



NAVY AND MARINE CORPS PUBLIC HEALTH CENTER
PREVENTION AND PROTECTION START HERE

Occupational and Environmental Medicine Field Operations Manual
NMCPHC TM 6260.9A

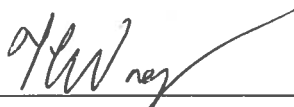
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Preface

As in previous editions, this update of NMCPHC TM 6260.9, Occupational and Environmental Medicine (OEM) Field Operations Manual (FOM), was developed to complement and clarify, but not replace, applicable Navy instructions. It defines the standard of care for delivery of OEM services. This updated edition is the effort of the following subject matter experts in the OEM, Radiation Health, and Audiology Divisions of the OEM Department at the Navy and Marine Corps Public Health Center (NMCPHC): Alan Philippi, CAPT, MC, Department Head, Jessica Hameed, LCDR, MC, Brian Hobbs, DA, Christopher Jackson, LCDR, MSC, Loraine O'Berry, RN (retired), James Pate, CDR, MC (retired), and John Muller, MD, MPH (primary editor).

Reviewed and Approved



T. L. Wagner, CAPT, MC, USN
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Notification of Changes

Changes were made to this manual on November 8, 2019. Form SF-66D was corrected to SF-66C. B-reader was changed to B reader. A statement was added that storage of X-rays is the responsibility of Radiology, and a statement was added that medical records of foreign nationals in OCONUS locations are to be stored and disposed of according to host nation regulations. The contact information for storage of civilian records was corrected. The frequency of spirometry training was added. Information and procedures related to the asbestos medical surveillance program were updated. The authorized version of OF 178 was corrected.

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Acronym	Definition
ABOHN	American Board for Occupational Health Nurses, Inc.
ABPM	American Board of Preventive Medicine, Inc.
ACOEM	American College of Occupational and Environmental Medicine
ADA	American's with Disabilities Act
ALARA	As Low As Reasonably Achievable
AMSP	Asbestos Medical Surveillance Program
ANSI	American National Standards Institute
AOBPM	American Osteopathic Board of Preventive Medicine
BAMT	Blood Assay for Mycobacterium Tuberculosis
BUMED	Bureau of Medicine and Surgery
CD	Compact Disc
CDC	Centers for Disease Control and Prevention
CERC	Crisis and Emergency Risk Communication
CFR	Code of Federal Regulations
CI	Confidence Interval
CMV	Commercial Motor Vehicles
CXR	Chest X-Ray
DoD	Department of Defense
DOEHRS-HC	Defense Occupational and Environmental Health Readiness System Hearing Conservation
DoN	Department of the Navy
DoL	Department of Labor
DOT	Department of Transportation
DTIC	Defense Technical Information Center
EMFS	Employee Medical File System
ENT	Otorhinolaryngologist
EPA	Employee Assistance Program
FDA	Food and Drug Administration
FECA	Federal Employees' Compensation Act
FFD	Fitness for Duty
FMCSA	Federal Motor Carrier Safety Administration
FMF	Fleet Marine Forces
FOM	Field Operations Manual
FRC	Federal Records Center
HCP	Hearing Conservation Program
HCW	Health Care Worker
HR	Human Resources
ICPA	Injury Compensation Program Administrators
IDC	Independent Duty Corpsman
IH	Industrial Hygiene
IIHI	Individually Identifiable Health Information
ILO	International Labour Organisation
LHWCA	Longshore Harbor Workers' Compensation Act
MML	Master Materials License
MMO	Medical Matrix Online
MTF	Military Treatment Facility
NAF	Non-Appropriated Fund
NAVOSH	Navy Occupational Safety and Health

Acronym	Definition
NAVSAFECEN	Naval Safety Center
NDRS	Naval Disease Reporting System
NETC	Naval Education and Training Command
NFPA	National Fire Protection Association
NIHL	Noise Induced Hearing Loss
NIOSH	National Institute for Occupational Safety and Health
NMCPHC	Navy and Marine Corps Public Health Center
NRC	Nuclear Regulatory Commission
NRMP	Naval Radioactive Materials Permit
NRSC	Naval Radiation Safety Committee
OCONUS	Outside the Continental United States
OEM	Occupational and Environmental Medicine
OH	Occupational Health
OHC	Occupational Health Clinic
OMPA	Occupational Medicine Program Assessment
OPM	Office of Personnel Management
OPNAV	Office, Chief of Naval Operations
OPNAVINST	Office, Chief of Naval Operations Instruction
OSH	Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
OWCP	Office of Workers' Compensation Programs
PAT	Process Action Team
Pb	Lead
PD	Position Description
PEL	Permissible Exposure Limits
PHI	Protected Health Information
PPE	Personal Protective Equipment
PTS	Permanent Threshold Shift
QMB	Quality Management Boards
RAM	Residency in Aerospace Medicine
RF	Radiofrequency
RSO	Radiation Safety Officer
SECNAV	Secretary of the Navy
SECNAVINST	Secretary of the Navy Instruction
SDS	Safety Data Sheets
SOAP	Subjective, Objective, Assessment, Plan
TB	Tuberculosis
TLD	Thermoluminescent Dosimeters
UMO	Undersea Medical Officer
WC	Worker's Compensation
WESS	Web-Enabled Safety System

I. INTRODUCTION

A. Purpose

This Field Operations Manual (FOM) is to provide uniformity to the naval Occupational and Environmental Medicine (OEM) Program by standardizing medical surveillance and job certification procedures of employees, the management of occupational injuries and illnesses, their reporting and recordkeeping requirements, and training and certification requirements for OEM service providers. The goal of the OEM program is to provide all personnel a safe and healthy workplace. (The terms “workplace” and “worksites” are interchangeable, and are both used in reference documents. For consistency, “workplace” will be used here.) This manual is intended to complement and clarify, but not replace, applicable Navy instructions; it defines the standard of care for the delivery of OEM services within the Department of the Navy (DoN).

B. Applicability

The FOM applies to all naval military and civil service personnel; however, the limitations inherent to uniquely military operations require flexibility in implementation of medical surveillance requirements for those operational forces. This manual is also applicable to foreign nationals who work for the DoN as determined by the Status of Forces Agreement negotiated with the host country as well as contract workers whose contracts include OEM services at the cost of the DoN.

C. Background

The Occupational Safety and Health (OSH) Act of 1970¹ requires the head of each federal agency “to establish and maintain an effective and comprehensive OSH program which is consistent with the standards promulgated” by the OSH Act to protect workers in the private sector.² Department of Defense (DoD) Directive 4715.1series establishes the OSH Program, and assigns Under Secretary of Defense for Acquisition, Technology, and Logistics USD (AT&L) to oversee the Program.³ The DoD OSH Program is described in DoD Instruction 6055.01series.⁴ DoD Instruction 6055.01 tasks DoD Component heads to establish programs that implement the requirements and procedures of the instruction.⁵ Secretary of the Navy (SECNAV) Instruction (SECNAVINST) 5100.10series establishes the DoN safety, occupational health and fire protection programs, and directs that they shall be implemented for the SECNAV through the Assistant Secretary of the Navy (Installations and Environment) (ASN(I&E)).⁶ The Navy OSH (NAVOSH) Program is described in detail in Office of the Chief of Naval Operations (OPNAV) Instruction (OPNAVINST) 5100.19series (applicable to shipboard operations)⁷ and OPNAVINST 5100.23series (applicable to ashore operations).⁸ OPNAVINST 5100.23 assigns NAVOSH roles to the commanders of the systems commands (SYSCOMs), the Chief, Bureau of Medicine and Surgery (BUMED), the Commander, Naval Safety Center (COMNAVSAFECEN), and the Commander, Naval Education and Training Command (NETC).⁹ NAVOSH is comprised of Safety, Industrial Hygiene (IH) and OEM; these three disciplines work together to provide a safe and healthful work environment for all naval personnel. OPNAVINST 5100.23 also states that “Contractors must comply with applicable Federal, State, and local codes and standards, including SOH requirements, as well as any additional specific requirements invoked by contract,” and further describes the role of NAVOSH in relationship to contractors.¹⁰

The main sources of the NAVOSH standards used in OEM programs are the following:

1. Office of Personnel Management (OPM) is a federal agency that sets classification and qualification standards for civil service positions, some of which include medical requirements. <http://opm.gov> (page last accessed 3-7-2016).
2. Occupational Safety and Health Administration (OSHA) is a federal agency within the Department of Labor. OSHA is headed by the Assistant Secretary of Labor for Occupational Safety and Health, who reports to the Secretary of Labor, who is a member of the Presidential cabinet. OSHA sets and enforces standards with the goal to assure safe and healthful working conditions. <http://www.osha.gov> (page last accessed 3-7-2016).
These are published in the Code of Federal Regulations (CFR) and the Federal Register. <http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr> (page last accessed 3-7-2016).
The Federal Register reports pending regulations and modifications. (Note that “pending” regulations may be, but are not necessarily, adopted by BUMED.) <http://www.federalregister.gov/> (page last accessed 3-7-2016).
3. The Federal Motor Carrier Safety Administration (FMCSA) is part of the Department of Transportation (DOT), which is also a Federal agency. FMCSA issues regulations pertaining to Commercial Motor Vehicles (CMVs), including the medical qualification of CMV operators. <https://www.fmcsa.dot.gov/regulations/medical> (page last accessed 3-7-2016).
4. Certain laws pertaining to workers are found in the US Code, which are laws passed by the Legislative branch, not the Executive branch, of the government. <https://www.gpo.gov/fdsys/browse/collectionUSCode.action?collectionCode=USCODE> (page last accessed 5-18-2016).
A separate site, maintained by Cornell University, also has current versions of US Code, <https://www.law.cornell.edu/uscode/text> (page last accessed 3-7-2016).
5. DoD issuances pertain to all DoD services, and are at the following Web address. <http://www.dtic.mil/whs/directives/index.html> (page last accessed 3-7-2016).
Alternate DoD standards approved under Executive Order 12196, Occupational safety and health programs for Federal employees, are found here. <http://www.archives.gov/federal-register/codification/executive-order/12196.html> (page last accessed 3-7-2016).
6. DoN issuances apply to the Navy, the Marine Corps, and the Coast Guard. (The Coast Guard normally is a part of the Department of Homeland Security; however, the Coast Guard may be transferred to the DoN by the President or Congress during time of war.) . SECNAVINSTs theoretically take precedence over OPNAVINSTs, although they must be in accord. <https://doni.daps.dla.mil/default.aspx> (page last accessed 3-7-2016).
7. BUMED issuances apply to Navy and Marine Corps Military Treatment Facilities (MTFs). <http://www.med.navy.mil/directives/Pages/Latest-Directives.aspx> (page last accessed 3-7-2016).
8. Nationally recognized sources of OSH guidance, such as the American Conference of Governmental Industrial Hygienists (ACGIH) <http://www.acgih.org> and the American National Standards Institute (ANSI) <http://www.ansi.org/> include detailed standards which are often incorporated into BUMED guidance.
9. Professional bodies publish consensus statements often referenced in BUMED guidance. One important scientific body is the American College of Occupational and Environmental Medicine (ACOEM) <http://www.acoem.org/> (page last accessed 3-7-2016).
10. A trade association of particular interest to Occupational Health (OH) MTFs is the National Fire Protection Association (NFPA) <http://www.nfpa.org/> (page last accessed 3-7-2016).
11. In most cases, state and outside the continental United States (OCONUS) regulations apply to naval workers. In addition, although they do not have regulatory authority Navy-wide, certain

states are known to have robust OSH programs that serve as expert guidance. The California Department of Food and Agriculture has vast experience with pesticide exposure in workers, <https://www.cdfa.ca.gov/> (page last accessed 3-7-2016), and the California Commission on Peace Officer Standards and Training (POST) publishes the Medical Screening Manual for California Law Enforcement, <https://post.ca.gov/medical-screening-manual.aspx> (page last accessed 3-7-2016). The Washington State Department of Labor & Industries has established a strong beryllium medical surveillance program, <http://www.lni.wa.gov/SAFETY/TOPICS/ATOZ/ABOUT/DEFAULT.ASP> (page last accessed 3-7-2016).

II. OCCUPATIONAL AND ENVIRONMENTAL MEDICINE (OEM) PRACTICE

A. Introduction

The OEM professional plays a critical role in the prevention of work-related injuries and illnesses, and in the promotion of healthy work practices and healthy lifestyles of workers. The scope of OEM practice is broad and involves a diverse mixture of clinical, epidemiological, administrative, and communicative skills. Medical personnel work closely with unit commanders, industrial hygienists, safety professionals, and workers in the management of health and safety programs. A brief outline is provided below with more detailed information provided in other sections of the manual.

[OPNAVINST 5100.23series](#) lists the responsibilities of Navy OEM programs.¹¹

B. Elements of an OEM Program

According to [OPNAVINST 5100.23series](#), “OEM focuses on the medical surveillance of employees potentially exposed to the hazards identified during the industrial hygiene workplace evaluation, the physical requirements of the job, and on the prevention, diagnosis and treatment of occupational injuries and illnesses.”¹² Elements of a comprehensive OEM program include, but are not limited to, the following:

1. Program management and oversight of elements of the Blood-borne Pathogens Exposure Control Plan, Tuberculosis (TB) Exposure Control Plan, the Hearing Conservation Program, Ergonomics, Reproductive Hazards, etc.
2. Medical Surveillance Program management, which includes, but is not limited to, validation of personnel assigned to medical surveillance programs based on current industrial hygiene data and medical surveillance examinations according to the technical manual [NMCPHC – TM OM 6260 Medical Surveillance Procedures Manual and Medical Matrix](#) (April 2016), commonly referred to as the Matrix.¹³
3. Fitness for duty medical evaluations.¹⁴
4. Medical qualification and certification examinations per the Medical Matrix.
5. Workplace visits by OEM professionals, in concert with IH and Safety.
6. Epidemiological assessment of injury and illness data to identify trends and to focus prevention efforts and reduction of lost work time.
7. Occupational illness and injury case management to restore workers to optimal function as soon as feasible.
8. Occupational audiology services in support of the Hearing Conservation Program.
9. Clinical consultative services to other physicians and the cognizant command.
10. Preventive services (e.g., appropriate immunizations to prevent disease due to occupational exposure and counseling of healthy lifestyle choices).
11. Work area health promotion programs.
12. Training and education of workers and professional and support staff.
13. [Employee counseling and referral to employee assistance programs](#) (EAPs).
14. Involvement in the command risk communication process.

C. Trend Analysis/Epidemiology

Epidemiologic tools are used to identify trends in the occurrence of injuries and illnesses in the worker population. Findings (i.e., from trend analysis) are communicated to safety, management, IH, and workers, so that preventive efforts may be implemented. This is discussed further in Chapter IV.

D. Workplace Visits

OPNAVINST 5100.23 assigns IH the responsibility of performing workplace assessments through a process of anticipation, recognition, evaluation, control and prevention of potential hazards.¹⁵ OH nurses, physician assistants, and physicians visit the workplaces to become acquainted with the tasks completed by the worker population of the Occupational Health Clinic (OHC) in order to make recommendations regarding restricted duty and perform fitness for duty evaluations. Workplace evaluations are often necessary for the review of potential exposure related hazards. Annual Occupational Medicine metrics include a minimum of 12 workplace visits per OHC. Workplace evaluations performed in coordination with IH or safety professionals are strongly encouraged. (See Chapter [III](#) for details.)

E. Pre-placement Examinations

OHCs will be asked to examine applicants (also called “candidates”) for some positions. Pre-placement examinations are described in more detail in Chapter V, Section C.

F. Medical Surveillance

Medical Surveillance is “the systematic assessment of employees exposed or potentially exposed to occupational hazards.”¹⁶ The purpose of surveillance is to identify the earliest reversible biologic effects so that exposure can be reduced or eliminated before the employee sustains irreversible damage.¹⁷ In practice, people that work around hazards (such as asbestos or noise) are periodically checked for evidence that an unexpected exposure or overexposure has occurred. That may range from completing a questionnaire to a complete medical exam and multiple tests. To be effective, medical surveillance must be linked to preventive action, such as modification of the workplace to eliminate or minimize further hazard exposure. This requires the use of trend analysis and other epidemiological tools, which are described further in Chapter [IV](#). Details about medical surveillance programs are included in Chapter [V](#) and on the [OSHA Web site](#).

G. Job Certification

Job certification examinations are medical evaluations that are done to ensure that a worker may safely perform the duties of the job. Certification exams are required by law or policy for certain occupations or for specific work tasks. Certification exams are directed at identifying underlying health conditions or limitations that may result in an unacceptable health or safety risk to the employee, co-workers, or the public. Examples include examinations for respirator wearers, commercial truck drivers, and firefighters. Details of job certification programs are in [Chapter V](#). Submariners and aviators undergo highly specialized exams that are not usually performed at OHCs, unless the OHC is staffed by a physician who has undergone additional undersea or aerospace medicine training.

H. Fitness for Duty Examinations

The term “fitness for duty” is used to describe medical examinations required or offered by management (not the OHC) as allowed by [5 CFR 339 Subpart C](#).^{18,19} A fitness for duty examination is completed by OEM professionals when an employee is required to submit to a medical examination because there is a question about the employee's continued capacity to meet the physical or medical requirements of a position. Worker fitness and risk evaluations are integral to all OEM

examinations performed. These include evaluations of a worker's ability to perform specific job tasks, as well as the risk to the worker from workplace hazards. These examinations are initiated by management and are completed by the OHC. There are many issues involved with these determinations which are discussed further in [Chapter V](#).

I. Treatment of work-related injuries and illnesses

A civilian government service employee who is injured at work is entitled to choose to be treated by the local OHC^{20,21} or by a private health care provider. The OHC has the responsibility to oversee the worker's safe return to work, regardless of whether the worker chooses a private physician or accepts the care of the OHC. There are many advantages to providing "in-house" injury care, including better trend analysis of workplace injuries, greater convenience for the employee, and reduced costs to the Government. Where available, "in-house" care may extend to treatment by other Navy medical specialists and to services (such as physical therapy) for job related situations.²² Sick call clinics, urgent care, and emergency departments, including shipboard medical departments and battalion aid stations, are generally the sources of care for treatment of work-related injuries in active duty personnel. Shore based OHCs must provide services for operational forces including DoN and Military Sealift Command ships and Fleet Marine Forces (FMF) since they frequently do not have the equipment and expertise to complete all medical surveillance and certification evaluations. Service to operational forces includes all the components of a comprehensive OEM program.

J. Billing for Work-related Injury and Illness

Emergency medical care of DoD employees injured on the job, whether appropriated or non-appropriated fund, will not be billed. Non-emergent or follow-up OH or Worker's Compensation (WC) care for non-appropriated fund employees will be billed to the employer at the interagency rate.²³ The Federal Employees' Compensation Act (FECA) provides coverage to over 3 million Federal and Postal workers, including wage replacement, medical care, vocational rehabilitation, and certain other costs of work-related injury and illness.²⁴ WC claims for federal employees are made to the Division of Federal Employees' Compensation of the Office of Workers' Compensation Programs (OWCP) within the Department of Labor. OHC care provided to employees of non-DoD Federal agencies for job-related injury or illness is billed to the OWCP at the applicable interagency rate, unless interagency support agreements are in effect.²⁵

K. Treatment of Non-Occupational Illnesses and Injuries

The OHC may, as staffing and resources permit, offer employees medical services that reduce the time the employee needs to spend away from work for non-occupational illnesses and injuries and simple medical screening. Examples of such services include dressing changes or suture removal after a non-occupational injury or blood pressure checks for individuals with hypertension. Except in unusual circumstances, where a local policy is in place allowing the treatment of individuals' personal medical problems, further treatment is the responsibility of the civilian worker's personal medical provider. In certain OCONUS locations, OHCs provide primary care for DoD employees.

L. Health Promotion

The scope of health promotion initiatives supported by a particular OHC will vary based on the size of the supported activity and the supported command's intrinsic health promotion assets. Priority

elements for the Navy Health and Wellness Promotion Program shall target unhealthy lifestyle choices such as misuse of drugs and alcohol, tobacco use, obesity, overweight, poor nutrition, sedentary lifestyle, preventable injuries, safe sex practices, management of stress and anger, suicide, and interpersonal violence.²⁶ OEM professionals have many opportunities to integrate health promotion into clinic practice. Interaction with workers for injury care, medical surveillance, or certification exams affords opportunities to engage with preventive medicine areas, such as smoking cessation, healthy weight goals, blood pressure screening and counseling, nutrition, and exercise. Interpreting results of spirometry performed as part of an OEM examination often provide added support for recommendations to quit smoking. Laboratory tests may demonstrate abnormalities related to alcohol abuse or other health issues, which should lead to counseling and referral. OEM personnel should work closely with their command health promotion officer in the delivery of health promotion services. Examples of OHC supported health promotion include offering blood pressure screening, lectures and training on health-related topics, cholesterol screening, and smoking cessation classes.

M. Travel Medicine

The OHC generally has the resources (i.e., TRAVAX) to be qualified to provide [travel medicine](#) consultations concerning military or civilian personnel traveling on extended unit deployments or assist visits, and personnel and their families on recreational travel to third world locations. Standards for the deployment of DoD civilians should be consulted, including [DoDI 6490.07](#),²⁷ and other theatre specific guidance, such as USCENTCOM 021922Z DEC 11 MOD ELEVEN.²⁸ Overseas medical screenings are described in [OPNAVINST 1300.14 series](#) and can be an additional service performed by the OHC.²⁹

N. Consultation to Management and Employees

OEM professionals are the major source of assistance to commanding officers, supervisors, managers, safety professionals, human resource officers, unions, and employees on workplace health-related issues. One area of consultation is WC cost containment and injury prevention programs, which is described in detail in Chapter VI. [OPNAVINST 5100.23 series](#) requires OEM programs to provide medical review and management of WC cases.³⁰ Other areas of responsibility include placement of employees with limitations, interpretation of medical information from private physicians, ergonomics, risk communication, evaluation of health hazards in the workplace, health promotion, environmental issues, disaster planning, and emergency response planning. OEM staff shall participate in the quarterly OSH policy council meetings and lost-time injury roundtables at supported commands. Many commands have Quality Management Boards (QMBs) and Process Action Teams (PATs) which focus on OSH related issues and can benefit greatly from the expertise of OEM professionals (e.g., back-injury prevention QMB, PAT evaluating the impact of job transfers on OSH programs).

O. Risk Communication

OEM professionals are routinely involved in communicating risk to individuals or groups of workers with exposure related health concerns, such as reproductive health concerns or asbestos exposure incidents. Almost all medical surveillance examinations include some element of risk communication. OEM professionals also are called to respond to health concerns related

environmental exposures, especially related to hazardous waste sites or at installations with superfund sites. Accordingly, formal courses in risk communication are strongly recommended for OEM professionals. The Centers for Disease Control and Prevention (CDC) offers online training on Crisis and Emergency Risk Communication (CERC) that also includes tailored materials for declared Public Health Emergency of International Concern (PHEIC) diseases, such as Pandemic Influenza, Ebola, and Zika, and is available online free-of-charge.³¹

P. OSH Education and Training

OEM professionals are an integral part of the OSH education of workers. Informal training is routinely performed during clinic encounters with workers. As such, OEM professionals must be familiar with the hazards present in the workplaces they support in order to answer health related questions from workers. OEM professionals should support formal training programs for workers, such as programs for health promotion, blood borne pathogens exposure prevention, and health effects of hazardous exposures. OEM professionals should also provide regular training in OEM topics to other medical department personnel. Examples include workplace hazards, treatment and tracking of work related injuries and illnesses, recognition of work-related conditions, follow-up of potential workplace hazards which may place other employees at risk, obtaining assistance from industrial hygienists and safety officers, and regulatory and administrative requirements of OEM programs.

Q. Employee counseling/referral to EAPs

OEM professionals are in a unique position to recognize employees with personal, family, or substance abuse problems. OHCs should identify the points of contact for EAP for civilian employees and the mechanisms for referral.³² In addition, community resources for problems not handled by EAP should be identified.

R. OEM Staffing

The staffing of individual clinics varies greatly depending on the size and complexity of the supported worker population. This can range from a large shipyard clinic with full-time physicians, nurses, technicians, clerical staff, audiologists, optometrists, and administrative staff, to a small shipboard medical department with an independent duty corpsman (IDC) or medical department representative. The physician and nurse staffing of shore-based OH clinics is based on formulas in [OPNAVINST 5100.23 series](#).³³ Regardless of the size of the OH clinic, all clinics shall designate an OEM program manager. This individual is responsible for the overall OEM program, including clinic or department operation, coordination of medical surveillance programs, interface with other OSH professionals such as Safety and IH, and establishing quality improvement (QI) and surveillance trending activities. For many shore clinics, the OEM nurse serves in this capacity. Afloat or FMF medical departments will usually designate a preventive medicine technician (PMT), IDC, or general duty corpsman to perform this function. OHCs may have full or part-time physicians who may be residency trained, board-certified OEM physicians, other medical specialties, general medical officers, flight surgeons, or undersea medical officers. All clinics shall identify an OEM specialist they can call for consultation (many are located at large naval hospitals and shipyard clinics).

S. Program Assessment

Each year, OM clinics are required to complete self-assessments using the Occupational Medicine Program Assessment (OMPA) tools for each program they conduct. These tools are available at the BUMED Navy Medicine [SharePoint website](#) or as the Regional Program Manager directs. Refer to the OMPA Implementation and Sustainment Guide, also available at the BUMED Navy Medicine SharePoint website, for further details on completing the OMPA tools. Some of the responses in the OMPA tools are also used in the annual OM metrics collected by BUMED. Starting in 2016, those metrics are being collected online, at <https://bumedm44.max.gov>. A Max.gov account is needed, but registration is straightforward; a user guide is available. Chart review worksheets are available for conducting routine records audits, per [BUMEDINST 6010.30](#).³⁴

III. WORKPLACE EVALUATION

A. Introduction

Routine onsite evaluation of the workplace by OH professionals is an essential element of any comprehensive OSH program, including a survey of each workplace by the cognizant industrial hygienist.³⁵ In addition, onsite workplace evaluation must be performed by OH nurses and health care providers to familiarize them with the job tasks and occupational hazards of their worker population. At a minimum, the OHC is to conduct 12 workplace visits annually. Workplace evaluations are also conducted in response to a specific employee's complaints or concerns, to investigate an apparent cluster of related complaints in two or more employees, or as part of a periodic workplace inspection schedule.

B. Workplace Visit Preparation

In preparation for a workplace visit, OH professionals must become familiar with all relevant data, such as the following.

1. The most recent IH survey report and the corresponding medical surveillance recommendations for the employees in the work space.
2. Results of physical, biological, and chemical hazard assessment (e.g., noise dosimetry and airborne chemical sampling done under the annual workplace monitoring plan).
3. The complaints or concerns of the employees who have been evaluated in the OHC.
4. Reports of the periodic safety department inspections and injury/illness data for the work center's employees.

C. Workplace Visit

The visit itself should be coordinated with the work center supervisor. Essential elements are the evaluation and documentation of all identified physical, biological, and chemical hazards, use of personal protective equipment (PPE), and assessment of work practices. A summary of the recommended PPE from the most recent IH survey facilitates ascertaining whether PPE is being used appropriately. If a particular employee complaint is being investigated, the specific circumstances surrounding that complaint must be thoroughly evaluated.

D. Documentation of the Workplace Visit

Documentation of the workplace visit should contain the name and phone number of the point of contact at the workplace, the amount of time the OH specialist spent at the workplace, a description of the work operations and work practices, and any other pertinent information. Figure 1 is an example of the documentation from a workplace visit is the following.

**OCCUPATIONAL MEDICINE
SUMMARY REPORT OF WORKPLACE VISIT**

Date and Time of Visit: _____

Workplace Location/Shop: _____

Workplace POC & Phone: _____

Operation Description & Major Tasks:

IH Identified Hazards & Medical Surveillance (list):

Reproductive Hazards (list):

Findings & Observations (e.g., use of PPE):

Employee Concerns:

Recommendations:

Follow-up:

Evaluators: _____

Figure 1 Example Workplace Visit Report

E. Follow-up of the Workplace Visit

The specific nature of the appropriate follow-up for a workplace visit is dependent on the reason for the evaluation. For example, if an employee complaint is the triggering event, a written report or debriefing session should be arranged to explain the results of the workplace evaluation to that individual. If the visit was part of an injury trend analysis, any identified OSH hazards should be reported to the work center supervisor(s), the activity OSH officer and, if applicable, the industrial hygienist, for appropriate correction. Regardless of the reason for the visit, a follow-up (at a minimum a phone call) is a must. This demonstrates command concern, fosters a sense of well-being in employees, and shows the availability and interest of the OH department.

The workplace visit must not be misconstrued by the supervisor or the work force as an inspection.

F. MTF TB Risk

MTF TB risk is typically determined by Preventive Medicine or the Infection Preventionist. Several occupational medical surveillance programs include screening workers for TB. The CDC screening recommendations for workers are based on the risk (likelihood) of exposure to TB. Risk of TB is determined by individual factors (for example, risk is elevated if the worker has a family member with TB or if the worker has recently traveled to an area where TB is endemic) and by the risk category of the workplace. OSHA refers to the CDC when determining whether facilities are low risk, medium risk, or potential ongoing transmission.³⁶ The CDC defines those risk categories as follows.³⁷

The three TB screening risk classifications are low risk, medium risk, and potential ongoing transmission. The classification of low risk should be applied to settings in which persons with TB disease are not expected to be encountered, and, therefore, exposure to *M. tuberculosis* is unlikely. This classification should also be applied to health care workers (HCWs) who will never be exposed to persons with TB disease or to clinical specimens that might contain *M. tuberculosis*.

The classification of medium risk should be applied to settings in which the risk assessment has determined that HCWs will or will possibly be exposed to persons with TB disease or to clinical specimens that might contain *M. tuberculosis*.

The classification of potential ongoing transmission should be temporarily applied to any setting (or group of HCWs) if evidence suggestive of person-to-person (e.g., patient-to-patient, patient-to-HCW, HCW-to-patient, or HCW-to-HCW) transmission of *M. tuberculosis* has occurred in the setting during the preceding year. Evidence of person-to-person transmission of *M. tuberculosis* includes 1) clusters of TST or BAMT conversions, 2) HCW with confirmed TB disease, 3) increased rates of TST or BAMT conversions, 4) unrecognized TB disease in patients or HCWs, or 5) recognition of an identical strain of *M. tuberculosis* in patients or HCWs with TB disease identified by deoxyribonucleic acid (DNA) fingerprinting. If uncertainty exists regarding whether to classify a setting as low risk or medium risk, the setting typically should be classified as medium risk.

The above description leaves uncertainty with regard to health care facilities, however, as it seems that any facility could, potentially, care for a patient with TB. The CDC goes on to give the following additional details.

Inpatient Settings with More Than 200 Beds

If less than six TB patients for the preceding year, classify as low risk. If greater than or equal to six TB patients for the preceding year, classify as medium risk.

Inpatient Settings with Less Than 200 Beds

If less than three TB patients for the preceding year, classify as low risk. If greater than or equal to three TB patients for the preceding year, classify as medium risk.

Outpatient, Outreach, and Home-Based Health-Care Settings

If less than three TB patients for the preceding year, classify as low risk. If greater than or equal to three TB patients for the preceding year, classify as medium risk.

In general, Navy MTFs are expected to be considered low risk based upon the few active TB patients treated there.

IV. EPIDEMIOLOGY AND TREND ANALYSIS IN OCCUPATIONAL AND ENVIRONMENTAL MEDICINE

A. Introduction

Using epidemiology, in particular trend analysis, health data (especially aggregated data) must be examined.^{38,39} The OSH officer and OEM are responsible for maintaining trend analysis reports. (Metrics showing the effectiveness of the entire DoD OSH Program are described in [DoDI 6055.01](#) and [DoDI 6055.05](#).)⁴⁰

B. Purpose

The purpose of epidemiology (incidence and prevalence rates) and trend analysis in occupational medical practice is to identify unsafe or unhealthy conditions that would otherwise have been undetected, so that effective action can be taken to provide a safe and healthy workplace. OEM staff not familiar with epidemiology or who are uncertain about its application should consult with those having such expertise (see the [Tools](#) section below).

C. Concepts and Terminology in Epidemiology

Biomonitoring is testing for substances or their metabolites or the effects of substances or their metabolites in human tissue or body fluids.

Chi-square (abbreviated X^2 or χ^2) is a calculation to help determine whether an observed value is from chance (i.e., random variation) or from factors that actually have an effect on the value. There are a number of formulas for calculating chi-square. A common one is: $X^2 = [\text{sum of } ([\text{observed values}] - [\text{expected values}])^2] \div (\text{expected values})$.

Confidence Interval (CI) is the range of values within which the actual value is likely to be, given a specific probability. The greater the probability specified, the larger the confidence interval will be. For example, the CI that would include the height of an adult, given a 50% probability, might be 5 feet 4 inches to 6 feet 4 inches. However, for a 100% probability (i.e., the CI would include the heights of ALL adults), the CI would be 2 feet 2 inches to 9 feet.

Incidence Rate (or simply, Incidence) is the number of new events (e.g., new diagnoses of a particular disease) in a population at risk for the event in a given time period. Clearly defining the parameters for the event and standardizing it by the time period and population at risk (denominator) allows comparing incidence rates over time and across other locations.

Mean is the average value. It is calculated by adding all values and dividing by the number of data points. For example, the mean of 1, 1, 1, 2, 3, 18, 19 is 6.43 (i.e., $1 + 1 + 1 + 2 + 3 + 18 + 19 = 45$; $45 \div 7 = 6.43$, rounded to 2 decimal places).

Median is the middle value in a group of numbers, such that an equal numbers of values are higher and lower. For example, the median of 1, 1, 1, 2, 3, 18, 19 is 2 (three numbers in the set [1, 1, 1] are less than 2, and three numbers in the set [3, 18, 19] are greater than 2).

Mode is the most common value in a group of numbers. For example, the mode of 1, 1, 1, 2, 3, 18, 19 is 1.

Prevalence Rate (or simply, Prevalence) is the number of existing events (or cases) in a measured population. It may serve as a baseline of cases within a population, especially if it is difficult to determine when the person developed the event or outcome of interest.

Prevention is action taken to stop a disease from developing, or, if disease is already present, to minimize its harm. “Primary Prevention” refers to preventing exposure to a disease-causing agent. An example is preventing malaria by killing mosquitoes; without mosquitoes, people will not be exposed to malaria. “Secondary Prevention” consists of identifying a disease process before symptoms occur and instituting treatment that prevents or minimizes morbidity or mortality. An example is identifying a positive TB skin test in someone who has been in contact with a TB patient. The positive TB skin test shows exposure to TB has occurred. Medications can be given to prevent active TB from developing in the exposed person. “Tertiary Prevention” is minimizing the adverse effects of a previous or existing illness or injury. An example is effective rehabilitation for persons who have experienced a serious injury.

P-value (more properly, “*p*-value”) is the probability of the observed result, plus more extreme results, if the null hypothesis were true. For example, if a difference in rates has a *p*-value = 0.05, it means that the likelihood is 5% (1 in 20 chance) or less that the observed difference in rates was due to chance. The most commonly used *p*-values are 0.05 and 0.01.

Screening is testing for evidence of exposure or over-exposure (i.e., adverse health effects from the exposure) before the exposure leads to medical care.

Sentinel Event is any unexpected health occurrence that may indicate the presence of a health risk of which personnel were unaware. For example, the first anthrax case in 2001 was a sentinel event of an intentional biological attack.

Site Assessment refers to the evaluation of a workplace for potential health hazards; it may include IH sampling for physical, chemical, biological, and radiological agents or activities.

Statistical Analysis is the examination of illness and injury data using mathematical formulas to identify the health status or trends of a population that were otherwise unrecognized.

Surveillance, in the context of general public health, is “the continuous, systematic collection, analysis and interpretation of health-related data needed for the planning, implementation, and evaluation of public health practice.”⁴¹ In the context of occupational medicine, surveillance is the systematic assessment of employees exposed or potentially exposed to occupational hazards. In other words, occupational medical surveillance is regularly checking workers for evidence of unexpected exposure or overexposure to work hazards, and then doing something about it.

Trend Analysis refers to examining health data collected over time, especially rates of illness or injury, for tendencies to significantly change. For example, rates of incidental pleural findings have decreased over time in Navy workers in the Asbestos Medical Surveillance Program (AMSP), suggesting that the Navy asbestos program has been effective in reducing asbestos-related disease.

Workplace Assessment/Visit (known as **Walk-through** by IH) refers to physically inspecting a workplace for potential health risks. This is generally done by OH professionals, especially safety specialists, industrial hygienists, nurses, and occupational physicians.

D. Tools

Local resources, such as organization Safety offices, may be available to help with trend analysis. Clinical epidemiology may be part of the preventive medicine team, and can provide expertise in epidemiology and biostatistics. The Composite Health Care System (CHCS) and the Armed Forces Health Longitudinal Technology Application (AHLTA) allow for ready computer access to health

care data on which to do trend analysis. The Epidemiology Data Center at NMCPHC may be consulted for assistance in identifying data sources and in conducting trend analysis.

1. Medical Matrix

Specific surveillance tools that have been developed for use by Navy OEM include the Medical Matrix NMCPHC-TM OM 6260 and its web based companion, Medical Matrix Online (MMO) (covered in detail in section [V.I.2](#)).

2. AMSP

The AMSP is a large surveillance program with specific requirements that data collected be sent to NMCPHC. NAVMED 6260/5 is used to report history and physical findings. It is to be completed annually by the OHC on all workers enrolled in the asbestos program annually; the original is placed in the employee medical record and a copy sent to NMCPHC for inclusion in the AMSP database. In contrast to the annual history and physical, asbestos chest X-rays (CXRs) are done according the schedule required by OSHA and described in MMO. NAVMED 6260/7 is used to report CXR B reading results. The top portion and Section 1 are completed by the OHC and sent, along with the CXR, to the B reader specified by NMCPHC. [AMSP](#) procedures are described in Section X and further details are available on the NMCPHC web site.⁴²

3. Naval Disease Reporting System (NDRS)

The NDRS collects health information from MTFs. The NDRS – Internet-based (NDRSi) is the latest electronic version, and is available to a limited number of MTFs.

4. Web-Enabled Safety System (WESS)

The [WESS](#) is the electronic system for reporting injuries to the Naval Safety Center ([NSC](#)) using the Internet.

5. Statistical Software

Epi Info is public domain software that can be used to perform basic statistical data analysis. [Epi Info 7](#) is available for download from the [CDC](#).⁴³ Other statistical software is available commercially if more advanced capabilities are required.

6. Microsoft Office

Microsoft Excel® (Excel) is a spreadsheet program that is capable of storing moderate amounts of data and performing some mathematical manipulations and simple statistical functions and graphing, including trend lines. Microsoft Access® is a database program that is capable of storing larger amounts of data, as well as performing data retrieval and producing reports. More sophisticated data analysis can be done using “macros” written within Access® or using Visual Basic for Applications®. Support for such software may be from information technology or clinical epidemiology personnel.

E. Procedures

The following are all part of Navy OEM surveillance.

1. Workers regularly exposed to health hazards should be enrolled in the appropriate medical surveillance programs and are followed according to criteria in the Medical Matrix.

2. Regular, purposeful review of injury and illness data, looking for unusual or unexpected patterns, should be done routinely; follow-up and follow-through of untoward events and adverse health effects should be thorough and timely, including communication with the workplace about findings and recommendations for workplace modification.
3. Report certain required data to NMCPHC, including AMSP forms and, using the Defense Occupational and Environmental Health Readiness System Hearing Conservation (DOEHRS-HC), Navy Hearing Conservation Program data.

Examples of Data Analysis

1. Example: Workplace Visit

During a workplace visit, it is noticed that several hazardous chemicals are used. Most workers do not know where the Safety Data Sheets (SDSs) (formerly MSDSs or Material Safety Data Sheets) are located. An appropriate response to this basic level of data collection and analysis includes notifying the supervisor that the SDSs must be made available to the workers. Depending on usage, IH sampling for levels of hazardous materials to which workers may be exposed may also be appropriate.

2. Example: MMO in Medical Surveillance

As a result of a workplace visit and IH sampling data, shipyard workers are known to be exposed to various health hazards. They are enrolled in several surveillance programs, with workers commonly enrolled in more than one program. To bring each worker to the MTF for appropriate history, physical, laboratory, and radiographic evaluation (or whatever is required for each program) separately would be time consuming and wasteful. Using MMO, all the appropriate elements of each program are identified and combined, so the requirements of all applicable surveillance programs can be fulfilled in one MTF visit. Over the course of a year, one high lead (Pb) level was found in a worker. Appropriately, the worker was questioned about his job and non-occupational habits, and his workplace was evaluated. Nothing unusual was noted in the workplace, but the worker described casting Pb soldiers as a hobby. The worker was appropriately counseled about Pb exposure, and his Pb and zinc protoporphyrin (ZPP) levels were followed closely by a physician. In addition to the high Pb level in one worker, quarterly review of the data showed a sudden increase in the number of currently-exposed asbestos workers enrolled in the AMSP. Further review revealed that a newly-hired nurse did not understand that inclusion was based on medical review of IH exposure data and not worker preference. Instructing the nurse allowed the AMSP enrollment to return to the previous level. Annual review of the data showed that workers in the cadmium surveillance program tested in the summer had levels of urine cadmium slightly higher than those tested in the winter. Statistical significance was borderline (p -value of 0.056); all urine cadmium levels were within normal limits. This was brought to the attention of the occupational physician and IH. A workplace visit, discussion with the supervisor, and telephone call with the laboratory did not offer an obvious explanation. No further action was taken. The following year, cadmium levels were not significantly higher during any season, and it was concluded the results from the previous year were most likely due to random variation.

3. Example: Rates of Illness

Seasonal variation in illness rates is expected (i.e., more allergy-related complaints in spring and fall, more influenza in winter, etc.). An experienced nurse at an OHC noticed more cases of bronchitis one summer. Worker population was stable at 170, although there was worker turnover. Reviewing records from the previous 5 years revealed seasonal variation, with a higher rate of bronchitis noted during the fall and winter of the first 3 years, but another increase during the summers for the last 2 years. To determine if the rate variations were significant, values were entered into an Excel spreadsheet. Using Excel, a chart was made, where seasonal variation was clearly seen. A trend line was added (in Excel, with the chart selected, click the “Chart” menu, then click “Add Trendline”), and a trend line of rates during the summer showed an upward slope. Using Epi Info, summer bronchitis rates were entered (using the June to August total as the “cases” and the 5-year total minus the single-year June to August total as the “controls” for that year), and the difference between the first 3 and the last 2 years was found to be significant.

The Excel spreadsheet and Epi Info results are displayed below.

Table 1 - Bronchitis Diagnoses by Month

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	15	16	17	9	6	6	10	5	7	9	12	11
2	12	19	9	9	5	7	10	9	8	12	15	13
3	10	13	12	8	7	5	9	6	9	8	14	13
4	19	17	10	11	5	15	17	18	14	11	10	15
5	17	14	11	10	8	16	18	19	13	9	15	14

A bar graph is generally used to display discrete data points, as follows.

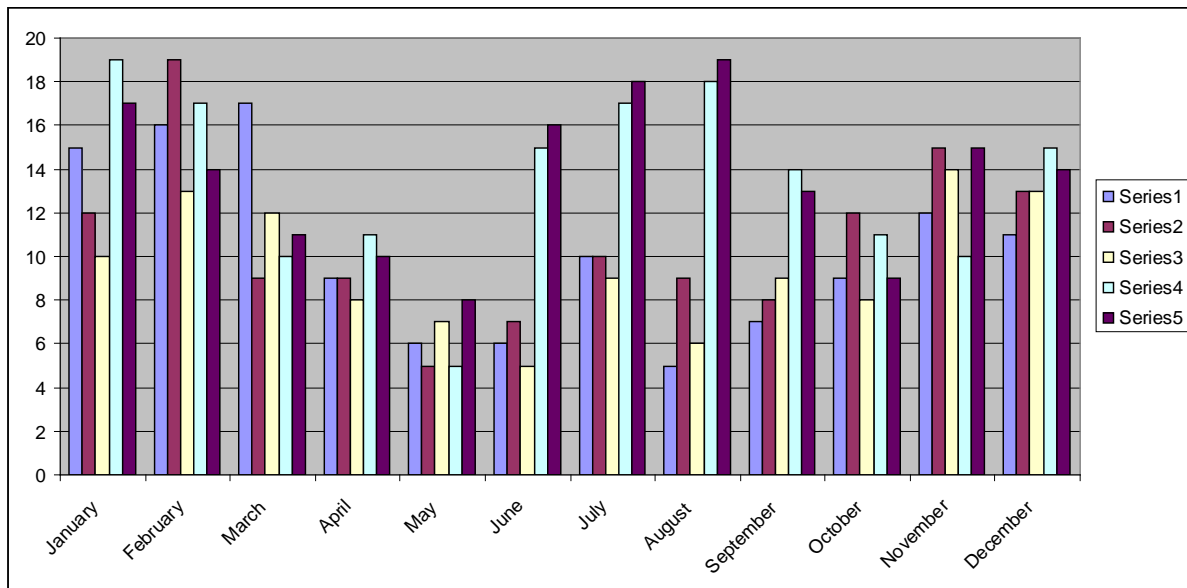


Figure 2 - Bar Graph of Bronchitis Diagnoses by Month over a 5-Year Period
 ("Series" = Years)

However, due to the number of data points, the following line graph more clearly reveals the area of interest.

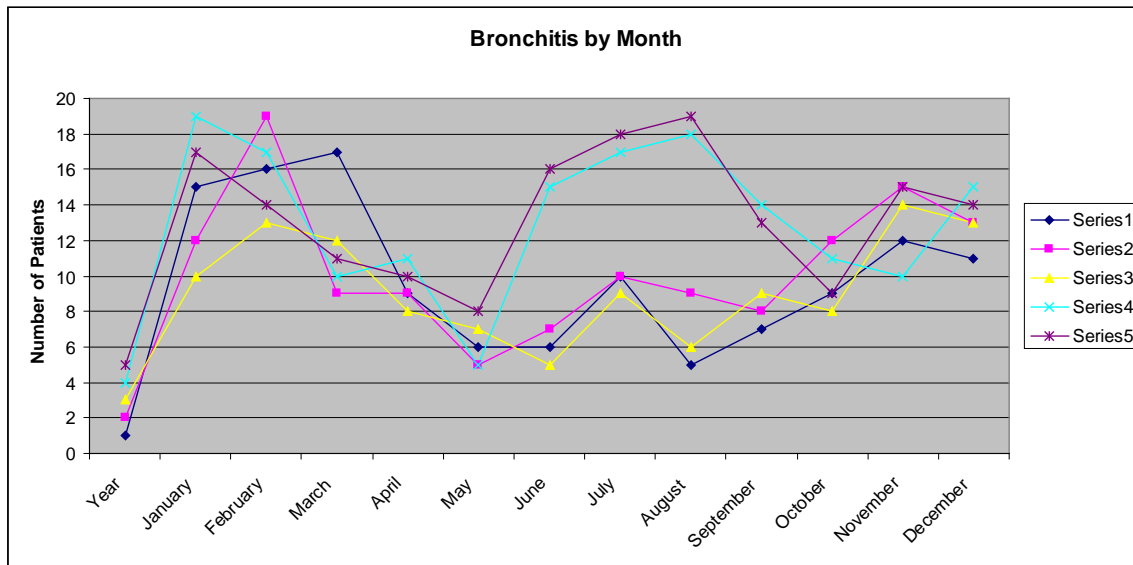


Figure 3 - Graph of Bronchitis Diagnoses by Month over a 5-Year Period ("Series" = Years)

Table 2 - Bronchitis Diagnoses by Season over a 5-Year Period

Year	Dec-Feb	Mar-May	Jun-Aug	Sep-Nov
1	42	32	21	28
2	44	23	26	35
3	36	27	20	31
4	51	26	50	35
5	45	29	53	37
Total	218	137	170	166

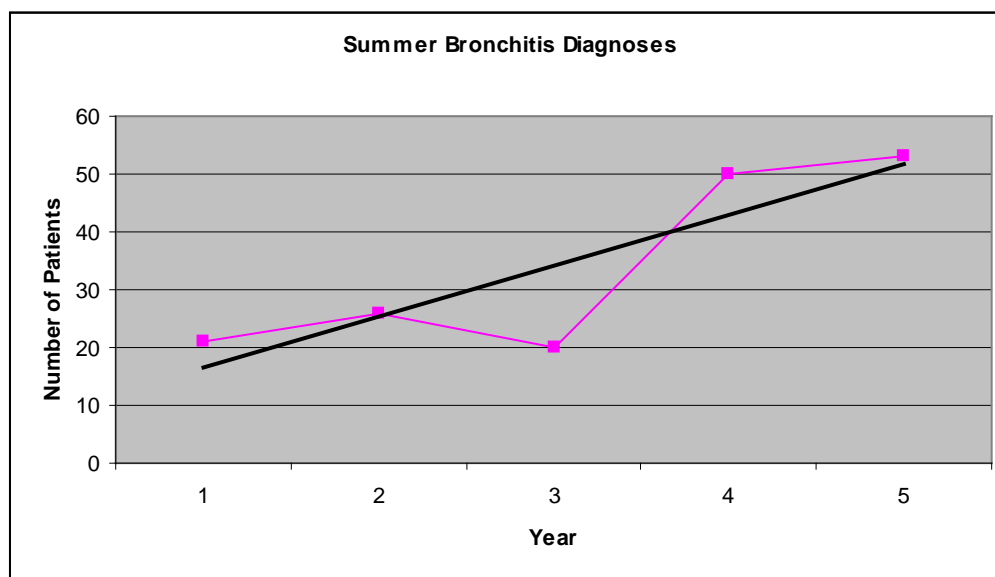


Figure 4 - Summer Bronchitis Diagnoses by Year over a 5-Year Period with Trend Line

As indicated by the analysis for linear trend (Chi-square for linear trend = 28.437), the difference in summer rates of bronchitis was significant at a p -value approaching zero (p -value = 0.0000, although the actual p -value would be greater than zero at enough decimal places).

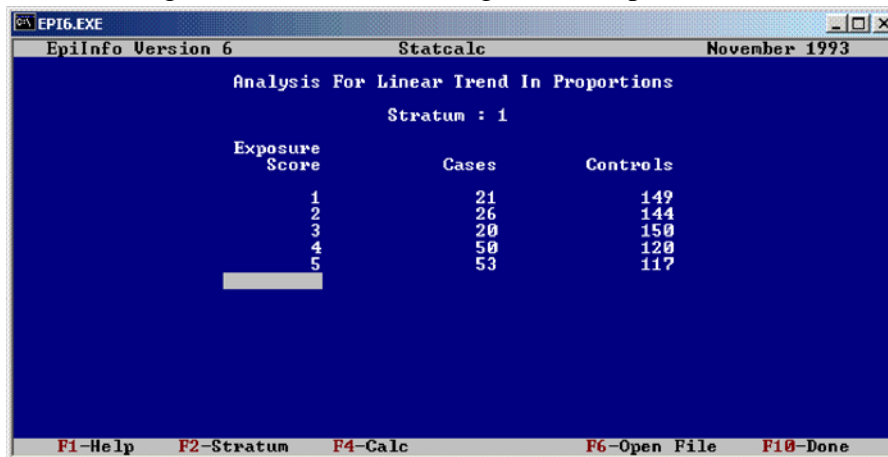


Figure 5 - Entering Data to Epi Info 6 for Analysis for Linear Trend

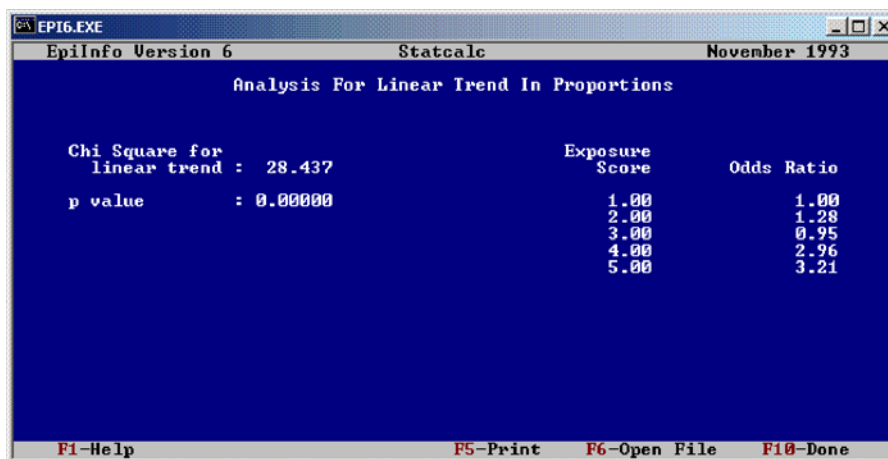


Figure 6 - Results of Statcalc from Epi Info 6 Analysis for Linear Trend

Further analysis revealed that most diagnoses of bronchitis during the summer were among workers in one shop in a large warehouse. A subsequent workplace visit and discussion with the supervisor and workers found that during the summer, doors were opened to allow ventilation. The supervisor thought that the ventilation was sufficient to prevent over-exposure to dusts and fumes, and thus did not enforce respirator use when the doors were open. Follow-up training of the supervisor and workers and enforcement of respirator use decreased the incidence of bronchitis in subsequent summers.

4. Example: Trend Analysis of Needlestick Injuries in an MTF (Descriptive Statistics)

An MTF recorded 21 needlestick injuries over the course of one calendar year. Using Excel, the data was entered and graphed as follows (see [above](#) for how to add a trend line).

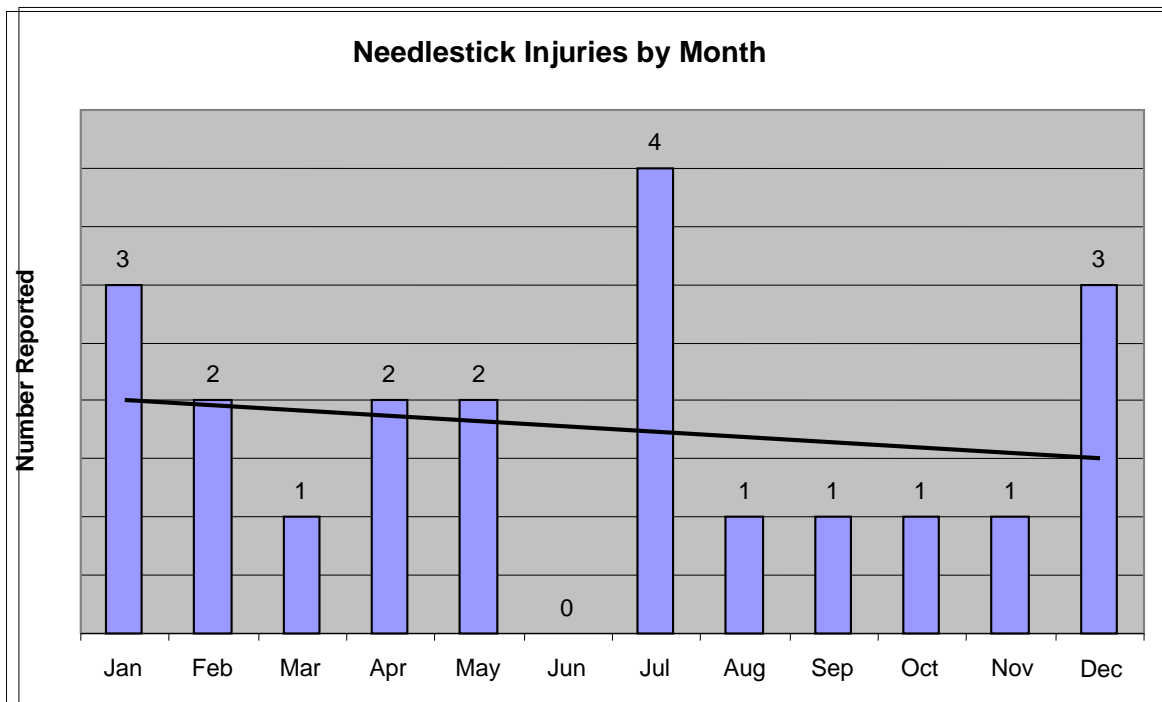


Figure 7 - Bar Chart of Needlestick Injuries with Trend Line

Month	Number
Jan	3
Feb	2
Mar	1
Apr	2
May	3
Jun	0
Jul	4
Aug	1
Sep	1
Oct	1
Nov	2
Dec	1
Total	21

Table 3 - Needlestick Injuries by Month

Device	Number
Surgical Sharp	5
IV Needle or Device	8
Venipuncture Needle or Device	3
Medication	4
Delivery Needle or Device	1
Other (Marrow, Biopsy, LP, etc.)	1
Total	21

Table 4 - Needlestick Injuries by Device

Dept	Number
Dental	4
Fam Practice	2
Inpatient (Non-Surg)	1
Inpatient (Surg)	3
Int Med (All)	2
Laboratory	2
Ob-Gyn	1
Occ Med	0
Pediatrics	1
Prev Med (Immunology Clinic)	4
Surgery Clinic	1
Total	21

Table 5 - Needlestick Injuries by Department

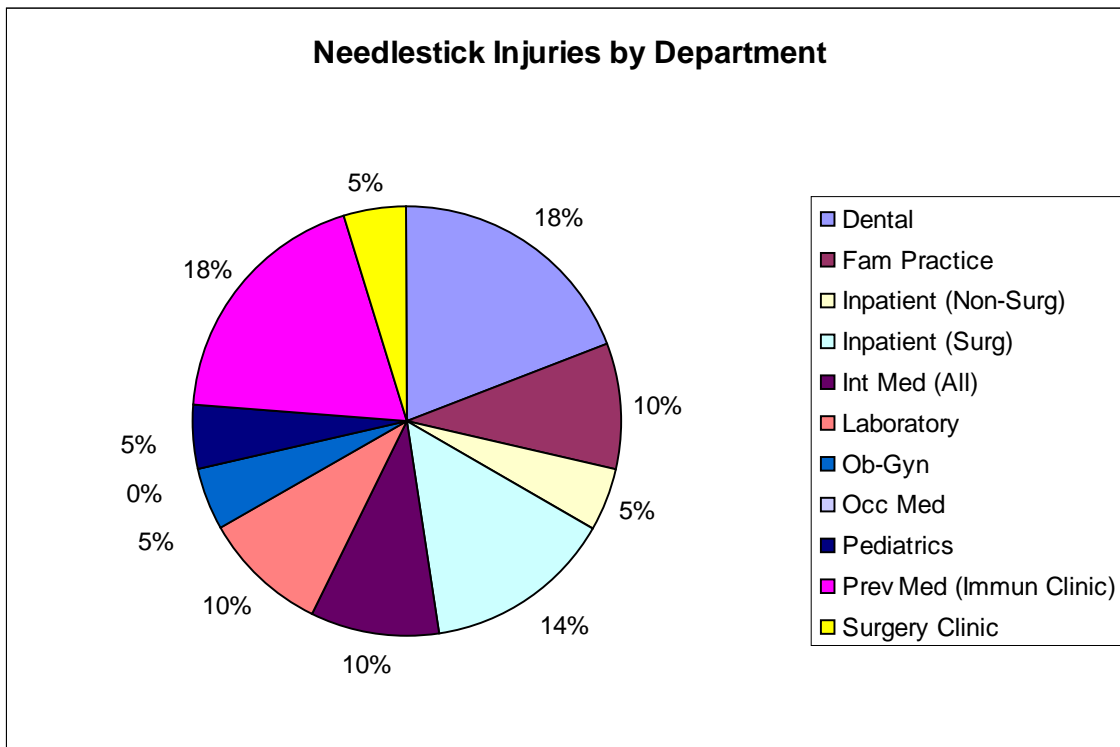


Figure 8 - Pie Chart of Needlestick Injuries by Department

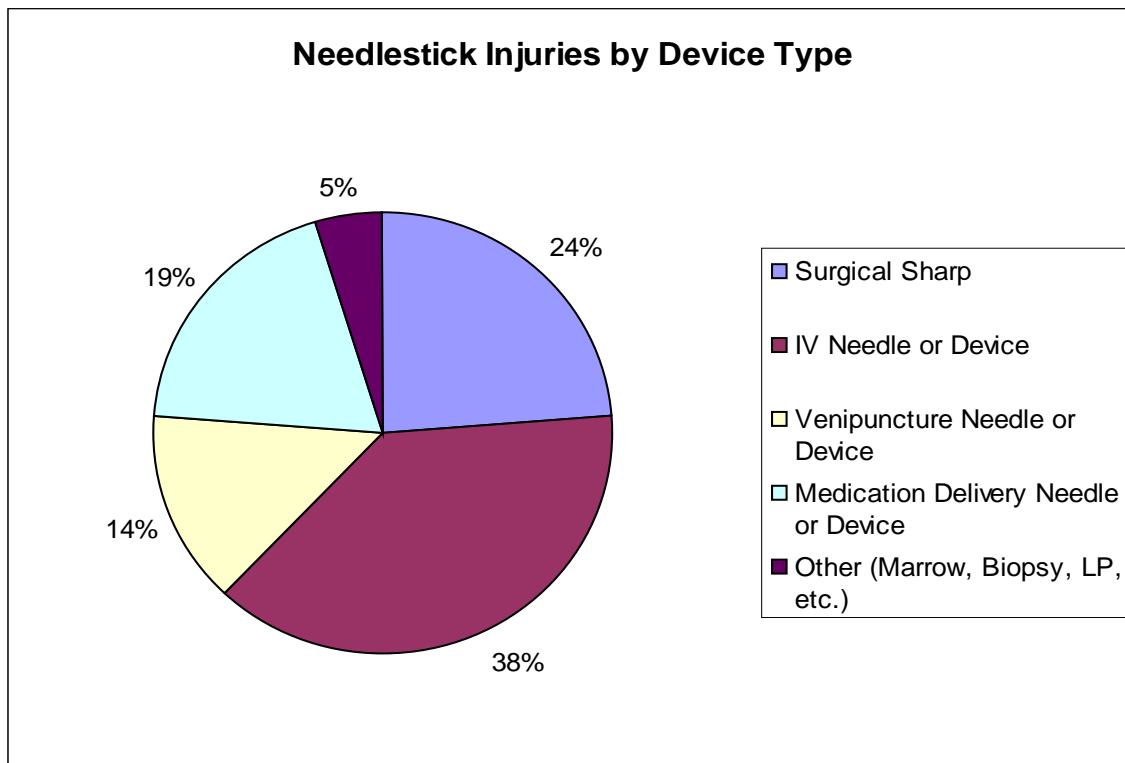


Figure 9 - Pie Chart of Needlestick Injuries by Device Type.

The use of descriptive statistics is demonstrated here. No calculations for rates, significance, probabilities, etc., were performed. However, a meaningful picture of patterns of occurrence is produced. The straight trend line was not helpful; rather, new trainees arriving in mid-summer and mid-winter seems to have impacted the incidence of injuries.

5. Example: Calculation of Rates

A small MTF (“MTF-A”) is one of 3 clinics associated with a hospital serving a large Navy population. Despite several attempts to organize and re-organize MTF-A, staff always feel overworked. Staffing needs, especially involving doctors and nurses, are a constant source of friction with human resources. All 3 clinics service different industrial sites, but worker population is evenly distributed among the clinics. In fact, MTF-A actually serves fewer workers (2217) than MTF-B (2565) or MTF-C (2420). An alert nurse supervisor investigated the type of clinic visits and incidence rates of industrial injuries at the 3 clinics. Data collected are shown in the following table.

	MTF-A	MTF-B	MTF-C
Surveillance Exams or Medical or non-Occupation-related Visits	1324	1525	1651
Occupational Injury – Simple or Minor	560	511	409
Occupational Injury – Moderate	126	57	44
Occupational Injury – Complex or Severe	30	4	2
Occupational Illness	57	2	3
Total	2097	2099	2109

Figure 10 - Occupational Medical Clinic Visits by Type and Complexity

While the total number of clinic visits was similar, the type of visits at MTF-A varied considerably from those at MTF-B and MTF-C. This was readily explained by the type of industry served by MTF-A (heavy industry) and by MTF-B and MTF-C (light industry). To make her case of the need for increased nursing support stronger, the supervisor calculated rates of injury per 1,000 workers, especially considering complexity of care.

Rate calculations were made using the following formula:

$$\text{rate} = \frac{\text{Cases (e.g., number of MTF visits)}}{\text{Controls (e.g., number of exposed workers)}} \times 1000$$

Figure 11 Formula for Calculating Rate

Multiplying by 1,000 standardizes the rate so it can be meaningful when used in comparisons. (A rate of 3.4 per 1,000 is obviously lower than 5.7 per 1,000, whereas a rate of 1.9 per 567 is not readily compared with 4.7 per 822.)

In the MTF-A, MTF-B, and MTF-C example, MTF-A had a worker population of 2,217 (the “denominator” or “Controls”), and 716 visits (adding all the occupational injuries but not including occupational illness, so 560 + 126 + 30 = 716, the “numerator” or “Cases”). Thus, 716/2217 = 0.323 (rounded). Multiplying by 1000 gives a rate of 323 injuries per 1,000 workers.

Her findings are displayed in the following table.

	MTF-A	MTF-B	MTF-C
Worker population	2217	2565	2420
Rate of Any Injury per 1,000 Workers	323.0	223.0	188.0
Rate of Minor Injury per 1,000 Workers	252.6	199.2	169.0
Rate of Moderate or Complex Injury per 1,000 Workers	70.4	23.8	19.0
Rate of Mod/Complex Injury or Occupational Illness per 1,000 Workers	96.1	24.6	20.2

Figure 12 - Rates of Injury Seen at MTFs, by Complexity

Analysis of rates clearly demonstrated the worker population served by MTF-A was at increased risk of occupational injury, especially of more severe injury. When severity and complexity of care were considered (more reflective of the medical and nursing care required), rates among workers cared for by MTF-A were almost 4 or 5 times higher than MTF-B and MTF-C. The nursing supervisor was able to make a strong case for requiring more physicians and nurses at MTF-A, as the workload was much different.

V. MEDICAL EXAMINATIONS

A. Introduction

Evaluation of the health status of an individual exposed to specific stressors or working in certain jobs is essential to achieve a safe and healthful workplace for that individual, his or her co-workers, and the general public. Certain jobs, especially safety-sensitive jobs like firefighter and police, have medical standards (written descriptions of the medical requirements for those jobs). Performing medical examinations is within the scope of OEM. Medical requirements for certain jobs are outlined in the job descriptions. Medical standards for specific occupations and exposures are contained in the [Matrix](#),⁴⁴ [NAVMED P-117 Chapter 15](#),⁴⁵ and other DoD and Navy instructions and in Federal regulations. These apply to military and civilian personnel. When specific medical requirements are not available, guidance may be established through the cooperative efforts of local occupational physicians, NMCPHC, and BUMED.

B. Types of Medical Examinations

Occupational medical examinations may be categorized by their purpose. The following types of occupational medical examinations are currently performed:

- Pre-placement,
- Surveillance,
- Certification,
- Fitness for duty,
- Return to work,
- Situational, and
- Termination.

Details on the definition and requirements of each are the subject of the remainder of this manual.

C. Pre-placement Medical Examinations

Occupational Medicine providers are frequently asked to determine whether a worker is medically qualified for a job. This can be challenging, especially when there is limited evidence to make such a determination, or when there are concerning findings but the worker or the supervisor insist that the worker is capable of safely performing all the duties of the job.

1. The Americans with Disabilities Act (ADA)

The [ADA](#) has the following elements pertinent to pre-placement medical examinations.⁴⁶

- a. Discrimination against workers on the basis of disability is prohibited.
- b. After a worker is offered employment, an agency is allowed to require a pre-placement medical examination.
- c. If a pre-placement exam is required, it is important for the employer that a written policy exists and that all workers, not just an individual, undergo such an examination.
- d. Information obtained regarding the medical condition or history:
 - 1) Must be on separate forms and in separate medical files,
 - 2) Must be treated as a confidential medical record,
 - 3) Supervisors may be informed regarding necessary restrictions on the work or duties of the employee and necessary accommodations, and

- 4) First aid and safety personnel may be informed if the disability might require emergency treatment” (Sec. 102. (c)(3)).⁴⁷

2. The Rehabilitation Act of 1973

The Rehabilitation Act of 1973 includes many of the elements of the ADA.⁴⁸ Section 504 of the Rehabilitation Act of 1973 indicates that employees of Federal agencies will not be excluded from employment due to disability: “Subject to the provisions of this subchapter, no qualified individual with a disability shall, by reason of such disability, be excluded from participation in or be denied the benefits of the services, programs, or activities of a public entity, or be subjected to discrimination by any such entity.”^{49,50}

3. Purposes of Pre-placement Exams

Pre-placement exams are done to assure that a worker can do a job without undue risk to the health and/or safety of the worker, co-workers, or the public. In such cases, a written description of the worker’s actual job requirements is essential to adequately perform the examination. The more specific the employer can be, the more accurately the OH provider can determine the worker’s ability to perform the job. Work requirements may be general (e.g., “heavy labor”) or specific (e.g., “lifting up to 45 lbs. repeatedly, carrying loads up to 45 lbs. for distances up to 100 yards, climbing ladders up to 20 feet high”). Often, pre-placement exams primarily serve to document the status of a worker’s health, and provide a baseline against which changes may be compared. Candidates coming to the OHC for pre-placement exams must bring a copy of their job description and OPM Optional Form 178, Certificate of Medical Examination (OF 178), with both Part A and Part B completed.⁵¹ Guidance on completing the OF 178 is given in R.3, below.

4. Pre-placement Exam Restrictions

Medical examinations are only authorized for workers filling positions with specific medical standards. Workers filling positions that are sedentary or only moderately active need only meet the general OPM medical qualification standard.⁵² The individual is presumed to be medically qualified in the absence of evidence to the contrary. According to [5 CFR 339.204](#), “Agencies [for example, the Navy, not an individual unit] must waive a medical standard or physical requirement established under this part when there is sufficient evidence that an applicant or employee, with or without reasonable accommodation, can perform the essential duties of the position without endangering the health and safety of the individual or others.”⁵³ A command may not deny employment to a candidate who has a medical condition solely on the basis that at some future time, the employee's condition may become aggravated and he or she may file a claim for WC. As long as the candidate is presently able to do the job, he or she is medically qualified; however, certain safety-sensitive positions have detailed lists of disqualifying medical conditions. When a command requires a medical examination, it has the authority to designate the examining physician or other practitioner. If a worker has been medically disqualified, the command must provide the employee an opportunity to submit medical documentation from his or her physician or practitioner. Such documentation must be reviewed and considered by the command, regardless of whether the examining physician thinks such documentation could demonstrate that the employee is medically qualified.⁵⁴ [5 CFR 339.104](#) provides a detailed discussion of the meaning of “medical documentation.”⁵⁵

5. Failure to Medically Qualify

a. Determining Medical Qualification

For each candidate or worker, determining medical qualification requires knowledge of the specific job requirements and the examinee's actual medical conditions (not risk factors), and being able to logically connect how those conditions prohibit or limit the examinee from safely performing the job. While the reference documents for an exam (e.g., for firefighters, DoD 6055.05-M, Occupational Medical Examinations and Surveillance Manual, and NMCPHC-TM OM 6260, Medical Surveillance Procedures Manual and Medical Matrix) may be used as general guidance, it is the occupational health provider's responsibility to look at the specific physical requirements of the job found in the Position Description (PD) and OF 178, Certificate of Medical Examination, to determine whether any medical condition limits or prevents the examinee from safely performing some or all of the essential job requirements. The OH provider then communicates to management (generally Human Resources, HR) the recommendation as to medical qualification for duty, and any limitations or accommodations. It is agency management that makes the final determination as to whether the worker can start or remain on the job, with or without accommodation.

b. Additional Tests and Consults

Except for Radiation Health exams (Matrix Program 505, Radiation – Ionizing), OH providers should not order or make referrals for specific tests or studies beyond what is listed in the Medical Matrix when determining examinee medical qualification. Doing so may place the OH provider in the role of treating physician or imply that the Navy is assuming responsibility for the medical care of the examinee. If the provider does order specific tests, the employer (the Navy) is financially responsible for those tests and the provider may be making an unauthorized commitment. Unauthorized commitments can result in financial responsibility for the provider. If the routine medical certification or surveillance exam and studies indicate the worker is not medically qualified for duty (i.e., there is evidence of a medical condition which prohibits the worker from safely performing the essential functions of the job), the examiner should recommend medical disqualification. Examinees wishing to dispute that finding may, at their own expense, provide medical documentation that must be considered by the OH provider. Radiation Health exams should follow the guidance in [NAV MED P-5055](#).⁵⁶

c. Requesting Additional Medical Information

The occupational health provider may provide a letter stating specifically why the examinee is medically disqualified and the information needed from the treating physician in order to establish that the worker can safely perform his or her essential job requirements. Specific tests should not be mentioned. A copy of the examinee's PD and OF 178 should be included for the treating physician to review. HR may wish to provide a letter to the worker identifying the time period the employee has in which to provide additional medical documentation.

d. Reviewing Documentation

The OH provider must review the medical documentation provided from the examinee and decide if it is adequate to determine whether the examinee is medically qualified for duty. There may be some situations where no amount of additional medical information will convince the occupational health

provider that the worker is qualified; however, the examiner is still required to review any medical information the worker may provide. Occasionally, the OH provider may need to contact the treating physician for additional information; in that case, a release should be signed by the examinee. If there is still insufficient information to determine that a worker is medically qualified for duty, either based on examinee past medical history or current documentation, then the OH provider cannot find the examinee qualified and should so inform the examinee and HR.

e. Fitness for Duty Evaluations

If the examinee fails to provide adequate and convincing documentation regarding the treatment, resolution, or stability of a medical condition which may limit the safe performance of essential job functions, then the agency may elect to order the worker for a Fitness for Duty (FFD) evaluation. Specific agency-ordered medical evaluations are allowed per 5 CFR 339.301 and are paid for by the agency. HR should take the lead in ordering FFD evaluations, as there may be disciplinary and legal ramifications. The OH provider should assist HR in determining the appropriate specialist for referral; typically, this specialist will have experience in Functional Capacity Evaluations and FFD evaluations. HR will make the final decision on FFD and whether the examinee can start or remain on the job.

D. Physical Requirements

OPM details the physical requirements for each qualification standard in Federal civil service.⁵⁷ The OH provider must have a list of the specific physical requirements (provided by the applicant's human resources office) or be personally familiar with the specific physical requirements for each applicant (e.g., from a workplace walk through). Generally, these requirements are listed as "Functional Requirements" on OF 178.⁵⁸ The examiner is responsible for evaluating the applicant to determine whether he or she meets each of these criteria. Failure to meet a properly established medical standard means the individual is not qualified for the position unless a waiver or reasonable accommodation is indicated.

E. Specific Medical Examinations and Tests

For specific jobs or job related requirements, testing may be necessary beyond the examinations performed at the MTF (e.g., depth perception testing for crane operators, color vision testing for truck drivers, etc.). If such routine testing is required but not available on the OEM provider's premises, off-site referral may be necessary. Also, if there is uncertainty as to the interpretation of special tests, assistance from the cognizant OH professional or NMCPHC should be sought. This does not include testing beyond what is specifically required for the job (i.e., specifically identified as part of the exam). For example, it does not include cardiac catheterization to further evaluate a worker for possible coronary disease; such testing is the responsibility of the candidate or worker, see previous section C.5).

F. Work and Medical History

As part of the pre-placement examination, it is important to obtain a detailed work and medical history. For example, documenting that a worker was occupationally exposed to asbestos for 20 years, that a worker was previously disqualified from work, or that a worker is under treatment for severe reactive airways disease may be important. The candidate or worker may be required to

complete a health history questionnaire, which may include all medical, social, and occupational history pertinent to the examinee's ability to perform his or her job. The health care provider may also inquire about and require documentation of any previous Federal agency disability rating (e.g., a former service member with a disability rating). Veterans Administration disability paperwork may specifically be required if the applicant is using his status as veteran for preferential hiring benefits; activities should develop a standard process to request that information.

G. Family History

Family history questions generally are no longer acceptable in routine medical certification and surveillance, due to restrictions imposed by the Genetic Information Nondiscrimination Act of 2008.⁵⁹

H. Regulations Related to Persons with Disability

1. Pre-Employment Examinations Generally Forbidden

[5 CFR 339.204](#) and [29 CFR 1630.14](#) provide guidelines on pre-employment inquiries regarding persons with disabilities.^{60,61} With certain exceptions, a command may not conduct a “pre-employment” medical examination (i.e., to require a medical exam prior to offering the person a job) and may not make pre-employment inquiry of an applicant as to whether he or she is disabled or the nature and severity of a disability. However, a command may make pre-employment inquiry into an applicant's ability to meet the medical qualification requirements of the job with or without reasonable accommodations, i.e., the minimum abilities necessary for the performance of the duties of the position in question. A command may make a conditional offer of employment pending the results of a pre-placement (in contrast to a pre-employment) medical examination, provided that all applicants are subjected to such an examination.

2. Reasonable Accommodation

The Equal Employment Opportunity Commission (EEOC) Federal Sector Equal Employment Opportunity⁶² requires agencies to make reasonable accommodation for the known physical or mental limitations of qualified disabled applicants or employees, unless the command can demonstrate that the accommodation would impose undue hardship on its operations.⁶³ If an employee is seeking reasonable accommodation, the employer may require a medical examination; the employee may produce medical documentation to support a request for medical accommodation if the limitation is not immediately apparent.⁶⁴ According to the [ADA](#), reasonable accommodation “may include (A) making existing facilities used by employees readily accessible to and usable by individuals with disabilities; and (B) job restructuring, part-time or modified work schedules, reassignment to a vacant position, acquisition or modification of equipment or devices, appropriate adjustment or modifications of examinations, training materials or policies, the provision of qualified readers or interpreters, and other similar accommodations for individuals with disabilities”⁶⁵

I. Medical Examinations as Part of Medical Surveillance

1. Medical Surveillance

Medical examinations are required as part of many medical surveillance programs. Such exams are usually baseline, periodic or termination. Surveillance is a type of secondary prevention. The Matrix

contains all current Navy surveillance programs, and meets or exceeds Federal and Military (but not necessarily local, state, or foreign country) requirements.

2. Matrix

Many recognized occupational hazards require surveillance of workers, including physical hazards (e.g., noise), chemical hazards (e.g., lead), and mixed hazards (e.g., wood dust). Surveillance for each hazard is considered a separate “program.” Requirements for each surveillance program can be very similar (e.g., urinalysis, physical exam). The Matrix¹³ was developed to assist OEM personnel in managing surveillance programs in compliance with all Federal and Military requirements, specifically including those of OSHA, DOT, DoD, and the DoN. The Matrix is a compilation of all surveillance requirements for Navy personnel. To eliminate redundant efforts (such as having a worker return 5 times for 5 physical exams and 5 urinalyses), an internet application version, MMO, is available. MMO collates and simplifies the requirements of combinations of surveillance requirements for various workplace exposures, and generates a single form [SF-600, Chronological Record of Medical Care](#), containing all required exam elements.⁶⁶ Thus, a worker enrolled in 5 programs can undergo one history, one physical, and one set of laboratory tests. Programs that require use of specific forms (such as [OF 178](#) and [DD Form 2807-1](#) Report of Medical History) are not included in the Matrix. The Matrix can be downloaded from the NMPCHC web site; access to MMO requires registration.⁶⁷ The Matrix contains the **minimum** requirements for medical surveillance and job certification examinations, in particular OPNAVINST 5100.23series⁶⁸ and OPNAVINST 5100.19series.⁶⁹ The Matrix is a primary source of guidance for medical surveillance programs. OSHA regulations issued after the Matrix is published take precedence. Requirements for situational examinations are not included in the Matrix.

3. Matrix Committee

Formerly, a committee of OEM physicians and occupational health nurses was formally established to determine changes to the Matrix. With changes to BUMED OH, especially the establishment of the Navy Medicine Regions, and to NMCPHC OEM, there is no longer a formal Matrix Committee. Minor changes are made by NMCPHC OEM, and major modifications to the Matrix are determined collaboratively by BUMED OEM, NMCPHC OEM, NAVMEDEAST and NAVMEDWEST, with considerable input from OH providers and nurses worldwide. The Matrix and MMO are maintained at NMCPHC OEM. The Matrix is continuously reviewed in order to stay current with changing requirements, policy and guidance.

J. Placement (Inclusion) into Medical Surveillance Programs

Workplace supervisors request enrollment in medical surveillance programs, based on industrial hygiene data and workplace characterization. Safety personnel, Occupational Health nurses, and OEM providers may also recommend enrollment, generally as the result of discussions or workplace walk-throughs. Supervisors use form SECNAV 5100/1 to request medical surveillance exams, and OEM providers communicate results of the exam (duty restrictions or accommodations) using the same form. The Matrix contains the elements required for each medical surveillance program and is meant to be used by those providing occupational medical surveillance; the Matrix is not to be used to determine who should be enrolled in medical surveillance. In accordance with OPNAVINST 5100.23series, selection of personnel for medical surveillance should be based primarily on the

results of IH surveys (preferably those that quantify exposures in the workplace). This is called hazard based surveillance. When quantitative exposure data is insufficient or not available, or if exposures are wide-ranging or poorly defined (e.g., for firefighters and hazardous waste workers), individuals are placed in specific programs based on the professional judgment of the IH representative made after a qualitative exposure assessment rather than on quantitative IH measurements and known exposure times. As the IH data base grows, personnel can be selectively included in or excluded from hazard based surveillance.

K. Contractors

The Navy has no general obligation to perform medical surveillance or certification examinations for contractor personnel performing work at Navy facilities. (Exceptions are certain types of personal services contracts or as defined by Status of Forces Agreements.) The contractor's agency is responsible for the medical surveillance and certification required, and the Navy has no statutory responsibility to ensure that those requirements are met. Under personal services contracts, where Navy hires an individual directly to perform work at a Navy site, the Navy may conduct medical surveillance/certification or require that it be performed by a non-Navy health care facility. In the latter case, it will be the contracted worker's responsibility to have the medical surveillance/certification performed at no cost to the government and the resulting documentation provided to the cognizant MTF.

L. Removal from Medical Surveillance Programs

Individuals may be removed from a medical surveillance program if any of the following situations occur:

- The worker's job changes and there is no longer adequate exposure to warrant inclusion in surveillance and there is no requirement of ongoing surveillance for the previous hazard , or
- IH personal sampling data clearly show that exposure does not warrant inclusion in surveillance, or
- IH survey data document the absence of a hazard or stressor in a job or process, or
- IH professional opinion states that no hazard exists.

It is to be noted that IH may recommend inclusion or removal from surveillance, but the final decision to include a worker in surveillance is the responsibility of OEM.

M. Types of Medical Surveillance Examinations

1. Baseline (or Initial) Examinations

Workers are generally required to undergo an initial surveillance exam on starting a job with potential health hazard exposure (see [Pre-placement Medical Examinations](#), above).

2. Periodic Examinations

Most medical surveillance programs require regular OH evaluation while the worker is enrolled in that program. Various components of surveillance are usually, but not always, annual, and OH personnel must be alert to specific requirements. Job certification evaluations are done periodically to make sure the individual continues to meet certification requirements for certain jobs (termed "Specialty Examinations" in the Matrix). For some programs (e.g., asbestos), the frequency of

examinations will depend on variables such as the findings from previous examinations, the history of exposure, and the age of the individual.

3. Termination Examinations

Surveillance programs often require a termination examination. When a worker terminates employment or is removed from a job requiring medical surveillance, he or she is removed from the medical surveillance program and undergoes a termination examination. (The AMSP has unique provisions for individuals removed from exposure, termed “past workers.”) In most cases, a termination examination is not required if a periodic examination has been documented within the past 12 months. Documentation of the individual’s state of health at the termination of exposure or employment is essential for comparison purposes if that individual later develops medical problems that could be attributed to past occupational exposures.

4. Specialty Examinations

Exams specific to a particular occupation or task are “special examinations” or “certification examinations.” Examples include respirator user certification and firefighter examinations. These special examination programs provide basic guidance on required examinations and define the content of examinations when there may be no other specific written guidelines. Some activities may have additional local requirements for examinations or additional occupations which are not included in the Matrix.

N. FFD Examinations (Military Personnel)

According to the MANMED, in addition to the various scheduled and special examinations for military personnel, under the following conditions, an FFD evaluation may be required:⁷⁰

- The service member was determined to be unfit for full duty, and is returning to full duty, or
- The service member is known or suspected to have a condition that may impair his or her ability to perform full duty.

In such cases, an FFD examination is performed, often with special attention to the condition suspected to be or actually is limiting the person’s ability to perform job duties. Emphasis on certain elements of the history, physical and/or additional studies may be appropriate. As military duty requirements are unique, including deployment OCONUS for extended periods, protective military gear use, etc., FFD examinations may be extensive. Documentation should clearly state the findings, duty restrictions (if any), or fitness for full duty (if qualified).

O. Return to work examinations (civilian personnel)

Generally, a civilian worker who, for medical reasons, has missed work or has been placed on light (restricted) duty is considered able to return to full duty when a written medical opinion documents that the period of limitations has ended or that the worker is able to return to full duty. For example, the worker may present a note from his or her physician stating, “Out of work for 1 week,” “No lifting for 2 weeks,” or, “Patient able to return to full duty,” etc. If the worker has been on limited duty or out of work because of a work-related injury, an examination documenting the patient’s condition may be preferable to a note estimating the duration of disability or limitations. The estimation, “Out of work for 1 week, then light duty for 1 week, then may return to full duty,” is less desirable than the verification, “Patient may return to full duty.” If there has been a serious injury, an

extended absence, or recurrent injury, it may be appropriate to document that a worker may return to full or light duty, including any limitations. If a physician or other provider who has seen the worker recommends (generally on the basis of incidentally noting a condition that may affect the worker's ability to safely perform his or her duties) that the worker's FFD (generally in safety-sensitive jobs) be evaluated, an examination is appropriate. For example, the worker being cleared to return to full duty after a back injury may reveal to the physician that the worker is taking medication for recently-diagnosed epilepsy. If the worker is a commercial driver, the physician may clear the worker as far as the back condition but recommend to the employer that the worker's ability to perform his or her job be reviewed. In the above cases, the employer may request that the worker be evaluated by a Navy-designated OH provider prior to returning to full or light duty. If the worker prefers his or her own physician do the evaluation and provide documentation of fitness, a review by a Navy-designated physician of the documentation and discussion with the worker's physician (after written permission from the worker to do so is verified) is appropriate. In cases where differences between medical opinions cannot be reconciled, an independent medical exam may be appropriate (see next section).

P. Circumstances in Which the Command May Require Medical Examinations

When the command requires a medical examination, it must inform the employee in writing of its reasons for doing so and the consequences of failure to cooperate. At no time will the OHC initiate a FFD exam without paperwork provided by the HR Office. When the command is authorized to require an examination, failure to submit to the examination may be grounds for disqualifying an applicant, or taking appropriate or adverse action against an employee. However, it may not impose a penalty for refusing an offer of an examination. The command may require medical examinations in the following situations.

1. Positions Covered by Specific Medical Standards

Since successful performance in these positions is dependent upon the worker's medical status, an employee may be required to undergo a medical examination after appointment or selection but prior to starting work (including re-employment on the basis of full or partial recovery from a medical condition), or on a regularly recurring, periodic basis after appointment, or whenever there is a direct question about an employee's continued capacity to meet the physical or medical requirements of a position.

2. On-the-Job Injury

A worker who has applied for or is receiving continuation of pay or compensation as a result of an on-the-job injury or disease may be required to undergo an examination to determine medical limitations that may affect placement decisions.

3. Release from Competitive Level

An examination may be required when an employee is released from his or her competitive level in a reduction in force, and the position to which the employee has assignment rights has medical standards or physical requirements different from those required in his or her present position.

4. Accommodating Employee Disability

If an employee requests reasonable accommodation because of a disability, the command may accept documentation from the worker's physician or, if not available, require an examination to determine what accommodation will be necessary.

Q. Psychiatric Examinations and Psychological Assessments

Psychiatric examinations and psychological assessments may only be used to make legitimate inquiry into a person's mental fitness to successfully perform the duties of his or her position without undue hazard to the worker or to others. They may be ordered only if the results of a current general medical examination which the command has the authority to order indicate no physical explanation for behavior which has been observed that may affect the safe and efficient performance of the individual or others, or if a psychiatric examination is specifically called for in the medical standards or medical evaluation program pertaining to the position.

R. Circumstances in Which the Command May Offer Medical Examinations

A medical examination may be offered in any situation where additional medical information is needed to make a management decision concerning civilian personnel. This may include situations where the individual requests, for medical reasons, a change in working conditions or any other benefits or special treatment (including reasonable accommodation on the basis of full or partial recovery from a medical condition), or where the individual has a performance, conduct or attendance problem which may require action by the command. As long as the candidate is presently able to do the job, he or she is qualified, unless the possibility that the condition might recur would present a substantial safety and/or health risk.

1. Existing Medical Conditions

Although OH providers are not responsible for evaluation of pre-existing medical conditions, it is their professional duty to inform their patients of any significant findings and give proper recommendations for follow-up. The worker should be provided with a copy of the abnormal findings; a note to his or her physician summarizing any abnormal findings may be appropriate as a courtesy.

2. Suspected Occupational Illness

Laboratory tests not required in the Matrix should be ordered only if they may indicate abnormalities resulting from occupational exposure. When the results of such tests are abnormal, follow-up should be done by the OH provider or by appropriate referral. If the individual prefers follow-up by his or her private physician, the employee must pay for the evaluation or must contact the HR Office, complete [FECA](#)⁷¹ forms⁷² and wait until approval has been obtained from the Department of Labor (DoL). If the FECA documents are completed after the employee has gone to a private physician, DoL may or may not approve payment for the medical expenses.

3. Employment Decisions

The role of the practitioner with respect to employment decisions is limited to determining whether the individual meets the medical requirements of the position. The practitioner indicates on [OF 178](#)⁷³ what restrictions, if any, are appropriate, based on the medical findings. Employment decisions are

the responsibility of the HR Office, who uses available medical information as one component influencing their decision.

(The 2009 version of OF 178 includes check boxes indicating the examiner's recommendation to hire or not. The examiner should not make such a recommendation, and the 2009 and the 2014 versions of OF 178 should not be used. As of November 2019, the [current authorized OF 178](#) is dated 2012.)⁷⁴

In cases where the decision to employ or not to employ is not straightforward or is likely to be challenged, it is recommended that a panel composed of HR, Management, Medical, Legal, EEO, and Safety representatives make employment decisions.

S. Situational Examinations

A situational examination is conducted in response to a specific incident in which an exposure or overexposure is suspected. Elements of the evaluation may vary considerably from routine surveillance protocols. Expertise in several areas of OH may be required, and assistance from the supervising OH activity or NMCPHC should be sought if needed. Although some or all elements of one or more medical surveillance programs may be deemed appropriate follow-up for that individual, the worker should not be enrolled in a medical surveillance program based on an incidental exposure. Incidental exposures or overexposures do not warrant entering a worker in a medical surveillance program, unless specifically required by OSHA (e.g., 1, 3-butadiene).

T. Termination examinations

Termination examinations may be performed on retirement or discharge from military or civilian service, or on removal from a medical surveillance program. The Matrix gives details on medical surveillance termination exams (see [above](#)). A termination exam serves both as an endpoint (i.e., compared to the pre-placement or baseline exam) and as a new baseline (i.e., documenting health status at the time of termination of employment, to which future examinations may be compared). Thus, the data collected from the history, physical, and other tests should be complete and accurate.

U. Procedures

On OF 178, the applicant indicates if he or she has any medical problems which may interfere with the duties of his or her position. The physician must obtain a full explanation, including treatment. The working conditions generally found at the applicant's job location should already be listed on the OF 178. These factors, as well as the functional requirements of the position, should be considered by the examiner in light of the applicant's general health. If the applicant is under a physician's care for a medical problem, there may be differences between the conclusions (as to the ability to perform a job) of the examiner and of the treating physician. In all cases where there is a question of medical qualification, the guidance provided in [C.5](#) should be followed. It is appropriate for the occupational health provider to discuss with the worker any abnormal findings detected during the examination. The report should be signed by the examiner (see Employment Decisions).

Some clinics ask supplementary medical history questions, often using DD form 2807-1, Report of Medical History. This form is not recommended for this purpose, since many of the questions are unrelated to applicant's ability to perform the specific job, and DD 2807-1 is used to determine acceptability of applicants for military service. Disability-related inquiries and requests for examinations should be job-related and consistent with business necessity.

Pre-placement examinees may be required to provide disability information, including information on past workers' compensation claims, supporting medical documentation, and medical specialist reports, as long as this policy is practiced consistently (i.e., for all applicants). Veterans may be required to provide their Department of Veterans Affairs (VA) Rating Decisions and supporting medical exam documents; the VA Rating Decision must be used only to determine the medical qualification for a particular position that has medical standards or physical requirements.

If the examiner identifies a disqualifying medical condition, the examiner should notify the examinee and explain that the examinee may, if appropriate, obtain and provide documentation that the suspected medical condition does not exist or, if it does exist, is under adequate control such that he or she can safely perform the essential job functions.

V. Using the "SOAP" Format

Documenting the medical surveillance evaluation can be effectively accomplished using the traditional SOAP (subjective, objective, assessment, plan) format. The history and review of systems are *subjective*. The laboratory tests, ancillary tests, and the physical examination are *objective*. The *assessment* is an interpretation of the results of the surveillance examination. Interpreting surveillance data is done from the viewpoint of the individual worker (as in traditional medical practice) and from the viewpoint of the group of workers (unique to public health). The assessment should state whether the provider believes abnormalities are related to the occupational stressor in question. Sometimes this question cannot be answered with certainty at the time of the examination. Information should be evaluated to identify evidence of occupational disease in a group of workers in the same surveillance program or working in the same process (this is discussed in more detail in Chapter [IV](#)). The *plan* should address follow-up of abnormal results and scheduling for the next evaluation or surveillance examination, ensure that the worker receives the assessment and/or results, and document if there has been a decision whether or not to recommend continued exposure to a stressor.

W. Communication

A summary of the medical certification and surveillance examinations (whether the worker can return to work with or without restrictions) should be transmitted back to the command as soon as possible (generally, this should be within a week). Details about medical conditions should not be communicated. For example, if a worker is disqualified because of a heart condition, the command may be told the worker is not fit for duty, but the actual diagnosis should not be disclosed. Unrelated or incidental medical diagnoses should not be disclosed. However, if a condition is discovered that brings the ability of the worker to safely perform his or her job into question, the OH provider may recommend to the command that an FFD exam be considered, without disclosing the reason (the diagnosis). [SECNAV 5100/1](#) is to be used by supervisors when sending workers for surveillance or certification exams and reporting the results of those exams.⁷⁵ It is required that occupational medical surveillance of BUMED employees be documented using the Enterprise Safety Applications Management System (ESAMS).⁷⁶ ESAMS is the recommended communication method for all commands using ESAMS.

X. Other documentation

When deployed personnel do not receive periodic examinations on schedule, the circumstances should be documented in the health record and the examination performed as soon as possible.

Y. Personnel Authorized to Perform Surveillance and Certification Exams

1. Licensed Medical Providers

In general, all pre-placement exams and surveillance programs that involve an exam of the worker beyond taking vital signs must be performed by a licensed medical provider (i.e., physician, nurse practitioner, or physician assistant). Certain programs require that an exam be performed by a physician⁷⁷ or even a specialist physician,⁷⁸ but most programs require only that exams be performed by or under the supervision of a physician. In such programs, the examiner must still be a licensed provider (i.e., a physician cannot assign his OHN to perform the exam and say the exam was performed under his supervision). For example, a physician may observe his nurse look in a patient's ears, but if the nurse has not had the training of a nurse practitioner, the physician has no way of being sure that the nurse knows what is normal or abnormal.

2. Nurses

Nurses are authorized to administer and review medical history and review of systems questions, and are specifically authorized to perform the following screenings.

- Blood and Body Fluids (blood-borne pathogens)
- Health Care Worker
- Childcare Worker
- Respirator User
- Wastewater/Sewage Worker

The above screenings are not "exams." For example, OSHA requires that respirator users be screened, which is done by asking questions or administering a questionnaire. Positive (abnormal) responses require further investigation, including an exam by a physician (what is commonly referred to as the "respirator exam").

3. Supervisors

Some screening is left to the employer (which usually ends up being the supervisor). Screening done by supervisors (or by anyone other than nurses or providers) must not include details about personal health information. For example, regulations pertaining to non-DOT vehicle operators (i.e., drivers of sedans, pickup trucks, minivans, etc.—those vehicles that do not require the driver to have a Commercial Motor Vehicle operator's license) state the following.⁷⁹

"At least once every 4 years, each agency will ensure that employees who operate Government-owned or leased vehicles are medically able to do so without undue risk to themselves or others. When there is a question about an employee's ability to operate a motor vehicle safely, the employee may be referred for a medical examination in accordance with the provisions of part 339 of this chapter."

The agency (i.e., the Navy, which usually falls on the supervisor) has the vague requirement of ensuring that the operator of a vehicle is "medically able to do so without undue risk." Only if there is

a question does the driver require a medical exam. A tool meant to help with such screening is OPM form OF 345, which includes questions about blood pressure, arthritis, epilepsy, and drug use—information supervisors have no right to know. While the form is signed by a “designated official” making a determination that the driver should or should not be “referred” for a medical examination, the only proper way to use OF 345 is for a nurse or provider to administer the form. Unfortunately, such confusion leads to OH clinics seeing workers who do not really require an exam. Appropriate questions for the supervisor to ask would be if the worker has had any change in health that might affect his or her ability to safely operate a motor vehicle, or if the worker has questioned his or her ability to safely operate a vehicle, or if the worker’s glasses prescription is current and adequate to drive safely. The supervisor could also consider his own observation of the worker and review the worker’s record for evidence of safety incidents involving vehicles.

4. Independent Duty Corpsmen (IDCs)

IDCs are authorized to provide care under indirect supervision (i.e., the supervising physician is not present) to military service members; IDCs may only provide care to civilians under direct supervision (the supervising physician must be present). Their scope of practice is described in [OPNAVINST 6400.1](#).⁸⁰ The following OH-related services are listed: medical surveillance programs, including noise exposure, asbestos exposure, and heat exposure, immunization programs, and the Radiation Health Program.

With regard to motor vehicle operators, IDCs are authorized to medically certify military operators of non-highway explosives and non-explosives material handling equipment, including forklifts, and of civil engineering support equipment. However, IDCs may not certify military (or civilian) operators of motor vehicles for use on highways (i.e., public roads).

VI. TREATMENT OF ILLNESSES AND INJURIES IN THE OH CLINIC

A. Introduction

OH professionals working in naval MTFs have a longstanding, multidimensional role in the prevention, treatment, and administrative disposition of occupational injuries and illnesses which occur in uniformed and civil service employees of the Navy and Marine Corps. Per [OPNAVINST 5100.23](#) series, OH services, including periodic medical examinations, treatment of acute and chronic occupational medical conditions, and medical review and management of WC cases are integral elements of the NAVOSH Program. Per [BUMEDINST 6320.103](#)⁸¹ and [MANMED](#),⁸² MTFs are authorized to provide emergency and non-emergency care, including OH services, to civilian employees for work-related injuries and illnesses. These authorized services include medical treatment under [FECA](#)⁸³ programs for appropriated fund employees ([20 CFR 10](#)⁸⁴ and DoL booklet [CA-550](#))^{85,86} and non-appropriated fund employees ([BUMEDINST 6320.103](#)).⁸⁷

B. Privacy

The [Health Insurance Portability and Accountability Act of 1996 \(HIPAA\)](#)⁸⁸ and its [Privacy Rule](#)⁸⁹ (45 CFR Parts [160](#) and [164](#)) established standards for disclosure and transmission of Individually Identifiable Health Information (IIHI) which apply to OHCs. [IIHI](#) is “any information, including demographic information collected from an individual, that is created or received by a health care provider, health plan, employer, or health care clearinghouse, and relates to the past, present, or future physical or mental health or condition of an individual, the provision of health care to an individual, or the past, present, or future payment for the provision of health care to an individual, and identifies the individual, or with respect to which there is a reasonable basis to believe that the information can be used to identify the individual.”⁹⁰ IIHI is also known as Protected Health Information (PHI). Per [45 CFR 164.512](#), a covered entity (including OH Clinics and providers) is not required to obtain written consent or authorization for disclosure of IIHI to an employer for medical surveillance evaluations, evaluation of work-related illness or injury, or reporting as required under 29 CFR parts 1904 through 1928 (i.e., recording and reporting occupational injuries and illnesses) or 30 CFR parts 50 through 90 (i.e., recording and reporting mining-related injuries and illnesses), if the covered health care provider provides written notice to the individual worker that the IIHI related to the medical surveillance of the workplace and work-related illnesses and injuries is disclosed to the employer.⁹¹

C. Prevention as the Foundational Role of the Occupational Medicine Clinic

1. Primary Prevention

Through identification, elimination, and control of workplace hazards and proper use of PPE, workplace exposures are eliminated or minimized.

2. Secondary Prevention

A well-designed, ongoing program of periodic medical surveillance based on current IH assessment of workplace exposures should identify health effects of overexposures before symptoms develop and in time to keep them from developing. Trending of workcenter data over time may be more sensitive than evaluation of a patient’s testing or evaluation results at a single point in time.

3. Tertiary Prevention

Should occupational injuries and illnesses occur, OH professionals, usually in coordination with physical therapy, occupational therapy, rehabilitative (physical) medicine, toxicology, and other specialties, play vital roles in optimally managing health care, minimizing disability, and reducing lost work time.

D. Clinical Care

Navy OH professionals provide clinical care to the injured or ill employee within the capabilities of the examining MTF. At many MTFs, this on-site treatment involves providing acute evaluation and treatment of occupation-related conditions, follow-up visits, on-site ancillary services (e.g., physical therapy) and referrals to military medical specialists (e.g., orthopedic surgeons) in the evaluation and treatment of work-related illnesses and injuries.

E. Payment for OH MTF Services

1. Federal WC

Federal employees are covered by a centrally administered, essentially “no-fault” insurance (i.e., WC) system designed to address occupation-related medical conditions.

2. Appropriated Fund Employees

Appropriated fund employees are covered by [FECA](#).⁹² It provides compensation benefits for disability due to personal injury (including occupational disease) sustained while in the performance of duty.

3. Non-appropriated Fund Employees

Non-appropriated fund (NAF) employees (i.e., certain employees of Navy exchanges, child care centers, and food service units) are authorized WC benefits by the [Nonappropriated Fund Instrumentalities Act](#).⁹³ As of March 26, 2008, all DoN NAF employees are eligible for OH and on-the-job injury care by MTFs without reimbursement by the responsible NAF Instrumentality.⁹⁴ Specific Patient Category Table codes (K57-9 and K57-A) have been established for Navy NAF employees to ensure they are not billed for OH services.

4. Appropriated and Non-appropriated Fund Differences

The [Longshore and Harbor Workers' Compensation Act \(LHWCA\)](#) covers most waterfront workers.⁹⁵ The administrative aspects of FECA and LHWCA differ in terms of program administration, nature of [OWCP](#) oversight, and financial underwriting. Both programs provide similar benefits: payment of medical expenses, recovery of lost wages, and schedule awards (also called “lump sum payments” for permanent impairment related to occupational diseases and illnesses). FECA and LHWCA operate under a claimant (employee) burden of proof to establish both the presence of a medical condition (as defined by generally accepted medical principles and practices) and a causal relationship between that condition and the claimant's performance of duties. The claimant must present evidence establishing the medical condition was caused, aggravated, accelerated, or precipitated by his or her work duties. Per DoL Publication [CA-810](#),⁹⁶ this is based entirely on medical evidence provided by physicians who have examined and treated the employee. Neither the opinions of the employee, supervisor or witness, nor general information contained in

published articles is considered. References and Resources for Filing Injury Claims (below) provides definitions of relevant FECA and LHWCA terms as well as a sampling of the standard reporting forms used in these programs. In both programs, the OWCP is the final authority in terms of acceptance of claims, review of medical documentation, and determinations of employees' ability to return to work in either a full duty or transitional (light) duty capacity.

F. Choice of Treating Physician

Both FECA and LHWCA give the occupationally injured or ill employee the responsibility and privilege of choosing his or her treating physician. A naval activity may establish administrative procedures requiring all employees with job related injuries or illnesses to report these conditions through the activity's MTF, but employees are not required to be examined or to accept treatment by the MTFs.

G. Medical Care for Work-related Conditions in the Navy MTF - Authorized Care

[BUMEDINST 6320.103⁹⁷](#) authorizes the following medical care for new and recurrent work-related conditions through the MTF: comprehensive care for active duty personnel, comprehensive care, within the limits of MTF capability and military referral networks, for civil service and non-appropriated fund personnel, and emergency care for contract, civilian, or humanitarian injuries.⁹⁸ Civil service and non-appropriated fund employees have the right to choose to receive care through civilian health care providers. MTFs should strive to provide accessible, timely care of the highest caliber. It is a professional responsibility, increases convenience of access to medical care for civil service employees, reduces medical costs to the Navy, and promotes more rapid return to work for injured or ill employees. For those patients choosing care at the MTF and who require adjunct treatment (e.g., physical therapy) or specialist care beyond the capabilities of the MTF, referral to local Navy providers may be done without prior approval, but referral to local private providers or to Navy providers requiring funding for travel must have prior approval.

H. The Role of the Occupational Health Physician

The physician assigned to the OH Clinic provides support to the activity's NAVOSH program, including but not limited to:

- Actively supporting occupational injury and illness prevention through comprehensive workplace evaluation and medical surveillance programs,
- Providing medical care within MTF capabilities to active duty and civil service personnel for work-related medical conditions,
- Remaining knowledgeable of changing Federal regulations, clinical practice guidelines (such as those published by ACOEM, and the U.S. Preventive Services Task Force),⁹⁹ and emerging ethical issues relevant to OEM,
- Serving as part of a multidisciplinary team in the ongoing review of WC cases,
- Providing case reviews, utilizing OEM specialist consultation when appropriate,
- Providing liaison with local civilian providers in WC case management, and
- Providing medical examinations.

I. Medical Examiner Responsibilities

Besides providing direct clinical care, the OEM physician may serve as a medical examiner, generally for employees on long-term compensation. OEM physicians and OH nurses provide the following oversight and review of occupational injuries and illnesses:

- Ongoing review for trends suggesting a particular work activity or work center requires further evaluation,
- Periodic, first-hand evaluation of at-risk employees' work centers through site visits,
- Medical liaison with private providers in occupational illness and injury case management,
- Review of medical documentation submitted to support an employee's request for WC, and
- Interfacing with occupational safety specialists, injury compensation program administrators (ICPAs), other HR Office employees, and work center supervisors in the activity's review and management of WC cases and Fitness for Duty cases

J. The Role of the OH Nurse

1. Immediate Care by the OH Nurse

- a. The OH nurse typically provides "routine" nursing support as well as care usually associated with preventive and OEM and public health, including (but not limited to) the following: Providing immediate initial assessment, documentation, nursing diagnosis and implementation of treatment plans.
- b. The OH nurse initiates follow-up of medical care, if the employee elects a private provider, including advising the employee and the provider of light duty availability, or facilitating care by a Navy health care provider if the employee so chooses.
- c. The OH nurse documents treatment, pre-existing conditions, and medical and occupational history.
- d. The OH nurse facilitates team communication by coordinating workplace visits with supervisors, safety professionals, industrial hygienists and ICPAs to evaluate ergonomic factors and identify safe light-duty or modified-duty assignments.
- e. The OH nurse makes personal contact with the employee to monitor injury status, provide information about medical treatment, and assist in any problems which may inhibit recovery and return to work.
- f. The OH nurse communicates verbally and in writing with the private health care provider, as needed, concerning the treatment plan, prognosis and work status.
- g. The OH nurse assists in obtaining approvals for surgery and special procedures from OWCP.
- h. The OH nurse consults with claims examiners and technical advisors at OWCP.
- i. The OH nurse serves as the communication liaison between the employee, the attending physician and OWCP.
- j. The OH nurse coordinates with all commands in managing employees returning to work on transitional duty status and assisting in preparing transitional duty job offers.
- k. The OH nurse tracks recovery progress after the employee returns to work, by making contact with the employee, private health care provider and supervisor.
- l. The OH nurse assures that medical treatment and medications charged were actually provided and were appropriate for the condition approved by OWCP.
- m. The OH nurse educates providers and administrators regarding civilian eligibility for treatment and the cost-saving benefit if care is provided by Navy facilities.
- n. The OH nurse assists with referral as needed.

2. Long-Term Case Management by the OH Nurse
 - a. The OH nurse provides assistance in updating medical information for permanent medical placement and reevaluation of employees in long-term transitional duty status.
 - b. The OH nurse works with OWCP to manage long-term compensation with the goal of returning employees to work.
 - c. The OH nurse coordinates with Department of Labor or OWCP locally contracted rehabilitation nurses, nurse case managers and physicians.
The OH nurse follows transitional duty cases until they return to regular duty or are referred for medical placement.

K. References and Resources for Filing Injury Claims

1. Definitions of Terms

The following are selected terms that commonly are used. FECA definitions may be found in [20 CFR 10.5](#).¹⁰⁰

Disability means the incapacity, because of an employment injury, to earn the wages the employee was receiving at the time of injury. It may be partial or total and is a legal decision vice medical decision.

Impairment means any anatomic or functional abnormality or loss. A permanent impairment is any such abnormality or loss after maximum medical improvement has been achieved.

Injury means wound or condition of the body induced by accident or trauma, and includes a disease or illness proximately caused by employment, including damage to or destruction of medical braces, artificial limbs, and other prosthetic devices which shall be replaced or repaired.

Traumatic injury means a condition of the body caused by a specific event or incident, or series of events or incidents, within a single workday or shift. Such condition must be caused by external force, including stress or strain, which is identifiable as to time and place of occurrence and member or function of the body affected.

Occupational disease or illness means a condition produced by the work environment over a period longer than a single workday or shift. Factors include systemic infection, continued or repeated stress or strain, exposure to hazardous elements (such as, but not limited to, toxins, poisons, fumes, noise, particulates, or radiation), or other continued or repeated conditions or factors of the work environment.

2. Additional Resources

Federal Employee's Compensation Act, Compliance Assistance

http://www.dol.gov/owcp/regs/compliance/ca_feca.htm (page last accessed 9-18-2014).

When Injured at Work Information Guide for Federal Employees (CA-11)

<http://www.dol.gov/owcp/dfec/regs/compliance/ca-11.htm> (page last accessed 9/18/2014).

Federal Employee's Notice of Traumatic Injury and Claim for Continuation of Pay/Compensation (Form CA-1)

<http://www.dol.gov/owcp/regs/compliance/ca-1.pdf> (page last accessed 9/18/2014).

Notice of Occupational Disease and Claim for Compensation (Form CA-2)

<http://www.dol.gov/owcp/regs/compliance/ca-2.pdf> (page last accessed 9/18/2014).

Authorization for Examination and/or Treatment (Form CA-16)

<http://www.afge171.org/forms/wcomp/ca-16.pdf> (page last accessed 9/18/2014).

OWCP-1500 Health Insurance Claim Form (OWCP-1500/HCFA-1500)

<http://www.dol.gov/owcp/dfec/regs/compliance/OWCP-1500.pdf> (page last accessed 9/18/2014).

Federal Employee's Duty Status Report (Form CA-17)

<http://www.dol.gov/owcp/regs/compliance/ca-17.pdf> (page last accessed 9/18/2014).

Attending Physician Report (Form CA-20)

<http://www.dol.gov/owcp/regs/compliance/ca-20.pdf> (page last accessed 9/18/2014).

Division of Longshore and Harbor Workers' Compensation (DLHWC) Forms

<http://www.dol.gov/owcp/dlhwc/lsforms.htm> (page last accessed 9/18/2014).

DLHWC Request for Examination and/or Treatment (Form LS-1)

<http://www.dol.gov/owcp/dlhwc/ls-1.pdf> (page last accessed 9/18/2014).

DLHWC Notice of Employee's Injury or Death (Form LS-201)

<http://www.dol.gov/owcp/dlhwc/ls-201.pdf> (page last accessed 9/18/2014).

Employer's First Report of Injury or Occupational Illness (Form LS-202)

<http://www.dol.gov/owcp/dlhwc/ls-202.pdf> (page last accessed 9/18/2014).

VII. Guidance for Occupational Health Medical Treatment Facilities with Contagious Clients

(This section is included as a model of a comprehensive policy; it is not intended to replace local guidance. Every MTF should have guidance about this for all its clinics, and clinics are to follow local guidance. If elements described here are not addressed in local policy, OHCs should request or develop local clarification.)

Although most OH MTF patients and visitors are not contagious, the possibility exists that people ill with a contagious disease will enter an OH MTF. It is incumbent on MTF personnel to recognize and respond appropriately, in order to protect themselves and other clinic visitors and to ensure that timely treatment, if necessary, is rendered to the sick. Although SARS, Ebola, and MERS have garnered much publicity, the vast majority of contagious illnesses suffered by OH MTF visitors will be common respiratory illnesses that pose minimal health risk to others. The following steps should provide an adequate general framework, and may be modified or augmented by guidance warranted by specific diseases.

1. All OH MTF personnel should be aware of and alert to the possibility of infectious visitors. Staff education and training can and must address that. Signs and symptoms of contagious disease, PPE selection and use, and protocols must be included in staff training.
2. Signage that is clear, understandable, and immediately visible to MTF visitors should be in place. Signs should have the following characteristics.
 - a. They should be noticeable upon or immediately before entering the MTF.
 - b. They should not be placed among other signs (so that readers are not distracted by other messages).
 - c. Lettering should be large and legible.
 - d. Language must be understandable by all likely visitors.
 - e. When signs become faded, damaged, or otherwise appear old or unimportant, they should be replaced.
 - f. Information should be concise, accurate, and give clear instructions.
 - g. Signs should be placed so that visitors are not distracted from reading the signs (for example, by questions from the staff, traffic going through the entrance, or pressure to move along).
3. Once potentially contagious visitors are identified (signs of contagious illness are recognized by the staff or symptoms of contagious illness are expressed by the patient), immediate action must be taken, as follows.
 - a. Protection. The top priority is to prevent disease transmission.
 - i. The ill patient should be given and asked to wear a surgical mask. Surgical masks may be available at “respiratory stations” in the facility, but must also be available at the entrance to the OH MTF.
 - ii. If the ill patient cannot wear a surgical mask and is actively coughing, sneezing, or vomiting, then staff members within 6 feet of the victim are to immediately don suitable PPE. This will usually be an N-95 respirator, eye protection (for diseases transmitted by droplet or airborne routes), and gloves.
 - b. Triage. Unless the ill patient is presenting as a patient with an illness due to an occupational exposure to a pathogen, a definitive diagnosis is not required. The ill patient must be immediately evaluated to determine the following.
 - i. What are the likely disease and/or mechanism of disease transmission?
 - ii. Does it pose a threat to others?

- iii. Must the ill patient be treated emergently (e.g., severe influenza, Ebola), or is simple isolation from others adequate (e.g., viral URI, mild influenza)?
- c. Disposition.
 - i. If the ill patient has not yet entered the clinic, a provider is to evaluate the patient outside the entrance and determine an appropriate disposition.
 - ii. If the ill patient has entered the clinic, there is concern about serious illness, and the patient is ambulatory, the patient is to be escorted immediately out of the clinic and to a facility prepared to render adequate care (e.g., the emergency room). If possible, the ill patient is to wear a surgical mask. If the ill patient is unable or unwilling, personnel accompanying the victim are to wear appropriate PPE.
 - iii. If the contagious disease is considered not serious, the ill patient is to be placed in a separate room.
 - iv. If the ill patient is unable to safely walk, to the patient is to be placed in a separate room and the rescue squad is to be called. The patient must not be left unattended. If nobody is available to prevent the patient from falling from a chair, stretcher, or exam table, the patient is to be placed on the floor before staff leaves the room.
 - v. Ill patients with minor potentially contagious illnesses may be instructed to go home and return when well. At the attendant health care provider's discretion, the person may be seen as scheduled (i.e., for medical surveillance or certification, for injury care, etc.). If an ill patient is to be seen, he or she should remain in the initial exam room until discharged from the clinic, or should don a surgical mask to prevent infecting other visitors.
 - vi. If a provider determines the symptoms or signs are not due to a contagious disease, the person may be seen as scheduled.
- d. Risk communication. If other MTF visitors may have been exposed to the contagious disease, the following steps are to be taken.
 - i. Those involved are to be informed about the situation immediately.
 - ii. The names and contact information (phone and email) of those involved (i.e., those in the immediate area) are to be obtained.
 - iii. Those involved are to be advised that if any are immunocompromised, they should contact their primary health care provider for guidance as to whether they should take prophylactic antibiotics or other measures.
 - iv. Those involved are to be informed of signs of infection indicating they should seek medical attention.
 - v. Those involved are to be informed that if the MTF learns that the illness in question is of more concern than a routine viral illness, they will be contacted immediately.
- e. Decontamination. If appropriate, sprays or washes are to be used to decontaminate or disinfect any surfaces potentially contaminated by the ill patient.
- f. Notification.
 - i. The parent command or facility (i.e., Preventive Medicine, unless the command has specifically identified another department) is to be informed of all events more serious than routine viral respiratory illnesses. Specifically, anything as serious as, or more serious than, influenza is to be reported.
 - ii. The clinic director must follow-up with the victim or the medical provider rendering acute care (e.g., the emergency room) as to the diagnosis or, if the ill patient simply went home, the clinical course (i.e., to be sure the patient is recovering uneventfully and there is no indication of serious disease).

- iii. For influenza or other contagious disease more serious than a routine viral illness, the staff and visitors exposed to the contagious person are to be contacted immediately.
 - g. Documentation. The MTF must maintain a log of the event.
4. Ill patients may not be aware of their symptoms or alert to the need to warn others. Thus, staff must be trained and alert to signs of potentially contagious illness. The following are warning signs of a contagious disease.
 - a. Any person with a fever, unless the person is certain the fever is due to non-contagious disease (e.g., rheumatoid arthritis, malaria) or medications.
 - b. Runny nose, watery eyes, or cough unless the person is certain the symptoms are due to non-contagious disease (e.g., allergies) or medications.
 - c. Nausea, vomiting, or diarrhea unless the person is certain the symptoms are due to non-contagious disease (e.g., inflammatory bowel disease) or medications.
 - d. Bleeding, bruising, or rash that the ill patient cannot explain (e.g., without apparent trauma or exposure to a known irritant or allergen).
 - e. Headache unrelated to trauma that is severe, unusual, or associated with a stiff neck or any alteration of alertness, coordination, or strength, or that is worsened by changes in position (such as lying down, bending over, etc.).
 5. Questions or additional guidance may be obtained from the local Infectious Disease representative, the Region, or the NMCPHC.
 6. A sample sign is reproduced on the following page.

STOP!

If you are sick or have ANY of the following, please put on a mask, knock on this door, and wait for assistance!

- ◇ Fever (temp. over 100)
- ◇ Runny nose or watery eyes
- ◇ Cough
- ◇ Nausea, vomiting, or diarrhea
- ◇ Bleeding, bruising, or rash
- ◇ Unusual headache

7. References Specifically Pertaining to Dealing with Contagious Clients

CDC. Guide to infection prevention for outpatient settings: minimum expectations for safe care. National Center for Emerging and Zoonotic Infectious Diseases, Division of Healthcare Quality Promotion. 2014. <http://www.cdc.gov/HAI/pdfs/guidelines/Outpatient-Care-Guide-withChecklist.pdf> (page last accessed 7-2-2015).

Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee. 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings. <http://www.cdc.gov/ncidod/dhqp/pdf/isolation2007.pdf> (page last accessed 7-2-2015).

VIII. MEDICAL RECORDS

A. Introduction

“Medical records” in this instance refers to health records and employee medical files and X-rays generated as part of OEM evaluations. Active duty and civilian medical records are the responsibility of BUMED. Medical records are the property of the Federal government. [SECNAV M-5210.1](#) and [DODINST 6055.05](#) implement OSHA and OPM requirements in the Navy community for the handling, maintenance, transfer and retirement of medical records.^{101,102} As discussed in section [VI.B](#) Privacy, HIPAA and the Privacy Rule mandate protection for IIHI / PHI in the DoD Health Care System.

1. Definitions

The MANMED lists the following definitions.

Medical Record. An account compiled by physicians and other health care professionals of a patient's medical history, present illness, findings on examination, details of treatment, and progress notes.

Primary Records. The original records established to document the continuation of care given to a beneficiary.

A **health record**, which is a type of primary record, is a file of continuous care given to an active duty member.

Employee medical files are the health records of federal civil service employees.

Secondary Records are medical records that are maintained separate from the primary record; these include convenience, temporary and ancillary records. Occupational medical records do not include secondary records.

According to OSHA ([29 CFR 1910.1020](#)), the employee medical record is a record concerning the health status of an employee which is made or maintained by a physician, nurse, or other health care personnel, or technician, including medical and employment questionnaires or histories (including job description and occupational exposures), the results of medical examinations (pre-employment, pre-assignment, periodic, or episodic) and laboratory tests (including chest and other X-ray examinations taken for the purpose of establishing a base-line or detecting occupational illnesses and all biological monitoring not defined as an “employee exposure record”), medical opinions, diagnoses, progress notes, and recommendations, first aid records, descriptions of treatments and prescriptions, and employee medical complaints.¹⁰³ [Section VI.B Privacy](#) describes IIHI.

2. Civilian Medical Records

Civilian employee medical records are also subject to Navy and OPM regulations ([5 CFR 293](#)),¹⁰⁴ particularly as prescribed in the [OPM Guide to Personnel Recordkeeping](#).^{105,106} Individual medical records are referred to as the Employee Medical Folder and are maintained in accordance with Privacy Act regulations. OPM has the following requirements for civilian medical records (see [5 CFR 293.503](#) for a complete list).¹⁰⁷

- a. Agencies must provide employees access to their own Employee Medical File System (EMFS) records consistent with regulations contained in [5 CFR 297](#).¹⁰⁸ Disclosure of an employee's occupational medical records to agency officials (both medical and non-

- medical) will be granted only when the specific information sought is needed for the performance of official duties.
- b. If occupational medical records are to be physically located in the same office as the Official Personnel Folder (OPF), the records are maintained physically apart from each other.
 - c. Agencies must issue written internal instructions describing how their EMFS are to be implemented. Those instructions should describe where and under whose custody employee occupational medical records will be physically maintained, and designate which agency office(s) will be responsible for deciding when and what occupational medical records are to be disclosed either to other agency officials or outside the agency.
 - d. Establishes responsibility of informing workers as to the permitted disclosure of certain PHI/IIHI without their consent. It requires covered health care providers who make such disclosures to provide affected employees with written notice that the information is to be disclosed to employers. The rule includes the provision that employees may be informed by posting the notice at the workplace if the medical service is provided there.
 - e. When electronic medical records are used, a “firewall” must be in place to keep occupational health records separate from other medical records (e.g., in the case of dual beneficiaries). Where that does not exist, OH MTF personnel must avoid reading non-occupational medical records unless a release to do so has been signed by the worker. [DD Form 2870](#) may be used for that purpose.¹⁰⁹ It should be made clear to the worker that signing the form is voluntary.

B. Retention of Medical Records

[29 CFR 1910.1020](#) requires that employee medical records are maintained for at least the duration of employment plus thirty (30) years except for some types of records;¹¹⁰ [5 CFR 293.511](#) requires Occupational Medical Records to be considered to be long-term records and be maintained for the duration of employment, plus 30 years or for as long as the OPF is maintained, whichever is longer.¹¹¹ Those exceptions include health insurance claims records, first aid records and records of employees who have worked for less than one year. Additionally, [29 CFR 1910.1001](#) (pertaining to asbestos) specifies “CXR films shall be preserved in their original state;” this includes PA CXRs taken as part of the AMSP (which are OSHA mandated).¹¹² The storage of CXRs is a Radiology responsibility. Medical records and their contents must be retained by the medical department and be accessible to the medical staff without compromising their security.

C. Access to Medical Records

Access to medical records must follow HIPAA and Privacy Rule guidance in addition to Privacy Act protocols, and includes obtaining specific authorization or consent from the employee prior to disclosure of PHI. Refer to [MANMED](#),¹¹³ [5 CFR 293](#),¹¹⁴ [29 CFR 1910.1020](#),¹¹⁵ [45 CFR Parts 160 and 164](#),¹¹⁶ and [OPNAVINST 5100.23series](#) for specific Privacy Act issues. OEM providers and clinic personnel are encouraged to review their clinic practices and to contact their respective command Privacy Officer to ensure compliance with these regulations. Disclosure of an employee's medical records to agency officials is limited to the specific information necessary for the performance of official duties (See [5 CFR 293](#)).¹¹⁷ Uses and disclosures for which consent, an authorization, or opportunity to agree or object is not required for disclosure of PHI/IIHI are specified in [45 CFR 164.512](#).¹¹⁸ Key points are summarized as follows.

1. PHI may be used or disclosed to the extent that such use or disclosure is required by law and the use or disclosure complies with and is limited to the relevant requirements of such law.
2. PHI may be disclosed when there is exposure to a communicable disease or risk of contracting or spreading a disease or condition.
3. PHI may be used or disclosed to the employer in occupational medical surveillance programs, if written notice is given to the employee; employee consent is not required. Written notice may be provided by giving a copy of the notice to the individual at the time the health care is provided or, if the health care is provided at the workplace, by posting the notice in a prominent place at the location where the health care is provided.
4. PHI may be used or disclosed in the evaluation and treatment of a work-related illness or injury, in which case the PHI that is disclosed consists of findings concerning the work-related illness, injury, or medical surveillance, and the health care provider provides written notice to the individual (by giving a copy to the worker or by posting a notice at the MTF) that such PHI is disclosed to the employer.
5. A copy of the medical record must be provided to the employee upon request. When additional copies of information previously provided are requested, a charge may be applied for the copies.

D. Maintenance of Medical Records

[MANMED](#) describes some of the routine forms in the medical records and the order in which forms are to be filed; while in Navy custody, medical records are maintained under the guidance of [MANMED](#).¹¹⁹ [29 CFR 1910.1020](#) provides guidance on all OEM records.¹²⁰ [OPNAVINST 5100.23series](#) describes information to be maintained in military and civilian employee medical records in compliance with OSHA.¹²¹

E. Retired military and military dependents

Civilian employees who are retired military members or military dependents must have medical records established just as other civilian employees. The military records of those individuals must be treated as a separate system of records. Both the civilian employee record and the military record must reference each other. The general beneficiary medical record must be kept separate from the official civilian employee medical record.

F. Transfer of Medical Records

1. Military Medical Records

Transfer these records in accordance with [MANMED](#). For a routine transfer to another Navy command, the military medical record transfers with the service member. X-rays of military personnel remain at the location where the X-ray was taken.

2. Civilian Medical Records

Transfer these records in accordance with [MANMED](#). Transfer may be facilitated if the receiving Human Resources Office (HRO) notifies the employee's previous MTF of the need to transfer the medical records. HROs should notify the servicing MTF when personnel leave employment, and should request records of new employees from the previous MTF. Civilian employee medical records must additionally comply with OPM regulations. When a civilian employee makes an inter- or intra-agency transfer within the Federal government, the medical record (including X-rays, except asbestos X-rays as discussed below) transfers to the receiving MTF. When the employee transfers outside the

Navy community to another Federal job, [29 CFR 1910.1020](#)¹²² and [5 CFR 293](#),¹²³ must be followed, including placing the medical record data in the Standard Form (SF) 66D Employee Medical Folder (“blue folder”).

Federal Records Center (FRC) SF-66C is the required folder for retiring medical records when the civilian has worked for one agency only. If the employee has worked outside the DoD agency, SF-66C ("orange folder") is required. The order of the medical record must be in compliance with [5 CFR 293](#).¹²⁴ More information is available at the [Federal Archive Center](#).¹²⁵

3. Asbestos X-rays

Because [29 CFR 1910.1001](#) requires maintenance of asbestos-related documents, asbestos CXRs are not to be transferred outside the Navy community.¹²⁶ Civilian asbestos CXRs should be retained by the last MTF holding the X-rays and a note placed in the medical record identifying the location of the X-rays. Each MTF holding X-rays must maintain the X-rays with mechanisms for retrieval as needed. On-site review of these X-rays is described in [29 CFR 1910.1020](#): “In the case of an original X-ray, the employer may restrict access to on-site examination or make other suitable arrangement for the temporary loan of the X-ray.”¹²⁷

G. Storage and Disposition of Records

When storing records, whether general or medical, the detailed procedures contained in [SECNAV M-5210.1](#) and [SECNAV 5210.8E](#) must be followed; no Navy command or activity is exempt.¹²⁸ If correct transfer procedures are not followed or proper record transfer documents are not provided, the entire records shipment may be returned to the transferring command or the immediate superior in command for correction. Medical records of foreign nationals at OCONUS activities must be stored and disposed of according to local (i.e., host nation) regulations.

1. Medical Records

Military and civilian employee records are kept at separate locations and must be handled separately.

Military	Civilian
Department of Veterans Affairs Claims Intake Center PO 4444, Janesville, WI 53547-4444	BONNIE GUTIERREZ NPRC-Annex 1411 Boulder Blvd Valmeyer, IL 62295 Phone 618-935-3000 www.archives.gov

As of January 1, 2014, medical and dental records of separating service members are to be sent to the Claims Intake Center at the above address (or the Evidence Intake Center, at the same address). Prior to 1994, the medical records of service members were held at the National Personnel Records Center (1 Archives Drive, St. Louis, MO 63138, Telephone: 314-801-0800). From 1994 through 2013, the medical records of service members were forwarded to St. Louis (PO Box 5020, St. Louis, MO 63115-0020, telephone 314-538-4500). They remain accessible to the Navy and can be returned to the Navy upon request. Additionally, individuals can request copies of their records directly from St. Louis.

2. X-Rays.

Currently, neither the former nor the current St. Louis facility accepts radiographs larger than 8.5" X 11" (these do not fit in the medical records). Since OSHA requires CXRs to be retained in their original state, CXRs of civilian personnel remain in the MTF that took the X-ray, while CXRs of military personnel remain in the last MTF that provided OH services.

3. Asbestos-related Documents

When medical records containing asbestos-related information are retired, they must be packed separately and labeled ASBESTOS RELATED DOCUMENTS.

4. Records other than Personal Medical Records

[SECNAV M-5210.1](#) contains a list and areas of responsibility for regional FRCs where records other than personnel medical records are to be forwarded.¹²⁹ Commands are encouraged to contact the appropriate FRC at www.archives.gov for information and specific guidance to facilitate smooth record transfers. Follow normal records retirement procedures by submitting a properly completed [SF 135, Records Transmittal and Receipt](#), to the appropriate FRC. Records must be properly identified, packed in the required boxes and accompanied by the [SF 135](#). State the length of time the files must be maintained and identify the command authorized to release the material for destruction. If the length of time is not specified, the FRC cannot accept the records.

H. Closing Facilities

1. General

When an MTF or supported line command is scheduled to close, [SECNAV M-5210.1](#) guidelines should be followed for archiving medical records.¹³⁰ All commands are encouraged to contact their regional FRCs, participate in their training programs and invite FRC personnel to visit. Key personnel should be identified and trained in preparation for base/facility closing to facilitate a smooth record transfer. The appropriate FRC must be contacted to request retirement of records earlier than routinely permitted by SECNAV M-5210.1. FRCs have been cooperative in accepting records early when notified of a command or base closing. Records forwarded to FRCs must be traceable and retrievable.

2. Bases

Base closings and other consolidation or realignment actions can result in entire facilities or individual tracts of land being turned over to other commands, agencies, or the private sector. Regulations may require that survey data be available to document the prior use of the facilities and worker exposures that occurred on the site. To meet these requirements, IH records must be maintained by the responsible MTF so that inquiries can be answered as to what (if any) medical surveillance is appropriate for personnel who used to work at that site.

3. Line Command

When a line command closes, and the supporting MTF remains open, medical and IH monitoring data which are no longer active may be retired as specified in [SECNAV M-5210.1](#). Medical and IH documents of employees with workers compensation claims are considered active and must be retained by the responsible MTF.¹³¹

4. Medical Treatment Facilities

When MTFs close, and the supported line command remains open, data and records must be transferred to the appropriate MTF responsible for the medical support of the line command. Follow routine procedures for transferring medical records as the employee/service members are transferred, or forward them to the FRC in St. Louis.

CXRs (14" X 17") are not accepted in the medical records for archiving. These X-rays must be transferred to the MTF responsible for the geographic area where the closing MTF is located, and must be accessible to employees or former employees in compliance with the Privacy Act. A notice must be placed in the medical record indicating where and how these X-rays can be obtained.

IX. TRAINING AND CERTIFICATION

A. Occupational Safety and Health Training for Employees

Training programs designed to provide employees with information on OH hazards and appropriate control measures are essential elements of the NAVOSH Program. While training in these programs is usually the responsibility of the Safety Office, maximum effectiveness will be attained if an OH Department representative is available to explain medical surveillance procedures, adverse health effects associated with exposure to occupational hazards, and first aid measures. [OPNAVINST 5100.23](#) series requires training programs in all commands with employees in specific programs.¹³² Records must be maintained for 5 years and are to indicate the training provided, names of attendees, and date of training. The training should also be recorded in the employee personnel folder.

B. Professional OH Personnel Credentials and Privileging

1. Physicians, Nurse Practitioners, Audiologists and Physicians' Assistants

Physicians, nurse practitioners, audiologists and physicians' assistants providing health care must receive clinical privileges in accordance with [BUMEDINST 6010.30](#).¹³³ In this process, the commander of the medical or dental treatment facility or unit with medical or dental treatment capability, upon recommendations from the Medical Executive Committee (MEC) or credentials committee as the case may be, grants to individual health care provider the privilege and responsibility of providing medical or dental care within the treatment facility. The recommendations are based on a review of a health care provider's credentials: documents constituting the evidence for the education, training, licensure, certification, experience, and expertise of the health care provider. Temporary clinical privileges are granted to health care providers after verification of credentials and while current clinical competence is assessed. Defined clinical privileges are granted to health care providers after thorough review of their credentials and demonstrated competence. These are granted for a period of no more than 2 years. The process of renewing clinical privileges follows the same procedures used for granting initial privileges.

2. Physicians Practicing Occupational and Environmental Medicine

Several options exist for granting OH clinical privileges to physicians. Board-eligible or board-certified occupational medicine physicians will usually receive core privileges in occupational medicine. One option for other physicians is to attach a set of supplemental "occupational medicine" privileges to core privileges of another specialty. There is no predetermined Navy-wide set of supplemental occupational medicine privileges; they must be locally determined based on the patient mix and encounter types. For example, one supplemental privilege could be a recent history of having completed a certain number of surveillance and certification examinations. However, since the department head for occupational medicine must also be able to oversee the core set associated with the supplemental privileges, that factor will usually limit the supplemental privileges to the Operational Medicine and General Medical Officer (GMO) core. The latter "specialty" only requires completion of GME-1 (internship) and can be overseen by any privileged Navy physician. The third option for OH clinic physicians is a locally created set of itemized privileges. This has the advantage of narrowing the focus of the privileging process and is especially appropriate if the physician's scope of practice can be limited to a well-defined set of clinical responsibilities. Supplemental

occupational medicine privileges exist for both physician's assistants and family nurse practitioners ([BUMEDINST 6010.30](#)).¹³⁴

C. Certification and Licensing

Physicians and nurses are responsible for maintaining current state medical or nursing licenses. They must be provided the opportunity to attend conferences and courses in order to meet continuing medical education requirements for state licensure, and to acquire and maintain certification in their specialties. Certification is a voluntary mechanism for validating a professional's knowledge in a specialized field. OH nurses and OEM physicians can demonstrate proficiency in the specialty by obtaining certification. Certification confirms that the nurse or physician has met standards for experience, education and knowledge. The DoN and OSHA require professional and paraprofessional personnel performing specific elements of the medical surveillance examinations to receive training and/or certification in those particular OH programs and/or in the operation of specific equipment.

1. OH Nurses

The sole certifying agency for OH nurses is the [American Board for Occupational Health Nurses, Inc.](#) (ABOHN).¹³⁵ ABOHN is a member of the American Board of Nursing Specialties.

2. Occupational Medicine Physicians

The sole certifying agency for allopathic (MD) OEM physicians is the [American Board of Preventive Medicine, Inc.](#) (ABPM).¹³⁶ ABPM is a member of the American Board of Medical Specialties. The certifying agency for osteopathic (DO) OEM physicians is the [American Osteopathic Board of Preventive Medicine](#) (AOBPM).¹³⁷ Osteopathic physicians can choose to obtain either ABPM or AOBPM or both certifications for Occupational Medicine.

3. Hearing Conservation Program

All personnel performing audiometric testing for the Hearing Conservation Program are required to attend and successfully complete a Navy approved [Audiometric Certification Course](#) and recertify every 5 years.¹³⁸ Personnel who conduct Navy sponsored courses in occupational hearing conservation (audiologists, physicians, nurses, industrial hygienists, safety professionals, and others) must be certified as course directors by the [Council for Accreditation in Occupational Hearing Conservation](#) (CAOHC) and be approved by NMCPHC. Certified Audio Technicians must be provided the opportunity to attend conferences and courses in order to obtain or recertify their credentials.

4. Pulmonary Function Testing

All personnel performing pulmonary function testing for occupational medical surveillance programs are required to successfully complete a spirometry course approved by the [National Institute for Occupational Safety and Health](#) (NIOSH) at least as frequently as every 5 years. Personnel certified by the NIOSH approved spirometry course are certified to perform spirometry for occupational medical surveillance and are not qualified to perform spirometry as a pulmonary function technician for other medical purposes (e.g., testing for clinical treatment and management). The OSHA Cotton Dust Standard (29 CFR 1090.1043) requires that a NIOSH approved spirometry training course is required for those administering screening spirometry for workers exposed to cotton dust. A NIOSH-

approved Spirometry Basic Course and Refresher course sponsored by the NMCPHC is recommended and more information about requesting a class can be found at the [NMCPHC website](#). NIOSH-approved Spirometry Basic and Refresher Courses can be obtained from course sponsors outside of the Navy and a list of approved courses can be found on the [NIOSH](#) web site.

5. Sight Screening

All personnel performing sight screening examinations should be trained by qualified technicians on the elements of sight screening and use of the screening equipment. The Tri-Service Vision Conservation and Readiness Course (TSVCRC) offered through the U.S. Army Public Health Center provides training on vision testing requirements, occupational eye surveillance, eye protection, and education regarding laser eye and non-ionizing eye injuries.¹³⁹

6. Basic Life Support

[BUMEDINST 1500.15](#) requires training in Basic Life Support for all Medical Department personnel assigned to, or subject to being assigned to, duties providing direct therapeutic or diagnostic health care.¹⁴⁰

D. Annual Training Plans

Each OH staff member is encouraged to develop an annual training plan in order to meet the minimum health training required by [OPNAVINST 5100.23](#) series.¹⁴¹ While a training plan is not a requirement, a training plan that includes type, cost, source, and priority of training provides an excellent method for tracking the training needs of each staff member and facilitates budget submissions.

E. Training Commands

1. NETC

[NETC](#) is an echelon 2 command under OPNAV. It offers professional development courses.¹⁴²

2. NAVSAFENVTRACEN

NAVSAFENVTRACEN is an Echelon III Command reporting directly to the Commander, Naval Safety Center. It “provides 36 safety, occupational health, and environmental training courses to military and civilian Navy and Marine Corps personnel worldwide. Courses range in length from two to five days and are offered via resident and Global Online venues.”

F. Resources for Continuing Education

1. NMCPHC

[NMCPHC](#) offers or coordinates the NIOSH Approved Course in Spirometry and the Navy Hearing Conservation Course. The Navy Occupational Health and Preventive Medicine Workshop has been temporarily suspended since 2011.

2. Defense Technical Information Center (DTIC)

[DTIC](#) serves as the central resource for DoD and government-funded scientific, technical, engineering, and business related information.

3. Defense Media Activity

The [Defense Media Activity](#) presents news and entertainment, as well as information about professional interests and managerial skills, on a variety of media platforms, including radio, television, internet, print media, and emerging media technologies.

4. Defense Imagery

The [Defense Imagery Management Operations Center](#) Web site contains the searchable listings and descriptions of thousands of photos and other audiovisual productions and interactive multimedia, including instruction products used by the DoD.

5. Professional Associations

Annual Conferences are held by the [American Association of Occupational Health Nurses](#)¹⁴³ and the [American College of Occupational and Environmental Medicine](#).¹⁴⁴

X. ASBESTOS MEDICAL SURVEILLANCE PROGRAM

A. Introduction

BUMED has tasked NMCPHC with centrally managing the [Navy AMSP](#).¹⁴⁵ These responsibilities include providing professional and technical consultation on the medical aspects of occupational exposure to asbestos, and maintaining and analyzing the central registry database containing information on personnel enrolled in the AMSP. This contains data from NAVMED 6260/5 (history and physical evaluation) and NAVMED 6260/7 (roentgenographic interpretation for pneumoconiosis).

B. Criteria for Enrollment in the AMSP

The terms “asbestos current worker” program and “asbestos past worker” program used in this section refer to the medical surveillance programs in the Matrix.¹⁴⁶ Navy personnel may be placed in the AMSP if they meet any of the following criteria.

1. Asbestos Current Worker Program

Military and civilian personnel who meet the exposure criteria defined in [OPNAVINST 5100.23series](#) are enrolled in the program for “asbestos current worker.”¹⁴⁷ This is mandated under OSHA law.^{148,149,150}

2. Asbestos Past Worker Program

In view of the long latent period between the first exposure to asbestos and the development of signs or symptoms of asbestos-related diseases, the Navy has developed a program for individuals with past asbestos exposure. Placement in the AMSP on the basis of past asbestos exposure is a Navy-specific program; it is not mandated by OSHA regulations. Enrollment in the program is voluntary, and individuals may request termination at any time. Military and civilian personnel with a history of asbestos exposure may be included in the asbestos past worker program, based on professional evaluation, if any of the following criteria are met.

- a. There is a history of enrollment in the Navy AMSP as an asbestos current worker.
- b. There is a history of participation, during past Federal employment or military service, in any operation where visible airborne asbestos dust was present, including but not limited to rip-outs, for approximately 30 days or more.
- c. The OH provider concludes that the individual had exposure to asbestos during past Federal employment or military service that met the current criteria for placement in the medical surveillance program, or its equivalent, for approximately 30 days or more.

C. Medical Records

Table 6 summarizes the medical records required for workers in the AMSP.

Table 6 - Summary of AMSP Requirements

ASBESTOS MEDICAL SURVEILLANCE PROGRAM MEDICAL RECORD			
		CURRENT WORKERS	PAST WORKERS
1)	DD 2493-1 Initial Medical Questionnaire	X	
2)	DD 2493-2 Periodic Medical Questionnaire	X	
3)	NAVMED 6260/5 History and Physical	X	X
4)	SF 519. X-ray Report	X	X
5)	NAVMED 6260/7 B reading (see Table 7)	X	X
6)	OPNAV 5100/15 Medical Surveillance Questionnaire	X	X
7)	Spirometry	X	X
8)	Summary of Care Entry	X	X
9)	"Asbestos" label for Medical Record	X	X
10)	Physician's written opinion	X	

Table 7 - B reading Periodicity for Current and Past Asbestos Workers

ASBESTOS MEDICAL SURVEILLANCE PROGRAM CHEST X-RAY B READING			
Years Since First Asbestos Exposure	Age of Employee 15- 34	Age of employee 35-45	Age of employee 45+
0 to 10	Every 5 years	Every 5 years	Every 5 years
10 +	Every 5 years	Every 2 years	Every year

History, physical, and spirometry of Current Workers occurs ANNUALLY, with B reading X-rays obtained according to the periodicity described in Table 7. History, physical, spirometry, and B reading of Past Workers follows Table 7.

D. Criteria for Removal from the AMSP

1. Current Workers

[OPNAVINST 5100.23](#) series details the criteria for removal from the AMSP.¹⁵¹ Documentation in the medical record and a letter to NMCPHC are required when the individual was inappropriately enrolled, or was enrolled because of potential exposure but was never actually exposed. Personnel who meet the exposure criteria must remain in the program for the duration of exposure.

2. Past Workers

Removal of an individual from the AMSP may be initiated by either the individual or an OH professional. An individual enrolled in the AMSP on the basis of past exposure may be removed from the AMSP at any time that he or she declines further evaluation. In such a situation, the following apply.

- a. A physician's written opinion is not required, but if the staff decides to provide one to the individual, the individual's command should not be provided a copy since the relevant asbestos exposure did not occur during his or her current position.

- b. A termination evaluation is not required, but is recommended in certain situations, such as cases with history of heavy asbestos exposures.
- c. The reason(s) for removal from the AMSP must be documented in the medical record. No other documentation is required. NMCPHC does not need to be informed that the individual refuses further evaluation.

An individual enrolled in the AMSP on the basis of past exposure may be removed from the AMSP if, upon review of available information, the OH professional concludes that the individual did not meet any of the criteria for inclusion in the program and was therefore inappropriately enrolled. In such a situation, the following apply.

- a. A physician's written opinion is not required, but if the staff decides to provide one to the individual, the individual's command should not be provided a copy.
- b. A termination evaluation is not required.
- c. Document in the medical record the reason(s) for removal from the AMSP.
- d. The individual's name and social security number should be forwarded to NMCPHC stating the reason(s) for removal from the AMSP.

E. B readings

CXRs done for asbestos medical surveillance are called “B readings,” and must be interpreted by a physician currently certified by NIOSH; such certified physicians are called “B readers.”¹⁵² NMCPHC contracts with NIOSH-certified B readers to read AMSP radiographs using the [International Labour Organisation](#) (ILO) classification for pneumoconiosis.¹⁵³ NAVMED 6260/7 is used in place of the NIOSH B reading form. All CXRs must be read by the local radiologist before the images are copied to a CD and mailed to the B reader. The B reading must not be relied upon for clinical purposes: The B reading is designed for epidemiological purposes, not for clinical evaluation, and it may take several months for the B reading process to be completed. If the B reading is significantly different from the reading of the local radiologist, or if the B reading notes “large opacities” or “other” findings that may be of clinical interest or significance, the local radiologist should be asked to review the film. Because the local radiologist has access to information about the individual’s history, physical examination, and previous X-rays, and can take further X-rays if needed, his or her interpretation of the chest film is more important for clinical diagnosis than the B reader’s interpretation. Further action will depend on the clinical judgment of the examining physician. Referral to a pulmonary specialist may be indicated. Individuals with pulmonary signs and symptoms from acute illnesses should not be scheduled for an AMSP X-ray until the illness has cleared up, to avoid temporary X-ray findings which may cloud pneumoconiosis findings.

F. B reading protocol

1. Ordering the CXR.

MTFs certified to take AMSP X-rays are to follow the procedures listed below to obtain B readings.

- a. Use routine medical procedures and NAVMED 6260/7 (download from [NMCPHC OEM AMSP](#)) to order routine digital posterior/anterior (PA) CXRs for individuals in both the Current and Past Asbestos Worker Programs. Complete Section I of NAVMED 6260/7 and then make a photocopy of that NAVMED 6260/7.
- b. Do not ask the B reader to make comparisons with old films. Do not forward radiology reports, other X-rays, or related information. They take time, and do not contribute to the B reading (B readers are to use only a single PA CXR, and are specifically instructed not to consider lateral views, other radiographs, CT scans, etc.). All additional X-rays and

consultations are the responsibility of the examining physician, in consultation with the local radiologist as needed.

2. Preparing CXRs for B readings.

The procedures below are to be followed in preparing AMSP CXRs for B readings.

- a. The local radiologist must read the films before they are forwarded to the B reader. CXR images are to be copied onto CDs, using as few CDs as possible (several CDs with one image file on each are not acceptable). Digital radiograph image files are to be in original, uncompressed, lossless (DICOM) format. JPG, TIF, BMP, BCM, etc., are not acceptable. If a clinic has only a single radiograph to send, then it may send a single CD with a single file on it.
 - b. All radiographs are to be submitted to B readers as digital images on CDs via certified US mail or other trackable method (e.g., FEDEX or UPS) (along with both the original and the copy of the NAVMED 6260/7). CDs are not to be sent to NMCPHC by the MTF; B readers are to send the CDs and copies of completed forms 6260/7 to NMCPHC. NMCPHC OEM will destroy the CDs; CDs will not be returned to the MTFs or to Radiology.
 - c. Authorization for mailing chest radiographs to the B-reader is required. Using this sample letter, request an authorization memorandum from NMCPHC. (The UIC in the letter is that of the OH clinic/MTF that is shipping the chest image CD.) For X-rays done as part of asbestos medical surveillance, a copy (not the original) of the NAVMED 6260/5 (the History and Physical form) must be included with the letter. The exact number of radiograph evaluations requested will be in the memorandum from NMCPHC. (Do not estimate the number of B-readings expected; the request must include the actual number that already have been done.) Requests for authorization to ship X-rays for B-readings must be in writing and sent to NMCPHC by regular mail, naval message, telefax (757-953-0670), or email NMCPHC-AMSP@med.navy.mil.
 - d. If two exposures are required to obtain the PA chest film (e.g., the worker is very large), count these two as one CXR, and prepare one NAVMED 6260/7 to request one evaluation. Place the NAVMED 6260/7 forms with each corresponding CD. The B reader is not responsible for sorting forms to match images.
 - e. Forward AMSP images at least monthly in batches of no more than 100 (i.e., do not hold films longer than one month, even if you have only one film to have read).
1. Prepare a mailing label for the CD mailer case, containing the B reader's address. Prepare a second mailing label with the OH clinic address (to which the B-reader should return the completed NAVMED 6260/7 forms). Place the second label in the mailing case with the CD, NAVMED 6260/7 forms, and the memo. Mark the envelope Confidential. Prepare a certified tracking method (certified mail by USPS, FEDEX, or UPS) and forward this information to NMCPHC or NMCPHC-AMSP@med.navy.mil.

3. B reading time interval

The B reader has fifteen days to read the images. B readers are to view and evaluate digital radiographs according to [current NIOSH guidelines](#).¹⁵⁴ If the original NAVMED 6260/7 forms are not returned within 2 months from the date the MTF mailed the forms and CD, contact NMCPHC.

4. B reading record storage

B reader interpretations (NAVMED 6260/7) are medical documents which must be incorporated into the permanent health record after review by the health care provider.

5. Requests for Authorization to Ship CXR image files for B readings

Requests must be in writing and forwarded to NMCPHC by U.S. mail, or e-mail (usn.hampton-roads.navmcpubhlthcenpors.list.nmcphc-ampsp@mail.mil). The format used in the following sample letter must be used to request authorization to ship AMSP CXR images for B reading. Paragraph 1 requires information on the quantity of radiograph evaluations. If two exposures are required for an individual, count these two chest images as one. Use the UIC of the MTF shipping the AMSP CD.

Date

From: (REQUESTING ACTIVITY) (Not the complete address—that should be only on the mailing label described below)

To: Navy and Marine Corps Public Health Center OEM, Portsmouth, Virginia

Subj: REQUEST FOR AUTHORITY TO SHIP X-RAYS FOR B READINGS

Ref: (a) OPNAVINST 5100.23 series Chapter 17

(b) 29 CFR 1926.1153 Appendix B Medical Surveillance guidelines for Silica

1. Per reference (a), (REQUESTING ACTIVITY) has a total of (QUANTITY) chest radiograph evaluations available for shipping to the designated B reader. The requested delivery date for films to be returned as completed is 45 days from the date of this request letter.
2. (REQUESTING ACTIVITY) will ensure a return addressed mailing label (with the complete mailing address including building number, UIC, etc.) will be included in the package with ATTN: Occupational Health in the address. Privacy Act Data Cover Sheet will be on top of the forms and mailed using a tracking number which will be provided to NMCPHC via email.
3. Point of contact: Name, E-Mail, Telephone #, Fax #

SIGNATURE

XI. RADIATION HEALTH

A. Background

The Radiation Health and Protection Program encompasses both ionizing and non-ionizing radiation from manmade sources (i.e., reactor byproduct material, accelerator-produced material, and mechanically generated radiation from diagnostic imaging and radiation therapy equipment, lasers, and radar), as well as naturally occurring sources of radiation. Radiation is typically classified into two categories: ionizing and non-ionizing. Ionizing radiation is defined as any electromagnetic or particulate radiation capable of producing ions, directly or indirectly, in its passage through matter. Ionizing radiation includes gamma rays, X-rays, alpha particles, beta particles, neutrons, protons, electrons, other particles, and electromagnetic waves capable of producing ions. Non-ionizing radiation is defined as any electromagnetic radiation, including ultraviolet, visible, or infrared light, radio waves, microwaves, or laser radiation, which generally does not produce ionizations in its interaction with matter. Individuals exposed to radiation (primarily ionizing radiation) can be classified as radiation workers, non-radiation workers, and members of the public. Radiation workers are individuals who are or may be exposed to radiation in the course of their employment or duties and are identified by their command as being occupationally exposed. Non-radiation workers are employees or crew members who may receive very low level ionizing radiation exposure incidental to their employment at a command or activity but not as an integral part of their skill, trade, or work assignment. Individuals who are not occupationally exposed to radiation are considered members of the public.

B. Ionizing Radiation – Standards and Regulations

Exposure limits to ionizing radiation have been established, as have permissible exposure limits (PELs) for non-ionizing radiation. Exposure limits are set forth in [10 CFR 20 Subparts C and D](#).¹⁵⁵ In general, exposure limits for individuals exposed to ionizing radiation due to their primary employment are allowed to receive greater exposure than an individual whose duties do not involve radiation, such as members of the general public. Components of the body, such as extremities and individual organs, are allowed to receive a greater exposure than that allowed for the whole body. These exposure limits are primarily based on the probability of stochastic (random) and deterministic (non-stochastic) biological effects to the human body. Radiation workers are first screened for primary risk factors, which are often determined through the completion of a radiation medical examination in accordance with the requirements in [NAVMED P-5055](#).¹⁵⁶ In addition, most individuals occupationally exposed to ionizing radiation are monitored through the use of personnel dosimetry, to ensure that exposure limits are not exceeded, and that exposures are maintained at a level as low as reasonably achievable (ALARA). Standards and regulations regarding the transportation of radioactive materials are covered in 49 CFR.^{157,158} These standards apply to packaging, marking and labeling, placarding, shipping papers, hazardous materials employee training, as well as specific requirements for the different modes of transport. Commands involved in the shipment of radioactive materials are also “permitted” under the Navy’s Master Materials License of broad scope (MML) issued by the Nuclear Regulatory Commission (NRC). The individual within a command that is responsible for radiation safety and ensuring compliance with standards and regulations is referred to as the Radiation Safety Officer (RSO).

C. Ionizing Radiation – Medical Surveillance and Monitoring Program

The primary guidance for the protection of individuals, including radiation workers and members of the general public, is covered in [NAVMED P-5055](#).¹⁵⁹ The purpose of that manual is to specify the radiation health requirements applicable to the Navy and Marine Corps Radiation Protection Programs. A Radiation Protection Program includes all methods, plans, and procedures used to protect the health and environment of personnel from exposure to sources of ionizing radiation; it includes the Radiation Health Program and the Radiological Controls Program. The purpose of a Radiation Health Protection Program is to preserve and maintain the health of personnel while they work in or around areas contaminated with radioactive materials or areas where they are exposed to ionizing radiation.

1. Radiation Health Forms

The [NAVMED P-5055](#) references the following forms, which can be downloaded from the [Navy Medicine Website](#).

- NAVMED 6470/1 Exposure to Ionizing Radiation
- NAVMED 6470/3 Radiation Exposure Report
- NAVMED 6470/10 Record of Occupational Exposure to Ionizing Radiation
- NAVMED 6470/11 Record of Exposure to Ionizing Radiation from Internally Deposited Radionuclides
- NAVMED 6470/13 Ionizing Radiation Medical Examination

2. Radiation Medical Exam (RME)

Components of the RME are identified in NAVMED P-5055 and on NAVMED 6470/13. Training requirements for examiners are outlined in BUMEDINST 1500.27A, Radiation Health Training for Designated Medical Department Personnel. The Radiation Health Indoctrination (RHI) course is required for assignment to certain billets, as well as for any medical officers, physician assistants, and nurse practitioners who perform RMEs on a regular basis. RHI trained providers must renew their certificate every five years. The course is open to civilians (including contract providers) as well as military.

3. Dosimetry

The [NAVMED P-5055](#) defines both a medical surveillance program consisting of radiation health medical examinations as well as a monitoring program using radiation dosimetry, in which exposures to ionizing radiation are monitored by thermoluminescent dosimeters (TLDs).¹⁶⁰ The Dosimetry Program for the Navy is managed by the [Naval Dosimetry Center](#). TLDs only detect ionizing radiation, and can be implemented as personnel dosimeters or can be posted to monitor radiation in areas proximate to ionizing radiation.

4. Limiting radiation exposure

It is the Navy's policy that personnel exposures to ionizing radiation shall be reduced to levels that are considered to be ALARA without compromising operational and training efforts. Personnel engaged in work in which they may be exposed to ionizing radiation shall be trained in radiological controls, radiation safety practices, and protective measures. In addition, proper protective equipment

(e.g., fixed and portable shielding, lead aprons, lead gloves and glasses, respiratory protection, etc.) and training in their use are available by all occupationally exposed personnel.

5. Exclusions from Radiation Protection Standards

[NAVMED P-5055](#) and radiation protection standards do not apply to the patient exposed to ionizing radiation or administered radioactive materials for the diagnosis or treatment of medical or dental conditions of that individual.¹⁶¹ In addition, background radiation from cosmic sources and from naturally occurring radioactive materials, including radon, terrestrial deposits of radioactive material, and global fallout as it commonly exists in the environment from the testing of nuclear explosive devices are typically excluded from medical surveillance and from the Radiation Health Program.

D. Ionizing Radiation – Management of Irradiated or Radioactively Contaminated Individuals

1. External and Internal Exposures

Exposure to individuals from radiation can be from sources either internal or external to the body and can be in the form of irradiation or contamination. External irradiation is exposure to radiation that originates external to and usually not in direct contact with the body. Penetrating radiation has sufficient energy to contribute dose to deep tissues and organs in addition to the skin. Radioactive contamination exists when a radioactive substance is dispersed either externally on or internally in an individual. Internal contamination can result from radioactive substances ingested, inhaled, or imbedded in the body, or which have entered the body through an exposed wound or other compromise in the integrity of the body's skin or protective membranes. Contamination is subdivided into external contamination, internal contamination, and wound contamination. In contrast, exposures from non-ionizing radiation are predominantly from sources external to the body. [BUMEDINST 6470.10](#) provides direction to the Medical Department, civilian medical personnel of the naval services, and Navy and Marine Corps commands for the initial exposure assessment, management, and treatment of individuals who are irradiated or externally or internally radioactively contaminated.¹⁶²

2. Decontamination

Exposure to radiation or radioactive contamination, either external or internal, rarely constitutes a medical emergency. However, whenever possible, external and internal contamination should be removed to prevent unnecessary exposure to the individual and reduce the likelihood of spreading contamination where other people could become irradiated or contaminated.

3. Injury care

Treatment of life-threatening injuries (severe trauma, shock, hemorrhage, respiratory distress, etc.) always takes precedence over decontamination or containment procedures, treatment of possible symptoms from irradiation, and dose estimation procedures. Medical emergency response personnel must not be impeded when proceeding to render emergent care for reasons such as issuing dosimeters or controlling access to restricted areas. Concerns about the spread of radioactivity or the possible contamination of medical personnel are nonetheless appropriate, and should be attended to after the patient has been stabilized. Under no circumstances will any individual be denied access to necessary treatment or MTFs because of radioactive contamination. In all instances, exposed individuals should be treated symptomatically until medical and health physics evaluations have been performed. It is

also important to note that no health care worker in the United States has ever suffered radiation injury secondary to rendering emergency care to a contaminated patient. Guidance for the management of exposed individuals can be obtained through contact with either NMCPHC or BUMED-M3B3 (Undersea Medicine & Radiation Health). In addition, all overexposures and incidents of radioactive contamination should be reported promptly to BUMED.

E. Ionizing Radiation – Naval Radioactive Materials Permit (NRMP) Program

1. Master Materials License

The Navy has been issued a MML by the NRC to permit Navy and Marine Corps activities and a limited number of Joint Commands to possess radioactive materials for both medical (including medical research) and non-medical (industrial) use. Under this license, the Naval Radiation Safety Committee (NRSC) at the Office of the Chief of Naval Operations (OPNAV-N45) has regulatory authority for all uses of radioactive materials in the Navy and Marine Corps.¹⁶³ This authority includes the regulation of reactor byproduct material, special nuclear material, source material, and naturally occurring or accelerator-produced radioactive material. This authority is granted in the MML.¹⁶⁴ This authority does not include some sources of radioactive materials, such as that associated with naval nuclear propulsion plants.

2. Radiation Health Technical Support

The Radiation Health Division at the NMCPHC has been designated as the Technical Support Center for all medical, research, and academic uses of radioactive materials under the Navy's MML, with direct reporting to the NRSC.¹⁶⁵ RASO at Naval Weapons Station, Yorktown, Virginia, is the Technical Support Center for all industrial and non-medical uses of radioactive materials. Only the NRSC has direct reporting authority to the NRC. Every effort shall be made to first report incidents or adverse events involving the unintentional irradiation or contamination of individuals and/or facilities, the overexposure of individuals, the loss of control of radiation or radioactive materials, and anything else that falls under the NRMP Program, to the NRSC through the appropriate Technical Support Center. Specific reporting and notification requirements for medical and research permittees under the NRMP can be found in NRSC Bulletin 2004-03.¹⁶⁶

3. Regulations and guidance

Regulations and guidance regarding the medical and research uses of radioactive materials are published in [10 CFR 35](#), and have also been made available on the NMCPHC Web site, including links to regulations and regulatory guides, audit guides, and applicable Information Notices and Bulletins.^{167,168} [BUMEDINST 6470.20series](#) prescribes procedures and responsibilities for the use and control of NRC licensed/permitted and other radioactive material used at naval Medical Department activities.¹⁶⁹

F. Ionizing Radiation – Diagnostic X-Ray Survey Program

1. FDA regulations

Regulations for ionizing radiation producing devices are provided by the Food and Drug Administration (FDA) in [21 CFR 900](#) and [21 CFR 1020](#).^{170,171} For mammography units, additional standards and evaluation procedures are published by the American College of Radiology (ACR).

2. Navy guidance

[BUMEDINST 6470.22](#) series is the Navy's policy and guidance on the radiological safety management of all imaging systems in Navy Medicine, and applies to all naval facilities and commands, ashore or afloat, and Navy Medical Department sponsored operations having medical and dental radiological systems.¹⁷² In general, all systems must be certified by the FDA and must meet Federal standards for procurement and initial and periodic evaluation to ensure safe and proper operation. In summary, qualified surveyors shall evaluate all radiological systems within 30 days of installation and after major repairs. Additionally, newly installed radiological and imaging systems shall be evaluated prior to initial clinical use. Periodic surveys of these systems shall also be conducted at frequencies specified in [BUMEDINST 6470.22](#). The Navy's standards and evaluation procedures for medical and dental X-ray units are published in a highly detailed technical manual, [NMCPHC TM 6470.1](#), which includes personnel qualification standards, structural shielding design, systems evaluation, reporting procedures, and criteria for prohibiting systems usage, to ensure the safe and effective use of medical and dental radiological systems.¹⁷³

3. Shielding

Regarding structural shielding design, the effectiveness of fixed shielding (i.e., walls, doors, leaded glass windows, etc.) must be evaluated for all new facilities housing ionizing radiological systems, as well as those undergoing major renovations. When mobile equipment is to be used routinely in one location, shielding shall be evaluated as a fixed radiographic installation. Guidance for the use, care, evaluation, and disposal of lead aprons and other similar shields used for the shielding of radiation to personnel from diagnostic radiology procedures can be found in [NMCPHC TM 6470.1](#).¹⁷⁴ In general, the integrity of the shielding is evaluated at least annually to verify compliance with the requirements specified in the manual.

4. Navy Medical Radiological Surveyors

The policies and procedures for initial qualification as a Navy Medical Radiological Surveyor, including requalification and qualification upgrades, can be found in [NMCPHC TM 6470.1](#).¹⁷⁵ A listing of [qualified surveyors](#) is maintained by NMCPHC¹⁷⁶ and can be accessed on the Navy's Radiation Health Web site or via the [MilSuite Radiation Health community page](#).¹⁷⁷

G. Non-Ionizing Radiation – Standards, Regulations and Guidance

The two non-ionizing radiations of primary concern in the Navy are laser radiation and radiofrequency (RF) radiation, but other electromagnetic radiation such as ultraviolet, visible, or infrared light, and radio and microwaves are also potential health hazards. Regulations covering the manufacturing and performance of lasers and other light emitting products are provided by the FDA in [21 CFR 1040](#).¹⁷⁸ Standards for the safe use of laser systems are published in ANSI Standard

Z136.1;¹⁷⁹ standards specific for the safe use of lasers in health care facilities is published in ANSI Standard Z136.3.¹⁸⁰ The individual within a command that is responsible for laser systems safety and ensuring compliance with standards and regulations is typically referred to as the Administrative Laser Safety Officer (ALSO), or simply the Laser Safety Officer (LSO). However, laser safety and safety involving other types of non-ionizing radiation may fall under the responsibility of the RSO. The Navy's laser safety policy and guidance applicable to military facilities and research laboratories, as well procedures for dealing with and reporting a laser mishap or overexposure incident, is published in [BUMEDINST 6470.19series](#).¹⁸¹ PELs, medical surveillance requirements, and casualty management procedures for personnel exposed to non-ionizing radiation (including lasers, RF, etc.) is published in [BUMEDINST 6470.23series](#).¹⁸² Funduscopic (retina) examination is the most important component of the non-ionizing radiation (laser) medical surveillance program.

H. Nuclear Field Duty Exams

Nuclear Field Duty examinations are required for workers in the Naval Nuclear Propulsion Program. They are distinct from the Radiation Medical Exams performed on workers exposed to radiation in other kinds of work (e.g., X-ray technicians), although a Nuclear Field Duty examination includes a Radiation Medical Exam. Nuclear Field Duty examinations may be performed by a physician, physician assistant, or nurse practitioner, but must be reviewed and co-signed by an undersea medical officer (UMO) or graduate of a Residency in Aerospace Medicine (RAM), unless the UMO or RAM performed the exam. Details and requirements of Nuclear Field Duty examinations are described in [MANMED P-117 chapter 15-103](#).¹⁸³

XII. EVALUATION OF ABNORMAL AUDIOGRAMS

A. Introduction

Noise is a common occupational exposure in Navy workplaces, and noise-induced hearing loss (NIHL) is one of the most common occupation-related disabilities. NIHL is a sensorineural hearing loss caused by long-term continuous exposure to loud noise (currently defined as noise in excess of 85 decibels, dBA) or by exposure to impact noise (currently defined as impact noise in excess of 140 dBP). The early, typical finding in NIHL is a decrease in the hearing threshold in the 3000-6000 hertz (Hz) range on the audiogram. Occupational sensorineural hearing loss may also be caused by exposure to ototoxic substances or blunt head trauma. Occupational conductive hearing loss may result from explosions, trauma, or burns.

B. Hearing Conservation Program

Commands whose personnel are exposed to noise in excess of specified noise levels are required to have a Hearing Conservation Program (HCP) as described in [OPNAVINST 5100.23series](#) (ashore) and [OPNAVINST 5100.19series](#) (afloat), respectively.^{184,185} The individual's Command Safety Officer is responsible for ensuring that noise exposed individuals report for all annual and required follow-up hearing tests, to include diagnostic audiology evaluations. However, the medical department is actively involved in many elements of the HCP and the OH clinic's primary role is in conducting and interpreting audiograms for noise-exposed personnel. Guidance concerning the Medical Department's procedures in hearing conservation is contained in [NMCPHC – TM 6260.51.99-2](#).¹⁸⁶ All personnel (civilian and active duty) enrolled in the HCP require a baseline (pre-placement or reference) audiogram, recorded on DD Form 2215. Following the baseline audiogram, testing is done periodically (annually, or more frequently if indicated) and compared to the baseline to detect any changes or shifts in hearing threshold levels, recorded on DD Form 2216. The [NMCPHC – TM 6260.51.99-2](#) outlines HCP equipment requirements, personnel responsibilities, and the procedures for noise measurements and audiometric monitoring.

1. Criteria for Referral to an Audiologist

Baseline audiogram findings of the following:

- a. Hearing threshold level greater than 25 dB at any frequency, or.
- b. Any audiogram with a 40 dB or greater difference between ears at any frequency.

Periodic audiogram findings of the following:

- a. Change in hearing threshold relative to the current reference audiogram of an average of 10 dB or more at 2000, 3000, and 4000 Hz, in either ear, or
- b. Change in hearing of 15 dB or greater at any test frequency from 1000 to 4000 Hz should be considered an early warning and counseling should take place in addition to ensuring proper fit of hearing protective devices.

Any audiogram with variable or inconsistent responses or unusual hearing loss curves.

2. Suggested criteria for referral to a physician or otorhinolaryngologist (ENT)

- a. History of ear pain, drainage, dizziness, severe persistent tinnitus, or sudden, fluctuating, or rapidly progressive hearing loss, or feeling of fullness or discomfort in one or both ears within the preceding 12 months.
- b. Visible evidence of cerumen accumulation or a foreign body in the ear canal.

A person who has received otologic evaluation previously on the basis of the foregoing criteria should be re-evaluated if he or she develops ear pain, drainage, dizziness, disequilibrium, imbalance, or severe persistent tinnitus, or shows significant change in hearing levels defined in the previous section.

3. Other suggested criteria for referral to audiologist, physician, or ENT include the following:
 - a. Baseline audiogram - hearing loss equal to or exceeding 30, 40, or 50 dB at 3000, 4000, and 6000 Hz, respectively in one or both ears,
 - b. Any audiogram: showing unilateral or asymmetrical hearing loss with a difference at any frequency between ears of 40 dB or greater, or
 - c. Any audiogram with a 40 dB or greater threshold at 500 Hz accompanied by a 25 dB or greater threshold at 1000 Hz.

It should be noted that these referral criteria are different than the criteria for referral to physician or audiologist based upon the development of a Permanent Threshold Shift (PTS) and the requirement for determining if a PTS is noise-related.

C. Evaluation of Hearing Loss by the OH Physician

The physician evaluating a worker for hearing loss faces two challenges: identifying the type of hearing loss and determining whether or not occupational noise exposure was the cause. A thorough medical, family, social, and occupational history should explore distant or recent head and ear trauma (including surgery), medication use (especially aminoglycosides and medication overdoses), hobbies (especially those involving loud noise, such as playing music or shooting, or ototoxic substances), and current or past noise exposure at work (whether hearing protection was used or not). Review of systems should especially explore hearing changes, tinnitus, vertigo, balance, strength, and general health. Physical examination should include the chest, neck, head, and upper respiratory tract, not only the ears. Conditions such as hypertension, arrhythmias, carotid stenosis, cervical spine disease, and deformities of the peri-aural structures can all contribute to hearing loss or tinnitus. Audiograms are important to document current hearing level and “pattern” (e.g., the 4000 Hz “notch”) and changes in hearing over time. Referral to an audiologist or ENT may be helpful or necessary; in some cases, special studies, including otoacoustic emissions, immittance testing, computed tomography or electronystagmogram, may be appropriate. In general, for employees whose job requires monitoring through the hearing conservation program, hearing thresholds that trigger audiometric fitness for duty criteria or exceed H-2 profile levels as defined in NMCPHC – TM 6260.51.99-2, should be referred to an audiologist for a diagnostic evaluation. The assessment may be straightforward in cases of physical trauma or extremely loud (impact) noise exposure, or when there has been long-term occupational noise exposure and audiograms display the classic 4000 Hz notch. Often, hearing loss is multi-factorial, and identifying a single cause may be difficult or impossible. Deciding on an appropriate disposition may also be challenging. Determining whether a hearing-impaired worker should be returned to noisy work (where he or she is likely to lose more hearing) or should be restricted from further work involving noise exposure has considerable financial, social, and psychological implications. At the very least, the worker should be informed of his or her condition and educated about the dangers of further noise exposure and the importance of using adequate hearing protection, whether at work or elsewhere.

XIII. ENDNOTES

- ¹ US Department of Labor Occupational Safety & Health Administration. OSH Act of 1970. https://www.osha.gov/pls/oshaweb/owasrch.search_form?p_doc_type=OSHACT (page last accessed 3-4-2016).
- ² 29 USC 668. OSH Act of 1970. SEC. 19. Federal Agency Safety Programs and Responsibilities. Paragraph (a). https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=OSHACT&p_id=3373 (page last accessed 3-4-2016).
- ³ DoDD 4715.1E, Environment, Safety, and Occupational Health (ESOH), March 19, 2005. <http://www.dtic.mil/whs/directives/corres/pdf/471501p.pdf> (page last accessed 3-4-2016).
- ⁴ DoDI 6055.01, DoD Safety and Occupational Health (SOH) Program, October 14, 2014. <http://www.dtic.mil/whs/directives/corres/pdf/605501p.pdf> (page last accessed 3-4-2016).
- ⁵ DoDI 6055.01. Enclosure 2, paragraph 6.
- ⁶ SECNAVINST 5100.10J, Department of the Navy Policy for Safety, Mishap Prevention, Occupational Health and Fire Protection Programs, October 26, 2005. <https://doni.daps.dla.mil/Directives/05000%20General%20Management%20Security%20and%20Safety%20Services/05-100%20Safety%20and%20Occupational%20Health%20Services/5100.10J.pdf> (page last accessed 3-4-2016).
- ⁷ OPNAV Instruction 5100.19E Navy Safety and Occupational Health (SOH) Program Manual for Forces Afloat. 30 May 2007. <https://doni.daps.dla.mil/opnav.aspx> (page last accessed 3-8-2016).
- ⁸ OPNAVINST 5100.23, Navy Safety and Occupational Health Program Manual, CH-1 of 21 Jul 2011. <https://doni.daps.dla.mil/opnav.aspx> (last accessed 3-8-2016).
- ⁹ OPNAVINST 5100.23G CH-1, 0206. Specified Support Areas.
- ¹⁰ OPNAVINST 5100.23G CH-1, 0503.d. Contracting Procedures, and Appendix 5-A DoD and Navy Requirements for Safety and Health in Contract Documents.
- ¹¹ OPNAVINST 5100.23G CH-1. Navy Safety and Occupational Health Program Manual. <https://doni.daps.dla.mil/opnav.aspx> (last accessed 3-8-2016).
- ¹² OPNAVINST 5100.23G CH-1, 0801. Discussion.b.
- ¹³ NMCPHC – TM OM 6260 Medical Surveillance Procedures Manual and Medical Matrix. <http://www.med.navy.mil/sites/nmcpbc/occupational-and-environmental-medicine/oemd/Pages/medical-matrix-online.aspx> (page last accessed 3-7-2016).
- ¹⁴ OPNAVINST 5100.23G CH-1, 0805. Occupational and Environmental Medicine (OEM) Program, paragraph a.(7).
- ¹⁵ OPNAVINST 5100.23G CH-1. Paragraph 0802. Industrial Hygiene.
- ¹⁶ Department of Health and Human Services. Medical Surveillance. <http://www.foh.hhs.gov/services/MedSurv/MedicalSurveillance.asp> (page last accessed 9-15-2014)
- ¹⁷ OSHA. OSHA Technical Manual Section VI: Chapter 2. Controlling Occupational Exposure to Hazardous Drugs. January 20, 1999.

¹⁸ 5 CFR 339.301 Authority to require an examination.

<http://www.gpo.gov/fdsys/pkg/CFR-2005-title5-vol1/pdf/CFR-2005-title5-vol1-sec339-301.pdf> (last accessed 9-16-2014).

¹⁹ 5 CFR 339.302 Authority to offer examinations.

<http://www.gpo.gov/fdsys/pkg/CFR-2005-title5-vol1/pdf/CFR-2005-title5-vol1-sec339-301.pdf> (last accessed 9-16-2014)

²⁰ DoDI 6025.23 CH-1 Health Care Eligibility Under the Secretarial Designee (SECDES) Program and Related Special Authorities, paragraph 4.g.(1). October 2, 2013.

<http://www.dtic.mil/whs/directives/corres/ins1.html> (page last accessed 3-11-2016).

²¹ 5 USC 7901 Health service programs.

<https://www.law.cornell.edu/uscode/text/5/7901> (page last accessed 3-11-2016).

²² NAVMEDCOMINST 6320.3B Medical And Dental Care For Eligible Persons At Navy Medical Department Facilities, 14 May 1987 (especially sections F-3.a. and F-3.e.).

<http://www.med.navy.mil/directives/ExternalDirectives/6320.3B.pdf> (page last accessed 3-18-2016).

²³ Assistant Secretary of Defense (Health Affairs). Memorandum of 26 March 2008,

Policy for Billing for Care Furnished by Military Treatment Facilities to Federal Employees for On-the-Job Injuries and for Occupational Health.

<http://www.health.mil/Policies/2008/03/26/Policy-for-Billing-for-Care-Furnished-by-Military-Treatment-Facilities-to-Federal-Employees-for-On-t> (page last accessed 3-8-2016).

²⁴ Department of Labor. Division of Federal Employees' Compensation (DFEC) Federal Employees' Compensation Act.

<https://www.dol.gov/owcp/dfec/regs/compliance/fecafact.htm> (page last accessed 10-20-2016).

²⁵ Treatment and Reimbursement Guidelines for Military Treatment Facilities Phase 2, 01-Dec-94 (Page 28, note #10).

http://www.tricare.osd.mil/ebc/files/ubo/ubo_patcat_category_list.doc

²⁶ OPNAVINST 6100.2 Health and Wellness Promotion Program.

<https://doni.daps.dla.mil/opnav.aspx?RootFolder=%2FDirectives%2F06000%20Medical%20and%20Dental%20Services%2F06->

[100%20General%20Physical%20Fitness&FolderCTID=0x012000E8AF0DD9490E0547A7DE7CF736393D04&View=%7bCACF3AEF-AED4-433A-8CE5-A45245715B5C%7d](https://doni.daps.dla.mil/opnav.aspx?RootFolder=%2FDirectives%2F06000%20Medical%20and%20Dental%20Services%2F06-100%20General%20Physical%20Fitness&FolderCTID=0x012000E8AF0DD9490E0547A7DE7CF736393D04&View=%7bCACF3AEF-AED4-433A-8CE5-A45245715B5C%7d) (page last accessed 3-8-2016).

²⁷ DoDI 6490.07 Deployment-Limiting Medical Conditions for Service Members and DoD Civilian Employees.

<http://www.dtic.mil/whs/directives/corres/ins1.html> (page last accessed 3-8-2016).

²⁸ USCENTCOM 021922Z DEC 11 MOD ELEVEN TO USCENTCOM INDIVIDUAL PROTECTION AND INDIVIDUAL-UNIT DEPLOYMENT POLICY.

<http://www.cpmc.osd.mil/expeditionary/pdf/MOD11-USCENTCOM-Indiv-Protection-Indiv-Unit-Deployment-Policy-Incl-Tab-A-and-B.pdf> (page last accessed 7-27-2015).

²⁹ OPNAVINST 1300.14D Suitability Screening for Overseas and Remote Duty Assignment

<https://doni.daps.dla.mil/opnav.aspx> (page last accessed 3-8-2016).

³⁰ OPNAVINST 5100.23, 0805. Occupational and Environmental Medicine (OEM) Program, paragraph a.(7).

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- ³¹ CDC. Crisis & Emergency Risk Communication (CERC).
<http://emergency.cdc.gov/cerc/index.asp> (page last accessed 10-20-2016).
- ³² OPM. Work-Life Employee Assistance Programs.
<https://www.opm.gov/policy-data-oversight/worklife/employee-assistance-programs/> (page last accessed 3-8-2016).
- ³³ OPNAVINST 5100.23G CH-1, 0303. Organization, Functional Responsibilities, and Staffing Criteria for Shore Safety Organizations, paragraph d.(2).
- ³⁴ BUMEDINST 6010.30 Credentialing and Privileging Program, 27 Mar 2015
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