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Pamphlet 40–11

Medical Services

Army Public Health Program

Headquarters
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Washington, DC
18 May 2020

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SUMMARY of CHANGE

DA PAM 40–11
Army Public Health Program

This major revision, dated 18 May 2020—

- Changes the title of the pamphlet from Preventive Medicine to Army Public Health Program (cover).
- Characterizes the types of organizations that comprise the Army Public Health Enterprise and outlines the functions and activities for governance of the Enterprise (paras 1–6 and 1–7).
- Identifies conditions when Army public health practices are applied at Joint bases and privatized facilities (paras 1–8 and 1–9).
- Introduces the Public Health Service Line and its role in the Enterprise governance process (para 1–10).
- Characterizes the different levels at which public health services are executed across the Army (para 1–12).
- Adds guidance for implementing quality management within each level of the Army Public Health Enterprise (chap 2, paras 12–17 through 12–22, appendices B and C).
- Identifies official Department of Defense and Army information systems used to archive and manage public health surveys, inspections, surveillance, exposure, and other related data (chap 3).
- Updates the guidance and procedures for conducting health risk assessments (chap 4 and app D).
- Updates the guidance and identifies resources for public health communication (chap 5 and app E).
- Updates the activities and guidance associated with health surveillance and epidemiology (chap 6 and app F).
- Updates activities and guidance associated with occupational health; introduces the scope and function of occupational and environmental medicine; and adds guidance for managing exposure to depleted uranium (chap 7 and app G).
- Adds guidance for occupational health activities associated with workers' compensation claims (para 7–33).
- Updates activities and guidance associated with environmental health (chap 8).
- Introduces facility sanitation and hygiene (para 8–38).
- Adds the public health functions of the Army Veterinary Service and characterizes the One Health concept (chap 9).
- Renames "Field Preventive Medicine" as "Operational Public Health" and updates the guidance and activities for administering public health in the operational environment (chap 10).
- Renames "Disease Prevention and Control" as "Clinical Public Health" and updates associated guidance and activities (chap 11).
- Renames "Soldier, Family, Community Health, and Health Promotion" as "Community-based Prevention and Health Promotion"; updates associated activities and guidance; introduces the Performance Triad concept; and adds guidance for Army Wellness Centers (chap 12 and appendices H and I).

- Renames “Preventive Medicine Toxicology” as “Public Health Toxicology” and updates associated activities and guidance (chap 13).
- Renames “Preventive Medicine Laboratory Services” as “Public Health Laboratory Services” and updates associated activities and guidance (chap 14).
- Adds activities and guidance associated with public health emergency management and response teams (chap 15).
- Updates terms (glossary).

Headquarters
Department of the Army
Washington, DC
18 May 2020

*Department of the Army Pamphlet 40–11

Medical Services

Army Public Health Program

By Order of the Secretary of the Army:

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General, United States Army
Chief of Staff

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Administrative Assistant
to the Secretary of the Army

History. This publication is a major revision.

Summary. This pamphlet implements practical measures for the preservation and promotion of health, the prevention of disease and non-battle injuries, and improvement of personal readiness; it is to be used with AR 40–5.

Applicability. This pamphlet applies to the Regular Army, the Army National Guard/Army National Guard of the United States, and the U.S. Army Reserve, unless otherwise stated. It applies to all elements of the Army across the range of military operations from military engagement, security cooperation, and deterrence through large-scale combat operations, to include activities during mobilization. It also applies to U.S. Army Reserve personnel on active duty or in drill status; U.S. Military Academy cadets; U.S. Army Reserve Officer Training Corps cadets when engaged in directed training activities; foreign national military personnel assigned to Army components; Civilian personnel; and nonappropriated fund personnel. Except for those public health services defined in DODI 6055.01 for supporting Department of Defense contractor personnel during outside continental United States Force deployments or specifically provided for in contracts between the Government and a contractor, this pamphlet does not generally apply to Army contractor personnel and contractor operations.

Proponent and exception authority. The proponent of this pamphlet is The Surgeon General. The proponent has the authority to approve exceptions or waivers to this pamphlet that are consistent with controlling law and regulations. The proponent may delegate this approval authority, in writing, to a division chief within the proponent agency or its direct reporting unit or field operating agency, in the grade of colonel or the civilian equivalent. Activities may request a waiver to this pamphlet by providing justification that includes a full analysis of the expected benefits and must include formal review by the activity's senior legal officer. All waiver requests will be endorsed by the commander or senior leader of the requesting activity and forwarded through their higher headquarters to the policy proponent. Refer to AR 25–30 for specific guidance.

Suggested improvements. Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to Headquarters, Department of the Army (DASG-HS), 7700 Arlington Boulevard, Falls Church, VA 22042-5143.

Distribution. This pamphlet is available in electronic media only and is intended for the Regular Army, the Army National Guard/Army National Guard of the United States, and the U.S. Army Reserve.

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*This regulation supersedes DA Pam 40-11, dated 22 July 2005.

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Glossary

Chapter 1
Introduction

Section I

Army Public Health Program

1–1. Purpose

This pamphlet provides implementing guidance for the public health (PH) responsibilities established in AR 40–5. It defines the public health service line (PHSL) and outlines the PH Enterprise approach for the planning, resourcing, delivery, monitoring, oversight, and standardization of PH services. In addition, it provides detailed PH functions, instructions, guidance, and procedures not published in other Army documents.

1–2. References and forms

See appendix A.

1–3. Explanation of abbreviations and terms

See the glossary.

1–4. Background

a. Public health is the preservation, maintenance, and restoration of health in Army populations through the anticipation, prediction, identification, surveillance, evaluation, prevention, and control of disease and non-battle injury (DNBI). It is one of the functional areas of the Military Health System (MHS) for which The Surgeon General (TSG) is the Army functional proponent. Public health is a major enabler for Army readiness and a major component of Force Health Protection (FHP) in its application throughout all Army activities. Levels of readiness and health in all Army populations are enhanced and sustained by applying the principles of PH to promote healthy behaviors and to prevent and minimize the impacts of diseases and injuries.

b. Public health professionals identify, assess, and communicate risks to health, readiness, and quality of life. Army PH includes a broad set of capabilities, ranging from basic field sanitation techniques to comprehensive medical and occupational and environmental health (OEH) exposure surveillance systems and procedures. These capabilities focus on the medical readiness of the Force by identifying, understanding, communicating, and preventing or mitigating health threats across the range of military operations in the continental United States (CONUS) and outside the continental United States (OCONUS). They are also designed to promote and maintain the health and well-being of all personnel and working animals for whom the Army is responsible.

c. Army PH supports population health management within the MHS. Population health management is the intentional and proactive use of a variety of individual, organizational, and population interventions to help improve patterns of disease and injury burdens, health status, and the health care demand of defined populations. Public health support includes individual and community health assessments (CHAs), surveillance, development and execution of interventions, and health outcome evaluations. Public health personnel complement—but do not replace or substitute for—other clinical providers who execute population health management functions (for example, case management) in the primary care patient-centered healthcare delivery model.

d. The overall goal of the Army PH Program is to enhance and sustain Army readiness by preventing or mitigating disease, illness, and injury. The Army PH Enterprise attains this goal by effectively executing PH policies as outlined in AR 40–5.

e. The Army PH Program includes relevant and appropriate capabilities and functions of the 10 Essential PH Services established through the Department of Health and Human Services.

f. The term “Army personnel” used throughout this pamphlet includes Military and Civilian personnel in all components. “Army populations” is a broader term that also includes Civilian beneficiaries, Retirees, military working animals, and the family pets of Soldiers.

g. For National Guard personnel—

(1) Each State/Territory and the District of Columbia are considered separate installations. The National Guard State Adjutant General is the senior commander.

(2) The term “occupational health clinic” used in this pamphlet translates to “occupational health program” as pertaining to the National Guard. Each National Guard State/Territory does not operate its own occupational health clinic but rather administers and manages a jurisdictional occupational health program.

h. The term “senior Enterprise” level used throughout this pamphlet refers to the U.S. Army Medical Command (MEDCOM) Deputy Chief of Staff, Public Health (DCS-PH) and the U.S. Army Public Health Center (APHC). As a result of organizational changes mandated by the 2019 National Defense Authorization Act (NDAA), the senior Enterprise will include appropriate Army and Defense Health Agency (DHA) medical authorities.

1–5. Program elements

a. The Army PH Program is composed of program elements, which are the primary functional areas used to organize or group similar activities. Those activities are individual or collective tasks which are performed to produce or deliver a product or service to a stakeholder. These specific program elements include—

(1) Health surveillance and epidemiology.
(2) Occupational health.
(3) Environmental health.
(4) Veterinary services.
(5) Operational PH.
(6) Occupational and environmental medicine (OEM).
(7) Clinical PH services.
(8) Community-based prevention and health promotion.
(9) PH toxicology.
(10) PH laboratory services.
(11) PH emergency management.

b. Quality management, PH information systems, health risk assessment, and PH communication are four additional program elements that serve as key enablers of all PH services.

Section II

Army Public Health Enterprise

1–6. Enterprise function

a. The Army PH Enterprise is a unified PH team that applies enterprise-approach relationships. This PH Enterprise approach involves all PH assets across the Army, that is, those assets directly assigned to Table of Organization and Equipment (TOE) and Table of Distribution and Allowances (TDA) units. Table of Distribution and Allowances medical and PH organizations that provide PH services to the installation and surrounding military communities are hereafter referred to as “institutional” PH for the purpose of enterprise governance. Medical TOE units, and personnel possessing a PH-related job specialty and assigned to a TOE unit, are hereafter referred to as “operational” PH.

b. The Army PH Enterprise provides—

(1) Emphasis on readiness through a PH-centric approach with an overall strategy of prevention-based Army Medicine.
(2) A cohesive, standardized approach to Army PH, emphasizing prevention and healthy lifestyles.
(3) A single accountable agent for PH services, with shared responsibilities across the Army.
(4) Responsive, timely, efficient, consist, and effective appropriate PH support locally, regionally, and across the Army.
(5) Integrated and synchronized delivery of PH services through the use of a PHSL management process.
(6) Accountability, responsibility, monitoring, and oversight of Enterprise planning, programming, budgeting, execution, and evaluation for all PH services and products for the Army and for ensuring the execution of veterinary services across the Department of Defense (DOD).
(7) Synchronization, integration, and standardization of health and wellness programs and services at installations, including on-post programs such as suicide prevention, alcohol and substance abuse prevention, and fitness, for which TSG does not have Headquarters, Department of the Army (HQDA) functional proponency.
(8) Flexibility and interoperability to plan, resource, and cross-level PH assets more efficiently in training exercises and in response to PH emergency missions.
(9) Integrated PH planning, resourcing, training and assessment for timely response to PH threats such as the accidental or intentional contamination of food and water supplies; zoonotic and infectious animal diseases; and emerging and re-emerging communicable diseases.

(10) Development and promulgation of a standardized Army PH Program, technical guidance and assistance, professional development, quality improvement (QI), output/outcome assessment, and best PH practices across the PH Enterprise.

(11) Integrated PH performance improvement and innovation to produce efficient and effective Army PH services.

1–7. Enterprise governance

The Enterprise approach includes a defined set of business rules and best practices managed through the PHSL to provide Enterprise governance of Army PH activities and resourcing. Formal governance of the Enterprise, as described in this paragraph, applies directly to institutional PH organizations.

a. Enterprise governance in the PH functional area is the set of command and technical staff relationships, both vertical and horizontal; standardization of practices; management controls; monitoring; and oversight functions that provide planning, accountability, and quality improvement. This governance enables the implementation of an integrated and synchronized approach to PH.

b. The PH Enterprise governance process employs a system of management and controls exercised in the stewardship (accountability, transparency, and fairness) of the enterprise, including strategic direction, monitoring and evaluating performance, managing risk, and shareholder reporting.

c. These business rules will provide consistent, standardized enterprise guidance on organizational relationships; resource planning, programming and allocation; the conduct of monitoring and oversight; gap identification and solution; issue resolution; and processes for taking action as a result of governance activities.

d. Performance metrics are established and monitored for all PH areas within the PH Enterprise. Metric progress and status are communicated to leadership and other relevant stakeholders on a recurring basis.

e. A corporate time-tracking data system, such as the DOD Automated Time Attendance and Production System (ATAAPS) or Defense Medical Human Resources System-internet (DMHRSi), is used to record PH workload at the project and/or task level executed by TDA PH organizations.

f. Public health-related financial execution is tracked to facilitate reporting and analysis by PH subject area through the use of appropriate cost centers, work breakdown structure elements, functional areas and/or point accounts (8-digit Army Management Structure Codes).

1–8. Joint base considerations

a. The PH Enterprise approach is applied to the planning, execution, and governance of joint base PH services for Army personnel, in collaboration and coordination with the other Services involved in the joint base.

b. The application of PH Enterprise governance principles and practices to satisfy responsibilities for PH services is collaboratively developed, defined, and documented in the joint base memorandum of agreement (MOA).

1–9. Privatized facilities and operations considerations

a. The PH Enterprise approach is applied to PH assessment of privatized facilities (Residential Communities Initiative (RCI) for Family Housing and Privatized Army Lodging (PAL) Program projects) operating on Army installations and providing services to DOD beneficiaries, in accordance with the provisions of the Ground Lease.

b. As outlined in the Ground Lease, PH personnel are authorized to conduct scheduled and unscheduled assessments of privatized facilities to ensure compliance with applicable health and safety criteria. Unannounced PH assessments are permitted if the purpose/effectiveness of the assessment will be adversely affected by giving advance notice. For scheduled assessments, the RCI/PAL facility manager will be contacted, and prior coordination will be made. For unscheduled assessments, the PH inspector will contact the RCI/PAL facility manager immediately upon arrival or at the earliest possible opportunity (DODD 4715.1E, DODD 6200.04, and AR 210–22).

1–10. Public Health Service Line

a. The PHSL serves as a management process in PH Enterprise governance. The MEDCOM DCS-PH uses the PHSL for developing policy and guidance, maintaining accountability, and optimizing processes to accomplish the Army PH mission consistent with the current Army Medicine Campaign Plan and current TSG priorities. This approach supports a shift from a “stove-piped” PH model to an operating company model in order to integrate and synchronize PH activities and resources, as well as to facilitate efficient and effective mission execution.

b. The DCS-PH integrates data from program analysis, management controls, performance management, quality management, and best practices. These integrated data enable the DCS-PH to execute Army PH strategy by establishing policy, standards, guidelines, and business rules and practices, ensuring efficient and effective distribution of resources and capabilities.

c. The PHSL leverages the Public Health Management System (PHMS) and the Army Strategic Management System (SMS) to enable an integrated change management system containing standards of practice, metrics, performance dashboards, and status reports (see paras 3–12 and 3–13). The leveraging of technology enables analysis and sharing of lessons learned across the PH Enterprise. Ease of access to the PHMS enables and empowers the regional health authorities to monitor and control PH programs within their area of responsibility (AOR).

d. The PHSL aligns PH support with the current *Army Medicine Campaign Plan*. This alignment is achieved through collaborative development and coordination of strategic initiatives across the PH Enterprise to implement transformative changes in policy, business processes, and organizational responsibilities and procedures.

e. The PHSL objectives include—

(1) Strategically aligning PH services with the Chief of Staff of the Army and TSG goals to increase strategic and unit readiness and to assist regional health authorities, installation medical and PH authorities, and senior commanders in providing comprehensive PH support.

(2) Documenting PH services provided at all levels, and entering data into the appropriate systems of records.

(3) Developing a system of enterprise collaboration to integrate PH services throughout the Army and DOD to achieve unity of action and PH support.

(4) Assessing PH products and services to ensure quality and timely support is provided to all stakeholders.

1–11. Planning, programming, budgeting, and executing public health resources

a. The Defense Health Program appropriation is the primary source of institutional Army PH Program resourcing.

(1) The Headquarters (HQ), MEDCOM staff directorates for Human Resources, Resource Management, and Program Analysis and Evaluation, in collaboration with the DCS-PH and regional health authorities, provide PH Enterprise resource planning, programming, prioritizing, and budgeting, to include programming future year unfinanced requirements requests.

(2) Public health workload and personnel requirements will be identified, documented, and allocated using the PH Enterprise approach, MEDCOM Manpower–Public Health Workload modeling, and governance guidance, in collaboration and coordination with the HQ, MEDCOM staff directorates and the DCS-PH.

b. The Army's mission, goals, and objectives drive resource requirements. The Army identifies and articulates its resource requirements to the DOD through the DOD's Planning, Programming, and Budgeting System and the Army's Planning, Programming, Budgeting, and Execution System (see AR 1–1).

c. Knowledge and application of the principles of obtaining and executing resources through the Army's Planning, Programming, Budgeting, and Execution System are essential skills for Army PH personnel. Without such skills, Army PH personnel responsible and accountable for obtaining and executing resources will be unable to perform these functions.

d. The Army Management Structure is the official Army framework for interrelating programming, budgeting, accounting, and manpower control through a standard classification of all Army activities and functions. The Defense Finance and Accounting Service (DFAS)–Indianapolis Center (IN) DFAS–IN Manual 37–100–FY, published annually, is the fiscal code manual that provides the coding structure for a wide variety of Army and DFAS users.

1–12. Levels of public health service execution

Army PH services and activities are executed at the senior Enterprise, regional health authority, installation PH authority, and operational levels during garrison, training, combat, and other military operations. Public health-related activities of the U.S. Army Medical Department Center and School, Health Readiness Center of Excellence (AMEDDC&S, HRCoE); and the U.S. Army Medical Research and Materiel Command (USAMRMC) are also considered senior Enterprise-level functions. In general, installation PH authorities are charged with executing the Army PH services characterized in this pamphlet in garrison; operational PH personnel (or units) execute PH services in field environments during combat and in other operational settings. The actions listed below represent core PH functions and the circumstances in which those functions are administered at the various PH service levels. Instructions and guidance for specific PH services are contained within the chapters of this pamphlet.

a. Senior Enterprise-level services and activities include—

(1) Developing PH policy and doctrine.

(2) Developing Enterprise data metrics to monitor execution of PH services, and recommending improvements to the current state of PH services.

(3) Developing guidance and capabilities for all PH program elements specified in AR 40–5.

(4) Developing and delivering training on all of the PH program elements to PH assets at all levels.

(5) Developing and overseeing PH informatics and the requirements for external informatics program development.

(6) Collaborating with Federal, DOD, Army, multi-Service, industry, and international organizations.

(7) Providing direct support to combatant commanders, component commands, and regional health authorities for the execution of unique PH services that do not reside at lower echelons.

(8) Providing oversight and support to military activities and Command-level programs that manage regulatory compliance, hazards, health risks, and health outcomes associated with Army activities.

(9) Evaluating and assessing the impacts of policy decisions and PH initiatives with the potential for Enterprise impact.

(10) Supporting commanders and public affairs officials in the development and dissemination of PH communication products.

b. Regional health authority-level services and activities include—

(1) Planning, program development, and execution of regional PH services and capabilities.

(2) Conducting evaluations of PH services within the region.

(3) Providing technical services and consultations (commensurate with resource capabilities) that cannot be achieved by the installation PH authority, or providing regional services that impact a Command or geographic area beyond the scope of the installation PH authority.

(4) Coordinating with senior Enterprise-level PH for resources to assist installations when necessary resource capabilities do not exist at the regional level.

(5) Standardizing, providing oversight, and monitoring performance of installation PH services. This includes collecting and reviewing installation PH program records and data and submitting them to the senior Enterprise level for review and subsequent archival in appropriate PH information systems.

(6) Providing regional metrics data for all PH activities to the senior Enterprise level.

(7) Assisting installation PH authorities in their efforts to ensure all installation activities as characterized in paragraph 3–6 are accurately defined in the Defense Occupational and Environmental Health Readiness System (DOEHRS).

(8) Providing appropriate training to installation-level PH assets, and continuous quality improvement.

(9) Supporting commanders and public affairs officials in the development and dissemination of PH communication products.

c. Installation PH authority-level services and activities include—

(1) Planning, developing, and executing specific PH services and actions based on the criteria outlined in this pamphlet and other specified publications.

(2) Providing subject matter consultative services (commensurate with expertise and resource capabilities) to installation tenant organizations and military units.

(3) Coordinating with the regional health authority for resources to assist installations when necessary resource capabilities do not exist at the installation level.

(4) Providing project-, service-, task-, and product-level performance monitoring. See chapter 2 for guidance regarding operator-level quality assurance (QA) and quality control (QC) actions.

(5) Providing project-specific oversight, evaluation, and collaboration with supported garrison and training activities.

(6) Providing training for field personnel (for example, field sanitation team (FST) training).

(7) Managing all data associated with PH services, using the PH information systems specified in this pamphlet.

(8) Reporting metrics data up to the regional health authority level.

(9) Coordinating with public affairs to assist the garrison commander in developing PH risk communication strategies for notifying the installation population of any PH-related issue or emergency.

d. Operational PH services and activities:

(1) Public health personnel assigned to TOE units provide the tactical equivalent to the installation PH- and regional health authority-level services and activities that are performed in garrison.

(2) Operational PH personnel communicate and collaborate with the installation PH authority for monitoring and archiving PH activities in support of units during peacetime training events and exercises.

(3) Operational PH personnel document and report the PH services and activities performed during combat and contingency operations using the official PH information systems discussed in this pamphlet.

1–13. Contact for technical consultation

a. Requests for technical consultation for the PH services and activities presented in this pamphlet, as well as for other PH-related issues, are addressed through the appropriate technical chain of command before being elevated to a senior Enterprise subject matter expert.

b. The DCS-PH is the senior Enterprise representative for PH issues. In general, the APHC serves as the DCS-PH's subject matter expert for consultative support. Contact the APHC by—

(1) Calling toll free: 1-800–222–9698; defense switched network (DSN) 584–4375; or commercial 410–436–4375; or

(2) Visiting the APHC website at http://phc.amedd.army.mil/pages/contact.aspx.

Chapter 2
Quality Management and Accreditation

2–1. Quality management

a. Quality management—

(1) Enables PH Enterprise organizations to efficiently deliver the best possible products, services, and other deliverables to clients and stakeholders.

(2) Is a business philosophy based on the principle that long-term success of the organization depends on meeting customer needs and exceeding expectations.

(3) Focuses not only on the quality of the products or services provided but also on the means to achieve it.

(4) Depends on every member of the organization taking a vested interest in optimizing operational procedures and meeting a desired level of excellence in the products and services provided. Such focus within an organization creates what is known as a Culture of Quality.

b. A Culture of Quality comprises the following six foundational components:

(1) Leadership commitment.

(2) Quality management infrastructure.

(3) Employee empowerment.

(4) Customer focus.

(5) Teamwork and collaboration.

(6) Continual quality improvement.

c. To foster and sustain a Culture of Quality, PH Enterprise organizations at every level will develop and operate under a Quality Management System (QMS) that incorporates the six foundational components of a Culture of Quality.

d. A QMS is a collection of business processes focused on consistently meeting a desired level of excellence that is aligned with the organization's purpose and strategic direction. It is expressed as the organization's standardized plan and mechanisms for incorporating quality goals into daily operations.

e. Where possible, all PH Enterprise organizations will identify and adhere to a nationally or internationally recognized quality management standard, such as International Organization for Standardization (ISO) 9001, ISO 17025, Clinical Laboratory Improvement Program, standards for installation PH program accreditation (see para 2–6), or others as relevant to a particular organization's field of work.

f. Where a recognized QMS standard suitable to the organization's mission or field of work does not exist, PH Enterprise organizations will internally develop and operate a QMS that addresses the minimum QM functions described in paragraph 2–2, below.

g. All PH Enterprise organizations should obtain and maintain third-party accreditation of their QMS when it is operational. Accreditation demonstrates—to clients and stakeholders—an organizational commitment to performance improvement and quality.

2–2. Quality management functions

An effective QMS addresses four main quality management functions in its design and execution: quality planning, QA, QC, and QI. Quality planning and assurance are process-focused functions that emphasize pre-planning, communication, training, competency, and standardization of operating procedures to prevent mistakes and deficiencies. Quality control is a product-focused function that emphasizes measurement and evaluation of inputs and outputs to reject failures or flaws in the product or service provided. Quality improvement is a system-focused function that emphasizes elimination of root causes of mistakes and deficiencies, optimization of work processes, and incorporation of innovation. Following are the required steps to develop and implement a QMS that addresses the four main functions of quality management:

a. Establish and document quality objectives and guiding policies of the QMS.

b. Establish a process for reviewing and incorporating client requirements into products and services.

c. Establish, document, and control all operational procedures under the QMS.

d. Establish a system for training and for measuring the competency of personnel to accomplish assigned tasks.

e. Establish a process to monitor and evaluate the performance of the QMS (see para 2–3).

f. Establish a process for validating resources, supplies, or other inputs affecting the quality of the product or service to be provided.

g. Measure and evaluate the outputs or products to reject failures.

h. Establish a system for eliminating the root causes of performance deficiencies and product failures.

i. Establish a data management system and/or recordkeeping system to achieve audit readiness. All records necessary to reproduce and defend the work will be identified and maintained in a system of records.

j. Establish a process for receiving, evaluating, and incorporating client feedback into the QMS.

k. Establish a process for reviewing the adequacy and effectiveness of the QMS. This process is hereinafter referred to as a program evaluation (see para 2–4).

2–3. Compliance and competency monitoring

Monitoring of an activity is continuous oversight which seeks to establish the extent to which input deliveries, work schedules, other required actions, and targeted outputs are proceeding according to plan so that timely action can be taken to correct any deficiencies detected. Monitoring is a QA/QC function applied at each level of the Army PH Enterprise: regional authorities, installation PH programs, and each office or division within PH.

a. Policies and procedures for Enterprise oversight and monitoring are established at the senior-most level of the Army PH Enterprise.

(1) Monitoring functions are achieved through the development of Program metrics which are assessed from the data reported into the system of records by installation PH programs. Metrics data are compiled by the APHC and communicated to the regional health authorities.

(2) Regional health authorities maintain oversight of services administered at the installation level and use the metrics data and other information obtained from organizational-level inspections and evaluations as tools for managing PH program accountability.

b. Public health authorities monitor subordinate levels of the PH Enterprise to provide PH program managers/directors with feedback that will enable them to make improvements. This activity is at the core of the Army's Organizational Inspection Program (OIP) as described in AR 1–201. Commanders implement the OIP to ensure the requirements set forth in AR 40–5 are met.

c. To evaluate the performance and outcomes of installation PH programs, regional health authorities also conduct periodic site assistance visits and technical program assessments. Guidance is provided and actions are taken to eliminate program gaps and to strengthen program weaknesses.

d. All levels of the PH Enterprise will ensure competency of assigned personnel is regularly assessed against adopted core competencies (for example, Core Competencies for PH Professionals) through the establishment of a PH credentialing and competency assessment process. This may include a standardized process and system of records for reviewing and archiving relevant educational or professional accomplishments that are required for an individual to work within the scope of his or her position. Human resource support personnel routinely document competency-based job descriptions specific to the level of skill, training, experience, and education needed to qualify for each position. Individual development plans reflect professional development activities that support personal growth in individual competency as well as the needs of Army PH.

2–4. Program evaluation

All entities that implement PH activities are responsible for conducting program evaluations to assess program execution and determine whether intended outcomes and overall impact were achieved.

a. Program evaluation, which is one of the 10 Essential PH Services, aims to gather information to inform continuous program, policy, or initiative improvement. Evaluation findings are used to make program adjustments and resource allocation decisions.

b. Program evaluation is distinct from compliance and program monitoring. Program evaluation is the systematic assessment of a PH program, policy, or initiative to measure the quality of program activities in relation to program effectiveness and achievement of its stated goals, objectives, and outcomes.

c. See appendix B for more information regarding how program evaluation differs from compliance monitoring, program monitoring, and research; guidelines for conducting program evaluation at all levels of the PH Enterprise; a description of the range of program evaluation processes and activities; and the role of program evaluation in evidence-based PH.

2–5. Accreditation

a. Using an accreditation process to measure and report performance drives improvements in both processes and quality. Accreditation objectively validates that a QMS has addressed all requirements of a given standard and is operated as intended. Specifically, accreditation is a formal declaration that a PH organization has demonstrated—

(1) Competency to perform specific functions listed on its scope(s) of accreditation;

(2) A QMS that addresses and conforms to all elements of the appropriate performance standard, is documented per the identified standard, and is fully operational;

(3) Alignment of operations with the QMS and the performance standards that are the basis of the accreditation; and

(4) Conformity with any additional requirements of the accrediting body or specific fields or programs necessary to meet particular user needs. In some fields of work, such as laboratory analysis of clinical and environmental samples, accreditation is required by regulation.

b. Where a suitable accreditation program exists (for example, for PH laboratories), the PH program manager follows the appropriate accrediting body's requirements to attain and maintain accreditation status. Installation PH programs should be accredited to provide consistent, accurate, and reliable PH products and services. Clinical PH activities that directly relate to healthcare services are accredited or certified by external agencies (DODI 6025.13) such as The Joint Commission. This accreditation only applies to DOD medical treatment facilities (medical and dental) and DOD healthcare practitioners who are involved in the delivery of direct healthcare services. Public health activities that protect populations are not accredited by the same agencies that accredit health care. As such, the standards for PH activities that relate to services within healthcare settings versus those that are population-based are distinctly different and are accredited independently. Laboratories performing nonclinical testing such as, but not limited to, food, environmental, industrial hygiene, drinking-water, and microbiological testing will be accredited to the standards prescribed by regulatory and client-driven requirements. Accreditation standards information is contained in various publications and is not duplicated in this pamphlet. The requirements may vary based on the applicable performance standards and accrediting body.

2–6. Installation public health program accreditation

a. Many installation PH program activities and services are analogous to State, city, or county health departments. As such, the installation PH program should follow nationally recognized performance standards which are established for PH department accreditation.

b. Accreditation is a means to demonstrate the capacity of the installation PH program to deliver the 10 Essential PH Services (AR 40–5) to supported communities; it signifies that the installation PH program meets national standards. Accreditation has the potential to strengthen installation PH cross-cutting capacities and infrastructure by fostering the program's engagement in continuous QI, strengthening its management processes, and improving its accountability. The PH accreditation process in the Army can be expected to—

(1) Facilitate more efficient and effective business practices.
(2) Improve the delivery of PH services and programs.
(3) Enable identification of strengths and weaknesses, fill gaps, and address performance shortfalls.
(4) Document a PH program's capacity to perform core PH functions and deliver the 10 Essential PH Services.
(5) Promote transparency within PH.
(6) Increase visibility and accountability to all stakeholders.
(7) Stimulate quality improvement and performance management.
(8) Improve communication and collaboration with Military Health Services and PH partners.

c. Since national performance standards are considered the standards of practice, efforts to conform to them should be incorporated into the installation PH program's day-to-day operations. Accreditation improves PH by continuously improving performance and quality as gaps in the provision and assurance of PH services are addressed. Deliberate preparation focusing on specific performance improvement activities well before accreditation application will better position the installation PH program to conform to national PH department performance standards which are the basis of PH accreditation. Each installation PH authority implements a QI plan as outlined in appendix C of this pamphlet.

Chapter 3
Public Health Information Systems

3–1. Informatics

Public health informatics is the practice of information management by creating, storing, retrieving, assessing, and sharing information using official DOD, DHA, or Army PH information systems. It is a key aspect of PH because it provides the opportunity to document PH activities clearly so past actions can be analyzed, current actions adjusted, and outcomes improved. The use of information systems is integral to establishing accurate baselines and observing trends. The DOD and Army employ numerous informatics processes that utilize efficient and secure mechanisms to capture data and report it. Over time, this process of data collection and reporting will measure PH functions both qualitatively and quantitatively.

3–2. Army Public Health Data Repository

The purpose of the Army Public Health Data Repository (APHDR) is to enable collection of information and monitoring of PH priority concerns at the senior Enterprise level for the purpose of conducting surveillance and investigations, and informing interventions.

a. The APHDR is located at the APHC, which is responsible for data system management. Access to the data is restricted to authorized personnel with a need to know.

b. The APHDR currently encompasses the Army Behavioral Health Integrated Data Environment (ABHIDE), which is a comprehensive registry of multiple administrative data sets used by APHC's Behavioral and Social Health Outcomes Practice Division to routinely monitor suicidal behavior and answer requests for information from Army leaders. The ABHIDE enables efficient, rapid, and retrospective examinations of self-harm behaviors and the assessment of behavioral- and social health-related comorbidities such as posttraumatic stress, depression, substance abuse, domestic violence, and violent crimes. The information can be used to identify patterns and changes in risk factors for negative behavioral and social health outcomes over time. In addition, analysis provides military leaders and clinicians with the information they need to focus their prevention interventions, refine policies and programs, allocate and target resources to promote prevention, and support risk mitigation and early intervention for suicidal behavior and other negative behavioral and social health outcomes.

3–3. Army Wellness Center Health and Wellness Tracker

a. The Army Wellness Center Health and Wellness Tracker (AWCHWT) is a centrally managed online database that is used to collect and report health-related assessment data from clients participating in Army Wellness Center services. This database is a critical component in ongoing program monitoring and evaluation of Army Wellness Centers. It provides data in a centralized location for tracking aggregate changes in clients' health-related assessments over time, at the installation and region levels.

b. The Army Analytics Group manages database storage, security, and maintenance, and the APHC (Army Wellness Center Operations Division) manages database access, data collection, and functionality reconfiguration.

c. The database is accessible by all Army Wellness Center staff and clients at all locations. The APHC Army Wellness Center Operations Division provides all Army Wellness Center staff with access to the database. Staff members can use the database after they have achieved a Level 1 competency and have been trained on the appropriate data collection protocol. Staff members achieve a Level 1 competency by demonstrating, either verbally or through observation, that they have mastered all of the knowledge, skills, and abilities (KSAs) required to perform the functions of their position. Army Wellness Center staff KSAs are identified in competency assessments that are available on the Army Wellness Center Hub (that is, a SharePoint™ site managed by APHC Army Wellness Center Operations Division). The data collection protocol for the AWCHWT outlines how Army Wellness Center staff members are to document data collected during an Army Wellness Center client encounter. It provides guidance on which forms need to be completed whenever a particular service is provided. The AWCHWT data collection protocol is also available on the Army Wellness Center Hub.

d. Army Wellness Center staff and clients enter data into the database. Staff members enter the results of health-related anthropometric, physiological, psychological, and behavioral assessments they conduct, and clients enter self-reported health-related goals, behaviors, self-efficacy, readiness to change, and health risk factors. Data entry can occur before, during, and/or after each client visit.

3–4. Defense Medical Surveillance System

The Defense Medical Surveillance System (DMSS) is a central repository of medical surveillance data for the U.S. Armed Forces. Maintained by the DHA Armed Forces Health Surveillance Branch (AFHSB), the DMSS is a continuously updated relational database containing current and historical data on diseases, injuries, behavioral health, and medical events. More specifically, the system includes—

a. Personnel and demographic data (for example, service, gender, marital status) for all Active, Reserve, and National Guard components, including information from military entrance processing stations and casualty databases.

b. Medical data for Active Duty and activated Reserve and Guard members, including in-patient, ambulatory, reportable events, immunizations, and prescriptions.

c. Medical data for beneficiaries, including in-patient, ambulatory, and reportable events.

d. Medical laboratory data, including serologic specimens, chemistry, and microbiology records.

e. Deployment data, including rosters, pre- and post-deployment health assessments, and in-theater in-patient, in-theater ambulatory, and in-theater prescription records.

f. Historic data are maintained as follows:

(1) Casualty and immunization records since 1980.

(2) Personnel data from entrance processing stations since 1985.

(3) Serologic specimen data since 1985.

(4) Personnel and inpatient medical data since 1990.

(5) Deployment rosters since the Persian Gulf War (approximately 1990).

(6) Pre- and post-deployment health assessments since 1994.

(7) Reportable medical events (RMEs) since 1995.
(8) Ambulatory records since 1996.
(9) In-theater medical data since 2008.
(10) Chemistry and microbiology records since 2010.
(11) Prescription data since 2014.

g. The Defense Medical Epidemiology Database (DMED) provides remote access to a subset of data contained within the DMSS. In addition to current and historical data on diseases and medical events, the database includes hospitalizations, ambulatory visits, reportable diseases, and longitudinal data relevant to personnel characteristics and deployment experience for all Active and Reserve Component Service members. DMED registration can be found at https://www.health.mil.

3–5. Defense Occupational and Environmental Health Readiness System – Hearing Conservation

a. The Defense Occupational and Environmental Health Readiness System – Hearing Conservation (DOEHRS-HC), an MHS information system, is the DOD system of records used to collect, maintain, and report hearing conservation and hearing readiness data across the DOD enterprise. The DOEHRS-HC supports personal auditory readiness and assists with the prevention of significant hearing loss through the early detection of hearing changes. Data collected at the end-user level is exported, aggregated, and stored in the DOEHRS-HC data repository. DOEHRS-HC data repository access allows an end user to download the DD Form 2215 (Reference Audiogram) and DD Form 2216 (Hearing Conservation Data) hearing test data of monitored personnel into the end user's DOEHRS-HC desktop application, thus ensuring that any decrease in hearing is identified at early onset.

b. The Army Hearing Program uses DOEHRS-HC not only to monitor the hearing ability of military and Civilian personnel and provide program management tools for the Army Hearing Program, but also as an authoritative data source for Army Hearing Program metrics and Medical Protection System (MEDPROS) Hearing Readiness Classification calculations. DOEHRS-HC system use allows Army Hearing Program stakeholders to provide targeted hearing health education training, to equip personnel with fitted, appropriate hearing protection devices, and to recommend referrals for clinical care, when indicated.

c. DOEHRS-HC is available at https://doehrswww.apgea.army.mil/. The APHC provides assistance with DOEHRS-HC registration and other administrative support.

3–6. Defense Occupational and Environmental Health Readiness System – Industrial Hygiene

a. Background.

(1) The DOEHRS-Industrial Hygiene (IH) is a DOD application funded by the MHS. It is the DOD system of records used to manage unclassified OEH data, including selected veterinary PH data, for garrison and deployment operations. DOEHRS-IH is also the DOD's system of records for informing OEH risk management, as well as a foundational system for the individual longitudinal exposure record.

(2) DOD policy requires the Services to implement the use of DOEHRS-IH at all Regular Army, National Guard, and Reserve installations and facilities to document exposures and manage health risks during all phases of military operations. To meet this requirement, the entire PH enterprise (institutional and operational) must incorporate the use of DOEHRS-IH in its activities.

b. Application.

(1) DOEHRS-IH is a common access card (CAC)-enabled, web-based system available at https://doehrs-ih.csd.disa.mil/. It contains seven business areas—Industrial Hygiene, Environmental Health, Food Protection, Radiation, Incident Reporting, Registries, and Digital Library—and includes a module for filtering and reporting data from these areas.

(a) Industrial Hygiene. The IH business area is based on the 8-step DOD Exposure Assessment Model. The business area components include documenting people, processes, hazards, and controls at all work sites. Controls include personal protective equipment (PPE), administrative, engineering, substitution, and elimination. The IH user collects and enters quantitative and qualitative exposure assessments such as ventilation system assessments, air sampling results for chemical exposures, ergonomic surveys, and noise survey results. The IH user creates similar exposure groups to facilitate assessments and uses the Master Schedule to schedule worksite assessments based on risk and Army IH business practices.

(b) Environmental Health. The Environmental Health business area is designed to capture location-specific surveillance data related to environmental hazards and facility sanitation. This business area's components include documenting all aspects of Occupational and Environmental Health Site Assessments (OEHSAs) and associated surveillance activities for air, water, soil, thermal stress, entomology, food sanitation, general sanitation, and waste management. Location-specific Periodic Occupational and Environmental Monitoring Summaries (POEMS) are also stored in the Environmental Health business area. When the cohort is properly defined, this business area has the ability to associate personnel not only to a location for a given time frame but to exposure pathways as well.

(c) Food Protection. Veterinary Services personnel use the food protection module to document food safety surveillance (that is, military sanitary inspections) conducted in retail stores and bulk food storage sites; installation food vulnerability assessment tracking; Prime Vendor audits; and nonapproved food sources.

(d) Radiation. The Radiation business area manages data associated with potential radiation hazards. It includes radiation surveys; air, soil, water, and surface wipe sampling data; bioassay and tactical dosimetry data collected during an exposure incident; and has the ability to document x-ray, laser, and radio frequency-emitting equipment. *Note: The dosimetry and bioassay data contained in DOEHRS-IH supports the Registries (see subpara (f), below) and serves as an indicator that a dosimeter was worn or internal monitoring was conducted. The data in DOEHRS-IH is not an Occupational Dose of Record. Occupational Doses of Record are managed by the U.S. Army Dosimetry Center in accordance with AR 385–10.*

(e) Incident Reporting. The Incident Reporting module manages data associated with OEH exposure incidents and includes initial field account and incident reporting surveys, potentially exposed populations, and associated hazards.

(f) Registries. The Registry business area is used at the APHC level exclusively. Registries are created to document potential exposures to a group of individuals who may require long-term surveillance and to document communications with registry participants. Environmental health surveillance registries include the ability to link all related data from other business areas in DOEHRS-IH.

(g) Document Library. The Document Library module in DOEHRS-IH replaces the functionality of the unclassified Military Exposure Surveillance Library (MESL) and is used to manage OEH surveillance data that cannot be managed in another module of DOEHRS-IH.

(h) Business Objects Reporting. The Business Objects Reporting feature in DOEHRS-IH allows users to conduct data queries and trend analysis. Users are able to view current and historical data either discretely or collectively, including laboratory results for food and environmental samples collected in theater and processed through a military PH laboratory.

(2) All unclassified surveillance, inspection, and sampling data associated with each of the business areas characterized in subparagraphs *b*(1)*(a)–(f)*, above, are entered in DOEHRS-IH whenever a CAC-enabled unclassified computer with internet connectivity is available. When connectivity is not available, information is collected on the DOEHRS-IH data collection documents found at https://phc.amedd.army.mil/topics/envirohealth/hrasm/pages/doehrs_resources.aspx. At the time connectivity is reestablished, an electronic record is created in DOEHRS-IH, data is entered, and the original paper document is scanned and posted to the official DOEHRS record.

c. Training and resources.

(1) A DOEHRS-IH account is established by all PH personnel in garrison and field units who are charged with the mission for conducting inspections, surveys, or sampling as characterized in subparagraphs *b*(1)*(a)–(e).* Commanders will ensure that their units are trained on DOEHRS-IH and that DOEHRS-IH is used in their respective unit's mission for all aspects of PH that have a DOEHRS-IH component.

(2) Prior to DOEHRS use, training is required for familiarization with navigating, entering data, and retrieving information from the system. Training is available through the AMEDDC&S HRCoE, APHC, and regional health authorities; downloadable training materials are also available through the link provided in subparagraph *b*(2), above.

3–7. Department of Defense Suicide Event Report

Defense Health Agency Connected Health (formerly the National Center for Telehealth and Technology) oversees the Department of Defense Suicide Event Report (DODSER). The DODSER is the exclusive tri-Service comprehensive data collection program created to gather key information on suicidal behavior (https://www.dspo.mil).

a. The APHC Behavioral and Social Outcomes Practice Division is responsible for Defense Suicide Prevention Program management and oversight for the Army according to AR 600–63 and DODI 6490.16.

b. The Army strategy for using the DODSER is to provide uniform collection and recording of suicidal behavior and contextual risk and protective factors. Formatted data are used for epidemiological investigation and monitoring, cost analysis, programmatic evaluation of suicide prevention strategies, and reporting to stakeholders.

c. Clinicians at medical treatment facilities (MTFs) enter the DODSER data manually. The installation medical authority is responsible for appointing a DODSER contact and ensuring reporting compliance in accordance with AR 600–63.

3–8. Disease Reporting System–internet

The Disease Reporting System-internet (DRSi) is the only DOD system used for reporting medical events as outlined in the *Armed Forces Reportable Medical Event Guidelines and Case Definitions*. DRSi data are submitted to DHA-AFHSB on a weekly basis for import into the DMSS.

a. Background.

(1) The purpose of the DRSi is to provide PH authorities at all levels a means to monitor, control, and prevent the occurrence and spread of reportable infectious and noninfectious diseases, as well as conditions and outbreaks.

(2) The DRSi is a web-based, CAC-enabled interface that allows PH and other medical personnel at MTFs to record RME information and transmit it to the APHC for analysis, reporting, and integration into the DMSS.

(3) Application, control, and maintenance of DRSi are a joint operation between the APHC and the Navy and Marine Corps Public Health Center (NMCPHC). Data are stored on servers housed by the NMCPHC.

(4) Routine follow-up and surveillance are conducted daily by high-end users at the APHC, region, and other levels.

(5) Mandated for use by all Services, the *Armed Forces Reportable Medical Events Guidelines and Case Definitions* contains the standard list of RMEs, including outbreaks.

b. Use of DRSi.

(1) MTF staff can request access to the DRSi website by contacting the APHC Disease Epidemiology Division at usarmy.apg.medcom-aphc.mbx.disease-epidemiologyprogram13@mail.mil or by calling (410) 417–2377. In order to complete the process, each user will need to complete DD Form 2875 (System Authorization). The form can also be downloaded from the APHC website at https://phc.amedd.army.mil/topics/healthsurv/de/pages/default.aspx.

(2) Technical assistance with DRSi use, along with related training, is available through the APHC (paragraph 1–13*b*). Public health personnel play a key role in educating MTF clinical and laboratory staff about RMEs listed in the *Armed Forces Reportable Medical Events Guidelines and Case Definitions* and the importance of their timely reporting to DRSi.

(3) The DRSi reporters at the MTF enter data about an RME into the DRSi website as information becomes available. Installation PH personnel can also use DRSi to report other unusual diagnoses and to track other non-reportable diseases or conditions of local interest.

(4) The APHC evaluates and reviews all RMEs, outbreaks, and PH responses to ensure consistency of response across all Army MTFs.

c. Validation. All RMEs entered into DRSi must be validated by an APHC epidemiologist to ensure consistency in reporting across all Army MTFs according to the *Armed Forces Reportable Medical Events Guidelines and Case Definitions*.

3–9. Enterprise Laboratory Information Management System

The Enterprise Laboratory Information Management System (ELIMS) is the current system of records for PH laboratories; it is centrally funded by MEDCOM. ELIMS is used for key PH laboratory business processes such as sample receipt and log-in; analysis; quality control; invoicing; management reports; and customer reporting. The use of ELIMS increases productivity through automation, standardizes common processes across Army PH laboratories, and standardizes the management and reporting of Army PH laboratory results.

a. ELIMS supports common laboratory automation solutions, including the adoption of data parsers for the automated transfer of electronic data from laboratory instruments directly into the system.

b. A minimum of one representative and alternate from each Army PH laboratory is appointed to serve on the ELIMS Configuration Control Board, which provides an ELIMS governance structure to best meet the needs of the Army PH laboratories.

c. Army PH laboratories should appoint a local ELIMS Administrator or arrange for support from another Army PH laboratory.

d. ELIMS interacts with other PH information systems, such as DOEHRS-IH. These interactions may be based upon unidirectional interfaces, bi-directional interfaces, and standardized electronic data deliverables or output files.

3–10. Electronic Surveillance System for Early Notification of Community-based Epidemics

a. The Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) is a DHA-maintained system which monitors and provides alerts for rapid or unusual increases in the occurrence of infectious diseases and biological outbreaks. This system provides near real-time syndromic surveillance of healthcare data based on patients' chief complaints, laboratory and radiology orders, pharmacy prescriptions, and International Classification of Diseases (ICD) codes. For information or support, contact the DHA Global Service Center by calling toll-free 1-800–600–9332, or via Email at servicecenter@dha.mil.

b. Instructions for obtaining access to ESSENCE are provided in the *ESSENCE Registration Guide*, available at https://www.med.navy.mil/sites/nmcphc/documents/program-and-policy-support/essence_registration_guide.pdf.

c. Training is available at https://www.med.navy.mil/sites/nmcphc/program-and-policy-support/drsi/monthly-disease-surveillance-training/pages/default.aspx.

3–11. Military Exposure Surveillance Library

a. The MESL is a DOD resource required by DODD 6490.02E and maintained by the APHC. Operating on the classified data system, the MESL is a classified application for managing classified OEH surveillance data that cannot be entered into DOEHRS-IH.

b. Previously available on the unclassified data system, the MESL has been migrated to a new Document Library module in DOEHRS-IH. Active MESL users who also have an account in the DOEHRS-IH DOD Deployment Surveillance Program Office are provided access to the new Document Library module (see subpara 3–6*b*(1)(*g*)).

c. The MESL provides the capability for PH personnel to submit classified OEH documentation to a centralized data management system as well as to search, view, and download classified OEH documents.

d. Only classified data should be submitted to the MESL. Unclassified data related to OEH surveillance should be managed in DOEHRS-IH.

3–12. Public Health Management System

a. The PHMS is a CAC-enabled, unclassified web-based system for installation-, regional-, and senior Enterprise-level PH program evaluation and performance improvement; it is available at https://usaphcapps.amedd.army.mil/phms/.

b. The PHMS includes mission-specific Program Status Reports, the PHMS Dashboard, synopses of key policy and regulatory documents, and resourcing information. The PHMS Dashboard displays metric data—drawn directly from the SMS—that enable leadership at all levels to view the health status of the populations for which they are responsible in order to make improvements.

c. PHMS Program Status Report data calls are self-assessments completed by installation PH assets and must be completed in a timely and accurate manner. These assessments comprise the system of records for PH data not collected elsewhere. Program Status Reports—

(1) Contain no personal identifiable information or protected health information.

(2) Provide TSG, the DCS-PH, regional health authorities, and installation PH staff with data to review for overall trends and to identify changes needed for the services, policies, guidance and resources at the applicable levels.

3–13. Strategic Management System

The SMS, which is the Department of the Army (DA)'s performance management tool, aggregates and displays metric data. The SMS is available at https://www.sms.army.mil/cms and is also accessible through the PHMS. Army Medicine has adopted the SMS as the database of record for analytical commentary and decisionmaking at the senior leader level. Public health data is loaded into SMS by subject matter experts and can be viewed directly via the SMS and the PHMS Dashboard.

3–14. Veterinary Service Information Management System

The Veterinary Service Information Management System (VSIMS) is a tri-Service application supporting Veterinary Service personnel and DOD food protection, veterinary PH, and operational missions at more than 700 locations around the world. It provides for collection and immediate delivery of targeted and relevant data to the entire chain of command and all appropriate customers, along with immediate availability of data required for mission performance to member personnel. VSIMS delivers modular management of workflow associated with the functions listed below:

a. Electronic management of the safety and quality of the DOD food supply through the following support functions:

(1) Management of the *Worldwide Directory of Sanitarily Approved Food Establishments for Armed Forces Procurement*.

(2) Management of sanitation audit reports of commercial establishments providing food to the DOD.

(3) Tracking of subsistence recalls and responses.

(4) Management of food and water risk assessment (FWRA) activities.

(5) Management of operational rations inspections.

(6) Tracking for the food laboratory destination monitoring program.

b. Management of installation support plans regarding—

(1) Food delivery and storage inspections.

(2) Animal housing sanitation and safety inspections.

c. Management of animals involved in potential rabies exposures. Veterinary Service personnel enter select bite-scratch data from DD Form 2341 (Report of Animal Bite – Potential Rabies Exposure) into VSIMS for internal form tracking only. The information from the DD Form 2341 (excluding personally identifiable information and protected health information) is entered manually into the following VSIMS data fields:

(1) Treating Location.

(2) Veterinary Treatment Facility (VTF) Name.
(3) Local Bite Number.
(4) Date of Bite-Scratch Incident.
(5) Date DD Form 2341 was initiated by the MTF.
(6) Date DD Form 2341 was received by the VTF.
(7) Date Action Initiated.
(8) Disposition managed by local authorities (yes or no).
(9) Animal disposition: Quarantine, Tested (positive or negative); Unable to Locate; Quarantine Not Required.
(10) Date DD Form 2341 returned to the PH Environmental Health office.

d. VTF equipment data.

3–15. Veterinary Services System Management

The Veterinary Services System Management is a DHA data system that currently consists of the Remote Online Veterinary Record (ROVR) system. Military VTFs use ROVR to record all aspects of animal medical care. ROVR is also utilized by or receives input from the Joint Pathology Center, the Working Dog Management System of the Air Force, the DOD Food Analysis and Diagnostic Laboratory, and external laboratories (Antech Diagnostics, for example). All of these inputs function to make ROVR a comprehensive system of records for animal health. Veterinary Services personnel also utilize ROVR to compile data, evaluate care, and assess veterinary-relevant metrics. During deployments or in other situations where ROVR is inaccessible, patient information is recorded on Standard Form (SF) 600 (Medical Record—Chronological Record of Medical Care) and entered into ROVR as soon as possible thereafter.

3–16. Public health information tools and models

a. The Force Risk Reduction (FR2) tool (available at https://joint.safety.army.mil/pages/home.html) is a DOD enterprise-level, data warehousing and monitoring tool that integrates related information in a central location for a more comprehensive and integrated representation of Total Force wellness. The information in FR2 can be used across organizational levels to evaluate trends and assist organizations in identifying areas to reduce risks inherent in daily operations, and to minimize unexpected and unintentional negative consequences that harm personnel and erode readiness/operational capacity.

(1) FR2 retrieves information from more than 400 million records across 13 different data sets (that is, the Defense Manpower Data Center, Defense Civilian Personnel Advisory Service, and Service Safety Centers) supplying 3 to 10 or more years of historical data for trending analysis. FR2 dashboards and reports display this data by Service, Installation, Major Organization, and Department and provide the capability to drill into the details that comprise fatalities, injuries, mishaps, Civilian lost time, costs, and rate denominators.

(2) FR2 currently integrates data for these categories: Military Injuries, Civilian Lost Time, Civilian Workers' Compensation Claims, Casualty Notifications, Air Evacuations, Population Strength (for Active Duty, Reserve, National Guard, Civilian, and Cadet), Population Full-time Employee (for the overall Military, Reserve, National Guard, and Civilian), Deployments, Department Costs, as well as the Service fatalities and mishaps tracked by the Service Safety Centers. FR2 mishap data are based on the mishap data elements defined in DODI 6055.07.

b. The Medical Cost Avoidance Model (MCAM) is a web-based application capable of estimating return on investment for the implementation of hazard mitigation strategies and PH programs. The MCAM assists leaders at all levels in making informed risk management decisions based on the predicted cost avoidance (such as medical, lost time, training, disability, fatality) resulting from hazard risk reduction and injury/illness prevention. The MCAM is managed by the APHC Health Hazard Assessment Division and is available at https://phc.amedd.army.mil/topics/workplacehealth/hha/pages/medical-cost-avoidance-model.aspx.

Chapter 4
Health Risk Assessment

4–1. Introduction

a. Many activities and services of Army PH are shaped by an understanding of the health risks faced by Soldiers, Families, DA Civilians, and other relevant populations. How well PH personnel comprehend and articulate that understanding to affected parties, decisionmakers, and commanders impacts the quality, timeliness, and cost effectiveness of preventive measures, intervention programs, and other risk management decisions made by commanders and policymakers. Therefore, health risk assessment is fundamental to Army PH practice.

b. Health risk assessment is both a process and a professional discipline.

(1) Health risk assessment is a process that is used to estimate risks by synthesizing available information to identify—

(a) Health hazards.

(b) The probability or likelihood of exposure.

(c) The magnitude and timing of exposure.

(d) The specific kinds of injury, illness, or other effects caused by exposure.

(e) The severity of effects.

(f) The probability or likelihood that exposure will result in predicted effects.

(2) As a PH discipline, health risk assessment is a multidisciplinary field of practice that is focused on the methods used to evaluate exposure to hazards, predict health risks and outcomes, and inform decisionmaking to control or otherwise respond to unacceptable exposures.

c. Health risk assessment is a core PH capability that optimizes Soldier protection in all environments and enables health and wellness for Soldiers, Family members, DA Civilians, and other populations. Per AR 40–5, health risk assessment capabilities and knowledge assets are developed and integrated across the Army PH Enterprise.

d. Health risk assessment supports commanders' risk management decisionmaking (ATP 5–19, Army Doctrine Reference Publication (ADRP) 3–37, and ADRP 4–0) and health and safety risk management programs (AR 11–35, AR 525–2, DA Pam 385–30, and DODD 4715.1E). Public health personnel apply health risk assessment techniques that are uniquely tailored to their component specialties. Health risk assessment techniques are built upon common concepts and principles that apply across functional areas and the tactical, operational, and strategic levels of decisionmaking.

e. Public health informatics is an integral component of the performance of health risk assessments (see para 3–1).

f. Appendix D provides a broad framework for Army health risk assessment, establishes key concepts, defines the relationship between risk assessment and risk communication, and provides implementation guidance.

4–2. Health-based exposure guidelines

a. A primary activity of health risk assessment is the establishment of health-based risk assessment guidelines. These guidelines serve as common risk assessment or health promotion tools to improve health and prevent disease and injury. Examples of health-based risk assessment guidelines are water quality criteria, body mass index (BMI) levels, physical fitness guidelines, nutrition recommendations, chemical safety standards, reference doses, cancer slope factors, military exposure guidelines, and the demarcations between endemic, epidemic, and pandemic levels of disease.

b. Health-based guidelines can be categorized into tiers relative to their importance or stature. In the field of Environmental Health, for example, such guidelines can be referred to as criteria, standards, or guidelines. Differences in the terminology can be important: criteria generally carry legal weight, standards are generally regulatory in nature, and guidelines tend to serve as consensus recommendations. Health-based guidelines are critically important tools for risk assessment and risk management. They provide consistency across programs and establish targets for health protection and health promotion. They can serve as triggers for ranking risks or responding to potential elevations in risk, such as when additional risk assessment may be needed, or follow-on medical surveillance should be initiated. Health-based guidelines also serve as targets for material solutions for hazard detection, identification, alarms, and laboratory analysis.

c. The development of health-based exposure guidelines is a technical task that involves collaboration between health risk assessment practitioners and the personnel responsible for developing and interpreting toxicology and epidemiology data and analysis.

4–3. Health risk assessment information technology

Quantitative health risk assessments are fundamental tools of the trade for many PH program elements. Quantitative assessments require health risk assessment modeling applications and databases to effectively bring health risk assessment techniques to bear on health threats facing the Army. Advances in computing power, computation speed, and information networks allow for more sophisticated risk assessments, including more rapid evaluations of uncertainty and the comparative analysis of courses of action. Risk communication with all stakeholders is enhanced by the rapid dissemination of information and data across the internet and through advancing communications technology. All areas of Army PH should seek ways to incorporate health-effective and cost-effective information technology solutions into the practice of health risk assessment.

4–4. Health risk assessment activities, capabilities, and consultations

a. Health risk assessment activities are generally performed at the lowest level of execution within the Army PH Enterprise and require full development of those capabilities at that level. The installation PH authority provides health risk assessment support to the garrison; similarly, operational PH personnel and units provide support within their defined AOR in the operational setting.

b. Effective health risk assessment requires a combination of subject matter expertise, risk assessment experience, and targeted technical and risk communication training. Successful application depends on the required skills and experience unique to each military PH problem under investigation and often requires multidisciplinary teams. The APHC provides both broad and specialized health risk assessment support (see para 1–13*b*), which includes—

(1) Supporting installation environmental program managers during their execution of FHP.

(2) Occupational and environmental health support, which includes chemical, biological, radiological, and nuclear (CBRN) surveillance and risk management; environmental, safety, and occupational health programs; environmental restoration and protection; emergency management; and the sustainable range program.

(3) Providing assistance with the following during an exposure incident:

(a) Designing suitable sampling plans based on the exposed populations and identified hazards.

(b) Assessing identified hazards.

(c) Determining individual and collective protection options.

(d) Documenting risk management actions and their efficacy.

(e) Managing and maintaining the exposure incident risk assessment in DOEHRS-IH.

(4) Reviewing health risk assessments prepared for Army programs and operations to ensure they are based upon consistent principles and practices and provide reliable, scientifically defensible input to decisionmakers.

(5) Advising and consulting on the generation and use of toxicology studies, exposure assessment and exposure reconstruction studies, exposure registries, disease registries, epidemiological studies, health surveillance activities, or health education programs executed to evaluate, mitigate, or prevent adverse human health effects from exposure to health hazards.

(6) Supporting materiel development and acquisition for health risk mitigation programs, including hazard detection, measurement, assessment, protection, and exposure documentation.

(7) Developing or providing health risk assessment procedures, techniques, guidance technical manuals, tools, and databases.

(8) Developing health-based exposure guidelines for OEH (including CBRN) hazards when such guidance for military-unique exposures does not exist (AR 40–5 and AR 70–75).

(9) Developing POEMS that provide a review of OEH (including CBRN) hazard exposure issues that occur at specific base camp locations during combat and contingency operations.

(10) Providing consultation on OEHSAs, to include—

(a) Designing suitable sampling plans based on the exposed populations and identified hazards.

(b) Evaluating identified hazards.

(c) Generating rapid health risk assessments to support tactical and operational risk decisions.

(d) Identifying appropriate individual and collective protection options.

(e) Documenting OEHSAs in DOEHRS-IH and evaluating the efficacy of associated risk management activities.

(11) Identifying emerging contaminants and potential impacts to the Army, particularly as they relate to human health (see DODI 4715.18). Army PH personnel work with headquarters Army staff and installations to develop risk management actions to minimize the impact of emerging contaminants on supported populations.

Chapter 5
Public Health Communication

5–1. Introduction

a. Public health communication employs a science-based process to inform and shape decisions that enhance health. Involving a multidisciplinary area of research, theory, and practice, PH communication includes such fields as risk communication, health communication, and health marketing. Public health communication uses a wide range of methods to plan, design, execute, and evaluate communication programs and activities based on the particular PH issue or threat.

b. Appendix E provides additional information, recommended training, tools, and resources to support the planning, development, implementation, and evaluation of PH communication activities.

5–2. Risk communication

a. Risk communication is the process used to effectively exchange information about a real or perceived health risk in order to inform, achieve consensus, or change behaviors over a broad spectrum of PH missions. Risk communication is most effective when used proactively in an effort to ensure that the level of stakeholder concern is appropriate given the real or perceived health risk at issue.

b. Risk communication is often considered a skill reserved for use in a crisis. However, "classic" risk communication situations are those that involve conflict, disagreement, mistrust, skepticism, anger, or fear that may be immediate or revealed over time. The most effective approach is to integrate risk communication into the overall risk management planning process when an issue is first identified, thus establishing strong relationships among leaders, experts, and stakeholders before a crisis occurs.

c. Risk communication focuses on accomplishing two critical goals: identifying and addressing an affected community's emotions and perceptions in high-stakes, emotionally charged, controversial, and low-trust situations; and effectively communicating technical, scientific, and medical information in terms that are understandable and relevant to the target audience or audiences. See paragraph E–7 for additional information.

d. Effective risk communication is a transparent, proactive process predicated on strong relationships with stakeholders, based on mutual trust and respect, before real or perceived health risk issues arise. This process promotes an open, two-way dialogue so the nature and scope of issues can be identified more quickly and accurately. See paragraph E–8 for additional information.

e. Risk communication is an important element of the risk assessment process introduced in chapter 4 and detailed in appendix D. Risk communication principles are to be applied throughout the entire risk assessment process in order to develop effective and publicly supportable risk management decisions. Effective health risk assessment requires a combination of subject matter expertise, risk assessment experience, and targeted technical and risk communication training and execution.

5–3. Health communication

Health communication, like health education, seeks to shape attitudes, knowledge, beliefs, and behaviors about health—often involving large, demographically diverse audiences (Clift & Freimuth, 1995). Health communication employs evidenced-based communication strategies to shape and inform decisions that enhance health. Public health surveillance efforts assist in the identification of health problems, behaviors, or policies to be changed. Health communicators can conduct an audience analysis to identify the target audience's needs and values; the results help inform the development of a communication plan. The communication plan documents objectives, evaluation metrics, key messaging, communication products, and the best means of reaching and involving audiences. Key personnel, such as visual information specialists, public affairs specialists, subject matter experts, and program evaluators, should be consulted during the planning, implementation, and evaluation of a health communication campaign or program.

5–4. Health marketing

Health Marketing (also referred to as Social Marketing) is a multidisciplinary area of PH practice that uses traditional marketing concepts and principles and adds science-based strategies to create, communicate, and deliver health information and interventions.

a. Health Marketing is a new area of practice that is still being refined. For effective marketing, a "product must be tailored to customer needs, priced realistically, distributed through convenient channels, and actively promoted to customers" (Lovelock & Wirtz, 2004). Additional information on Health Marketing Basics is available from the U.S. Centers for Disease Control and Prevention (CDC) at https://www.cdc.gov.

b. The CDC (CDC, 2011a) identifies four fundamental marketing elements, also known as the "Marketing Mix" or "four Ps," that are integral to health marketing:

(1) *Product:* The item, good, or service that is being provided that delivers benefits to those who consume it; includes quality, packaging, design, and brand name.

(2) *Price:* Monetary and nonmonetary costs to the market.

(3) *Place:* Channels and locations where the product can be obtained.

(4) *Promotion:* Direct communication, publicity, and advertising.

5–5. Functions, services, and capabilities

a. Direct support is available at the senior Enterprise level for the execution of unique PH communication services and capabilities that do not reside at lower echelons.

b. Public health communication services are coordinated with and executed in support of Army commanders, public affairs staffs, technical personnel, medical personnel, installation advisory boards, PH personnel, and anyone whose responsibilities include communicating about health. Public health communication services include—

(1) Consultative support.

(2) Training.

(3) Development or review of communication methods and tools, including social media messaging, and web and mobile content.

(4) Printed and downloadable health information products and educational materials developed by APHC.

c. All medical and PH personnel should—

(1) Improve their knowledge and practice of health and risk communication through available training and readings. See appendix E for a list of available and recommended training opportunities.

(2) Coordinate with local and regional public affairs personnel when developing PH communication messaging or campaigns and—

(a) Become proficient in developing and applying evidence-based PH communication strategies, processes, and techniques to convey technical or scientific information to a nontechnical, anxious, or concerned audience more effectively.

(b) Integrate with relevant Army and DOD programs, education, and advocacy efforts for a comprehensive approach.

(c) Identify DOD or Army organizations with similar communication goals, and discuss opportunities for potential collaboration to maximize reach and the efficient use of resources.

(d) Synchronize and coordinate communication efforts with the Commander's Ready and Resilient Council (CR2C) (formerly named the Community Health Promotion Council) and CR2C facilitators, Army Wellness Centers, and other key partners (see chap 13 and AR 600–63).

(e) Engage risk communication-specific expertise through the senior Enterprise level as needed.

(3) Routinely incorporate PH communication principles into the planning and delivery of PH products and services.

(4) Evaluate and assess audience engagements and risk communication efforts. Share lessons learned with the APHC and the MEDCOM Directorate of Public Affairs to assist in shaping subsequent strategic messages and PH products, and provide advance notice of pending or growing concerns. See figure E–2 for a sample feedback template.

(5) Review all related Army policies involving Army information systems and the release of information to the public, to include AR 25–1, AR 25–2, AR 25–30, DA Pam 25–91, and AR 360–1.

d. Commanders at all levels should—

(1) Integrate health risk communication and audience perception factors into planning for, and the management of, operational risks.

(2) Coordinate with medical and public affairs personnel to—

(a) Communicate PH issues and health risks to military personnel and/or the general public.

(b) Develop and integrate a PH communication strategy into health, crisis, and emergency response communication planning efforts and data collection.

(3) Execute health communication principles, as recommended by medical, PH, and public affairs experts.

(4) Review all related Army policies involving Army information systems and the release of information to the public as specified in subparagraph *c*(5), above.

5–6. Communication activities

a. Public health communication encompasses a wide range of risk communication, health communication, and health marketing activities and products. Given the requirements set forth for public affairs officers in AR 360–1, many of these activities will require public affairs officer support and involvement, including, but not limited to—

(1) Stakeholder identification and partnership development.

(2) Audience analysis and needs assessment.

(3) Cultural recognition.

(4) Community outreach.

(5) Perception evaluation.

(6) Message and product development.

(7) Individual and group instruction.

(8) Print and broadcast (television, radio, newspapers, and magazines) product development.

(9) Social media messaging and analysis.

(10) Media relations.

(11) Communication interventions, to include campaigns, implementation, and dissemination of messaging and products.

(12) Health advertising.

(13) Monitoring and evaluation of communication activities.

(14) After action reports.

b. See paragraph E–10 for additional information about health communication activities and strategies.

Chapter 6
Health Surveillance and Epidemiology

Section I

Health Surveillance

6–1. Introduction

Health surveillance is the regular or repeated collection, analysis, and interpretation of health-related data and the use of the data to prevent, reduce, or treat disease and injury. Army health surveillance is used to help document the nature, magnitude, and distribution of health threats and exposures, diseases, and injuries; to focus PH and risk communication efforts; and to document the effectiveness of interventions and countermeasures. Health surveillance can also identify potentially harmful occupational and environmental agents and data from the medical and administrative databases used for medical surveillance.

a. The design, integration, and use of Army medical and personnel information systems must support disease, injury, and behavioral health surveillance in order to assess, maintain, and protect the health of Army personnel throughout their time in service, as well as that of other healthcare beneficiaries. Health surveillance activities are extended to include the essential Civilian and contractor personnel who directly support deployed Forces (see DODI 1400.32 and DODI 1100.22).

b. Health surveillance activities (see DODD 6490.02E and DODI 6490.03) are conducted before, during, and after deployments to—

(1) Collect, analyze, and interpret health-related data on the health status of Army personnel, other beneficiaries, and military working animals.

(2) Identify health hazards, risks, and exposures to Army personnel, other beneficiaries, and military working animals.

(3) Monitor trends and risk factors for disease, injury, and behavioral health conditions related to military service or living or working in a military environment.

(4) Assist in monitoring occupational, environmental, and other health threats and stressors.

(5) Help assess disease and injuries, combat and operational stress casualties, and combat casualties, including those produced by CBRN warfare threat agents.

c. The DOD Serum Repository (DODSR) was established to support the identification, prevention, and control of diseases associated with military service. Sera submitted by the Services from other personnel or beneficiaries, such as Civilian employees, are accepted. DODSR specimens may be available for surveillance or special studies by request to the AFHSB. The serum repository and other systems of records containing health surveillance information will comply with DODD 6490.02E, AR 25–22, and AR 25–55.

d. Health surveillance of Army Civilian employees includes the collection and analyses of data related to Civilian occupational disease and injury, and compensation trends. Reports of these analyses are provided to installations, major subordinate commands, direct reporting units (DRUs), Army commands (ACOMs), and Army service component commands (ASCCs). These reports should include interpretation and guidance to improve the prevention and control of disease and injury.

6–2. Functions

Public health surveillance and epidemiology are the foundation for disease and injury prevention because they provide the factual basis from which to set priorities, plan programs, and take actions to protect the health of Army populations. Health surveillance, epidemiology, and outbreak/field investigation functions include those performed by the APHC, regional health authority, installation medical authority, installation PH authority, and public health emergency officer (PHEO), as described below.

a. The APHC—

(1) Maintains and provides capabilities to support disease, injury, and behavioral health surveillance at fixed installations, during training missions, and during overseas deployments.

(2) Collects and analyzes data describing the incidence of diseases, injuries, and behavioral health conditions on installations, and reports the analytical results annually (or more frequently, as agreed upon) to commanders, installation medical or PH authorities, and other PH stakeholders.

(3) Provides epidemiological consultation (EPICON) services for the scope of EPICON activities listed in paragraph 6–5.

(4) Provides the epidemiological resources to maintain an Army epidemiological database and to perform analysis and reporting of military PH information in support of DOD comprehensive military medical and behavioral health surveillance.

(5) Monitors and assists, as requested, with the execution of outbreak investigations conducted by regional or installation medical and PH authorities to ensure the effective management of acute PH threats.

(6) Provides staff for and operates the DOEHRS Technical Integration Office in support of the DOD Military Health System Clinical Information Technology Program Office and the DOEHRS Project Manager.

(7) Provides subject matter experts in support of defining functional requirements for DOEHRS applications and in support of DOEHRS development efforts as requested from the DOEHRS Project Manager.

(8) Coordinates the deployment environmental surveillance aspects of DOEHRS with the DOEHRS Project Manager.

(9) Maintains the DOEHRS data repository as the consolidated central archive of data for the Army and DOD.

(10) Develops risk communications and PH information products to support threat emergencies and outbreaks.

(11) Supports military operations by—

(a) Integrating, analyzing, and interpreting health surveillance data to assess medical and behavioral health threats in order to plan appropriate countermeasures.

(b) Designing and operating systems to rapidly identify medical and behavioral health threats that emerge during operations, and recommending applicable preventive countermeasures.

(c) Providing oversight and evaluation for all epidemiological investigations to support outbreaks and RMEs, either through deskside, field investigation, or EPICON support.

(d) Providing analysis of surveillance data to determine proper epidemiological response to disease mitigation.

b. The regional health authority—

(1) Provides resources and training necessary to implement disease prevention and control measures, health surveillance, and planning and response to emergencies and outbreaks.

(2) Oversees the quality and execution of field investigations conducted by the installation medical and PH authorities to ensure the effective management of acute PH threats.

(3) Coordinates with PH subject matter experts to develop risk communications and PH information products to support emergency and outbreak planning and response plans.

c. The installation medical authority—

(1) Reports unusual occurrences of health outcomes (for example, infectious diseases, injuries, mental or behavioral conditions) or environmental or occupational-related health hazards to the installation PH authority and appropriate commanders so corrective action can be taken immediately.

(2) Consults with the installation's designated PHEO on unusual disease occurrences or diseases that are normally associated with PH emergencies.

(3) Through the MTF's Medical Emergency Manager (MEM), creates, maintains, and utilizes plans to rapidly detect and respond to emergencies/outbreaks. An emergency/outbreak response plan outlines local investigative capabilities and includes—

(a) Standards for surveillance and procedures for analysis of data.

(b) Schedules for review of disease trends.

(c) Thresholds at which a response is to be initiated.

(d) Meaningful involvement of local health department personnel and affected community members.

(e) Staffing considerations.

(f) Timely notification to appropriate PH Enterprise personnel.

(g) Reporting of the outbreak in DRSi.

(h) Evaluation of response effectiveness.

(i) Training and exercises to evaluate and improve responses.

(j) Ensuring health surveillance, analysis, and response functions are codified in local plans and standing operating procedures (SOPs). Local policies and practices should adhere to all DOD, DA, and medical regulations, policies, and directives, as well as relevant state and local PH requirements.

(4) The MTF should have at least two personnel with ESSENCE access (see para 3–10) and at least one person with DMED access to augment its disease surveillance capabilities (see para 3–4*g*).

d. The installation PH authority—

(1) Monitors and reports disease and injury trends in the population.

(2) Conducts epidemiological investigations of suspected disease outbreaks and injury or illness occurrences capable of reducing military effectiveness or readiness.

(3) Provides PH resources to implement health surveillance and to detect and investigate conditions affecting the health of the installation, as well as potential outbreaks of disease in populations within the senior commander's AOR.

(4) Recommends control measures to stop disease transmission or mitigate an outbreak.

(5) Documents outbreaks and the actions taken to mitigate their spread.

(6) Oversees all outbreak and disease responses to ensure that a standardized response is used for all situations, and to ensure FHP.

(7) Consults with the installation's designated PHEO on unusual disease occurrences or diseases that are normally associated with PH emergencies.

(8) Conducts a post-outbreak investigation response evaluation in an after action review.

e. The PHEO—

(1) Maintains situational awareness of PH and medical threats.

(2) Ensures appropriate epidemiological investigations are conducted in the event of a PH emergency.

(3) Performs other activities as appropriate (see chap 15).

6–3. Reportable medical events

a. The standard list of RMEs, found in the *Armed Forces Reportable Medical Events Guidelines and Case Definitions*, is mandated by the DOD to facilitate analysis and comparison of RMEs within and among the Services. Each RME is described and is accompanied by a case definition and required data elements.

b. The DOD consensus list of RMEs uses predetermined selection criteria derived from each Service's stated objectives for medical event reporting.

c. Reportable events are entered into DRSi by MTF personnel as information about the event becomes available. Medical events, including outbreaks, as defined by the *Armed Forces Reportable Medical Events Guidelines and Case Definitions*, are reported through the DRSi. Cases of botulism, human rabies, and novel influenza should be reported within 24 hours of diagnosis. Chlamydia and gonorrhea are reported into DRSi within 7 business days of diagnosis. Any other RME should be entered within 2 business days of diagnosis.

d. All RMEs entered into DRSi must be validated by APHC epidemiologists to ensure the reporting is consistent throughout all Army MTFs and in accordance with the *Armed Forces Reportable Medical Events Guidelines and Case Definitions.*

e. Preventive Medicine physicians play a key role in educating the medical staff in other clinics and the clinical laboratory about RMEs and the importance of their timely reporting through the DRSi to the AFHSB. The case finding module in DRSi may be used to simplify the case reporting associated with positive laboratory results.

f. Other unusual diagnoses, nonreportable diseases, or conditions of local interest can be also reported in DRSi under "Any other unusual condition not listed."

6–4. Disease and nonbattle injury surveillance

a. DNBI surveillance (reported as counts or rates) is an important part of health surveillance at all levels (for example, unit, site/installation, regional, component command, and theater) and must be conducted regularly. Abnormal patterns and trends may indicate a problem that could negatively affect mission accomplishment, identify potential PH emergencies, and/or indicate the need for additional investigation and, if validated, the need to implement appropriate preventive countermeasures (see MCM–0017–12).

b. The purpose of DNBI surveillance is to promote and maintain healthy and fit deployed Forces through monitoring of illnesses and injuries and instituting targeted interventions as needed. Specific objectives include—

(1) Communicable disease outbreak detection.

(2) Sentinel event detection, primarily related to RMEs and burgeoning PH emergencies.

(3) Other relevant areas of PH, such as injury prevention and the monitoring of environmental and occupational exposure sources.

c. DNBI surveillance is not meant to capture the overall clinic/hospital caseload, justify specific resources, or track other business-oriented aspects of healthcare operations. DNBI surveillance also does not focus on the incidence of chronic diseases where preventive efforts in a theater of operation are generally neither effective nor available (for example, cancer or cardiovascular disease). These types of chronic conditions should be prevented, identified, or treated in the garrison setting prior to deployment or movement into an operational area, as part of periodic health assessment (PHA) and predeployment health assessment activities.

d. DNBI surveillance is conducted for U.S. Military and other personnel eligible for DOD medical care. Where applicable, DNBI surveillance data should also be recorded and archived for others who receive care from U.S. Military medical assets. Such recipients include third country nationals, local nationals (both military and civilian), detainees, prisoners of war, and refugees. DNBI surveillance methods may also be applied to military working animals.

e. Local DNBI data are evaluated at least once daily, with more frequent attention paid to infectious disease categories during periods of increased threat, such as when intelligence reports indicate a planned attack with a biowarfare agent, or during an ongoing illness outbreak.

f. Upstream authorities, such as the Component Command Surgeon, Joint Task Force Surgeon, APHC, and AFHSB, are available to monitor regional or command-focused aggregates, possibly identifying larger patterns and trends.

g. See appendix F for acute respiratory disease (ARD) surveillance guidelines.

Section II

Outbreaks and Field Investigations

6–5. Introduction

a. Detecting abnormal disease rates and patterns, and distinguishing them from normal but unusual occurrences, are the principal goals of health surveillance.

b. All outbreaks are reported through DRSi. The APHC coordinates and collaborates with regional health authorities and impacted installations to ensure completion of all outbreak documentation. Evaluation of the situation and response efforts should be conducted jointly between the APHC and the affected MTF in coordination with the supporting regional health authority.

c. EPICON services are the central epidemiological investigative resource provided by the APHC. Such services range from electronic and telephonic consultations to on-the-ground investigation teams at local sites. Certain situations may necessitate deployment of an epidemiological response team. EPICON services are available by request through medical command channels to APHC to support Army medical organizations worldwide.

d. EPICON and field investigative services include support for—

(1) Infectious diseases.

(2) Occupational diseases.

(3) Injuries (acute, overuse, environmental, and occupational).

(4) Frequently occurring illnesses.

(5) Public health aspects of humanitarian and disaster relief operations.

(6) Behavioral and social health concerns.

(7) Other situations involving the application of epidemiological methods.

(8) Health outcome evaluations of program services aimed at the items presented above.

e. The appropriate requesting medical authority provides operational control for a field investigation as well as local administrative and logistical support.

6–6. Investigations

a. Epidemiological field investigations are conducted when a cluster of disease or injury cases is suspected to be in excess of what is normally expected for a particular population. Often, the first step in an epidemiological investigation is to determine whether the cluster of disease or injury cases does in fact exceed the endemic rate of disease. This determination is accomplished by confirming recent cases and reviewing local data on historic disease rates. Endemic rates vary with each disease. While a few cases of viral gastroenteritis in a large population may be typical, a single case of bacterial meningitis would trigger an outbreak investigation. An outbreak or epidemic is defined as an increase in the observed number of cases of a disease or condition above what is expected in a given population in a geographic area over a period of time. When an outbreak or epidemic is identified or even suspected, local PH authorities should be contacted to conduct an epidemiological investigation.

b. Outbreak investigations are critical to disease control. Outbreaks, including those derived from a single acute event such as food poisoning, should be investigated and reported. Details of the methods and findings of the investigation must be compiled and submitted to the APHC. Investigations that reveal excessive numbers of occupational injuries are reported to Army Safety personnel.

c. Field investigations are also conducted to help explain high injury rates in a selected population.

d. When epidemiological investigations require resources or expertise beyond local capabilities, consultative support should be requested through the supporting regional health authorities.

e. Timely and efficient flow of accurate information is essential to the successful completion of any epidemiological investigation. Communication channels must be opened and maintained among all parties involved.

f. The installation PH authority should enter required reports in DRSi as soon as possible after the suspected or confirmed diagnosis of an RME. Certain cases may also warrant a Significant Incident Report or a Commander's Critical Information Request (CCIR) to be completed and submitted through command channels. Consult the local commander, the regional authority, or the APHC for guidance.

g. Electronic or telephonic consultation with epidemiologists at APHC may be obtained by contacting the Clinical Public Health and Epidemiology Directorate (see para 1–13*b*).

Chapter 7
Occupational Health

Section I

Occupational Health Services

7–1. Introduction

a. Army Occupational Health comprises those activities and functions implemented by a variety of professionals to anticipate, identify, assess, communicate, mitigate, and control occupational illness and injury threats to Army personnel, and support to human resources and line managers for employment-related programs.

(1) Occupational threats may include chemical, biological, radiological, psychological, and physical hazards and may occur in garrison, field training, or deployed environments. Occupational health services focus on prevention and are tailored to specific hazards that are anticipated or identified for the defined population.

(2) Support to human resources and line managers includes medical qualification determinations, as needed, to inform employment decisions to hire, retain, terminate, or accommodate Civilian employees; and worker compensation services to Civilians who select Occupational Health as their provider to deliver care following a work-related injury or illness. This support is based on Office of Personnel Management (OPM) regulations and the implementation of the Americans with Disability Act and the Equal Employment Opportunity Act in the Federal workplace.

b. Occupational health services include capabilities that promote the health and safety of the individual, the unit, the workplace, and the community. Services may focus on hazard education or on medical surveillance to facilitate early detection of adverse outcomes associated with the occupational environment. In the event that adverse injury or illness outcomes occur, occupational medical services aim to restore health and productivity.

c. Army medical assets executing occupational health missions and services should effectively coordinate, collaborate, and synchronize their efforts with other occupational health stakeholders (for example, commanders, human resources personnel, and safety assets) to best ensure safety and health across the DOD and Army Enterprises.

d. The objectives of Army Occupational Health are to—

(1) Ensure that Army personnel are physically, mentally, and psychologically suited to their work at the time of their assignment, and that their physical and behavioral health is monitored to detect early signs of job-related injury or illness.

(2) Protect Army personnel from adverse effects of health and safety hazards in the work environment, that is, field operations, garrison, industrial, and administrative workplaces.

(3) Provide medical care, rehabilitation, and return-to-duty programs for occupationally ill and injured Civilians who select Occupational Health as their care provider under their worker compensation program.

(4) Reduce loss (manpower and economic) caused by occupation-related injuries and illnesses of Army personnel.

(5) Prevent decreased combat readiness caused by occupational illness and injury of Army personnel throughout the full spectrum of military operations.

e. Occupational health services consist of the following interdependent clinical and nonclinical functions:

(1) Industrial hygiene.
(2) Ergonomics.
(3) Hearing conservation.
(4) Vision conservation and readiness.
(5) Ionizing and nonionizing radiation exposure and medical surveillance.
(6) Support to surety, personnel reliability, and other occupational reliability services.
(7) Reproductive hazards.
(8) Bloodborne pathogens.
(9) Indoor environmental quality.
(10) Emerging occupational hazards.
(11) Health hazard education.
(12) PPE.
(13) Respiratory protection.
(14) Occupational illness and injury prevention and control.
(15) Worksite evaluations.
(16) Worksite epidemiological investigation.
(17) Evaluation of occupational health services and activities.
(18) Worker compensation.
(19) Asbestos exposure control and surveillance.

(20) Occupational medical determination and surveillance examinations.

(21) Aviation medicine (AVMED).

(22) Work-related immunizations.

f. The control of exposures to known occupational hazards utilizes a hierarchy of controls. These controls include elimination or reduction of the hazard, such as substitution of a less toxic chemical; engineering controls, such as use of a mechanical lift device; and administrative controls, such as training and PPE. Within the hierarchy of controls, the use of PPE is the least preferable solution.

g. Army occupational health is shaped by an understanding of the health risks faced by Soldiers, Army Civilians, and other relevant populations. Army PH Program operators use health risk assessment techniques that are uniquely tailored to their component specialties, including occupational health. Additional health risk assessment process information can be found in chapter 4 and appendix D of this pamphlet.

h. Army occupational safety and health criteria are derived from the provisions of the Occupational Safety and Health Act; the regulations, standards, and criteria promulgated by the Occupational Safety and Health Administration (OSHA); and consensus standards. The Army must comply with OSHA standards for all nonmilitary-unique operations, and must apply, in whole or in part, as practicable, OSHA standards to uniquely military equipment, systems, operations, or workplaces. The Federal regulations promulgated by the Nuclear Regulatory Commission (NRC) (Title 10, Code of Federal Regulations (10 CFR)), the Food and Drug Administration (FDA) (21 CFR), and the Department of Transportation (49 CFR) set additional standards and requirements for ionizing and nonionizing radiation. AR 385–10 establishes the exposure standards for both ionizing and nonionizing radiation. The current American Conference of Governmental Industrial Hygienists® (ACGIH®) threshold limit values (TLVs®) are the criteria that apply within the Army when OSHA standards are less protective or when no OSHA standards exist. When other alternate or supplemental criteria are necessitated by military uniqueness, the existing standards and regulations are followed until justification is forwarded through command channels and Office of The Surgeon General (OTSG) approval is obtained. Refer to paragraph 4–2 of this pamphlet and to DA Pam 40–503 for additional information.

7–2. Industrial hygiene

Industrial hygiene is devoted to the anticipation, recognition, evaluation, prevention, and control of those environmental factors and stresses arising in or from the workplace which may cause sickness, impaired health and well-being, or significant discomfort among workers or community citizens. Industrial hygienists function as a team with the occupational health staff, occupational medicine staff, and installation safety office. Army Industrial Hygiene is vital to Occupational Health by providing exposure and assessment data and recommendations for inclusion into employees' personal records for medical surveillance. Refer to DA Pam 40–503 for detailed implementing instructions and guidance for the execution of Army Industrial Hygiene services.

7–3. Ergonomics

a. DA Pam 40–21 provides guidance and procedures for implementing the Army Ergonomics Program. An emphasis on early identification and prevention of work-related musculoskeletal disorders (WMSDs) and associated risk factors will preserve and protect the military and Civilian workforce while decreasing related costs. The goals of ergonomics are to—

(1) Prevent or control injury and illness by eliminating or reducing worker exposure to WMSD risk factors.

(2) Reduce the potential for fatigue, error, and unsafe acts by designing workstations, equipment, and jobs that match workers' capabilities.

(3) Increase the overall productivity of the workforce.

(4) Reduce workers' compensation claims and associated costs.

(5) Improve overall unit readiness.

b. A collaborative partnership among all levels of the working community is essential for achieving ergonomic goals. Command emphasis and commitment by management, with demonstrated visible involvement, are imperative to provide the organizational resources and motivation needed to implement a sound ergonomics policy. All levels of DA personnel (manager, supervisor, worker, and Soldier) identify risk factors and reduce the incidence of WMSDs.

c. Implementing an effective installation ergonomics plan will help reduce WMSDs and workers' compensation claims. This plan may improve product quality, productivity, and personnel morale, as well as decrease costs. Ergonomics capabilities should include workplace analysis, hazard prevention and control, education and training, and evaluation.

7–4. Hearing conservation

The Army Hearing Program comprises four elements: hearing conservation, hearing readiness, clinical hearing services, and operational hearing services (see paras 10–27 through 10–30). Hearing conservation focuses on protecting military

and Civilian personnel from hearing loss due to workplace noise exposures. The four elements of the Army Hearing Program embody the leadership policies, strategies, and processes to prevent noise-induced hearing loss among military and Civilian personnel. DA Pam 40–501 provides detailed guidance regarding the Army Hearing Program. Hearing conservation and readiness data are managed in DOEHRS-HC (see para 3–5).

7–5. Vision conservation and readiness

An effective Army Vision Conservation and Readiness Program (VCRP) promotes and optimizes Soldier vision and optical readiness. Civilian personnel vision and optical readiness requirements are defined by line management and human resources personnel according to 5 CFR 339 (for appropriated fund (APF) employees) and AR 215–3 (for nonappropriated fund (NAF) employees), with VCRP guidance. The VCRP is essential to ensure a safe and healthful working environment; it applies to garrison, field training, and operational environments. An effective VCRP is implemented and administered according to the procedures, principles, and guidance provided in DA Pam 40–506 and includes occupational vision, eye safety, and environmental vision components. MEDCOM G-3/5/7 healthcare delivery is the medical proponent of vision conservation and readiness.

7–6. Occupational radiation exposure and medical surveillance

a. Occupational radiation exposure. Policy and guidance for the comprehensive Army Radiation Safety Program are provided in AR 385–10, Technical Bulletin, Medical (TB MED) 521, TB MED 523, TB MED 524, TB MED 525, and Technical Manual (TM) 1–1500–335–23. The Program is directed at safeguarding personnel, the environment, and property from ionizing and nonionizing radiation hazards.

b. Ionizing radiation medical surveillance. Routine medical examinations for individuals occupationally exposed to ionizing radiation are not necessary. Evaluations of elevated exposures below the legal limit (5 rem for whole body exposure) do not necessarily indicate the need for a medical examination; however, evaluations of Army personnel who have received higher doses, known as "reported overexposure," may require a medical examination. The circumstances associated with the reported overexposure and the estimated organ or whole-body dose should help determine the type and extent of any examination, as well as the types of laboratory or medical tests.

c. Nonionizing radiation exposure and medical surveillance.

(1) The installation medical authority and the responsible occupational health clinic ensure that personnel potentially exposed to nonionizing radiation receive appropriate medical examinations as required by DODI 6055.15 and DOD 6055.05-M with specific details in DA Pam 40–506.

(2) No suitable personal dosimeters exist for measuring individual exposures to nonionizing radiation.

(3) Some medical treatments (such as phototherapy at Dermatology clinics) intentionally expose the skin of individuals to ultraviolet (UV) radiation from artificial sources. Application of UV radiation for medical treatment is an authorized practice as long as the radiation is confined to the treatment area, and the medical treatment benefit outweighs the risk posed by the UV radiation.

(4) See paragraph 1–13*b* for the consultative support contact.

7–7. Support to surety, personnel reliability, and other occupational reliability programs

a. The Army has established multiple services governing surety and reliability programs. These programs are oriented to assigned tasks or to assess populations or materials, which the Army especially safeguards. Medical support to these programs includes health records screening, medical evaluations and examinations, and required communications from the supporting clinic to the managers and supervisors of affected personnel. In addition, many of the personnel in these programs receive ongoing occupational medical surveillance for hazards associated with their assigned duties. Occupational Reliability Programs may include uniformed, Civilian, and contractor personnel. Chemical, biological, and nuclear surety are specialized services designed to ensure that chemical and biological warfare materials and nuclear material and reactors are handled securely and that personnel working with these materials are protected appropriately. AR 50–5 prescribes the Army Nuclear Surety Program, AR 50–6 prescribes the Army Chemical Surety Program, and AR 190–17 establishes the Army's Biological Select Agents and Toxins (BSAT) Security Program. Each of these includes a Personnel Reliability Program (PRP), special handling and screening of medical records, and treatment of potential and actual casualties.

b. The PRP supports the Army's Surety Program and the BSAT Security Program. The goal of the PRP is to ensure that individuals who have access to or control of Surety or BSAT Program materials meet the highest standards of reliability and can perform their Surety or BSAT Program duties safely. The components of the PRP include—

(1) Initial screening of medical records.

(2) Evaluation of personnel for evidence of reliability.

(3) Continuing evaluation and periodic screening of personnel performing surety program duties.

c. Additional guidance related to the Army's medical support to Surety Programs and PRP services may be found in the Office of the Assistant Secretary of the Army (Installations, Energy, and Environment) Memorandum, subject: Interim Guidance on Occupational Health Practices for the Evaluation and Control of Occupational Exposures to Nerve Agents GA, GB, GD, GF and VX and Mustard Agents H, HD, and HT, 23 January 2013; and Army Directive 2013–03, Chemical Accident or Incident Response and Assistance, 4 April 2013; with enclosures thereto. As required by AR 50–5, AR 50–6, and AR 190–17, OTSG publishes additional detailed guidance on the manner of execution of tasks required for medical support to PRP and Surety Programs, and specifies the required training content and procedures for providers and clinic staff in order to support Surety and PRPs and for chemical, nuclear/radiological, or BSAT accident and incident response and assistance. Consultation and assistance to MTFs and occupational health clinics is also available from APHC for optimal support to these programs.

d. AR 190–56 establishes the Army Civilian Police and Security Guard Program. This includes the Individual Reliability Program which, similar to the PRP, ensures the Army's Civilian police force and security guards meet the Army's standard for reliability and can perform their duties safely. This program includes medical fitness standards, requirements for initial and continuing reliability screening to detect disqualifying factors (see AR 380–67), and hazard-specific medical surveillance.

e. A number of other uniformed and Civilian employee populations are also subject to screening. These include personnel requiring access to arms, ammunition, and explosives and their key and lock systems; controlled medical substances and sensitive items; and Category 1 and 2 radionuclides of concern. It also includes Army Drug Testing Program unit prevention leaders and collection site personnel, drivers of nontactical vehicles, mail handlers, and personnel in charge of Soldiers in Initial Entry Training or minors. Support to these services (such as screening of medical records and reliability assessments) is usually provided by the Occupational Health clinic (for Civilian employees) and primary care or troop clinic staff (for uniformed personnel).

Section II

Occupational and Environmental Medicine

7–8. Scope of occupational and environmental medicine

The OEM component of PH specializes in the prevention, surveillance, screening, diagnosis, and treatment of work-related and environmental exposure-related injuries and illnesses. OEM professionals support human resources and line managers who make employment decisions to hire, retain, terminate, or accommodate Civilian employees by delivering medical qualification determination services according to OPM regulation 5 CFR 339 for APF employees, and AR 215–1 and AR 215–3 for NAF employees, as well as other applicable DOD and Federal agency regulations regarding disability and equal employment opportunity.

a. OEM professionals provide individual clinical services, population-based expertise, and serve as subject matter experts when providing senior Enterprise-level guidance. OEM services are focused on Soldiers, Civilian employees, and other beneficiaries working or residing in DOD-owned or -leased property and in a deployed or operational setting. Occupational Health Nurses and Privileged providers who provide occupational health/medicine care and services (except physicians who have completed an occupational medicine residency and physician's assistants (PAs) who have completed the Army PA master's program in Occupational Medicine) should complete the Fundamentals of Occupational Medicine Course series (6H-2716 F20DL and 6H-F20 resident course, or its current version).

b. OEM professionals are advisors and subject matter experts regarding the threats that pose a significant risk to Army readiness and individual and population health.

c. OEM professionals work with other PH professionals to manage and administer services that enhance FHP and readiness, promote and sustain worker health, control healthcare costs, and improve Soldier and Civilian retention by—

(1) Assessing, preventing, and mitigating the short- and long-term health impacts from potential and actual environmental and occupational exposures, identified through worksite visits and recorded in DOEHRS-IH.

(2) Developing strategies to prevent the recurrence of adverse health effects from known environmental and occupational threats.

(3) Developing policy and guidance for the medical management of DOD-unique occupational and environmental exposures.

(4) Conducting PH investigations on the association between exposures and health outcomes.

(5) Delivering medical qualification determination services to human resources and line management personnel who make employment decisions to hire, retain, terminate, or accommodate Civilian employees; providing position-specific medical qualification assessment services for Soldiers, when requested.

(6) Developing and conducting—

(a) Population-level medical surveillance and individualized medical screening examinations.

(b) Worker health promotion and health and hazard education.

(c) Medical management of occupational and environmental illnesses and injuries.

(d) Professional training and educational programs.

(7) Supporting organization/agency responses to Federal Employees' Compensation Act (FECA) claims reviews.

d. OEM contributes to the response to actual and potential environmental and occupational exposures by conducting—

(1) *Exposure reconstruction studies.* These studies, which are investigations of OEH-related illnesses and/or syndromes, help identify the source of exposure and enable decisionmakers to develop strategies for response and prevention. OEM services include clinical assessments to confirm biological effects from the presence of OEH hazards.

(2) *Occupational and environmental medicine surveillance.* OEM surveillance provides population-level diagnosis data for OEH-related syndromes and illnesses. This information assists in directing OEH surveillance efforts as described in chapters 6 and 7.

(3) *Risk communication.* The development and dissemination of relevant, factual, transparent, and timely information comprise a critical element of the PH response plan. Refer to chapter 5 and appendix E.

(4) *Educational initiatives that target healthcare providers.* Educational initiatives offer information about the signs and symptoms of illnesses caused by exposure to anthropogenic and naturally occurring occupational and environmental substances.

e. The APHC maintains an OEM consultation service which provides—

(1) Provider-to-provider clinical consultations to assist all military and U.S. Department of Veterans Affairs (DVA) healthcare providers (HCPs) in addressing individual patients' military occupational- and environmental exposure-related health concerns.

(2) Educational and reference materials for Service members, HCPs, and PH personnel.

(3) Subject matter expert responses to Congressional, DOD, and DA inquiries.

7–9. Functions

In addition to the overarching Army PH Enterprise functions outlined in paragraph 1–12, OEM support functions are performed at three levels within the Enterprise: the APHC, regional health authorities, and installation medical and PH authorities.

a. The APHC—

(1) Promotes recognition of known and novel health effects from exposure to anthropogenic and naturally occurring occupational and environmental hazards.

(2) Conducts investigations and assessments into the health effects from occupational and environmental hazard exposures to the total Army workforce.

(3) Develops registries of populations affected by occupational and environmental exposures, as directed or clinically warranted, and coordinates with the DOD and other Federal agencies as needed.

(4) Conducts epidemiologic studies of the health impacts of deployment, particularly as related to environmental hazards and exposures.

(5) Resources and provides oversight for the training of Army OEM residents.

(6) Provides didactic and practicum training experiences for Army OEM residents.

b. Regional health authorities—

(1) Enforce training of all subordinate unit and MTF clinicians, including medics and health technicians, for recognition of the early signs and symptoms of hazardous occupational and environmental exposures, including CBRN, whether anthropogenic or naturally occurring, whether intentionally released or otherwise, and whether in operational or installation settings. This training must include information about medical management, including stabilization and acute treatment for such exposures.

(2) Ensure all subordinate unit and MTF OEM providers complete functional training as required in AR 40–68 and by means of Army OEM courses provided by the AMEDDC&S HRCoE and the APHC. Examples include Fundamentals of Occupational Medicine, the DOD Hearing Technician Certification Course, and the Vision Conservation and Readiness Course.

c. Installation medical and PH authorities—

(1) Document into DRSi all clinical cases of suspected, reported, or confirmed CBRN warfare agent exposure, intentional or accidental, naturally occurring or anthropogenic.

(2) Must select in DRSi "Any other unusual condition not listed," ensure their comments state "alleged/reported CBRN agent exposure," and enter all available relevant information, including the—

(a) Location, date, and time of the incident.

(b) Unit rosters of all personnel involved (affected or potentially exposed).

(c) Circumstances, mechanism, and route of exposure.

(d) Health concerns, signs, and symptoms believed by the exposed to be related to the exposure.

(e) HCP-observed or -diagnosed health outcomes of the exposure, and the existence and results (as available) of any medical testing performed to confirm either the exposure or a related health condition.

(f) Acute, known, or anticipated latent health outcomes and any medical follow-up required.

(g) Documentation of PPE or countermeasures used, the effectiveness of and compliance with such countermeasures, and any other exposure response activities.

(h) Results of environmental monitoring.

(i) Attachments or descriptions of any health risk communication materials provided to HCPs, employees, individuals, or the population at risk.

7–10. Occupational medical determination and surveillance examinations

a. DODD 6490.02E specifies requirements for medical examinations based on occupational exposures or specific position description medical requirements. Occupational medical surveillance provides risk-based medical screening or examinations for early detection of occupational diseases or illnesses that may be associated with work tasks or workplace exposures of a physical, chemical, biological, radiological, or psychological nature. Occupational medical surveillance activities also provide—

(1) Documentation of occupational exposures for use in post-deployment and post-service medical assessments; medical studies; and health risk assessments.

(2) Evaluation of the effectiveness of protective and risk mitigation procedures.

(3) Provision of health risk information that is useful to commanders in deployed settings for assessing the occupational health risks posed by military operations.

b. AR 40–5 directs the implementation of DOD 6055.05–M. This manual provides health professionals with information and references appropriate for developing and conducting occupational medical surveillance examinations and screenings. Other references that provide policy, guidance, and information regarding job-related examinations are identified below and cited in appendix A.

(1) 5 CFR 930, Subpart A. This code provides requirements and procedures for periodic medical evaluations for APF civilian employees required to operate a Government-owned or -leased motor vehicle (acquired for other than short-term use for which the Government does not have full control and accountability) to carry out their assigned duties properly.

(2) OPM Federal Position Classification and Qualifications website, https://www.opm.gov/policy-data-oversight/classification-qualifications.

(3) 29 CFR 1910.

(4) AR 11–34.

(5) AR 190–56.

(6) AR 385–10 and DA Pam 385–10.

(7) DA Pam 40–501.

(8) DA Pam 40–506.

(9) DA Pam 40–513.

(10) DA Pam 385–24 and DA Pam 385–25.

(11) TB MED 297.

(12) TB MED 509.

(13) TB MED 510.

(14) TB MED 515.

(15) TB MED 523.

(16) TB MED 524.

(17) TB MED 525.

c. Standards and criteria.

(1) Pubic health personnel (in Industrial Hygiene and Environmental Health, for example) use specific exposure standards and criteria to evaluate Soldier and worker exposures to chemical, physical, or biological agents to determine the need for corrective action, occupational health screening, and medical examinations. OSHA permissible exposure limits (PELs) are used by the Army except when the current ACGIH TLVs are more stringent.

(2) Clinical medical practices are guided by both regulation and practice guidelines, including Federal (OSHA, for example), DOD, and Army regulations. Practice guidelines are published by both Governmental agencies and non-Governmental groups. Examples include the National Institute for Occupational Safety and Health (NIOSH) and the American College of Occupational and Environmental Medicine.

(3) AR 385–10 implements the Army Radiation Safety Program. MEDCOM can establish appropriate occupational health surveillance programs for personnel who are occupationally exposed to radiation. Refer to paragraph 7–6 for more information on ionizing radiation medical surveillance.

(4) DA Pam 40–173 provides exposure limits for chemical warfare agents.

7–11. Medical surveillance for pesticide applicators

a. Due to their potential exposure to pesticides, all installation personnel who apply pesticides, including onsite supervisors, quality assurance evaluators, and groundskeepers, are required to enroll in the installation Occupational Medical Surveillance Program. Occupational medical surveillance requirements are found in DOD 6055.05–M. Red blood cell cholinesterase levels should be monitored if organophosphate or carbamate pesticides are used.

b. Contractors are expected to provide contracted pesticide management personnel with medical surveillance support and monitoring unless their contract states otherwise.

7–12. Army aviation medicine

a. The Army AVMED Program applies to pilots, aircrew, and personnel performing flight, unmanned aircraft system, or air traffic control duties in accordance with AR 95–1 and AR 95–2. Aeromedical standards, policies, and procedures are provided in AR 40–3, AR 40–8, and AR 40–501.

b. TSG is responsible for the AVMED Program and is the proponent for all aeromedical policies and standards through MEDCOM G-3/5/7 and the Army Aeromedical Activity. The AVMED consultant to TSG assists TSG in formulating policies and standards and provides technical supervision of all aspects of the AVMED Program.

c. All ACOM, ASCC, and DRU commanders are responsible for enforcing the regulatory aspects of AVMED within their commands.

7–13. Work-related immunizations

Immunizations are provided for multiple purposes, as part of different programs. Immunizations may be required as a condition of employment, either to protect the employee from a potential adverse exposure or to ensure that the employee is not a risk to others in the course of their employment. Refer to AR 40–562/AFI 48–110IP/BUMEDINST 6230.15B/CG COMDTINST M6230.4G and CDC/U.S. Preventive Services Task Force Advisory Committee on Immunization Practice (ACIP) recommendations for immunization guidance.

a. Employees at risk of infection due to potential exposures in the work environment may be required to receive, or may be offered, immunizations that reduce the severity or risk of contracting an illness. Some immunizations are required to fulfill the duties of a position, for example, positions designated as national security sensitive; or to participate in a specific activity such as official foreign travel. Whether an immunization is required of, or offered to, a Civilian employee is determined by human resources policy, with medical personnel acting in an advisory role. Required immunizations for APF employees must be identified in vacancy announcements and position descriptions. Employees and applicants must be notified of this requirement in writing.

b. Other immunizations may be offered to Civilian employees to reduce absence due to sickness.

c. DA Pam 385–69 contains guidance concerning immunizations for workers in biodefense programs.

d. Civilians traveling under military sponsorship are provided appropriate immunizations and chemoprophylactic medications.

e. Rabies pre-exposure vaccinations, as specified in paragraph 9–7*c*, are required for DOD Civilian, military, and contract personnel who, as part of their duties, may conduct feral/wild animal control operations on the installation.

7–14. Nonoccupational-related conditions

The Army occupational health clinic can provide the following limited services for nonoccupational illness, injury, and health promotion if resources are available:

a. Emergencies. Employees receive the medical attention required to prevent loss of life, limb, or eyesight, or to relieve suffering until they are placed under the care of their personal physicians.

b. Minor disorders. First aid or palliative treatment may be given if the condition is one for which the employee would not reasonably be expected to seek attention from a personal physician, or to reduce absenteeism by enabling the employee to complete the current work shift before consulting a personal physician.

c. Minor treatments or services. Examples of these include, but are not limited to, administering allergy treatments, monitoring blood pressure, and providing physiotherapy. These treatments or services may be furnished at the discretion of the responsible physician if resources are available. The employee's personal physician submits a request for such services in writing before the employee receives them. The employee provides any required medications.

d. Substance abuse services. Employees with substance abuse problems are to be encouraged to seek assistance and counsel from local substance abuse program staff and the installation Employee Assistance Program. Occupational health personnel can provide initial counseling as well as refer employees to treatment and counseling resources. Refer to AR 600–85 and DA Pam 600–85 for additional guidance.

e. Total worker health. This includes health promotion activities that promote the health and safety of the individual, the unit, and the workplace.

7–15. Studies of health impacts from occupational/environmental exposures

a. Occupational and environmental epidemiology is the branch of epidemiology concerned with the role that operational, industrial, and/or garrison occupational/environmental exposures play in causing or protecting against injury, illness, developmental conditions, disability, and death in human populations. Occupational and environmental epidemiology also includes the identification of PH actions to manage risks associated with adverse operational, industrial, and/or garrison environmental exposures and maximizes the impact of beneficial health determinants and behaviors. Occupational and environmental exposures include those which are naturally occurring and from anthropogenic sources; intentional and unintentional exposures; and garrison and deployment exposures. AR 40–5 and DODI 6490.03 form the basis for the conduct of environmental epidemiology.

b. OEM professionals design and conduct epidemiologic investigations or studies to characterize relationships between garrison- and deployment-associated occupational and environmental exposures and the health of the total Army workforce, and, as requested, for Veterans, Retirees, and their beneficiaries.

7–16. Exposure reporting

a. DOD policy requires documentation and archiving of exposure investigations and reports of OEH exposures, to include chemical, biological, radiological, nuclear, and high-yield explosive (CBRNE) exposures (DODI 6490.03). Exposure is defined as "human contact due to a completed exposure pathway with a hazardous or potentially hazardous chemical, physical, or biological agent. Exposure may be short-term, of intermediate duration, or long-term" (DODI 6490.03). Exposure pathway is defined as occurring "when five elements: source of contamination, environmental media and transport mechanism, point of exposure, route of exposure, and receptor population link the contaminant source to the receptor population by inhalation, dermal contact, or ingestion. If a completed or potentially completed exposure pathway exists, the receptor population is considered at risk for exposure" (DODI 6490.03).

b. The most obvious exposure scenarios are those resulting in real-time health impacts that require medical countermeasures or treatment. At times, all five elements of an exposure pathway will not exist, that is, a completed exposure pathway is not present, but potential exposures, population concerns, or senior leadership interest will trigger an investigation related to the potential presence of an OEH hazard. Actions and circumstances surrounding the incident should be documented even when a determination of "no completed exposure pathway," "no significant level of exposure" (will vary by agent(s)), or "no significant impact to human health or mission" is made.

c. Examples of scenarios which may indicate the need to document exposures, or potential exposures, include—

(1) The presence of an OEH threat that is plausibly associated with actual observed (acute) clinical health outcomes that are reported and/or treated (for example, complaints of dizziness, skin/eye irritation/burning, coughing, nausea).

(2) The presence of an acute OEH hazard that is detected using real-time field equipment (for example, M8/M256/ICAM detectors for chemical warfare agents).

(3) Evaluation of data or related information by an appropriate medical or PH professional which indicates that exposure to the OEH hazard could plausibly result in a significant adverse health outcome, to include significant chronic conditions.

(4) Visual or sensory cues that indicate the potential presence of an OEH hazard (for example, smoke/cloud, odors, or strange liquid/powders).

d. Public health assets providing area support to the site(s) where the exposure(s) occurred typically lead the investigation effort and submit the initial report(s) in accordance with information requirements as described in paragraph 7–9*c*.

e. All environmental PH data associated with OEH exposures are managed and maintained in DOEHRS-IH (see para 3–6).

7–17. Administration of depleted uranium bioassays

a. Depleted uranium (DU) bioassays will be administered to all personnel in the Level 1 exposure category, as defined in appendix G. This category includes personnel with embedded metal fragments that might include DU, or personnel who were in, on, or near (less than 50 meters) an armored vehicle at the time (or shortly after) it was struck with a DU munition.

b. DU bioassays will be administered to all personnel in the Level II exposure category, as defined in appendix G. This category includes personnel who routinely enter damaged vehicles as part of their military occupation or who fight fires involving DU munitions.

c. DU bioassays are not required for personnel in the Level III exposure category, as defined in appendix G. This category includes personnel with incidental exposure to DU. However, a physician may choose to perform a bioassay based on medical indications or if a Soldier who experienced an incidental exposure requests to be tested.

d. Bioassays (urine specimens) are not required to be collected in theater.

Section III

Occupational Exposures

7–18. Reproductive hazards

a. Reproductive hazards are substances or agents that may affect the reproductive health of women or men or the ability of couples to have healthy children. These hazards may be chemical, physical, or biological, and workers may be exposed to them by breathing them in (inhalation), contact with skin (dermal), and swallowing (ingestion).

b. The employee at risk should be informed of and understand which workplace hazards are considered reproductive and developmental hazards. Exposure to some reproductive and developmental hazards has been associated with spontaneous abortion, premature births, and fetal/infant child neurological damage and may also impact male reproduction (that is, low sperm counts). Examples of the most well documented reproductive hazards include—

(1) Lead (inorganic).
(2) Ethylene oxide.
(3) Cadmium.
(4) Glycol ethers.
(5) Mercury.
(6) Toluene.
(7) Xylene.
(8) Ionizing radiation.
(9) Waste anesthetic gases.
(10) Bloodborne pathogens.
(11) Infectious diseases such as rubeola, rubella, and varicella.
(12) Physical hazards such as vibration and exertion.

c. All persons of reproductive age are vulnerable to reproductive hazards. Some of the potential effects on the male reproductive system include sterility and sperm mutagenesis, both of which can cause infertility. Pregnant employees and their fetuses may require special protection in the work environment. Employees who breastfeed their infants and who are exposed to certain chemical hazards should be counseled as pregnant employees. Key components of reproductive hazard surveillance and control include—

(1) Identifying work areas or occupations that present potential health reproductive hazards.

(2) Counseling all employees, during pre-placement or periodic job-related examinations, about the nature of any potential hazards to reproduction.

(3) Informing females about the availability of job accommodation, modification, or transfer, if so indicated, in the event of pregnancy. Job accommodations such as transfers can only occur if pregnant employees declare their pregnancy to their supervisor in writing.

(4) Instituting a policy or procedure to ensure pregnant employees notify the health clinic as soon as the pregnancy is known.

(5) Assessing the employee's job assignment and work environment for all potential hazards—physical, chemical, and biological—when a pregnancy is known and declared. This workplace assessment should also apply to breastfeeding/lactating Soldiers and Civilians. A worksite visit coordinated with Industrial Hygiene may be required to evaluate work practices and hazards.

(6) Providing recommendations to the profiling officer regarding job-related hazards to pregnant Active Duty personnel.

(7) Providing periodic follow-up and counseling, as indicated, including pregnancy outcome evaluation and breastfeeding/lactation counseling. A complete review of all workplace hazards should identify conditions and outcomes that may have potential adverse effects on reproduction or development.

d. AR 40–501, AR 385–10, DOD 6055.05–M, and 29 CFR 1910 provide additional guidance.

7–19. Bloodborne pathogens

a. The OSHA bloodborne pathogens standard, 29 CFR 1910.1030, applies to employees who are likely to be exposed to blood and other potentially infectious materials. Exposure to bloodborne pathogens can occur in a wide variety of occupations including, but not limited to, healthcare, emergency response and public safety, barbering and cosmetology, and mortuary affairs. Bloodborne pathogens are pathogenic microorganisms that are transmitted via human blood and can cause disease in exposed individuals. The pathogens of primary concern include, but are not limited to, the human immunodeficiency virus (HIV), hepatitis B virus (HBV), and hepatitis C virus (HCV).

b. The Exposure Control Plan (ECP) required under the Bloodborne Pathogens Standard identifies the job classifications, tasks, and procedures pertaining to workplaces where occupational exposure exists. The plan also describes the methods used to prevent or minimize such exposure and document the consideration and implementation of safer, commercially available, and effective medical devices designed to eliminate or minimize occupational exposure. The responsible office or clinic reviews and updates its ECP at least annually and whenever changes in tasks, procedures, and job positions affect or create new occupational exposures.

c. Methods to prevent or minimize employee exposures to blood and other potentially infectious materials are—

(1) *Engineering controls.* Engineering controls isolate or remove bloodborne pathogens from the workplace. Examples of engineering controls include the use of puncture-resistant sharps disposal containers, plastic capillary tubes, needleless systems, and sharps with sharps-engineered sharp injury protections.

(2) *Safe work practices.* Safe work practices specify how to perform specific tasks to prevent occupational exposure. Housekeeping procedures, such as linen management; decontamination procedures using United States Environmental Protection Agency (EPA)-approved disinfectants; segregation and removal of regulated medical waste (RMW); universal or standard precautions; and hand hygiene are examples of safe work practices.

(3) *Personal protective equipment.* Gloves, gowns, laboratory coats, face shields, N-95 masks or respirators, eye protection, cardiopulmonary resuscitation pocket masks, and other protective gear act as a barrier to protect workers from exposure to bloodborne pathogens. The Army supplies, cleans, repairs, and replaces PPE, as needed, at no cost to employees.

(4) *Other methods.* Additional provisions of the standard are the labeling or color coding of contaminated materials and equipment, providing employee information and training, offering the HBV vaccine to employees, providing post-exposure evaluation and follow-up to an employee after an exposure incident occurs, and maintaining medical records and a sharps injury log.

d. Laboratories and facilities engaged in the culture, production, concentration, and manipulation of HIV and HBV must adhere to specific requirements detailed in the OSHA bloodborne pathogen standard. Research laboratories also follow the recommended guidelines for safety practices, equipment, and facility design and construction described in the CDC and National Institutes of Health (NIH) publication, *Biosafety in Microbiological and Biomedical Laboratories* (CDC and NIH, 2009).

e. Additional guidance is provided in the following publications:

(1) Needlestick Safety and Prevention Act (Public Law 106–430).

(2) U.S. Public Health Service Guidelines for the Management of Occupational Exposures to Human Immunodeficiency Virus and Recommendations for Postexposure Prophylaxis (CDC, 2015b).

(3) Appendix A: Practice Recommendations for Health-Care Facilities Implementing the U.S. Public Health Service Guidelines for Management of Occupational Exposures to Bloodborne Pathogens (CDC, 2001a).

(4) CDC Guidance for Evaluating Health-Care Personnel for Hepatitis B Virus Protection and for Administering Post-exposure Management (CDC, 2013).

(5) Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Postexposure Prophylaxis (CDC, 2001b).

(6) Recommendations for Prevention and Control of Hepatitis C Virus Infection and HCV-Related Chronic Disease (CDC, 2017).

(7) Society for Healthcare Epidemiology of America Guideline for Management of Healthcare Workers Who Are Infected with Hepatitis B Virus, Hepatitis C Virus, and/or Human Immunodeficiency Virus (Henderson et al, 2010).

(8) Hepatitis B Immunization Policy for DOD Medical and Dental Personnel (Health Affairs Policy 97-006).

7–20. Indoor environmental quality

Indoor environmental quality encompasses indoor air quality, which focuses on airborne contaminants and ventilation requirements to achieve acceptable indoor air quality, as well as other health, safety, and comfort issues such as thermal conditions; water incursion from leaks, floods, or condensation; ergonomics; acoustics; and lighting. There are health risks associated with both acute and chronic exposures to indoor environmental contaminants such as particulates, combustion byproducts, asbestos, lead-based paint, formaldehyde, other volatile compounds, and biological pollutants such as bacteria

and mold. See DA Pam 40–503 for detailed guidance on the role of the industrial hygiene practitioner as relating to indoor environmental quality.

7–21. Emerging occupational hazards

a. When new or emerging hazards are discovered and there is no published standard or guideline, DOD issuance, or DA publication to address them, the OTSG may publish policy that incorporates the most up-to-date occupational safety and health guidance.

b. The OSHA General Duty clause (29 USC 654 Section 5) applies when a standard for a hazard does not exist.

7–22. Health hazard education

At a minimum, Army personnel should receive training and education in the following areas:

a. Hazard communication. Federal regulations (10 CFR 19, 29 CFR 1910.1030, 29 CFR 1910.1200), AR 700–141, and DA Pam 385–24 require all personnel to receive, at a minimum, initial training regarding potential workplace hazards. An overview should be provided covering general workplace safety associated with chemicals, ionizing and nonionizing radiation, bloodborne pathogens, and physical hazards. The training should also include any protective measures and PPE required to control exposures. Training must be documented so that compliance can be assessed.

(1) These regulations also require that safety data sheets be readily available to Army personnel. AR 700–141 instructs on compliance with hazard communication (HAZCOM) standards for Army installations that produce chemicals or hazardous materials. These installations must provide the appropriate hazard information and communication in compliance with the global harmonization system criteria. These criteria include methods of classification of chemical hazards, and labeling requirements for the use of standardized signal words, pictograms, hazard statements, and precautionary statements.

(2) Installation safety personnel normally provide general HAZCOM training; PH personnel may assist. In addition, the Army must provide specific hands-on training which should include information regarding all hazards associated with the specific work location and task(s), including, but not limited to, all chemical, biological, and physical hazards. This specific training must also review all of the controls that are put in place for a location or task. Sources of information regarding specific training requirements include the OSHA website, APHC website, and professional organization websites.

(3) Additional training is required when new hazards are introduced into the work environment (29 CFR 1910.1200).

(4) Occupational medicine personnel may assist in the communication of deployment-related hazards.

(5) Specific HAZCOM training requirements for both ionizing and nonionizing radiation hazards are included in 10 CFR 19, 29 CFR 1910, 49 CFR 172, and NRC licenses.

b. Hearing conservation. As required by 29 CFR 1910.95, all personnel who work in noise-hazardous areas and operations receive initial and annual training on the effects of noise on hearing; the purpose of hearing protection; the advantages and disadvantages of various hearing protection devices; the mandatory requirement to wear assigned hearing protectors; instructions on selection, fitting, use, and care of hearing protectors; and the purpose of audiograms. DA Pam 40–501 provides further guidance.

c. Reproductive hazards. Federal regulations (10 CFR 19 and AR 40–5) require that all individuals be informed of the potential adverse reproductive health effects from exposures to all hazards known to cause such effects. 29 CFR 1910.1200 provides general requirements for HAZCOM.

(1) AR 40–501 provides information on profiling pregnant Soldiers, limitations to protect their health and the health of the fetus, and profiling postpartum Soldiers.

(2) AR 385–10 and 29 CFR 1910 require that all pregnant personnel who officially declare their pregnancy to their supervisor in writing are to be trained regarding the potential harmful effects of ionizing radiation on the fetus. AR 385–10 provides Army implementing guidance for this requirement.

(3) 29 CFR 1910.1025 mandates that training on the hazards of lead include information specific to adverse reproductive effects. Applicable training should be delivered regardless of stated gender identification. For example, personnel who self-identify as male may have female reproductive capacity.

(4) AR 40–562/AFI 48–110/BUMEDINST 6230.15/CG COMDTINST M6230.4E requires counseling of females regarding the safety, benefits, and potential risks associated with immunizations during pregnancy.

(5) 29 CFR 1910.1030 addresses HAZCOM requirements regarding potential exposure to bloodborne pathogens.

(6) 29 CFR 1910.1047 provides specific HAZCOM requirements for ethylene oxide hazards, including reproductive hazards.

(7) 29 CFR 1910 provides training requirements in addition to general HAZCOM information for specific chemicals that are known or potential carcinogens, many of which have also been associated with reproductive hazards.

(8) TB MED 510 and TB MED 515 provide information to assist healthcare personnel in identifying and understanding the reproductive hazards associated with a variety of waste anesthetic gases and hazardous drugs, such as cytotoxic drugs, found in MTFs. The information in these publications may assist healthcare personnel in complying with the general hazardous communication requirements of 29 CFR 1910.1200.

Section IV

Occupational Exposure Controls

7–23. Personal protective equipment

a. The use of PPE is an integral part of the local safety and occupational health program for all Soldiers and Civilian employees. Requirements for PPE are specified in DA Pam 385–10, 29 CFR 1910.132, and AR 385–63/MCO 3570.1C. Army personnel who deliberately or carelessly violate regulations regarding the wearing of PPE may be subject to disciplinary action (see AR 690–700).

b. Installation or unit safety personnel, with assistance from appropriate subject matter experts, such as industrial hygienists, ergonomists, or radiation safety personnel—

(1) Designate the specific type of PPE to be used by Army personnel who are performing specific operations, processes, or tasks.

(2) Determine appropriate signage to post in areas requiring the use of PPE, such as eye-hazardous areas or areas requiring the use of a hard hat.

(3) Ensure that all PPE is used as required, stored, and maintained properly.

c. Occupational health nurses and occupational medicine physicians evaluate Army personnel's ability to wear PPE safely.

7–24. Respiratory protection

Army personnel mandated to use respiratory protection, and Army personnel who are not required but choose to use respiratory protection, are required to follow the Army Respiratory Protection Program (see AR 11–34) criteria and the relevant OSHA standards in 29 CFR 1910.134, 29 CFR 1926.103, and 29 CFR 1915.154. The installation PH authority, with the assistance of the safety office, ensures that any shop or unit either using or identified as needing respiratory protection meets the requirements outlined in AR 11–34 and OSHA standards.

7–25. Occupational illness and injury prevention and control

A comprehensive Army injury prevention campaign that improves readiness and reduces costs includes surveillance of occupational hazards in all Army environments; education in risk reduction strategies; and implementation of injury prevention "best practices" and tools. Musculoskeletal injuries are common in the Army and contribute to reduced readiness, avoidable lost time, workers' compensation costs, and medical provider encounters.

a. Functions.

(1) The leadership and staffs of the U.S. Army Combat Readiness Center and the APHC coordinate in supporting injury reduction planning and initiatives for the Army. These two organizations support each other with technical consultants in addressing workplace safety, risk communication, and investigation of accidents or incidents that cause injuries or other adverse health effects.

(2) Commanders, supervisors, and other leaders, assisted and advised by medical and PH staff, are the first and critical line of defense in reducing impact from injuries through education and training of personnel, early recognition of symptoms of injury, and timely application of preventive measures.

(3) Commanders can reduce the risk of injury by—

(a) Publishing a unit-level annual directive on the prevention of injuries.

(b) Providing to unit leaders an annual orientation class on how to access safety, medical, or PH personnel for consultation on ways to reduce the occurrence of injuries.

(c) Ensuring all newly assigned personnel are aware of the warning signs of injuries and ways to prevent injuries.

b. Elements.

(1) Successful installation injury prevention and control efforts include local policies, attentive case review for lessons learned, position restructuring to reduce risk of injury and illness, and regular meetings of those involved in the local injury prevention and control program.

(2) Injury prevention and control efforts include—

(a) Cooperation and communication at the local level among the commander's management representatives; safety, occupational health, and G-1/Civilian Personnel Advisory Center/human resources personnel; and worker compensation program representatives.

(b) Prompt provision of medical care on a priority basis, per AR 40–400, for employees and Soldiers afflicted with occupational injuries and illnesses. Initial and follow-up care are provided for Civilians as resources permit.

(c) Educational efforts to teach best practices in injury and illness reduction, lessons learned, and related topics.

(d) Consultation with occupational health specialists for installations with particular problem areas.

(e) Use of medical surveillance and epidemiology tools to obtain relevant injury and illness data, perform trend analysis, target specific interventions, and evaluate the effectiveness of those interventions.

Section V

Evaluations and Investigations

7–26. Worksite evaluations

a. Worksite visits and evaluations conducted by occupational health, industrial hygiene, ergonomics, and safety personnel are required periodically or as operations change. Worksite visits conducted by occupational health professionals are often collaborative with safety personnel and facilitate the mission readiness and capabilities of the Army's workforce.

b. Industrial hygiene evaluations are conducted, reported, and recorded in accordance with DA Pam 40–503. Each visit is documented, and the worksite supervisor is provided a written report. At a minimum, these evaluations should address risk factor and hazardous material identification; type of engineering controls needed, if applicable; type of PPE required; recommended posting of signs; recommended medical surveillance; and occupational exposure evaluation results. Data from industrial hygiene surveys are entered in DOEHRS–IH as specified in paragraph 3–6.

c. Clinical occupational health professionals should conduct worksite visits in collaboration with industrial hygiene, safety, and other MTF or installation partners supporting the Army's Safety and Occupational Health Program. Worksite visits—

(1) Provide basic characterization of the worksite, worker practices, use of controls, and identification of apparent occupational and environmental hazards.

(2) Identify worksite causes of elevated exposure-related indices.

(3) Educate employees and supervisors about work-related hazards, particularly those hazards with corresponding OSHA- and/or DOD-mandated medical surveillance programs.

(4) Provide clinical guidance to supervisors and employees concerning physical restrictions, administrative accommodations, worker medical qualifications and standards, and/or other administrative matters requiring occupational health expertise.

(5) Determine appropriateness of medical surveillance recommendations from other safety and occupational health professionals.

d. Industrial hygiene worksite visit frequency is determined by the shop priority in accordance with DA Pam 40–503 and DODI 6055.01.

(1) High priority (1) shops (those with hazards requiring occupational medical examinations, and those where a novel hazard exists) must be surveyed at least annually or more frequently.

(2) Medium priority (2) shops (those with hazards that are well defined and controlled) should be surveyed every 2 years.

(3) Low priority (3) shops (those with stable work environments and processes) should be surveyed every 3 years.

e. Occupational health worksite visit observations, findings, and recommendations must be documented and routinely reported to the installation medical authority, worksite supervisor, and other safety and occupational health professionals, including industrial hygiene.

(1) All findings requiring further actions by partner safety and occupational health professionals must be communicated promptly.

(2) The occupational health clinic must keep and maintain all worksite visit reports.

(a) Employee exposure records are kept for the duration of the employee's employment plus 30 years (29 CFR 1910.1020).

(b) Electronic reports are acceptable and can be attached to the DOEHRS-IH survey for a worksite (shop).

(c) All workplace assessment data are entered to DOEHRS-IH as a data element.

7–27. Workplace epidemiological investigations

Commonly accepted epidemiological methods and tools are used to investigate incidences of infectious diseases, occupational illnesses, sick building syndrome, and injuries presumed to be associated with the workplace. A workplace epidemiological investigation is a targeted inquiry that is conducted when a greater than expected number of cases of an illness or injury have occurred (see chap 6).

7–28. Evaluation of occupational health services and activities

Self-audits and external assessments of Army occupational health services and activities are essential tools in evaluating the outcomes and effectiveness of those services and activities from both local and Armywide perspectives. Such evaluations also assist senior commanders and local occupational health clinic managers in improving the quality of their occupational health services and activities.

a. The occupational health clinic manager implements Enterprise OEH Program goals and conducts an annual self-assessment of installation-level services and activities, including industrial hygiene, hearing conservation, and other occupational health services.

(1) The assessment is completed through the PHMS, as specified in paragraph 3–12, using the self-assessment checklist in the Occupational Health Program Status Report (OHPSR) web-based application, available at https://usaphcapps.amedd.army.mil/phms/psr/psr.asp.

(2) Results should be shared with the senior commander. The installation PH authority determines improvements to be made based on the self-assessment. Occupational health clinics are additionally responsible for completing monthly and periodic OHPSRs. The local occupational health clinic manager can access the Occupational Health Self-Assessment Checklist at the secure uniform resource locator (URL) stated in subparagraph *a*(1), above, after obtaining an account in PHMS (see para 3–12).

(3) An annual fiscal year assessment is completed using the OHPSR web-based application. Each Army occupational health clinic completes this self-assessment annually in October, providing the results through the installation PH authority to the regional health authority, then to DCS-PH. This data is also provided to the DOD as required by DODI 6055.01. The local occupational health clinic manager can obtain access to the secure OHPSR website after obtaining an account in PHMS (see para 3–12).

(4) Occupational health clinics are also responsible for completing other required assessments via monthly and ad hoc data calls using the OHPSR website.

(5) The APHC consolidates and analyzes assessments to assist the DCS-PH in identifying Armywide industrial hygiene and occupational health services strengths and weaknesses and in planning systemic program improvements and problem resolution. The installation PH authority also uses local assessment results to determine improvements to be made. Assessment results should be shared with the senior commander.

(6) The regional health authority will validate occupational health assessment data at the local level during the regional OIP.

b. The installation PH program industrial hygiene manager conducts an annual self-assessment of installation-level industrial hygiene services and activities (DA Pam 40–503).

(1) The assessment is completed and documented using DA Form 7693 (Industrial Hygiene Program Evaluation), which is a self-assessment questionnaire.

(2) The APHC Industrial Hygiene Program Management Division (IHPMD) sends an annual electronic notification letter to installation industrial hygiene service managers; it contains instructions for completing the assessment online.

(3) The APHC IHPMD analyzes the completed assessments and distributes the aggregated data to the regional health authority industrial hygiene consultants. Based on analysis results, IHPMD develops educational tools, updates guidance, and conducts outreach through the regional health authority to the installation industrial hygiene program to address issues that impede effective program execution.

c. The annual assessments are analyzed at the senior Enterprise level to identify Armywide industrial hygiene and occupational health services strengths and weaknesses and to assist in planning systemic program improvements and problem resolution.

d. Regional health authority or senior Enterprise-level assets conduct a formal external evaluation at least every 3 years.

Section VI

Other Services and Activities

7–29. Introduction

Army PH supports other occupationally-related services and activities that are not part of the formal DOD Safety and Occupational Health Program or the Army Occupational Health Program. These services and activities include—

a. Asbestos exposure control and surveillance.

b. Health hazard assessment (HHA). The Army Health Hazard Assessment Program in Support of the Army Acquisition Process (AR 40–10), unique among the military components, provides HHAs of Army materiel.

c. Workplace violence.

d. Worker compensation.

7–30. Asbestos exposure control and surveillance

The Army Asbestos Program comprises two distinct components managed by two different organizations. The first component addresses asbestos in building materials and facilities and is the responsibility of the installation (for example, Facility Engineers and Environmental Office). The second component addresses asbestos exposures and controls. The installation PH authority (for example, the Industrial Hygienist), with the assistance of the safety office, identifies potential scenarios and conditions in which Soldiers and workers may be occupationally exposed to asbestos. Army occupational health clinics' responsibilities for supporting both aspects of the Army Asbestos Program are outlined in AR 40–5, AR 200–1, AR 420–1, and DA Pam 40–513. Additional guidance is provided in 29 CFR 1910.1001, 29 CFR 1926.1101, and 29 CFR 1915.1001.

7–31. Health hazard assessment of Army equipment and materiel

a. The Army implements the Health Hazard Assessment Program in Support of the Army Acquisition Process in accordance with AR 40–10.

(1) This Program is designed to identify and eliminate or control health hazards associated with the life cycle management of new and modified Army materiel. The Program focuses on potential health hazards resulting from operations and maintenance throughout a system's life cycle.

(2) The Program supports the Army acquisition community's compliance with health assessment requirements contained in DOD policies and ARs. The proponent is TSG, and APHC is TSG's Lead Agent.

b. Instructions for requesting an HHA can be found on the APHC public website at https://phc.amedd.army.mil/pages/default.aspx.

7–32. Workplace violence

Workplace violence is one type of violence that can occur in military communities. Some installations have active workplace violence prevention initiatives as part of their risk reduction strategies. Law enforcement, safety, and the chaplain's office are the principal participants in such installation services. Public health personnel may support senior commanders in establishing and conducting effective workplace violence prevention activities.

a. The installation medical authority should support and participate in installation workplace violence prevention processes.

b. Guidance for planning and implementing workplace violence prevention processes can be found in—

(1) Army Civilian Personnel Office guidance, at https://www.milsuite.mil/book/community/spaces/civ-hr.

(2) The OPM guide for agency planners for dealing with workplace violence, at https://www.opm.gov/policy-data-oversight/worklife/reference-materials/workplaceviolence.pdf.

(3) Department of Labor (DOL)–OSHA guidelines for preventing workplace violence for healthcare and social service workers, at https://www.osha.gov/sltc/workplaceviolence/.

7–33. Worker compensation

a. The DOL Office of Workers' Compensation Programs (OWCP) administers four major disability compensation programs which provide wage replacement benefits, medical treatment, vocational rehabilitation, and other benefits to certain workers or their dependents who experience work-related injury or occupational disease. Two OWCP programs pertain to Army Civilians (https://www.dol.gov/owcp/).

(1) Army APF Civilian employees are covered by the FECA, administered by the OWCP Division of Federal Employees' Compensation (DFEC), found at https://www.dol.gov/owcp/dfec/.

(2) Army NAF employees are covered by the Longshore and Harbor Workers' Compensation Act (LHWCA) and Nonappropriated Fund Instrumentalities Act. The OWCP Division of Longshore and Harbor Workers' Compensation (DLHWC) provides technical assistance, dispute resolution services, and oversees benefit delivery by the self-insured

Army Nonappropriated Fund Instrumentalities (NAFI) and the insurance carriers it authorizes and regulates (https://www.dol.gov/owcp/dlhwc/).

b. Army coordination, oversight, and responsibility for applicable worker compensation programs reside in the G-1 for APF employees and the G-9 for NAF employees.

c. FECA guidance is primarily found in DODI 1400.25-V810; implementation is through the Army Benefits Center (https://www.abc.army.mil). LHWCA guidance is primarily found in AR 215–1; supplemental information is provided in AR 215–3.

d. Worker compensation program forms are described and available through the OWCP. DFEC forms for APF employees are available at https://www.dol.gov/owcp/dfec/regs/compliance/forms.htm; training for electronic filing of forms is provided on the Army Benefits Center website. DLHWC forms for NAF employees are available at https://www.dol.gov/owcp/dlhwc/lsforms.htm. Note that the programs differ in regard to form intent and completion responsibility. Under the LHWCA, the supervisor is responsible for initiating the first report which covers both injury and illness (LS-202, Employer's First Report of Injury or Occupational Illness).

e. Management and funding streams for the two worker compensation programs differ, affecting the involvement of PH personnel.

(1) The FECA, coordinated through Army G1, is administered by the DFEC, with claims processing and individual medical case management provided through the DFEC. The DOD/Army receives a bill, a chargeback, for all program costs. The chargeback brings the program cost to the attention of senior leadership across the Federal Government.

(2) The LHWCA is an Army NAFI self-insured program with claims processing and medical case management provided through a G-9/Morale, Welfare, and Recreation (MWR) contract; program costs do not gain the attention of Army senior leaders. Public health personnel are encouraged to explore avenues of intervention to reduce the occurrence of injury and illness among NAF employees, coordinating through the responsible local LHWCA program office. Reported numbers suggest that NAF employees disproportionately file compensation claims more frequently than APF employees.

f. Volunteers providing gratuitous services are considered employees for compensation purposes (DODI 1100.21).

g. Employees under both programs have the right to select their initial treating HCP; their right to change providers after starting treatment may be restricted. Initial treatment generally does not include any necessary immediate urgent or emergent medical interventions.

(1) Direct delivery of worker compensation health care to APF employees under the FECA, whether in the occupational health clinic or elsewhere in the MTF, is fiscally advantageous for the Army since costs associated with OWCP program administration are reduced. Costs of care delivered are not reimbursable.

(2) Direct delivery of worker compensation care to NAF employees under the LHWCA is not reimbursable for necessary immediate urgent or emergent medical interventions. Reimbursement for initial and ongoing care should follow locally applicable policies.

h. The following outlines the functional roles associated with worker compensation activities:

(1) The commander ensures that a FECA Working Group is formed and meets periodically (usually quarterly) to analyze FECA costs, trends, and plans, and to develop cost containment initiatives.

(2) First-line supervisors—

(a) Ensure that employees know they have the freedom to choose a treating physician.

(b) Send injured employees for medical treatment when a traumatic injury is reported.

(3) Medical officers review all reported cases of occupational illness and either take or recommend action.

(4) Other occupational health officials (DODI 1400.25-V810)—

(a) Provide workplace exposure monitoring and epidemiology data appropriate for investigation.

(b) Advise workplace managers and supervisors of the exposure monitoring results and the recommended workplace practices to control worker exposure.

7–34. Recordkeeping and reporting

The Civilian Human Resources Agency maintains accountability for employee records; the occupational health clinic, industrial hygienist, radiation safety officer, and installation safety officer support this function. Sections 66–71 of 29 CFR 1960 establish uniform requirements for the collection and compilation of Federal employees' occupational safety and health records. AR 40–66 outlines medical recordkeeping, confidentiality, and reporting requirements. AR 40–68 outlines quality assurance procedures for records maintenance. Criteria for reporting and recordkeeping are further contained in DODI 6055.05, which directs the use of DOEHRS as the information management system (see chap 3).

Chapter 8
Environmental Health

8–1. Introduction

Environmental health—

a. Is the interdisciplinary science and practice of preventing or mitigating adverse health effects through the anticipation, recognition, evaluation, and control of health hazards identified within the environment (air, water, food, land, natural resources, built infrastructure, cultural resources, and other environmental media or settings that may adversely affect human health). It deals with risks from chemical, biological, radiological, physical, noise, and vector-borne hazards.

b. Services and activities incorporate health risk management processes to continuously anticipate, identify, assess, and control health hazards, and documents activities within prescribed systems of records. They are integral parts of Comprehensive Health Surveillance (DODD 6490.02E); Occupational and Environmental Health (DODI 6055.05), FHP (DODD 6200.04) and Health Service Support (JP 4–02); Deployment Health (DODI 6490.03); Environment, Safety and Occupational Health (DODD 4715.1E); Occupational and Environmental Health Risk Management (AR 11–35); Environmental Protection and Enhancement (AR 200–1); Survivability of Personnel and Materiel (AR 70–75); and the Procurement of Sustainable Goods and Services (DODI 4105.72).

8–2. Entomological services

a. Army PH entomological services encompass all aspects of pest management, including surveillance, pesticide-use reporting and monitoring, pesticide-resistance testing, and the provision of entomological subject matter expertise and training. Entomological support considers both the direct impact of pests on the military and the potential environmental impacts of intervention efforts. The scope of effort spans medically, economically, and agriculturally important pests, and pests of natural resources. Pests also include nonarthropods, such as birds, mammals, and plants, that pose a potential threat to human health or resources. Army PH entomological services adhere to Integrated Pest Management (IPM) principles that consider and promote non-chemical measures over the use of chemical measures. Pest prevention, identification, surveillance, management, documentation, and analysis are key areas of emphasis.

b. Army PH entomological science services and activities are executed at numerous levels during garrison, training, combat, and contingency operations. In addition to the core functions outlined in paragraph 1–12, the following activities apply to entomological services:

(1) *Senior Enterprise-level public health functions.*

(a) Provide pesticide-use monitoring, archival, and investigation services.

(b) Provide pesticide-resistance testing and monitoring services.

(c) Archive and analyze Army installation pesticide use records, and report significant findings to the regional health authorities.

(d) Archive and analyze DOD contingency pesticide use records, and report significant findings to the Armed Forces Pest Management Board (AFPMB).

(e) Maintain the DOD Pesticide Hotline.

(f) Monitor and archive installation PH pest surveillance and associated pathogen testing data.

(g) Identify and fill critical entomological training deficiencies.

(h) Utilizing archived pest control and surveillance data, provide yearly installation-level PH pest risk mitigation reports to the regional health authorities.

(i) Provide subject matter expert support, as needed, to regional health authorities, installation PH authorities, and military units.

(j) Provide support for Freedom of Information Act requests focused on historical pesticide use on DA installations.

(k) Establish core metrics for PH pest surveillance and pesticide reporting practices for regional health authorities.

(l) Prepare vector-borne and zoonotic threat assessments in response to emerging threats and PH concerns.

(m) Represent Army Entomology in DOD working groups and committees.

(n) Conduct evaluations of commercial, off-the-shelf pest management items.

(2) *Regional health authority-level public health functions.*

(a) Coordinate and standardize installation-level PH pest surveillance efforts.

(b) Conduct scheduled entomological technical assistance visits for newly assigned installation PH staff, and provide subject matter expertise support to all installations within the region.

(c) Conduct quick-response site visits to assess emerging vector-borne disease threats and assist installations in establishing targeted surveillance measures and response plans.

(d) Establish and maintain liaison with installation PH authorities.

(e) Provide PH pest identification and pathogen testing services for installations.

(f) Assist installation PH personnel with conducting pest management program reviews, as needed, and in coordination with the Army Environmental Command Entomologist.

(g) Provide DOD pesticide applicator training and certification in OCONUS locations.

(h) Support installation IPM Plan reviews by providing and interpreting installation-level PH pest risk mitigation reports provided by the APHC.

(i) Collect and submit installation-level PH pest surveillance data to the APHC for use in compiling annual surveillance reports provided to regional health authorities.

(j) Review installation pest management records and submit them to the APHC for archiving and for compiling annual surveillance reports provided to regional health authorities.

(3) *Installation public health authority-level functions.*

(a) Conduct installation PH pest surveillance activities.

(b) Support annual IPM Plan review. Ensure surveillance data are included in the update. On fixed installations, ensure a stray animal control plan is incorporated into the IPM Plan.

(c) Build and maintain liaisons with the Installation Pest Management Coordinator (IPMC) and local health department personnel.

(d) Ensure pesticide applicators are enrolled in a medical surveillance program.

(e) Monitor pesticide sale and distribution on the installation.

(f) Provide training to field personnel.

(g) Recommend appropriate personal protective measures for pest management personnel.

(h) Provide direct technical support to installation pest management personnel.

8–3. Pest surveillance

Public health pest surveillance encompasses inspections, surveys, and routine surveillance for any organism that poses a PH or nuisance threat. This surveillance ranges from standard mosquito surveillance, tick surveys, entomological surveys during sanitation inspections (rodents, cockroaches, bedbugs, and stored-product pests, for example) to poisonous, noxious, or invasive plants that are targeted through the installation IPM Plan.

a. Pest surveys and surveillance. A PH pest is any organism that can harbor and/or vector a human pathogen, inflict bodily harm through mechanical injury, degrade individual or mission effectiveness due to nuisance, or inflict economic injury through infestation of products, goods, materials, or facilities. In addition, any organism affecting environmental resources that could be controlled by pesticide application is included in this category because pesticide application is a potential exposure risk for supported populations.

(1) Standard installation surveillance should include, at a minimum, an active mosquito and tick surveillance program that conducts routine surveillance on the installation and coordinates the testing of collected specimens for pathogens of human concern (see para 8–3*c*). Mosquitoes can be shipped to the APHC for pesticide resistance testing (see para 8–8 for details). Surveillance activities should focus on areas with a high potential for human/mosquito interaction. Surveillance areas may include housing, outdoor recreation areas, and high-use training areas such as firing ranges, obstacle courses, and physical fitness training areas.

(a) Coordinate pre- and post-treatment surveillance efforts with responsible pest control personnel to collect actionable data to guide pest management activities.

(b) Conduct scheduled sampling at fixed trap sites at locations of interest. A strong surveillance plan collects baseline data, which is used to modify the installation pest management plan and evaluate its efficacy.

(2) For guidance on conducting tick surveillance, see the AFPMB Technical Guide (TG) 26.

(3) Routine pest surveys should be conducted during sanitation inspections, as specified in paragraph 8–40, for the following pests, as appropriate: filth flies, rodents, cockroaches, bedbugs, and stored-product pests. For guidance on conducting these surveys, see AFPMB TG 27 and AFPMB TG 30.

(4) Submit actively feeding ticks removed from DOD personnel and other beneficiaries to the DOD Human Tick Test Kit Program (HTTKP) at the APHC for pathogen testing. Ticks from animals residing on the installation may also be submitted. For more information regarding tick submission, or for questions concerning ticks and tick-borne diseases, contact the Tick-borne Disease Laboratory at usarmy.apg.medcom-aphc.mbx.tickcom@mail.mil.

b. Pest identification. Pest identification support is available to installation PH personnel through the supporting regional health authority. Additional support may include identification technique training, taxonomic keys, and identification services for PH pests. Specimens must be submitted according to the regional supporting laboratory's protocols (see subpara c, below).

c. Pest pathogen testing. Medically relevant arthropods collected as part of an installation pest surveillance program may be submitted to the supporting regional PH laboratory for pathogen testing. Coordination must be made with the supporting PH laboratory prior to sample collection and submission.

d. Pest surveillance recording and reporting.

(1) Installation PH personnel enter surveillance trap site data into the DOEHRS-IH Environmental Health entomology samples module. Minimum essential information for submission includes the trap type, date trap was opened, Global Positioning System (GPS) coordinates, and type of lure used, if any. When submitting specimens to the regional PH laboratory, ensure collections are annotated with the correct DOEHRS trap site identification number to allow identification and testing data to be linked to the correct trap sites upon upload.

(2) The APHC uses reported data to compile annual surveillance reports which are provided to the regional health authorities. The regional health authorities review the reports with the installation PH authorities within their AOR to guide future surveillance activities and identify areas for IPM Plan modification.

e. Liaison with local PH experts. Installation PH authorities should build and maintain liaisons with local, county, and State PH officials to proactively address vector-borne diseases impacting DOD personnel and beneficiaries.

8–4. Pest management

a. Stray animal control is the responsibility of the garrison commander, is conducted through appropriate pest management services, and is incorporated into the IPM Plan (Assistant Chief of Staff for Installation Management Memorandum, 2014).

b. Installation pest management personnel and facility operators conduct IPM to control pests. The application of IPM methods, including those listed below, is a sustainable approach to managing pests that combines biological, cultural, physical, and chemical tools in a way that minimizes economic, health, and environmental risks (DODI 4150.07).

(1) Biological control is the use of parasites, predators, and genetic engineering to suppress pest populations to an acceptable level.

(2) Cultural controls (sometimes referred to as "behavioral controls") alter routine practices in ways that are detrimental to the biological success of PH pests. Examples include increasing sanitation, wearing permethrin-treated uniforms, removing harborage and water sources, and altering outdoor activity times/locations to avoid vectors.

(3) Physical and mechanical controls directly or indirectly destroy pests or make the environment unsuitable for pest entry, dispersal, survival, or reproduction. Examples could include killing pests with heat, cold, snap-traps, or pellet guns; screening windows and blocking entry points of buildings; using pest-proof food storage containers and trash cans; and irradiating insects to alter reproduction.

(4) Chemical control is the reduction of pest populations or the prevention of insect-inflicted injuries by using chemicals to poison them, attract them to other devices, or repel them from specific areas. Chemical control should be a last resort, used after the problem has been thoroughly examined and other means of control have been ineffective.

(5) Consult with the installation veterinarian about humane options for any euthanasia of avian or mammalian pests.

c. Pest quarantine/invasive species management. Invasive plant and animal species are usually considered a natural resources issue. Invasive species management is coordinated with installation natural resources personnel following U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) guidance. Reach-back support for invasive species management is available from the APHC, the Army Environmental Command Entomologist, USDA APHIS, and its local cooperative extension office. Public health personnel support the installation's pest management efforts and ensure that retrograde programs are established and unit personnel are properly trained.

8–5. Pesticide application

a. Only trained and certified applicators may apply pesticides. Training and certification of military personnel are conducted in accordance with DODI 4150.07 and DODM 4150.07. Contracted pesticide applicators are certified through the State in which the installation is located. In contingency operations and deployments, all pesticide applicators must be certified or working under the direct supervision of a certified applicator. Occupational medical surveillance requirements for pesticide applicators are presented in paragraph 11–5.

b. The use of preventive or scheduled periodic pesticide treatments is prohibited. All pesticide applications must be based on surveillance data.

c. Aerial dispersal of pesticides is conducted in accordance with AR 200–1 and DODI 4150.07.

d. Although the DOD does not currently require posting notifications of outdoor pesticide applications, each installation should determine appropriate actions to protect the public (especially children) from unnecessary exposure to pesticides applied to outdoor MWR facilities.

e. Pest control operators must adhere to the following criteria when conducting pest management in sensitive areas.

(1) *Food establishments.* IPM principles and measures are applied in food establishments according to TB MED 530. Pesticides should never be applied in the absence of documented surveillance data indicating a pest infestation.

(a) The installation PH authority assesses the effectiveness of chemical control measures, and the results are conveyed to pest management personnel.

(b) Stored-product pests are monitored and managed in accordance with AFPMB TG 27, AFPMB TG 38, and AFPMB TG 11.

(2) *Medical, dental, and animal care facilities.* The guidance provided in AFPMB TG 20 should be followed to the maximum extent possible when pesticides are applied in a medical, dental, or animal care facility. Pesticides may not be applied when patients, facility personnel, or sensitive equipment is present in the immediate area.

(3) *Child care facilities.* Pest problems in child care facilities require an initial assessment by the installation PH authority and are managed according to AR 608–10, the installation's IPM Plan, and AFPMB TG 2.

(a) Do not apply pesticides when children are present or to surfaces that children may contact. Remove children and their toys from the treatment area prior to application. Following application, children should not be allowed to re-enter the play area until the specified wait time on the product label has elapsed. If the label does not specify a wait time, wait a minimum of 48 hours.

(b) Use tamper-resistant bait stations when applying rodenticides. Never place insect bait where children can reach it.

(c) Do not use chemical herbicides for weed control in outdoor play areas.

f. In the event of a pesticide spill, refer to the information in AFPMB TG 15.

g. The APHC provides pesticide use incident investigation services when a potentially adverse environmental or PH exposure has occurred as a result of pesticide application. If a potential exposure has occurred, contact the APHC Entomological Sciences Division for more information.

8–6. Personal protective equipment for pest management personnel

a. PPE is provided to pest management personnel in accordance with 29 CFR 1910 and as specified on the pesticide product label or safety data sheet. Responsibilities, policies, and procedures for providing personal protective clothing and equipment are further specified in AR 385–10 and DA Pam 385–10.

(1) If pest management activities are a contracted function, PPE must be provided in accordance with the terms of the contract. The contract statement of work must always include a section requiring the provision and use of appropriate PPE by the contractor.

(2) AFPMB TG 14 provides additional information regarding PPE for pest management personnel, and AFPMB TG 41 provides PPE guidance for personnel who are occupationally at risk for rodent-borne Hantavirus infection.

b. At a minimum, the following PPE should be available to pest control personnel: solvent-resistant gloves, aprons, and boots; splash-protective eyewear; and hearing protection. All PPE must be available in sufficient quantity to provide protection to all pesticide applicators. Additional PPE may be specified on pesticide labels and must be used by the pesticide applicators. For example, if fumigants are used, then a self-contained breathing apparatus must be available to the pest control personnel. Use of this equipment requires specialized training.

c. A daily change of protective clothing is provided for each pesticide applicator. Protective clothing should consist of a complete change of outer clothing and coveralls. This clothing is to be worn in place of, not over, personal clothing. Coveralls should be worn only during actual pesticide application. Adequate sets must be available to allow an immediate change of outer clothes if the set being worn becomes contaminated or damaged (AFPMB TG 14).

d. Home laundering of protective clothing is prohibited. All protective clothing is laundered by the employer (installation laundry service or appropriate commercial service). If laundry service is not available, a washer and dryer may be located at the pest control shop for this purpose. Severely contaminated clothing is treated as pesticide-related waste and disposed of in accordance with current regulatory requirements.

e. To prevent contamination by pesticide vapors, the protective clothing and equipment must be stored separately from pesticide storage and mixing areas.

f. Respirators are required when the occupational exposure limit is exceeded for a chemical of concern or when the potential for exposure exceeds applicable risk management criteria. Contractors are responsible for providing respiratory protection for their employees unless otherwise specified in their contract.

(1) Pesticide applicators require individual fit-testing for their assigned respiratory equipment.

(2) All Active Duty and Civilian pest control personnel who are required to wear a respirator must be included in the installation respiratory protection program (see para 7–24). Contractor pest control personnel should be included only if the contract designates the installation occupational health clinic as their servicing occupational health clinic.

(3) Respirators and respirator replacement canisters must be stored separately from pesticide storage or mixing areas. Canisters exposed to pesticide vapors may be rendered ineffective.

(4) Respirator cartridges or canisters are changed when indicated by a respirator end-of-service-life indicator certified by the NIOSH for containment. If the respirator cartridge or canister has no such indicator, the supervisor must then implement a cartridge or canister change schedule that is based on objective information or data that ensure the cartridges or canisters are changed before the end of their expected service life.

g. Supervisors and the pest control operator chain of command are responsible for ensuring that pest management personnel wear protective clothing and equipment.

8–7. Pesticide-use recording and reporting

a. All pesticide applications are documented using DD Form 1532–1 (Pest Management Maintenance Record), a computer-generated equivalent such as the DOD IPM Information System, or another computer-generated equivalent approved by the designated pest management consultant (DODI 4150.07). The IPMC is responsible for collecting and maintaining all pest management reports on the installation. The pest management record—

(1) Is used to record all pesticide applications and non-chemical pest management operations.

(2) Applies to all DOD buildings, structures, property (under DOD control by ownership, permit, lease, license, or other use agreement), public works, equipment, aircraft, vessels, and vehicles.

(3) Applies to all DOD vector control and pest management operations performed worldwide during peacetime, wartime, and military deployments.

(4) Does not apply to privatized housing, which must comply only with State and local laws and regulations. Additionally, pest management activities by residents at their private quarters on Army installations are exempt from the scope of this requirement, except as regulated by individual installation policies and procedures.

b. The installation PH authority conducts periodic reviews of pesticide application records to monitor all pesticide applications that are conducted on the installation. This action requires the PH authority to establish a strong relationship with the IPMC and to have a clear understanding of the IPMC's role and responsibilities, which are specified in DODI 4150.07 and further outlined in AFPMB TG 18.

8–8. Pesticide resistance assessments

Pests of PH importance can develop resistance to pesticides that are applied frequently, thus surviving treatments that were previously sufficient for their control. If control efforts fail, it is of paramount importance to consider pesticide resistance to avoid wasting resources and creating potential pesticide exposures with unsuccessful applications. Consult the APHC for testing and assessment services when pest resistance is suspected. Use the information from the resistance analysis to modify the IPM Plan accordingly.

8–9. Pesticide sale and distribution

a. All pesticides and pest control equipment distributed at self-help programs must be on the approved list in AFPMB TG 42.

b. AFPMB TG 45 addresses guidelines for selecting, selling, and handling pesticides at post exchanges, commissaries, veterinary clinics, self-help programs, and other establishments on Army installations. Only EPA-and State-registered pesticides may be offered for sale on Army installations. Retail establishments sell only general-use pesticides that are appropriate for use by uncertified, untrained personnel. Products labeled "Restricted Use" will not be sold.

8–10. Public health pest trends and data analysis reports

The APHC compiles yearly reports analyzing all of the surveillance and pesticide application data submitted to the Center for data management. These reports are sent to the Army regional health authorities for use in their Installation-level reports. Regional health authorities utilize these data to provide installation PH authorities with yearly summaries of surveillance and pesticide application trends for use in their IPM Plan review.

8–11. Overview of water resources protection

a. Water resources are sources of water that could have a beneficial use (or detriment, if not appropriately managed), often for agricultural, industrial, household, recreational, or environmental activities. These resources include oceans, lakes, ponds, rivers, streams, reservoirs, wetlands, groundwater, storm water, and the water bodies connected to them.

b. The protection of water resources is essential to maintain community PH and robust environmental health. Water resources must be protected to ensure that surface waters and ground waters can be used safely as sources of drinking water (public and private residential wells) or agricultural water (crop irrigation, livestock watering, aquaculture); fish are free of toxic and/or bioaccumulative substances and safe for human consumption; water is safe for incidental contact while boating or fishing; sedimentation and erosion do not promote flooding or damage work and living areas; and aquatic species diversity is not adversely affected to give rise to disease-vector breeding areas.

c. Army water resources include those water bodies described that are owned, used, or influenced by Army activities, operations or possession.

d. Water resources protection programs include, but are not limited to, the following sub-program elements:

(1) Aquifer monitoring, evaluation and protection.
(2) Property transaction environmental health evaluation.
(3) Surface water monitoring, evaluation and protection.
(4) Wastewater compliance monitoring, evaluation and reporting.
(5) Emerging and existing contaminant evaluation; treatment program recommendation and implementation.
(6) Runoff assessment, evaluation, and program planning.
(7) Community stewardship through release prevention, planning and monitoring.

8–12. Public health functions for water resources protection

Public and environmental health water resource protection services are often an Armywide or multiregion effort provided generally, though not exclusively, by the APHC. Regional health authorities may also provide strategic level support when appropriate and commensurate with their available resources. In addition to the core functions outlined in paragraph 1–12, the following activities apply to water resources protection services:

a. Senior Enterprise-level PH functions.

(1) Liaise with applicable HQDA authorities to monitor, evaluate, and improve strategic water resource protection programs.

(2) Collect, interpret, and act on strategic level water resource protection data.

(3) Collate, develop, and monitor water resource credentialing across the Enterprise.

(4) Assess emerging water resource-related products and technology.

(5) Serve as Army external outreach.

(6) Aggregate, evaluate, and act on water resources data generated and/or collected from installation and operational PH personnel.

(7) Report on the current state of Army, Command, or Enterprise water resources protection.

b. Installation PH authority-level functions.

(1) Collaborate with supported garrison environmental management staff, commensurate with resource capabilities, to provide PH oversight regarding—

(a) Aquifer and surface water monitoring, evaluation, and protection.

(b) Property transaction environmental health evaluation.

(c) Wastewater compliance monitoring, evaluation, and reporting.

(d) Emerging and existing contaminant evaluation, treatment program recommendation, and implementation.

(e) Runoff assessment, evaluation, and program planning.

(f) Community stewardship through release prevention, planning, and monitoring.

(2) Assist in garrison implementation of water resources protection programs.

(3) Collect garrison water resources data to support regional monitoring.

(4) Evaluate the garrison's water resource protection status.

8–13. Overview of drinking and recreational water

This section provides guidance to Environmental Health Sciences personnel responsible for oversight, monitoring and technical evaluation of drinking water systems and recreational waters at Army installations to support Soldier and community health. The DA objective for Army drinking water systems is to operate and maintain them to ensure sufficient quantities of safe, palatable drinking water are provided to consumers.

Note. Drinking water, as presented in this chapter, does not include commercial bottled water, which is classified as "food" in TB MED 530.

The DA objectives for Army recreational water facilities are their safe operation, optimum maintenance, and comprehensive monitoring to ensure protection of bather health. Environmental health personnel ensure that the Army's drinking water systems and recreational waters are operated and maintained in a safe and sanitary manner and in compliance with all applicable regulations to protect human health.

8–14. Drinking water

a. *Provisions at CONUS-fixed installations.*

(1) Drinking water at CONUS-fixed installations is provided according to the requirements of 42 United States Code (USC) section 300f et. seq. (the Safe Drinking Water Act, as amended) and all applicable Federal, State, and local regulations. Refer to the most current version of 40 CFR 141 and 40 CFR 143 for updates to the *National Primary Drinking*

Water Regulations (NPDWR) and the *National Secondary Drinking Water Regulations*. Refer to individual state and local regulations, as applicable, for current information in those regulations.

(2) Army installations classified as suppliers of water must comply with substantive and procedural requirements pursuant to 40 CFR 141. Suppliers must also meet applicable State and local regulations that meet the EPA primacy requirements. AR 420–1 and AR 200–1 provide additional Army requirements associated with safe drinking water at CONUS-fixed installations.

(3) AR 525–13, DODI O-2000.16, and DODI 6055.17 specify requirements for the recurring assessment of all critical potable water systems infrastructure and emergency response plans.

(4) Chlorination and fluoridation of drinking water are conducted according to AR 420–1 and TB MED 576. TSG or the DCS-PH approves the initiation or discontinuation of fluoridation of drinking water supplies at fixed installations.

b. Provisions at OCONUS-fixed installations.

(1) Drinking water at OCONUS-fixed installations is provided in compliance with country-specific Final Governing Standards (FGS) or, in the absence of FGS, the NPDWR as outlined in the Overseas Environmental Baseline Guidance Document (OEBGD) (DOD 4715.05–G). AR 420–1 details additional Army requirements associated with safe drinking water at OCONUS-fixed installations.

(2) The sanitary control and surveillance of water supplies at fixed installations is conducted according to TB MED 576 and host nation requirements.

c. Drinking water for field deployment and training operations. Drinking water for field deployment and training operations is provided according to the procedures defined in AR 700–136, ATP 4–44/MCRP 3–17.7Q, ATP 4–25.12, and TB MED 577/NAVMED P–5010–10/AFMAN 48–138_IP. See paragraphs 10–16 through 10–19 of this pamphlet for information pertaining to field water.

d. Drinking water on Army floating vessels. Drinking water on all Army floating vessels is provided according to 40 CFR 141 and NAVMED P–5010–6 (rev. 7-2005) 0510–LP–103–9057.

e. Cross-connections. Cross-connections between potable and nonpotable water distribution systems are not permitted. AR 420–1 addresses cross-connections and provides proper references. The current plumbing codes (*Uniform Plumbing Code®*, *International Plumbing Code®*, or *National Standard Plumbing Code*) are followed in the design, maintenance, and renovation of water distribution systems and in the selection of all plumbing fixtures.

f. Water reuse. Water reuse and recycling programs are provided to support the Army's Net Zero Installation Strategy in an effort to limit the consumption of freshwater resources and return water to the same watershed so as not to deplete the quantity and quality of the ground and surface water resources of the region.

g. Development of standards. Any standards, criteria, or guidance needed beyond those mandated by law for Army facilities and operations is developed through the DCS-PH and published by TSG.

8–15. Drinking water functions

In addition to the core functions outlined in paragraph 1–12, the following activities apply to drinking water services:

a. Garrison commanders—

(1) Implement actions to monitor drinking water for regulatory compliance.

(2) Provide plans for all projects that may affect drinking water, as well as all drinking water compliance testing analytical results, to the installation PH authority (Environmental Health Section) for medical review and evaluation.

b. Installation engineering support staffs (the Directorate of Public Works (DPW), for example) maintain routine contact with supporting installation PH personnel regarding drinking water quality and notify them when the sanitary control of drinking water is or may be compromised. Drinking water quality can be compromised during any water system component (for example, water treatment facility, distribution line, or storage tank) installation, improvement, or repair, or during an emergency situation.

c. The installation PH authority—

(1) Maintains PH oversight, QA, and technical assistance for the installation's drinking water supply systems, to include operations and monitoring programs and small water systems (for example, range wells and campground water systems). Bacteriological QA monitoring is conducted in accordance with TB MED 576.

(2) Verifies that the supplier of water conducts a drinking water monitoring program according to the NPDWR, assists in the implementation of the monitoring program, and performs compliance monitoring where applicable.

(3) Reviews all drinking water sampling plans to verify that sample sites are in accordance with EPA and State requirements; ensures/validates adequate representation of the serviced population, with special attention to high-risk locations (for example, child development centers, elementary schools, and hospitals).

(4) Reviews and assesses all drinking water analytical results and provides summaries of evaluations with appropriate recommendations to the installation medical authority if the water supply is not in compliance with NPDWR or other applicable water quality standards.

(5) Confirms that proper disinfection procedures, as required by AR 420–1, are carried out during and after installation and repair of drinking water treatment, storage, or distribution facilities.

(6) Performs annual sanitary surveys of drinking water systems at installations within the AOR according to TB MED 576.

(7) Maintains laboratory capabilities for water quality testing to include—

(a) Bacteriological and basic water quality parameter testing (minimum of total and fecal coliform, pH, and disinfectant residual).

(b) Pursuing (as needed, and based on available resources, facilities, and staffing) certification by the State authority verifying the laboratory conducts bacteriological testing that meets the standards of the EPA *Manual for the Certification of Laboratories Analyzing Drinking Water*.

(8) Ensures all Army installation water systems within the AOR are accurately defined in DOEHRS-IH; ensures all water system sampling plans are accurately defined and entered into DOEHRS-IH; manages all data associated with drinking water surveillance, sampling, and assessment in the DOEHRS-IH.

(9) Reports drinking water program performance status in the PHMS.

(10) Provides information and guidance to garrison commanders regarding—

(a) Current requirements for, availability of, and regulations concerning potable water.

(b) Appropriate corrective actions for potable water supply contamination events.

(c) Use of any alternative water source (for example, bottled water, or point of entry/point of use devices).

(d) The need for and methods of water conservation.

(e) Available methods to reduce pollution of the source water supply by installation activities.

(11) Assists the garrison commander in developing a public notification plan for notifying the installation population of any degradation or contamination of the potable water system.

(12) Participates in all design and review processes for projects relating to the provision of drinking water (including collection, treatment, storage, and distribution) to verify that such projects provide the maximum protection of PH.

(13) Reviews and provides recommendations for the type and concentrations of chemical additives to drinking water supplies.

(14) Assists garrison commanders in developing memorandums of understanding (MOUs) and MOAs with local authorities to document relationships that facilitate the shared use of critical resources according to AR 525–13.

(15) Assists garrison commanders in developing and reviewing Water System Vulnerability Assessments (WSVAs) and Water System Emergency Response Plans (WSERPs) for water supply systems.

(16) Participates in the Environmental Quality Control Committee and antiterrorism security meetings.

d. Regional health authorities—

(1) Perform comprehensive sanitary surveys of drinking water systems at Army installations every 3 years in accordance with TB MED 576.

(2) Perform comprehensive WSVAs and update WSERPs at all Army installations every 3 years, as specified in AR 525–13 and TB MED 576.

(3) Provide technical support to installation PH personnel, including any required or nonroutine sampling and analytical assistance, to ensure acceptable drinking water quality in installation and deployment situations.

(4) Provide oversight and assistance to installation PH personnel in managing all data associated with drinking water surveillance, sampling, and assessment in the DOEHRS-IH; report metrics data to the APHC. Ensure installation PH personnel define (with assistance, as needed) all Army installation water systems within the AOR in DOEHRS-IH.

(5) Provide training to installation PH personnel regarding the operation of a laboratory for basic water quality monitoring, as well as training for all other PH-related issues regarding the drinking water system infrastructure.

(6) Provide consultative support to installation personnel/activities relating to the provision of water reuse and recycling programs.

e. Senior Enterprise-level PH functions are as follows:

(1) Develop programmatic and technical guidance and standards to facilitate operation and maintenance of water supply systems and WSERPs.

(2) Track current state of drinking water quality throughout the Army.

(3) Provide subject matter expert technical, consultative, and analytical assistance for—

(a) Non-routine drinking water sampling and emergency responses.

(b) Cross-connection surveys/plans.

(c) Water system performance evaluations/comprehensive performance evaluations.

(d) Drinking water source and wellhead protection surveys.

(e) Water system hydraulic modeling and flushing plans.

(f) The Army's drinking water surveillance program.

(g) Water reuse and recycling programs.

(4) Provide PH laboratory analytical support.

8–16. Privatized water systems

Many Army drinking water systems are now "privatized." Privatization, as it pertains to Army drinking water systems, is the transfer of ownership, operation, maintenance, and improvements of Army water plants and systems to municipal, private, local, or regional utility companies.

a. Each installation has its own unique water supply requirements; therefore, contracts are usually developed at the installation level. Compliance with Federal and State regulations for water systems may not be adequate to support the special needs of the military. Therefore, consideration must be given to military-unique requirements in the development or updating of drinking water contracts.

b. A thorough, clear, and comprehensive contract is essential to protecting the interests of the Government. Contract provisions should require the purveyor to develop an acceptable management plan that would include performance objectives; surveillance; operations and maintenance practices; emergency and contingency planning; coordination; deliverables; capital improvements; and QA.

c. The installation PH authority must establish and maintain a good working relationship with the DPW and the privatization company to be able to support the garrison commander in providing PH oversight and addressing any unique installation risks associated with a privatized drinking water supply. The installation PH authority plays an important role in identifying health-related issues that must be addressed and/or incorporated into the privatization contract. Privatization may result in the ownership of various portions of installation distribution systems by different parties. For example, the private purveyor may own the installation distribution system, except for all service lines to individual buildings and points of consumption; the Army may own the service lines and the buildings' interior plumbing.

d. The installation PH authority needs to be aware of who owns all parts of the drinking water system and be able to contact the appropriate individuals or offices when PH issues with the system arise.

e. Considerations for privatized water systems.

(1) The garrison commander ensures the purveyor maintains the capability, according to the contract, to deliver an uninterrupted supply of potable, palatable drinking water in compliance with the NPDRW and NSDWR. Guidance is provided by a water quality management team (WQMT) consisting of, as a minimum, the contracting officer's representative (COR) and technical representatives from the garrison water utilities and the PH authority.

(2) By providing technical leadership and PH oversight, the installation PH authority assists the garrison commander in ensuring the private drinking water purveyor meets all contract requirements. The installation PH authority—

(a) Establishes increased protective measures for source water supplies, such as decommissioning wells no longer in use. Such wells could act as a conduit for contamination to groundwater resources.

(b) Conducts an annual sanitary survey or supplements a purveyor's sanitary survey to ensure that water supply operations are safe and dependable; provides recommendations to the management team to address shortcomings.

(c) Conducts additional independent monitoring of the source water entering the installation for target contaminants, and of the water in the distribution system for indications of biological contamination or the absence of disinfectant residual.

(d) Conducts a WSVA or supplements a purveyor's or higher headquarters assessment to ensure that all vulnerabilities, including those which may be unique to military installations, are addressed adequately. Since civilian purveyors may not be able to conduct a thorough assessment due to the classified nature of a particular installation's operations, the installation PH authority provides recommendations to the WQMT to mitigate those vulnerabilities.

(e) Evaluates operations and maintenance practices; provides recommendations to the WQMT to address shortcomings.

(f) Assesses the installation's backflow prevention and cross-connection control program; provides recommendations to the WQMT to address any identified shortcomings.

(g) Contributes to the emergency operations planning for the installation to ensure it addresses health-related issues adequately. Emergency plans should identify the PH role and responsibilities to support emergencies.

(h) Contributes to contingency planning for the installation to ensure that an adequate and dependable water supply can be provided to an installation whose population may rapidly expand due to contingency or other military operations.

8–17. Recreational water functions

Recreational waters include manmade facilities such as swimming pools, hot tubs, and other aquatic venues, as well as natural bathing areas such as beaches and lakes on Army installations. Sanitary control and operation of Army swimming pools and natural swimming areas are conducted according to AR 420–1, TB MED 575, and TM 5–662. In addition to the core functions outlined in paragraph 1–12, the following activities apply to recreational water services:

a. The installation PH authority—

(1) Maintains access to engineering plans, type, location, size, maximum bather load, and operating hours for all recreational water facilities.

(2) Provides training for lifeguards and applicable water supply personnel in the sanitary operation and monitoring of swimming facilities. The PH authority also ensures all lifeguards are certified in lifesaving techniques by the American Red Cross or by other nationally recognized organizations that provide training in lifesaving techniques.

(3) Ensures that swimming facility oversight activities are conducted only by personnel who have been trained or certified as pool operators or inspectors.

(4) Performs annual pre-season and pre-opening inspections of swimming facilities in conjunction with the appropriate stakeholders to identify deficiencies in accordance with TB MED 575. Recreational water facilities are allowed to open only after all deficiencies identified during such inspections have been corrected.

(5) Maintains a laboratory capability to provide chemical and bacteriological monitoring of recreational waters.

(6) Performs weekly inspections of the recreational water facilities and the associated operational logs to ensure that proper operation and monitoring are being performed at the frequency specified in TB MED 575; recommends immediate actions to correct unhealthy or unsafe conditions.

(7) Conducts bacteriological and chemical surveillance of recreational waters in accordance with TB MED 575.

(8) Verifies that chlorine residual analyses are accomplished by an approved method.

(9) Maintains records of sanitary surveys, inspections, results of bacteriological sampling, and other pertinent information; enters the data into DOEHRS-IH.

(10) Investigates all complaints of illness potentially related to a recreational water facility.

(11) Maintains liaison with State and local recreational water authorities and with the installation engineer, morale support officer, and safety officer.

(12) Conducts a yearly sanitary survey of all natural swimming areas under installation control.

(13) Conducts medical or technical reviews of all recreational water facility construction and renovation plans; requests assistance from the APHC, or another applicable supporting laboratory or agency, in this review.

(14) Reports metrics data to the regional health authority.

(15) Ensures privatized recreational water facilities maintain water quality and sanitation standards as outlined in TB MED 575 and TSG-approved waivers.

(16) Participates in all design and review processes for projects relating to recreational water facilities to verify that such projects provide the maximum protection of PH.

b. Regional health authorities provide technical support to installation PH authorities in the performance of recreational water (natural bathing area) sanitary surveys.

c. Senior Enterprise-level PH functions.

(1) Track the current state of recreational water throughout the Army.

(2) Recommend improvements to the current recreational water program; monitor metrics reporting.

8–18. Overview of air quality

"Air quality" refers to the healthfulness of the air around us. Air quality is important to PH because everyone is constantly exposed to the air, both internally and externally. Air quality is assessed using criteria from international, Federal, State, or local agencies, both regulatory and non-regulatory, as appropriate. The DA objectives are to—

a. Manage air pollution exposures in order to maximize military readiness and minimize threats to human health and environment.

b. Mitigate air pollutant emissions from Army equipment and operations in order to comply with U.S. laws and regulations, military policy and doctrine, and applicable international agreements.

8–19. Outdoor air quality roles and functions

Air quality programs and services are provided to protect human health and the environment and to ensure compliance with appropriate Federal, State, local, DA, and OCONUS FGS or Status of Forces Agreement (SOFA), OEBGD, and host nation regulations (DODI 4715.05). In addition to the core functions outlined in paragraph 1–12, the following activities apply to air quality services:

a. Senior Enterprise-level PH functions.

(1) Evaluate the air pollution burden on the health of Army personnel.

(2) Coordinate with the Research, Development, Test, and Evaluation community in evaluating potential air quality impacts of proposed materiel.

(3) Provide pollution prevention services to identify alternate processes, methods, and products that promote minimal practicable air pollution emissions from Army activities.

(4) Support the Army demilitarization programs by documenting and minimizing air pollutant emissions generated from storage and disposal operations.

b. Regional health authority-level PH function. Maintain awareness of air quality conditions that may affect installations in their defined region.

c. Installation PH authority-level functions.

(1) Evaluate proposed and existing air pollution sources that may present potential PH impacts or violations of air pollution emission standards.

(2) Investigate complaints of exposures to air pollution emissions; coordinate further evaluation with installation facility engineering, environmental management personnel, and State, local, Territorial, or Tribal PH officials, as needed.

(3) Support risk management planning for processes covered by section 112(r) of the Clean Air Act Amendments of 1990.

(4) Assist garrison personnel in the development of air pollution emergency episode plans, per applicable air pollution control regulations.

(5) Maintain awareness of processes on the installation that generate air pollutants.

(6) Maintain awareness of processes outside the installation that may impact the air pollution burden on Army personnel.

(7) Maintain awareness of local air quality conditions and potential mitigation measures.

8–20. Overview of environmental noise

Environmental noise occurs below the threshold for permanent hearing loss but reaches levels high enough to cause other nonauditory effects. Within the Army Hearing Program and industrial hygiene, environmental noise is sometimes referred to as "nuisance noise." Environmental noise-related adverse health effects include, but are not limited to, sleep disturbance, excess stress hormones, learning and attention deficits (especially in children), elevated blood pressure, and general annoyance. Populations served by Army environmental noise management activities include—

a. Army barracks and Family housing occupants.

b. Soldier and Civilian office workers.

c. People living in the vicinity of military ranges and airfields.

d. Deployed Soldiers and Army Civilians (see DA Pam 40–501).

e. Patients in military medical facilities, including Wounded Warrior facilities.

8–21. Noise

a. Land use guidelines for environmental noise. The Army implements the DOD approach of long-term planning to prevent environmental noise problems. This approach is intended to protect PH and welfare without impairing the mission or readiness. Army policy and responsibilities for environmental noise management are provided in AR 200–1 and DODI 4715.13.

b. Interior sound level guidelines. Interior sound levels should not interfere with occupants' activities. Table 8–1 provides recommended interior sound levels based on a building's intended use.

Table 8-1
Acceptable building interior sound levels

Activity	All Noise Sources[1] L_{eq} (dB(A))	Continuous Interior Sources[2, 3, 4] L_s (dB(A))
Sleeping	45	40
Other Residential Activities (conversations, Radio, TV Listening, other)	50	40
Classrooms, Libraries, Churches, Hospitals	50	40
Offices—Private, Conference	45	40
Offices/Work Spaces, Telephone Use Satisfactory	55	45
Work Spaces—Occasional Speech Communication or Telephone Use	60	55
Work Spaces—Infrequent Speech Communication, Telephone Use Infrequent	70	60

Source: AFM 19–10/TM 5–803–2/NAVFAC P–970

Table 8-1
Acceptable building interior sound levels—Continued

Notes:

[1] L_{eq} is equivalent sound level.

[2] Typically, ventilation systems and mechanical equipment in near-continuous operations.

[3] L_s is sound level measured with slow weighting of the meter (that is, L_{eq} with slow weighting).

[4] The L_s value is given in terms of A-weighted noise level, or dB(A). The appropriate noise criteria (NC) curve values are 8 dB less than the A-level values.

8–22. Environmental noise assessment and control

Army PH personnel provide environmental noise services and capabilities to assess noise levels and provide noise control recommendations. In addition to the core functions outlined in paragraph 1–12, the following activities apply to environmental noise services:

a. Senior Enterprise-level PH functions include—

(1) Participating in the Defense Noise Working Group, thereby providing input to the Senior Readiness Oversight Council.

(2) Providing Army installations with noise contour maps for use in base planning, community outreach, encroachment management, installation sustainment, and National Environmental Policy Act decisions (32 CFR 651).

(3) Providing technical oversight and QA for noise contour maps produced by Army contractors.

(4) Coordinating with the Army Construction Engineering Research Laboratory and other entities in improving the accuracy and quality of environmental noise prediction software.

(5) Serving as the technical transfer agent for environmental noise management products developed at the Army Construction Engineering Research Laboratory.

(6) Maintaining an acoustical equipment pool and technical expertise to conduct environmental noise monitoring studies at military installations.

(7) Providing expert testimony at public meetings.

(8) Writing installation environmental noise management plans/Installation Compatible Use Zone studies.

(9) Evaluating noise exposures in military facilities, such as medical facilities.

b. Installation-level PH functions include conducting noise dosimetry as needed.

8–23. Overview waste management

a. Waste management consists of activities related to the identification, collection, storage, disposal, and documentation of generated waste for the purpose of protecting human health and the environment in a manner that complies with all applicable Federal, State, local, OCONUS (FGS and SOFA), OEBGD, host nation requirements (DODI 4715.05), AR 200–1, and DA regulations. Garrison staff monitor the generation, management, and disposal of all wastes generated on the installation and are responsible for ensuring these activities are conducted in a manner that complies with all applicable regulations. With respect to waste management, the garrison is the liaison with all regulatory agencies.

b. The installation medical authority is responsible for ensuring that all wastes generated within MTFs, clinics, laboratories, medical homes, medical materiel warehouses, and other military medical facilities are managed in a manner that complies with all applicable regulations as well as any requirements set forth by the garrison.

c. The installation PH authority—

(1) Provides oversight, consultative support, and assessments for waste management.

(2) Coordinates and/or reports waste management and disposal issues with the garrison.

(3) Provides support for the following waste streams, as defined in AR 200–1:

(a) Solid waste.

(b) Hazardous waste.

(c) RMW.

(d) Pharmaceutical waste.

(e) Other regulated wastes.

d. All environmental health data associated with solid, hazardous, and RMW are managed and maintained in DOEHRS-IH (see para 3–6).

8–24. Waste management roles and functions

In addition to the core functions outlined in paragraph 1–12, the following activities apply to waste management PH services:

a. Senior Enterprise-level PH functions.

(1) Conduct programmatic reviews of waste management at regional health authority-level organizations.

(2) Conduct programmatic evaluations/studies on issues that impact waste generators across the PH Enterprise.

(3) Review and update disposal guidance in the Military Item Disposal Instruction (MIDI) database to reflect Federal regulatory changes and changes in disposal technologies. Provide disposal guidance as requested for items not found in the MIDI system.

(4) Provide disposal guidance on specific formulary reviews for DOD Pharmacies.

(5) Develop standing operational procedure mission templates, associated training packages, and guidance for the PH Enterprise that are relevant to waste management, the packing and shipping of biological materials, and issues relevant to CBRN and emergency/contingency operations.

(6) Provide environmental status briefs and reports to MEDCOM G-9 by assessing medical waste management compliance at specific sites each fiscal year.

(7) Provide field support, consultation, and training to DOD components and Army installation/facilities on issues pertaining to waste management and the transport of DOD biological materials occurring in CONUS, OCONUS, and during emergency/contingency operations/CBRN events.

(8) Identify waste management/sampling credentialing requirements for personnel within the PH Enterprise.

(9) Conduct programmatic reviews of past environmental actions under the Resource Conservation and Recovery Act (RCRA) (40 CFR 261) to ascertain the effectiveness of engineering controls and relevance of exposure standards to determine possible health impacts.

(10) Conduct programmatic reviews of waste management activities to ascertain potential impacts to human health and the environment by visiting select medical facilities each fiscal year to verify regulatory compliance.

(11) Review the relevance and completeness of MTF environmental program requirement (EPR) funding requests.

(12) Evaluate EPR funding usage and expenditures.

(13) Conduct periodic reviews of contractor operations to ascertain regulatory compliance and identify associated liabilities that could adversely impact MTF operations.

(14) Assist in the evaluation of new and emerging technologies with the potential to benefit medical treatment facility operations.

b. Regional health authority-level PH functions.

(1) Within the region, conduct waste management assistance visits covering all aspects of waste management within 6 months of the assignment of a new Environmental Science and Engineering Officer (ESEO) or position equivalent serving as the Chief of Environmental Health, and submit copies of the report to the MTF and APHC.

(2) Monitor waste-generation rates and costs across the region, and provide this information to the APHC for analysis.

(3) Track waste management and biological material shipping incidents (for example, spills, exposures, and improper packaging) within the region.

(4) Maintain corrective action plans to monitor and track waste management inspection non-compliance issues at medical facilities within the region.

(5) Complete PH waste management-specific training and credentialing.

c. Installation PH authority-level functions.

(1) Conduct programmatic reviews of waste management at all facilities that fall within the area of operation.

(2) Provide training to waste generators within medical facilities.

(3) Submit funding requirement requests for waste management, training, disposal, supplies, and services necessary for effective waste management.

(4) Monitor waste generation rates and costs.

(5) Develop and implement medical waste management plans and SOPs.

(6) Review and follow disposal guidance provided in the MIDI database at https://phc.amedd.army.mil/topics/envirohealth/wm/pages/military-item-disposal-instructions.aspx. Email requests may be sent to the MIDI team at usarmy.apg.medcom-aphc.mbx.midi@mail.mil.

(7) Provide technical assistance, when requested, to healthcare facility personnel and to installation personnel in reviewing disposal guidance for conformance to Federal, state, and local regulations.

(8) Ensure medical personnel are trained to manage waste streams generated within their respective work areas.

(9) Conduct quarterly, internal compliance reviews of the waste management process.

(10) Track waste management noncompliance corrective actions resulting from internal/external reviews.

(11) Track and monitor spills, releases, exposures, and other unplanned waste-related incidents.

(12) Participate on the Environment of Care Committee to address and identify PH Enterprise waste management issues.

(13) Complete the relevant waste management questions on the Environmental Health Program Status Report (EHPSR) in PHMS.

8–25. Solid waste

The principal objective of solid waste management is to ensure wastes are managed in a manner that is protective of human health and the environment, and to minimize waste generation while maximizing recycling, repurposing, reuse, composting, and donation with the ultimate goal of net zero waste. Solid waste management is a garrison function whereby tenants and activities use garrison services subject to Federal, State, local, installation, FGS, and host nation requirements.

a. Senior Enterprise-level PH functions.

(1) Evaluate the effectiveness of the recycling/waste minimization/sustainable procurement program at medical facilities.

(2) Provide assistance, when requested, to evaluate regulatory compliance of on-post landfills, construction and demolition debris landfills, and other land disposal facilities to verify these are operated, monitored, and closed in a manner that is protective of human health and the environment.

b. Regional health authority-level PH function. Conduct solid waste characterization surveys at medical facilities to identify source reduction and recycling opportunities.

c. Installation PH authority-level functions. Installation PH personnel evaluate community complaints and provide health and welfare recommendations to the facilities engineers.

8–26. Hazardous waste

The principal objective of hazardous waste management in the Army is to manage such wastes in a manner that is protective of human health and the environment.

a. Personnel in logistics, pharmacy, and PH departments (to include dental and veterinary clinics) work in conjunction with the garrison environmental office for the turn-in and tracking of hazardous waste generated at all military medical facilities located on and off post. All garrison policies and procedures governing the management, tracking, and disposal of hazardous waste are followed except when patient care or research is directly impacted. In those circumstances, an exception letter must be sought from the garrison detailing the alternate process to be followed.

b. The ESEO, facility hazardous waste coordinator, or garrison environmental office maintains copies of all hazardous waste turn-in documents and hazardous waste manifests.

c. MTFs do not accept hazardous waste from units returning from deployment. Persons inquiring about such waste are directed to the garrison environmental office.

d. The installation PH authority (specifically, Environmental Health)—

(1) Provides technical assistance to—

(a) Identify potential health effects of exposure.

(b) Assist the garrison environmental office to identify and characterize unknown waste, new waste streams, and changes to existing waste streams for hazardous waste constituents within military medical facilities across the area of operation as requested.

(c) Select and evaluate storage methods within military medical facilities for protection of PH and compliance with regulations.

(2) Advises medical facility hazardous waste generators on potential waste reduction initiatives.

(3) Ensures the segregation of radioactive waste from nonradioactive waste.

(4) Assists senior commanders and public affairs officers in health risk communication.

(5) Maintains oversight of the hazardous waste program, to include universal waste and recycled/reclaimed materials, at military medical facilities.

(6) Facilitates the implementation of garrison-specific hazardous waste policies and procedures within the facility and in outlying areas, where applicable.

(7) Ensures hazardous waste generation rates/weights and disposal costs are recorded.

8–27. Regulated medical waste

The principal objective of RMW management in the Army is to manage RMW in a manner that prevents disease and injury. Such wastes are also regulated to comply with appropriate State, local, DA, OCONUS (FGS or SOFA), OEBGD, and host nation regulations (DODI 4715.05).

a. The installation PH authority has joint responsibility with other organizational staff offices within the MTF to include Logistics/Environmental Services and Infection Control for the effective management of the RMW program.

(1) *Medical facility logistics personnel—*

(a) Input RMW disposal weights and costs into the Environmental Services Management Information System (SB 8–75–11).

(b) Arrange for and supervise the collection, storage, transportation, and disposal of RMW from Government and contracted clinics.

(c) Weigh RMW prior to its pickup for disposal.

(2) *The installation public health authority—*

(a) Provides guidance to emergency medical response and police forces on the collection and management of trauma scene medical waste.

(b) Prepares local procedures and monitors the timely collection, transportation, treatment, storage, and disposal of RMW.

(c) Provides guidance for disposal of animal roadkill.

(d) Provides guidance to returning deployed Forces on the packaging and turn-in of RMW to medical facilities for disposal.

(e) Monitors compliance with the Single Use Devices policy, if applicable.

b. Trauma scene waste (suicide, accident), animal roadkill, and household medical waste are not considered facility RMW and are not within the purview of the facility RMW program.

(1) Management of trauma scene waste is subject to guidance from the installation PH authority.

(2) The MTF does not receive household medical waste. Such waste should be disposed directly by the households per State and local requirements, usually as solid waste.

c. Medical waste is accepted from units returning from deployment on a case-by-case basis.

d. Healthcare facility personnel monitor the proper handling, identification, segregation from all other waste streams, transport, and treatment of RMW to prevent the potential release or spread of microorganisms.

e. Guidance for management of RMW in the field can be found in paragraph 10–23.

8–28. Pharmaceutical waste

a. The principal objective of pharmaceutical waste management in the Army is to manage such wastes in a manner that protects the health of healthcare and animal care facility personnel, patients, and the environment and complies with all applicable Federal, State, local, DA, OCONUS (FGS and SOFA), OEBGD, and host nation regulations (DODI 4715.5).

b. Expired, partially used, unneeded, excess, compounded, and empty containers of pharmaceuticals and prepared mixtures fall into several categories of pharmaceutical waste, as described in the following paragraphs. TB MED 515 provides additional guidance for the management and disposal of NIOSH-, The Joint Commission-, and locally designated hazardous drugs.

(1) *Hazardous waste.* Pharmaceuticals that exhibit the characteristics of hazardous waste or are a listed hazardous waste under the RCRA, State, or host nation hazardous waste regulations. This category may include pharmaceuticals also listed as vaccines, controlled substances, NIOSH hazardous drugs, or chemotherapeutic pharmaceuticals.

(2) *Controlled substances (AR 40–61).* Pharmaceuticals specifically identified under the Controlled Substance Act (21 USC 801) that require strict accountability for any Drug Enforcement Agency (DEA)-registered entity involved in the manufacture, distribution, dispensing process, collection, and destruction of controlled substances.

(3) *National Institute for Occupational Safety and Health hazardous drugs.* Pharmaceuticals identified by the NIOSH (49 CFR 1910) as possessing characteristics deemed harmful to persons not prescribed or not taking them in a controlled setting. Appropriate PPE or engineering controls must be used when NIOSH hazardous drugs are handled.

(4) *Non-Resource Conservation and Recovery Act.* Pharmaceuticals that are not listed or regulated under the RCRA**.**

(5) *Chemotherapeutic pharmaceuticals.* Cytotoxic pharmaceuticals administered to patients being treated for cancer. Used items that have come into contact with the cytotoxic pharmaceutical (for example, IV bags, tubing, sharps, PPE, and wipes used to clean surfaces) are also considered chemotherapeutic trace waste.

(6) *Household pharmaceuticals.* Those pharmaceuticals generated by households, not the healthcare facility. The household generator may bring household pharmaceuticals to the facility as part of the DEA collection receptacle program or a Provost Marshal-run take-back event managed per 21 CFR 1317.75. Facilities that are not DEA-registered and/or do not have a collection receptacle cannot accept the return of household pharmaceuticals. DEA collector envelopes can be dispensed to households for mailing controlled substances to a DEA-registered vendor for incineration.

(7) *Vaccines.* Vaccines that are not classified as a hazardous waste due to thimerosal (mercury) content under 40 CFR 261. These are typically disposed as RMW.

c. The following subparagraphs apply to healthcare and animal care facility pharmaceuticals:

(1) Pharmacy personnel have the primary responsibility for characterizing, storing, transporting, and disposing all pharmaceutical waste generated within the pharmacies and any automated pharmacy system, to include maintaining a current inventory and 2 years of receipts of all stockage submitted to a pharmaceutical returns vendor.

(2) Patient-care staff members, to include dental personnel, are responsible for the proper segregation, collection, transportation, and disposal of all pharmaceutical waste. This category includes pharmaceuticals retained from patients admitted to the facility for treatment.

(3) Logistics personnel are responsible for facilitating the storage, transportation, and disposal of pharmaceutical waste generated both within the facility and within their AO, to include such waste turned in from returning deployed and training units.

(4) Veterinary personnel have the primary responsibility for properly managing all pharmaceutical waste generated within their facility. This includes coordination with the medical facility logistics personnel and installation environmental office.

d. The installation PH authority assists with the identification and characterization of pharmaceutical waste.

8–29. Overview of health risk assessment of environmental hazards

The goal of environmental health risk assessment is to protect the health of Soldiers, their Families, and other relevant populations exposed to environmental hazards related to Army activities. Environmental health risk assessment functions are executed according to the general technical guidance provided in chapter 4 and appendix D. Specific environmental health risk assessment services and capabilities are provided for—

a. Environmental site assessments.

b. Legacy environmental exposures.

c. Environmental exposure incidents.

d. Support for materiel acquisition programs.

8–30. Environmental site assessments

Environmental health risk assessment services supporting decisions for environmental sites on contaminated or potentially contaminated lands are provided mainly by strategic-level assets at the APHC. However, installation PH and regional health authorities provide some health risk assessment-related activities and services.

a. The APHC conducts environmental health risk assessments, PH assessments, health studies, and other related activities that support decisions for specific environmental sites on contaminated lands. The Center also reviews and consults on risk assessments performed by other organizations.

(1) AR 200–1 describes the medical roles and responsibilities regarding human health risk assessments and ecological risk assessments in support of the Army environmental protection and enhancement program.

(2) AR 350–19 describes the medical roles and responsibilities regarding health risk issues associated with the Army sustainable range program.

(3) The types of sites that are addressed include—

(a) Environmental restoration sites (DOD Manual 4715.20), which include those in the Army Installation Restoration Program, Base Realignment and Closure (BRAC) Program, Formerly Used Defense Sites Program, and military munitions response activities.

(b) Training and test range characterization and preservation sites.

(c) Ammunition demilitarization facilities, including conventional and chemical agent ammunition.

(d) Installation industrial facility operations, including permitting, closure, and decommissioning.

b. Installation PH authorities (in collaboration with the regional health authority, as needed)—

(1) Identify and investigate environmental hazards.

(2) Notify commanders of environmental health hazards posing risks of immediate PH concern.

(3) Provide onsite support and coordination within their level of expertise and available resources.

(4) Request guidance and technical support from the APHC as necessary.

8–31. Legacy environmental exposures

DODI 6055.20 provides policy guidance to the Army regarding the assessment, tracking, and documentation of significant long-term health risks from past environmental exposures to military personnel and Civilians resulting from living or working on Army installations. In support of the DCS-PH in these matters, APHC environmental health risk assessment personnel—

a. Investigate and assess the nature and extent of potential past exposures.

b. Develop and refine tools and techniques for evaluating past exposures.

c. Provide written responses to concerned Service members or other representatives.

d. Maintain an archive of pertinent information and response products in the system of records (DOEHRS-IH).

8–32. Environmental exposure incidents

Exposure incidents are known or suspected significant events during which a known population has been exposed to a significantly high level of one or more health hazards. DOD policy requires documentation and archiving of exposure investigations and reports of OEH exposures, including CBRN exposure incidents. Such activities involve OEH professionals and environmental medicine assets. Chapter 7 provides guidance related to environmental medicine-specific activities related to specific incidents. All PH data associated with OEH/CBRN incidents are managed and maintained in DOEHRS-IH. Exposure incident reporting during contingency operations follows the doctrine in ATP 3–11.37/MCWP 3-37.4/NTTP 3-11.29/AFTTP 3-2.44 and ATP 4–02.7/MCRP 4-11.1F/NTTP 4-02.7/AFTTP 3-42.3 that defines OEH/CBRN exposure incidents and reporting procedures. OEH professionals are involved in exposure risk assessment and reporting, which facilitate the understanding of potential long-term consequences of exposure events. In support of these matters, PH personnel—

a. Investigate and assess the nature and extent of potential exposures.

b. Develop and refine tools and techniques for evaluating exposures and conducting risk assessments.

c. Collaborate with and support environmental medicine assets during their activities related to medical follow-up and epidemiological investigations.

d. Provide consultation exposure and risk assessment services to Army senior leaders and other decisionmakers.

8–33. Support for materiel acquisition programs

Senior Enterprise-level PH assets at the APHC provide environmental health risk assessment support to materiel acquisition programs (see AR 70–1, DODI 3150.9, MIL–STD–3056, and other relevant policy guidance) that deal with OEH/CBRN hazard detection and measurement, OEH/CBRN surveillance, hazard and toxicological assessments, health risk assessment methods and risk characterization, hazard protection measures, and FHP decision support.

8–34. Introduction of climatic injury

Climatic environmental injuries include exertional heat injuries, cold weather injuries, and altitude-related injury. Such injuries may occur as isolated events or as a series of concurrent cases that suggest epidemiologic trends of significant concern. There is notable military training and operational impact associated with these preventable injuries. As such, the Armed Forces include heat- and cold-related injuries as RMEs for accountability and tracking. Climatic injury prevention and control require a comprehensive approach that incorporates—

a. *Annual health education and training.*

b. *Identification and monitoring of individuals at higher risk levels.* Marking and buddy systems should be used to monitor those individuals with prior heat/cold injury, certain medical conditions/medications, high BMI or poor fitness levels, and those who are not sufficiently acclimatized to hot environments and/or intense physical activities.

c. *Health hazard assessment.* Monitoring of both the environmental conditions and the physical intensity of activities is critical. This includes ensuring wet bulb globe temperatures are calculated prior to activities and routinely thereafter (such as hourly) at the specific location of the activity (for example, road marches, physical fitness training) so that Army heat risk categories are determined and work-rest cycles are adjusted in accordance with TB MED 507/AFPAM 48-152 (I). This assessment may be performed by PH, safety, or unit personnel and should be reported to the MTF when an exertional heat injury casualty occurs.

d. *Risk mitigation.* To minimize risks, risk management should include the appropriate adjustment of the time, duration, and intensity of activities. Personal interventions should include provision of proper hydration and nutrition as well as shade, cooling systems (fans, cold water), and protective equipment such as sunblock and sunglasses.

e. *Health outcome assessment.* Monitor installation- and unit-specific exertional heat injury and cold weather injury cases to identify increasing trends and potential causes or risk. Ensure all clinical cases are documented in the DRSi.

8–35. Functions

The following functions, carried out by all commanders and their staffs, are fundamental to the prevention and control of climatic injuries:

a. Providing protective clothing, equipment, supplies, and facilities (other than medical) to prevent climatic injuries from occurring.

b. Implementing heat and cold injury prevention programs according to guidelines in TB MED 507/AFPAM 48-152 (I) and TB MED 508, respectively.

c. As required by doctrine, ensuring that personnel at high risk of heat or cold injury (for example, those with prior heat or cold injury) are properly marked and monitored during training and operational activities. Even in moderate temperatures, wetness, physical exertion, and protective clothing can increase everyone's risk of heat or cold injury, particularly those who are predisposed to it.

d. Monitoring environmental conditions at troop locations in conjunction with knowledge of unit-specific activities (physical exertion levels, protective clothing, duration of activities and number of repeated days) with assistance from the installation PH authority.

e. Enforcing mandatory work/rest cycles based on environmental conditions in training environments and where allowed in operational missions.

f. Documenting and investigating exertional heat injuries and cold weather injuries to identify any lapses in prevention programs and any program areas needing improvement. Exertional heat injuries and cold weather injuries are reported to the installation PH authority or the MTF within 1 week of diagnosis for entry as an RME in DRSi.

(1) Cases treated and recovered in the field that are not evacuated to a higher level of care or given a limited duty profile are not considered reportable in DRSi. Units or others may track these cases on their own for visibility and trending.

(2) Cases assigned an inpatient status are considered "hospitalized" for DRSi reporting.

g. The installation medical authority and installation PH and safety personnel assist commanders in climatic injury prevention and control by—

(1) Recommending individual or environmental protective measures to commanders and leaders.

(2) Reporting all applicable heat- and cold-related injuries to DRSi (see para 3–8).

(3) Investigating clusters or severe cases of heat or cold-weather injuries.

8–36. Heat and cold injuries

a. Basic heat injury prevention and control involves heat injury prevention training; appropriate acclimatization, hydration and nutrition; work/rest cycles; clothing for missions and training; and the early detection and management of signs and symptoms of heat injuries. TB MED 507/AFPAM 48-152 (I) is the primary source of Army guidance. ATP 4–02.55 and Training Circular (TC) 4–02.3 provide individual and unit leader guidance.

b. Basic cold-weather injury prevention and control involves cold-injury prevention training; appropriate clothing, hydration, and nutrition; risk assessments of operations relative to the wind-chill index; and the early detection and management of signs and symptoms of cold-weather injuries. TB MED 508 is the primary source of Army guidance.

c. The DCS-PH publishes an annual All Army Activities (ALARACT) message to provide supplementary guidance to TB MED 507/AFPAM 48-152 (I) and TB MED 508 for each upcoming heat and cold injury season. These ALARACTs serve to remind regional health authorities and ACOM and DRU Surgeons that a new heat or cold injury season is approaching and that annual training is required. This annual supplemental guidance, usually published by the end of April, addresses recent lessons learned, additional training information, and any new guidance that may have been developed.

8–37. High-altitude-related illnesses

Basic high-altitude illness prevention and control involves altitude illness prevention training; appropriate acclimatization; the use of chemoprophylactic medications, when appropriate; and the early detection and management of signs and symptoms of high-altitude illness. Prevention of altitude sickness is best achieved through medical screening (AR 40–501) and acclimatization to altitude. TB MED 505 provides technical guidance.

8–38. Introduction of facility sanitation and hygiene

Sanitation and hygiene controls are applied to support the following objectives: safeguard PH, reduce the incidence of communicable diseases, and protect mission readiness of military units. Achieving these objectives requires—

a. Proper design and construction of public facilities, to include housing, childcare facilities, recreational areas, and food service operations.

b. Maintaining physical facilities in good repair.

c. Facility manager enforcement of prescribed sanitary controls and effective employee hygienic practices.

d. Periodic PH inspections to monitor sanitary control conformance.

e. Application of PH interventions that are designed to improve active managerial controls.

8–39. Functions

a. Senior commanders are responsible for ensuring that the physical facilities and public services available on the installations within their command jurisdiction are maintained and operated to protect the health of the supported population. Key actions include—

(1) Notifying the installation PH authority (Environmental Health and Veterinary Services) prior to approving requests to operate a new food service operation.

(2) Providing staff officer oversight of troop and Family support operations, including housing, manufactured home parks, recreational areas and facilities, food service establishments, laundry operations, and other operations that are capable of transmitting disease when not controlled properly. On-post military housing (guest lodging and Family quarters) includes privatized facilities.

(3) Consulting with the appropriate regional health authority to coordinate environmental health sanitation inspection support at installations that do not have assigned PH personnel.

(4) Overseeing disciplinary control board activities to evaluate off-post facilities that present a potential threat of communicable and infectious disease for Service members and their Families. This board may include representatives of PH, the Judge Advocate General, the Military Police, and other appropriate staff and community representatives. The scope of responsibilities for the disciplinary control board includes protecting Soldiers and their Families against communicable and infectious diseases.

b. The installation PH authority's Environmental Health Section—

(1) Executes sanitation and hygiene inspection and surveillance activities to protect PH.

(2) Validates technical competencies of assigned PH workers. This is achieved by implementing quality assurance protocols and applying quality controls in the delivery of services to promote stakeholder confidence in the PH team (see chap 2).

(3) Conducts risk-based sanitation and hygiene activities that emphasize training and health education while providing adequate onsite evaluations or surveys to alert the medical and senior commanders of any health hazards.

(a) Inspection schedules are executed in accordance with the frequencies specified in TB MED 531 or based on a facility risk assessment survey. Risk ratings are used to establish routine sanitary inspection schedules for all facilities and operations for which a prescribed frequency for conducting sanitation inspections has not already been directed.

(b) Educational and consultative support interventions are used to improve active managerial controls in operations that are high-risk due to frequent non-compliance to prescribed sanitation standards.

(4) Reviews and approves facility design and construction materials, equipment, authorized services, and sanitation standing operating procedures and other documents dealing with the sanitary operation and hygienic controls for facilities, as specified in TB MED 531.

(5) Identifies operations and facilities within the medical facility's assigned health services area that present a High or Extremely High risk for contributing to adverse health outcomes in supported populations.

(6) Distributes PH inspection findings, which are reported to appropriate installation representatives for inclusion in the Installation Status Report. Environmental health surveillance activities are also reported as follows:

(a) A copy of the non-compliant (or unsatisfactory) general sanitation and food sanitation inspection report is forwarded at the time of inspection to the operation's sponsoring organization (Army and Air Force Exchange Service (AAFES) and MWR, for example) or to the next-level commander for operations conducted by military personnel.

(b) Copies of all dining facility food sanitation inspection reports, regardless of rating, are forwarded to the Installation Food Program Manager at the time of inspection.

(c) Environmental Health program performance data are submitted quarterly (or as directed) via the EHPSR in PHMS (see para 3–12).

c. Facility managers are responsible for maintaining sanitation and hygienic controls within their operations. Actions include—

(1) Monitoring employee health, and restricting employee duties, as appropriate, when the employee has a suspected or confirmed communicable illness.

(2) Adhering to prescribed sanitation standards, and ensuring timely correction of violations found during inspections.

(3) Notifying appropriate installation elements when Government-owned facilities and equipment are found to contribute to unsanitary conditions due to poor repair or damage.

d. Dental facilities are responsible for water quality infection control associated with dental chair water systems. Periodic dental unit sampling is conducted by the infection control officer, and sample analysis is coordinated through a professional laboratory.

e. Commanders of military units are responsible for assuring sanitary control of facilities that are operated under their command and for restricting practices that present a high risk to Soldiers' health. Examples of activities requiring oversight include, but are not limited to—

(1) Field shower and laundry operations.

(2) Field feeding operations.

(3) Unit-operated fitness rooms.

(4) Barbering services performed in the barracks by unit members. When professional barbering services are not available, unit members may use the military field barber kit. TB MED 531 specifies the sanitary controls for field barbering services.

(5) Body art. Individual Soldiers are prohibited from performing tattoos, piercings, and other body art services in the barracks, in other facilities located on Army installations, and at any other military site occupied during training, combat operations, and contingency support operations. This prohibition extends to those Soldiers who may be licensed to perform these services by their State of residence.

f. All environmental PH data associated with facility sanitation and hygiene inspections are entered in DOEHRS-IH (see para 3–6).

8–40. Inspected operations

TB MED 531 presents the sanitation controls and inspection requirements for the facilities and operations identified below. These requirements are applicable to the privatized facilities operated through the RCI and PAL in accordance with the Ground Lease agreements. Periodic sanitation inspections are required for the following operations and facilities:

a. Barber and beauty operations. Barber shops, beauty shops, and other facilities that perform hair, skin, or nail treatments are categorized as "beauty operations." The services provided by a beauty operation may include hair cutting, chemical hair treatments, skin treatments, or nail treatments. The term "day spa" is sometimes used to characterize multifunctional beauty operations that offer a combination of hair, skin, and nail services.

b. Fitness facilities. Fitness facilities are gymnasiums and fitness centers and may include temporary structures in which physical fitness training services and equipment are available for public use on the installation. Therapeutic services for injury rehabilitation and pain management are contained within the scope of "fitness operations."

(1) Therapeutic services performed through a medical facility (for example, physical therapy) or under the direct supervision of medical personnel are evaluated according to The Joint Commission guidelines.

(2) Indoor tanning is prohibited on Army installations. UV phototherapy under medical supervision is permitted for treatment at medical facilities.

(3) Cryotherapy is prohibited on Army installations, except when performed at medical facilities under the direct supervision of medical personnel.

c. Massage operations. Massage services may be performed in a medical facility (for example, physical therapy) for injury rehabilitation, or may be offered as a nonmedical service for the purpose of relaxation. Inspections are conducted at nonmedical massage facilities that service the general public.

d. Troop housing. The term "troop housing" as used in this pamphlet includes Family housing and unaccompanied personnel housing (UPH) facilities for permanent party, institutional training, and transient training populations as characterized in AR 420–1. Periodic sanitation inspections are required for institutional training UPH, transient training UPH facilities with central latrines/showers, and barracks used during unit mobilizations.

(1) Sanitary controls for troop housing consider adequate floor space, environmental controls, lighting, ventilation, and adequacy of hygiene facilities as important health and safety factors.

(2) Public health personnel assist installation emergency operations personnel in developing standards and procedures for mobilization to include evaluating and developing mobilization troop housing and provisions for feeding, potable water, personal hygiene, and other activities necessary to support the health of Soldiers.

(3) Evaluation of on-post Family housing is conducted upon request by the installation housing office or garrison commander in accordance with AR 420–1 and under the provisions of the Privatized Project Ground Lease.

e. Manufactured home parks. Manufactured home parks operated on Army installations are a component of Army Family housing and UPH. Inspections are conducted upon request by the senior commander and when unsanitary conditions that may present a health risk are suspected or reported.

f. Recreational areas. Recreational areas include campgrounds, playgrounds, marinas, recreation centers, athletic fields, riding stables, and a wide variety of other recreation services available on Army installations. Public health personnel participate in pre-site selection for new recreational areas to assess environmental health factors that may impact the operation. Recreational areas must provide adequate protection for the environment and ensure sanitation controls are integrated in the design, construction, and operation of the recreational site.

g. Recreational waters. Recreational waters include manmade aquatic venues such as pools, spas, and spray pads, as well as natural bathing areas. TB MED 575 provides the requirements and procedures for sanitary surveillance of recreational water facilities.

h. Child and youth services facilities. Medical/health inspections for child care centers, Family child care homes, and youth services facilities are required according to AR 608–10, DODI 6060.02, and DODI 6060.4. Medical inspections are comprised of two parts: health and sanitation. The health and wellness aspects of child care operations are generally

evaluated by an Army Public Health Nurse (APHN). Environmental Health personnel conduct the sanitation component of the inspection, which examines general sanitation, food service, and other environmental factors that impact health.

i. Confinement and detention facilities. AR 190–47 directs the conduct of medical inspections at Army detention and confinement facilities.

j. Laundry operations. Laundry and dry cleaning operations are governed under AR 210–130; ATP 4–42 addresses field laundry. Laundry operations should follow commercial laundry processes. Use of hot water and heated mechanical drying are the primary mechanisms used to destroy harmful microorganisms deposited on fabrics. Application of an antimicrobial agent is recommended for laundry with high potential levels of microorganisms, such as gym towels and athletic clothing, and linens from transient quarters, hospitals, refugee camps, disaster relief operations, prisons, and field operations.

k. Food service operations. Food protection consists of actions in two major areas that contribute to protecting PH: food safety and food defense. Food safety encompasses all practices associated with safe food handling and sanitary control of operations to prevent unintentional contamination of food. Food defense addresses controls to protect against the deliberate contamination of food (see para 9–4).

(1) TB MED 530/NAVMED P-5010-1/AFMAN 48-147_IP provides food safety standards and guidance for PH surveillance of food establishments on military installations.

(2) Public health inspections ensure safe and sanitary food service is provided at all levels of command in both garrison and field environments. In accordance with AR 40–657/NAVSUP 4355.4H/MCO P10110.31H, the Army Veterinary Service conducts military sanitation surveillance inspections for commissaries, including delicatessen operations within the commissary, AAFES retail stores (for example, Exchange and Express), Class I supply points, food storage facilities, and bulk food storage within food service establishments. Environmental health inspection personnel are responsible for facilities that conduct food service, such as food courts, restaurants, snack bars, mobile food vendors, and other similar food service activities operating on the installation.

(3) Food defense activities are managed by the Army Veterinary Service and may include collaboration with Environmental Health personnel.

(4) Environmental Health and the Army Veterinary Service maintain a synergistic relationship regarding PH surveillance of food operations. Collaboration and communication are essential for ensuring services are administered efficiently and effectively.

l. Body art operations. Body art businesses involving tattooing, application of permanent makeup, body piercing (except for ear piercing), Henna, and other invasive treatments are prohibited on Army installations.

(1) Ear piercing is an authorized service through AAFES as specified in AR 215–8 and is limited to piercing the non-cartilage portion of the ear lobe.

(2) The senior commander or unit leaders may request a PH evaluation of body art operations located in close proximity to the installation. The installation PH authority coordinates with the local health department to conduct a joint inspection for safety, cleanliness, and sanitary controls to protect against bloodborne pathogens and the spread of infectious disease organisms. The installation PH authority recommends placing a facility "off-limits" if it presents a health risk to Service personnel.

m. Ice manufacturing operations.

(1) Commercial ice plants are evaluated and approved by the Army Veterinary Service. Approved plants are listed in the *Worldwide Directory of Sanitarily Approved Sources* or a list of locally approved establishments. See AR 40–657/NAVSUP 4355.4H/MCO P10110.31H for food inspection and laboratory services policies and procedures.

(2) Ice manufacturing plants operated on the installation require routine inspection by PH personnel according to the sanitary requirements for ice manufacture specified in Military Standard (MIL–STD)–3006C and the following guidance:

(a) The current *International Plumbing Code, Uniform Plumbing Code,* or local jurisdiction plumbing code (whichever is more strict) governs all plumbing associated with ice manufacturing.

(b) Surfaces of floors, walls, and ceilings of all rooms used for the manufacture, processing, and storage of ice are smooth, impervious, and nontoxic (under use conditions).

(c) All can fillers, core-sucking devices, and drop tubes are handled in a manner to prevent contamination.

(d) Freezing cans are disinfected by steam or by submersion for 2 minutes in a 100-parts per million free available chlorine solution.

(e) Ice is transported only in vehicles dedicated for transporting ice. An exception is granted for transportation of packaged or containerized ice placed in an enclosed and clean multiuse vehicle.

(3) Ice machines operated in administrative areas such as an office work space or troop barracks are managed and maintained by the facility occupants. Routine sanitary inspections by Environmental Health personnel are discretionary. TB MED 531 provides guidance for maintaining and evaluating the sanitary control of ice machines.

n. *Base camp assessments.* Base camp assessments comprise the collective reporting of sanitary conditions associated with a contingency operation. Paragraphs 10–9 and 10–10 of this pamphlet discuss the requirements for conducting a base camp assessment.

8–41. Overview of the liaison to the Agency for Toxic Substances and Disease Registry

a. The Agency for Toxic Substances and Disease Registry (ATSDR) is mandated by Congress under the Comprehensive Environmental Response, Compensation, and Liability Act to assess potential PH exposures. The DOD and ATSDR collaborate in an interagency effort to promote timely and accurate execution of ATSDR PH activities on DOD installations and sites.

b. DODI 4715.07 and DOD Manual 4715.20 designate the Secretary of the Army as Lead Agent for the ATSDR. The Secretary of the Army has assigned the Lead Agent authorities to the Assistant Secretary of the Army for Installations, Energy, and Environment (ASA(IE&E)) for the DOD's interaction with the ATSDR.

c. The ASA(IE&E) has delegated mission execution authority to Commander, MEDCOM. MEDCOM's DOD and Army Liaisons to the ATSDR reside at APHC.

d. The DOD Lead Agent (ASA(IE&E)) ensures the exchange of funding and information, and coordinates the review of all documents produced by the ATSDR pertaining to DOD sites, and with the DOD Services.

8–42. Role of the Department of Defense Liaison to the Agency for Toxic Substances and Disease Registry

As the DOD Liaison, the APHC executes DOD responsibilities for interactions with the ATSDR (MOU between the DOD and ATSDR), including the responsibilities provided in 10 USC 2704(a), 2704(c), 2704(d), and 2704(e), and the following:

a. Maintain and execute the DOD-ATSDR MOU.

b. Serve as Liaison among the DOD, the Services, and the ATSDR.

c. Coordinate and plan with the ATSDR to ensure execution of DOD-ATSDR program review meetings.

d. Chair the DOD workgroup of Service Liaisons, subject matter experts, and program managers.

e. Develop an Annual Plan of Work (APOW) and its amendments among the DOD, the Services, and the ATSDR.

f. Facilitate transfer of funds between the Services and ATSDR, including notifying the DOD Services of the costs in a timely manner to enable them to plan, program, and budget accordingly.

g. Monitor and report on the performance and execution of the APOW and its amendments.

h. Ensure ATSDR receipt of the DOD and Services' information/data.

i. Ensure DOD and Services' data validation review of ATSDR products.

j. Work with the ATSDR during evaluation of petitions/requests.

k. Maintain a repository of ATSDR health assessments and health consultations on DOD sites and installations.

l. Maintain a database of ATSDR recommendations and Services' responses.

m. Provide administrative and technical support regarding the ATSDR activities authorized under the APOW and its amendments, including—

(1) Public health assessments and health consultations.

(2) Toxicological profiles and toxicology research.

(3) Health education and health promotion.

(4) Health surveillance, health studies, and exposure and disease registries.

(5) Emergency response.

8–43. Army Liaison to the Agency for Toxic Substances and Disease Registry

The role of Army Liaison to ATSDR currently resides at the APHC. Other Army agencies may also fill this role. The responsibilities of the Army Liaison are to provide expertise in the areas of ATSDR execution covered under the MOU. The Army Liaison to ATSDR—

a. Develops the Army ATSDR program and coordinates with the DOD Liaison, ATSDR, and Army agencies, installations, and decisionmakers.

b. Participates in DOD-ATSDR program review meetings and Services' workgroup meetings.

c. Coordinates and reports on ATSDR activities for the Army.

d. Develops budget estimates for the Army. Includes requests for resources to support ATSDR requirements and recommendations in the budget submittals for the Army's Environmental Restoration Account, BRAC, and other appropriations, where needed.

e. Provides funding to the ATSDR through the APHC.

f. Coordinates changes to the APOW through the DOD Lead Agency.

g. Coordinates the Army's identification of requirements and resources for new toxicological profiles to the DOD Lead Agency for incorporation into the APOW.

h. Provides oversight of ATSDR activities within the Army and apprises the Secretary of the Army and the DOD Lead Agent of these activities.

i. Provides the best available site and installation information that is necessary for ATSDR activities; ensures ATSDR publications reflect accurate interpretation and use of the information.

j. Ensures and provides cooperation and coordination for site visits, data and information exchanges, data validation reviews, participation in professional meetings, and participation in intra-agency and public forums.

k. Maintains the repository for ATSDR documentation for the Army.

l. Coordinates Army review of ATSDR toxicological profiles.

Chapter 9
Veterinary Service

9–1. Introduction

The Army Veterinary Service's mission encompasses animal health and welfare, food protection, and veterinary PH across the military components, as described in DODD 6400.04E. Veterinary PH focuses on the animal health interface with human health and environmental health and is an essential part of the One Health concept (CDC, 2018). Veterinary PH includes those aspects of food protection and animal health that may impact the health of Service members, military working animals, Civilians, Retirees, Family members, and pets across the DOD. These aspects include the practice of preventive veterinary medical care; animal welfare; human-animal bond advocacy; veterinary food protection surveillance; zoonotic and endemic animal disease surveillance, epidemiology, control, and prevention; health education and extension; shared management of domestic and wild animal populations; and assistance in preparing for and responding to PH emergencies.

9–2. Animal health

a. The Army Veterinary Service's animal health mission supports PH and One Health initiatives on military installations of all Services by directly improving animal health and supporting zoonotic disease control programs and initiatives. The veterinary animal health mission has a direct, positive impact on PH and provides a platform to maintain the skills required for the readiness of Veterinary Service personnel.

b. Animal health missions include, but are not limited to—

(1) Providing comprehensive medical and surgical care for DOD-owned animals to maintain operational readiness.

(2) Providing care for privately owned animals, with a focus on PH and the prevention and control of zoonotic and infectious animal diseases or those conditions which may constitute community health problems or are of significant public interest.

(3) Providing comprehensive care for non-DOD-owned animals on a fee for goods and services basis in accordance with interagency agreements, as mission and resources permit.

(4) Promoting the human-animal bond by improving the health of animals, which improves the physical, psychological, and emotional health of supported beneficiaries.

(5) Providing training for appropriate personnel that includes, but is not limited to, veterinary PH, zoonotic, and other animal disease control measures; emergency animal first aid; CBRN protective measures for animals; and animal care procedures.

(6) Maintaining liaisons with civilian PH agencies in matters pertaining to animal health, veterinary PH, and zoonotic disease surveillance.

(7) Coordinating wild animal endemic disease surveillance programs on military installations with Federal, State, and foreign government programs and agencies.

c. The provision of animal health care is described in AR 40–905/SECNAVINST 6401.1B/AFI 48–131 and the Veterinary Medical Standardization Board guidelines published on the Army Veterinary Service milSuite site (https://www.milsuite.mil/book/groups/army-veterinary-services).

9–3. Animal welfare

The Army Veterinary Service advocates for and provides consultation regarding the welfare of DOD-owned animals and privately owned animals residing on DOD installations. Activities include inspecting housing and husbandry practices, and developing installation policy that provides standards for animal welfare and control, as specified in AR 40–905/SECNAVINST 6401.1B/AFI 48–131. Veterinary Corps Officers also advise on animal health and welfare procedures

during the procurement (purchase or donation), disposition, or adoption of military working dogs and DOD-owned equids. Disposition and adoption must be conducted in accordance with 10 USC 2583, AR 40–905/SECNAVINST 6401.1B/AFI 48–131, and DODM 4160.21, Vol 3 and 4. Veterinary Corps Officers contribute to the welfare of animals used in DOD-supported research, development, test, evaluation, and training programs by providing professional guidance and direction to ensure compliance with DODI 3216.01, AR 40–33/SECNAVINST 3900.38C/AFMAN 40-401(I), 7 USC 2131–2159, and 9 CFR 1, 9 CFR 2, and 9 CFR 3.

9–4. Food protection

a. The Army Veterinary Service implements and evaluates food protection measures (food safety and food defense) to ensure food ingredients and food products are safe, wholesome, meet quality standards, and are free from unintentional or intentional contamination and adulteration. The Army Veterinary Service's food protection mission includes veterinary food protection surveillance and inspections of installation- and theater-level food receipt and storage, on- and off-installation support for special events, quality assurance inspections of food products purchased through APF and NAF contract instruments, and management of the DOD Commercial Food Establishment Sanitation Audit Program. Procedures for conducting the food protection mission are provided in MIL-STD 3006C, AR 40–656/NAVSUPINST 4355.10/MCO 10110.45, AR 40–657/NAVSUP 4355.4H/MCO P10110.31H, and AR 40–660/DLAR 4155.26/NAVSUPINST 10110.8C/AFR 161–42/MCO 1011038.C.

b. Food protection mission services include—

(1) *Food protection audits of commercial food establishments.* This program ensures certain food products purchased by the Armed Forces or intended for sale on military installations originate from sources specifically evaluated for PH threats unique to military populations and military logistics scenarios.

(2) *Installation support.* Installation support is provided through veterinary food protection surveillance for the safety and quality of food and bottled water on the supported installation through direct inspection of food at on-post facilities.

(3) *Installation food vulnerability assessments.* Installation food vulnerability assessments are conducted routinely on all Army, Navy, and Joint installations and consist of a food vulnerability assessment performed for each food facility located on the installation as part of the Installation Support Plan. Assessments are conducted by formally trained PH personnel who have successfully completed the Installation Food Vulnerability Assessment course conducted through the AMEDDC&S HRCoE.

(4) *Subsistence laboratory analysis.* Sanitation audit sampling, other origin sampling, and destination monitoring sampling services are managed at the senior Enterprise level and comprise laboratory surveillance for monitoring the microbiological and chemical safety of commercially produced or supplied food and bottled water.

(5) *Operational rations inspections.* The performance of receipt and cyclic destructive inspections ensures rations in storage remain safe for consumption and of a quality expected of the subject ration. Veterinary food protection surveillance for operational rations is conducted for individual and group rations at the unit, installation, and theater level.

(6) *Unique mission requirements and special events.* Unique mission requirements and special events include, but are not limited to, in-transit Forces; training and exercises; operational deployments; graduation ceremonies, and events open to the public (such as Armed Forces Day celebrations) (AR 525–13). For unique mission requirements and special events, a risk-based evaluation for food protection will be performed on the proposed catering support for Army, Navy, and Joint sponsored or supported off-installation events. Residual risk acceptance is the responsibility of the appropriate commander.

(7) *Department of Defense hazardous food and non-prescription drug recalls.* Recalls originate from a wide variety of sources such as the USDA–Food Safety Inspection Service, the FDA, lab results, and the customer complaint system. The All Food Activities (ALFOODACT) message is the mechanism by which the Defense Logistics Agency announces recalls within the DOD. ALFOODACT response and tracking procedures are outlined in AR 40–660/DLAR 4155.26/NAVSUPINST 10110.8C/AFR 161–42/MCO 1011038.C.

(8) *Military sanitary inspections.* These inspections, conducted by the Veterinary Service, assess compliance with the food safety criteria presented in TB MED 530/NAVMED P-5010-1/AFMAN 48-147_IP at all Defense Commissary Agency and Service Exchange retail convenience stores (for example, Express and mini-marts) and storage warehouses associated with the Departments of the Army and Navy.

(9) *Food and water risk assessments.* See paragraph 10–21 of this pamphlet.

9–5. One Health

a. One Health is the integration of efforts from multiple disciplines to attain optimal health for people, animals, and the environment. One Health recognizes that human health is connected to the health of animals and the environment. The Army Veterinary Service contributes to the success of One Health by protecting human and animal health through the diagnosis, treatment, and prevention of zoonotic and infectious animal diseases; ensuring food protection; and collaborat-

ing with other PH elements. One Health is also an important consideration in global health engagement. In many populations, human health and security may depend on healthy animals to provide food, fiber, labor, shelter, transportation, and economic security, among other functions. The Army Veterinary Service recognizes and communicates the various ways in which One Health may impact the health of the Force, the community, and the mission of the local commander.

b. Veterinary One Health includes, but is not limited to—

(1) Zoonotic and infectious animal diseases.

(2) Foodborne illnesses.

(3) Human-animal bond programs.

(4) Communication.

9–6. Zoonotic and infectious animal diseases

a. One Health involves the identification and prevention of zoonotic and infectious animal diseases through surveillance, treatment, prevention, and control. In a coordinated effort, PH professionals investigate zoonotic and infectious animal disease outbreaks and assess the risks to humans, animals, and the environment, such as the risk to agriculture.

b. Several zoonotic diseases are spread through animal bites or scratches. These include, but are not limited to, rabies, plague, tularemia, cat scratch fever, rat bite fever, and infections from *Capnocytophaga canimorus*, herpes B (nonhuman primates), and *Pasteurella spp*. The importance of an effective animal bite/scratch program at the installation level cannot be over-emphasized. Immune-compromised individuals are at increased risk from these diseases.

c. The mitigation of zoonotic and infectious disease threats requires recurring surveillance of the health records of military working animal populations and privately owned animal populations in order to identify, track, and analyze these threats. Army Veterinary Service personnel work with other PH colleagues to effectively identify and track zoonotic diseases affecting both human and animal populations, as well as infectious diseases affecting animal populations. Animals often serve as health sentinels for co-located humans. Early identification of these diseases in the animal population should be shared with local PH personnel and with the appropriate installation collaboration group (such as a PH advisory team or equivalent group as established by the installation PH authority) for coordination of efforts.

d. The Army Veterinary Service inspects animals and their environment in Department of Defense Dependents Schools (DODDS) and on-post child care centers in accordance with AR 608–10 to ensure the animals are free from disease, immunized appropriately, and sanitarily maintained; and advises DODDS and on-post child care personnel on any welfare concerns.

9–7. Animal rabies control program

The animal rabies control program will be conducted in accordance with AR 40–905/SECNAVINST 6401.1B/AFI 48–131.

a. Local policy. Veterinary Corps Officers work with installation or garrison commanders to develop applicable directives or polices regarding animal rabies control, including requirements for animal registration and immunization.

b. Reports. Animal bites and scratches are documented on DD Form 2341. Reporting is a coordinated action with the MTF, as specified in paragraph 11–6 of this publication, and includes communication with the local or State health department.

c. Rabies prevention. Rabies is a viral disease with a human case-fatality rate that approaches 100 percent. Risk from potential rabies exposure is minimized through the following enhanced rabies prevention activities:

(1) Through the occupational health clinic, develop a pre-exposure rabies immunization protocol for selected individuals, based on increased occupational risk (for example, military working dog handlers, Army Veterinary Service personnel, and personnel involved in animal control efforts) (AR 40–562/BUMEDINST 6230.15B/AFI 48–110_IP/CG COMDTINST M6230.4G).

(2) Conduct rabies prevention education emphasizing the importance of domestic animal vaccination, animal bite prevention, and the avoidance of wildlife and stray animals.

(3) Include appropriate rabies threat and prevention education in medical threat briefings for deployments and other contingency operations.

d. Rabies exposure. A potential rabies exposure is a bite or scratch from an animal capable of spreading rabies; animal saliva or neural tissue contact with a person's mucous membranes or broken skin; and actual or potential contact with a bat.

(1) If the animal involved in the potential rabies exposure has a medical record that is maintained by the local military VTF, details of the biting incident will be recorded in the animal's veterinary health record. This record will be maintained for the duration required by the Army Record Information Management System.

(2) Army Veterinary Service personnel generate a Bite-Scratch Report in VSIMS for internal tracking. The report is completed with information from DD Form 2341.

(3) Based on the most current PH recommendations, a rabies risk assessment for exposed and potentially exposed individuals is completed in coordination with members of the Rabies Advisory Board.

(4) The local Rabies Advisory Board coordinates with a PH advisory team or an equivalent group as established by the installation PH authority (see para 12−3) to assess the quality of response to potential rabies exposures and to recommend changes to decrease future potential rabies exposures. These recommendations will, at a minimum, consider the recommendations in the AFPMB TG 37.

9–8. Foodborne illness

Foodborne illness in human and animal populations may have far-reaching impacts on the health of the Force, both human and animal, and to the beneficiary population. Army Veterinary Service personnel coordinate and collaborate with other installation PH assets to help prevent foodborne illnesses. During foodborne illness outbreak events, Army Veterinary Service personnel help to identify the cause and to control the spread of the illness. Occurrences of foodborne illness outbreaks or related issues are reported in DRSi (see paras 3–8 and 6–3) and should be shared with the local or State health department and the appropriate installation collaboration group (such as a PH advisory team or equivalent group as established by the installation PH authority) for coordination of efforts.

9–9. Human-animal bond

In coordination with other healthcare professionals, Army Veterinary Service personnel support human-animal bond programs to improve Army Community, Family, and individual health. Human-animal bond programs involve the interactions and attachments between people and animals and the significance of the human-animal bond to physical, psychological, and emotional health. Further guidance for human-animal bond programs is provided in TB MED 4.

9–10. Communication

a. Regular communication and collaboration with other supporting PH personnel is essential to ensure continuity and promote efficiencies during the execution of food protection activities (see para 8–40*k)*.

b. For successful PH outcomes, coordination and collaboration must occur across all local PH elements (see para 12–3). Army Veterinary Service personnel should be knowledgeable of relevant issues and be prepared to share information during installation PH collaboration meetings (for example, a PH advisory team). Animal health, food protection, and One Health issues relevant for discussion will vary according to the needs of the local command and supported installations. Such issues may include—

(1) Current food protection matters (for example, ALFOODACTs).

(2) Zoonotic, emerging, and re-emerging infectious diseases; and the effectiveness of control and prevention efforts, including rabies.

(3) Vector-borne diseases common to animals and humans.

(4) Current professional guidance regarding control of stray animals (see para 8–4*a*).

(5) Animal welfare and the human-animal bond as they pertain to disaster preparedness and noncombatant evacuation operations.

c. Public messaging should occur through coordination with local health risk communicators and Public Affairs offices. One Health, animal health, and food safety education and information products in both print and electronic formats should be made available to the supported installation population. These products are available through the APHC Health Information Products eCatalog on the APHC public internet webpage.

Chapter 10
Operational Public Health

Section I

Background

10–1. Introduction

History has shown that DNBI plays a significant role in the outcome of military operations. In its most fundamental form, operational PH is the application of garrison-based health threat identification and health protection practices in the operational setting (field training, exercises, combat, and contingency operations).

a. Garrison-based PH services are appropriately tailored to the mission and the operational or training environment.

b. The success of operational PH requires deliberate and consistent analysis and communication of health threats to inform individuals within the operational environment, and the implementation and enforcement of unit and individual

countermeasures (for example, exposure controls, chemoprophylaxis, and immunizations) required to reduce associated health risks.

c. Commanders and unit leaders must remain informed and proactively engaged to ensure the health of the Force; reduce health threats, stressors and risks; and promote all available countermeasures.

d. Operational PH services are provided according the guidance provided in this chapter, JP 4–02, AR 11–35, ATP 4–02.7/MCRP 4-11.1F/NTTP 4-02.7/AFTTP 3-42.3, ATP 4–02.8, and ATP 4–02.82.

10–2. Functional roles and capabilities

Operational PH activities should begin early during the operations process, which is defined by Army Doctrine Publication (ADP) 5–0. Command surgeons, supported by their staffs, use the operations process to drive the conceptual and detailed planning necessary to understand, visualize, and describe their operational environment, understand health threats, make and articulate FHP and health service support decisions, and direct, lead, and assess operational PH activities that support commanders. The functional roles of operational PH are distributed across the following operational PH capabilities:

a. Command surgeons and their staffs (such as division and brigade Environmental Science and Engineering Officers) are responsible for establishing baseline health conditions, capturing data on potential and actual OEH exposures, and monitoring for subsequent deviations, prescribing large-scale chemoprophylaxis as necessary, providing personnel, assessment and reporting support to other PH assets, training FSTs, producing SOPs, and providing general PH support and consultation for unit leaders.

b. Medical Detachments (Preventive Medicine) provide technical consultation support on PH and preventive medicine issues throughout the operational theater (see ATP 4–02.8).

c. Medical Detachments (Veterinary Service Support) are the sole provider of veterinary services for all Service components of the DOD, and veterinary teams may be co-located with U.S. Navy, Marine Corps, or Air Force units in operational areas. Veterinary Service Support personnel provide technical consultation and support for veterinary PH issues, food protection surveillance, and comprehensive medical and surgical care for DOD and contracted working dogs throughout the operational area (see ATP 4–02.8).

d. The Area Medical Laboratory is a PH asset that focuses on rapid health-hazard identification and assessment in an AO. The Area Medical Laboratory is a specialized theater laboratory with the ability to provide field confirmatory and theater validation laboratory support.

e. The mission of the unit FST is to assist commanders in maintaining the health and well-being of unit members by overseeing the application of health and sanitation controls. FSTs train unit personnel in individual preventive and protective measures, and supervise or conduct basic PH services, such as advising on base camp site selection, water treatment and monitoring, arthropod and rodent control, solid waste management, and monitoring for prevention of climatic and noise injuries. The scope and details of unit FST operations are defined in ATP 4–25.12 and ATP 4–02.8.

f. Individual Soldiers and unit leaders are the first line of defense for the early recognition and application of appropriate procedures to reduce health risks. Public health actions that are understood and proactively implemented by unit leaders and individual Soldiers have the greatest impact on preventing and controlling casualties from disease and injuries.

g. The use of DOEHRS-IH is required (DODI 6055.05, AR 11–35) for operational PH activities in all instances when internet connectivity and CAC-enabled computers are available. Prior to any deployment, it is the responsibility of the unit PH asset (for example, Preventive Medicine or Environmental Health personnel) to—

(1) Obtain a DOEHRS-IH account and/or ensure it is active (see subpara 3–6*b*(1)).

(2) Ensure they are trained on how to add and review data in the system through either the APHC, a regional health authority organization, or the online training modules available at https://phc.amedd.army.mil/topics/enviro-health/hrasm/pages/doehrs_resources.aspx.

(3) Perform reconnaissance in DOEHRS-IH for the deployment location(s) for which they are responsible. It is critical that operational PH assets obtain and use existing knowledge about a location to enhance OEH support planning and actions.

Section II

Health Surveillance

10–3. Comprehensive health surveillance

a. Comprehensive health surveillance is an important element of FHP programs to promote, protect, and restore the physical and mental health of Army personnel throughout their military service and employment, both in garrison and during all Army activities.

b. Health surveillance includes medical surveillance and OEH surveillance. These surveillance systems continuously capture data on occupational and environmental exposures to potential and actual health hazards and link with medical surveillance data to monitor the health of the U.S. military population and identify potential risks to health. Health surveillance thereby enables timely interventions to prevent, treat, or control disease and injury and reinforces the provision of optimal medical care.

c. Health surveillance activities (DODI 6490.03) are conducted before, during, and after deployments as outlined in chapter 6. They include essential Army Civilian and contract personnel directly supporting deployed Forces (DODI 1400.32 and DODI 1100.22).

d. Health surveillance is used to help document the nature, magnitude, and distribution of health threats and exposures; focus PH and risk communication efforts; and document the efficacy of interventions and preventive measures.

e. Army health surveillance analytical capabilities include—

(1) Access to the DMED, which contains current and historical data on diseases and medical events as well as DOD personnel and deployment data (see para 3–4*g*).

(2) Epidemiological expertise to provide analyses and reporting on request to commanders, medical planners, policymakers, and others.

10–4. Medical surveillance

a. Medical surveillance is defined as the ongoing systematic collection, analysis, and interpretation of data derived from instances of medical care or medical evaluation, and the reporting of population-based information for characterizing and countering threats to a population's health, well-being, and performance.

b. Medical surveillance is a component of health surveillance which involves capturing individual and population data regarding instances of disease and injury (inclusive of DNBI surveillance), medical interventions (such as immunizations, treatments, and medications), stress-induced casualties, combat casualties, and medical evacuations to permit the analysis, interpretation, and reporting of population-based information for identifying, characterizing, and countering threats to the Army population's health, well-being, and performance.

c. The design, integration, and use of Army medical and personnel information systems must support disease, injury, and behavioral health surveillance in order to assess, maintain, and protect the health of Army personnel.

d. The APHC provides timely, routine, and systematic collection, analysis, reporting, and archiving of pertinent health information on defined Army populations. These capabilities—

(1) Document the nature, magnitude, and distribution of disease, injury, and behavioral health conditions in Army populations.

(2) Are designed and implemented to provide useful and reliable health information to support improving and sustaining the health, fitness, and performance of Army personnel.

e. RMEs occurring in the operational setting are reported through the DRSi. See paragraph 3–8 of this pamphlet for information on obtaining a DRSi account.

f. Medical surveillance activities associated with occupational and environmental exposures and registries are discussed in chapter 7.

10–5. Disease and non-battle injury

a. DNBI event trends, whether counts or rates, are an important type of surveillance for use at all levels (unit, site/installation, regional, component command, theater) and must be monitored regularly. Abnormal patterns and trends may indicate a problem that could negatively impact mission accomplishment and indicate the need for additional investigation and, if validated, the need to implement appropriate preventive countermeasures.

b. The purpose of DNBI surveillance is to promote and maintain healthy and fit deployed Forces, through monitoring illnesses and injuries and instituting interventions as needed. Specific objectives include—

(1) Communicable disease outbreak detection.

(2) Sentinel event detection, primarily related to RMEs.

(3) Other relevant areas of PH, such as injury prevention, rabies prevention and control, and exposure monitoring of environmental and occupational sources.

c. DNBI surveillance is not meant to capture the overall clinic/hospital caseload, justify specific resources, or track other business-oriented aspects of healthcare operations. Neither should it track the incidence of chronic diseases where preventive efforts in the theater of operation are generally not effective or available, such as cardiovascular disease or cancer. DNBI surveillance is applicable in post-deployment health assessments to assess potential exposures and adverse health outcomes.

d. Local DNBI data must be evaluated at least once daily with more frequent attention to infectious disease categories during periods of increased threat (for example, intelligence reports of a planned attack with biowarfare agent, or a known

ongoing outbreak). Electronic health event data collection systems are available at most levels of care in any theater of operation. These systems should be utilized as the primary PH surveillance tools, eliminating the need for paper-based reporting in most situations.

10–6. Army management of persons exposed to depleted uranium

All personnel with actual or potential exposures to DU will be identified, assigned a potential exposure Level (I, II, or III as outlined in appendix G), assessed, and treated (if indicated) (see para 7–17). Identified personnel are monitored and tracked according to the procedures and guidance provided in appendix G.

Section III

Occupational and Environmental Health Surveillance

10–7. Occupational and environmental health surveillance

a. OEH surveillance is defined as the regular or repeated collection, analysis, archiving, interpretation, and dissemination of OEH-related data for monitoring the health of, or potential health hazard impact on, a population and individual personnel, and for intervening in a timely manner to prevent, treat, or control the occurrence of disease or injury when determined as necessary.

b. OEH hazards can seriously impact the mission and erode public confidence in the Army's ability to protect its personnel. Exposures to OEH hazards can cause a range of impacts. High-level exposures have a potential to result in immediate (acute) health effects that significantly impact mission capabilities. Low-level exposures may result in delayed (latent) health effects that would not have a significant impact on the mission but which are still necessary to identify, control, and document.

c. The OEH surveillance process includes assessing potential exposures and health effects, recommending health risk reduction options, and evaluating the effectiveness of health risk reduction methods.

d. The scope of OEH surveillance addresses health effects from—

(1) Toxic industrial materials (TIMs) in air, soil, water, and food.
(2) Weapons of mass destruction.
(3) Pathogens.
(4) Disease vectors (such as arthropods and rodents).
(5) Heat, cold, and altitude.
(6) Nonionizing radiation (such as radio frequency, microwave, and laser) and ionizing radiation sources.
(7) Noise and ototoxins (DA Pam 40–501).
(8) Psychological stressors.
(9) Blast injury and embedded metal fragments.

e. OEH surveillance includes coordination and information transfer with agencies responsible for surveillance of safety hazards (such as ground, vehicle, and aviation) and environmental management actions to comply with U.S. or host nation environmental compliance, cleanup, and pollution prevention laws, regulations, and other agreements.

f. At the lowest levels, OEH surveillance is performed by organic PH personnel assigned to specific units and includes the following activities:

(1) OEHSAs.
(2) Base camp assessments.
(3) Disease vector and pest surveillance.

10–8. Occupational and environmental health risk management

Through OEH surveillance activities, PH personnel contribute to commanders' OEH risk management programs to minimize the total risk to personnel during all Army activities (AR 11–35). Army PH policies are intended to allow commanders to execute decisive action while minimizing the total health risk to Soldiers, Civilians, and military working animals, according to applicable DOD/Army policies, implementing instructions, and regulations (AR 11–35, DA Pam 385–30, and ATP 5–19). During operations, Army leaders at all levels should make informed risk decisions about health threats and should consider, in all risk decisions, the overall short-term and long-term risk to personnel arising from exposures to health hazards (AR 11–35). Refer to chapter 4 and appendix D for information and guidance regarding health risk assessments.

10–9. Occupational and environmental health site assessment

a. The OEHSA is part of an iterative process used to identify and provide recommendations to commanders to manage health threats and their sources at a particular deployment site (such as a base camp, air base, or forward operating base) with complete or potentially complete exposure pathways to a current or future deployed population. Conducted according to the guidance in ATP 4-02.82, the OEHSA is a comprehensive baseline assessment of all activities occurring at the site, followed by periodic reassessments.

(1) Reassessments serve to validate or alter the previously recognized risk with complete exposure pathways, and identify new sources and exposure pathways resulting from changes such as site expansion, mission change, or other factors.

(2) Exposure pathways are used to show how the affected population (the cohort) is linked to the source (hazard).

(3) Sources are of point or non-point origin. Examples include industrial facility or burn pit emissions, dust from vehicle traffic, disinfected-only groundwater, municipal/treatment plant water, soil with past/current agricultural use or past military use, hazardous waste/material, and radiation (ionizing or non-ionizing). The specific details of the sources are documented in the various sections and subsections of the OEHSA template.

b. The OEHSA and subsequent reassessments are documented in DOEHRS-IH as specified in paragraph 3–6. The Joint Service OEHSA template outlines the type of data collected during the OEHSA. Any OEHSA that is added to DOEHRS-IH should be marked "Approved by QA" to indicate the completed report was adequately reviewed by either a senior PH professional on-site or a higher echelon PH professional designated by the Joint Task Force or Service component theater policy.

c. DODI 6490.03 outlines when an OEHSA should be conducted.

(1) For OCONUS deployment sites where personnel will be stationed for more than 30 days, operational PH assets will conduct an initial OEHSA within 30 days of site occupancy and will update the OEHSA at a minimum of every 18 months.

(2) For OCONUS deployment sites where personnel are stationed for 30 days or fewer, operational PH assets will conduct an OEHSA as directed by the commander and based on extremely-high or high-risk estimates identified during the pre-deployment hazard assessment or previous OEHSA conducted for the deployment location.

(3) For CONUS sites where personnel are stationed for fewer than 30 days and there is no fixed MTF with organic Environmental Health Sciences assets present, operational PH assets will conduct an OEHSA.

d. Public health actions include—

(1) Identifying specific deployment locations as far in advance of deployment as possible.

(2) Developing an initial OEHSA for each location, or obtaining the most current OEHSA for the site from DOEHRS-IH. OEHSAs will not be archived in DOEHRS-IH if the site location and all associated data are classified. Classified OEHSAs are archived and available in the MESL on the classified network (see para 3–11).

(3) Completing the OEHSA within 30 days of occupying or assuming responsibility for a base camp by identifying all OEH hazards associated with the base camp through the development of exposure pathways.

(4) Entering the OEHSA and all associated exposure pathways in DOEHRS-IH.

(5) Developing a sampling/surveillance plan for each hazard identified in the exposure pathway, and documenting the plan in DOEHRS-IH.

(6) Executing the documented sampling/surveillance plan during the operation or until the hazard no longer exists.

(7) Continuing the process of assessing previously documented and new or potential exposures during the operation through creating new or redefined exposure pathways and associated sampling/surveillance plans as hazards change.

10–10. Base camp assessment

Historically, the Army has conducted base camp assessments (BCA) at deployment locations where an OEHSA was not required per DODI 6490.03; the BCA represented an abbreviated version of the OEHSA. However, in lieu of the BCA and as specified in paragraph 10–9, operational preventive medicine units will conduct an OESHA for all OCONUS combat and contingency operation sites.

a. A BCA template can be used as a guide to common deployment-related OEH tasks and concerns; it can be downloaded from the APHC website at https://phc.amedd.army.mil/topics/envirohealth/hrasm/pages/doehrs_resources.aspx.

b. Historically, many different templates and formats have been used for the BCA. A BCA may be uploaded to the DOEHRS-IH Document Library but only if the OEHSA is first added and approved.

Section IV

Disease Vectors and Pest Management

10–11. Surveillance and control of disease vectors and pests

a. Entomological PH assets are a critical component of successful OEH surveillance and risk management involving disease vectors and pests. Entomologists—

(1) Conduct PH pest surveillance activities in the supported AO.

(2) Provide pest management subject matter expertise to the pest management COR and supported units within the AO.

b. Assigned unit PH personnel (typically, enlisted military occupational specialty (MOS) 68S, Environmental Health; or officer area of concentration 67C, Preventive Medicine) have primary responsibility for conducting pest surveillance during field training exercises, combat, and contingency operations (see ATP 4–02.8).

c. The lowest level of support at which entomological expertise is available is the medical detachment. The detachment can train unit preventive medicine teams to conduct PH pest surveillance activities correctly and can also serve as the conduit for sending collected specimens off for pathogen testing. Unit PH personnel should coordinate with the supporting medical detachment by providing their surveillance data for tracking, analysis, and threat mitigation activities. The Medical Detachment (Preventive Medicine) uses this data to estimate disease risk for the area of operation and to monitor and develop contingency IPM plans. AFPMB TG 48 provides general information on the basic principles, equipment, and techniques used to collect PH pests.

10–12. Recording and reporting pest management in military operations

a. DODI 4150.07 requires that all pest management activities during military operations are recorded and archived.

b. Active and Reserve Component PH personnel, operational preventive medicine units, logistics civil augmentation programs, FSTs, pest management contractors, or other contracted personnel conducting pest management during combat or contingency operations must record all pesticide applications (except insect repellents for skin and clothing) and nonchemical pest management activities.

c. Daily pesticide application records are maintained as specified in paragraph 8–7 and are reported on DD Form 1532–1 in accordance with DODI 6490.03, DODI 4150.07, and ATP 4–02.8. DD Form 1532–1 is available as an Excel® spreadsheet on the AFPMB website, http://www.acq.osd.mil/eie/afpmb, to document pest control activities. When forms are not available, record the information in the unit logbook, staff journal, or in a similar expedient manner. Required information includes the—

(1) Date on which the pesticide was applied.

(2) Area/site/building and country where the pesticide was used.

(3) Target pest.

(4) Pesticide(s) name(s) and EPA registration number(s).

(5) Percent of final concentration used.

(6) Method of application.

(7) Amount used.

(8) Full name and rank of the individual who applied the pesticide.

d. All reports are consolidated by the unit commander or Logistics Civil Augmentation Program manager and emailed directly to the APHC at usarmy.apg.medcom-aphc.mbx.pesticide-archival@mail.mil for archiving. The APHC will archive these pesticide application records in DOEHRS-IH.

e. Report all pesticides applied in CONUS during readiness training and exercises to the local IPMC for inclusion in the monthly installation pest management report.

10–13. Pest management guidance

a. During contingency operations, readiness training exercises, deployment operations, and pest management operations (whether performed by military or contracted personnel), contingency pest management operations should be conducted in accordance with the guidance found in the following resources:

(1) AFPMB TG 3.

(2) AFPMB TG 6.

(3) AFPMB TG 24.

(4) AFPMB TG 27.

(5) AFPMB TG 30.

(6) AFPMB TG 38.

(7) AFPMB TG 44.

(8) AFPMB TG 46.

(9) AFPMB TG 47.

(10) AFPMB TG 49.

(11) ATP 4–02.8.

(12) ATP 4–25.12.

b. Additional guidance and information is available from—

(1) The APHC deployment pest management website at https://phc.amedd.army.mil/topics/envirohealth/epm/pages/deployment-pest-management.aspx.

(2) The AFPMB website at http://www.acq.osd.mil.

10–14. Pesticide selection and application in military operations

a. Only those pesticides listed on the DOD Contingency Pesticide List can be used during contingency operations, except when the task force commander determines an emergency exists.

b. DODI 4150.07, enclosure 7 outlines the procedures for procuring pesticides locally during emergency situations. The DOD Contingency Pesticide List is available from the AFPMB website at https://extranet.acq.osd.mil/eie/afpmb/cac/standardlists/dod_contingency_pesticides_list.pdf.

c. Equipment for use in Army pest management operations is listed on the DOD Pest Management Materiel (Other than Pesticides) List available from the AFPMB website at https://extranet.acq.osd.mil/eie/afpmb/cac/standardlists/dod_pest_management_material_list.pdf.

(1) Only use pesticide dispersal equipment that is compatible with the selected pesticide formulation. Clean, maintain, and calibrate equipment regularly to ensure proper performance.

(2) Refer to AFPMB TG 13 for help with ultra-low-volume application equipment.

(3) Pesticide applicator personnel must dispose of all pesticides and containers in accordance with all applicable Federal, State, local, and host nation laws, regulations, and other agreements, and in accordance with AFPMB TG 20.

10–15. Retrograde pest management consultation

Introduction and dissemination of pests may occur during the movement of vessels, aircraft, or other transport of the Armed Forces arriving at or leaving Armed Forces installations in the U.S. and foreign countries, or at ports or other facilities in the U.S. and its Territories, Commonwealths, and Possessions.

a. Quarantine/retrograde cleaning and inspection actions are taken to safeguard agricultural and natural resources from risks associated with the entry, establishment, or spread of pathogens and pests of humans, plants, and animals.

b. Commanders are responsible within their jurisdiction for complying with regulations and for issuing and enforcing directives and instructions, as required, to handle special and unusual conditions.

c. The command surgeon or designated PH representative responsible for the operation of retrograde activities ensures the full implementation of AFPMB TG 31 and Defense Transportation Regulation (DTR) 4500.9–R, Part V.

Section V

Water Management

10–16. Water

In contingency and field training operations, water may be procured from surface or ground sources or may be local municipal water that is processed and treated to serve as drinking water or to support sanitation and hygiene activities such as shower and laundry operations. Operational PH assets provide oversight for the production and distribution of drinking and nonpotable water and provide guidance regarding water reuse and recycling. These assets use their expertise to ensure that water is supplied and maintained in a safe and sanitary manner and in compliance with all applicable regulations to protect human health.

a. During combat, contingency, and field training operations, the unit or command surgeon, through assigned PH personnel—

(1) Implements or oversees the implementation of the PH procedures and instructions required for ensuring the adequacy and safety of field drinking water supplies.

(2) Must define, in DOEHRS-IH, the site's potable and/or nonpotable water system(s), including all untreated natural water sources, treated water processes (field treatment or municipal treatment plant), distribution systems, and containers (see para 3–6).

(3) Provides the medical oversight of field water supply operations for the prevention of waterborne diseases.

(4) Documents field water quality analysis in DOEHRS-IH.

b. TB MED 577/NAVMED P–5010–10/AFMAN 48–138_IP provides instructions, standards, criteria, procedures, and guidance for the sanitary control and surveillance of field water supplies.

c. ATP 4–44 provides doctrine for water supply planning and management in military operations.

10–17. Water reuse and recycling

Gray and black wastewaters are defined and regulated as wastewater streams by the EPA, State health authorities, and most nations. Appropriate Federal, State, and host nation laws, regulations, and other agreements must be followed. According to TB MED 577/NAVMED P–5010–10/AFMAN 48–138_IP, water reuse is defined as using the water for a different purpose than it was originally used and water recycling is defined as using it again in the process that generated it, usually by treating then returning it to the beginning of the operation.

a. Gray wastewaters should not be reused or recycled back into a potable water distribution system.

b. The reuse of military and contractor-operated reverse osmosis-based water purification system reject water (or brine) for nonpotable use may only be permitted after a risk assessment has been performed according to TB MED 577/NAVMED P–5010–10/AFMAN 48–138_IP and approval has been granted by local military PH personnel.

c. Reverse osmosis reject water (or brine) may be further treated internally in some systems or returned externally to and mixed with the system feed water to increase the overall efficiency (percentage of raw water converted to product water) of the system. Contaminant concentrations in the resulting feed water mixture must not exceed the capabilities of the treatment system to produce water of acceptable quality for the intended use. Technical assistance for determining the allowable return rate is available from the APHC (see para 1–13).

d. Gray wastewater collected from military shower and/or laundry facilities may be treated according to TB MED 577/NAVMED P–5010–10/AFMAN 48–138_IP and reused or recycled for shower and/or laundry facility use, or other uses, after risk assessment and approval by local military PH personnel.

e. Black wastewater may not be reused or recycled back into a potable water distribution system; it must be treated and/or disposed of in a sanitary manner unless approved for other uses by local military PH personnel.

10–18. Recreational waters

Recreational waters that are used in an operational setting and managed under U.S. contract must meet the water quality and sanitation criteria specified in TB MED 575.

a. Operational PH personnel conduct a facility risk assessment for all non-U.S. operated recreational waters that are available to U.S. Service members and Civilians.

b. Recommendations to restrict the use of a recreational water facility or natural bathing area are provided to the appropriate level of command when water quality parameters are outside of the safe limits specified in TB MED 575.

10–19. Ice, bottled water, and packaged water

During combat, contingency, and field training operations, bottled water from a military-approved source, as well as water produced and packaged by the military, may be used as alternative sources of water when adequate bulk water purification, storage, and distribution assets are not available to the commander, or as the mission requires.

a. Commercial bottled water and commercially packaged ice are treated as a food commodity and must come from a military approved source as specified in AR 40–657/NAVSUP 4355.4H/MCO P10110.31H and TB MED 530/NAVMED P-5010-1/AFMAN 48-147_IP.

(1) The use of commercial bottled water does not ensure better protection against waterborne diseases as compared to military-produced field water supplies.

(2) Commercial bottled water does not maintain a disinfectant residual such as chlorine. If transportation and storage conditions are poor, or no PH oversight is provided, then bottled water may pose a greater risk of illness than alternative sources of drinking water.

b. Water produced in the field by military units or contractors, as well as host nation municipal water supplied to U.S. Forces, is managed according to TB MED 577/NAVMED P-5050-10/AFMAN 48-138_IP.

c. Bulk water that is subsequently packaged by military units or contracted water packaging operations (other than a commercial bottling plant) is treated as field water. This guidance also applies to field ice production operations. See paragraph 8–40*m* regarding inspection of ice-manufacturing operations occurring on military sites.

Section VI

Food

10–20. Food protection

a. Operational food protection encompasses activities associated with food sources, distribution, storage, and service. Army Veterinary Service personnel provide food protection functions according to ATP 4–02.8 and as specified in paragraph 9–4.

b. Food safety (which includes sanitation) for tactical feeding and contracted food service operations is executed according to the criteria provided in TB MED 530/NAVMED P-5010-1/AFMAN 48-147_IP.

(1) Unit FST members conduct food sanitation inspections of tactical feeding operations.

(2) Environmental Health personnel from the brigade or Medical Detachment (Preventive Medicine) conduct food sanitation inspections of all food service operations within their AO.

(3) Inspection documents DD Form 2973 (Food Operation Inspection Report); or DD Form 2974 (Tactical Kitchen Food Sanitation Inspection) must be added to DOEHRS-IH and marked "Completed."

10–21. Food and water risk assessment

FWRAs are conducted to assess and mitigate the food protection risk in commercial food establishments, forward operating bases, foreign dining facilities, and feeding locations supporting military operations and exercises. FWRAs apply to establishments that are not formally audited by the Army Veterinary Service for inclusion in the *Worldwide Directory of Sanitarily Approved Food Establishments for Armed Forces Procurement.* The circumstances in which FWRAs occur include short-term deployments, initial entry of deployed Forces into the AO, and exercises and other short-term operations conducted outside the U.S. or its Territories.

a. FWRAs are designed to identify foodborne and waterborne hazards and facilitate the communication of associated risks to the operational commander, who makes the final determination regarding facility or food item use. FWRAs are—

(1) An assessment; they do not "approve" or "disapprove" a specific area or facility.

(2) Never used in lieu of, substituted for, or performed to generate "approved sources."

b. The FWRA involves conducting a risk-based assessment of food items, bottled water, and ice for actual or potential health threats; intentional and unintentional microbiological, chemical, or physical contamination of the feeding system and products; evaluating potential exposure pathways; and determining countermeasures and mitigation strategies to control or reduce the health threats to DOD personnel.

c. FWRAs are valid for one-time, short-term, or early entry use. Based on the mission, FWRAs are valid for 6 months (in some commands) or until the end of the operation or event, whichever comes first.

d. FWRAs are conducted by veterinary or other trained PH personnel using the required procedures outlined in MIL-STD-3041. Guidance for conducting FWRAs is provided in MIL-HDBK-3041. Public health resources for FWRAs are available through the APHC website at https://phc.amedd.army.mil/topics/foodwater/fwra/pages/default.aspx.

Section VII

Waste Management

10–22. Waste management

Waste management consists of activities related to the identification, collection, storage, disposal, and documentation of waste materials for the purpose of protecting human health and the environment. During combat, contingency, and field training operations, waste management can be even more critical and complex due to military personnel operating within a small geographical space where waste generation, storage, and disposal activities occur in closer proximity to administrative, housing, and dining areas and there is decreased ability to remove or dispose of wastes in a timely manner. As such, waste management should be incorporated into mission planning in a manner that optimizes Force protection and space utilization while minimizing potential harmful effects to personnel, the environment, and the mission.

a. Waste generated during contingency and field operations is disposed in a manner that complies with all applicable Federal, State, and local, or OCONUS (FGS, SOFA, OEBGD, or host nation) requirements (DODI 4715.05) and DA regulations. Unit commanders—

(1) During OCONUS operations, ensure hazardous waste is disposed through unit logistics channels and in compliance with the policies established in AR 200–1 and applicable environmental laws and regulations.

(2) During CONUS military operations, manage all hazardous waste in compliance with Federal and State laws and regulations and coordinate disposal through the garrison Environmental office.

(3) During deployment situations where the operational tempo (OPTEMPO) requires waste to be disposed of in a more expedient/nonconventional manner to protect personnel or the mission, disposal must be done in a manner that complies with combatant command operation orders (OPORDs) and the relevant guidance and regulations specific to field waste management (for example, TM 3–34.56/MCIP 411.01 and AR 385–10).

b. Unit FSTs assist the commander in implementing the hazardous waste disposal procedures specified in TM 3–34.56/MCIP 411.01. Radioactive wastes are managed according to the procedures prescribed in AR 385–10.

c. Public health personnel—

(1) Monitor field sanitation and waste disposal activities, and advise commanders and engineers on proper waste handling and disposal procedures, protecting the health of Soldiers, and preventing environmental contamination.

(2) Perform waste management inspections utilizing the applicable DOEHRS-IH Waste Survey (Hazardous, Solid, Regulated Medical, or Wastewater), and enter the inspection results and other data into the DOEHRS-IH Environmental Health business area (see para 3–6).

10–23. Regulated medical waste

For CONUS field operations, the management and disposal of RMW must comply with State laws and regulations (see para 8–27). For managing RMW in OCONUS operations, medical personnel and anyone else responsible for managing, handling, or disposing of RMW should use the OEBGD, FGSs, and TM 3–34.56/MCIP 411.01.

a. Apply and use universal precautions whenever treating patients or handling (including transport or disposal of) the wastes generated as a result of treating patients.

b. RMW must be segregated from general trash at the location where the RMW is initially generated; the segregation must remain until final disposal has been accomplished. RMW is grouped by waste source and comprises the following categories of waste: cultures, stocks, and vaccines; pathological waste; blood and blood products; used and unused sharps and syringes; animal waste; isolation waste; fluids designated by the local infection control authority, and chemotherapy/NIOSH hazardous drug wastes. In most cases, the items that provide universal precautions (such as gloves, masks, and other protective equipment) are classified as general trash, not as RMW.

c. Collect RMW in leak-proof, puncture-resistant receptacles lined with red plastic bags. The red bags must meet the American Society for Testing and Materials (ASTM) D1709-16ae1 impact strength and ASTM D1922-15 tear strength standards. Follow country-specific container and bag requirements when OCONUS.

d. Sharps containers are used for disposing syringes, needles, scalpel blades, and infectious glassware used in the diagnosis and treatment of patients. Sharps containers are rigid and puncture-proof containers, generally made of heavy-duty plastic, with a closable cover, and are not made of a material that will become saturated and allow liquids to permeate through the container.

(1) Use sharps containers that will not leak if used and stored properly (that is, not filled with liquids and not stored on their side or upside down).

(2) Manage sharps containers to prevent injury or perceived disease hazard to the local population.

e. The Theater Surgeon or authorized medical representative may determine whether or not non-bloody wastes from unique theater-specific diseases require segregation and management as RMW. The decision is based on the nature of the disease, its prevalence, the method of transmission, and other medical and scientific factors.

f. PH personnel—

(1) Provide training to all Soldiers to ensure they know the operational procedures for proper management of medical waste.

(2) Incorporate procedures in OPORD annexes and SOPs for the AO.

(3) Make on-the-spot corrections immediately upon notice of a violation to the SOP or command policy.

(4) Document the non-compliance.

(5) Perform RMW inspections utilizing the survey checklists in DOEHRS-IH. Enter the inspection results and other data into the DOEHRS-IH Environmental Health business area.

g. RMW will be stored in a designated, secure, ventilated area that is kept clean and free of vectors, offers protection from the environment, and limits access to authorized personnel only.

(1) The storage area is of sufficient capacity to store all RMW generated during the course of 1 month.

(2) All RMW containers are stored in a manner to minimize the potential for leakage, rupture, and/or puncture.

h. Disposal options include incineration or sterilization, burial, or the use of alternative technologies to treat and dispose of collected RMW; PH assets provide oversight for these activities. A contingency plan should be established in the event of equipment breakdown. Following are the RMW treatment options in order of preference:

(1) *Incineration.* In a field situation, RMW may be incinerated using mobile RMW incinerators. Mobile incinerators may be operated by Soldiers or contractors trained to operate them in accordance with the manufacturer's instructions.

(a) Ash from medical incinerators must be sampled for hazardous constituents. If the ash is nonhazardous and does not contain medical sharps, it can be managed as ordinary trash and buried at designated in-theater locations.

(b) Medical sharps are any medically-related item that can penetrate the skin, including, but not limited to, needles, scalpels, broken glass that was in contact with infectious agents, broken capillary tubes, and exposed ends of dental wires. Ash that contains sharps should be disposed in a puncture-resistant container such as a 55-gallon drum.

(2) *Steam sterilization.* Steam sterilization is an alternative to incineration of medical waste. Follow the operational instructions for the autoclave/steam sterilizer. Once sterilized and cooled, the waste is general trash and should be managed

as such. Ensure care is taken to minimize needle sticks when handling the waste. Never use a field medical surgical instrument sterilizer to autoclave medical waste. Use only field medical sterilizers permanently and indelibly marked and labeled for sterilizing medical waste. In case the steam sterilizer should become nonfunctional, always have a contingency plan in place to manage waste that was intended for sterilization.

(3) *Open burning of medical waste.* Open burning of medical waste may be permissible, provided such burning is approved by appropriate theater command and combatant command personnel and local officials and conforms to regulatory policies for the specified region. Burning should take place as far away as possible from living and sleeping areas, the flight line, hazmat area, and fuel storage, with the prevailing wind pushing the smoke away from these areas.

(4) *Contracting for medical waste disposal.* Unit commanders must specify, in either a Statement of Work or Performance Work Statement, what is required from the contractor to ensure proper disposal of medical waste. Once the Directorate of Contracting has awarded a contract, the unit commander must coordinate the disposal of medical waste through the COR.

(5) *Retrograde the waste.* Send waste back to the rear where disposal facilities are available. PH personnel must coordinate with local logistics personnel for proper transport of retrograde waste.

(6) *Burial.* The last resort is to bury untreated medical waste in a local sanitary landfill (with prior approval from local PH officials). Immediately cover buried medical waste with fill material.

i. Ensure Soldiers wear both skin protection and respiratory protection when burning medical waste.

(1) An air-purifying respirator (cartridge or canister) with a high-efficiency particulate air (HEPA) filter (NIOSH HEPA or Class 100) is recommended. The paper surgical mask does not protect from hazards inherent in the burning of waste and should not be substituted for the air-purifying respirator.

(2) Do not allow Soldiers to wear their issued nuclear/biological/chemical protective gas mask when burning medical waste. Although this personal protective mask is equipped with a high-efficiency particulate filter, it is best used to protect the Soldier from chemical and biological attacks. Inappropriate use of the personal protective mask would also wrongfully lead other Soldiers to believe the operational area was under chemical attack.

Section VIII

Heat, Cold, and Altitude

10–24. Heat injuries

Heat injuries claim the lives of an average of two to three Soldiers annually. Hundreds of other Soldiers experience less severe heat injuries that require temporary restricted duty and may result in future high risk of recurrent heat injury. Many of these injuries do not actually occur on the hottest days; they result from warm weather, physically intense activities, and a variety of risk factors. Because the heat-related injury seen among Soldiers is almost always related to their level of physical exertion, the term “exertional heat illness” is used to describe the spectrum of military heat injuries. These include heat stroke (the most severe and fatal condition), as well as heat exhaustion, heat injury, and heat cramps. Conditions such as hyponatremia (excessive water consumption, which can also be fatal) are heat-related conditions seen among Soldiers who overhydrate.

a. Both PH personnel and commanders should ensure the guidance in TB MED 507/AFPAM 48-152 (I) is followed for their units, including—

(1) Annual training (by early spring).

(2) Risk identification.

(a) To determine the risk category, monitor environmental conditions using the wet bulb globe temperature at the location of training or the operational setting prior to and during activities.

(b) Factor in the past 3 days of heat risk when determining the current day’s risk category.

(c) Factor in additional heat factors, such as carrying heavy loads and, in particular, wearing additional chemical protective clothing.

(d) Identify, mark, and monitor individuals at higher risk of heat injury, particularly those with prior heat injury, those with certain medical conditions/medications, those who are overweight and/or have poor fitness levels (such as new recruits), or those who recently transferred from a cooler climate.

b. Prevent excessive heat exposure and enhance individuals’ health status by providing appropriate hydration, nutrition, rest breaks, and opportunities for heat dumping; monitoring urine output and water consumption; encouraging the use of sunblock, sunglasses, and a patrol or jungle hat with brim to protect the face; and conducting timely and effective casualty management, RME reporting, and incident investigations to identify gaps.

10–25. Cold injuries

Soldiers have an increased likelihood of being exposed to cold weather during various Army training and operational activities in colder and/or wet climates. Cold-related injuries include hypothermia, frostbite, chilblains, and trench foot (immersion). Chilblains and trench foot can occur in non-freezing conditions when there is prolonged exposure to wet conditions. Other injuries particularly associated with cold-weather environments include sunburn, snow blindness (sunlight exposure intensified by snow reflection), carbon monoxide poisoning (from stoves, heaters, or engines used for heat), dehydration, and slips, trips, and falls (very common injuries that are most prominent when ice and snow are present). PH personnel and commanders should ensure TB MED 508 and associated guidance are followed to prevent these injuries.

10–26. Altitude sickness

At high altitude, there is decreased availability of oxygen in ambient (surrounding) air. This decrease, in turn, lowers the oxygen supply to the body, which can lead to altitude illnesses and reduced physical and mental performance. Altitude exposure may also increase the likelihood of other climatic injuries (for example, cold injuries) or worsen pre-existing medical conditions. As with other injuries, the primary prevention tactic is to gradually increase exposure (acclimatize) and be aware of individuals' risk factors when characterizing risks and planning training activities. TB MED 505 provides additional guidance.

Section IX

Operational Hearing Services

10–27. Introduction

Maintaining normal hearing ability is essential to effective communication, especially in operational environments where hazardous noise and nuisance noise are prevalent. Deployed personnel who cannot hear well on today's high-technology battlefield cannot communicate effectively and therefore cannot perform optimally. In an operational environment, individuals with normal hearing can lose their hearing in an instant as the result of an explosion or other noise exposure. Such hearing loss immediately renders these individuals combat-ineffective, as they are unable to rely on their hearing to maintain situational awareness. The overall goal of operational hearing services is to prevent noise-induced hearing loss during military operations. Hearing loss should not be an accepted by-product of military service, especially with today's hearing loss prevention program and technologies. DA Pam 40–501 provides Army Hearing Program guidance.

10–28. Education and training

Public health assets should educate commanders and Soldiers regarding the risk that noise-induced hearing loss poses to the detection of mission-essential information such as threats and incoming communication. Communicate the other effects of noise exposure, including the signs and symptoms of auditory fatigue, and the preventive measures for avoiding overexposure to hazardous noise. Noise-induced hearing loss and its nonauditory effects hinder auditory awareness and unit readiness. Temporary reductions in hearing acuity caused by significant noise exposures can have an immediate negative impact on a Soldier's survivability and lethality. Continuous exposure to hazardous steady-state noise, with no auditory rest, can increase the probability of ringing in the ears (tinnitus) or a permanent and disabling hearing loss. A single, unprotected exposure to hazardous impulse noise can potentially cause damage. Soldiers should train as they fight and always attempt to use communication enhancement and hearing protection devices in the training environment so they become familiar with and have confidence in their equipment when they enter a tactical or combat environment.

10–29. Noise hazard assessment and monitoring

A general survey of operational areas, such as the Tactical Operations Center, work sites, and living quarters, should be performed to screen for noise exposures and to determine if additional monitoring is necessary. See DA Pam 40–501 for detailed guidance on measuring and monitoring sound levels. Sound-level meters and noise dosimeters are used to assess an individual's exposure to noise.

10–30. Post-acoustic trauma evaluation

If prevention strategies fail and acoustic trauma occurs, management of the hearing loss is necessary, especially during a deployment.

a. Quantifying a Soldier's hearing capabilities and determining the extent of injury from noise exposure require thorough audiological evaluation. Delivering these clinical audiology services as far forward on the battlefield as possible is critical to providing leaders with their Soldiers' hearing status, and limits unnecessary loss of duty time that occurs if a

Soldier is evacuated for these services. These evaluations are critical for determining Soldiers' readiness and fitness for returning to duty in an AO.

b. Hearing loss can be temporary or permanent. Only an audiological evaluation can determine the presence and magnitude of hearing loss. A temporary hearing loss can occur following exposure to hazardous noise; the Soldier may notice decreased hearing and possibly a ringing in the ears (tinnitus) that gradually improves over the course of up to 48 hours or more. However, multiple exposures can cause the hearing loss to become permanent. Permanent hearing loss can occur instantly as a result of exposure to an extremely intense noise, or it can occur gradually over time.

c. If a Soldier experiences any type of hearing loss during a deployment, a hearing profile may be warranted to protect not only that Soldier but others as well. Such profiles are important because they communicate any Soldier limitations to the chain of command. A physician may write a temporary profile for events such as a ruptured eardrum or a middle ear infection; a permanent profile can only be provided after evaluation by an audiologist has taken place.

Chapter 11
Clinical Public Health

Section I

Overview and Functions

11–1. Overview

a. Preventive medicine focuses on the health of individuals, communities, and defined populations. Preventive medicine specialists are licensed medical doctors (MD) or doctors of osteopathy (DO), who possess core competencies in biostatistics, epidemiology, environmental and occupational medicine, planning and evaluation of health services, management of health care organizations, research into causes of disease and injury in population groups, and the practice of prevention in clinical medicine.

b. Communicable diseases can rapidly degrade the medical readiness of military units and their ability to carry out their mission. Communicable diseases can also cause significant suffering and excess utilization of military health care services among the beneficiary population. Prevention and control of communicable diseases are conducted according to policies, directives, and instructions from TSG and in AR 40–5, AR 40–562/AFI 48–110/BUMEDINST 6230.15/CG COMDTINST M6230.4E, and the *Control of Communicable Diseases Manual* (American Public Health Association, 2014).

11–2. Functions

The following functions and those outlined in paragraphs 11–3 through 11–8 are necessary for the prevention and control of communicable disease. The services under each general topic, as well as the organization and function supporting these services, will vary by installation based on the population served, the mission of the installation or organization, and the supporting PH and non-PH assets.

a. Unit commanders—

(1) Provide the manpower, training, resources, PPE, supplies, and facilities necessary to implement required disease prevention and control measures.

(2) Validate that all eligible personnel comply with prescribed individual protective measures.

(3) Comply with immunization requirements in AR 40–562/AFI 48–110/BUMEDINST 6230.15/CG COMDTINST M6230.4E, and command policy specified in AR 600–20.

(4) Maintain copies of current policy and guidance on disease prevention and control.

b. Installation PH authority in collaboration with the installation medical authority—

(1) Identifies potential disease and OEH threats and risks based on epidemiological information, intelligence, and knowledge of military activities.

(2) Maintains knowledge of current disease prevention and control policies, procedures, and techniques.

(3) Recommends individual protective measures and environmental control measures to the commands they support based on the health threat assessment.

(4) Advises commanders, units, and individuals on the prevention and control of communicable diseases.

(5) Conducts medical surveillance of individuals and units operating in environments where the threat of serious disease or occupational and environmental injury or illness is present.

(6) Advises units on disease and OEH threats, specific preventive measures, and medical surveillance before, during, and following deployments.

(7) Reports unusual occurrences of diseases or environmental health problems to appropriate commanders so corrective action can be taken immediately.

(8) Conducts epidemiological investigations and contact tracing, as appropriate, for suspected disease outbreaks or disease occurrences that are capable of reducing military effectiveness or readiness. Installation PH authorities should also work with an APHC epidemiologist to ensure consistency among personnel for outbreak response and to ensure coordination for outbreaks occurring across multiple installations.

(9) Uses the DRSi to report all RMEs (see para 3–8).

(10) In coordination with the MEM and PHEO, coordinates with the senior commander, State, local, Tribal, Territorial, or host-nation agencies and organizations regarding the recognition of, response to, and recovery from PH emergencies.

c. Individuals—

(1) Implement all preventive measures directed by command authorities and/or recommended by the PH authorities.

(2) Avoid unnecessary exposure to infectious agents, hosts, or vectors of disease.

(3) Practice good personal hygiene, such as hand-washing and covering the mouth and nose when coughing or sneezing.

(4) Consult unit or installation PH personnel to determine the need for travel medicine services when planning to travel OCONUS.

Section II

Clinical Services

11–3. Immunization and chemoprophylaxis

a. Immunization and chemoprophylaxis are provided according to the policies and procedures in AR 40–562/AFI 48–110/BUMEDINST 6230.15/CG COMDTINST M6230.4E or as directed by TSG.

b. Active and Reserve Component personnel immunization requirements contained in AR 40–562/AFI 48–110/BUMEDINST 6230.15/CG COMDTINST M6230.4E, or as directed by TSG, take precedence over guidance provided by the U.S. Public Health Service or the CDC.

c. Civilian employees may be required to receive vaccinations as a condition of employment. These include the annual influenza vaccination for healthcare workers in DOD healthcare facilities.

d. Immunization recommendations for Civilian beneficiaries will be consistent with DA policies and CDC/ACIP recommendations.

e. MOS 68W (Combat Medic Specialist) personnel may administer and record appropriate immunizations when such personnel are trained and supervised by a privileged, licensed, certified, and/or registered individual such as a physician, nurse practitioner, PA, or registered nurse. MOS 68W personnel—

(1) May administer immunizations to adults.

(2) May administer allergy shots or skin testing after completing the Y8 Immunization Course.

(3) May administer immunizations to children less than 17 years of age only after completing the Y8 Immunization Course.

11–4. Sexually transmitted infections

a. At the installation level, sexually transmitted infection (STI) prevention and control efforts include accurate assessment and diagnosis, appropriate therapy and follow-up, disease intervention, and community and unit health education. Centralization of diagnostic efforts, interviewing, counseling, and treatment procedures is ideal and facilitates quality control and maintenance of patient confidentiality. The diagnostic efforts should be conducted by the primary care provider in collaboration with the installation PH authority or designated PH physician. STI case interviews, contact investigations, and education should be conducted by the APHN or a designated disease intervention specialist. A disease intervention specialist is an individual who has attended the AMEDDC&S Sexually Transmitted Disease (STD) Intervention Course (6H–F9/322–F9), or other comparable civilian training.

b. Army STI control services will adhere to guidance published by the CDC on screening procedures, treatment, follow-up, and prevention strategies, whenever appropriate. The current preferred treatment regimens are outlined in the latest edition of the CDC's treatment guidelines for STDs. Since CDC guidelines and recommendations are directed at the U.S. population at risk, and the U.S. Military is globally dispersed, the CDC guidelines and recommendations may not always be appropriate for all DOD beneficiaries.

c. The success of STI prevention and control in the military is also contingent on a satisfactory working relationship with civilian PH authorities. Cooperation with local, county, and State health offices involved in STI prevention and control is encouraged.

d. Unit health education classes are strongly encouraged and should be incorporated with HIV education efforts. Class quality, delivery, and frequency of scheduled offerings should be assessed as part of the OIP.

e. The release of medical information concerning persons who have been diagnosed with an STI will be based on applicable laws and regulations. This applies to the reporting of STIs to State and/or local civilian PH authorities in CONUS locations. The civilian contacts of DOD beneficiaries infected with an STI will be determined and reported through medical channels to local civilian PH departments.

f. STI information and statistics should not be used to compile indices of commander efficiency or unit morale or integrity.

11–5. Human immunodeficiency virus among military Service members

The Army conducts HIV surveillance and control in accordance with AR 600–110. This regulation describes the policy, procedures, responsibilities, and standards concerning the identification, surveillance, and administration of personnel infected with HIV.

11–6. Rabies

a. Rabies prevention and control includes pre-exposure prophylaxis for humans and animals, post-exposure prophylaxis, stray animal control efforts, surveillance of animal rabies in domestic and wild animal populations, human exposure and disease incidence, documentation and investigation of potential human exposure events, and community health education.

b. The installation medical authority—

(1) Designates a Rabies Advisory Board consisting of at least two qualified physicians and one veterinarian. One of the two physicians is usually a Preventive Medicine or Occupational Medicine physician; however, if no physician with this training is available at a particular location, a designated medical provider with PH experience may serve in this capacity. Consultation may also be attained through the supporting regional health organization. Although the incidence is low, human rabies is almost 100 percent fatal; therefore, medical authorities involved in rabies prevention and control efforts must fully evaluate every potential exposure.

(2) Ensures rabies pre-exposure and post-exposure vaccination series are based on guidance in AR 40–562/AFI 48–110/BUMEDINST 6230.15/CG COMDTINST M6230.4E, TSG guidance, and current ACIP recommendations (https://www.cdc.gov/vaccines/hcp/acip-recs/index.html).

(3) Uses the DRSi to report cases of suspected human rabies and cases requiring post-exposure prophylaxis, in accordance with the *Armed Forces Reportable Medical Events Guidelines and Case Definitions*. Additional reporting is conducted as specified in this pamphlet and through command channels, according to local procedures for significant activity reporting or command critical incident reporting. Cases are also reported to State and local health authorities in accordance with standard practice.

c. Attending physicians—

(1) Prepare a potential rabies exposure report on DD Form 2341 for every domestic, feral, and wild animal bite and/or scratch; suspected rabies exposure; and actual or potential contact with a bat. Ensure patient identification and contact information is complete and entered legibly. Transmit the form to PH within 24 hours or next duty day regardless of whether or not post-exposure prophylaxis was initiated.

(2) Consult, as needed, with a physician member of the Rabies Advisory Board or another qualified physician, such as an infectious disease specialist, regarding the provision of rabies post-exposure prophylaxis. Rabies post-exposure prophylaxis, when provided, will be in accordance with current ACIP guidelines.

(3) Ensure the rabies risk evaluation is performed as part of post-deployment health assessments. All persons returning from deployment should be assessed for potential rabies risk exposures in theater and followed up as outlined herein. Untreated or incompletely treated exposures should be referred for appropriate care immediately. Since risks of exposure to rabies vary considerably across deployments and operational areas, review and consult the Combatant Command, Joint Command, and Army Component Command for AO-specific rabies risk evaluation policies and guidance. Rabies exposure risk-evaluation guidance is also provided and is updated regularly for medical Soldier Readiness Processing sites.

d. The installation PH authority—

(1) Provides DD Forms 2341 to the attending physicians, and tracks the status of each form.

(2) Reviews all new DD Forms 2341 and submits them to Veterinary Services each duty day. Coordinates with Veterinary Services to identify the status of the animal in question.

(3) Identifies and coordinates rabies post-exposure prophylaxis under ACIP guidelines.

(4) Ensures the Rabies Advisory Board has reviewed and provided guidance for all exposure incidents in which the animal was not caught, quarantined, or tested to be found free of rabies.

(5) Ensures patients who begin rabies post-exposure prophylaxis complete the series; ensures the series is terminated only when appropriate.

(6) Ensures the PH physician or designee completes Part IV, sections 25 and 26 of DD Form 2341.

(7) Maintains a copy of the completed DD Form 2341 and ensures it is filed according to AR 40–66.

(8) Coordinates rabies pre-exposure vaccination to include, as appropriate, periodic titers and boosters for personnel whose occupation makes them susceptible to potential rabies exposure (see para 7–13*e*).

e. The installation veterinarian—

(1) Reviews all new DD Forms 2341 each duty day; coordinates with the animal owner and/or local authorities to have the animal examined/quarantined or euthanized and tested according to AR 40–905/SECNAVINST 6401.1B/AFI 48–131, whenever possible.

(2) Provides information and recommendations to the treating physician on the risk of rabies exposure.

(3) Completes the veterinary section of DD Form 2341 and returns it to the installation PH authority.

11–7. Tuberculosis

a. Introduction. The purpose of the Tuberculosis (TB) Surveillance and Control Program is to prevent new cases of TB through prompt identification and treatment of both latent tuberculosis infection (LTBI) and active TB disease. The program includes policy and procedures for testing, evaluating, treating, monitoring, referring, documenting, and tracking Army personnel and beneficiaries who are at risk for TB.

b. Functions.

(1) Installation medical authorities are responsible for ensuring that PH personnel have sufficient staffing, resources, and training to implement the TB Surveillance and Control Program.

(2) Installation PH authorities are responsible for oversight and program supervision of MTF- and installation-level TB surveillance and control activities, including testing and treatment.

(3) MTF infection control committees will establish policies and procedures that ensure the rapid identification of TB patients, as well as proper isolation, application of PPE, and other control measures.

(4) The MTF occupational health clinic will determine which workers are at risk for TB by performing a TB risk assessment based on the risk assessment of the facility, the TB exposures anticipated during occupational activities, and individual risk factors. The occupational health clinic will ensure that targeted TB testing is performed both at baseline and periodically, as needed. The occupational health clinic will perform surveillance for tuberculin skin test (TST) and interferon-gamma release assay (IGRA) conversions and will report this information to the infection control committee and the installation PH authority.

c. Testing for tuberculosis.

(1) Both the CDC and the Assistant Secretary of Defense for Health Affairs (ASD(HA)) recommend that TB testing should be targeted to individuals at high risk and discouraged for those at low risk. Consistent with these policies and recommendations, the U.S. Army will use targeted testing in all settings. Personnel responsible for local TB control programs should ensure that testing adheres to these policies and recommendations. Tests used for targeted testing include the TST and IGRA.

(2) The following pertains to populations to be tested, and the use of forms:

(a) Accession. Personnel on initial military training for active duty of 30 days or more will undergo targeted testing as part of reception processing. Universal skin testing on accession will not be performed; rather, testing will be targeted based on a risk assessment.

(b) Deployment. There will be no routine testing in the pre-deployment setting, during deployment, or in conjunction with the post-deployment health assessment/re-assessment. Post-deployment TB risk assessment will be performed at the time of the PHA as described below. Contact investigations of cases of TB disease performed in the deployed setting must be conducted under the guidance of the Theater PH consultant.

(c) Periodic health assessment. Soldiers will receive an annual TB exposure risk assessment to be completed during the PHA. Only those Soldiers with an identified risk factor will undergo TB testing.

(d) Separation. Universal testing will not be performed.

(e) Healthcare workers. Targeted testing among healthcare workers should occur based on the MTF's annual TB risk assessment and on individual risk factors in accordance with current CDC guidelines. Any employees who have documentation of diagnosis or treatment for TB infection or disease do not require further testing with a TST, IGRA, or chest x-ray. These individuals should undergo a symptom screening instead. The frequency of the symptom screening should be determined by the risk classification for the setting.

(f) Inmates and prison workers. Targeted testing of inmates and workers in prisons, detention, and confinement facilities should occur according to CDC guidelines.

(g) International personnel. Pre-departure medical examinations for international military students, civilians, and authorized dependents should be performed in the country of origin. However, since several cases of TB disease in this population have occurred in recent years, additional TB assessment should occur at time of entry into the United States, or not later than when the individual arrives at his or her first duty station.

(h) Child care and school facility personnel. Workers in child care and school facilities are not a high-risk group, and routine testing is not recommended for these groups. Therefore, only targeted testing of these groups will be performed in accordance with CDC guidelines. Targeted testing will only be performed in this group as part of the pre-placement examination. Additional testing (for example, annual testing) will not be performed unless there is a known exposure to a case of TB disease.

(i) Deparment of the Army personnel. Prospective DA employees, current employees, students, and volunteers may be required to undergo targeted TB testing as a condition for employment in healthcare facilities or in other facilities where TB transmission is of substantial concern, as defined in this pamphlet, by the CDC, or by State law or local ordinance.

(j) Contracting office. Contracting officers and their representatives will include requirements in all contracts to ensure that contractors and their employees undergo targeted TB testing whenever said employees are working in an environment in which DOD employees would normally be required to undergo such testing. TB testing and treatment will be paid for by the contractor.

d. Evaluation and treatment.

(1) All individuals with a positive TST or IGRA will be referred to the installation PH authority and will receive a medical evaluation from a physician or other appropriately licensed independent provider. Medical evaluations should be performed in accordance with CDC guidelines. Immediate medical evaluation by a licensed independent provider is required for any Soldier with signs or symptoms suggestive of active TB disease.

(2) Treatment regimens published by the CDC provide guidance on drugs, intervals, and duration for LTBI treatment. All treating providers and APHNs will be knowledgeable about and proficient in the use of these guidelines and all relevant updates. Selection of the appropriate LTBI treatment regimen is based on clinical evaluation and a consultation with a physician. Physicians certified in a Preventive Medicine specialty (including aerospace medicine and occupational medicine) are the preferred specialists for prescribing initial treatment, but any licensed independent provider can also prescribe this treatment. Only those Privileged Independent Providers (Skill Type 1 or 2) are authorized to initiate LTBI treatment or refill LTBI treatment medications. If there is any doubt concerning the possibility of active TB disease, a pulmonary or infectious diseases specialist is the preferred consultant.

(3) Patients on LTBI treatment will be provided appropriate education on the disease process, treatment options, risks and benefits of the medication prescribed, and their individual treatment plan. Regardless of the LTBI treatment regimen selected, patients will be evaluated monthly prior to medication refill, or more frequently if treatment- or disease-related symptoms occur. This evaluation will include assessment of treatment adherence, symptoms of adverse drug events, the individual treatment plan, risks and benefits of LTBI treatment, signs and symptoms of active TB disease, and other patient concerns. A licensed independent provider or an APHN may perform this evaluation. Any adverse drug events noted in an initial evaluation performed by an APHN must be referred to a licensed independent provider for evaluation.

e. Contact investigation. The installation PH authority will ensure a contact investigation is conducted for all confirmed cases of active TB disease according to current CDC guidelines in order to identify and treat contacts with TB disease or LTBI. Contact investigations must be coordinated with civilian PH authorities to ensure that all contacts who are not DOD beneficiaries are appropriately evaluated and treated.

f. Disposition of cases.

(1) *For Soldiers with confirmed active tuberculosis disease—*

(a) Initiate Entrance Physical Standards Board (EPSBD) proceedings in accordance with AR 40–400 if the Soldier is identified within the first 180 days after accession as not meeting medical procurement standards but meeting retention standards (see AR 40–501).

(b) Refer the Soldier to a medical evaluation board in accordance with AR 40–400 if, after the initial 180 days of active duty or active duty for training, he or she is identified as not meeting medical retention standards (see AR 40–501).

(2) *For Soldiers with latent tuberculosis infection—*

(a) Initiate EPSBD proceedings in accordance with AR 40–400 if the Soldier is identified within the first 6 months as not meeting medical procurement standards (see AR 40–501). Since LTBI, by definition, is asymptomatic and causes no disability, separation from the Army for this condition would be expected only in extremely rare circumstances such as severe adverse events, contraindications to all of the LTBI treatment regimens, or Soldier noncompliance with treatment.

(b) Initiation of LTBI treatment is compulsory at the time of initial military training or for Soldiers who are retained as an outcome of the EPSBD, unless medically contraindicated. Treatment at other times is not compulsory.

g. Documentation and tracking.

(1) Active TB disease is a communicable disease that must be reported through military and civilian PH channels. A Report of Verified Case of Tuberculosis (RVCT) (CDC 72.9a) will be completed for each case of active TB disease. The RVCT will be sent to the supporting county and/or State health department and reported through DRSi. LTBI is not communicable and is not a reportable event in DRSi.

(2) All TB testing and results will be entered into the Medical Operational Data System (MODS)/MEDPROS database and the individual's electronic medical record. The date of test, manufacturer, lot number, date of TST reading, TST result in millimeters (mm), and the name of the individual placing and reading each test will be documented. The medical exemption code, "Medical Permanent," will be entered into MODS/MEDPROS for those individuals whose test results are positive, as per CDC guidelines, to document no further need for testing. IGRA testing dates and results will also be entered into medical records. The date of test, manufacturer, lot number, all quantitative test results, and test interpretation according to CDC guidance will be recorded in the electronic medical record.

(3) MTFs will document the annual TB risk assessment for the facility. This assessment will be reported to the infection control committee and the occupational health clinic. The results of the assessment will also be communicated throughout the facility and used to determine TB surveillance requirements among healthcare workers.

(4) The occupational health clinic will document TB risk assessments and TST results in employee health records. Occupational Health will document and report surveillance for TST conversion among employees and will report this information to the infection control committee and installation PH authority.

(5) Installation PH authorities will maintain a local tuberculosis registry for all persons under treatment for active TB disease and LTBI. This registry will also include contacts of active TB disease cases requiring medical follow-up. Use of electronic databases is authorized when associated with information management protections and in accordance with Health Insurance Portability and Accountability Act (HIPAA) requirements. DA Form 3897 (Tuberculosis Registry), a case management and surveillance tool, can be used and maintained locally to assist with managing patient care.

(6) For personnel being treated for LTBI and who are undergoing a change of station, the losing installation PH authority will send referral forms directly to the gaining installation PH authority to ensure continuity of care. If no installation PH authority or MTF is available, the individual will be referred to the local PH department or designated HCP. Prior to his/her departure, each individual will be counseled on the importance of both adherence to the treatment protocol and timely follow-up.

(7) For personnel under treatment who depart military service or who are National Guard or Reservists no longer on active duty, the losing installation PH authority will refer the patient for follow-up at his/her future location of residence. Follow-up care may be provided by the local health department, a military MTF, the Feds Heal Program, the Veterans Administration (VA), or another HCP.

(8) All patients who complete a course of therapy for TB disease or LTBI will receive documentation of their completion of treatment. This documentation will include, at minimum, the dates of treatment, the medication and dose given, and the number of doses given. The patient will be cautioned in writing to seek medical care for any future development of active TB disease symptoms. The documentation will also state that no additional TSTs, IGRAs, or chest x-rays will be routinely administered to the patient.

11–8. Travel medicine

a. Travel medicine services are offered at the MTF or by referral to appropriate facilities for all eligible beneficiaries traveling to foreign countries in which there is an increased risk from infectious disease or other environmental hazards. Services are provided for short-term and long-term leisure travel.

b. Medical providers will ensure the services provided are based on current recommendations from the CDC, World Health Organization, National Center for Medical Intelligence, or other reputable travel medicine resources. Services provided should include—

(1) Detailed review of the travel itinerary and planned activities.

(2) Review of the patient's medical history, to include past immunizations, current medications, pregnancy status, and the presence of any chronic medical conditions.

(3) Ordering of appropriate laboratory studies as needed (for example, serological titers to confirm immunity).

(4) Immunizations.

(5) Chemoprophylaxis (such as for malaria or altitude) based on the location of travel and planned activities.

(6) Self-treatment for common travel-related illnesses such as traveler's diarrhea.

(7) Counseling on recommended personal preventive measures.

Section III

Hospital-Acquired Infection Control

11–9. Introduction

An effective hospital infection control plan maintains high quality patient care, uses hospital services effectively, and protects employee health while preventing and controlling hospital-associated infections.

a. The installation medical authority's emphasis ensures the implementation of hospital infection controls in accordance with the requirements of The Joint Commission.

b. The hospital infection control committee provides technical and administrative oversight of the controls on behalf of the installation medical authority.

c. The basic principles of patient care and employee health apply to all inpatient areas, outpatient areas, emergency rooms, special care areas, and troop clinics.

11–10. Hospital infection prevention and control

a. Infection control committee. The hospital infection prevention and control committee operates as a medical audit committee and is accountable to the MTF commander. This committee, which serves as part of the hospital's quality improvement capability, comprises a chairperson who leverages the services of the installation PH authority to—

(1) Reduce the incidence of preventable infections by establishing a practical and timely system for the recognition, evaluation, and reporting of hospital-acquired infections in hospitalized patients, recently discharged patients, and patients who have undergone same-day surgery or other ambulatory procedures.

(2) Provide assistance in developing preventive measures and policies.

(3) Maintain a continuing education service on the subject of preventing hospital-acquired infections.

(4) Provide consultation to the MTF commander, medical staff, and nursing staff on infection control practices.

(5) Provide information about facility employee immunization.

(6) Monitor the bloodborne pathogen and TB exposure control services.

(7) Advise on healthcare-acquired infections.

(8) Advise on work restrictions for employees with contagious infections.

(9) Advise on matters relating to the hospital environment, including waste management; housekeeping; selection and use of cleaning and disinfecting products; food safety; hospital laundry; and environmental monitoring.

(10) Advise on the potential for pest infestations that contribute to the spread of infectious agents, and recommend appropriate pest management measures.

(11) Provide advice on matters relating to ventilation or other workplace processes relating to hospital-acquired infections.

b. Consultations. Onsite consultations and special studies are initiated by the hospital epidemiologist or hospital infection preventionist at the MTF. Requests for consultative support may be elevated, in sequence, to the regional health authority, TSG's physician or nurse consultant for hospital infection prevention and control, and the OTSG.

c. Reporting. An endemic hospital-acquired infection rate for the hospital should be consolidated into formal reports for presentation during medical staff conferences. Hospital-acquired infections for a specific period of time should be reported by the incidence ratio, the prevalence, or a targeted surveillance rate, depending on the size and complexity of the medical facility, where—

(1) The incidence ratio equals the number of patients developing hospital-acquired infections during a specific time period divided by the number of patients discharged over the same time period.

(2) The prevalence equals the number of patients with hospital-acquired infections at a specific point in time divided by the number of patients in the hospital at the same point in time.

(3) Targeted rates are—

(a) Unit-specific, based on bed days.

(b) Device-specific, based on device days.

(c) Procedure-specific, based on the number of times the specific procedure is performed.

(d) Benchmarked, as appropriate (that is, according to the National Nosocomial Infections Surveillance System for Hospitals).

d. Coding. Coding of diagnoses on individual patient data system coding transcripts from inpatient treatment record cover sheets should always include any diagnosis representing a hospital infection (see AR 40–68).

e. Documentation. Outbreaks as well as isolated RMEs, as defined in the *Armed Forces Reportable Medical Events Guidelines and Case Definitions*, are documented in DRSi.

Chapter 12
Community-based Prevention and Health Promotion

Section I

Health Promotion and Health Education

12–1. Introduction

Health promotion is the art and science of enabling people to increase control over their health and improve health-related behaviors and determinants of health. Health promotion fosters a culture and environment that values health and fitness; empowers individuals, units, and organizations to lead healthy lives; enhances the health of beneficiaries; and improves mission readiness and productivity of military and Civilian personnel. Health promotion provides a range of interventions to facilitate healthy living as a lifestyle choice and social norm. The health promotion activities presented in this chapter complement the health promotion functions specified in AR 600–63.

a. Health promotion strategies include building healthy public policy, creating supportive environments for health, strengthening community action for health, developing personal skills, and re-orienting health services. These strategies involve a unified effort to move from a healthcare system to a system for health to maintain, restore, and improve health and readiness in line with the National Prevention Strategy (NPS). The NPS identifies four strategic directions that guide actions that will improve health demonstrably: Healthy and Safe Community Environments, Clinical and Community Preventive Services, Empowered People, and Elimination of Health Disparities. The NPS priorities provide evidence-based recommendations designed to improve health and wellness: tobacco-free living; preventing drug abuse and excessive alcohol use; healthy eating; active living; injury- and violence-free living; reproductive and sexual health; and mental and emotional well-being (https://www.hhs.gov). Community-based prevention and health promotion services and activities are aligned with the NPS and enhance and sustain Army readiness by promoting healthy lifestyles and improving, sustaining, and restoring health.

b. Well-planned and -executed community-based prevention and health promotion activities—

(1) Support Soldier readiness.

(2) Address Soldier, Family, beneficiary, Retiree, and Civilian needs.

(3) Utilize qualitative and quantitative data to understand, identify, and focus priorities.

(4) Conduct rigorous analysis and critical thinking (to include root cause analysis) to identify areas of concern.

(5) Improve the detection and assessment of actual and potential health needs of individuals, Families, units, organizations, and communities.

(6) Include mechanisms for continuous feedback through monitoring and evaluation of policies, activities, services, and the environment.

(7) Allow for coordinated and efficient use of PH resources.

(8) Synchronize various models and theories during the development, implementation, and evaluation of policies, programs, and services.

(9) Apply evidence-based practices and lessons learned to ensure efficient and effective services, activities, and initiatives.

(10) Mobilize multidisciplinary partners, stakeholders, and leaders to solve identified problems.

(11) Develop plans and policies that support individual, unit, and community prevention efforts.

(12) Investigate health problems, and search for insights and innovative solutions.

(13) Link people to services designed to improve health and wellness.

c. Effective community-based prevention and health promotion activities can enable individuals, Families, units and organizations to—

(1) Understand their health needs and the methods with which to address them.

(2) Change their behavior or their environment to improve their health and safety and that of those around them.

(3) Obtain PH service support they may need but cannot provide for themselves in times of stress or uncertainty as a solution to mitigate adverse health outcomes.

d. Army PH professionals at all levels should be prepared to advise commanders, leaders, stakeholders, and beneficiaries on community-based prevention and health promotion issues and implications and should be consulted during the development of regulations, policies, directives, programs, operation orders, measures, and actions that could impact individuals, units, organizations, and communities in Army settings. See appendix H for the application of "health" in all policies.

e. Health promotion activities begin with surveillance for early identification of health threats attributed to lifestyle choices and social behaviors. Health promotion includes delivery of health education and PH initiatives to change knowledge, skills, attitudes, and behaviors. Health promotion also impacts social and physical environments to proactively sustain and improve the health of the Force as prescribed in AR 600–63 and DODI 1010.10.

f. These activities are part of the spectrum of prevention which results in influencing policy, changing organizational practices, fostering coalitions and networks, educating providers and the public, and strengthening individuals, Families, and units. An integrated, multidisciplinary approach coordinates solutions that are driven by data and rigorous analysis, deliberate prioritization, and leveraging partnerships to achieve meaningful improvements in health and the environment for the individual and the community.

12–2. Health promotion implementation

a. Health promotion initiatives are based on primary prevention, early intervention, and a focus on avoiding the initial occurrence or expansion of a problem, health risk, or behavior that can negatively impact health. Health promotion—

(1) Is any combination of health education and related organizational, political, and economic interventions designed to facilitate behavioral and environmental changes conducive to the health and well-being of the Army community (see AR 600–63).

(2) Involves the implementation of multiple strategies that are applied to individuals and populations.

(3) Enhances mission and unit readiness.

(4) Encourages individuals and organization to achieve optimal health.

b. Health education is a strategy that helps individuals and communities manage, improve, and safeguard their health. Health education is used to increase knowledge, awareness, and behavioral change. It is based on health behavior theory that identifies targets for change and methods for accomplishing changes. Health education will provide the target audience with an activity or service that demonstrates the following characteristics:

(1) Presents clear, health-related goals and behavioral outcomes.

(2) Assesses determinants of health: the personal, social, behavioral, economic, and environmental factors that influence health status.

(3) Validates the attitudes, values, and beliefs that support positive health behaviors and combat biases, as well as misinformation and environmental disincentives which block knowledge of or access to care or healthy behavioral models.

(4) Provides instructional strategies and learning experiences that are participant-centered, interactive, experiential (group discussions, problem solving, role playing, peer-led), and directly related to the behavioral outcomes.

(5) Reinforces protective factors, addresses the perceptions of personal risk of engaging in specific unhealthy practices and behaviors, and builds essential skills to reduce risk.

(6) Employs culturally appropriate materials and teaching methods.

(7) Offers opportunities to reinforce skills.

(8) Builds on existing strengths and assets within a community.

(9) Uses multiple, complementary strategies to promote health at the individual and community level.

c. Health education and health promotion are interrelated. Health educators conduct rigorous assessment, planning, implementation, research, evaluation, advocacy, and program management to encourage healthy lifestyles, policies, and environments through the following actions:

(1) Collecting and analyzing quantitative and qualitative data.

(2) Using scientific, multidisciplinary theories to plan interventions.

(3) Translating scientific research into practical, applied programming.

(4) Planning and conducting mass media and health communications campaigns to change the knowledge, attitudes, behaviors, and norms of select populations.

(5) Implementing programs.

(6) Providing training to individuals, lay health advisors, other professionals, and policymakers.

(7) Evaluating health promotion programs for continuous program improvement.

d. Incorporating health education and health promotion into other PH disciplines such as environmental health, physical health, behavioral health, and spiritual health is strongly recommended to support and strengthen the health of the Force and Army communities.

e. The roles and responsibilities of health promotion span across disciplines and include PH agencies at the installation and regional level; HCPs; safety agencies and professionals; human resources and services; recreation, education, and youth development agencies; and environmental agencies. The determinants of health are beyond the capacity of any one practitioner or discipline to manage. A myriad of health care providers (physicians, nurses and behavioral health providers) as well as allied health professionals such as dietitians, physical therapists, and other interdisciplinary PH personnel are responsible for community-based prevention and health promotion.

f. Personnel are identified and responsible for delivering a series of planned learning activities designed to achieve changes in health awareness, knowledge, attitude, skills, and behavior. These activities refer to the levels or types of health promotion and education initiatives. They involve setting up, managing, and executing the instructional sessions, methods, strategies, wellness activities, and interventions that address the program objectives. Health promotion program implementers, both medical and non-medical personnel, follow the guidance in AR 600–63.

g. Effective PH practice requires a well-prepared workforce to deliver strategic objectives. To expand their impact within the Force, health education and health promotion include workforce training and professional development.

12–3. Coordinating and administering effective public health services

a. An installation collaboration group such as a PH advisory team (or equivalent group as established by the installation PH authority) should be established to facilitate communication, coordination, investigation, surveillance, response, and prevention activities including, but not limited to, the animal-human-environment interface (One Health), and vector-, water-, food-borne, and zoonotic diseases.

b. Installation PH personnel are members of this team and will provide representation to installation boards, councils, and committees as directed.

c. Members of this team will provide support to unit health promotion teams. These teams are led by commanders at the brigade and battalion level and are designed to provide unit leadership with a forum to establish and monitor standards for a safe, healthy environment for unit members. Installation medical and PH authorities support these teams and provide commanders with visibility on health risks and prevention activities that lead to medical readiness and health of the Force.

Section II

Health Promotion Components

12–4. Performance Triad

The Performance Triad (P3) is a comprehensive messaging and communication strategy to improve readiness and increase prevention efforts through PH initiatives and leadership engagement. A critical component in the Army Medicine transformation to a System for Health, the Triad represents healthy sleep, physical activity, and nutrition—three key components that are essential for health, well-being, and readiness. While each component is independently important, P3 focuses on the importance of balancing all three components for optimal performance. The success of P3 is established through strategic messaging at all levels, outreach, education, policy development, leader development and training, and collaborative partnerships resulting in heightened awareness and deliberate actions that demonstrate the importance of sleep, activity, and nutrition to affirm physical supremacy, cognitive dominance, and emotional resilience of the Force.

a. From the PH perspective, P3 is a component of the core tenets of self-care and should be delivered through the many programs, classes, and initiatives that Army Medicine provides on these three focus areas.

b. Installation medical and PH authorities are critical assets in proliferating P3 messaging and integrating P3 concepts and activities into individual, unit, community, and organizational policies and practices.

12–5. Sleep

a. Sleep is vital for health, performance, and well-being. It sustains the brain's capabilities for success on and off the battlefield. With quality sleep, Soldiers, Families, Civilians, and beneficiaries are able to excel mentally and physically. Short sleep duration (fewer than 6 hours) is associated with new onset of mental health disorders, decreased physical endurance, and an increase in work-related injuries.

b. Commanders and unit leadership should encourage practical steps for Soldiers, Civilians, and contractors to obtain adequate sleep. A deliberate sleep plan based on the unit's roles and responsibilities will improve mission success. Those personnel with responsibilities that require the highest cognitive demand should receive priority for the most consolidated hours of sleep.

c. Installation medical and PH personnel advocate for the P3 sleep targets of achieving 8 hours of quality sleep in a 24-hour period, and not consuming caffeine 6 hours before bedtime.

d. Installation medical and PH personnel should use the sleep guidelines published by the CDC and within the P3 educational materials to guide education and communication efforts to support sleep hygiene. Information can be found at https://www.cdc.gov/sleep/index.html.

e. Initiatives that focus on sleep behaviors may be incorporated into existing services, such as the Civilian fitness program, Army Wellness Centers, and the pregnancy postpartum physical training (P3T) program.

f. HCPs should encourage healthy sleep behaviors that support individual performance and overall unit readiness.

12–6. Physical activity

a. A fit and ready Force is required to meet the demands of the Army. An investment in holistic health, injury prevention, and total fitness can optimize the human performance of Soldiers and Civilians. Soldiers at all levels and assignments must maintain a baseline level of fitness and proper physical readiness to perform tasks which may occur anywhere and without warning. The stress of emerging operational environments impacts an individual's ability to make proper and timely decisions.

b. According to the CDC, regular daily physical activity can help control weight, reduce the risk of cardiovascular disease, type 2 diabetes, and some metabolic syndrome cancers; strengthen bones and muscles; improve mental health and mood and the ability to perform daily activities; and increase the likelihood of living longer.

c. Commanders and unit leadership should encourage practical steps to increase physical activity throughout the day. Recommended practices include flexible work schedules to allow time for fitness training; participation in command-sponsored activities; regular movement breaks during the work day; the use of adjustable sit-stand workstations; and "walking meetings."

d. Primary prevention and health promotion personnel should use the *Physical Activity Guidelines for Americans* for adults (https://health.gov/paguidelines/guidelines/adults.aspx), children, and youth (https://www.cdc.gov/healthyschools/physicalactivity/guidelines.htm) to guide education and communication efforts to support increased activity.

e. Installation medical and PH personnel should advocate for the P3 targets for physical activity—

(1) Aim for 10,000 steps per day, for an ideal goal of 15,000 steps per day.

(2) Incorporate at least 150 minutes (up to 2.5 hours) of moderate aerobic, cardio exercise, plus an additional 75 minutes of vigorous intensity exercise per week. Intensity refers to the magnitude of effort required to perform the activity.

(3) Include at least 2 days or more of resistance training per week.

(4) Include at least 1 day of agility training per week.

f. To increase daily physical activity, installation medical and PH authorities should promote active living activities and initiatives that focus on activity, such as the Civilian fitness program (in accordance with AR 600–63), P3T, and national health observances that focus on activity; Army Wellness Center assessments, Family MWR recreational activities, and P3.

g. Installation medical and PH personnel support P3T for units.

(1) A medical technical consultant provides guidance on the medical issues related to pregnancy and postpartum that affect military requirements and procedures; facilitates communication with health care providers; ensures medical quality and safety assurance for the exercise component of P3T; and assists with instruction on medically-related curriculum. The medical technical consultant can be an obstetric nurse, nurse midwife, family nurse practitioner, physical therapist, PA, or registered nurse.

(2) An education coordinator organizes the class schedule and advises on topics and speakers for the education component of P3T. The educator coordinator may be a PH nurse, community health nurse, registered nurse, or health educator.

(3) An Army Wellness Center P3T educator will collaborate strategically with the APHC to deliver the train-the-trainer P3T Onsite Instructor Course to train P3T instructor trainers and medical technical consultants at the installation.

(4) AR 40–501 provides information on requirements to enroll Soldiers in P3T upon pregnancy diagnosis to enable their participation both during pregnancy and postpartum.

h. Installation medical and PH authorities should advocate for the completion of the Military Promoting Active Communities (m-PAC) assessment. The m-PAC is an assessment tool to determine gaps in policy, physical infrastructure and environmental supports, promotion strategies, and resources to create an active living community. The m-PAC assessment requires teamwork among medical and PH authorities on the installation and within the community to generate ideas for community improvements.

(1) Identified gaps can be addressed by the CR2C in a collaborative effort to enhance the physical activity opportunities of Army populations.

(2) Installation medical and PH personnel should engage with the Garrison Master Planner to—

(a) Prioritize healthy community planning principles that will positively change the built environment to better encourage healthy lifestyles.

(b) Participate in visioning sessions and planning charrettes to advocate for inclusion of health considerations and opportunities for physical fitness.

(3) The APHC supports the use of the m-PAC assessment tool through training, evaluation, and consultation.

12–7. Nutrition

a. A fit and healthy fighting Force is the foundation of a strong national defense. Healthy eating patterns and nutritionally balanced meals are essential for mission success. Body composition, activity, sleep, and nutrition impact a Soldier's mental, physical, and emotional health. Inadequate nutrients or consuming too many calories can negatively impact a Soldier's ability to perform mentally and physically. AR 40–25/OPNAVINST 10110.1/AFI 44–141/MCO 10110.49, AR 600–9, and AR 600–63 provide guidance on nutrition education for Soldiers, commanders and leaders.

b. Installation medical and PH personnel advocate for the following P3 nutrition targets:

(1) Eat at least 8 servings of fruits and vegetables per day.

(2) Refuel at least 30–60 minutes after strenuous exercise.

c. Installation personnel should consult with registered dietitians/nutritionists on the impact of nutrition on readiness and human performance optimization.

d. Health promotion nutrition is the science and art of helping people change nutrition-related behavioral patterns to move toward a state of optimal health and readiness. The process includes the assessment, planning, implementation, monitoring, and evaluation of comprehensive strategies targeting populations that include Soldiers, Family members, and Retirees. Providing supportive environments offering healthy, convenient food choices has the greatest impact on producing lasting change. Performance nutrition concepts support the commander in cultivating a fit and ready Force that is resilient, productive, effective, and healthy.

e. Health promotion nutrition strategies should consider all levels of the Social-Ecological Model. Health status is dependent upon the collective behaviors, attitudes, knowledge, and beliefs of family and community. Delivery of programs and services is provided in locations where target populations live, work, and play, with emphasis on high-population-reach programs and strategies.

f. Standardized nutrition education is provided for Soldiers needing to meet their body fat standard, as outlined in AR 600–9, using *Fit For Performance – Powered by Performance Triad*. This a scientifically-based lifestyle and behavior modification program designed to help maximize military readiness and job performance and lower the risk of weight-related disease. More information is available at https://phc.amedd.army.mil/topics/healthyliving/n/pages/weightmanagement.aspx.

g. Performance nutrition education provided to units will optimize unit training and readiness. Information for the integration of P3 nutrition tenets to optimize operational missions can be found at https://p3.amedd.army.mil.

h. Nutritional Environment Assessment.

(1) The Nutritional Environment Assessment is a standard tool used to assess the quality of the installation nutritional environment, develop an annual healthy food improvement action plan, and brief installation leadership quarterly with updates from the annual action plan. The goal of the Military Nutrition Environmental Assessment Tool (m-NEAT) is to help community leaders and coalitions make targeted and effective changes to the installation nutrition environment. The m-NEAT achieves this goal by defining improvement areas and guiding the development of evidence-based action plans. The m-NEAT areas of focus are installation community programs, dining facilities, fast-food venues, NAF food venues, Snack Shop/Grab 'N Go Stores (Express), commissaries, vending operations, and community and worksite policies. The m-NEAT evaluation tools and facilitator's guide can be found at https://www.med.navy. Data from the evaluations should be sent to the APHC Health Promotion and Wellness Directorate.

(2) The m-NEAT is coordinated through the CR2C for installation-wide oversight by the senior commander. A chartered working group is the recommended means to coordinate the various stakeholders. Recommended stakeholders may include a dietitian, nutrition care specialist, health promotion coordinator, the APF dining facility, Exchange, commissary, NAF food facilities, lodging, fitness center, and any other installation stakeholders interested in promoting a healthy nutritional environment.

(3) After the installation m-NEAT evaluation of the food environment, the working group will identify focus areas for short- and long-term action plans and will provide progress updates at CR2C meetings.

i. Operation Supplement Safety is the DOD initiative to educate commanders, leaders, HCPs, and Service members on dietary supplement safety, including energy drinks. The senior commander communicates the informed, responsible, and safe use of dietary supplements through the CR2C annually, at a minimum (https://www.opss.org/).

12–8. Child health, safety, and well-being

Child health services promote and support the physical, social, emotional, and intellectual health of children and youth as well as support program activities appropriate to the development level and abilities of individual children and youth. These services involve all elements of health promotion, health maintenance, health education, and disease surveillance and mitigation developed for child development services, school-age services, and youth services in accordance with AR 608–10, DODI 6060.02, and DODI 6060.40. Health activities are developmentally appropriate and encourage physical fitness; positive self-esteem; intellectual, social, and physical achievement; leadership skills and initiative; lifelong recreation skills; positive use of leisure time; moral development and community leadership; self-reliance and independence; and respect for diversity.

a. Installation PH support to child health and safety services includes—

(1) Serving as MTF Health Consultant to Child, Youth, and School Services (CYSS).

(2) Collaboration with pediatric services and other military and civilian health and welfare organizations regarding community-based programs that support children and youth.

(3) Consultation with staff regarding communicable disease prevention and control.

(4) Health consultation for children with special healthcare needs.

(5) Health consultant membership on the Exceptional Family Member Program Multidisciplinary Inclusion Action Team for children with special healthcare needs.

(6) Review of available medical and health-related documents for medical diagnoses reflecting potential life-threatening conditions, functional limitations, behavioral and/or psychological conditions; and review of medical action plans for the development of a plan of care for children in CYSS programs.

(7) Consultation with CYSS staff and parents for education and training in health-related areas including, but not limited to, communicable diseases, medication administration, and bloodborne pathogens.

(8) Sanitation and environmental health support to CYSS staff, operations, and facilities, as described in AR 608–10, TB MED 531, and subparagraph 8–40*h* of this pamphlet.

(9) Consultation and inspection of child and youth program facilities according to Federal, DOD, and Army policies.

(10) Collaboration and consultation with Army Veterinary Services, OEH personnel, and other PH services to address health risk concerns and problems related to the support of child and youth programs.

(11) Health consultation with on-post dependent schools that are not otherwise provided APHN services according to Federal, State, and local policies.

(12) Liaison with nursing services, as needed, at off-post schools attended by military Family members.

b. Childhood lead poisoning prevention services are intended to minimize children's environmental lead exposure. AR 420–1 and AR 200–1 require that lead hazards from all sources be identified and mitigated.

(1) Clinical services include—

(a) Written or electronic parental questionnaires to review potential lead exposures, as recommended by the American Academy of Pediatrics, at well-child examinations beginning at age 6 months through 6 years.

(b) Targeted child blood lead screening as determined by the installation medical authority.

(c) Clinically indicated screening of children at high risk for lead exposure.

(d) Elevated blood level case management.

(e) Referral to an APHN as needed.

(f) Physician oversight.

(2) APHN services include—

(a) Elevated lead laboratory surveillance and reporting.

(b) Elevated blood lead level case investigation.

(c) Facilitating outreach and education on lead hazards and prevention strategies for parents and other personnel upon request.

(3) Installation lead hazard management services include the identification and mitigation of lead hazards; Industrial Hygiene services; and hazardous waste consultations.

(4) A collaborative effort to prevent childhood lead poisoning includes involvement by pediatricians, industrial hygienists, Environmental Health Sciences personnel, laboratory officers, commanders, nurses, installation engineering support personnel, and the installation safety officer.

12–9. Family advocacy

Family advocacy services provided by PH are generally administered by an APHN. The Army Family Advocacy Program is established by AR 608–18 and supported by installation PH staff for prevention, identification, and treatment services for spouse and child abuse. Public Health Nursing family advocacy services include—

a. Serving on or providing a representative to serve on the Family Advocacy Committee and the Fatality Review Committee per AR 608–18.

b. Providing services directed toward the prevention of spouse and child abuse through health education to individuals, Families, and groups (for example, new-parent support, parenting, and child-development classes) and coordinating such efforts with Army Community Service (ACS) and Family Advocacy Program staff.

c. Assisting with the identification of high-risk Families; providing direct services to selected Families.

d. Serving as the nurse consultant to the MTF staff in the identification of suspected abuse cases.

e. Referring cases to the designated installation reporting point of contact when spouse abuse or child abuse and neglect are suspected.

f. Serving as a consultant to the case review committee upon request, to provide nursing input into the assessment, intervention, and evaluation process of individual cases.

g. Receiving referrals from the case review committee for Family health counseling, and providing this service in the Preventive Medicine clinic or APHN office.

12–10. Family health

a. A PH case referral (hard copy or electronic) provides a means for medical and allied health personnel to refer individuals and Families for APHN services. The APHN may use the case referral to clinically case-manage a patient/Family or to refer patients to other military and civilian health agencies or to APHNs at other military installations.

b. Case management is a collaborative process that assesses, plans, implements, coordinates, monitors, and evaluates options and services to meet an individual's health needs through communication and available resources to promote quality, cost-effective outcomes.

c. APHN service referral documentation is prepared as follows:

(1) The APHN should use the electronic medical record as the primary means of referral.

(2) Email communication from the APHN service to another MHS provider may be used if the message is encrypted, marked confidential, and contains a HIPAA notice.

(3) Telephonic communication may be used for time-sensitive and/or complex referrals to MHS or civilian HCPs.

(4) Written (paper) communication may be used to follow up on referrals to the MHS or civilian sector as executed in one of the manners stated above.

12–11. Maternal, child, and women's health

Maternal health services provided by PH are generally administered by an APHN. Maternal health elements support the normal prenatal and postpartum concerns of beneficiaries. Maternal health services promote a safe and healthy work and home environment for the well-being of the mother and the normal growth and development of the fetus or newborn child.

a. The APHN, in coordination with obstetrical/gynecological services, social work services, ACS, and other leaders and organizations within the military community—

(1) Supports or identifies prenatal and newborn health education classes for the community.

(2) Advocates for health issues affecting military women, including—

(a) P3T education.

(b) Unintended pregnancy, and reproductive and sexual health.

(c) Identification of military and community resources related to women's health and wellness.

(d) Breastfeeding education, and support for breastfeeding upon return to duty.

(e) Female-specific deployment information, and promoting women's health in austere environments.

(f) Consultation with registered dietitians/nutritionists for pregnancy and postpartum nutrition education.

b. Occupational health—

(1) Conducts reproductive health and pregnancy surveillance, to include breastfeeding and lactation support with respect to workplace health hazard assessment and health risk determinations.

(2) Informs the pregnant or lactating employee of any job hazards or exposures in her work environment, and the potential effects of those hazards on her and her fetus or breastfeeding child.

(3) Participates in prenatal and postpartum education programs on job hazards/exposures during pregnancy and while breastfeeding.

(4) Refer to paragraph 7–18 for information about the reproductive hazards associated with occupational exposures.

12–12. Tobacco use prevention, cessation, and control

a. Tobacco use impacts readiness by impairing physical fitness, increasing susceptibility to disease, increasing illness and absenteeism, and increasing health care costs. DODI 1010.10 and AR 600–63 provide guidance on tobacco prevention, cessation education, and environmental controls. The current clinical practice guideline is *Treating Tobacco Use and Dependence*, developed by the U.S. Public Health Service.

b. In accordance with AR 600–63, senior commanders are responsible for supporting the tobacco-free lifestyle, assisting with deglamorizing tobacco products, and enforcing tobacco control policy as part of local health promotion and PH services.

c. For the purpose of Tobacco Free Living (TFL), "tobacco and tobacco-related products" includes all forms of tobacco products and tobacco-related products such as cigarettes, cigars, pipes, smokeless tobacco (snuff and chewing tobacco), electronic nicotine delivery devices (for example, e-cigarettes, e-pipes, e-cigars), roll-your-own tobacco, dissolvable tobacco, and products intended for use in hookahs/water pipes.

d. "Tobacco products" does not include FDA-approved nicotine replacement medications such as nicotine patches, gum, lozenges, nasal spray, and inhaler, which are available both over the counter and by prescription for the purpose of tobacco cessation in the DOD TRICARE Tobacco Cessation Program.

e. Tobacco-free living education and tobacco-related health problem information are provided in basic and advanced courses for all military personnel. Topics include—

(1) Primary tobacco prevention for youth and adults.

(2) Health risk factors associated with tobacco and secondhand smoke.
(3) Safety risk factors in a field environment, including fires and light discipline.
(4) Nicotine addiction.
(5) Varieties of personal and online behavior modification tools and pharmacologic and nicotine replacement therapies to aid in tobacco cessation.
(6) Referrals to tobacco use cessation programs.

f. Tobacco use cessation services are most successful when a multidisciplinary team approach is used. The Army Medical Home is the primary access point for beneficiary tobacco cessation services. Team members may include HCPs (physicians, nurses, PAs, nurse practitioners), registered dietitians/nutritionists, behavioral health providers, substance use disorder clinical care providers, pharmacists, health promotion coordinators, and fitness trainers.

g. The use of tobacco products is prohibited on or within medical campuses as established by AR 600–63. All Army medical facilities promote TFL workforces and implement the Tobacco Free Medical Campus (TFMC) in support of TSG Army Medicine Healthcare Covenant. TFL and the TFMC provide patients with safe environments in which to receive their care. TFL includes tobacco prevention, incremental tobacco reduction, and control.

h. Installation medical authorities will identify a TFL Action Officer, preferably a tobacco subject matter expert, to champion the TFL effort. The action officer's responsibilities are to coordinate actions related to this policy, attend mandatory trainings and in-progress reviews with HQ MEDCOM and the APHC, support data collection and evaluation efforts, and report policy status to HQ MEDCOM and the APHC as requested. The action officer will coordinate with the APHC to evaluate and monitor processes and outcomes associated with MEDCOM TFL.

i. The tobacco use cessation program must maintain records of participant data to assess program effectiveness. The data should include, but are not limited to—
(1) Basic demographics.
(2) Length of tobacco use.
(3) Number of previous attempts to quit.
(4) Cessation aids used in the past.
(5) Cessation aids currently in use.

Section III

Community-Based Prevention

12–13. Soldier medical readiness

a. Public health personnel, such as APHNs, provide the screening, health education, health promotion, and surveillance services that link Soldiers and their units to the supporting MTF.

b. APHNs provide the following services to Soldiers and their units, as resources are available:
(1) Pre- and post-deployment health threat information for deployment screening processes when units do not have embedded Environmental Health personnel.
(2) Communicable disease surveillance (for example, tuberculosis, STI, malaria, HIV).
(3) Health promotion and health education.
(4) Advocacy for specific health issues affecting female Soldiers.
(5) Immunizations.
(6) Information for commanders about health risk trends within their commands.

12–14. Army Wellness Centers

The mission of Army Wellness Centers is to provide integrated and standardized primary prevention programs and services that promote enhanced and sustained healthy lifestyles to improve the overall well-being of Army community members and readiness of the Total Force. Army Wellness Centers serve as an extension of the Army Medical Home to provide comprehensive, evidence-based health education with a health coaching specialty for individuals and groups. Army Wellness Centers are at the forefront in the paradigm shift from a reactive health care system to a proactive System for Health. Part of the local MTF, the Army Wellness Center allows for medical provider direction and oversight of patient processes through electronic medical record documentation. The local MTF provides logistical support to ensure the Army Wellness Center meets defined standards. Program responsibilities for technical oversight of Army Wellness Centers are specified in AR 600–63.

a. Army Wellness Centers—
(1) Focus on general wellness education on topics such as healthy lifestyle habits, health coaching, good sleep habits; and tobacco education in support of TFL.

(2) Focus on early detection and prevention of disease and musculoskeletal injury by providing health education and by identifying risk factors such as low aerobic capacity, high and low BMI/body fat percentage, tobacco use, and inadequate sleep.

(3) Use advanced technology to measure current health status; design individualized programs to meet needs and goals.

(4) Improve individual and unit readiness; support physical fitness standards by targeting the physical fitness and performance of Soldiers.

b. Services provided by Army Wellness Centers include—

(1) *Performance Triad education.* This service provides information on healthy sleep, physical activity, and nutrition to Soldiers, Families, Retirees, and Civilians.

(2) *Health assessment review.* This review is an analysis of an individual's health status, risk for disease, and ability to participate in or increase physical activity safely. The review includes risk stratification, a wellness questionnaire, and biometric screening.

(3) *Physical fitness assessment.* Using state-of-the-art equipment, the individual's physical fitness level is assessed and used to create an individualized or unit exercise prescription.

(4) *Healthy nutrition.* This service uses metabolic testing to identify the individual resting metabolic rate and provide appropriate strategies to improve healthy behaviors (for example, portion control, healthier food choices, caloric awareness) for weight loss, gain, or maintenance.

(5) *Stress management.* This service provides education in biofeedback, stress management education, and individual stress management training, to include positive coping skills.

(6) *General wellness education.* This service offers broad health and wellness topics, such as healthy lifestyles, sleep habits, resiliency, and self-care.

(7) *Tobacco education.* This service provides awareness of tobacco cessation opportunities and relapse prevention.

c. Army Wellness Centers require the following four elements to function effectively:

(1) *Facilities.* Army Wellness Centers require adequate space for administrative duties, class instruction, and health and wellness assessments based on the current *ACSM's Health/Fitness Facility Standards and Guidelines*, published by the American College of Sports Medicine (ACSM). According to the Office of the Assistant Chief of Staff for Installation Management Real Property Planning and Analysis System, Army Wellness Centers are located in nonclinical space (General Instruction Buildings Category Code 17120).

(2) *Staffing.* Army Wellness Center staffs are based on a population model and consist of a director, health educators, health promotion technicians, and administrative staff.

(a) The director provides daily management, oversight, and compliance with established policies and procedures.

(b) Health educators are multidisciplinary, with backgrounds in exercise science, health education, health promotion, wellness, nursing, physical therapy, and nutrition, with specialization in health coaching techniques. A national certification approved by the National Commission for Certifying Agencies in a relevant related field is required for this position.

(c) Health educators are cross-trained in each of the core program areas and are required to maintain established proficiencies.

(d) Competency review and monitoring are performed both locally and Enterprise-wide. The Army Wellness Center director conducts initial and periodic competency assessments to ensure personnel standards are met and maintained.

(e) Health promotion technicians provide direct support to the Army Wellness Center and health educator(s) to ensure the delivery and quality of services provided meet established standards.

(3) *Equipment.* Army Wellness Centers require equipment and supplies to perform their duties.

(4) *Core programs.* Army Wellness Centers provide six core programs across the Enterprise that are based on changing behaviors toward positive lifestyles. If there is a need for an additional service at an Army installation, the APHC has an assessment method to ensure that the proposed service is not redundant with existing services at the installation, is focused on primary prevention, and is based on the best available evidence of effectiveness.

d. Army Wellness Center programs are mobile to meet unit needs and the needs of geo-dispersed populations. Requests for mobile testing are managed at the installation level.

e. Army Wellness Center visits are documented in the electronic medical record and the AWCHWT. The AWCHWT provides installation-level outcome reports.

f. Program monitoring and evaluation are accomplished as follows:

(1) Compliance with Army Wellness Center standards is monitored through the Army SMS (see para 3–13). The information is populated by the installation Army Wellness Center Director who must validate each standard and provide current status through SMS. SMS outcomes are reported quarterly to regional health authorities and the installation medical authority.

(2) The Quarterly Program Monitoring Report provides process outcomes for utilization, no-show rates, and customer satisfaction. The Quarterly Program Monitoring Report is published quarterly and provided to installation stakeholders such as the commander, installation medical authority, and regional health authority.

(3) Ongoing and ad-hoc program evaluation are conducted through the APHC Public Health Assessment Division, which produces an annual prospective evaluation report. These outcomes are provided to Army medical and other stakeholders who require information about the efficacy of the Army Wellness Center program.

(4) Refer to appendix I for additional Army Wellness Center program requirements, standards, and guidelines.

12–15. Community disease prevention, surveillance, and control

a. Chronic and communicable diseases and RME control services are provided to identify lifestyle risk factors associated with specific reportable diseases, conditions, and events. Health promotion activities increase individuals' knowledge regarding control factors associated with the development of medical risk.

b. Communicable disease control services focus on health education, disease screening, and contact tracing and counseling activities that complement and support communicable disease control activities, including, but not limited to, STI/STD, tuberculosis, and so forth.

c. Chronic disease control services target individual and population risks associated with the development of long-term illnesses such as diabetes, hypertension, heart disease, HIV, and hepatitis. Services include health education, disease screening, and individual counseling.

d. Army PH nursing, in coordination with primary care medical staff—

(1) Provides awareness services to inform the community of identified risks, lifestyle control factors, and related illnesses.

(2) Provides education to facilitate modification of lifestyle behaviors associated with increased risks.

(3) Utilizes targeted surveillance and screening to identify individuals at risk.

(4) Ensures epidemiological contact investigations are completed to ensure proper medical evaluation and treatment of all patients and contacts.

(5) Assists in training the individuals who conduct contact investigations, education, and counseling.

12–16. Community partnerships and coalitions

a. Collaboration and integration among installation agencies improve communication, foster shared resources, develop partnerships, and minimize duplication of efforts. The health of the Force is not the sole responsibility of any one agency or service provider. Installation medical and PH personnel may bear responsibility for leading community health improvement efforts; the success of such efforts hinges on the ability to establish and maintain effective partnerships.

b. In order to effectively assess the health of an installation as described in paragraph 12–17, the installation medical and PH authorities rely on partners to—

(1) Advocate for shared goals and objectives.

(2) Contribute data, information, resources, and personnel in all phases of PH development.

(3) Promote services and capabilities.

c. Collaboration should extend beyond the services available on military installations. Potential partners include State, Tribal, and local governments; businesses; healthcare systems; clinics; voluntary health organizations; schools, colleges, and universities; and various community, nonprofit, and faith-based organizations.

d. On the military installation, collaboration can be accomplished through the CR2C in accordance with AR 600–63. The CR2C—

(1) Is the responsibility of the senior commander, per AR 600–20, and is a multidisciplinary community coalition that, through review of routine findings, provides visibility to Commands and enables targeted actions to enhance and optimize health and readiness.

(2) Engages stakeholders to undertake a Community Health Improvement Process and/or Health Promotion Strategic Planning process; implements working groups to address identified priorities through review of assessment findings, a prioritization process, and decisionmaking; and develops and implements an action plan.

(3) Implements the process described above by means of a full-time, designated facilitator assigned to the senior commander.

e. The installation PH authority is a critical leader and member of the CR2C and its working groups and enables installation-wide community assessments through a variety of data collection methods and ongoing health surveillance of populations.

f. Active engagement in CR2Cs provides the infrastructure for PH surveillance for the continuous, systematic collection, analysis, and interpretation of health-related data needed for the planning, implementation, and evaluation of PH practice at the local level.

g. Installation medical and PH authorities are members of the CR2C and support the following CR2C tasks:

(1) Provide analysis of compiled data, including disease, injury, and behavioral health outcomes, to identify community health-, readiness,- and resilience-related priorities, which become CR2C priorities.

(2) Provide input to CR2C Community Health Improvement Plan (CHIP)/Health Promotion Strategic Plan goals and objectives.

(3) Serve as a member or leader of designated CR2C Working Groups.

(4) Develop action plans through the working groups, including identification of targeted interventions.

(5) Implement CR2C Working Group action plans.

(6) Provide monitoring and evaluation expertise of implemented action plans.

(7) Provide recommendations to the senior commander's CR2C to sustain, re-evaluate, or establish new priorities.

(8) Provide input and updates to the content of the Installation Community Resource Guide (CRG), utilizing the Enterprise CRG platform (https://crgs.amedd.army.mil), as requested by the CR2C facilitator.

h. The APHC develops and trains CR2C facilitators, provides oversight and monitoring, and conducts process and outcome evaluation of Army CR2Cs and CR2C Working Groups.

i. Community-based participatory research (CBPR) is a model for engaging those who are most affected by a community issue, typically in collaboration or partnership with those who have research skills, to provide assistance with and analyze a particular issue with the goal of devising strategies to resolve it. The APHC can provide CBPR consultation to communities.

Section IV

Health Promotion Services Development

12–17. Introduction

Health promotion services and initiatives are designed to meet specific population needs and are aligned with the strategic organizational mission and goals. They can enhance awareness, help individuals make lifestyle changes, and create environments that support readiness. Effective application of an evidence-based conceptual framework will aid in the design, implementation, and evaluation of effective health promotion services and initiatives at all levels.

a. Health promotion initiatives have key components for the planning, staffing, administration, and evaluation of rendered services. They use a planned process of promoting, maintaining, and improving individual, Family and community health through the following activities:

(1) Health education to increase awareness.

(2) Health risk assessments or health screenings to identify populations requiring lifestyle interventions.

(3) Specific, targeted health promotion interventions (such as services, policy, or environmental) to reduce risk factors and increase healthy lifestyles.

(4) Marketing and incentives (for example, time off) to increase awareness and facilitate behavior change.

(5) Evaluations to determine effectiveness, identify opportunities for improvement, and provide evidence for continuing support.

b. Installation medical and PH authorities and personnel should follow a standardized approach and framework for development of initiatives, activities, and programs. Developing a plan to manage participation, timelines, and resources, and determine methods for data-gathering, interpretation, and decisionmaking will allow for identified personnel to manage the planning process. Specific details in the next sections and subsections of this guidance are referenced in AR 600–63. Effective development should—

(1) Address an identified need based on data and analysis.

(2) Identify and engage target group(s).

(3) State specific intended goals and measurable objectives.

(4) Include activities relevant to the goals, objectives, and outcomes.

(5) Specify the relationship between activities and objectives.

(6) Build a means to evaluate results.

12–18. Assessment

a. To effectively plan, implement, and evaluate needed services, initiatives, policies, and environmental changes, there needs to be a way to assess and frame the current state (operating environment) and monitor changes over time. Assessment involves gathering data and input on needs from the individual and unit to the community level. Assessments lead to organizing and prioritizing strategies.

b. Assessment is the process of gathering information about the factors that support and/or hinder health and also identify opportunities to address or improve them. The assessment should help identify the current picture of health. It is necessary to complete assessments before goals are developed, resources allocated, strategies adopted, and actions targeted and evaluated.

c. Obtaining baseline measures, setting targets, and measuring progress support the evaluation capability and provide staff and leaders the means to measure performance.

d. Assessments are derived from the following:

(1) *Demographics.* Describe the population affected.

(2) *Existing data sources.*

(3) *An environmental scan.* This is a narrative and graphic description that captures the history, culture, and current state of the population, as well as available resources, services, and capabilities.

e. Available data sources that provide information should be collected and analyzed. Some data are readily available, some may need to be requested from a third party, and some may not be currently available, thus necessitating a decision as to whether or not to collect data.

f. Timely and targeted assessments can help show connections between various risk factors affecting health at the individual, organizational, and environmental levels. When supported by multiple pieces of data, actionable recommendations to preserve and protect the Force can be implemented. Everyone, at all levels, has a responsibility to assess and identify target group(s) health needs in order to determine and monitor—

(1) Health status or indicators by considering both the leading and lagging indicators of illness and injury, and the modifiable behavioral factors that contribute to poor health and conditions.

(2) Knowledge, perceptions or misperceptions, attitudes, motivation, and current practices.

(3) Actual or perceived problems, issues, or findings based on benchmarking; or creating a baseline for monitoring changes.

g. Various methods of selecting and prioritizing health promotion initiatives, services, and activities will provide systematic and unbiased means of interpreting the data and identifying priorities.

(1) Priority areas are identified using a prioritization method such as a prioritization matrix, nominal group process, multivoting technique, strategy grid, or other prioritization tools.

(2) Selection of appropriate prioritization criteria on which to judge the merit of the potential focus area is important to avoid basing the selection on bias or hidden agendas. Commonly used prioritization criteria include cost, return on investment, availability of solutions, impact of the problem, urgency of solving the problem, and the size of the problem.

h. Assessments should be conducted in advance of implementing any health promotion service, initiative, or activity.

i. A comprehensive CHA informs the development of a CHIP and ensures that priorities and decisions for this plan are driven by broad data and findings.

(1) The ultimate goal of a CHA is to inform and support improvements in the health and quality of life for individuals, groups, and communities through a data-driven and systematic planning and action process. A variety of tools and processes may be used to conduct a CHA; the essential components are community engagement and collaborative participation.

(2) Public health personnel, along with CR2C members and other on- and off-post partners, utilize the CHA to inform and direct program, service, and policy planning and resources as laid out within the health improvement plan.

j. The comprehensive CHA for Army installations is comprised of four key assessments (see fig 12–1) outlined in the Mobilizing for Action Through Planning and Partnerships framework, found at https://www.naccho.org/programs/public-health-infrastructure. These assessments are the Community Health Status Assessment (CHSA), Community Strengths and Themes Assessment (CSTA), Forces of Change (FoC) Assessment, and the Local Public Health System Assessment (LPHSA). The CHA is conducted collaboratively by multiple installation agencies or subject matter experts. Each assessment yields important information for improving health, but the value of the four assessments is greater when the findings for each are considered as a whole. Doing so illustrates a more complete understanding of the factors that affect the installation PH system, the installation community, and ultimately, the health of the installation community.

(1) A CHSA is completed using a standardized Army CHSA tool managed by the APHC Army Public Health Nursing Division. Using this standard tool, installation PH authorities complete the CHSA every 3 years and review the data to describe the nature of the community's current health status. Public health personnel coordinate with the CR2C and other installation agencies, as appropriate, to identify additional data indicators that should be included in the CHSA tool, based on local needs.

(a) The CHSA is intended to answer questions such as "How healthy are the people in our community?" and "What does the health status of our community look like?" using objective data from a variety of Army, National, State, and local sources. This tool provides guidance on which data must be compiled or collected and provides a place for inputting those data.

(b) Installation PH personnel present the CHSA results to installation stakeholders and CR2C members and provide a copy of the report via email to APHC Public Health Nursing Division staff within 3 months of CHSA completion.

(c) The CHSA report is reviewed annually by installation PH personnel, such as APHNs, to determine progress made towards the identified top health concerns. To ensure the CHA is as current as possible, it can be updated if new data are available (for example, changes in policies or demographics).

(2) A CSTA is a survey administered electronically to all members of the installation. It is conducted through the CPHC every 2 years; the CR2C facilitator leads survey administration and marketing with the assistance of other installation agencies and CR2C members.

(a) The CSTA is designed to provide a deeper understanding of the issues that relate to community members' perceptions of quality of life, health, safety, and satisfaction within the environment of an Army installation by answering questions such as, "What is important to our community?", "How is quality of life perceived in our community?", and "What assets do we have that can be used to improve community health?"

(b) Public Health professionals support the installation CR2C facilitator in administering the CSTA and assist in distributing the CSTA results to CR2C members and other installation and community partners.

(c) The CSTA results can be reviewed annually by the CR2C facilitator and installation PH personnel to provide updates to the CHA.

(d) The CR2C facilitator presents the CSTA results to installation stakeholders and CR2C members within 3 months of CSTA completion.

(3) A FoC assessment is designed to help the installation community and the CR2C understand the forces that affect the community and the PH system at the installation. It answers the following questions: "What is occurring or might occur that affects the health of our community or the local PH system?" and "What specific threats or opportunities are generated by these occurrences?" The FoC assessment can be compared to the Strengths, Weaknesses, Opportunities, and Threats assessment in the Strategic Planning process and, combined with other CHA results, will inform major CHA findings and development of the CHIP.

(a) Installation PH personnel, along with CR2C members and other community partners, as appropriate, facilitate the FoC assessment at least every 5 years.

(b) The FoC results should be briefed to the CR2C membership within 3 months of completion.

(c) The FoC should be reviewed by installation PH personnel to provide updates to the CHA report.

(4) The LPHSA determines the degree to which the installation PH system is executing the 10 Essential Public Health Services. The LPHSA answers these questions: "What are the components, activities, competencies, and capacities of our local PH system?" and "How are the Essential Services being provided to our community?"

(a) Installation PH personnel, such as Environmental Health chiefs, Industrial Hygiene chiefs, or APHNs, lead an LPHSA at least every 5 years.

(b) In support of the LPHSA, the CRG can be used to assist in identifying the services and activities available in each community. Installation medical and PH authorities are responsible for providing bi-annual CRG updates to the CR2C facilitator.

(c) An LPHSA report is prepared and briefed to the CR2C and all involved community partners (that is, those who participated in the LPHSA) within 3 months of completion.

(d) The LPHSA results should be reviewed to provide updates to the CHA report.

k. Other assessments may be implemented as identified by the community, leaders, and units and should result in a deeper understanding of identified issues.

l. The results of the CHSA, CSTA, and FoC, along with LPHSA data and findings (and other assessments as appropriate), comprise the comprehensive CHA and should be presented together in a comprehensive CHA report.

(1) Installation PH personnel, such as the installation PH authority, develop the CHA report at least every 5 years, or more frequently if the findings of any one assessment have changed significantly or if leadership otherwise requests the report.

(2) The installation PH authority should coordinate with the CR2C facilitator and other CR2C members to brief the comprehensive report at the CR2C and working group meetings within 3 months of report completion and at least annually as other significant updates to the data are made.

(3) The installation PH authority should distribute a draft form of the CHA report to the CR2C and other partner organizations for a period of comment and input; revise it as warranted, based on the input received; and finalize it.

(4) The installation PH authority distributes the final CHA report to the community-at-large and to installation and off-post organizations for their access and use. The report is available via electronic and hard copy methods to ensure broad accessibility to the CR2C, those living or working on the installation, installation agencies, and local partners, as appropriate.

(5) The installation PH authority should ensure that the major findings of the CHA report are referenced in the CHIP/health promotion strategic plan and in working group action plans.

(6) These assessments contribute to the installation PH program's accreditation process. See chapter 2 for information on accreditation.

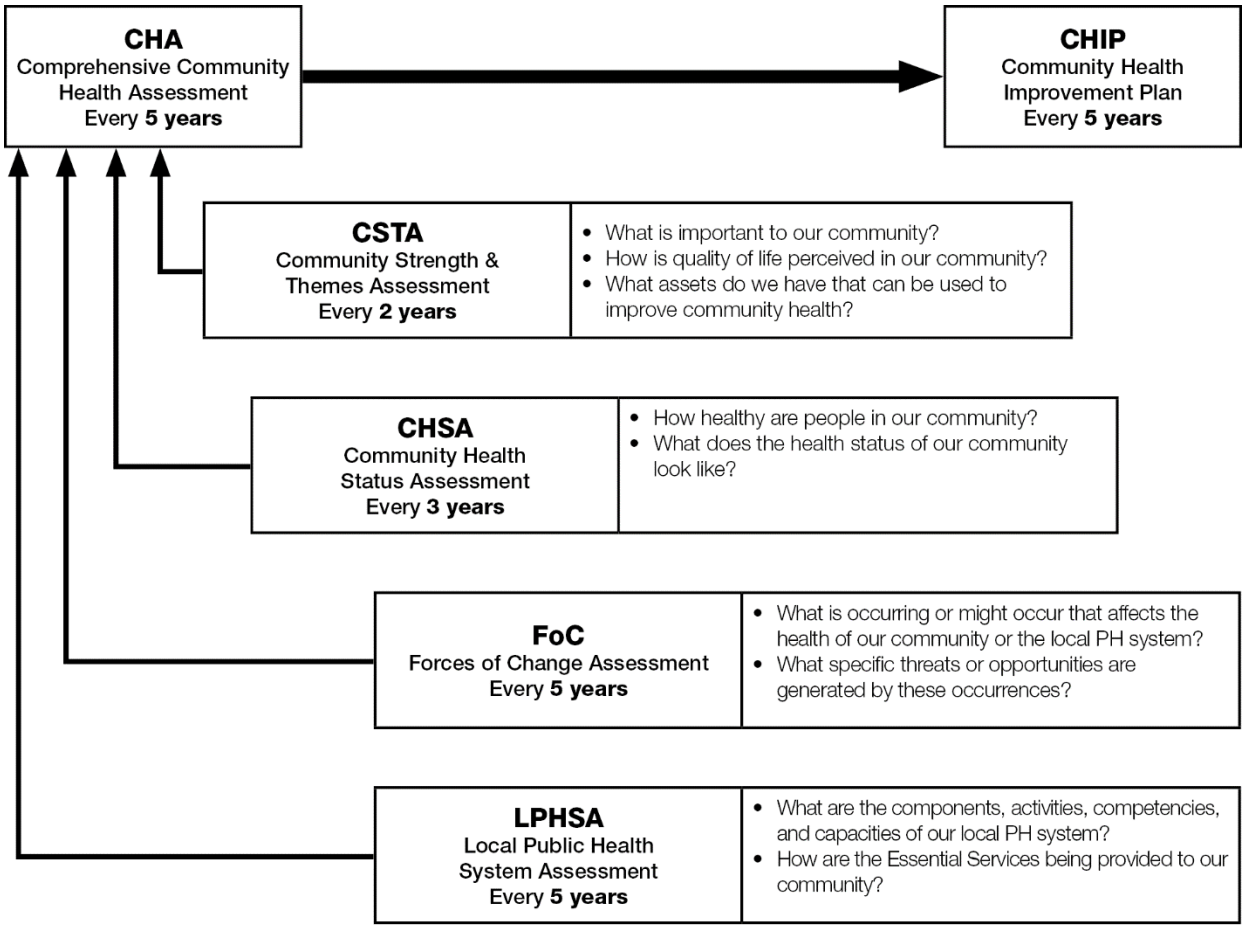

Figure 12–1. Comprehensive community health assessment

12–19. Planning

a. Installation medical and PH personnel may be assigned the task of planning, developing, implementing, and evaluating health promotion activities, services, or policies as part of a CHIP. There are a number of health promotion planning models that are useful, depending on the type of health promotion activity, initiative, or project.

b. The planning step is informed by the results of a comprehensive CHA, literature reviews, and other assessments to determine targeted goals, targeted population(s), outcomes, and objectives. Installation medical and PH personnel should plan specific behavioral goals, objectives, and outcomes based on identified needs. This planning supports the ability to inform leaders and evaluate progress toward intended goals.

c. The Military Decision Making Process is a tool to help solve a problem and can be applied to health promotion (ADP 5–0).

d. Installation medical and PH authorities should manage the following elements with personnel identified with developing and implementing health promotion services, activities, and policies as part of the planning process:

(1) Recruit and gain commitment of personnel, potential participants, decisionmakers, and key stakeholders for buy-in, advocacy, and establishment of roles and responsibilities.

(2) To develop health promotion programs and interventions, elect foci using a prioritization method based on the major CHA findings and other installation assessment data.

(3) Use a structured tool, such as a logic model, to identify and link inputs and activities to goals and objectives. A logic model is a systematic and visual road map to present and share an understanding of the relationship between resources for program operation, the planned activities, and the intended/expected changes or results (see fig 12–2).

(4) Identify and procure resources such as personnel, staff requirements, current funding assets, and equipment for all phases of development.

(a) Coordinate with the appropriate resource manager for funding options.

(b) Investigate cost-sharing opportunities with other departments, tenant agencies, or local community agencies.

(c) Allocate financial, material, and human resources for program activities.

(5) Design appropriate interventions with specific behavioral goals, learning objectives, and outcomes to increase awareness, knowledge, skills, and attitude and behavior change.

(a) Apply the appropriate health promotion theory and health promotion models to develop interventions and activities. Theories and models give planners the tools to design and evaluate activities.

(b) Refer to *Theory at a Glance: A Guide for Health Promotion Practice* at www.med.upenn.edu/chbr/documents/theoryataglance.pdf.

(6) Determine and establish timelines and milestones related to the planning process, based on the type of health promotion activity (such as public information and awareness, risk reduction education programs, or community-level intervention).

(7) Identify the type of evaluation the program requires, the data needed, and the indicators for measuring program success.

e. In collaboration with CR2C members and working groups, the installation PH authority adopts, publishes, and distributes the final CHIP as a key planning document for the installation community at least every 5 years, or more often as required by leadership.

(1) The installation PH authority leads or collaborates with CR2C members and working groups to develop an ongoing tracking process for CHIP implementation.

(2) The installation PH authority leads or collaborates with CR2C members and working groups to complete and publish an annual report on CHIP implementation for the installation community.

f. The planning process and CHIP contribute to the installation PH program's accreditation process. See chapter 2 for information on accreditation.

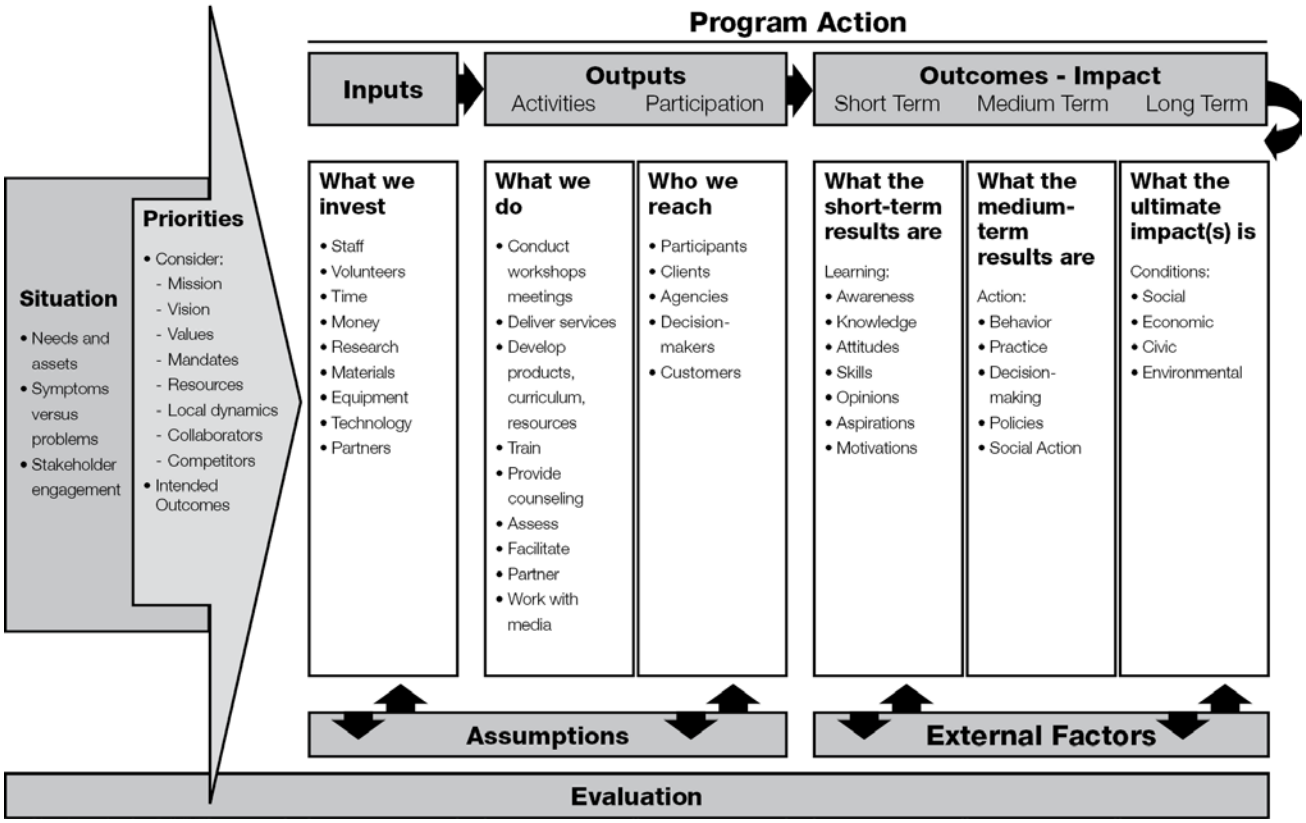

Figure 12–2. Example of a logic model

12–20. Implementation

Implementation is the execution of the planned health promotion program.

a. Installation medical and PH authorities, subject matter experts, and providers should deliver a series of planned activities designed to achieve changes in health awareness, knowledge, attitude, skills, and behavior.

b. These activities involve setting up, managing, and executing instructional sessions, methods, strategies, policies, wellness activities, interventions, and measures that address program objectives.

c. The above personnel should demonstrate a variety of skills in delivering activities and interventions that will meet the established goals and objectives.

d. The above personnel should evaluate the activities' effectiveness in accomplishing the established goals and objectives.

12–21. Evaluation

a. Installation medical and PH authorities should engage in evaluation practice as a means for decisionmaking, accountability, and performance. Monitoring and evaluating are vital in determining if actions were effective, helping refine delivery of services, and providing evidence for continuing support. Refer to chapter 2 for additional program evaluation information.

b. Evaluation is a systematic process that can achieve multiple aims including, but not limited to—

(1) Determining the fidelity of implementation to standards of execution.

(2) Monitoring progress toward goals and objectives.

(3) Substantiating outcomes by assessing the reach, efficacy, and maintenance of effects over time.

(4) Measuring adoption across target staff, locations, or institutions.

(5) Justifying resources to maintain effective programs and strengthen ineffective programs.

c. Selecting the type of evaluation will determine how the evaluation findings are used to improve the design and implementation of health promotion activities to optimize the use of resources and achieve desired outcomes. (See para 2–6 for more information regarding program evaluation.)

d. Evaluation should be part of the planning process in order to determine the impact of a complete, well-planned, and well-executed service or activity.

e. Performance indicators (or outcome measures) are a measure of how successful the service or activity was to the targeted population. The indicators should directly relate to the goals and objectives of the service or activity.

f. Installation medical and PH personnel should develop and test instruments for data collections, ensuring consistency in training and measurement that will lead to more consistent data collection.

g. It may also be necessary to conduct an economic evaluation to demonstrate the return on investment and potential cost savings. A common element across all forms of economic evaluation is that they involve measuring costs, including personnel, time, and resources. Installation medical and PH personnel should ensure upfront accounting of costs in order to use economic evaluations effectively.

h. Communicate the results of evaluation and share them with appropriate internal and external audiences, and consider how to use the results in future planning.

i. Refer to the CDC Framework for Program Evaluation in PH at https://www.cdc.gov/mmwr/preview/mmwrhtml/rr4811a1.htm for more information.

12–22. Communication

a. Installation medical and PH authorities should communicate with the target population and program stakeholders (persons or groups that are interested in the success of the program), including leaders from mission, garrison, and medical commands, about health needs, concerns, and resources.

b. Communication should include increasing awareness, illustrating skills, reinforcing knowledge, affecting attitude and behavior changes, supporting risk reduction and disease prevention health policies, and reporting program effectiveness to stakeholders.

c. Communication services should incorporate the sharing of community resources, responding to requests for health information, referring requesters to valid health information sources, and assisting with marketing and public relations.

d. Refer to chapter 5 and paragraph E–10 of this pamphlet for additional guidance on developing evidence-based PH communication messaging, products, channels, and campaigns.

Chapter 13
Public Health Toxicology

13–1. Introduction

a. Toxic substances contained in products and materials in the military system, military waste products, and occupational and environmental chemical hazards can result in adverse effects on human health and the environment. Public health toxicology laboratory and consultative services are provided to help identify, assess, and eliminate or control the potential human health threats posed by these factors, which are a result of military activities and operations.

b. Public health toxicology laboratories will establish and maintain stringent quality control and quality assurance programs to enhance and ensure the accuracy of results.

c. Public health toxicology laboratory capabilities include—

(1) Toxicity screening and exposure-specific testing of military-relevant materiel and chemicals (not including CBRN warfare agents), combustion products, their degradation products, and toxic industrial and agricultural chemicals via *in vivo*, *in vitro*, and/or *in silico* (computer-based) methods. *In vivo* and *in vitro* studies are conducted using Good Laboratory Practices (GLPs), and *in vivo* studies are performed under Institutional Animal Care and Use Committee supervision in an Association for Assessment and Accreditation of Lab Animal Care-approved facility. These studies include new and developmental substances and materiel. Testing capabilities include short-term, single dose tests as well as longer-term repeated dosing by various exposure routes in mammalian and non-mammalian species consistent with GLP protocols.

(2) Gross pathology and histopathology services, clinical chemistry, and hematology testing in support of toxicity evaluation of materials being considered for military use.

(3) Development and use of chemical and biologically based methods and test systems to rapidly identify and determine the health effects of toxic materials and their transport through all environmental media.

(4) Development and use of methods to improve the prediction and assessment of human health and ecological effects from military occupational and environmental contaminants, including the development of toxicology-based health benchmarks. Refer to paragraph 4–2 for information on the development of benchmarks.

d. Requests for toxicity assessments and clearances are submitted to the APHC (see para 1–13). Public health toxicology consultative services include—

(1) Formal toxicity assessments for new Army materiel, according to AR 40–5. Toxicity assessments are consequence-of-use evaluations of a material or chemical with possible multiple applications. The toxicity assessment identifies chemical properties, reviews and evaluates completed toxicity testing, provides an assessment of occupational (Soldier) and environmental consequences of use, and lists additional toxicity testing requirements that may be needed for issuance of a toxicity clearance. A toxicity assessment is a tool that Army decisionmakers may use to help evaluate toxicity issues related to possible future use of a material. The toxicity assessment forms the technical foundation for the toxicity clearance.

(2) Formal toxicity clearances according to AR 40–5, AR 70–1, and DA Pam 70–3. A toxicity clearance is a toxicological evaluation of a chemical or materiel prior to its introduction into the Army supply system.

(a) A toxicity clearance is required of all new materials and chemicals being introduced into the Army supply system (classes of supply are defined in AR 710–2 and include all types of munitions). Before introducing any new material, whether a commercial or military-unique product, the program manager or individual authorized to add chemicals or materials to the Army supply system is required to request a toxicity clearance for that product. Materials are conditionally approved based on a chemical's exact formulation for a specific application. The toxicity clearance also identifies requirements for safe use and handling of the material for a specific application.

(b) Detailed technical information provided with the toxicity clearance request will aid in a timely toxicity evaluation and program approval. Each toxicity clearance request should identify the new chemical or material; its manufacturer with address, technical point of contact and phone number; specific use conditions or application; and any technical information supplied from the manufacturer, including—

1. Scope and use identified in the proposed application and in the commercial marketplace, if applicable.
2. Any human, animal, or *in vitro* toxicity study information.
3. Pertinent safety data sheet(s).
4. Any reported adverse human health effects.
5. The chemical or system manufacturing process being used and/or replaced.
6. Complete information provided by the requestor on the chemical formulation, including any proprietary chemicals. Any proprietary information will be held in confidence upon request.

(3) Health risk toxicity evaluations using electronic toxicology databases, literature reviews, and consultation with experts in toxicology and related health specialties.

(4) Review of new and revised standardization documents such as military specifications, military and Federal standards, non-Government standards, and commercial item descriptions for potential toxicity concerns.

(5) Toxicity evaluation and interpretation in support of the Health Hazard Assessment Program (AR 40–10), a domain of manpower and personnel integration in the system acquisition process (AR 602–2). This information includes recommendations concerning options based on realistic risk-to-benefit ratios with respect to the toxicity assessment or toxicity clearance.

(6) Development of health-based toxicity values for use in the protection of Soldier, occupational, and/or environmental health, including the cleanup of contamination resulting from military activities (see para 4–2).

(7) Development of exposure standards and guidelines using health-based toxicity values, in collaboration with APHC health risk assessment assets (see para 4–2).

(8) Toxicology-based health risk assessments and consultations. Appendix D provides risk assessment guidance.

(9) Chemical hazard identification, health risk assessments, and exposure control advice.

(10) Advice on personal protection, targets of toxicity for medical surveillance purposes, and other countermeasures to avoid or minimize potentially hazardous exposures.

(11) Review and validation of health-based rationale for substitute or replacement materials proposed under the Army Pollution Prevention Program.

(12) Veterinary pathology consultative services.

(13) *In silico* modeling for toxicity estimates from which to develop health-based criteria for emergency response operations where existing data are limited or nonexistent.

(14) Consultations to the DOD emerging contaminants program (see DODI 4715.18).

(15) Consultative services for the Army Liaison to the ATSDR (see para 8–43).

(16) Forensic toxicology services for instances of potential or known exposures to military-unique chemicals or mixtures.

13–2. Functions

a. The APHC—

(1) Performs toxicity clearances and toxicity assessments when requested.

(2) Provides the toxicity screening, exposure-specific testing, histopathology services, clinical chemistry, and hematology testing laboratory capabilities to support PH toxicology services.

(3) Develops health-based occupational and environmental toxicity criteria.

(4) Develops and uses chemical methods and test systems to rapidly identify the potential health effects of toxic materials and the transport of military-relevant toxic materials in the environment.

(5) Develops and uses methods to improve the prediction and assessment of human health effects of military-relevant materials, including explosives, pyrotechnics, and propellants.

(6) Provides the PH toxicology consultative services described in paragraph 13–1*d*.

(7) Coordinates with the USAMRMC to ensure that PH toxicology needs, such as screening tools, test methods, instrumented animal models, sensors, and criteria and standards, are considered in the prioritization of medical materiel research, development, and acquisition efforts.

(8) Coordinates with the AMEDDC&S HRCoE to ensure that PH medicine toxicology materiel requirements are identified, validated, and addressed through the doctrine, organizations, training, materiel, leadership and education, personnel, facilities, and policy process.

b. The USAMRMC will consider PH toxicology needs when identifying, prioritizing, and conducting medical materiel research, development, and acquisition.

c. U.S. Army Materiel Command (AMC) program executive offices and command and DRU program managers are responsible for requesting from APHC, through their respective surgeon's office, a formal toxicity assessment and clearance, appropriate toxicology consultation, and recommendations on the safe handling and use of new materials or products introduced into or being considered for use in the Army Acquisition System.

Chapter 14
Public Health Laboratory Services

14–1. Introduction

a. The mission of Army PH laboratories is to provide routine and responsive analytical services in support of military population health readiness. Guidance in this section applies to fixed-facility PH laboratories. See paragraph 14–6 for guidance on deployable field laboratories. Army PH laboratories analyze a range of food, environmental, entomological, and industrial hygiene samples for a variety of chemical and radiological contaminants as well as infectious diseases.

b. Army PH laboratories will establish and maintain quality control and quality management programs to enhance the accuracy of laboratory results. The laboratories will obtain and maintain third-party accreditation appropriate for their scope of testing, customer needs, and guidance from higher headquarters. Examples of third-party accreditations include ISO/IEC 17025, the National Lead Laboratory Accreditation Program, and the DOD Clinical Laboratory Improvement Program (as described in DODI 6440.02 and DODM 6440.02). These efforts will result in scientifically defensible laboratory results, studies, and recommendations.

c. Army PH laboratories test for numerous analytes and pathogens in a variety of matrices or sample types. For convenience, the analytical methods performed by Army PH laboratories are often grouped by chemical properties (such as metals, ions, radioactive materials, and volatile organic chemicals), sample characteristics (clinical or nonclinical), technology used for measurements (chromatography, classic chemistry, immunoassay, nucleic acid analysis, and others), and sample types (environmental, industrial hygiene, diagnostic, food, and others).

d. Army PH laboratories perform a number of specialized laboratory tests as specified in separate DOD, DA, and/or MEDCOM publications. These specialized testing programs are described in paragraph 14–5 and include cholinesterase monitoring, the DOD HTTKP, the DOD Lyme Disease Program, and methods for analyzing embedded metal fragments, as well as DU in urine.

e. Labs will consult with installation PH and logistics authorities for proper disposal of wastes (see paras 8–23 through 8–28).

14–2. Support to U.S. and Allied Forces

Army PH laboratories support U.S. and Allied Forces in a given area of operations. The Medical Detachment (Preventive Medicine), Medical Detachment (Veterinary Service Support), and Area Medical Laboratory each have specific field laboratory capabilities (ATP 4–02.8). Each regional health authority possesses PH laboratory capabilities. While some methods, such as lead in drinking water, are available in most regions, Army PH laboratories must reach out to their customers

to ensure the needed PH laboratory analytical capabilities are available for operational commanders and other stakeholders. Army PH laboratories interact with other PH program elements, local MTFs, DPWs, CBRNE units, and the intelligence community in order to meet customer analytical needs. Analysis does not necessarily need to be performed locally in-house. In some cases, it is more efficient to send samples to other Army PH Laboratories, contract out the analysis locally, utilize an existing contract at another Army PH Laboratory, or arrange for analysis at a Navy, Air Force, or interagency laboratory. Laboratory managers will implement measures to ensure efficient Army PH Laboratory operations. Lowest cost is not always a requirement. Often, the needs of operational commanders and the timeliness of results will dictate the approach needed to provide the required laboratory capabilities.

14–3. Cooperative and collaborative interactions between Army public health laboratories

a. Army PH Laboratories collaborate and cooperate in order to enhance Warfighter readiness, obtain operational efficiencies, and optimize resources spent. A productive and integrated relationship among Army PH Laboratories is critical to providing comprehensive and timely solutions for the global Army, DOD, and national PH laboratory requirements. Coordinated and synchronized Army PH Laboratories directly support increased operational readiness, PH surveillance, and global health engagements.

b. To support efficient PH laboratory operations, MEDCOM currently provides central funding for the ELIMS, combined contracts for laboratory accreditation, and annual planning meetings for managers at Army PH Laboratories.

c. Army PH Laboratories implement best practices to the greatest extent possible by collaborating and cooperating with other Army PH Laboratories to improve efficiency, increase interoperability, and avoid redundant efforts by—

(1) Utilizing the ELIMS for key PH laboratory business processes (see para 3–9).

(2) Establishing similar, if not identical, pricing schedules for PH laboratory services at Army PH Laboratories and simplifying reimbursement processes, such as quarterly reconciliation of invoices, when samples are analyzed at different laboratories.

(3) Periodically reviewing recent workload and future workload projections in order to shift analytical work between laboratories with the goal of increasing operational readiness, optimizing turn-around time, and reducing contracting costs.

(4) Utilizing combined contracts that are centrally funded through the MEDCOM for ELIMS, laboratory accreditation, proficiency testing materials, and instrument maintenance.

(5) Notifying other Army PH Laboratories when DA Civilian vacancies are advertised at their laboratory.

(6) Adopting similar if not identical components of quality management systems.

(7) Standardizing laboratory software and instrumentation when feasible.

(8) Providing technical consultations to include adopting similar or identical analytical procedures, and assisting with the transfer of analytical methods and scientific knowledge among Army PH Laboratories.

(9) While functioning as an enterprise, ensuring adequate representation in various laboratory networks and committees such as the Defense Laboratory Network, the Laboratory Response Network, and the Joint Public Health Laboratory Subgroup. A summary of conclusions will be provided to the enterprise in a format most appropriate for reporting (for example, email, video teleconference, or information paper).

(10) Notifying other Army PH Laboratories with similar or identical requirements when planning for technical training and conference attendance. For example, invite other laboratories to in-house or off-site technical training events, and collaborate on conference attendance packets.

(11) Sharing market research findings and procurement documents as appropriate.

(12) Participating in monthly video or audio teleconferences in order to maintain open lines of communication between Army PH Laboratories and facilitate the adoption of best practices described above. Representative laboratory directors or their designees are expected to participate in these monthly meetings. As appropriate, other Army, Joint, inter-agency, multinational, and Civilian participants may be invited. Meetings with external participants may or may not include all Army PH Laboratories and should focus on technical issues while avoiding internal Army discussions that are unlikely to be of interest to external partners.

14–4. General guidance on analytical methods

a. Army PH Laboratories test for a broad range of analytes, which are often categorized into one or more groups for convenience and simplicity. Examples include—

(1) Ions.

(2) Metals.

(3) Radiochemicals.

(4) Volatile organic compounds.

(5) Semi-volatile organic compounds.

(6) Pesticides.

(7) Herbicides.
(8) Explosives.
(9) Dioxins.
(10) Vector-borne diseases.
(11) Food-borne diseases.

b. In addition to testing for a broad range of analytes, Army PH Laboratories must be able to identify analytes in several different matrices. Examples of different matrices include—

(1) Potable water.
(2) Nonpotable water.
(3) Food.
(4) Air.
(5) Soil.
(6) Wipes.
(7) Human or animal blood or tissue specimens.

c. Army PH Laboratories perform a variety of published and scientifically accepted methods to determine the identity and quantity of substances and pathogens known to cause adverse health effects. The actual methods and analytes available at a given laboratory will vary. Contact individual Army PH Laboratories for a current list of methods that are available for particular analytes in associated matrices. Information on currently accredited methods at Army PH Laboratories is often publicly available on the websites of accreditation bodies. Army PH Laboratories perform many methods published by the following agencies and organizations—

(1) EPA.
(2) OSHA.
(3) National Institute of Occupational Safety and Health (NIOSH).
(4) Association of Official Analytical Chemists.
(5) ASTM.
(6) Standard Methods for the Examination of Water and Wastewater.
(7) CDC.
(8) World Health Organization.
(9) ISO.
(10) Custom in-house methods.
(11) Modified methods.

14–5. Other unique public health laboratory programs

a. Cholinesterase monitoring.

(1) DOD and DA authorities require regular testing of blood samples for cholinesterase levels to provide medical surveillance of workers with an exposure potential to cholinesterase inhibitors. TB MED 590 describes the performance of this surveillance; the testing is an MTF responsibility unless an exception is granted by the proponent of this pamphlet. When an exception is granted, see guidance in subparagraph 14–5*a*(2)(*g*). TB MED 590 also specifies procedures for the red blood cell Cholinesterase Monitoring Program (CMP).

(2) The Cholinesterase Reference Laboratory (CRL) administers the CMP. The CRL—

(a) Specifies test methods and procedures to be used by MTFs under the CMP.

(b) Provides training and certifies analysts in the CMP test methods. Training is free for DOD employees; all others must provide reimbursement for training costs.

(c) Approves MTFs as CMP testing sites.

(d) Provides equipment and calibration standards to MTFs approved to perform the test.

(e) Provides quality assurance oversight of MTF laboratories performing the cholinesterase testing, to include proficiency testing, confirmatory analysis, and on-site assessments.

(f) Provides technical assistance and backup analysis to MTF laboratories.

(g) Performs cholinesterase testing for Federal employees who are under job-related medical surveillance and do not have access to testing at their MTF.

(h) Performs cholinesterase testing for non-DOD workers performing activities with cholinesterase-inhibiting compounds under contract to DOD or as part of an international treaty. The contractor or facility submitting the specimens pays for the costs of this testing.

(i) Requires MTFs participating in the CMP to maintain Clinical Laboratory Improvement Program (CLIP) Amendments/CLIP certification.

b. DOD Human Tick Test Kit Program. The HTTKP supports the Army and the larger DOD community by identifying and responding to threats posed by tick-borne diseases. Providers may send live or dead tick specimens to the HTTKP. Specimens are identified and analyzed for vector-borne diseases. Staff at the HTTKP are available for technical consultations. Data from this program also support vector-borne disease surveillance efforts.

c. DOD Lyme Disease Program. Similar in scope to the HTTKP, the DOD Lyme Disease Program specifically focuses on preventing Lyme disease. Since military personnel are frequently exposed to heavily tick-infested areas, the DOD Lyme Disease Program provides prevention information, consultations, and analyzes *Ixodes scapularis* specimens (commonly known as the deer tick or blacklegged tick) for *Borrelia* bacteria that cause Lyme disease.

d. Metal Fragment Analysis Program. In accordance with DOD and MEDCOM policies, all fragments removed from DOD personnel are analyzed for chemical composition. This analysis is performed at the APHC Directorate of Laboratory Sciences.

e. Analysis of Depleted Uranium in Urine. Refer to paragraph G–7*e*.

14–6. Guidance for deployable laboratories

Many deployable Army laboratories, such as the Medical Detachment (Preventive Medicine or Veterinary Service Support) and the Area Medical Laboratory, perform PH laboratory analysis. These laboratories often operate in a field environment where it is not feasible to obtain accreditation or participate in proficiency testing programs. These laboratories are encouraged to reach back to fixed-facility Army PH laboratories to bring new methods on-line that will enhance their support to commanders in a particular area of operations, and adopt appropriate QA and QC measures that will enhance the accuracy and precision of their laboratory results.

Chapter 15
Public Health Emergency Management

15–1. Introduction

a. Public health emergency management is an integrating capability accomplished through the unified efforts of PHEOs, Assistant public health emergency officers (APHEOs), and MEMs supporting the installation emergency response activities.

b. Assisted by the APHEO, the PHEO is the senior PH expert appointed, on an additional duty basis, by the senior commander as the primary advisor/subject matter expert for PH emergencies. The PHEO provides important synchronization between unit commanders and the medical, veterinary, and PH capabilities, thus ensuring seamless coordination between the installation and the local civilian PH community.

c. The PHEO is the senior commander's central point of contact and clearinghouse for PH-related information during a suspected or declared PH emergency. He or she works closely with the senior commander, installation Emergency Manager, and PH personnel to identify, confirm, and control a PH emergency.

d. DOD policy and guidance relating to PH emergency management is provided in DODI 6055.17 and DODI 6200.03. Army Emergency Management policy is provided in AR 525–27.

15–2. Public health emergency officer functions and roles

PHEOs and APHEOs provide commanders with guidance and recommendations on preparing for, declaring, responding to, mitigating, and recovering from PH emergencies.

a. Headquarters-level activities include—

(1) Performing duties as "ex officio" Army PHEO for the operational aspects of PH emergency management planning and response.

(2) Coordinating with the MEDCOM G-3/5/7 to provide PH emergency management program analysis and planning; coordinating operational Health Protection Programs, defined and assessed by the Army Protection Program; and integrating these mission requirements across the MEDCOM.

(3) Ensuring that persons appointed as regional and installation PHEO/APHEO possess the required qualifications and training.

(4) Maintaining an enterprise list of personnel assigned the role/additional duty of PHEO/APHEO.

(5) Coordinating with the Defense Medical Readiness Training Institute (DMRTI) to identify annual PHEO training quotas.

(6) Coordinating required training through collaboration with regional health authority PHEO consultants.

(7) Coordinating with DMRTI and the tri-Service PH emergency management education workgroup for PHEO/APHEO education and training requirements, curriculum development, and course offerings.

b. Regional health authority-level activities include—

(1) Functioning as the senior PH emergency consultant to the commanding general.

(2) Consulting with the installation medical and PH authorities prior to recommending a PHEO candidate to a senior commander.

(3) Maintaining rosters and supporting documentation for all PHEOs/APHEOs within the region; providing updates as required.

(4) Providing, through an appropriately executed support agreement in accordance with DODI 4000.19, PH emergency management support to installations and Army Activities within the region that lack the organic PH and medical capability.

(5) Ensuring that PHEO/APHEO appointees are identified in the Digital Training Management System additional duty module as having this additional duty, and that this duty assignment is linked with advanced CBRNE training and other duty-specific training requirements for tracking and reporting.

c. Installation PH authority-level activities include—

(1) Collaborating closely with the installation Emergency Management Program Manager and the MEM in preparing for, declaring, responding to, and recovering from a PH emergency.

(2) Maintaining situational awareness of PH and medical threats.

(3) Providing advice to the senior commander regarding the declaration of a PH emergency and the implementation of emergency health powers in accordance with relevant PH laws, regulations, and policies, in coordination with the Staff Judge Advocate.

(4) Ensuring appropriate epidemiological investigations are conducted.

(5) Recommending appropriate diagnosis, treatment, and prophylaxis of affected individuals or groups and populations, in consultation with appropriate clinical staff.

(6) Providing subject matter expertise to commanders in the integration of PH and medical preparedness with other installation and/or command emergency response planning and exercises.

(7) Supporting preparedness for PH emergencies and medical surge capacity in collaboration with the MEM, as appropriate.

(8) Assisting in public affairs risk communications, including dissemination of health protection measures.

(9) Advising the commander on PH aspects of workplace and return-to-work issues during the emergency response and recovery phases.

(10) Coordinating with other DOD Components; civilian State, local, Territorial, and Tribal government representatives; other Federal agency regional offices; Title 32 Forces; and host nation agencies and organizations, as necessary.

15–3. Procedures

PHEOs work closely with other medical and non-medical personnel; State, local, Territorial, and Tribal governments; other Federal agencies' regional offices; Title 32 Forces; and host nation authorities (as applicable) to identify, confirm, and control a PH emergency that may affect the installation and/or command. PHEOs—

a. Ascertain the existence of cases suggesting a PH emergency, identifying all individuals thought to have been exposed to the illness or health condition.

b. Counsel and interview potentially exposed individuals to assist in positive identification and information relating to the source and spread of the illness or health condition.

c. Define distribution of the illness or health condition.

d. Recommend implementation of proper control measures (to include declaration of a PH emergency) to the senior commander.

e. In conjunction with operational reporting requirements (for example, Serious Incident Reports and CCIRs) and in coordination with MEDCOM, upon declaration of a PH Emergency by the senior commander, report the declaration to MEDCOM through appropriate channels via Medical Report for Emergencies, Disasters, and Contingencies and through DCS-PH channels to the CDC and appropriate State and local PH agencies.

f. In coordination with the senior commander and installation Public Affairs, inform affected individuals of the declaration of a PH emergency and its termination; actions individuals should take to protect themselves; and the actions being taken to control or mitigate the emergency.

g. Examine facilities or materials that may endanger the PH. As necessary and to the degree possible, ensure preservation of potential evidence and chain of custody; close and evacuate facilities; and secure any material suspected of contributing to the PH emergency. Decontamination or destruction of facilities or materials having been secured as evidence occurs after law enforcement authorities have completed their investigation and/or have released the facility or material.

h. Share discovered information with installation Public Affairs and with Federal, State, local, or host nation officials responsible for PH and public safety as appropriate and in accordance with policy, regulations, and local agreements.

i. Through applicable military channels, notify appropriate law enforcement authorities of any information indicating a possible terrorist incident or other crime.

j. In coordination with the applicable organization, take responsible measures for testing and safely disposing of human and animal remains and associated wastes to prevent the spread of disease, ensuring proper labeling, identification, records, and evidence preservation regarding the circumstances of death and disposition.

k. Judiciously use and, as appropriate, disclose protected health information to local PH authorities and others to ensure proper treatment of individuals and prevent the spread of communicable diseases.

l. Consistent with the protection of military installations, facilities, and personnel, facilitate the assumption of PH emergency management responsibilities by civilian agencies for other-than-U.S. military personnel and non-Army property. Responsibility will only be given to civilian agencies with appropriate jurisdiction over the persons or property.

m. As appropriate, delegate oversight of PH response actions to the APHEO or appropriate PH personnel to better manage the evolving situation.

n. Accomplish after action reviews and record lessons learned from major operations, contingencies, exercises, or other significant incidents or events. Ensure dissemination of information through DCS-PH and G-34 and other appropriate channels for a MEDCOM-level repository/ability to assess/analyze/disseminate lessons learned and best practices.

o. Assess risks, capabilities, and capacity to adequately respond to a potential PH emergency, including a terrorist attack utilizing biological agents.

p. Determine and evaluate existing vulnerabilities in the threat response plan.

q. Develop procedures to implement a PH Emergency Declaration.

r. Establish rules and orders for quarantine when quarantine is directed by the senior commander.

15–4. Qualifications and training

a. Generally, PHEOs are appointed as an additional duty to serve as a technical expert on the command staff or personal staff of an incident command structure advising the senior commander during a PH emergency. PHEOs are appointed by the senior commander with the advice and approval of the servicing installation medical authority (or PH authority, as appropriate).

b. A PHEO is a professional member of the AMEDD, either a commissioned officer or DOD Civilian employee, in grade O-3/GS-11 or higher, and possessing the following minimum qualifications:

(1) Professional degree (physician, PA, advanced practice nurse) with associated clinical privileges and either a Master of Public Health or equivalent graduate degree or 5 years of experience in PH, preventive medicine, occupational medicine, and/or environmental health.

(2) Active national security clearance of SECRET or above.

c. An APHEO will be appointed by the MTF commander. An APHEO performs the duties/functions of the PHEO in his or her absence.

(1) The APHEO is a professional member of the AMEDD, either a commissioned officer or DOD Civilian employee, in grade O-3/GS-11 or higher.

(2) While there is no positive education requirement for APHEO appointees, those with knowledge of and experience in PH disciplines such as preventive medicine, occupational medicine, environmental health, or industrial hygiene are preferred.

d. At facilities/installations where an APHEO is appointed in the absence of a PHEO, the APHEO has direct reach-back to the regional health authority PHEO consultant for subject matter expertise and guidance during response to a PH emergency.

e. PHEOs and APHEOs develop experience and receive training in the functions essential to effective PH emergency management, including the National Incident Management System, Incident Command System, National Response Framework, and the Public Health Emergency Management Course–Basic, which is offered by DMRTI.

f. As soon as practicable after appointment, PHEOs and APHEOs complete the following training:

(1) *Required.* IS-100, IS-120, IS-200, IS-700, IS-800, the Emergency Preparedness and Response Clinician Course, and the Public Health Emergency Management Course–Basic.

(2) *Recommended.* ICS 300, ICS 400, Hospital Incident Command System, Medical Management of Chemical and Biological Casualties Course, Medical Effects of Ionizing Radiation, and Hospital Management of CBRNE Incident Course.

g. Personnel assigned to PHEO/APHEO duties for more than 4 years, and personnel previously assigned to PHEO/APHEO duties but are returning to them upon new assignment, are required to complete the Public Health Emergency Management Course–Sustainment to keep pace with current topics as well as processes in policy, regulation, and law.

h. DMRTI, the proponent for PH emergency management training, maintains initial and sustainment (refresher) training courses germane to PH emergency management roles and responsibilities.

15–5. Army public health response teams

a. The function of PH response teams is to assist garrison and deployed Army commanders in responding to PH emergencies to protect the Force against health threats.

b. The response team provides multifaceted PH preparedness and response in partnership with regional health authorities, the Army Staff, the U.S. Army Installation Management Command (IMCOM), ASCCs, the Joint Staff, and the Geographic combatant commands.

c. The response team is a readily deployable team of PH experts, as required by AR 40–5 for APHC and OCONUS regional health authorities, covering PH functional areas of Epidemiology, Occupational Health, Industrial Hygiene, Environmental Health Sciences, Health Physics, clinical Preventive Medicine, Public Health Nursing, Entomology, Health Risk Communication, Veterinary Public Health, and Public Health Laboratories.

d. The ready members of the team must be subject matter experts in their respective areas, on 72-hour deployment orders, and must have received additional training in Defense Support for Civil Authorities (DODD 3025.18). Rapid response officers are trained as PH Emergency Managers, and all other providers are trained as PH Emergency Officers.

Appendix A

References

Section I

Required Publications

Except as noted below, Joint Publications (JPs) are available online from the Joint Chiefs of Staff website: https://www.jcs.mil. Army Directives, ADPs, ADRPs, ARs, ATPs, ATTPs, DA Pams, FMs, TB MEDs, SBs, TCs, and TMs are available online from the U.S. Army Publishing Directorate (APD) website: https://armypubs.army.mil/. DOD directives, instructions, manuals, and publications are available online from the Executive Services Directorate website: http://www.esd.whs.mil. Military Handbooks and Standards are available online from https://quicksearch.dla.mil, unless otherwise noted. Armed Forces Pest Management Board (AFPMB) documents are available online from the AFPMB website at https://www.acq.osd.mil. Unified Facilities Criteria are available online from the Whole Building Design Guide website: https://www.wbdg.org/ffc/dod/unified-facilities-criteria-ufc/. Codes of Federal Regulations (CFR) and U.S. Codes (USC) are available online from the U.S Government Publishing Office at https://www.govinfo.gov/. Centers for Disease Control and Prevention (CDC) publications are available online from https://www.cdc.gov/ or as otherwise noted.

ADP 5–0
The Operations Process (Cited in para 10–2.)

ADRP 3–37
Protection (Cited in para 4–1*d*.)

ADRP 4–0
Sustainment (Cited in para 4–1*d*.)

AFPMB TG 2
Integrated Pest Management in Child Development Centers and Schools (Cited in para 8–5*e*(3).)

AFPMB TG 3
Feral Animal Risk Mitigation (FARM) in Operational Areas (Cited in para 10–13*a*.)

AFPMB TG 6
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AFPMB TG 11
Hydrogen Phosphide Fumigation with Aluminum Phosphide (Cited in para 8–5*e*(1).)

AFPMB TG 13
Dispersal of Ultra Low Volume (ULV) Insecticides by Cold Aerosol and Thermal Fog Ground Application Equipment (Cited in para 10–14*c*(2).)

AFPMB TG 14
Personal Protective Equipment for Pest Management Personnel (Cited in para 8–6*a*(2).)

AFPMB TG 15
Pesticide Spill Prevention and Management (Cited in para 8–5*f*.)

AFPMB TG 18
Installation Pest Management Program Guide (Cited in para 8–7*b*.)

AFPMB TG 20
Pest Management Operations in Medical Treatment Facilities (Cited in para 8–5*e*(2).)

AFPMB TG 24
Contingency Pest Management Guide (Cited in para 10–13*a*.)

AFPMB TG 26
Tick Borne Diseases: Vector Surveillance and Control (Cited in para 8–3*a*(2).)

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Stored-Product Pest Monitoring Methods (Cited in para 8–3*a*(3).)

AFPMB TG 30
Filth Flies: Significance, Surveillance, and Control in Contingency Operations (Cited in para 8–3*a*(3).)

AFPMB TG 31
Guide for Agricultural Preparation of Military Gear and Equipment for Redeployment (Cited in para 10–15*c*.)

AFPMB TG 37
Integrated Management of Stray Animals on Military Installations (Cited in para 9–7*d*(4).)

AFPMB TG 38
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AFPMB TG 41
Protection from Rodent-borne Diseases with Special Emphasis on Occupational Exposure to Hantavirus (Cited in para 8–6*a*(2).)

AFPMB TG 42
Self-Help Integrated Pest Management (Cited in para 8–9*a*.)

AFPMB TG 44
Bed Bugs: Importance, Biology, and Control Strategies (Cited in para 10–13*a*.)

AFPMB TG 45
Storage and Display of Retail Pesticides (Cited in para 8–9*a*.)

AFPMB TG 46
DOD Entomological Operational Risk Assessments (Cited in para 10–13*a*.)

AFPMB TG 47
Aedes Mosquito Vector Control (Cited in para 10–13*a*.)

AFPMB TG 48
Contingency Pest and Vector Surveillance (Cited in para 10–11*c*.)

AFPMB TG 49
Sand Flies (Diptera: Psychodidae: Phlebotominae): Significance, Surveillance, and Control in Contingency Operations (Cited in para 10–13*a*.)

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AR 11–35
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AR 25–1
Army Information Technology (Cited in para 5–5*c*(5).)

AR 25–2
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AR 25–30
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AR 40–5
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Nutrition and Menu Standards for Human Performance Optimization (Cited in para 12–7*a*.)

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UPC
Uniform Plumbing Code® (IAPMO/ANSI UPC 1–2018) (Cited in para 8–14*e*.) (Available at http://codes.iapmo.org/.)

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(Cited in para 11–1*b*.) (Available at https://www.apha.org.)

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Section II

Related Publications

A related publication is a source of additional information. The user does not have to read it to understand this publication.

AFM 19–10/TM 5–803–2/NAVFAC P–970
Planning in the Noise Environment

ADP 6–0
Mission Command

AR 1–1
Planning, Programming, Budgeting, and Execution

AR 70–1
Army Acquisition Policy

AR 210–22
Private Organizations on Department of the Army Installations

AR 215–3
Nonappropriated Funds Instrumentalities Personnel Policy

AR 380–67
Personnel Security Program

AR 602–2
Human Systems Integration in the System Acquisition Process

AR 690–700
Personnel Relations and Services (General)

AR 700–136
Tactical Land-Based Water Resources Management

AR 710–2
Supply Policy Below the National Level

ATP 3–11.37/MCWP 3–37.4/NTTP 3–11.29/AFTTP 3–2.44
Multi-Service Tactics, Techniques, and Procedures for Chemical, Biological, Radiological, and Nuclear Reconnaissance and Surveillance

ANSI Z87.1–2015
Practice for Occupational and Educational Eye and Face Protection Devices

ANSI Z136.1–2014
Safe Use of Lasers

ANSI Z136.3–2011
Safe Use of Lasers in Health Care

ANSI Z136.6–2015
Safe Use of Lasers Outdoors

Army Medicine Campaign Plan
Army Medicine Campaign Plan

Circular 40–1
Worldwide Directory of Sanitarily Approved Food Establishments for Armed Forces Procurement

DA Pam 40–8
Occupational Health Guidelines for the Evaluation and Control of Occupational Exposure to Nerve Agents GA, GB, GD, and VX

Defense Acquisition Deskbook
(Available at www.acq.osd.mil.)

DHHS Agency for Healthcare Research and Quality
Clinical Guidelines and Recommendations

DOD Dictionary of Military and Associated Terms
(Available at https://www.jcs.mil.)

DODD 3025.18
Defense Support for Civil Authorities (DSCA)

DODI 1100.21
Voluntary Services in the Department of Defense

DODI 1100.22
Policy and Procedures for Determining Workforce Mix

DODI 1400.32
DoD Civilian Work Force Contingency and Emergency Planning Guidelines and Procedures

DODI 3150.9
The Chemical, Biological, Radiological, and Nuclear (CBRN) Survivability Policy

DODI 4715.05
Environmental Compliance at Installations Outside The United States

DODI 4715.18
Emerging Contaminants (ECS)

DODI 6025.13
Medical Quality Assurance (MQA) and Clinical Quality Management in the Military Health System (MHS)

DODI 6440.02
Clinical Laboratory Improvement Program (CLIP)

DODM 6440.02
Clinical Laboratory Improvement Program (CLIP) Procedures

DOD Insect Repellent System
(Available at https://phc.amedd.army.mil/topics/envirohealth/epm/.)

DOD Population Health Improvement Plan and Guide
(Available at https://www.qmo.amedd.army.mil.)

DOD Standard Pesticides and Pest Control Equipment Lists
(Available at https://www.acq.osd.mil/eie/afpmb.)

DOD/Veterans Affairs Clinical Practice Guidelines
(Available at https://www.healthquality.va.gov/.)

DTR 4500.9–R, Part V
Department of Defense Customs and Border Clearance Policies and Procedures

EEOC Notice Number 915.002
Enforcement Guidance: Disability-Related Inquiries and Medical Examinations of Employees Under the Americans With Disabilities Act (ADA)

EPA Good Laboratory Practice
(Available at https://www.epa.gov.)

EPA Manual for the Certification of Laboratories Analyzing Drinking Water
(Available at https://www.epa.gov/dwlabcert/laboratory-certification-manual-drinking-water/.)

Health Affairs Policy 08–012
Assistant Secretary of Defense for Health Affairs Memorandum, 29 September 2008, Policy for the Use of Tubersol as the Preferred Brand of Tuberculin

Health Affairs Policy 07–029
Assistant Secretary of Defense for Health Affairs Memorandum, 18 December 2007, subject: Policy on analysis of metal fragments removed from Department of Defense personnel

Health Affairs Policy 04–004
Under Secretary of Defense for Personnel and Readiness Memorandum, 6 February 2004, subject: Biomonitoring Policy and Approved Bioassays for Depleted Uranium and Lead

Health Affairs Policy 03–012
Assistant Secretary of Defense for Health Affairs Memorandum, 30 May 2003, subject: Policy for the Operation Iraqi Freedom Depleted Uranium (DU) Medical Management

Health Affairs Policy 02–011
Office of the Assistant Secretary of Defense for Health Affairs Memorandum, 4 June 2002, subject: Policy on Standardization of Oral Health and Readiness Classifications

Health Affairs Policy 98–027
Assistant Secretary of Defense for Health Affairs Memorandum, subject: Put Prevention into Practice – Policy, 31 Mar 98

Health Affairs Policy 97–006
Office of the Assistant Secretary of Defense for Health Affairs Memorandum, 23 October 1996, subject: Hepatitis B Immunization Policy for Department of Defense Medical and Dental Personnel

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International Classification of Diseases, 9th Revision, Clinical Modification. (Based on ICD–9, World Health Organization)

Implementation Guide of Medical Standards for Department of Energy Firefighters
U.S. Department of Energy, Office of Occupational Medicine and Medical Surveillance, 14 April 1995

Institute of Medicine Report
Noise and Military Service: Implications for Hearing Loss and Tinnitus. (2006). National Academy of Sciences

ISO 9001:2015
Quality management systems–Requirements

ISO/IEC 17025:2005
General requirements for the competence of testing and calibration laboratories

JP 2–01.3
Joint Intelligence Preparation of the Operational Environment

JP 3–11
Operations in Chemical, Biological, Radiological, and Nuclear (CBRN) Environments

JP 5–0
Joint Operation Planning

Memorandum from the Vice Chief of Staff, dated 16 April 2009
Army Campaign Plan for Health Promotion, Risk Reduction and Suicide Prevention (ACPHP)

Memorandum from The Surgeon General, dated 12 June 2006
Army Acute Respiratory Disease Surveillance Program

Memorandum from the Assistant Secretary of Defense for Health Affairs, dated 9 April 2004, dated 9 April 2004
Operation Iraqi Freedom Depleted Uranium Medical Management

Memorandum from The Surgeon General, dated 30 September 1999
Hepatitis C Screening

Memorandum from Deputy Under Secretary of Defense (Acquisition and Technology), dated 1 February 1999
Approval for Local Purchase of Pesticides During Deployment Operations

Memorandum from the Assistant Secretary of the Army (Installations, Logistics, and Environment), dated 20 March 1998
Agency for Toxic Substances and Disease Registry (ATSDR) Program Management Plan (Available at Assistant Secretary of the Army (Installations, Energy and Environment), 110 Army Pentagon (SAIE-ESO), Room 3D453, Washington DC 20310-0110.)

Memorandum from the Assistant Secretary, dated 23 March 1993
Management/Oversight of the Memorandum of Understanding (MOU) between the Department of Defense (DOD) and the Agency for Toxic Substances and Disease Registry (ATSDR) (Available at Assistant Secretary of the Army (Installations, Energy and Environment), 110 Army Pentagon (SAIE-ESO), Room 3D453, Washington DC 20310-0110.)

Memorandum of Understanding, dated 22 September 2015
Memorandum of Understanding between the U.S. Department of Health and Human Services' Agency for Toxic Substances and Disease Registry and the U.S. Department of Defense for Public Health Assessments, Toxicological Profiles, and Related Activities at DOD Facilities

Memorandum of Understanding, dated 23 September 2015
Memorandum of Understanding between the Agency for Toxic Substances and Disease Registry, U.S. Public Health Service and the U.S. Department of Defense, The Development of Toxicological Profiles for Hazardous Substances and Public Health Assessments and Related Activities at DOD Facilities, as amended

MIL–STD–3056
Chemical, Biological, and Radiological System Contamination Survivability Design Criteria [for]

National Nosocomial Infections Surveillance (NNIS) System
(Available at https://www.cdc.gov/.)

NFPA 10
Standard for Portable Fire Extinguishers

NFPA 13
Standard for the Installation of Sprinkler Systems

NFPA 30
Flammable and Combustible Liquids Code

NFPA 70
National Electrical Code®

NFPA 72
National Fire Alarm and Signaling Code

NFPA 80
Standard for Fire Doors and Other Opening Protectives

NFPA 82
Standard on Incinerators and Waste and Linen Handling Systems and Equipment

NFPA 90A
Standard for the Installation of Air-Conditioning and Ventilating Systems

NFPA 96
Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations

NFPA 99
Health Care Facilities Code

NFPA 101
Life Safety Code®

NFPA 110
Standard for Emergency and Standby Power Systems

NFPA 501A
Standard for Fire Safety Criteria for Manufactured Home Installations, Sites, and Communities

NFPA 1582
Standard on Comprehensive Occupational Medical Program for Fire Departments

NFPA 5000
Building Construction and Safety Code®

NUREG–1556, Volume 9, Revision 2
Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Medical Use Licenses

Personnel Policy Guidance
Department of the Army Personnel Policy Guidance (PPG) for Overseas Contingency Operations

SB 8–75–11
Department of the Army Supply Bulletin. Army Medical Department Supply Information

TB MED 561
Pest Surveillance

TB MED 593
Guidelines for Field Waste Management

Technical Guide 230
Environmental Health Risk Assessment and Chemical Exposure Guidelines for Deployed Military Personnel

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UFC 3–230–02
Operation and Maintenance: Water Supply Systems

UFC 3–410–01
Unified Facilities Criteria (UFC), Design: Heating, Ventilating, and Air Conditioning

UFC 3–420–01
Unified Facilities Criteria (UFC), Design: Plumbing Systems

U.S. Office of Personnel Management Operating Manual, Qualifications Standards for General Schedule Positions
Section VI, Medical requirements

10 CFR
Energy

10 CFR 19
Notices, Instructions and Reports to Workers: Inspection and Investigations

10 CFR 21
Reporting of Defects and Noncompliance

21 CFR
Food and Drugs

21 CFR 129
Processing and Bottling of Bottled Drinking Water

21 CFR 165.110
Bottled water

21 CFR 1300
Controlled Substance Act

29 CFR 1910.1000
Air contaminants

29 CFR 1910.1001
Asbestos

29 CFR 1910.1030
Bloodborne pathogens

29 CFR 1910.1200
Hazard communication

29 CFR 1915.1001
Asbestos

29 CFR 1926.1101
Asbestos

29 CFR 1960.79
Self-evaluations of occupational safety and health programs

40 CFR
Protection of the Environment

49 CFR
Transportation

49 CFR 1910
National Institute for Occupational Safety and Health (NIOSH)

5 USC 522, as amended
Freedom of Information Act

10 USC 12304
Selected Reserve and Certain Individual Ready Reserve Members; order to Active Duty other than during war or national emergency

42 USC 4321 et seq. (1969) [req]
The National Environmental Policy Act, as amended

42 USC 9601 et seq. (1980)
Comprehensive Environmental Response, Compensation, and Liability Act (Superfund)

Public Law 106–430
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Section III

Prescribed Forms

Unless otherwise indicated, DA forms are available online from the APD website (https://armypubs.army.mil/). DD forms are available online at the following website (http://www.esd.whs.mil/).

DA Form 3897
Tuberculosis Registry (Prescribed in para 11–7*g*.)

Section IV

Referenced Forms

Unless otherwise indicated, DA forms and Standard Forms (SFs) are available online from the APD website (https://armypubs.army.mil/). DD forms are available online from the following website (http://www.esd.whs.mil/).

CDC 72.9a
Report of Verified Case of Tuberculosis (Available at www.cdc.gov.)

DA Form 2028
Recommended Changes to Publications and Blank Forms

DA Form 2173
Statement of Medical Examination and Duty Status

DA Form 7693
Industrial Hygiene Program Evaluation

DD Form 1380
Tactical Combat Casualty Care (TCCC) Card

DD Form 1532–1
Pest Management Maintenance Record

DD Form 2215
Reference Audiogram

DD Form 2216
Hearing Conservation Data

DD Form 2341
Report of Animal Bite—Potential Rabies Exposure

DD Form 2766
Adult Preventive and Chronic Care Flowsheet

DD Form 2796
Post-Deployment Health Assessment (PDHA)

DD Form 2875
System Authorization

DD Form 2973
Food Operation Inspection Report

DD Form 2974
Tactical Kitchen Food Sanitation Inspection

LS–202
Employer's First Report of Injury or Occupational Illness (Available at www.dol.gov.)

SF 504
Clinical Record–History-Part 1

SF 557
Medical Record–Miscellaneous

SF 600
Medical Record–Chronological Record of Medical Care

Appendix B

Public Health Program Evaluation

B–1. General

It is the responsibility of all entities that implement PH activities (such as policies, programs, or initiatives) to conduct program evaluation to account for program execution, outcomes, and impact and to inform continuous program improvement. Public health evaluation is one of the 10 Essential Public Health Services (https://www.cdc.gov/stltpublichealth/publichealthservices/essentialhealthservices.html). Public health program evaluation is a systematic and objective process to determine the relevance, effectiveness, efficiency, and impact of PH activities in the light of their specified objectives. Program evaluation—

a. Is a learning and action-oriented management tool and organizational process for improving current activities and future planning, programming and decisionmaking. Program evaluation findings provide information on how to prioritize and optimize Army resources to improve program performance and increase health readiness.

b. Systematically assesses an emergent, completed, or ongoing PH activity, initiative, policy, or program to answer key questions related to its evidence of need, efficiency, effectiveness, quality, and/or impact.

c. Differs from the following activities:

(1) *Compliance monitoring and inspection:* Ensures compliance with program requirements, policies, and regulations. Inspections answer the question, "Are things being done according to the directions?" Program evaluation determines whether programs are achieving their stated goals, objectives, and outcomes. Evaluations answer the question "How are things being done, why are they being done that way, and what are the outcomes of those activities?" Compliance data are often one of multiple data sources used to answer program evaluation questions, but singly, such data are insufficient for evaluation purposes.

(2) *Program monitoring:* Involves the continuous oversight of program implementation to determine whether established metrics for program inputs, processes, activities, and outputs, are met to identify change or progress over time. Program monitoring answers the question, "How do program implementation and outcomes align with established metrics?" Program evaluation answers the question of "How do changes or differences in implementation impact outcomes?"

(3) *Research:* Tests or proves an idea to add to general knowledge. Program evaluation assesses the performance of specific program aspects to inform program improvement. Program evaluation findings provide information on how to prioritize and optimize Army resources to improve program performance and increase health readiness.

B–2. Program evaluation guidelines

Program evaluation studies model nationally recognized standards and best practices (for example, the CDC Framework for Program Evaluation in Public Health (https://www.cdc.gov/eval/framework/index.htm/) regardless of evaluation type, method, or approach). Program evaluation studies follow these guidelines—

a. Use a systematic approach in all phases: planning, execution, reporting.

b. Define evaluation questions and target population(s).

c. Answer evaluation questions that are prudent and provide information of utility to the Army.

d. Utilize feasible designs in alignment with available resources.

e. Engage stakeholders such as the intended target audience(s) and also individuals or entities who are involved in or affected by the policy, program, or initiative and its evaluation findings.

f. Develop a logic model or framework that describes the program's need, target population(s), activities, anticipated outcomes, inputs, and assumptions.

g. Document evaluation methods and steps transparently and in a replicable manner.

h. Gather credible evidence.

i. Include ethical practices and appropriate human protections.

j. Disseminate findings and recommendations to key stakeholders/audiences.

B–3. Program evaluation processes and activities

Public health program evaluations may be conducted by a wide range of individuals and entities such as program staff, regional health authorities, the APHC, and other internal and external entities with the needed expertise. The types of evaluation activities relevant to Army PH policies, programs, and initiatives include but are not limited to—

a. Needs assessment. A systematic process for collecting information that identifies key health needs and issues within a specific group or community. Needs assessment is conducted prior to the development of new policies, programs or initiatives and also when existing activities are being modified or used in a new setting or with a different target audience to determine which needs should be addressed and how.

b. Literature review. A systematic process of collecting information about a specific topic or issue through the review of studies/literature to determine if there is scientific evidence and/or theory to support that proposed program activities will result in desired outcomes.

c. Process evaluation. The systematic collection of information to determine the extent to which policies, programs, or initiatives have been implemented as intended and to which program improvements are needed to implement it as planned. Process evaluation is conducted at the inception of the policy, program, or initiative, and periodically throughout its life cycle and is a critical element of the quality and/or process improvement cycle.

d. Cost-effectiveness evaluation. A systematic process for identifying resources being used to implement a policy, program, or initiative and their costs (direct and indirect) to determine if substantiated outcomes justify the allocation of Army resources. Cost-effectiveness evaluation is conducted at inception of the policy, program, or initiative and periodically throughout its life cycle.

e. Outcome evaluation. A systematic process for collecting information to determine the degree to which, if at all, a policy, program or initiative is affecting the intended target population(s) and whether or not program improvements are needed to achieve intended outcomes. Outcome evaluation is conducted after program activities have been implemented among the intended target population(s).

f. Impact evaluation. A systematic process for collecting information to determine whether or not an initiative or program is effective in achieving its ultimate goals. Impact evaluation is conducted periodically throughout the life cycle of an initiative or program and at the end of the program.

B–4. Program evaluation and its role in evidence-based public health

Program evaluation, and outcome evaluation in particular, adds to the evidence base of Army PH. An evidence-based PH program, policy, or initiative is one for which the preponderance of available evidence (that is, program evaluation and research findings) suggests that it results in positive outcomes. Systematic reviews are one means by which evidence-based programs, policies, or initiatives are identified. Systematic reviews examine the quality, quantity, and consistency of the scientific evidence regarding the effectiveness of programs, policies, or initiatives. When possible, the Army implements PH programs, policies, or initiatives supported by such systematic reviews.

a. Where a systematic review has not been conducted or there is insufficient existing scientific evidence to conduct a systematic review, the evidence base can be developed through program evaluation studies that use well-accepted program evaluation methods (to include non-experimental, quasi-experimental, and experimental designs).

b. Programs improve and thrive as they grow in evidence along a continuum from “Unsupported” (that is, cannot produce evidence of a relationship between program services and program outcomes; sufficient data are not available) to “Evidenced-based” (that is, endorsed by a systematic review).

c. All Army PH programs, policies, and initiatives should demonstrate a commitment to establishing, measuring, and growing their evidence base over time. This requires a variety of evaluation studies and methods conducted in various settings and with various populations. If initial program evaluation studies reveal evidence of program, policy, or initiative effectiveness, further evaluation studies strive to enhance scientific rigor of and confidence in findings through improvements in methods that minimize threats to internal and external validity of evaluation findings.

Appendix C

Installation Public Health Program Performance Improvement Guidance

C–1. General

This appendix supports chapter 2 and provides guidelines on specific performance improvement activities that the installation PH program implements to meet nationally recognized PH department performance standards (the basis of PH accreditation) and to prepare for accreditation application. The following outlines the core components of the PH performance improvement plan for an installation PH program.

C–2. Build documentation into regular processes and activities

The installation PH program must demonstrate that the required PH services and activities are provided to their supported installation and population, regardless of who provides them. Documentation is necessary to demonstrate conformity to the national performance standards and to prepare for PH accreditation. A key aspect of a PH performance improvement plan is to enhance the documentation practices of the installation PH program. The installation PH authority produces or maintains documentation that can be stored on a computer in an electronic file and establishes a naming convention and documentation storage procedures. Evidence of authenticity is very important and appears on the actual documents. The installation PH program includes a process that ensures documents are dated at most recent review and bear evidence (signature or logo, for example) that they are authentic to the responsible organization. All policies and procedures in use by the installation PH program are signed and dated, and a protocol is in place to ensure these are reviewed regularly and, if needed, revised/updated. Key types of documentation include—

a. Documentation of policies and processes, such as regulations (local, regional, Army, and medical), policies, standing operating procedures, emergency response plans, memorandums of agreement, memorandums of understanding, manuals, flowcharts, decision trees, organizational charts, and other similar documentation.

b. Documentation of reporting activities, data, and decisions, including reports (health data summaries, survey data summaries, data analyses), meeting agendas, meeting and committee minutes, interim progress reports, information papers, after action reviews, tracking logs, QI reports, and others. As appropriate, these documents are recorded on the approved letterhead of the responsible or coordinating organization.

c. Documentation to demonstrate the distribution of information, technical assistance, and other activities. Examples include emails, memoranda, distribution lists, health alerts, case files, comment matrices, attendance records, brochures, media releases, newsletters, posters, website screen shots, briefing or training slides (in approved templates), and others. Installation PH program brochures, flyers, or other promotion materials use an approved logo or nomenclature.

C–3. Establish and coordinate installation public health program performance improvement activities

a. Designate an installation PH program performance improvement coordinator or manager. Each installation PH Authority designates in writing a PH performance improvement program coordinator or manager to coordinate the installation PH performance improvement program activities and to initiate/assess readiness for PH accreditation in accordance with senior Enterprise level guidance.

b. Establish an installation PH program PI/QI committee. Conformity to national standards and preparation for PH accreditation require an ongoing installation PH commitment to PI/QI. Installation PH establishes a PI/QI committee that is convened at least once a quarter, records attendance, and maintains written meeting minutes.

c. Prepare an installation PH program quality improvement plan. An installation PH program includes a written QI plan based on organizational direction and policies. The plan addresses key elements of the installation PH QI structure; QI training; QI/process improvement model(s); project identification; alignment with the installation PH program strategic plan; QI goals/objectives/measures with time-framed targets; and processes for monitoring, reporting, and communicating quality improvement activities. This plan is updated at least every five (5) years.

d. Implement QI projects. The installation PH program executes its QI plan and related projects on an ongoing basis. QI improvement projects use the installation PH program's chosen process improvement model and are documented. Staff members across the installation PH program are involved in various quality improvement projects.

e. Conduct a performance management assessment. The installation PH authority conducts a performance management self-assessment of the installation PH program at least every five (5) years.

f. Assess customer satisfaction. The installation PH program executes a standard process to examine customer satisfaction with installation population-based PH services every five (5) years, at a minimum.

g. Offer staff development. Professional development in the area of performance improvement is, at a minimum, required for staff who will be working directly on performance monitoring and analysis or serving on the installation PH

Performance Improvement/QI Committee. Installation PH program staff receive training and information on a variety of PI/QI topics.

C–4. Develop foundational plans

There are three plans or key documents that provide long-term guidance and direction to the installation PH program, are critical to meeting national performance standards, and essential for accreditation readiness. The installation PH authority prepares and/or participates in the development and implementation of these plans/documents and their recurring reviews/updates, as outlined below.

a. Community health assessment. A comprehensive CHA for Army installations is comprised of four key assessments outlined in the Mobilizing for Action Through Planning and Partnerships framework and is completed in collaboration with key installation community partners and stakeholders. The installation PH program staff lead or participate in a collaborative process to complete the CHA. See paragraph 12–18 for additional information and guidance on developing the installation CHA.

b. Community health improvement plan. A CHIP, completed at least every five (5) years (or earlier if directed by leadership), reflects developed priorities and action plans based on CHA findings and in collaboration with installation, military community, and neighboring community partners and stakeholders. The installation PH authority leads or participates in the collaborative process to develop and implement the CHIP. See paragraph 12–18 for additional information and guidance on developing the installation CHIP.

c. Installation public health strategic plan. The installation PH authority completes and/or updates and implements a strategic plan that is developed in coordination with the installation medical authority and installation PH program staff. The plan defines and determines installation PH program roles and direction over three (3) to five (5) years and includes the mission, vision, strategic priorities, goals and objectives with measurable and time-framed targets, key support functions required for efficiency and effectiveness, external trends or events, and assessment of installation PH program strengths and weaknesses. The strategic plan is developed or revised at least every five (5) years and is linked to the CHIP and installation PH program's QI plan.

C–5. Complete additional key planning documents and activities

a. Implement an installation PH program branding strategy. The installation PH authority implements a branding strategy that communicates the presence and the key products and services of installation PH program to its customers, stakeholders, and the chain of command. The branding strategy may be based upon branding developed by and already in use at a higher level such as the installation medical authority or regional health authority and is reviewed and updated at least every five (5) years. This strategy outlines how the installation PH program will integrate its brand into communication efforts, especially external communication, and should use a standard visual identifier such as a logo or other graphic. Branding is implemented inside and outside of the installation PH program facility and on key installation PH program documents and communication tools.

b. Implement an installation PH program workforce development plan. A workforce development plan ensures that staff development is addressed, coordinated, and appropriate for installation PH program needs as a whole. It is responsive to emerging areas and advancements in the field. The installation PH authority develops and implements a specific installation PH program-wide workforce development plan that is reviewed and updated at least every two (2) years. The plan addresses an assessment of staff competencies, training needs and opportunities, barriers and inhibitors, and strategies to address gaps in capacities and capabilities and future needs.

c. Prepare an installation PH emergency operations plan. The installation PH program includes a written PH emergency operation plan that delineates the roles and responsibilities of the installation PH program, its partners (including the PHEO), and the installation PH authority, in responding to PH emergencies. This plan is nested in a larger all-hazards-based emergency operations plan, such as the installation medical authority or installation plan, or it may be a stand-alone document. The plan is reviewed and updated at least every five (5) years.

C–6. Implement a performance management policy/system

A performance management system encompasses all aspects of using organizational objectives and measurement to evaluate the performance of the installation PH programs, policies, and processes, and the achievement of outcome targets. The installation PH program implements or adopts a performance management system for assessing performance and achievement of goals and objectives. Adoption and use of either the installation medical authority's performance management system or aspects of the Army Strategic Management System, U.S. Army Medical Department Command Management System, or Army PH Management System are acceptable as long as the system includes the installation PH program's scope of practice and organizational objectives identified at the level of installation PH. The system used is reviewed and updated at least every five (5) years.

C–7. Record Workload through designated codes

There are DMHRSi codes established for PH performance improvement and PH accreditation activities. Specific information and corresponding definitions are available on the DMHRSi PH task template. Personnel within the installation PH program carefully track the time spent on given tasks against the appropriate DMHRSi codes (below) to inform higher-level analysis of workload.

a. PH Performance Improvement DMHRSi code (FBB*.05).

b. PH Accreditation process DMHRSi code (FBB*.04).

Appendix D

Army Health Risk Assessment Overview and Guidance

D–1. General

This appendix supports chapter 4 and provides a broad framework for Army health risk assessment, establishes key concepts, defines the relationship between health risk assessment and risk communication, and provides implementing guidance applicable to Army PH Program elements. Each program element uses health risk assessment techniques that are uniquely tailored to their component specialties. The specific techniques are built upon common concepts and principles that apply across functional areas and across tactical, operational, and strategic levels of decisionmaking.

D–2. Health risk management decisions

a. Health risk assessment capabilities are designed to support risk management decisions. Risk management is a decisionmaking process that identifies hazards, assesses hazards, develops and compares hazard controls or solutions, makes risk management decisions, monitors progress, and makes adjustments. Army health risk assessment capabilities are framed by the Army approach to risk management articulated in ATP 5–19, DA Pam 385–30, and AR 11–35. In addition, some Army PH programs and services use other risk management processes designed for specific decisionmaking contexts, such as those used to demonstrate compliance with applicable PH regulatory statutes. Health risk management processes are integrated within tactical, operational, and strategic levels of Army PH. Health risk assessment capabilities and levels of implementation differ primarily by the decision contexts, hazard focus areas, and each professional discipline and training.

b. Risk decisions are an inherent part of Army mission command (see ADP 6–0), and Army risk management approaches have primarily emerged from within troop-leading procedures and the military decisionmaking process. Army risk management frameworks defined in ATP 5–19, DA Pam 385–30, and AR 11–35 are directly applicable to health risk management. Public health approaches to risk management have tended to use the basic structure of the process presented in ATP 5–19, as expected, but have historically used different terminology and disciplinary perspectives. Table D–1 shows the five steps of the risk management process (as specified in ATP 5–19) and how they are linked to two examples of PH approaches to risk management in the military. Figure D–1 illustrates how health surveillance data (generated by medical or OEH surveillance) initiates risk management processes. Depending upon the surveillance data that initiates action, either a health hazard or health outcome perspective is applied to address the risk management problem. In either case, a five-step risk management process is followed, which includes health risk assessment activities.

Table D-1
Army health risk assessment capabilities aligned within the Army risk management process

Army Standard	**Health Hazard Perspective**	**Health Outcome Perspective**
Risk Management[1]	**Occupational and Environmental Health[2]**	**Disease Control and Health Promotion[3]**
(1) Identify the Hazards	a. Anticipate and identify hazards	a. Surveillance to quantify and prioritize problems
(2) Assess the Hazards	b. Assess hazards to determine risks	b. Research to identify modifiable risk factors and causes
(3) Develop Controls and Make Risk Decisions	c. Develop Controls and Make Risk Decisions	c. Intervention trials or program evaluations to determine effectiveness
(4) Implement Controls	d. Implement Controls	d. Implementation of programs and policies
(5) Supervise and Evaluate	e. Supervise and Evaluate	e. Evaluation/monitoring of programs and policies to determine success or failure

Notes:
[1] ATP 5–19. Shaded process steps are those in which health risk assessment capabilities are utilized. Health risk assessment begins with the identification of hazards in Step 1 and ends with the assignment of residual risks for alternative control options in Step 3.
[2] DODI 6055.05.
[3] Gunlicks, Patton, Miller, and Atkins, 2010.

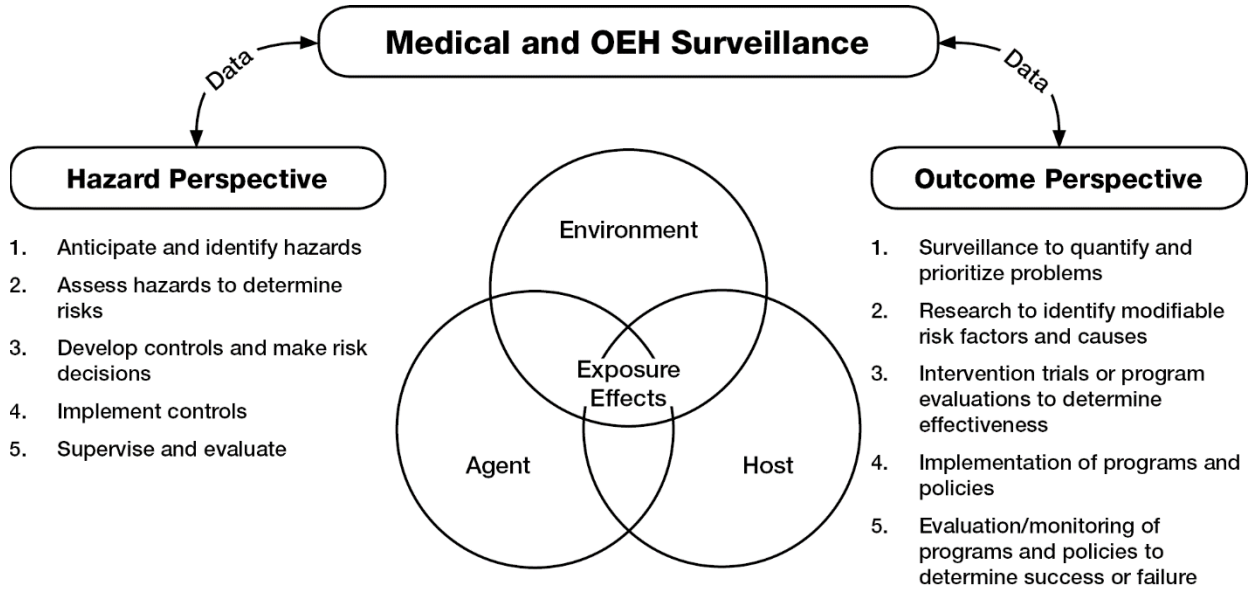

Figure D–1. Army Health Risk Assessment is embedded in Health Surveillance and Risk Management

c. Properly designed health risk assessment products support decisionmaking by providing actionable information that is relevant, reliable, timely, and understood. The health risk estimates of interest are either qualitative judgments (for example, High, Low) or quantitative measures (for example, a 1 in 1,000 chance of cancer). They may be direct measures of health status (for example, cancer risk, injury risk) or operational measures or forecasts that are impacted by health status (for example, mission degradation or failure risk due to illness or injury). Health risk assessment activities and products allow individuals and commanders to make informed risk decisions as they apply risk management principles (see DODI 6055.05, ATP 5–19, DA Pam 385–30, AR 11–35, AR 40–503, and AR 200–1).

D–3. Concepts and principles

a. Introduction. Health risk assessment methodologies are relevant to the entire range of military operations to include garrison, training, and contingency operations. They are relevant for tactical, operational, and strategic level decisions and actions. This section outlines broad health risk assessment concepts and process themes and integrates them across Army PH Program elements. While there are many health risk assessment approaches, the strength of a structured health risk assessment method is that there is a broad common conceptual structure that is relevant across functional areas. This appendix describes the common structure and concepts. Specific methods and health risk assessment procedures for various Army PH programs are not discussed here.

(1) Health risk assessment methods are often multidisciplinary. For example, in the field of environmental health, risk assessments typically involve engineers and toxicologists, among other subject matter experts. However, in other areas of PH practice and investigation, risk assessment methods have traditionally been highly specific to one or more related disciplines. For example, the investigation of the population risks of vaccine side effects has historically involved clinicians and epidemiologists, two related disciplines. Nonetheless, risk assessment techniques across all Army PH programs share a broad commonality; notwithstanding historical differences in terminology and perspective.

(2) Army health risk assessments measure and/or estimate the magnitude of health risk associated with exposure to hazards in order to inform health programs and risk management actions for the purpose of preventing disease, improving population health, and sustaining the Force. The magnitude of health risk is dependent on the frequency or likelihood of exposure to hazards, the nature of the health consequences if exposure occurs, and the presence of other factors that modify exposure and health consequences. Health risk assessment within a decisionmaking framework usually includes estimate of baseline health risks and also a comparative assessment of health risks associated with each of the alterative risk mitigation actions or program designs under consideration.

(3) Figure D–2 illustrates the conceptual structure of health risk assessment and its relationship to risk management process steps, risk communication, and risk decisionmaking. The illustration shows a view from the health hazard perspective but is equally relevant for the health outcome perspective (see table D–1 and fig D–1). An important element of this structure is the performance of risk communication activities throughout the entire endeavor rather than at the end of the process, when decisionmakers are ready to communicate their decision. Refer to chapter 5 for risk communication guidance.

(4) Different types of health risk assessment orientations and analytic designs can be crafted to address hazard- or outcome-specific problems in the context of different subject matter disciplines and risk management applications (see paras D–4 and D–5). Specific risk assessment designs and required training and expertise depend upon the health and exposure questions and risk management decisions under consideration, and whether the decisions to be made are at the tactical, operational, or strategic level. The key health risk assessment concepts and considerations that are common across program areas are described in the following subparagraphs:

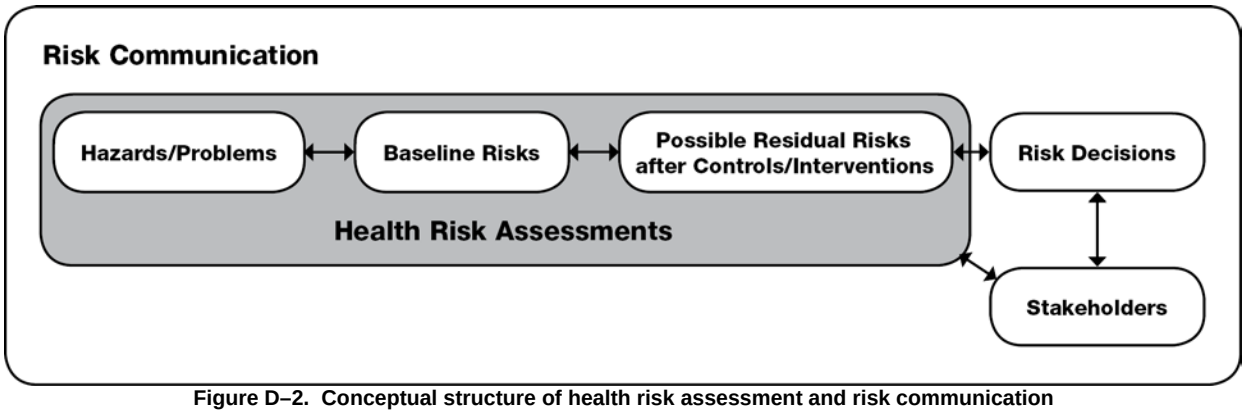

Figure D–2. Conceptual structure of health risk assessment and risk communication

b. Key health risk assessment concepts.

(1) *Decisions.* Army health risk assessments and their methods are designed to inform decisions. In this context, risk assessment is not a research endeavor. Risk assessments are performed to inform numerous types of decisions—from a commander's operational decisions, to the choice of best design of a health promotion program, to the prioritization of health hazards to control first, to the choice of decontamination levels for contaminated equipment.

(2) *Health outcomes.* The prevention, control, and reduction of preventable, adverse health outcomes are the ultimate goal of health risk management. Therefore, the direct measurement of the occurrence or potential change in health outcomes within populations and specific subgroups is a fundamental measurement within health risk assessment. Additionally, medical surveillance of health outcomes within the population allows for a common operating picture of the ongoing impact of endemic diseases, health hazards, and behavioral risk factors that have not yet been controlled.

(3) *Hazards.* Health risks are posed by health hazards. There are various hazard categorization frameworks in existence. Table D–2 illustrates the types of health hazards that can be investigated by health risk assessment methods. Under this framework, health hazards are the focus of risk assessments because hazards are to be controlled and/or the effects of the hazards are to be mitigated.

(a) Primary hazards are always introduced from the worksites and environments where humans exist. They are external to the human body and can lead to poor health outcomes. Primary hazards can occur in any number of environments: homes, public spaces, water supplies, worksites, garrison and training environments, base camps, combat zones, and even within medical treatment facilities. Within Army health risk assessment, the term "primary hazards" is synonymous with the term "OEH hazards."

(b) Secondary hazards are biological conditions or events that are intermediate, that is, between primary hazards (for example, OEH hazards) and resulting health outcomes. Primary hazards lead to secondary hazards, but secondary hazards can themselves be the hazard that is assessed within a risk assessment.

(c) The terms "primary" and "secondary" hazards are useful constructs in the PH approach because the PH approach to prevention is comprised of primary and secondary prevention measures. In this context, primary prevention measures are aimed at stopping the effects of primary hazards, while secondary prevention is aimed at mitigating adverse health effects (that is, the secondary hazards) after they have begun to occur.

Table D-2
Types of health hazards

Hazard Type[1]		Examples	
		Hazard	**One Possible Health Outcome**
Primary hazards[2]			
Environmental	Physical	Excessive heat	Heat stroke
		Excessive noise	Hearing loss
	Radiological	Ionizing: Radionuclide exposure	Cancer
		Non-ionizing: Radiofrequency	Heat damage and burns
	Chemical	Hydrogen cyanide	Death
		Dioxin compounds	Heart disease
	Microbiological	Malaria parasites (*Plasmodium* spp.)	Malaria
		Yersinia pestis	Pneumonic plague
	Ergonomic	Poorly designed work station	Chronic back pain
		Repetitive motion tasks	Joint injury
	Nutritional	Poor diet	Obesity
		Excessive caffeine	Excessive heart rate
	Social	Combat	Posttraumatic stress disorder
		Stressful life event	Depression
	Medical	Anesthesia	Allergic reaction
		Vaccine components	Adverse reactions
Secondary hazards[3]			
Physiological	Condition	High blood pressure	Heart attack
		Obesity	Diabetes
	Event	Blood clot release to the brain	Stroke
		Allergic reaction	Anaphylactic shock
Psychological	Behavioral	Reckless driving	Injury, death
		Use of smokeless tobacco products	Oral cancer
	Mental	Maladaptive emotions	Suicide
		Anorexia Nervosa and Bulimia Nervosa	Malnutrition

Notes:

[1] There are various hazard categorization frameworks. The approach adopted here is a broad, “environmental” one, whereby all primary hazards originate from outside the body and are external, arising from the natural and manmade environments.

[2] Primary hazards are always external and introduced by the environments where humans exist. These environments introduce hazards that are external to the body, and those hazards can eventually lead to poor health outcomes.

[3] Secondary hazards are biological conditions or events that are intermediate between environmental hazards and resulting health outcomes. Primary hazards cause secondary hazards, but secondary hazards can themselves be the hazard that is assessed within a health risk assessment.

(4) *Common structure and key steps of risk assessment.* The basic key steps of the health risk assessment process, described below, are within the broad common structure of risk assessment shown in figure D–2. Additionally, table D–3 provides a standard step-wise health risk assessment method aligned according to the steps of the risk management process presented in ATP 5–19. While deviations from this prescribed process are expected when circumstances dictate, the basic concepts remain intact for most health risk assessments. Terminology can vary across communities of practice; however, the underlying activities are fundamentally consistent. For example, the terms "hazard" and "hazard assessment" have different meanings when ATP 5–19-style risk assessments are compared to other risk assessment applications used within the Army to execute certain functional activities. The ATP 5–19-style approach refers to a hazard as an "external agent," such as a toxic chemical or a dangerous event, whereas "toxicological application" sometimes refers to a hazard as the health effect potentially caused by exposure to the external agent. The toxicological application of a "hazard" is captured in the discussion for "effects assessment" in subparagraph *b*(4)*(d)*, below.

(a) Risk assessment purpose. The purpose of a health risk assessment must be understood before data collection and risk estimation and analysis activities are initiated. Otherwise, the effort will neither be focused nor useful for decisionmaking. Several orientations are related to the purpose of the risk assessment (see para D–5).

(b) Hazard or problem identification. Health hazards or health problems may be initially discovered or anticipated using medical or OEH surveillance data collection efforts. This information gathering is then organized into a conceptual model of the problem, the population and environmental (or worksite) considerations, and the scope of how additional data collection and the risk assessment will be conducted. Initial follow-up efforts are focused on further collection of information and data directly related to the potential causes of adverse health outcomes and the occurrence of hazards, the environmental context surrounding the situation, and the populations at risk. Preliminary assessments are used to further refine the problem statements to be investigated by the risk assessment, generate relative risk rankings of hazards, or document risk screening results that indicate whether additional risk assessment efforts are necessary.

(c) Exposure assessment. Exposure assessments estimate or predict the level of exposure to the hazard that is expected within the population. Exposure estimates can be qualitative or quantitative, and usually consider exposure timing, frequency, and duration. Exposure variability within the population is an important consideration in many assessments, as are certain environmental/worksite conditions or control measures that may modify exposure. Understanding how the hazards or risk factors co-occur or interact with the environment/worksite and the population is critical for estimating exposure properly. The methods of exposure assessment are highly varied based on the type of hazard, the environment or worksite where exposure occurs, the type of population under investigation, and the level of effort needed to answer exposure assessment questions adequately. Health risk assessments that directly support training or contingency operations most often use a categorical hazard probability ranking approach aligned with ATP 5–19. The appropriate method is determined based on the challenges at hand and the decisionmaking framework that the risk assessment supports.

(d) Effects assessment. Effects assessments identify the types of potential health outcomes that may occur given a range of exposure conditions. These assessments also often estimate or predict the frequency or rate of the effects within the population given exposure of certain magnitudes (for example, dose-response). They involve the type, magnitude, or severity of effects and/or an estimate of the frequency of their predicted (or measured) occurrence in the population. The assessment should attempt to describe how health outcomes might differ or change, based on various characteristics of either the environment/worksite or the population itself. The methods used to perform effects assessments vary based on the type of health outcome, the hazard or risk factor, the type of population under investigation, and the level of effort needed to answer health effects questions adequately. Health risk assessments that directly support training or contingency operations most often use a categorical hazard severity ranking approach aligned with ATP 5–19. The appropriate method is determined based on the challenges at hand and the decisionmaking framework that the risk assessment supports.

(e) Risk characterization. In risk characterization, the separate results of the exposure assessment and effects assessments are integrated and then combined with contextual information to produce risk estimates, the actual measures of risk. Risk characterization is the formal end product of the risk assessment and is often the final written chapter in a health risk assessment report. Risk estimates for baseline conditions and potential future end states (residual risks) should be characterized on similar scales. Written and verbal risk characterizations should provide a description of the risks in context of the decisions to be made and the nature and degree of uncertainty associated with the risk estimates. The level of detail of any given risk characterization should be tailored for the decisionmaker and others within the target audience. The required format and level of detail also depend on the complexity of the risk assessment and whether the assessment supports tactical, operational, or strategic decisions. Risk characterization can be as simple as choosing a risk assessment code (RAC) from the risk assessment matrix in ATP 5–19, using a standard protocol for a given functional program. Or, it can be as detailed as a multipage report chapter that combines numerical risk estimates with a synthesis of the information and a description of the risks using risk communication principles in the context of stakeholder concerns and the decisions to be made. Table D–4 presents characteristics of valuable risk characterization products.

Table D-3
Army standard health risk assessment process[1,2].

Army Risk Management	Standard Health Risk Assessment (HRA) Process	
	HRA Step	**Step Description**
[Mission Receipt]	Define Purpose	The purpose of the HRA must be determined prior to the design of the HRA. Required elements of this step include what triggered the HRA (for example, surveillance findings), knowledge of who the decisionmaker is, what types of decisions are at stake, and when the HRA must be complete. Additional information can include upfront risk acceptance criteria or primary legal/regulatory considerations, if any.
(1) Identify Hazards	Generate Conceptual Model of Risk	Conceptual models frame the health risk questions under consideration and articulate the presumed linkages between hazards, populations, and potential health effects associated with exposure. Conceptual models also articulate how hazard exposure may occur and what relevant population and environmental characteristics are important considerations.
	Develop and Execute Data Collection Plan	Proper and efficient data collection plans can be generated based on the conceptual risk model. Data collection methods will vary based on hazard, health outcomes, populations, environments, and mission or decision contexts.
	Identify Hazards in a Preliminary Assessment	Once data are collected, preliminary assessments can usually be performed that determine if one of more hazards exist. Identified hazards will require further risk analysis in the next steps of the process. Unconfirmed hazards can be eliminated from further analysis. These types of assessments are sometimes referred to as screening-level assessments or hazard ranking assessments.
(2) Assess Hazards	Perform Exposure Assessment	Exposure assessments estimate or predict the level of exposure to the hazard that is expected in the population and through what pathway(s) exposure occurs. Exposure estimates can be qualitative or quantitative, and usually include descriptions of exposure timing, frequency, and duration. Exposure variability within the population is an important consideration in many assessments, as are certain environmental conditions or control measures that may modify exposure.
	Perform Effects Assessment	Effects assessments identify the types of potential health outcomes that may occur after exposure and also often estimate or predict the frequency or rate of the effects within the population.
	Prepare Risk Characterization for baseline risks	Risk characterization is where the results of the exposure and effects assessments are integrated to produce risk estimates, the actual measures of risk. This is the formal end product of the risk assessment. The required format and level of detail depend on the complexity of the HRA. It can be as simple as choosing a RAC from the ATP 5–19 risk assessment matrix. It can be as detailed as a multipage report chapter that combines numerical risk estimates with a synthesis of the information and a description of the risks in context of stakeholder concerns and the decisions to be made. This step in the process should also identify the largest uncertainties affecting the results. It should also include a concise risk communication message for the decisionmakers.
(3) Develop Controls and Make Decisions	for residual risks	Useful risk characterizations are those that compare risks across the various risk mitigation alternatives being considered by the decisionmakers. Such comparative risk assessments should also describe how the key uncertainties accompanying residual risks may change according to the mitigation alternatives.
	[Decision]	When a decision is made, then the inherent uncertainties in the risk estimates are acceptable by definition. If uncertainties are too great for a decision to be made, then a reiteration of the HRA is necessary with additional data to reduce the uncertainty.
(4) Implement Controls (5) Supervise and Evaluate	[Monitoring]	Controls are implemented based on the decision made. Some risk control options require concurrent monitoring of the hazards or the potential health outcomes. Often, such monitoring data are used to compare with risk-based guidelines identified in the HRA.

Notes:

Shading represents health risk assessment steps. Health risk assessment begins with receiving the task and the identification of hazards in Step 1 and ends with the assignment of residual risks for alternative control options in Step 3.

[1] Deviations from this prescribed process may be needed based on the decisionmaking context.

[2] The communication of risks and decisions is most effective when risk communication activities are included in all HRA steps, particularly as part of the risk characterization step.

Table D-4
Attributes of highly valuable characterizations of health risk

1. Valuable risk characterizations provide actionable information that is relevant, reliable, timely, and understood.
2. Valuable risk characterizations identify the largest uncertainties affecting the results. When a health risk assessment breaks new ground or is highly technical, or where risk management decisions based on the assessment may be costly or controversial, it is important to provide recommendations for how the largest uncertainties can be reduced.
3. Valuable risk characterizations include a concise risk communication message about the risk assessment for the decisionmaker. Risk characterizations can also be translated into summaries or fact sheets designed for distribution to stakeholders.
4. Valuable risk characterizations compare risks across the various risk mitigation alternatives being considered by the decisionmaker. Such comparative risk assessments should also describe how the key uncertainties accompanying residual risks may change according to the mitigation alternatives.

(5) *Types of health risk estimates.* The key outcome of a health risk assessment is the health risk estimate, which is the measure of risk to the population or operation. Risk estimates can be qualitative or quantitative. Health risk assessments should be designed to express risk in the way that is most useful to the decisionmaker and also be translatable into a format that is understandable to Soldiers and stakeholders. How health risk estimates are expressed to Soldiers and stakeholders should be based on risk communication principles (see chap 5 and app E).

(a) Qualitative estimates. Qualitative estimates (for example, High, Medium, Low) are useful when the supported decision does not require additional precision, when the uncertainty around quantitative estimates is high, when ranking relative risks, or when high OPTEMPO prohibits quantitative analysis. In general, the context of the health risk management decision will dictate the format of the risk estimates. For example, the ATP 5–19 risk management process is primarily written to provide qualitative estimates to a troop leader or contingency operations commander. This approach uses the RACs of Low, Medium, High, and Extremely High. It is the doctrine for commanders' operational decisions and has also been adopted for Army garrison safety and health risk management (see DA Pam 385–30), and for certain deployment environmental health risk assessment processes.

(b) Quantitative estimates. Numerical risk estimates are useful when the supported decision requires at least some degree of numerical precision, and the health outcome and risk of that outcome can be quantitatively measured. This occurs when exposure and/or effects can be measured numerically, when regulatory considerations dictate numerical analysis, when uncertainty around risk estimates can be quantified, and/or when sufficient time is available to allow such an analysis. Numerical risk estimates can take many forms and can be accompanied with qualifying terms regarding the confidence of the estimate (High, Medium, or Low confidence). Some of the most common numerical risk estimates are—

1. Incidence rate (for example, 1 in 10,000).
2. Relative risk, odds ratio, hazard ratio, population attributable risk.
3. Hazard index and hazard quotient.
4. Margin of safety or exposure.
5. Population portion above or below a numerical guideline or standard.
6. Frequency above or below a numerical guideline or standard.

(6) *Populations at risk.* Army PH professionals apply health risk assessment methodologies to optimize performance and protect populations. Health risk assessment techniques usually focus upon specific populations at risk. Depending upon the issue and context, the populations of concern include Soldiers, Families, DA Civilians, contract employees, and local communities. Populations at risk may be restricted to specific occupational groups or may apply to all individuals coming in contact with the hazard. Special subpopulations may also need to be considered, depending upon the context and purpose of the risk assessment. Special subpopulations can include groups that are more highly exposed to a hazard (for example, young children with respect to contaminated indoor dust) or those that are more sensitive to the effects of the hazard (for example, air pollution and asthmatics). There are also cases where risk assessments must be designed for healthy populations that contain fewer sensitive or unhealthy individuals compared to other populations.

(7) *Knowledge and uncertainty.* Risk assessment products, especially risk characterizations, are powerful tools to organize and articulate scientific knowledge within a framework useful to decisionmakers. However, risk assessment conclusions should not over-interpret data or results; this is a common pitfall. Health risk assessment conclusions should focus on facts and knowledge and accurately reflect the magnitude of uncertainty involved in the assumptions used to derive the estimate. Uncertainties exist in the identification and measurement of hazards, the estimation of exposures, the identification and measurement of health effects associated with exposures, the factors that may modify exposures or responses, and in the method used to characterize and communicate risks. Uncertainty must not be ignored; however, some uncertainties are more important than others, and the impact of uncertainty varies with the consequences of making a wrong decision.

(a) Iteration. The creation of a risk assessment product is an iterative process designed to be refined over several revisions until there is consensus on the most important and most uncertain factors affecting the results. How confident subject matter experts, decisionmakers, and commanders need to be on these important but uncertain factors should drive the duration and complexity of the risk assessment life cycle. Any given health risk estimate is designed to inform a decision, and its generation is influenced by assumptions based on data availability and risk perceptions.

(b) Confidence. Final risk assessment results should be accompanied by some measure of confidence in the results. Some risk assessment conclusions can be quite uncertain due to a lack of sufficient, relevant data. Other conclusions can be very strong without large uncertainties. The level of uncertainty that is acceptable to a decisionmaker will depend on his or her experience level, precedent from previous similar decisions, and ultimately, the consequences of making the wrong decision.

(c) Research. Risk assessments are not research endeavors. However, they are constructed upon scientific and technical knowledge and are thus based on research and scientific concepts. Important scientific or technical uncertainties that affect risk assessment results should be articulated as limitations or data gaps that can be targeted for improvement by basic and applied research programs. Risk assessment-driven research to fill data gaps and reduce uncertainties should be highly valued because it can directly improve decisionmaking and risk management.

D–4. Health risk assessment orientations

A risk assessment orientation is the perspective and emphasis taken during the risk assessment. The orientation is determined by the context of the risk management decisions driving the need for the risk assessment and it effects how the risk assessment should be designed. There are four orientations:

a. Operation-oriented risk assessments. These risk assessments are most closely aligned to the risk assessment techniques found in Army risk management doctrine (ATP 5–19). These techniques assist the troop leader and the operational commander with a risk assessment that is focused on how constellations of hazards may impact mission effectiveness and courses of action associated with an operation or maneuver. These risk assessments can include a series of multiple locations, be focused on a large region, or an entire AOR. These types of health risk assessments focus on how health risks can impact mission success.

b. Site-oriented risk assessments. This orientation involves risk assessment techniques that measure hazard exposure and health outcomes at a specific location. These assessments help to identify what hazards to control to prevent poor health outcomes or promote mission success at that location. Industrial hygiene investigations at worksites are an example of this kind of risk assessment. OEH surveillance investigations are another kind of site-oriented risk assessment because they focus on hazards that occur at a specific installation site, base camp, or forward operating base. Many of these risk assessments can be readily aligned to the specific risk assessment techniques found in Army risk management doctrine (ATP 5–19). Other types of site-oriented risk assessments, such as those conducted at hazardous waste facilities, are designed to determine safe facility operating conditions, or required cleanup or decontamination requirements. These require specific risk assessment designs that do not specifically follow the ATP 5–19 process. However, the broad health risk assessment concepts are the same. These types of health risk assessments are usually performed at the operational and strategic levels of Army PH Enterprise. In these cases, the health risk assessment focuses on how health hazards can be mitigated to allow for continued operations or for land or equipment clearance decisions.

c. Hazard-oriented risk assessments. This orientation involves risk assessment techniques that focus on a specific hazard. These typically involve the establishment of exposure levels that are linked to safe or acceptable exposures, or the identification of a tiered set of hazard-severity based levels. These assessments can also focus upon materiel management in the Army acquisition supply chain or the health risks associated with the hazard or material from production, to intended use, to environmental disposal-related health risks. Hazard-oriented risk assessments generally do not need to follow the specific risk ranking methods found in ATP 5–19. These types of health risk assessments are usually performed only at the strategic level of the Army PH Enterprise. In these cases, the health risk assessment focuses on how health hazards can be controlled through the supply chain, across all workplaces or environments, and whether such control requires development and implementation of exposure guidelines or standards. These types of assessments are used to establish exposure standards and guidelines (see para D–5).

d. Population-oriented risk assessments. This orientation involves risk assessment techniques that focus on measures of health outcomes within segments of an Army population and is often stratified by location, demographic group, or other attributes. Epidemiological health surveillance and disease control investigations are the prime example of this type of health risk assessment. This orientation focuses on identifying unacceptable increases in disease patterns across the population and then working to identify potential causes for targeted investigation. Population-oriented risk assessments follow the specific risk ranking methods in ATP 5–19 only generally. These types of health risk assessments are usually performed at the operational and strategic levels of the Army PH Enterprise for garrison and contingency operations. In these cases, the health risk assessments usually focus on what health outcomes have actually occurred across the population for the purpose of guiding PH responses to emerging health concerns and measuring the success of prevention efforts.

D–5. Alternative analytic designs

A risk assessment design is the technical approach taken to answer the health risk question at hand. The design is determined by the orientation needed to answer the risk management questions and the technical methods available to the risk assessment team. There are several broad dimensions that can be used to describe the technical design of a risk assessment.

a. Prospective and retrospective risk assessments. Health risk assessments that track exposures and health outcomes as they occur through time are prospective. Those that reconstruct past exposures and/or examine health outcomes from the past are retrospective.

b. Medical surveillance based health risk assessments. Medical surveillance risk assessments support Comprehensive Health Surveillance (DODD 6490.02E), focus on measuring health outcomes directly, and are population-oriented. These are usually driven by epidemiology-based methods and traditionally focus on individuals' encounters at medical treatment facilities. This type of assessment is commonly known as an epidemiologic study and uses a slightly different set of stepwise procedures compared to those found in table D–3.

c. Occupational and environmental health surveillance risk assessments. Several types of OEH surveillance risk assessments support Comprehensive Health Surveillance and OEH risk management (see DODD 6490.02E and AR 11–35). They focus on exposures to health hazards and are usually site-oriented or hazard-oriented. These assessments are usually driven by toxicology-based methods and focus traditionally, but not solely, on chemical toxicants, toxins, and/or radiation.

d. Forward- and backward-calculating risk assessments. Risk assessments that measure or estimate the risk or impact of exposure are referred to as "forward-calculating" risk assessments. Table D–3 represents this kind of design. Risk assessments that measure or estimate the amount of exposure that is safe, or that is associated with a specific magnitude of predicted outcomes, are referred to as "backward-calculating" risk assessments. These use slightly different sets of stepwise procedures compared to those found in table D–3. For example, the risk assessment that estimates the number of cancers that will occur after a radiation accident is a "forward-calculating" design, and the risk assessment that estimates the safe level of radiation exposure independent of a specific event is a "backward-calculating" design. Another example, an epidemiologic investigation of a disease outbreak, involves tracking down the disease cases and identifying the cause of the outbreak. This example is a "forward-calculating" design because it provides an estimate or summary of the health outcome in the population. Intervention trials or health program comparative studies reflect aspects of both risk assessment designs. In these types of investigations, the population impact of an intervention is measured to compare its effectiveness to other programs for the purpose of choosing the best program by which to control poor health outcomes.

e. Tactical and lifecycle risk assessments. Tactical risk assessments focus on measuring tactical effects, which are those that occur during a mission and that directly impact the success of a mission. Lifecycle risk assessments focus on lifecycle effects. For example, a lifecycle assessment can focus on the entire lifecycle of the individuals in the population. A different kind of lifecycle assessment can focus on the lifecycle of a material within the supply chain. When lifecycle risk assessments focus on the lifecycle of individuals, the health effects of most concern are those that are irreversible and last for the life of an individual after exposure. When lifecycle risk assessments focus on the lifecycle of a hazard found in materials, the exposures and health effects of concern are those that arise from different stages of the production, use, and disposal, which often include the fate and the transport of materials in the environment.

f. Casualty estimation. Casualty estimation models are used for operational and emergency planning purposes and are a form of prospective health risk assessment. These types of risk assessments often focus upon exposure to chemical, biological, radiological, nuclear (CBRN) agents and natural disasters and the rough prediction of potential casualties that may occur during and/or after such an event. For example, CBRN casualty estimation assists medical planners with planning for medical workloads by estimating the number and types of casualties from a CBRN event. These risk assessment models, given pre-defined scenarios, estimate the units affected, number of casualties, and severity and time course of illnesses. This information assists planners in predicting the medical force structure necessary to develop and wargame medical support courses of action. Doctrine for these risk assessments is found in ATP 4–02.7.

Appendix E

Public Health Communication

E–1. Introduction

This appendix provides additional information, recommended training, tools, and resources to support the planning, development, implementation, and evaluation of PH communication activities as described in chapter 5.

E–2. Risk communication training

The following risk communication resources are available and recommended for training commanders, medical and PH personnel, and anyone whose responsibilities include communicating about health:

a. Risk communication.

(1) APHC Health Risk Communication classroom training, available at https://phc.amedd.army.mil/pages/coursedetails.aspx?courseid=70/.

(2) Risk Communication course (two offerings within the Army Learning Management System (ALMS) at https://www.lms.army.mil/).

(a) Search for "risk communication."

(b) Select "AMEDD ACCP ATC053 Risk Communication."

b. Unit Public Affairs Representative Course. Five modules through ALMS at https://www.lms.army.mil/.

E–3. Crisis and emergency response communication training

The following crisis and emergency response communication resources are available and recommended for training commanders, PHEOs, medical and PH personnel, and anyone whose responsibilities include communicating about health:

a. CDC Crisis and Emergency Risk Communication online training, available at https://emergency.cdc.gov/cerc/cerconline/training/index.html/.

b. The Federal Emergency Management Agency Communications series, available at https://training.fema.gov/hiedu/aemrc/courses/coursesunderdev/crisisandrisk.aspx/.

(1) IS-100.B: Introduction to Incident Command System.

(2) National Incident Management System, An Introduction.

(3) National Incident Management System Public Information System.

(4) National Response Framework, An Introduction.

E–4. Health communication training

The following health communication resources are available online through the CDC at "CDC TRAIN" and are recommended for training PH personnel who are responsible for developing PH communications:

a. Health Literacy for Public Health Professionals (https://www.train.org/cdctrain/course/1057675/).

b. Writing for the Public (https://www.train.org/cdctrain/course/1066816/).

c. Speaking with the Public (https://www.train.org/cdctrain/course/1066814/).

d. Creating Easier to Understand Lists, Charts, and Graphs (https://www.train.org/cdctrain/course/1066806/).

e. Fundamentals of Communicating Health Risks (https://www.train.org/cdctrain/course/1066960/).

f. Using Numbers and Explaining Risk (https://www.train.org/cdctrain/course/1066815/).

E–5. Social media training

a. All personnel who publish, administer, or moderate information on social media or any other external official presence are required to complete specific training and serve as a subject matter expert on social media policies, techniques and best practices: https://www.army.mil/socialmedia/managers/.

b. The following additional training is recommended for medical personnel who are responsible for and manage social media accounts: Social Media Workshop, hosted by the Defense Information School, http://www.dinfos.dma.mil/about/social-media-workshop/.

E–6. Characteristics of effective risk communicators

Risk communication is a learned skill that is challenging and requires practice. The characteristics of a skilled risk communicator include—

a. Training. Basic risk communication training establishes a foundation of the principles of risk communication and forms the basis for more focused training that refines skills for specific applications. In addition to PH professionals, those

who should consider risk communication training include remediation managers, emergency officers, environmental officers and planners, environmental project managers, technical experts, engineers, scientists, health and safety personnel, public affairs officers, commanders, and Judge Advocate General officers.

b. Commitment. Commit to communicating risks based on the science while integrating evidence-based risk communication principles. Risk communication methods are especially effective when stakeholder concerns are high and stakeholder confidence in the risk management process is low.

c. Timeliness. Prompt response (or action) as soon as a risk or hazard is identified, regardless of the level of stakeholder awareness or concern at that time, is key to success. Delaying release of information to avoid media coverage, political scrutiny, or due to a fear that the information may elevate stakeholder concerns, contradicts risk communication best practices and risks losing trust, credibility, and control. Sharing as much information as possible, particularly during times of uncertainty, is the most successful approach. Otherwise, stakeholders may find other sources which may not provide accurate information, causing inconsistencies and deterioration of the issue.

d. Integrity, credibility and confidence. An honest, credible, and confident spokesperson builds and strengthens trust. Mutually satisfying relationships and good risk communication are both necessary in order to succeed at either. When communicating about real or perceived health risks, the most effective communicators are confident, credible, empathetic, active listeners who honor agreements, share the communication role, and welcome feedback.

e. Emotional and social intelligence. The risk communicator should possess keen emotional and social intelligence that embraces the psychology of communication and human interactions, should recognize and control emotions, and should practice fairness in dialogue with others.

f. Improvement. Through practice and training, continually seek to master risk communicator skills. Use evaluation tools (such as feedback mechanisms, meeting evaluations, surveys, and so forth) to measure performance.

E–7. Risk communication principles

a. Credibility and trust. Strong, trustworthy relationships prior to a risk event can align perceptions and decrease the emotional impact. Involve stakeholders as a partner in decisionmaking, actively listen, accept responsibility, and engage credible sources to strengthen mutual trust and credibility. Trust stakeholders to do the right thing, even when they receive bad news. Being a trustworthy information source makes the information more acceptable to audiences.

b. Perception of risk. Effective communication begins with understanding risk perceptions. Misperceptions, left unchecked, result in concerns that are not proportionate to the actual hazard or risk, potentially derailing the PH mission. Factors unrelated to health-risk information often influence perceptions, complicating communication efforts. The most significant factors influencing risk perception are familiarity, control, and benefit. Each of these, when diminished, will likely cause stakeholder perception of risk to increase.

c. Concerns. It is important to avoid either ignoring or minimizing stakeholder perceptions and concerns. Outwardly acknowledging perceptions and concerns, even when they conflict with the true level of risk, increases credibility and helps create opportunities for continued dialogue. Ignoring perceptions may increase anger, diminish credibility and trust, and cause stakeholders to reject helpful information and messages. See table E–1 for factors that impact a person's perception of risk.

Table E-1
Factors impacting perception of risk

Less Risky	More Risky
High trust in information source	Low trust in information source
Potential to affect everyone equally	Affects children, the elderly, or other vulnerable groups disproportionately
Voluntary	Involuntary
Fair	Unfair
Naturally occurring	Created by humans
Chronic	Catastrophic
Positive historical associations	Negative historical associations

Adapted from Slovic and Fischoff, 1982

d. Empathy. Empathy is the ability to identify with the perspective, experiences, or motivations of another, or to comprehend and, to some extent, share another individual's emotional state. The ability to empathize with stakeholders in situations involving real or perceived health risks is necessary for effective risk communication. The risk communicator, at the outset of communications, should express genuine empathy proportionate to the level of concern expressed by the stakeholder.

E–8. Risk communication practices

The following risk communication practices offer a starting point for focusing communication efforts:

a. Accept and involve stakeholders as legitimate partners. Early stakeholder participation, before decisions are fixed and actions are initiated, is most effective. Identifying stakeholders and understanding their diverse and competing interests, concerns, and agendas are critical to the risk communication process. Building and maintaining stakeholder relationships is a proactive effort that requires a significant investment of time; however, the benefits of establishing a two-way dialogue based on mutual trust and respect will be significant. Misperceptions by stakeholders are minimized when the risk communicator is considered trustworthy, when mutually satisfying relationships have been established, and his or her information is therefore accepted. Figure E–1 outlines the stakeholder identification steps that will aid in building a network of trusted stakeholders.

The following steps will aid in building a network of trusted stakeholders.

1. List all stakeholders, including individuals, groups, and organizations. Comprehensively consider all who could potentially and indirectly be affected, as well as those who are clearly impacted by the issue.

2. Categorize each stakeholder as primary, secondary, or tertiary based on the nature of the stakeholder's relationship to the issue. As the risk communication process proceeds and the issue progresses, understand that a stakeholder category assignment may change. The number of persons directly affected (primary stakeholders) may increase because an affected area has expanded, or a communicable disease has spread. Following are examples of questions the risk communicator should ask:

   - Who impacts the mission most, both favorably and unfavorably?
   - Who is the audience?
   - Who are the key decision leaders/makers?
   - Who can be effective third-party supporters?
   - Which individuals/groups will perceive they are affected?
   - Who will be upset if not involved?
   - Who was previously involved in this active issue?
   - Who could give a balanced range of opinions on an active issue?
   - Who is least likely to communicate with those managing the risk?
   - With whom will you have to collaborate to address this issue effectively?
   - With whom would you least like to communicate?
   - What's our history with each audience?
   - What do the audiences think of each other?
   - What could happen if we don't reach out?

3. Stakeholders may be categorized into additional groups based on their opinions and activity, whether they are as supporters, neutral, or opposed to information, an official response, action plan, or position.

4. Identify the specific interests or responsibilities of the stakeholders with respect to the issue, and the corresponding risk communicator responsibility to the stakeholder.

5. Ensure mutual understanding of the mission, limitations, and benefits for stakeholders. Establish credibility and trustworthiness, and continually seek to improve both through transparent, timely, and honest two-way dialogue.

6. Ensure stakeholders are contacted periodically at a predetermined frequency (daily, weekly, bi-monthly), based on the nature of the relationship; ensure that schedule is maintained whether issues exist or not. This contact informs and strengthens the relationship, ensures contacts are current, reinforces the mutual worth, and prefaces issue engagement.

Figure E–1. Stakeholder identification

b. Plan and tailor risk communication strategies. Different goals, audiences, and risk issues require different strategies. The needs and preferences of those who are directly impacted by the risk, or who believe they are, will determine the most effective strategies. Planning also requires routine monitoring of audience concerns.

c. Listen to the audience. This is critical to effective risk communication. Willingly listen to the audience, regardless of how difficult it may be to do so. Acknowledge audience interests, concerns, organizational missteps, or differing opinions. Audiences in a heightened state of interest or concern first want to know that those responding to a real or perceived risk issue understand and respect their concerns. This is especially true during times of high uncertainties. Acknowledgement indicates that concerns have been heard and considered, and that partnering with audiences to resolve the issue is a priority. Integrate audience needs into communication efforts to help address the emotional component and shape more effective information. Public health personnel should have feedback mechanisms in place to monitor, assess, and evaluate audience engagements, messages, and communication efforts. Figure E–2 presents a feedback template which can be used as a tool

to systematically collect the data, demonstrate interest in stakeholder opinions, and inform adjustments and changes to messaging and communication efforts.

Audience Feedback Template Sample	
Name, job title, division/section of Army Medicine communicator	First name, Last Name, preventive medicine specialist
Title of audience engagement (for example, meeting with Family Readiness Group (FRG) leaders)	Installation town hall meeting
Date/time	05 Aug 2016, 1800
Location	Garrison theater
Length of audience engagement (for example, 1 hour)	2 hours (1800–2000)
Purpose of audience engagement (for example, provide update)	Provide updates about Army Zika activities
Key Army Medicine messages communicated	• No cases of Zika have been identified on the installation or in the local community. • Zika-carrying mosquitoes have not been found in this area. Army preventive medicine experts continue to aggressively monitor the installation. • Army medical providers are complying with the latest DOD and CDC guidance. • We can use everyone's help to remove all possible mosquito breeding areas. • Protect yourself by….
Information about other speakers at the event (names, job titles, organizations)	• First name, Last Name, installation DPW • First name, Last Name, Bexar County health department • First name, Last Name, Chief of Nursing, Brooke Army Medical Center
Overall tone of audience encounter: Positive, neutral, critical	Neutral, given the potentially alarming nature of Zika. Most participants were females, some pregnant. Some teenagers also present.
Number of audience members in attendance	Approximately 50, ranging in age from 15 to 70. Most participants were in the 25–40 age range.
List of audience questions or content areas	• Can I be tested for Zika? If not, why? • Why can't my husband be tested for Zika? • What options are available to me if I'm pregnant and diagnosed with Zika? • Have Zika mosquitoes been found in our area? • If I've been diagnosed with Zika in the past, will that harm my future pregnancy? • What should we do if my husband and I want to start a family? • Can I telework more often to avoid exposing myself to mosquitoes?
Observations of interest, if any (such as, items that could help shape future messages, or items that indicate brewing concerns/ questions)	Meeting started out with briefings by invited speakers. All presentations were completed without interruption in less than 20 mins. Majority of meeting time was spent in open discussion. Of particular interest was a detailed group discussion about why male Soldiers aren't automatically tested for Zika when they re-deploy from an area with known Zika transmission.
Due-outs/requests from engagement	AMEDD owes an updated Zika Q-and-A list to GEN Last name's spouse for distribution within the FRGs.

Figure E–2. Audience feedback template sample

d. Be honest, frank, and open. Bad news does not get better with age, and good news risks being perceived negatively if it is not timely. Forthright, proactive communication strengthens audience public trust and credibility.

e. Coordinate and collaborate with other credible sources. Communications about health risks are enhanced when accompanied by respected, credible, and neutral sources of information. Be mindful that power struggles, disagreements, and conflicting messages from information sources degrade credibility. Take steps to achieve consensus with other agencies prior to communicating with the potentially affected population. The appropriate credible sources will be issue- and site-dependent.

f. Plan for media influence. Public affairs officers (PAOs) are trained to handle traditional and social media interactions successfully. The media plays a major role in transmitting risk information and can be leveraged to communicate appropriate and accurate risk information to large audiences. Work with the PAO to prepare clear, consistent, and simple risk communication messages and to provide the support necessary to facilitate a successful media engagement. Understanding motivations of the media can be helpful.

g. Speak clearly and with compassion. Avoiding jargon and technical words, and account for cultural differences. Pretest messaging and materials, when possible, to improve audience resonance. Enhance understanding through dialogue that recognizes and respects audience expectations, attitudes, and perceptions.

E–9. Crisis communication and social media

Social media should be used during all stages of a crisis from educating the public about risks during the pre-crisis phase to communicating initial protective measures to promoting the role or capabilities of the organization during the resolution phase. Leaders responding to a PH emergency may consider social media a distraction from more serious responsibilities. However, social media are now a constant presence and play a critical role in informing, and in some cases misinforming, the public during a crisis (CDC, 2014). During crisis events, PH personnel should coordinate with PAOs or their local communication office in charge of social media (see table E–2).

Table E-2
Using social media for crisis communication

Crisis Management	Using social media to communicate with audiences during a crisis has proven to be effective due to their speed, reach, and direct access. Social media can help distribute health and command information, answer questions, identify concerns, and enable two-way dialogue.
Building trust and credibility before a crisis	Establish social media platforms and build an online presence before a crisis occurs. Posting content consistently, and staying active on social media lets your audiences know you are a trusted source for timely information.
Promote your social media account as an official source for information.	During a crisis, it is important that you highlight your social media efforts. Ensure the public, media, and coordinating agencies are aware of where information will be released. Social media provide another avenue to publicize a press release, direct audiences to resources, or web pages.
Share relevant health information, and leverage networks.	Establish partnerships online by networking with other social media managers, cross posting, tagging, liking, or retweeting their content. Leverage other organizations' established networks to facilitate information sharing and expand the reach of your health messages.
Answer questions.	Be prepared to engage and answer your audience's questions. As part of crisis response planning, anticipate likely questions the public may have, and prepare responses ahead of time. The best way to stop rumors is to be the first to release accurate information.
Monitor content and conversations.	Use social media to identify and track conversations and overall sentiment. Monitoring trends and discussions on social media can help to better understand current interests, knowledge level, and potential misunderstandings or myths about a health topic. Identify and practice using online tools to track hashtags, monitor conversations, and create reports that provide a snapshot of current trends and discussions.
Post cleared information as it becomes available.	Social media move information quicker than ever, so when a crisis hits, do not wait for a formal press release. When you have solid, approved/cleared information, post it. This includes information about negative news items, as well. You can continue to post updated information as it becomes available. Not posting updates quickly during a crisis, or not keeping the community informed, may damage the organization's credibility. Rumors spread faster than ever with social media. Posting accurate information first, and providing subsequent updates, builds credibility and puts your message at the forefront of your audience's mind.

Table E-2 Using social media for crisis communication—Continued	
Analyze metrics, and evaluate efforts.	During the crisis, review metrics and track audience feedback. It is important to evaluate how a social media account performs so adjustments can be made. Once the crisis is over, analyze what happened, and plan for the future.
To learn more about how social media have been used during a crisis, and to obtain guidance for writing for social media, read chapter 9 of the CDC's *Social Media and Mobile Media Devices*, available at https://emergency.cdc.gov.	

E–10. Communication messaging and campaign steps, strategies, and tools

a. Successful PH communication activities involve more than messages and educational materials; they are the application of evidence-based strategies to shape the materials and determine the appropriate channels. Activities should use behavioral and social learning theories and models to help guide strategies and activities. See table E–3 for a summary of frequently used health promotion and health communication theories and their underlying key concepts.

Table E-3
Summary of theories: focus and key concepts

	Theory	Focus	Key Concepts
Individual Level	Health Belief Model	Individuals' perceptions of the threat posed by a health problem, the benefits of avoiding the threat, and factors influencing the decision to act	Perceived susceptibility Perceived severity Perceived benefits Perceived barriers Cues to action Self-efficacy
	Stages of Change Model	Individuals' motivation and readiness to change a problem behavior	Precontemplation Contemplation Decision Action Maintenance
	Theory of Planned Behavior	Individuals' attitudes toward a behavior, perceptions of norms, and beliefs about the ease or difficulty of changing	Behavioral intention Attitude Subjective norm Perceived behavioral control
	Precaution Adoption Process Model	Individuals' journey from lack of awareness to action and maintenance	Unaware of issue Unengaged by issue Deciding about acting Deciding not to act Deciding to act Acting Maintenance
Interpersonal Level	Social Cognitive Theory	Personal factors, environmental factors, and human behavior exert influence on each other.	Reciprocal determinism Behavioral capability Expectations Self-efficacy Observational learning Reinforcements
Community Level	Community Organization	Community-driven approaches to assessing and solving health and social problems	Empowerment Community capacity Participation Relevance Issue selection Critical consciousness
	Diffusion of Innovations	How new ideas, products, and practices spread within	Relative advantage Compatibility

Table E-3
Summary of theories: focus and key concepts—Continued

		a society or from one society to another	Complexity Trialability Observability
	Communication Theory	How different types of communication affect health behavior	Example: *Agenda Setting* Media agenda setting Public agenda setting Policy agenda setting Problem identification, definition Framing

Excerpted from Glanz, Rimer, and Su (2005).

b. Use the following steps, and collaborate with public affairs on each, when developing PH communication messaging, products, or campaigns:

(1) *Define the problem.* This includes formative research to include literature reviews, needs assessments, surveys, interviews, and focus groups. If time or resourcing constraints prohibit formative research, the pretesting of messaging and materials becomes more critical. Review traditional and social media coverage of the issue. Talk with staff elements familiar with the issue.

(2) *Set communication objectives.* Use objectives that are specific, measurable, attainable, relevant, and time-bound. Determine what success looks like for your communication effort.

(3) *Conduct audience analysis and segmentation.* Determine: Who are you reaching? What do they know and want to know about the problem? How do they feel about the problem? Where and how do they want to be reached? What sources do they trust for information about the issue? What do they expect to be done?

(4) *Develop and pre-test messaging.* When developing messaging, use an evidenced-based tool such as the Clear Communication Index (https://www.cdc.gov/ccindex/) for improved readability as well as adherence to the *Plain Language Act Guidelines* (https://plainlanguage.gov/guidelines/). After development, pre-test by engaging a smaller group(s) of the demographic you are trying to reach, to ensure your messaging is appealing and relevant. Re-adjust the messaging and materials as necessary, based on feedback.

(5) *Select communication channels.* Use the audience's preferred communication channels during the pretesting phase and adjust channels depending on feedback.

(6) *Develop a communication or health marketing plan.* The purpose of a plan is to integrate all the relevant programs, education, and advocacy efforts. A plan may also help to deploy resources more effectively by highlighting shared opportunities across the Army PH Enterprise. Synchronize and coordinate communication efforts with facility, local and regional PAOs, CR2Cs and CR2C facilitators, Army Wellness Centers, and other key partners for improved reach. See figure E–3 for a sample communication plan outline.

(7) *Implement strategies.* Effective communicators use multiple communication strategies and modalities. Consider strategies that balance the needs of audiences, PH practitioners, and risk managers. Historically, communicators have relied heavily on print materials and website content to reach Soldiers and the Army Community. As technology advances and audiences embrace new ways of receiving and interacting with health information, communication strategies should also evolve. Consider strategies and techniques based on the audience feedback. Some options to consider include—

(a) Interpersonal interventions. These include one-one-one conversations or small group settings. The higher the audience level of concern, the more important active listening will be.

(b) Community campaigns.

1. Community-wide campaigns are large-scale, multiple strategy campaigns that deliver messages by using multiple media such as television, radio, and newspaper columns and inserts.

2. Community-wide campaigns may also include policy and environmental changes, such as opening school facilities to public use and creating a walking trail (CDC, 2011d).

(c) Traditional media. These include print and broadcast (television, radio, newspapers, and magazines).

(d) Social media.

1. Social media strategies are key components of successful PH programs, health promotion efforts, crisis response, and public affairs. Using social media is an effective way to raise awareness, facilitate behavior change, amplify PH messages, expand reach, foster engagement, and increase access to credible, science-based health information (CDC, 2016a).

2. Public health personnel in a communication or education role should develop and integrate a social media strategy into overall PH programs, communication planning efforts, and data collection. Use the Health Communicator's Social Media Toolkit (https://www.cdc.gov/socialmedia/tools/guidelines/index.html) to develop social media strategy into overall PH programs, communication planning efforts, and data collection. Consider the social media platforms that will best meet the intended audience's needs.

(e) Internet.

1. Apply best practices in user-experience and user-centered design to improve the quality of the user's interaction with the information and the perception of the user about the group or organization providing the information (DHHS, 2017a and 2017b).

2. Internet and mobile interventions may include multimedia and social networking capabilities. When possible, tailor and structure health information based on individual factors such as gender, age, and readiness to change or self-efficacy. Social support via coaching or counseling may also be utilized (Parvanta, Nelson, Parvanta, and Harner, 2011).

(f) Mobile media. When possible, PH programs should integrate mobile strategies into their health communication efforts. Media delivered on smartphones and tablets make information easier to access, and content can be updated almost instantly. Mobile applications and text messaging campaigns may be created in coordination with, or in place of, traditional print products.

(g) New media. Investigate and develop emerging communication methods and strategies for future application. For example, newer search engine optimization capabilities may improve information reach to an intended audience.

(h) Displays. These include health information or marketing displays promoting a health service, product, or behavior.

(8) *Evaluate the process and outcomes.* The evaluation may examine the reach, effectiveness, adoption, implementation, and maintenance of the campaign or initiative (Glasgow, Vogt, and Boles, 1999). See *Making Health Communication Programs Work* (https://www.cancer.gov/publications/health-communication/pink-book.pdf) for additional evaluation guidance.

Sample Communication Plan Outline

1. **Situation**
   - Provide information essential to understanding the situation.
   - Provide evidence of need; may be real (data driven) or perceived (something the public believes to be a high risk that is not necessarily supported by data).
   - What pitfalls/ vulnerabilities do you face and what countermeasures might address them?
   - What information do you need to deliver that provides a balance between audience needs/ interests and the PH data?
   - What communications capacity do you have?
   - Who will do the work?
   - What budget and resources (personnel, facilities, equipment) do you have?

2. **Mission**
   - This is a clear concise statement of the task(s) to be accomplished and the purpose for doing it. Who will do what (educate/inform), when, where, why and how (could be multifaceted)?
   - Communication objectives, why are you communicating, what do you want to accomplish?
   - Primary audiences in priority order with rationale.
   - Secondary audiences in priority order with rationale.
   - What do you need to know about your target audience and how will you get that information?

3. **Execution**
   - Frame the issue: what is the issue really about, who is affected?
   - State the intent or the overarching communication strategy to include outcomes (concept of operations).
   - State the overarching theme.
   - List the core campaign messages: problem/solution/action.
   - Often this section is organized into an execution matrix that describes in detail how each element of the plan will accomplish its task from start to finish. Include suspense dates for task completion and message or product dissemination and distribution.
   - Define tasks that are essential. Include task and timeline for visual information consult and product development.
   - Define the communication materials and approach (media engagements, print products, town hall meetings, email blast, public service announcements, newsletters…).
   - Who are the best spokespeople to reach your target audience?
   - What are the deliverables and supporting products?
   - List the administrative or logistical support needed to implement the plan.
   - Identify printing, dissemination, product placement.
   - Identify media engagements (contact local Public Affairs Officer).

4. **Assessment**
   - Define the measures and methods for assessing the plan.

5. **Identify Command and Control**
   - Define supporting and supported relationships.
   - Include points of contact/planning members.
   - List necessary references.

6. **Annexes**
   May include—
   - Risk communication guidelines.
   - Operations security and public affairs guidelines.
   - Execution matrix.
   - Supporting products (questions and answers, fact sheets, press release, social media strategy, and other supporting communication materials).

Figure E–3. Sample communication plan outline

Appendix F

Acute Respiratory Disease Surveillance Guidelines

F–1. General

The objectives of ARD surveillance are to collect and disseminate timely and accurate installation-specific ARD data, to recognize lapses or failures of ARD preventive strategies, and to identify outbreaks or trends. Formal ARD surveillance systems are generally associated with installations conducting initial entry training (IET) or advanced military training but may be implemented in any beneficiary population where a need exists.

F–2. Case definition of acute respiratory disease and rate calculation

a. For Army surveillance, an ARD case is defined as a fever of 100.5 degrees Fahrenheit or greater and any of the following symptoms: sore throat, cough, runny nose (rhinorrhea), chest pain, shortness of breath, headache, tonsillar exudates, tender cervical lymphadenopathy, or generalized muscle aches (myalgia).

b. Personnel conducting ARD surveillance should report only those cases that satisfy this case definition and are either hospitalized or returned to their unit with any profile limiting their duty for more than 24 hours. This includes limitations on physical fitness training.

c. The ARD rate is calculated as the number of trainees meeting the case definition (with profile) (x 100) divided by the total number of trainees at risk.

d. ARD surveillance should be conducted across outpatient (including Emergency Department/Acute Care Clinics) and inpatient populations. At basic training sites, a strep test should be performed on trainees who meet the case definition.

F–3. Acute respiratory disease surveillance at initial entry training installations

a. Historically, respiratory disease has been a significant cause of lost training time among Army basic training populations, as well as a preventable cause of mortality. The reinstitution of the adenovirus vaccine has dropped ARD rates, but monitoring is important to assess vaccine effectiveness and to identify other circulating disease agents. Consequently, PH personnel at IET sites must place special emphasis on monitoring sick call trends with special focus on ARD. Increases in ARD rates should be promptly investigated to determine the extent and nature of ARD morbidity.

b. The installation PH authority at each IET installation closely supervises the process of collecting ARD data, incorporating the following elements to ensure data quality and completeness:

(1) Strict adherence to the ARD case definition.

(2) Education of epidemiology and disease control personnel on the importance of the ARD surveillance program and required procedures (see para F–5), including timely weekly submissions to the APHC.

(3) Coordination with clinical providers and laboratory personnel to ensure successful program implementation.

(4) Complete capture of outpatient and laboratory data at troop medical clinics and emergency department locations.

(5) Prompt investigation of any upward trends to determine the extent and nature of respiratory morbidity.

(6) Notification of the regional health authority and APHC when an ARD outbreak investigation is initiated or when there is any occurrence of acute rheumatic fever (ARF).

c. Outbreaks.

(1) The Army surveillance definition of an ARD outbreak is a rate of greater than 1.5 percent per week for 2 consecutive weeks. This rate is calculated as the number of trainees with ARD (x 100) divided by the total number of trainees at risk. (ARD and rate calculation are defined in paragraph F–2).

(2) Outbreaks must be investigated promptly. The number of ARD cases required to exceed the outbreak threshold (total number of trainees x 0.015) should be calculated locally at the beginning of each week. On a daily basis, the cumulative number of ARD cases for the week should be compared to this calculated number that defines an epidemic.

(3) Installation PH authorities should coordinate services with their respective supporting laboratories to ensure arrangements are in place to perform the needed testing. These arrangements should include identification of primary points of contact, stockpiling of testing materials, identification of procedures for collecting and shipping of samples, and procedures for obtaining test results. When indicated, an EPICON may be requested from the APHC Disease Epidemiology Division through the regional health authority.

F–4. Streptococcal disease surveillance at initial entry training installations

Historically, invasive Group A beta-hemolytic streptococcal (GABHS) infections have been a cause of morbidity and even mortality among basic trainee populations. Increases in ARD activity have often been temporally associated with increased strep activity. Although large outbreaks of streptococcal disease or rheumatic fever are infrequent, there is still significant concern that such outbreaks could occur. Several IET locations include Bicillin® prophylaxis (or an oral alternative when

Bicillin is not available) in their basic trainee medical processing in order to reduce the risk of severe disease. Empirical evidence suggests that the detection of increasing streptococcal disease trends allows for the implementation of effective control strategies prior to the occurrence of invasive strep disease.

a. Routine tracking of indicators of streptococcal disease activity (table F–1 and table F–2) is likely to identify populations at risk and provide a basis for prompt intervention. The Strep Recovery Rate and the Streptococcal-ARD Surveillance (SAS) Index (SASI) must be calculated weekly for the trainee population. Clinical providers must order a throat culture (or rapid streptococcal antigen test) for all trainees who meet the ARD case definition.

b. Diagnosis of respiratory disease secondary to streptococcal infections is based on isolation of GABHS organisms in culture. Isolation of a single colony of GABHS is adequate for diagnosis. The streptococcal-ARD surveillance (table F–3) and control plan (table F–4) indicate appropriate responses to the diagnosis of ARF or an elevated SASI.

c. At IET locations, Bicillin (or alternative) prophylaxis administration must also be reported with the weekly ARD report.

Table F-1
Streptococcal throat culture-based indices

Name of Index	Formula	Comments
Strep Recovery Rate	Positive strep cultures [1] among ARD cases x 100 Total cultures among ARD cases	Calculate weekly. Observe over time for trends. (Only positive throat cultures from trainees meeting the case definition are used in this calculation.)
Strep-ARD Surveillance (SAS) Index	Strep Recovery Rate X: (# ARD Cases) X 100 (Total # Trainees)	Calculate weekly. Index > 25 for 2 consecutive weeks indicates significant streptococcal disease activity.

Notes:

[1] Include throat cultures positive for streptococcus (groups A, C, or G) or positive rapid streptococcal antigen test results.

[2] Acute respiratory disease

Table F-2
Suppurative compications of streptococcal infections

Complications	Comments
Peritonsillar abscess Paranasal sinusitis Otitis media Mastoiditis Suppurative adenitis	Monitor these events through admission/discharge diagnoses, emergency room logs, or through regular correspondence with appropriate clinical services.
Suppurative thrombophlebitis Metastases to joints or bones Meningitis Pneumonia	A marked increase in any of these events may be a sensitive, early indicator of an incipient acute rheumatic fever epidemic.

Table F-3
Streptococcal-acute respiratory disease surveillance

Definition	Phase I	Phase II	Phase III	Phase IV
Based on the Streptococcal-ARD Surveillance Index (SASI) and occurrence of cases of ARF	**SASI** < or = **25** for 2 or more consecutive weeks AND No cases of ARF	**SASI > 25** for 2 or more consecutive weeks OR One case of ARF	Two or more cases of ARF	Occurrence of cases of ARF despite Bicillin prophylaxis

Table F-4
Streptococcal-acute respiratory disease control plan

Control	Phase I	Phase II	Phase III	Phase IV
See key below	1	1 and 2	1 and 2	1, 2, and 3

Key:

[1] Perform throat cultures (or rapid streptococcal antigen tests) on all symptomatic patients, and administer a single dose of 1.2 million units intramuscular of Bicillin (benzathine penicillin G)* to those with positive cultures or rapid antigen tests for group A streptococcus.

[2] Administer Bicillin (benzathine penicillin G)* to cadre and current trainees and to all new trainees as they enter the reception station.

[3] Administer a second dose of Bicillin (benzathine penicillin G)* to all trainees 4 weeks after the first dose.

Note:

Unless contraindicated by allergy; consider a 10-day course of erythromycin or a 5-day course of azithromycin. (GABHS resistance to macrolides has been reported to be as high as 14 percent; treatment failures require retreatment based on results of culture and antibiotic sensitivity testing of isolates.)

F–5. Acute respiratory disease surveillance reporting procedures at initial entry training installations

a. The incidence of ARD in all IET populations, to include those at Forts Benning, Jackson, Leonard Wood, and Sill, will be reported weekly to the APHC Disease Epidemiology Division. Reports will include the following data elements for each company-sized unit: unit designation, week of training, type of training, barracks type, number of Bicillin L-A® doses administered to the unit, number of males/females assigned, number of male/female ARD cases, number of positive group A streptococcus throat cultures or positive rapid streptococcal antigen test results from ARD-confirmed males/females, and the number of group A streptococcus throat cultures or rapid streptococcal antigen tests performed on confirmed ARD males/females.

b. The APHC will consolidate and analyze the ARD surveillance information and distribute the information to the OTSG, MEDCOM (or appropriate medical headquarters), U.S. Army Training and Doctrine Command (TRADOC) Surgeon, regional health authorities, and the installation PH authority at each ARD reporting site.

c. All occurrences of meningococcal disease will be reported immediately to APHC through the DRSi. Additionally, any ARD epidemics must be reported telephonically to the APHC Reportable Medical Event Project Officer at 410–436–6920.

d. Instructions for ARD surveillance reporting are found in the Army Acute Respiratory Disease Surveillance Program Reference document, which is published at https://www.health.mil. This document provides detailed guidance on ARD surveillance and an example of the first page of the ARD surveillance report.

F–6. Acute respiratory disease surveillance of groups other than basic trainees

a. Soldiers in advanced individual training, cadre, other permanent party personnel, and Family members, should be monitored for unusual illness activity when feasible. Assessment of respiratory disease activity may be focused on sentinel populations (for example, pediatrics clinics or troop medical clinics) and may be a routine part of local PH surveillance activities. Routine use of ESSENCE or other DHA syndromic surveillance systems is an ideal method for monitoring clinics and respiratory disease occurrences.

b. Absenteeism is an excellent indicator of an outbreak, such as an influenza outbreak, so surveillance efforts should be coordinated with local school authorities, command authorities, occupational health clinics, and civilian personnel offices. School and workplace absenteeism as well as visits to MTFs should be followed.

c. Since Army populations interact with other military and civilian communities, all surveillance efforts should be performed with some understanding of the incidence of disease in communities surrounding Army installations. Coordination with medical authorities from other services and local civilian health authorities is encouraged.

F–7. Acute respiratory disease surveillance in overseas areas

a. In the European and the Pacific Theaters, a year-round ARD surveillance program should be operational and emphasized, particularly during the influenza season. Annually, the DHA identifies specific MTFs to serve as sentinel surveillance locations for the DOD Influenza Surveillance Program. Public health personnel should support MTF teams in developing and maintaining their sentinel surveillance processes.

b. In the Pacific Theater, diagnostic capability at Army medical facilities in Korea is limited, but it may be feasible to send specimens to laboratories of other Services. Medical authorities in Korea and Japan should contact other Service representatives to identify available support and establish agreements when needed.

F–8. Outbreak investigations

a. All outbreaks of ARD are investigated and reported in the DRSi. Commanders' critical incident reports will be submitted, as needed. The installation PH authority conducts these investigations. Consultation with regional health authorities and APHC epidemiologists is recommended.

b. In the event that local capabilities are insufficient to conduct an in-depth investigation, the local medical authority should contact the regional health authority for additional assistance. If necessary, an EPICON should be requested.

c. In the European Theater, outbreak investigations are monitored by the European Regional Health Command preventive medicine consultant. Laboratory support is provided by Landstuhl Army Medical Center and APHC–Europe. EPICON support is available.

d. In Korea, outbreak investigations are coordinated by the FHP Officer, 65th Medical Brigade. The APHC can also provide EPICON support, if requested.

Appendix G

Procedures and Guidance for the Medical Management of Army Personnel Exposed to Depleted Uranium

G–1. Background

a. The procedures in this appendix outline the methods to be used to identify, assign a potential exposure level (I, II, or III), assess, and treat (if needed) all personnel with actual or potential exposure to DU, regardless of the source. In addition, these procedures detail required monitoring and tracking of all Army personnel with retained metal fragments and/or suspected inhalation or incidental exposure to DU.

b. These procedures will also be used to ensure the appropriate use of urine bioassay for DU exposure assessment and biomonitoring.

c. If required, a DU bioassay (24-hour urine collection) will be performed as soon as practical upon the Soldier's return to home station (see para 7–17). Medical units located in a theater of operations, as well as higher-role MTFs acting as en route processing points for redeploying Soldiers, should not collect the 24-hour urine specimen for the DU bioassay. The collection requirements are documented on the Soldier's DD Form 2796 (Post-Deployment Health Assessment), and other medical records (for example, DD Form 2766 (Adult Preventive and Chronic Care Flowsheet), sections 5 and 7 (block 20)), ensuring collection of the 24-hour urine specimen and documentation by the Soldier's home station or demobilization site MTF.

d. The HCP or primary care manager (PCM) at the role of care at which fragment and/or urine specimens are collected from Level I and II personnel will complete the DU questionnaire and health survey (see fig G–1) and/or overprinted Standard Form (SF) 600 (Medical Record–Chronological Record of Medical Care). The original DU questionnaire is placed in the individual medical record and a copy is sent along with any fragment or urine specimens going to the APHC for analysis.

G–2. Indicators of potential depleted uranium exposure

There are several indicators of potential exposure to DU.

a. Indicators of DU exposure that are obtained directly from the patient or the patient's DD Form 1380 (Tactical Combat Casualty Care (TACCC) Card) include—

(1) Patient's vehicle was struck by a Kinetic Energy (KE) munition. (KE munitions are usually made from either tungsten or DU.)

(2) Patient's vehicle was struck by DU munitions either from U.S. tanks or aircraft.

(3) Patient reports observing burning fragments (similar to a Fourth of July sparkler) while the vehicle was being penetrated. (DU is pyrophoric, that is, it may ignite spontaneously in air; it can ignite when fine particles are formed.)

(4) Patient was a first responder and entered the vehicle to rescue or evacuate personnel or retrieve sensitive material immediately after the vehicle was struck by suspected or confirmed DU munitions.

(5) Patient was wounded by DU munitions. Similar to lead, tungsten, and steel, DU fragments are readily visible on radiographic images. Radiography alone, however, is not sufficient to determine the presence or absence of DU. If readily available, a radiation detection, indication, and computation (RADIAC) meter (AN/VDR-2 with the beta shield open, or equivalent) may potentially be used to monitor surgically removed fragments, wounds, burns, surfaces, or sites with suspected DU contamination or embedded fragments. This will indicate the likely presence of DU and can assist in wound cleaning or surface decontamination. Under no circumstances should medical treatment be delayed while a RADIAC meter is obtained.

b. It is unlikely that environmental measurements or dose assessments will be available in all situations, especially in combat. However, if field survey monitoring indicates the presence of radioactive material on the patient, or in the vicinity of the patient's activities when the injury occurred, then include the survey results, the time and date of the survey, and the type and serial number of the RADIAC meter and detection probe on the Field Medical Card or other patient records. The clinician should alert PH personnel if other individuals have been exposed so that an exposure assessment can be performed.

c. Inhaled, ingested, or imbedded DU will be retained by the Soldier for a considerable amount of time with the amount excreted in the urine decreasing as the time from the exposure increases. Bioassay results from relatively high exposures remain precise enough to allow accurate dose assessments to be made even if the bioassay is taken after a long or extended deployment.

d. Lower exposures expected at the Level II and III categories may be difficult to differentiate from normal environmental uranium uptake as the time from exposure increases.

G–3. Definitions of potential depleted uranium exposure levels

a. Level I. Personnel who may exceed occupational safety levels by taking in a sufficient amount of DU into the body.

(1) This level includes personnel who were struck by DU munitions; were in, on, or near (within 50 meters) a combat vehicle struck by DU munitions or a vehicle with DU armor breached by any munition; first responders who entered these vehicles to render aid to the crew; or individuals who have retained fragments containing DU.

(2) DU bioassays are administered to all personnel within this level.

(3) Bioassays are performed as soon as medical condition permits a urine collection at the Soldier's home station or demobilization site MTF. The medical records of non-hospitalized Level I personnel will be annotated to state that a 24-hour urine collection is required and the bioassay will be performed as soon as possible (for example, upon return to home station).

b. Level II. Personnel who are routinely exposed to DU-damaged vehicles or fires involving DU munitions.

(1) Personnel in this level have a very slight potential to exceed occupational safety levels. Level II includes personnel (other than first responders) who routinely enter vehicles containing DU dust to perform maintenance and recovery operations, intelligence operations, or battle damage assessment. This level also includes personnel whose occupation involves firefighting involving DU munitions.

(2) DU bioassays are administered to all personnel within this level. Specimen collection should take place as soon as possible after the Soldier returns to his/her home station or demobilization site MTF. The type of PPE worn during potential DU exposure situations should be annotated in the remarks section of the DU questionnaire.

(3) Medical records are annotated (for example, DD Form 2766, sections 5 and 7 (block 20)) with the requirement to collect a 24-hour urine specimen for DU bioassay.

c. Level III. Personnel with “incidental” exposures to DU.

(1) Examples of personnel in this level include individuals who have driven through smoke from a fire involving DU munitions or who have entered or climbed on or in a battle-damaged vehicle on an infrequent basis (not as a first responder and not as a job requirement). Level III also includes Soldiers, DOD Civilians, and contractors who may have been exposed to buried DU.

(2) Bioassays are not required for Level III personnel, though a physician may choose to perform one based on medical indications or at the potentially exposed individual's request. If the individual indicates that he or she was cut, scraped, or sustained a puncture type wound while in, on, or around a potentially contaminated vehicle, then it is strongly recommended that a urine bioassay be obtained. The individual may have an embedded fragment that contains DU. *NOTE:* Paradoxically, this group may require more health risk communication than those in Levels I and II. Level I personnel may know they have retained fragments or were potentially exposed to a relatively high level of DU while those in Level III may have various signs and symptoms not attributable to a single cause and thus consider DU the causative agent.

G–4. Treatment considerations for wounded personnel with suspected depleted uranium exposure

a. Follow these standard procedures when treating wounded personnel.

(1) Embedded fragments should be removed using standard surgical criteria except that large fragments (greater than 1 centimeter) should be more aggressively removed unless the medical risk to the patient is too great. The short-term consequence of retained DU fragments does not justify an aggressive approach during the early treatment of wounds. Appropriate treatment of the wound with removal of any easily accessible fragments is performed. In the care of acute wounds, surgical judgment is applied to avoid the risk of harm in removal of other fragments, even when known to be DU. DU fragments may always be removed at a later date.

(2) Kidney function monitoring is recommended for patients who have contaminated wounds, embedded depleted uranium fragments, or who are acutely wounded. Monitoring should follow the protocol developed and in use by the Depleted Uranium Follow-Up Program at the Baltimore VA Medical Center (https://www.publichealth.va.gov/exposures/depleted_uranium/followup_program.asp).

(a) The kidney is one of the organs most sensitive to uranium exposure. The VA protocol recommends the following kidney function tests: urinalysis, 24-hour urine for uranium bioassay, blood urea nitrogen, creatinine, beta-2-microglobulin, and creatinine clearance.

(b) Based upon current estimates of depleted uranium exposure health effects, chelation therapy is not recommended.

b. Medical treatment or evaluations required immediately will not be delayed because of the possible presence of DU on skin or clothing, for the determination of the presence of DU on a patient, or for DU bioassay specimen collection.

c. The presence of DU fragments in a patient’s body presents no risks to the HCP or other individuals. As with other heavy metals retained in the body, DU in all body fluids (urine, blood, sweat, saliva, and semen), tissues, and excrement (feces) is not categorized as hazardous material waste, and no special precautions related to DU are required for handling or disposal.

d. Specimens for urine DU bioassays or fragment collection are ideally obtained early at the home station or demobilization site MTF where risk communication can be provided once the results of the analysis are available. Specimens obtained in a theater of operations in emergency situations or under medical orders may be evaluated by following the procedures in paragraph G–7 even though not required by this policy. Specimens are potentially collected during redeployment/demobilization in CONUS when feasible and when the patient's clinical condition permits; however, specimen collection must occur at home station if not accomplished and documented during redeployment and demobilization.

G–5. Personnel with suspected depleted uranium exposure

a. If DU exposure is suspected at Roles 1 or 2, medical personnel should annotate the DD Form 1380, Block 13 (Diagnosis) or patient's clinical record (SF Form 504, Clinical Record–History-Part 1, or other) with the statement: "SUSPECTED DEPLETED URANIUM (DU) EXPOSURE," and the time, date, and other pertinent information (for example, in Block 9, state the circumstances for "What was he doing when injured?"). Ensure completion of DA Form 2173 (Statement of Medical Examination and Duty Status) for all Soldiers.

b. If DU exposure is suspected at Roles 3 or 4, medical personnel should record the information in the medical record on the DD Form 2766 and code the information into the patient's electronic health record or equivalent.

c. For personnel who are suspected of having exposure to DU and who are not expected to re-deploy immediately, DU exposure levels (I–III) are assigned, and bioassay procedures should begin for Level I and II personnel. While bioassay procedures need not be instituted in-theater or at intermediate stops en route to CONUS (for example, Landstuhl, Germany; or redeployment/demobilization stations), medical records must document the need for follow-up bioassay if DU exposure is suspected. Annotations in medical records must be sufficiently clear so that subsequent reviews (at the home station, for example) will produce the necessary bioassay.

d. The HCP or PCM at the role of care at which fragment and/or urine specimens are collected from Level I and II personnel will complete the overprinted SF Form 600. The original DU questionnaire is placed in the individual medical record, and a copy is sent along with any fragment or urine specimens submitted to the APHC for analysis.

e. Specimens for urine DU bioassays should be obtained when operationally feasible and when the patient's clinical condition permits; however, such delays should not prevent eventual specimen collection.

f. Exposure situations include both known DU exposure, as well as potential DU exposure, based upon proximity to a blast, fire, or historical incident involving a DU projectile or DU armor.

G–6. Post-deployment screening for actual or potential exposure to depleted uranium

The initial HCP will identify Army personnel with retained metal fragments and suspected inhalation or incidental exposure to DU. The initial HCP does this by—

a. Reviewing and ensuring the completion of DD Form 2796 for all redeploying/demobilizing Soldiers.

b. Identifying wounded individuals and individuals with suspected DU exposure who provided a positive response to Questions 17, 18, or 19 (regarding potential DU exposure) on DD Form 2796. Ensure completion of DA Form 2173 for all Soldiers who recorded a positive response to these questions.

c. Using the short exposure assessment questionnaire provided in paragraph G–14 to complete the potential exposure assessment; assigning a DU potential exposure Level (I, II, or III); and determining the need for bioassay for potentially exposed Soldiers. NOTE: If, for some extenuating circumstance, a DU Exposure Category is not provided by the requesting HCP, nor is a Post-Deployment DU Exposure Questionnaire provided for a patient, the APHC will work with the designated senior Enterprise representative to administratively place the patient into an exposure category (I, II, or III) based upon the results of the laboratory analysis of the submitted specimen. If additional information regarding the patient is later obtained, the administrative exposure category may be updated. The ASD(HA) requires this information for all patients under evaluation for DU exposure.

d. Documenting the assigned Level (I–III) of potential DU exposure on the DD Form 2796. Refer all individuals assigned a Level I or II potential DU exposure to their PCM at the MTF for further assessment and a 24-hour urine uranium analysis as soon as possible. The level of exposure and referral, if indicated, will be documented on the DD Form 2796, the individual health record, and the DD Form 2766 and then transferred into the permanent medical record during reconciliation/update.

G–7. Depleted uranium bioassay specimen collections and management

a. Metal fragments removed from Level I patients.

(1) Suspected DU metal fragments removed from Level I patients will be considered clinical laboratory specimens and forwarded to the APHC for composition analysis. Information provided with the fragment specimen will include a completed SF Form 557 (Medical Record–Miscellaneous), which includes the ordering physician's contact information, the

injury date, and the date the fragment was removed from the patient. A copy of the completed DU questionnaire will accompany all metal fragments sent to APHC for analysis.

(2) The documentation accompanying each metal fragment specimen should indicate if it is suspected that similar fragments remain embedded in the patient. An indication as to whether urine bioassays were collected from the Soldier (in- and out-of-theater MTF) before or after fragment removal would also be helpful. If urine bioassays were collected from a patient with a metal fragment, then the dates and times of the bioassay collection and the fragment removal need to be provided.

(3) The local medical laboratory will maintain a roster of metal fragment specimens shipped with patient identification. The local medical laboratory will receive the results and is responsible for ensuring that results are entered into the individual's medical record and into the local automated clinical information system. Upon completion of that action, requests for DU bioassay may be submitted online; the results will be posted in a manner similar to current standard medical tests.

b. Urine specimens.

(1) The HCP or PCM at the supporting MTF will refer all Army personnel assigned a Level I or II DU potential exposure category to the clinical laboratory for 24-hour urine specimen collection.

(a) A 24-hour urine specimen results in a more accurate dose estimate than the result from a spot urine specimen; the former also provides sufficient volume for additional analyses when required.

(b) A 24-hour urine specimen is required for subsequent VA follow-up for all Level I and II exposure category personnel.

(c) Post-exposure urine specimens should be collected when practicable after suspected DU exposure. In accordance with DOD policy, a urine specimen will be collected from an identified Level I or Level II Soldier. A DU bioassay for a Level III potentially exposed Soldier is not required; however, a physician may choose to perform one based on medical indications or at the request of the potentially exposed individual.

(2) The local clinical laboratory will collect and manage 24-hour urine specimens according to the following procedures:

(a) Specimens will be collected using the containers specified for this purpose.

(b) Instruct the patient to begin urine collection after the first morning void of Day 1 and end collection after the first morning void of Day 2 (the next day). Document the beginning time, the ending time, and the total volume of this 24-hour collection.

(c) After an aliquot is taken from the 24-hour urine specimen for a creatinine test, the specimen will be packaged for shipment to the APHC.

(d) The MTF clinical laboratory will complete a urine creatinine analysis on an aliquot from each 24-hour specimen. For the measurement of urine creatinine level, the patient's age, sex, height, weight, and potential exposure level (I, II or III) must be provided on the laboratory request, SF Form 557. The laboratory will submit a copy of the creatinine results when submitting the specimen to the APHC.

(e) All 24-hour urine specimens for DU bioassay will be forwarded to the APHC according to the guidance in paragraph G–8. Each urine specimen will be shipped with a completed SF Form 557, a copy of the completed DU questionnaire, a copy of the health survey, and the results of the urine creatinine analysis.

c. Registry. All laboratories that collect or receive specimens will maintain a registry of specimens (fragments and urine).

d. Results. The APHC will provide DU bioassay and fragment analysis results and interpretations to the requesting MTFs. The Center will also provide copies, with all related documents, to the DOEHRS-IH Depleted Uranium Registry and the U.S. Army Dosimetry Center.

e. Urine uranium specimens. In accordance with DOD and Army policies, the Directorate of Laboratory Sciences at the APHC analyzes the 24-hour urine uranium specimens. Results of the analyses of DU in urine are reported to the submitting MTF laboratory, referring provider, and dosimetry center and are archived in the DOEHRS-IH Registry. Additionally, a copy of the analytical results will be supplied to the APHC Health Physics Division for interpretation and assessment. Positive results are confirmed by collecting and analyzing a second specimen. Patients with a second positive result are referred to the VA's Depleted Uranium Follow-Up Program.

G–8. Laboratory procedures

a. The APHC provides Army bioassay and metal fragment identification services. All specimens (metal fragments and urine) will be sent to the APHC. Mail or ship (FedEx, DHL, or best available means) the packages of urine specimens or metal fragments to the U.S. Army Public Health Center (MCHB-PH-LOD) Sample Management Lab, 8988 Willoughby Road, Aberdeen Proving Ground, MD 21010-5403.

b. Before shipping any urine specimens or metal fragments to the APHC, please contact the APHC Laboratory by telephone and/or email:

(1) Chief, Inorganic-Radiochemistry Section, COM (410) 436–8244, DSN 584–8244.

(2) APHC Sample Alert email address (also known as the Sample News Bulletin) at usarmy.apg.medcom-phc.mbx.dls-sampnews@mail.mil (410–436–8356).

(3) APHC EOC Current Operations secure internet protocol router network (SIPRNET).

c. MEDCOM will provide staff oversight of the clinical laboratory support for the collection, identification, and processing of urine specimens for DU bioassay, extracted fragments for proper identification of the metal, and measurement of creatinine in urine as part of the DU bioassay effort.

d. The APHC will report the fragment analysis results and urine bioassay results (with interpretation and comparison to referent norms, as appropriate) to the MTF laboratory that submitted the sample. All urine bioassay results will be reported normalized to creatinine (for example, micrograms of uranium per gram creatinine) and normalized to the volume of the urine specimen (for example, nanograms uranium per liter of urine).

(1) This action is completed expeditiously using APHC-approved internal procedures; however, if there is an unexpected increase in submitted specimens for DU bioassay, the APHC may coordinate with the CDC for assistance.

(2) Records are maintained that support not only the analytical results but also the transmittal of those results to the requesting MTF.

e. The laboratory receiving the results from the APHC will ensure that the results are routed appropriately to be placed in the affected individual's medical record. The interpretation of laboratory results by APHC Health Physics Division personnel accompanies the laboratory results back to the MTF, including the MTF laboratory and the HCP.

f. The APHC Laboratory Sciences, Laboratory Analytical Division, Inorganic and Radiochemistry Section provides consultations on DU bioassay specimen collection, preservation, and shipment, as well as laboratory support. Please contact the Section with any questions concerning shipment of specimens to the APHC.

G–9. Health risk communication

A critical component of the DOD strategy for the medical management of DU exposures is health risk communication. Additional information on Public Health Communications, to include health risk communication, appears in chapter 5 and appendix D of this pamphlet.

G–10. Medical and other records

a. HCPs must clearly document all cases of wounded personnel with embedded metal fragments.

b. MEDCOM will identify coding requirements to ensure that the medical records of patients with retained fragments, post-conflict, are coded appropriately.

c. There is no specific code for suspected inhalation exposure to DU, but this diagnosis should be annotated on the medical record, DD Form 2766, item 20.

d. The SF Form 557 will identify whether the patient is at Level I, II, or III for suspected DU exposure and whether the patient has a retained fragment or suspected inhalation exposure. All SF Forms 557 will include the name and contact information of the ordering physician.

e. MTF clinical laboratories will retain a registry of all specimens (fragments and urine) sent to the APHC for DU analysis. The local medical laboratory is responsible for ensuring that results are entered into the individual's medical record and into the local automated clinical information system.

f. A DU questionnaire and health survey will be completed for all personnel who provide either fragment or urine specimens for bioassays. The original completed DU questionnaire and health survey will be placed in the individual's medical record, and a copy will accompany any specimens sent to APHC for analysis.

g. MTFs need to maintain patient contact information when patients with possible DU exposure undergo a permanent change of station or leave Active Duty. Use the DU questionnaire for the patient to provide a permanent Home of Record/address, and telephone number. This information is critical for the follow-up of patients who test positive for DU.

G–11. Reporting and archiving

The APHC will—

a. Archive and report results of fragment analysis and urine bioassay results to the MTF laboratory that submitted the specimen; include interpretation and comparison to referent norms as appropriate.

b. Send dose interpretation and laboratory results to the U.S. Army Dosimetry Center (AMSAM-TMD-SD), Redstone Arsenal, Alabama, for archiving. Copies for members of the other Services will also be furnished to the Servicemember's appropriate dosimetry center, if identified, for archiving.

G–12. Training

a. All HCPs (Physicians, PAs, Nurse Anesthetists, and Nurse Practitioners) will complete DU General Awareness Training and the AMEDDC&S HRCoE-developed training. Newly assigned providers will complete the Army one-time DU Awareness Training and the AMEDDC&S HRCoE training within 3 months of assignment to their first duty station.

b. HCPs will, at least biennially, repeat the training on procedures to implement this policy.

G–13. Roles for Army medical personnel

a. MEDCOM functions.

(1) Including DU training requirements in the Annual MEDCOM Command Training Guidance.

(2) Tracking the training of HCPs and providing an annual report on the status of HCP training.

(3) Ensuring training compliance by incorporating DU training as an item in the OIP checklist.

(4) Ensuring clinical consultants are aware of, and comply with, DU policy and specified procedures.

(5) Providing oversight of clinical laboratory support for specified DU bioassay procedures.

b. Regional health authority functions.

(1) Providing oversight and guidance to the health service area to implement DU policy and specified procedures, including support planning for redeployment, demobilization, and training of MTF and medical demobilization personnel.

(2) Ensuring medical records of patients with retained DU fragments are properly coded.

(3) Documenting DU training in the Defense Training Management System. Ensure newly assigned HCPs complete, within 3 months of assignment, the Army DU Awareness Training and the training on procedures to implement this policy. Ensure HCPs repeat, at least biennially, the training on procedures to implement this policy.

c. APHC functions.

(1) Providing the Army bioassay and metal fragment identification processes and the archiving of all laboratory results and interpretations.

(2) Providing the results of urine and fragment analyses to the clinical laboratory and the physician submitting the specimens consistent with approved APHC protocols and procedures.

(3) Serving as the Army lead for coordination of laboratory procedures and sample management procedures between the Army, the other military services, and the DVA.

(4) Providing consultative assistance regarding the dose assessment/estimations and health implications of exposure to DU or metal fragments.

d. Updates. The AMEDDC&S HRCoE maintains and updates, as necessary, DU training materials (to include web-based material) suitable for use by both TOE and TDA medical elements of the Active and Reserve Components worldwide.

e. Installation medical authority functions.

(1) Ensuring the procedures and guidance outlined in DA Pam 40–11 are implemented for all encounters through the MTF(s) with patients with retained DU metal fragments and/or suspected inhalation exposure to DU.

(2) Providing DU Awareness training, as well as training on the procedures and guidance specified in this pamphlet, to the HCPs; documenting the training in accordance with regional health authority guidance.

(3) Reviewing current workload statistics to determine if a single DU case manager is needed for patients submitting urine specimens for DU bioassay. It is recommended that the DU case manager be appointed from one of the clinical specialties.

f. Functions for HCPs or case managers at medical demobilization stations.

(1) Ensuring the completion of the DD Form 2796 for all Army personnel processing through the stations.

(2) Ensuring the completion of the short DU exposure assessment questionnaire (see para G–14), when indicated by the DD Form 2796. Ensure completion of DA 2173 for all positive responses.

(3) Assigning a DU potential exposure level (I, II, or III) to Soldiers with potential exposure, and documenting the assigned level on DD Form 2796. The HCP must inform the patient about the results of the DU bioassay and ensure documentation in the medical record. The HCP must also discuss any need for additional medical follow-up.

(4) Referring all Soldiers assigned a potential DU exposure Level I or II to a PCM at the supporting MTF for further evaluation and/or bioassay, and documenting the referral on the DD Form 2796.

g. Functions for PCMs or case managers at MTFs.

(1) Reviewing the DD Form 2796; the completed short questionnaire; and the assigned exposure level for completeness. Assign and document an exposure level category if one has not been assigned.

(2) Referring the patient to the clinical laboratory for a 24-hour urine specimen collection and creatinine analysis. Inform the Soldier of the following:

(a) Results of laboratory tests may not be available until after he/she leaves the MTF.

(b) Results will be maintained by the APHC and may be obtained by contacting the Center either on-line at https://phc.amedd.army.mil/organization/ls/pages/lad-i.aspx, by telephone at 410–436–2208; DSN 584–2208; (800) 222–9698, or email at usarmy.apg.medcom-aphc.list.org-ohs-ohs@mail.mil.

(3) Completing the DU questionnaire and health survey, and ensuring that the originals are placed in the individual medical record and a copy accompanies any specimens (fragments or urine) sent to the APHC.

(4) Informing the Soldier of the DU bioassay results (if the Soldier is available when the PCM receives them) and documenting this communication, as well as the health risk assessment and its interpretation, in the medical record.

(5) Coordinating with the MTF DU Case Manager to ensure those patients with positive DU results are referred to the VA's Depleted Uranium Follow-Up Program.

h. Functions for HCPs in field medical units.

(1) Identifying Army personnel with retained metal fragments and suspected inhalation or incidental exposure to DU by—

(a) Reviewing and ensuring the completion of the DD Form 2796 for all redeploying/demobilizing Soldiers.

(b) Identifying wounded individuals and individuals with suspected DU exposure who provided a positive response to DD Form 2796 questions 17, 18, or 19, regarding potential DU exposure.

(c) Ensuring completion of DA Form 2173 for all Soldiers with a positive response on the DD Form 2796.

(d) Using the short exposure assessment questionnaire provided in paragraph G–14 to complete the potential exposure assessment; assigning a DU potential exposure level (I, II, or III); and determining the need for a bioassay for potentially exposed Soldiers.

(e) Documenting the assigned level (I, II or III) of potential DU exposure on the DD Form 2796 and entering data into the Joint Theater Trauma Registry.

(2) Referring all individuals assigned a Level I or Level II potential DU exposure to their PCM at the MTF for further assessment and a 24-hour urine uranium analysis as soon as possible.

i. DU Case Manager functions.

(1) Adhering to the guiding principles and practices of the case management process.

(2) Acting as the single point of contact in the MTF for DU issues.

(3) Facilitating the risk communication process.

(4) Transmitting of bioassay results and coordination of potential referrals to the VA's Depleted Uranium Follow-Up Program.

j. MTF Medical Laboratory Manager functions.

(1) Collecting and managing all 24-hour urine specimens and fragments identified for DU analysis in accordance with procedures outlined in this appendix.

(2) Maintaining a roster of metal fragment specimens shipped with patient identification.

(3) Ensuring that results are entered into the individual's medical record and into the local automated clinical information system.

G–14. Questionnaire to assess potential depleted uranium exposure

Figure G–1 provides a sample questionnaire to assist the HCP in assessing potential DU exposure. The original questionnaire is to be placed in the individual's medical record; a copy of the questionnaire will accompany any specimen (fragment or urine) sent to the APHC.

Health Care Provider/Interviewer's Name: [First, Last]

Location & Date: [Installation, mm/dd/yyyy]

Patient's Name & Unit: [First, Last, Unit]

Conclusion/Exposure Level Assigned: [Determined by DU Exposure Decision Matrix]

QUESTIONS	CIRCLE RESPONSE	
1. Were you in, on, or near (within 50 meters) an armored vehicle at the time the vehicle was struck by depleted uranium munitions?	Yes	(No)
2. Were you in a vehicle struck by armor-piercing munitions?	Yes	(No)
3. If you were in a vehicle struck by armor-piercing munitions, were the munitions DU or did you observe burning fragments (like a Fourth of July sparkler) when the vehicle was hit?	Yes	(No)
4. Were you in, on, or near (within 50 meters) a vehicle with depleted uranium armor (Abrams tank) at the time the armor was breached by DU or non-DU munitions?	(Yes)	No
5. Were you within 50 meters of a burning Abrams tank, British tank, Bradley Fighting Vehicle or any vehicle known to contain DU, DU armor or DU munitions?	Yes	(No)
6. Did your deployment duties involve repeated entry or recovery of vehicles likely damaged by munitions from an Abrams tank, British tank, Bradley Fighting Vehicle or USAF A-10 ("Warthog") aircraft?	Yes	(No)
7. Did you have any other reason to believe you were exposed to DU?	Yes	(No)
8. Do you currently retain fragments in your body from enemy or friendly fire?	Yes	(No)

FOR HEALTHCARE PROVIDER USE

DU Exposure Decision Matrix

Yes Response to **Question:**	**Exposure** Level
1	I
2	Go to question 3
3	I
4	I
5	II
6	II
7	III Clinician's judgment on bioassay
8	Coded for fragments

SAMPLE

Figure G–1. Sample depleted uranium exposure questionnaire

Appendix H

Health Policy—Applying Health Considerations to Army Policies

H–1. Policy and environment

To promote community health and prevent adverse health outcomes, changes to policy and environments, as opposed to individually focused efforts, allow for the greatest cost-benefit for achieving improvements to population health and military readiness. Addressing and reshaping economic, physical, social, and service environments can help provide opportunities and resources for health, support healthy behaviors, and create healthy communities.

a. Commanders at all levels are responsible for the health of their commands. Considerations of health can include the financial cost and benefits of health impacts of various decisions, distribution of health impacts across a population, and long-term health impacts that may be significant but may not be captured in short-term projections.

b. Commanders and other leaders should request and use information that considers the positive and negative health consequences of their decisions during decisionmaking processes.

H–2. Health lens processes

A health lens can be applied to decisionmaking through two primary processes—

a. Health in All Policies (World Health Organization, 2010) is one approach that allows Government agencies to think explicitly about incorporating health into decisionmaking. This involves assisting leaders and policymakers to integrate considerations of health, well-being, and equity during the development, implementation, and evaluation of policies and services.

(1) Commanders and leaders at all levels systematically seek PH personnel input into potential health considerations of all regulations, policies, programs, and operations orders that impact Soldiers and beneficiaries when these are updated or initially developed. The request for PH review is made in the early stages of program development, planning, and policymaking rather than after decisions have been made. These actions occur on an ongoing basis.

(2) Public health personnel throughout the Enterprise review and analyze the health considerations and implications of proposed actions and provide the analysis and recommendations to commanders and leaders in the form of a white paper or decision brief that summarizes the analysis and recommendations. This action should be completed no later than within 30 days of the commander's or leader's request.

(3) Installation PH authorities and regional health authorities provide an overview of PH capabilities to new commanders on the installation. This overview includes mention of the importance of considering health in all policies, how short-term decisions may have long-term impacts, and the PH expertise available to commanders for developing and/or implementing a health-in-all-policies approach. This action should occur within the first 45 days following a change of command or leadership.

(4) Public health authorities or personnel at all levels serve as subject matter experts in applying a health-in-all-policies approach and should advocate for this perspective in proceedings during which new regulations, policies, programs, or operations orders are discussed.

(5) The DCS–PH APHC provides tools and resources to assist installation PH authorities and other personnel carry out the duties described above.

(6) The AMEDDC&S HRCoE incorporates *Health in All Policies* into its preventive medicine curriculum.

b. Health Impact Assessment. The HIA is a practice that aims to bring a greater understanding of health consequences to public policy and decisionmaking. The HIA is a systematic process to determine the potential effects of a proposed action on the health of a population and the distribution of those effects within the population (National Research Council, *Improving Health in the United States: The Role of Health Impact Assessment*). The goal of an HIA is to inform a decisionmaking process in an effort to maximize the potential positive health impacts and minimize and/or avoid the potential negative impacts of decisions and actions. The HIA is a tool that can inform decisionmakers of potential outcomes or impacts related to health and well-being before the decision is made.

(1) Commanders and PH personnel or authorities will determine whether or not an HIA is feasible, timely, and would add value in a particular decisionmaking context or process. This action occurs on an ongoing basis as decision points arise.

(2) If an HIA is deemed appropriate, the commander and installation PH authority or other PH authority at that level will designate an HIA action team or consult with other Army agencies or on- or off-post partners to secure their assistance.

(3) If it is determined that Army agencies on the installation will lead the HIA directly, the HIA action team will scope the HIA by determining a plan and timeline for conducting it that defines priority issues to evaluate, methods for analysis, and participant roles. Recommended completion of this action is within 45 days of the commander's request.

(4) The HIA action team will gather data on existing conditions and evaluate health impacts using qualitative and quantitative research methods. Recommended completion of this action is no more than 90 days following the commander's request.

(5) The HIA action team will make evidence-based recommendations to the commander to improve the project, plan, or policy to mitigate any negative health impacts. Recommended presentation of these recommendations to the commander is no more than 120 days following the initial request.

(6) Commanders use the HIA findings to identify potential adverse or beneficial health consequences of a policy or program and incorporate these findings into the final decisionmaking. Considering HIA findings is most helpful during the development of, or an update to, a commander's campaign plan, a community's health improvement plan, or an installation's master plan, for example.

(7) The HIA action team will monitor and evaluate the impacts of the HIA on the decisionmaking process, the implementation of the decision, and the impact(s) of the decision on health indicators and health status.

(8) The DCS-PH APHC will provide subject matter expertise and consultation on HIA completion to commanders and PH personnel at all levels and will directly assist when requested and as resources allow.

Appendix I

Army Wellness Centers

I–1. Introduction

This appendix provides additional information on resources to support the planning, development, implementation, monitoring, and evaluation of Army Wellness Centers as described in chapter 12 of this pamphlet. Contact the APHC for further information regarding Army Wellness Center services and operations (https://phc.amedd.army.mil/topics/healthyliving/al/pages/armywellnesscenters.aspx) (see para 1–13).

I–2. Roles and responsibilities

Army Wellness Centers are a means to achieve the existing installation Health Promotion and Wellness mission along with the enhanced capabilities of fitness assessments and metabolic testing. Fulfilling these Army Wellness Center roles and responsibilities requires multiple levels of synchronization and collaboration across the following:

a. The APHC serves as the proponent for Army Wellness Centers and provides enterprise oversight and technical guidance in developing, implementing, sustaining, and program monitoring and evaluation of Army Wellness Center programs and services across the MEDCOM.

b. The MEDCOM provides funding to standardize Army Wellness Centers at designated Army installations (U.S. Forces Command, TRADOC, and AMC) to optimize health promotion and wellness services across the Force.

c. Regional health authorities provide regional oversight of Army Wellness Center implementation and sustainment to ensure compliance with program standards across the MEDCOM.

I–3. Army Wellness Center program constructs

The following program constructs are a necessary means to support a standardized evidence-based health promotion program that provides primary preventive services that are delivered consistently at every location.

a. Facilities. The facility operates within established space requirements. Army Wellness Centers should be located in nonclinical space and should meet the current *ACSM's Health/Fitness Facility Standards and Guidelines*. To determine overall facility space requirements, Army Wellness Center utilization rates will be estimated as one-third of the total installation population. Some Army Wellness Centers may require multiple testing areas to accommodate the needs of the population.

b. Staffing. All staff members are part of the Army Wellness Center staffing model. Assistance with staffing requirements must be provided based on the current Army Public Health staffing/manpower model. The APHC will assist with estimating the staffing model to ensure adequate staff exists to meet the Army Wellness Center mission. Each Army Wellness Center will include the following standardized mix of personnel, scaled to match the local installation population: Army Wellness Center Director (GS-12) or equivalent, Health Educator (GS-9/11) or equivalent, Health Promotion Technician (GS-7) or equivalent, and Administrative Support (GS-5) or equivalent.

c. Programs. Army Wellness Centers conduct the following evidence-based core programs only: Health Assessment Review, Physical Fitness, Healthy Nutrition, Stress Management, General Wellness Education, and Tobacco Education.

d. Equipment. Maintain a list of standard Army Wellness Center equipment, and maintain the equipment in working order. The exact amount of standard equipment necessary to support the Army Wellness Center core programs will be based on population and facility size.

I–4. Program monitoring and evaluation

a. Ongoing evaluation and monitoring are essential for continuous quality improvement and to ensure future program success.

b. Ongoing program monitoring and evaluation are conducted through APHC's Public Health Assessment Division. Army Wellness Center Operations utilizes informatics systems such as the AWCHWT, SMS, and electronic health record systems to manage program compliance with program constructs and track Army Wellness Center client participation in the program, health assessments, health risks, and changes in health risks. Periodic reports are provided to the MEDCOM and other stakeholders regarding information on program effectiveness across the network of Army Wellness Centers.

Glossary

Section I

Abbreviations

AAFES
Army and Air Force Exchange Service

ABHIDE
Army Behavioral Health Integrated Data Environment

ACGIH
American Conference of Governmental Industrial Hygienists

ACIP
Advisory Committee on Immunization Practice

ACOM
Army command

ACS
Army Community Service

ACSM
American College of Sports Medicine

ADP
Army Doctrine Publication

AFHSB
Armed Forces Health Surveillance Branch

AFI
U.S. Air Force instruction

AFMAN
U.S. Air Force manual

AFPMB
Armed Forces Pest Management Board

ALARACT
All Army Activities (message)

ALFOODACT
All Food Activities (message)

AMC
U.S. Army Materiel Command

AMEDD
U.S. Army Medical Department

AMEDDC&S, HRCoE
U.S. Army Medical Department Center and School, Health Readiness Center of Excellence

ANSI
American National Standards Institute

AOR
area of responsibility

APD
U.S. Army Publishing Directorate

APF
appropriated fund

APHC
U.S. Army Public Health Center

APHDR
Army Public Health Data Repository

APHEO
Assistant public health emergency officer

APHIS
Animal and Plant Health Inspection Service

APHN
Army public health nurse

APOW
Annual Plan of Work

AR
Army regulation

ARD
acute respiratory disease

ARF
acute rheumatic fever

ASA(IE&E)
Assistant Secretary of the Army (Installations, Energy, and Environment)

ASCC
Army service component command

ASD(HA)
Assistant Secretary of Defense (Health Affairs)

ASTM
American Society for Testing and Materials

ATAAPS
DOD Automated Time Attendance and Production System

ATP
Army Techniques Publication

ATSDR
Agency for Toxic Substances and Disease Registry

AVMED
aviation medicine

AWCHWT
Army Wellness Center Health and Wellness Tracker

BCA
base camp assessment

BMI
body mass index

BRAC
Base Realignment and Closure

BSAT
Biological Select Agents and Toxins

BUMEDINST
U.S. Marine Corps Bureau of Medicine instruction

CAC
common access card

CBPR
Community-based participatory research

CBRN
chemical, biological, radiological, and nuclear

CBRNE
chemical, biological, radiological, nuclear, and high-yield explosive

CCIR
Commander's Critical Information Request

CDC
U.S. Centers for Disease Control and Prevention

CFR
Code of Federal Regulations

CHA
Community Health Assessment

CHIP
Community Health Improvement Plan

CHSA
Community Health Status Assessment

CLIP
Clinical Laboratory Improvement Program

CMP
Cholinesterase Monitoring Program

CONUS
continental United States

COR
contracting officer's representative

CR2C
Commander's Ready and Resilient Council

CRG
community resource guide

CRL
Cholinesterase Reference Laboratory

CSTA
Community Strengths and Themes Assessment

CYSS
Child, Youth, and School Services

DA
Department of the Army

DA Pam
Department of the Army pamphlet

dB
decibel

dB(A)
decibels, A-weighted

DCS–PH
Deputy Chief of Staff, Public Health

DD Form
Department of Defense form

DEA
Drug Enforcement Agency

DFAS
Defense Finance and Accounting Service

DFEC
OWCP Division of Federal Employees' Compensation

DHA
Defense Health Agency

DHHS
U.S. Department of Health and Human Services

DLHWC
OWCP Division of Longshore and Harbor Workers' Compensation

DMED
Defense Medical Epidemiology Database

DMHRSi
Defense Medical Human Resources System-internet

DMRTI
Defense Medical Readiness Training Institute

DMSS
Defense Medical Surveillance System

DNBI
disease and non-battle injury

DOD
Department of Defense

DODD
Department of Defense directive

DODDS
Department of Defense Dependents Schools

DODI
Department of Defense instruction

DODM
Department of Defense manual

DODSER
Department of Defense Suicide Event Report

DODSR
Department of Defense Serum Repository

DOEHRS
Defense Occupational and Environmental Health Readiness System

DOEHRS–HC
Defense Occupational and Environmental Health Readiness System-Hearing Conservation

DOEHRS–IH
Defense Occupational and Environmental Health Readiness System -Industrial Hygiene

DOL
Department of Labor

DPW
Directorate of Public Works

DRSi
Disease Reporting System-internet

DRU
direct reporting unit

DSN
defense switched network

DTR
Defense transportation regulation

DU
depleted uranium

DVA
U.S. Department of Veterans Affairs

ECP
Exposure Control Plan

EEOC
U.S. Equal Employment Opportunity Commission

EHPSR
Environmental Health Program Status Report

ELIMS
Enterprise Laboratory Information Management System

EPA
Environmental Protection Agency

EPICON
epidemiological consultation

EPR
environmental program requirement

EPSBD
Entrance Physical Standards Board

ESEO
Environmental Science and Engineering Officer

ESSENCE
Electronic Surveillance System for the Early Notification of Community-based Epidemics

FDA
Food and Drug Administration

FECA
Federal Employees' Compensation Act

FGS
Final Governing Standards

FHP
Force Health Protection

FoC
Forces of Change

FR2
Force Risk Reduction

FST
field sanitation team

FWRA
food and water risk assessment

FY
fiscal year

GABHS
Group A beta-hemolytic streptococcal

GLP
Good Laboratory Practice

HAZCOM
hazard communication

HBV
hepatitis B virus

HCP
healthcare provider

HCV
hepatitis C virus

HEPA
high-efficiency particulate air

HHA
health hazard assessment

HIA
Health Impact Assessment

HIPAA
Health Insurance Portability and Accountability Act

HIV
human immunodeficiency virus

HQ
Headquarters

HQDA
Headquarters, Department of the Army

HRA
Health Risk Assessment

HTTKP
DOD Human Tick Test Kit Program

ICD
International Classification of Diseases

ICD–9–CM
International Classification of Diseases, 9th Revision, Clinical Modification

IEC
International Electrotechnical Commission

IET
initial entry training

IGRA
interferon-gamma release assay

IHPMD
Industrial Hygiene Program Management Division

IMCOM
U.S. Army Installation Management Command

IPM
Integrated Pest Management

IPMC
Installation Pest Management Coordinator

ISO
International Organization for Standardization

JP
Joint publication

KSA
knowledge, skills, and abilities

LHWCA
Longshore and Harbor Workers' Compensation Act

LPHSA
Local Public Health System Assessment

LTBI
latent tuberculosis infection

MCAM
Medical Cost Avoidance Model

MEDCOM
U.S. Army Medical Command

MEDPROS
Medical Protection System

MEM
Medical Emergency Manager

MESL
Military Exposure Surveillance Library

MHS
Military Health System

MIDI
Military Item Disposal Instruction

MIL–HDBK
military handbook

MIL–STD
military standard

MMWR
Morbidity and Mortality Weekly Report

m–NEAT
Military Nutrition Environmental Assessment Tool

MOA
memorandum of agreement

MODS
Medical Operational Data System

MOS
military occupational specialty

MOU
memorandum of understanding

m–PAC
Military Promoting Active Communities

MTF
medical treatment facility

MWR
Morale, Welfare, and Recreation

NAF
nonappropriated fund

NAFI
Nonappropriated Fund Instrumentalities

NAVMED
Navy medicine

NDAA
National Defense Authorization Act

NFPA
National Fire Protection Association

NIH
National Institutes of Health

NIOSH
National Institute for Occupational Safety and Health

NMCPHC
Navy and Marine Corps Public Health Center

NPDWR
National Primary Drinking Water Regulations

NPS
National Prevention Strategy

NRC
Nuclear Regulatory Commission

OCONUS
outside the continental United States

OEBGD
Overseas Environmental Baseline Guidance Document

OEH
occupational and environmental health

OEHSA
Occupational and Environmental Health Site Assessment

OEM
occupational and environmental medicine

OHPSR
Occupational Health Program Status Report

OIP
Organizational Inspection Program

OPM
Office of Personnel Management

OPORD
operations order

OPTEMPO
operational tempo

OSHA
Occupational Safety and Health Administration

OTSG
Office of The Surgeon General

OWCP
Office of Workers' Compensation Programs

P3
Performance Triad

P3T
pregnancy postpartum physical training

PA
physician's assistant

PAL
Privatized Army Lodging

PAO
public affairs officer

PCM
primary care manager

PEL
permissible exposure limit

PH
public health

PHA
periodic health assessment

PHEO
Public Health Emergency Officer

PHMS
Public Health Management System

PHSL
Public health service line

POEMS
Periodic Occupational and Environmental Monitoring Summaries

PPE
personal protective equipment

PRP
Personnel Reliability Program

QA
quality assurance

QC
quality control

QI
quality improvement

QMS
quality management system

RAC
risk assessment code

RADIAC
radiation detection, indication, and computation

RCI
Residential Communities Initiative

RCRA
Resource Conservation and Recovery Act

RME
reportable medical event

RMW
regulated medical waste

ROVR
Remote Online Veterinary Record

RVCT
Report of Verified Case of Tuberculosis

SAS
Streptococcal-ARD Surveillance

SASI
Streptococcal-ARD Surveillance Index

SB
supply bulletin

SF
Standard Form

SMS
Strategic Management System

SOFA
Status of Forces Agreement

SOP
standing operating procedure

STD
sexually transmitted disease

STI
sexually transmitted infection

TB
tuberculosis

TB MED
technical bulletin, medical

TC
Training circular

TDA
table of distribution and allowances

TFL
Tobacco Free Living

TFMC
Tobacco Free Medical Campus

TG
technical guide

TIB
toxic industrial biological

TIC
toxic industrial chemical

TIM
toxic industrial material

TIR
toxic industrial radiological

TLV
threshold limit value

TM
technical manual

TOE
Table of Organization and Equipment

TRADOC
U.S. Army Training and Doctrine Command

TSG
The Surgeon General

TST
tuberculin skin test

U.S.
United States

UFC
Unified Facilities Criteria

UPH
unaccompanied personnel housing

USAMRMC
U.S. Army Medical Research and Materiel Command

USC
United States Code

USDA
U.S. Department of Agriculture

UV
ultraviolet

VA
Veterans Administration

VCRP
Vision Conservation and Readiness Program

VSIMS
Veterinary Service Information Management System

VTF
veterinary treatment facility

WMSD
work-related musculoskeletal disorder

WQMT
water quality management team

WSERP
Water System Emergency Response Plan

WSVA
Water System Vulnerability Assessment

Section II

Terms

Acclimatization
Adaptation to a new environment or a change in the old environment.

Acute Respiratory Disease
Also called ARD. A flu-like illness with a fever of 100.5 degrees Fahrenheit or greater and any of the following symptoms: sore throat, cough, runny nose, chest pain, or generalized muscle aching. Infectious agents of greatest military significance include influenza, parainfluenza, adenoviruses, streptococci, and mycoplasmas.

Air pollution emission inventory
The measurement and documentation of actual and potential emission rates on installations for both criteria pollutants and hazardous air pollutants. These inventories are needed by installations for meeting regulatory agency annual emission reporting requirements; air permits; health risk assessments; annual fees; National Environmental Policy Act documents; general conformity; or emission reduction credits.

Animal waste
Animal waste includes animal carcasses, blood and blood derivatives, pathological waste, body parts, and bedding of animals known to have been exposed to infectious agents during research production of biologicals or testing of pharmaceuticals. Carcasses of road kills, euthanized animals, animals dying of natural causes, and waste produced by general veterinary practices are not considered animal waste.

Army personnel
As used in this publication, includes Regular Army; Army National Guard/Army National Guard of the United States and U.S. Army Reserve personnel on active duty or inactive duty for training status; U.S. Military Academy cadets; U.S. Army Reserve Officer Training Corps cadets, when engaged in directed training activities; other DOD and foreign national military personnel assigned to Army components; and Civilian personnel and nonappropriated fund personnel employed by the Army worldwide. Except for those PH services defined in DODI 6055.01 for supporting DOD contractor personnel during OCONUS Force deployments or specifically provided for in contracts between the Government and a contractor, Army contractor personnel are not included in this definition. Service members' dependents and co-residing Family members living on Army installations are also included in Army personnel for purposes of environmental health and safety, and wellness activities. Volunteers are considered Army personnel only to the extent noted in DODI 1100.21 (for example, during training).

Army populations
Army populations include Army personnel, Civilian beneficiaries, Retirees, military working animals, and family pets of Soldiers.

Benchmark
A standard of best practice against which performance is measured.

Biowarfare agents
Microorganisms (or toxins derived from them) that cause disease in man, plants, or animals, or that cause deterioration of material; have no justification for prophylactic, protective or other peaceful purposes; and are designed and intended for hostile use against men, animals, or plants.

Black wastewater (or black water)
Wastewater discharged from toilets and urinals containing concentrated human wastes and water from kitchen preparation areas containing concentrated food wastes.

Bloodborne pathogen
An infectious organism in the blood, of which the predominant medical interest is its contamination of blood-soiled linens, gowns, bandages, and other items from individuals in risk categories, needles and other sharp objects, and medical and dental wastes, all of which health workers are exposed to. This concept is differentiated from the clinical conditions of bacteraemia, viraemia, and fungaemia where the organism is present in the blood of a patient as the result of a natural infection process. Examples of such organisms include human immunodeficiency viruses and the hepatitis C virus.

Brine
As used in this publication, the membrane reject water from brackish or seawater reverse osmosis treatment that may constitute 40 to 60 percent of the influent water stream.

Case management
All the activities that a physician or other health care provider normally performs to ensure the coordination of health services required by a patient. When used in connection with managed care, case management also covers all the activities of evaluating the patient; planning treatment; referral; and follow-up so that care is continuous and comprehensive and payment for the care is obtained.

Chemical warfare agent or chemical agent
A chemical substance which, because of its physiological, psychological, or pharmacological effects, is intended for use in military operations to kill, seriously injure, or incapacitate humans (or animals) through its toxicological effects. Chemical agents may be nerve agents, incapacitating agents, blister agents (vesicants), lung-damaging agents, blood agents, and vomiting agents.

Chemoprophylaxis
In PH, the use of drugs, nutritional and mineral supplements, or other natural substances by asymptomatic persons to prevent future disease.

Climatic injury
Injury or illness from environmental extremes, such as heat, cold, and altitude.

Cold weather injuries
Include hypothermia (clinically significant depression of body temperature, resulting from either cold temperatures or immersion in cold water); frostbite due to the freezing of tissue fluids in skin or subcutaneous tissues from exposure to freezing conditions or objects (less than 32 degrees Fahrenheit or 0 degrees Celsius) resulting in mild (superficial) tissue damage to more severe deep tissue damage; immersion of hand/foot (also referred to as trenchfoot), and severe cases of chilblains that can occur after hours or days in non-freezing (as high as 60 degrees Fahrenheit) wet or damp conditions.

Communicable disease
Illness, due to a specific infectious agent or its toxic products, that arises through transmission of that agent or its products from an infected person, animal, or inanimate reservoir to a susceptible host, either directly or indirectly, through an intermediate plant or animal host, vector, or the inanimate environment. Synonymous with infectious disease.

Comprehensive health surveillance
Health surveillance conducted throughout Service members' military careers and DOD Civilian employees' employment, across all duty locations, and encompassing risk, intervention, and outcome data. Such surveillance is essential to the evaluation, planning, and implementation of PH practice and prevention and must be closely integrated with the timely dissemination of information to those who can act upon it (see DODD 6490.02E).

Contract working dog
Dogs that are owned by companies contracted by the DOD and required by the using DOD component for a specific purpose, mission, or combat capability. Contract working dogs are authorized medical care and support when in an operational environment. Scope of care provided to these dogs is defined in each company's individual contract.

Countermeasure
A barrier protecting, or contributing to the protection of, a Soldier from disease or injury. Policy; doctrine; individual knowledge; tactics, techniques, and procedures; PPE; immunizations; chemoprophylaxis; and detectors are examples of preventive medicine countermeasures.

Cross–connection
Any physical connection through which a supply of potable water could be contaminated or polluted, or a connection between a supervised potable water supply and an unsupervised supply of unknown potability.

Decibels, A–weighted
Also called dB(A). A measured sound spectrum that has been weighted to place less emphasis on low frequencies than on high frequencies in order to better represent the human ear.

Department of Defense–owned animals
Animals that are owned by the DOD and authorized care by the Army Veterinary Service. These animals include, but are not limited to, military working animals; authorized unit mascots; animals supported through appropriated and nonappropriated funds; stray animals on military installations in a DOD-operated stray facility for the first 3 working days; animals used in biomedical research, education, training, and testing; and wild animals in confinement on military installations, such as deer. See also "military working animals."

Deployment
The rotation of forces into and out of an operational area.

Disease and non–battle injuries
All illnesses and injuries not resulting from enemy or terrorist action or cause by conflict. Also called DNBI.

Drinking water surveillance
The monitoring, analysis, documentation, and reporting of drinking water quality.

Enterprise
An organization supporting a defined business scope and mission. An enterprise includes interdependent resources (people, organizations, and technology) that must coordinate their functions and share information in support of a common mission or set of related missions. See also "public health enterprise."

Enterprise governance process
The system of management and controls exercised in the stewardship (accountability, transparency, and fairness) of the enterprise, including strategic direction, monitoring, and evaluating performance, managing risk, and shareholder reporting.

Environmental health
The science and practice of preventing human injury and illness and promoting well-being by identifying and evaluating environmental sources of health hazards and preventing or limiting those exposures.

Environmental medicine
A medical specialty aligned with occupational medicine within the profession of preventive medicine that focuses on assessing environmental exposures, including environmental contaminants, to individuals or populations and the adverse health outcomes that may result from those exposures.

Environmental restoration
The cleaning up of pollution from contaminated sites caused by past Army operations or waste disposal practices; part of the Army Environmental Program.

Epidemiology
The most fundamental practice of PH, involves the study of the distribution and determinants of health-related states or events in specified populations and the application of this study to control health problems. Distribution refers to time, place, and person (demographics, behavioral characteristics). Determinants include causes, risks, or exposure types/volumes of activities, disease agents, or external OEH hazards. Health-related states or events are health outcomes (see "health outcome**"**) (see *Public Health and Preventive Medicine*, 2007).

Ergonomics
The field of study that seeks to fit the job to the person, rather than the person to the job. This is achieved by the identification, assessment and remediation of work related musculoskeletal disorder risk factors and evaluation, design and modification of workplaces, environments, jobs, tasks, equipment, and processes in relationship to human capabilities and interactions in the workplace.

Exertional heat injuries
Represent a continuum of injury severity, from milder forms of tissue damage that cause physical collapse and/or minor debilitation occurring during or immediately following exertion in the heat to more severe life-threatening conditions involving multiple organ damage and profound altered mental status. These clinically significant medical conditions are defined by three categories of severity in AR 40–501. Included in the Heat Injury and Heat Stroke categories are diagnoses for exertion-associated rhabdomyolysis (even in absence of hot environment, exertion-associated hyponatremia—the imbalance of electrolytes— is potentially fatal).

Feral animal risk mitigation
Policies, procedures, and practices collectively employed in an operational area to reduce the traumatic injury and disease risks posed by feral animals. Feral animals are free-roaming animals, usually a domestic species, with no apparent owner (see AFPMG TG No. 3).

Field confirmatory identification
The employment of technologies with increased specificity and sensitivity by technical forces in a field environment to identify CBRN hazards with a moderate level of confidence and the degree of certainty necessary to support follow-on tactical decisions (see ATP 3-11.37/MCWP 3–37.4/NTTP 3–11.29/AFTTP 3–2.44).

Field investigation
An epidemiological field investigation entailing the collection of quantified and/or observational health outcome and/or health hazard data of a specified location or targeted population either onsite or through virtual means (for example, surveys). Results can be used to determine whether health outcomes or hazards indicate unidentified health problems or whether a program or intervention is improving health outcomes or reducing exposures to health hazards.

Field sanitation team
Also called **FST**. At least two Soldiers from a company- or battery-sized unit who are appointed and trained to perform field sanitation activities for their unit. One of the team members must be a noncommissioned officer when organic medical personnel are not available. If available, one member should be a medic and the leader of the FST.

Force Health Protection
Measures to promote, improve, or conserve the mental and physical well-being of Service members to enable a healthy and fit force, prevent injury and illness, and protect the force from health hazards.

Garrison
Organization responsible for providing installation management services and operations. An Army garrison is a TDA organization that manages Army installations. Garrison command, the execution arm of the IMCOM, delivers the majority of installation management services to both resident and nonresident organizations. The garrison's mission, which is linked to the installation's purpose, is to provide installation management programs and services for mission activity commanders, Soldiers, Civilians, Family members, and Retirees.

Gray wastewater (or gray water)
Wastewater discharged from washing machines, laundry sinks, hand-washing sinks, showers and bathtubs that does not contain concentrated animal waste or human sanitary or food wastes.

Hazard communication
A formal program mandated by Federal law to reduce occupational illness and injury resulting from chemical exposures. Employees must be informed of the identities and hazards of the chemicals with which they work by means of a written HAZCOM program, warning labels, and material safety data sheets. Employees must be trained regarding the measures for preventing chemical exposures and what to do if a spill or exposure occurs.

Hazardous material/waste
Solid material/waste, or a combination of material/waste (except those excluded in 40 CFR 261.4(b)), that because of its quantity, concentration, or physical, chemical, or infectious characteristics, may—

a. Be a solid, liquid, semi-solid, or contained gaseous material.

b. Cause or significantly contribute to an increase in mortality or an increase in serious, irreversible or incapacitating, reversible illness.

c. Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

Health communication
The study or use of communication strategies to inform and influence individual and community decisions that enhance health. See also "public health communication."

Health hazard
An existing or likely condition, inherent to the operation or use of materiel, that can cause death, injury, acute or chronic illness, disability, and reduced job performance by exposure to acoustic energy, biological substances, chemical substances, oxygen deficiency, radiation energy, shock, temperature extremes and humidity, trauma, and vibration.

Health hazard assessment
The application of biomedical knowledge and principles to document and quantitatively determine the health hazards of Army materiel, processes, or environments. This assessment identifies, evaluates, and recommends controls to reduce risks to the health and effectiveness of personnel who operate or maintain Army materiel. This assessment includes the evaluation of hazard severity, hazard probability, risk assessment, consequences, and operational constraints; the identification of required precautions and protective devices; training requirements; and an estimate of medical cost avoidance.

Health Hazard Assessment Program
One of the domains of the Army's Manpower and Personnel Integration Program. The Health Hazard Assessment Program, in support of the Army materiel acquisition decision process, exists to identify and eliminate or control health hazards associated with the life cycle management of new materiel and weapons systems. The Program focuses on potential health hazards from training, combat, maintenance, and disposal.

Health marketing
Involves creating, communicating, and delivering health information and interventions using customer-centered and science-based strategies to protect and promote the health of diverse populations (see CDC, 2011a).

Health outcome
A direct measure or criteria representing a person's physical and/or mental health status. Adverse health outcomes include diagnosed or reported medical conditions (disease, physical or mental, sign or symptom) and abnormal medical or laboratory results (for example, abnormal audiology exam). Clinically significant biological markers of disease or injury in an exposed population (such as cholinesterase, radiation, blood-lead levels) may also be identified as a health outcome for medical evaluations and medical surveillance of specifically exposed populations (adapted from *Public Health and Preventive Medicine*, 2007).

Health risk assessment
Health risk assessment is both a process and a professional discipline. The health risk assessment process is used to estimate risks by synthesizing available information to identify health hazards; the probability or likelihood of exposure; the magnitude and timing of exposure; the specific kinds of injury, illness, or other effects caused by exposure; the severity of effects; and the probability or likelihood that exposure will result in predicted effects. As a PH discipline, health risk assessment is a multidisciplinary field of practice that is focused around the methods used to evaluate exposure to hazards, predict health risks and outcomes, and inform decisionmaking to control or otherwise respond to unacceptable exposures to health hazards.

Health risk communication
See "risk communication" and "public health communication."

Health surveillance
The overarching term that describes all aspects and types of surveillance related to human and animal health. Health surveillance is made up of sub-elements, including medical surveillance, which examine health outcomes (such as disease and injury) based on diagnoses recorded in healthcare IM/IT systems; and OEH surveillance, which focuses on exposures (not outcomes), such as those described through analyses of air, water, and other media. Health surveillance is the regular or repeated collection, analysis, and interpretation of health-related data and the dissemination of information to monitor the health of a population and to identify potential health risks, thereby enabling timely interventions to prevent, treat, reduce, or control disease and injury. It includes OEH surveillance and medical surveillance (see DODD 6490.02E).

Health threat
A composite of ongoing or potential enemy actions; adverse environmental, occupational, and geographic and meteorological conditions; endemic diseases; and employment of CBRN weapons (to include weapons of mass destruction) that have the potential to affect the short- or long-term health (including psychological impact) of personnel (see JP 4–02).

Hospital–acquired (nosocomial) infection
A localized or systemic condition that (1) results from adverse reaction to the presence of an infectious agent(s) or its toxin(s), and (2) was not present or incubating at the time of a person's admission to a hospital.

Industrial hygiene
The science and art devoted to anticipation, recognition, evaluation, prevention, and control of those environmental factors or stresses, arising in or from the workplace or the community, that may cause sickness, impaired health and well-being, or significant discomfort among workers or among citizens of the community.

Infectious disease
A disease resulting from the presence and activity of a microbial agent.

Injury
The damage or interruption of normal body tissue function caused by an energy transfer that exceeds the threshold of tissue tolerance, either suddenly (acute trauma, such as broken bones, sprains, wounds) or gradually (cumulative micro-trauma, such as musculoskeletal overuse injuries resulting from physically demanding Soldier training activities). Injuries are categorized based on the causal energy (mechanical, thermal, radiant, nuclear, chemical, or electrical) or the inhibition of an essential element.

Installation environmental noise management plan
An installation plan to implement the Army Environmental Noise Management Program locally. The plan addresses the identification and mitigation of noise and vibration sources and environments; long-range installation land use planning; management of noise complaints; education of civilian and military communities; and coordination with planning and zoning officials to maintain compatible land use, both on and off the installation.

Installation medical authority
The commander or director of the MTF.

Installation public health authority
The senior PH professional as designated or recognized by TSG or DHA as the commander, director, or chief of an installation's PH program. The installation PH authority is responsible for integrating, coordinating, and synchronizing the delivery of the Army PH Program for the installation.
Note. Prior to the 2017 NDAA, the MTF's Chief of the Preventive Medicine Department, under the medical commander, was responsible for installation preventive medicine services. Veterinary services were administered through the Public Health Command Activity. Changes to the organizational structure of the Army Medical Department (and MEDCOM) are pending at the time of this pamphlet's publishing based on decisions from the 2017 NDAA, which may remove the function of PH from the MTF and combine the former functions of preventive medicine and veterinary services under a single organization/department.

Installation public health program
The organization or department, under the leadership of the installation PH authority, responsible for providing PH services and support activities for the installation to ensure Army readiness.

International Classification of Diseases, 9th Revision, Clinical Modification (ICD–9–CM) code
The official system of assigning codes to diagnoses and procedures associated with hospital utilization in the U.S. The ICD–9 code is used to classify mortality data from death certificates. The ICD–9–CM consists of a tabular numerical list of disease codes; an alphabetical index to the disease entries; and a classification system for surgical, diagnostic, and therapeutic procedures.

Ionizing radiation
Charged subatomic particles and ionized atoms with kinetic energies greater than 12.4 electron volts, electromagnetic radiation with photon energies greater than 12.4 electron volts, and all free neutrons and other uncharged subatomic particles (except neutrinos and antineutrinos).

Medical surveillance
The ongoing, systematic collection, analysis, and interpretation of data derived from instances of medical care or medical evaluation, and the reporting of population-based information for characterizing and countering threats to a population's health, well-being, and performance (see DODD 6490.02E). See also health surveillance.

Medical surveillance system
An integrated set of information management capabilities, information technologies, databases, and procedures for the collection, analysis, archiving, and dissemination of information in support of PH activities.

Medical treatment facility
As used in this publication, an MTF is a Civilian or uniformed services medical center, hospital, clinic, or other facility that is authorized to provide medical care.

Military working animals
Animals that are owned by the DOD, have a specific military mission, and are considered active duty Service Members for the purposes of medical care and support while on active duty. These animals include, but are not limited to, military working dogs, military working equids, and marine mammals.

Morbidity
A diseased condition or state; the incidence of a disease or of all diseases in a population.

Nonionizing radiation
Electromagnetic radiation with photon energies less than 12.4 electron volts.

Occupational and environmental health
Human health issues impacted by hazardous materials, agents, organisms, or conditions found in a specific work environment or in the natural environment.

Occupational and environmental health surveillance
The regular or repeated collection, analysis, archiving, interpretation, and dissemination of OEH-related data for monitoring the health of, or potential health hazard impact on, a population and individual personnel, and for intervening in a timely manner to prevent, treat, or control the occurrence of disease or injury when determined necessary (see DODD 6490.02E). See also health surveillance.

Occupational and environmental health threat
Any condition or situation that could result in an exposure to Army personnel and military working animals, which could lead to the development of an acute, delayed, or chronic health effect. Occupational and environmental health threats include, but are not limited to, the following:

a. Accidental or deliberate release of weaponized or non-weaponized TICs/TIMs, physical hazards (such as ionizing and nonionizing radiation, noise, heat, cold, and altitude) and the hazards/residue from the use of CBRNE material.

b. Food-, water-, vector-, and arthropod-borne threats, endemic diseases, zoonotic diseases, residues, or agents naturally occurring or resulting from previous activities of U.S. Forces or other concerns, such as non-U.S. military forces, local national governments, or local national agricultural, industrial, or commercial activities.

c. The TICs/TIMs or hazardous physical agents (such as noise levels, blast over-pressure, and ionizing and nonionizing radiation) currently being generated as a by-product of the activities of U.S. Forces or other concerns (including pre-deployment activities), such as non-U.S. military forces, local national governments, or local national agricultural, industrial, or commercial activities.

d. Combat and operational stress.

e. Nontraditional OEH threats/exposures, such as blast injury and embedded metal fragments; these threats may not be managed through traditional risk management activities, but Soldier exposures must be recorded, monitored, reported, and managed.

Occupational health
Promotes maintenance of the highest degree of physical and mental health and well-being of employees by monitoring employee health and identifying and eliminating or mitigating workplace hazards. Occupational health supports human resources and line management when making employment decisions to hire, retain, terminate, or accommodate civilian employees. Occupational health involves the integrated application of many different disciplines including industrial hygiene, ergonomics, physical therapy, laboratory science, policy development and implementation, epidemiology, statistics, engineering, education, psychology, computer science, nursing, and medicine.

Occupational medicine
A medical specialty aligned with environmental medicine and AVMED under the umbrella of preventive medicine. Occupational medicine focuses on the prevention of work-related injuries and illnesses in employees and groups of employees, and provides medical advisory support to human resource personnel and line managers who make civilian employment decisions regarding hiring, retention, termination, and accommodation. Diagnosis and treatment may, but does not necessarily, occur as part of occupational medicine practice. Occupational medicine practitioners work closely with disciplines that monitor and analyze potential work-related hazards, to include industrial hygiene, laboratory science, ergonomics, and safety.

One Health
One Health is the integrative effort of multiple disciplines working locally, nationally, and globally to attain optimal health for people, animals, and the environment. One Health recognizes that the health of people is connected to the health of animals and the environment (see CDC, 2018).

Operating company model
A business framework that seeks consistency of experience across the enterprise by both patients and medical staff. It is the abstract representation of how an organization operates across process, organization, and technology domains in order to accomplish its function. The operating company model reduces operational complexity and describes the way a 21st-century organization does business today.

Operational public health
Operational PH is the application of the principles and practices of PH in the operational setting and during field training activities.

Oversight
The process whereby the overseeing agency has the authority to "stop work" within an overseen agency to ensure that program or function process execution, outputs, and outcomes are within policies and standards.

Packaged water
Potable water intended for human consumption and sealed in containers or packages with no added ingredients except that it may contain safe and suitable antimicrobial agents. In the military, packaged water is further defined as water that has been produced and packaged by the military for military use in field environments.

Palliative treatment
Treatment to relieve symptoms of a disease or injury, but not to cure it. Frequently takes the form of making the patient more comfortable through pain management.

Permissible exposure limit
An 8-hour time-weighted average occupational health standard promulgated by the Occupational Safety and Health Administration to safeguard workers against dangerous contaminants in the workplace. Also called PEL.

Personal protective equipment
Specialized clothing or equipment worn or used by an individual for protection against a hazard. General clothing (for example, uniforms, pants, shirts, blouses) not specifically intended to function as protection against a hazard is not considered to be PPE. Also called PPE.

Personal protective measure
Individual tactics, techniques, procedures, and personnel equipment intended to protect an individual from disease or injury.

Pest
Arthropods, birds, rodents, nematodes, fungi, bacteria, viruses, algae, snails, marine borers, snakes, and other organisms (except for human or animal disease-causing organisms) that adversely affect readiness, military operations, or the health and well-being of personnel and animals; attack or damage real property, supplies, equipment, or vegetation; or are otherwise undesirable.

Pollution prevention
Source reduction, as defined in the Pollution Prevention Act of 1990; and any other practice that reduces or eliminates the creation of pollutants through increased efficiency in the use of raw materials, energy, water, or other resources. Includes alternate processes, methods, and products that avoid, prevent, or reduce contaminant release to the environment.

Population health
The overall health status of a specified population, determined by a set of selected qualitative and quantitative health metrics. The aggregate health outcome of the health-adjusted life expectancy (quality and quantity) of a group of individuals, in an economic framework that balances the relative marginal return from the multiple determinants of health.

Potable water
Water that has been examined and treated to meet appropriate standards and declared fit for domestic consumption by an appropriate medical authority.

Public health
The science and practice of promoting, protecting, improving, and, when necessary, restoring the health of individuals, specified groups, or the entire population (adapted from *A Dictionary of Public Health*, 2007). Public health encompasses a wide range of capabilities, organizations, and professional disciplines operating in a systematic manner to effectively execute the 10 Essential Public Health Services. Also called PH.

Public health communication
Health communication is the scientific development, strategic dissemination, and critical evaluation of relevant, accurate, accessible, and understandable health information communicated to and from intended audiences to advance the health of the public (see Bernhardt, 2004). PH communication may provide risk-based information or health education.

Public health emergency
According to DODI 6200.03, a PH emergency is an occurrence or imminent threat of an illness or health condition that may—

a. Be caused by biological incident, manmade or naturally occurring; the appearance of a novel, previously controlled, or eradicated infectious agent or biological toxin; natural disaster; chemical attack or accidental release; radiological or nuclear attack or accident; high-yield explosive detonation, and/or zoonotic disease.

b. Pose a high probability of a significant number of deaths in the affected population considering the severity and probability of the event; a significant number of serious or long-term disabilities in the affected population considering the severity and probability of the event; widespread exposure to an infectious or toxic agent, including those of zoonotic origin, that poses a significant risk of substantial future harm to a large number of people in the affected population; and/or health care needs that exceed available resources.

c. Require notification to the World Health Organization as a potential Public Health Emergency of International Concern.

Public health enterprise
The set of command and technical staff relationships, both vertical and horizontal, throughout the U.S. Army, functioning as a unified Army PH team, implementing a cohesive, standardized approach to Army PH planning, resourcing, and asset distribution. See also enterprise and enterprise governance process.

Public health enterprise governance
The set of command and technical staff relationships, both vertical and horizontal; standardization of best practices; management controls; oversight and monitoring functions providing accountability; and quality improvement. See also enterprise governance process and public health enterprise.

Public health laboratory
Analyzes a range of food, environmental, entomological, and industrial hygiene samples for a variety of chemical and radiological contaminants as well as infectious diseases. PH laboratories provide services that may be unavailable or are cost-prohibitive elsewhere. These laboratories collaborate closely with national and local laboratories in the U.S. and in foreign countries to prevent and control health threats. (Adapted from the Association of Public Health Laboratories, https://www.aphl.org/).

Public health nurse/Army public health nurse
A registered nurse who has successfully completed a post-baccalaureate program of study that prepares the registered nurse to provide population-centered nursing services, including epidemiological and health promotion support, to individuals, families, and groups in the community.

Public Health Response Teams
Teams consisting of subject matter experts who are sufficiently trained and prepared to provide the appropriate level of response on order of TSG/MEDCOM, at the request of legitimate civil, Federal, or defense authorities. These teams provide short-duration medical augmentation to regional domestic, Federal, and DOD agencies responding to disaster, civil-military, humanitarian, and emergency incidents.

Qualified expert (radiation protection)
A person who, by virtue of training and experience, can provide competent authoritative guidance about certain aspects of radiation safety. Being a qualified expert in one aspect of radiation safety does not necessarily mean that a person is a qualified expert in a different aspect (see DA Pam 385–24).

Radiation safety officer
The person that the commander designates, in writing, as the executive agent for the command's radiation safety program. Same as radiation protection officer or health physics officer.

Recreational waters
Manmade and natural aquatic venues such as swimming pools, spas/hot tubs, spray/splash pads, and natural bathing beaches established and operated by the Army.

Regional health authority
The regional health authority is designated as having responsibility to administer or oversee all medical activities (to include PH) at MTFs, installations, and facilities within their AOR. Examples prior to the 2017 NDAA include Regional Health Commands and Regional Public Health Commands.

Regulated medical waste
Also called RMW. Waste generated in the diagnosis, treatment, research, or immunization of human beings or animals and is capable of causing disease or which, if not handled properly, poses a risk to individuals or a community. These wastes are also called "infectious waste," "biohazardous waste," "clinical waste," "biomedical waste," or simply "medical waste." Terms will vary based upon locality and host nations; States; or local laws that may include additional wastes classified as RMW that are not identified here.

Rem
A unit of any of the quantities expressed as a dose equivalent. The dose equivalent in rems is equal to the absorbed dose in rads multiplied by the quality factor (1 rem = 0.01 sievert).

Reproductive hazard
A physical, chemical, biological, or radiological hazard that can adversely affect male and female reproductive systems as well as the health of fetuses.

Risk communication
An interactive process to exchange information and opinion to facilitate informed decisions about real or perceived health threats. Risk communication is subset of PH communication and is accomplished through building and maintaining relationships based on mutual trust and credibility.

Risk management
The process of identifying, assessing, and controlling risks arising from operational factors and making decisions that balance risk cost with mission benefits.

Risk management plan
An installation plan required by the Clean Air Act to prevent accidental releases to the air of the hazardous substances listed in Section 112 of the Clean Air Act Amendments of 1990 and to control and mitigate the consequences of any such release.

Safety data sheet
A set of basic information on a particular material or chemical product. The information addresses properties and potential hazards, how to use the material or chemical safely, and what to do in case of an emergency.

Secondary prevention
Public health measures taken to identify and treat asymptomatic persons who have already developed risk factors or preclinical disease, but in whom the condition has not yet become clinically apparent. The aim of secondary prevention is to detect and correct departures from good health as early as possible; in other words, to reduce the prevalence of disease and injury.

Self–harm
Self-inflicted, potentially injurious behavior for which there is evidence (either explicit or implicit) that the person did not intend to die.

Senior commander
An officer designated on orders from HQDA as the senior commander of an installation. Normally the senior general officer at the installation. The senior commander's mission is the care of Soldiers, Families, and Civilians, and to enable unit readiness. While the delegation of senior command authority is direct from HQDA, the senior commander will routinely resolve installation issues with the IMCOM and, as needed, the associated ACOM, ASCC, or DRU.

Stress reaction (combat and operational)
Acute, debilitating mental, behavioral or somatic symptoms thought to be caused by operational or combat stressors that are not adequately explained by physical disease, injury, or preexisting mental disorder, and that can be managed with reassurance, rest, physical replenishment (hydration, food, hygiene, sleep), and activities that restore confidence.

Suicidal ideation
Thinking about, considering, or planning suicide.

Suicide
Death caused by self-directed injurious behavior with an intent to die as a result of the behavior.

Suicide attempt
A non-fatal, self-directed, and potentially injurious behavior with any intent to die as a result of the behavior. A suicide attempt may or may not result in injury.

Surety program
A specialized program of products and services designed to ensure that chemical or biological warfare materials, nuclear materials, or nuclear reactors are handled safely and securely and that personnel working with these materials are protected appropriately. An important component of a surety program is a personnel reliability program.

Sustainment training
Training beyond that which awards an MOS (MOS-producing training) and other training provided in TRADOC schools.

Tertiary prevention
Public health measures taken that are part of the treatment and management of symptomatic persons with clinical diseases and injuries. The aim of tertiary prevention is to prevent further complications and reduce risk factors for continued deterioration of health.

Theater validation
Theater validation identification is the employment of multiple independent, established protocols and technologies by scientific experts in the controlled environment of a fixed or mobile/transportable laboratory to characterize a CBRN hazard with a high level of confidence and the degree of certainty necessary to support operational-level decisions (see ATP 3-11.37/MCWP3-37.4/NTTP3-11.29/AFTPP 3-2.44).

Threshold limit value
The maximum concentration of a chemical recommended by the ACGIH for repeated exposure without adverse effect on workers. Also called TLV.

Total surveillance (incidence) rate
Number of new cases of a disease or injury occurring in the population during a specified period of time divided by the number of persons exposed to risk of developing the disease or injury during that period of time.

Toxic industrial materials
A generic term for toxic, chemical, biological, or radioactive substances in solid, liquid, aerosolized, or gaseous form that may be used, or stored for use, for industrial, commercial, medical, military, or domestic purposes. Also called TIM. TIMs include the following:

a. Toxic industrial biological. Any biological material manufactured, used, transported, or stored by industrial, medical, or commercial processes which could pose an infectious or toxic threat. Also called TIB.

b. Toxic industrial chemical. A chemical developed or manufactured for use in industrial operations, or research by industry, government, or academia, that poses a hazard. Also called TIC.

c. Toxic industrial radiological. Any radiological material manufactured, used, transported, or stored by industrial, medical, or commercial processes. Also called TIR.

Travel medicine
Public health services provided to personnel traveling or residing outside the United States, especially in developing countries. Services include medical advice, medical record review, screening tests, immunizations, chemoprophylaxis, and personal protective measures.

Vector
An organism, such as an insect or animal, that can transmit pathogens.

Veterinary food protection surveillance
The regular or repeated collection, analysis, archiving, interpretation, and dissemination of food protection data from veterinary food safety and food defense activities for monitoring the health of, or potential hazard impact on, the Joint Force, authorized beneficiaries, and DOD Civilians, and to identify potential health risks enabling timely interventions to prevent, reduce, or control the occurrence of disease as part of comprehensive, Joint FHP.

Veterinary services
The Army Veterinary Service comprises the practice of veterinary medicine and surgery, including diagnosis and treatment of sick or injured animals; animal health and zoonotic disease surveillance; epidemiology; control and prevention of zoonoses; food protection; management of health aspects of laboratory animal facilities and diagnostic laboratories; biomedical research; health education and extension; production and control of biological products and medical devices; shared management of domestic and wild animal populations; and assisting in preparing for and responding to PH emergencies.

Work/rest cycle
A pattern of wake, sleep, and work hours. Control of this pattern through administrative guidelines and training, monitoring of work/rest cycles, monitoring the onset of fatigue, and work and sleep rules is intended to reduce inadvertent or unintentional fatigue factors.