normally provided, except as specified above. Occupational health services can routinely be provided to personnel from other federal agencies and to National Guard and Reserve personnel provided an inter-service support agreement is in place. Agencies such as the Defense Commissary Service have made arrangements and reimbursed the Army occupational health clinics for these services in the past. Usually, the additional funding is split between the hospital and the occupational health clinic.

## Contracting for Occupational Health Services

Contracting for occupational health services, particularly in remote locations, is difficult for a variety of reasons. The commander arranging the services must have a thorough knowledge of the needed occupational health services, and the installation commander must maintain close contact with the contracting representatives regarding the delivery of services. Once a contract is set up, oversight of services provided tends to be problematic because of the lack of expertise on the part of the installation commander. The medical treatment facility that arranged for the contract support must exercise oversight of the services delivered to ensure standards of care are met and top-quality care is delivered, which is difficult if occupational health programs are understaffed. A concerted effort must be made to ensure periodic oversight is written into the contract and actually performed.

## SUMMARY

This chapter has reviewed the organizational command and control relationships from the DoD level to the installation occupational health clinic level. The roles and responsibilities for managing the Army occupational health program were discussed, and the evaluation of occupational health programs was presented. Making the business case for a solid occupational health program requires both hard economic data that proves the financial benefits of effective programs, and the ability to translate this information

into a form that resource management and the deputy commander for administration decision-makers will understand and accept.

Beyond traditional process and outcomes measures (eg, FECA costs, workers' compensation, lost work days), new OEM research is examining the impact of health promotion and wellness initiatives, providing valuable information on workplace benefits versus the costs. Research data on absenteeism and "presenteeism" costs, coupled with increased receptivity

by senior leaders and resource managers, support a stronger case for health promotion along with traditional disease and injury prevention programs. OEM professionals must use evidence from private industry and apply the lessons learned to their own occupational health programs and advocate for resources and staffing that benefit both military and civilian workers.

The continued growth of outcomes research in OEM represents significant opportunities to improve quality and efficiency by reducing waste and ensuring physicians meet the standards of care and patients are satisfied. The American Board of Medical Specialties' Maintenance of Certification Committee has outlined an approach for providers to assess and improve their practice and ultimately improve patient health care

outcomes, with the following suggestions:

- develop and promote the use of standardized forms for data collection;
- establish a national clearinghouse for collection and dissemination of data obtained;
- create a panel to identify outcomes, assess interventions, and provide feedback on care quality, health outcomes, and patient satisfaction; and
- emphasize the conduct, reporting, and dissemination of high-quality outcomes research.<sup>26</sup>

These changes are steps toward the goal of relating patient outcomes to the care received.

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