

Occupational and Environmental Medicine Field Operations Manual

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As in the first edition, this update of NEHC TM90-1, 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.

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Chapter 1

INTRODUCTION

Purpose

To provide uniformity to the Navy 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 employees a safe and healthy workplace. This manual is intended to complement and clarify, but not replace, applicable Navy instructions; it defines the standard of care for delivery of OEM services.

Applicability

It applies to all Navy military and civil service personnel; however, the limitations inherent to uniquely military operations will require flexibility in implementation of medical surveillance requirements for forces afloat. This manual is also applicable to foreign nationals who work for the U.S. Navy 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 U.S. Navy.

Background

The Navy Occupational Safety and Health (NAVOSH) Program adopted section 19(a) of the Occupational Safety and Health (OSH) Act of 1970 that requires heads of federal agencies to establish and maintain an OSH program which provides its employees with equal or more stringent than those promulgated by the OSH Act to protect workers in the private sector. 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 Navy personnel.

Sources of NAVOSH Standards

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

1. Department of the Navy (DON) and Department of Defense (DoD) instructions are at the following Web address <http://www.dtic.mil/whs/directives/corres/ins1.html>.
2. Occupational Safety and Health Administration (OSHA) standards <http://www.osha.gov>. These are published in the Code of Federal Regulations (CFR) and the Federal Register at: <http://www.gpoaccess.gov/nara/index.html>.

In cases where NAVOSH standards are not in conformance with the most recent OSHA standards, the latter are used as interim NAVOSH standards.

3. Alternate DoD standards approved under Executive Order 12196 <http://www.osha.gov/oshprogs>.
4. Nationally recognized sources of occupational safety and health 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/>.
5. Office of Personnel Management (OPM) <http://opm.gov> which sets medical qualification requirements for federal civilian employees in certain positions.

6. Other federal agencies, such as the Department of Transportation <http://www.dot.gov>, which may require physical examinations for personnel performing specific duties.

Organization of the Navy Environmental Health Center

The [Navy Environmental Health Center](#) (properly abbreviated NAVENVIRHLTHCEN but here and commonly known as NEHC) coordinates and provides centralized support and services to Navy medical activities ashore and afloat in the areas of OEM, IH, Population Health (which includes Clinical Epidemiology, Health Promotion and Preventive Medicine), and Environmental Programs (EP) and Expeditionary Preventive Medicine. NEHC is also charged with coordinating and reviewing all OH and preventive medicine programs under the direction and management of the [Bureau of Medicine and Surgery](#) (BUMED). More information regarding the mission and structure of NEHC can be obtained on the [NEHC Web site](#).

Chapter 2

OCCUPATIONAL AND ENVIRONMENTAL MEDICINE PRACTICE

Introduction

The OEM professional plays a critical role in the prevention of work-related injuries and illnesses, the promotion of healthy work practices, and in the lifestyles in workers. The scope of OEM practice is broad and involves a diverse mixture of clinical, epidemiologic, administrative and communicative skills. Medical personnel work closely with 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.

Elements of an OEM Program

Elements of a comprehensive OEM program include but are not limited to:

1. Program management and oversight of elements of the Blood-borne Pathogens Exposure Control Plan, Tuberculosis Exposure Control Plan, the Hearing Conservation Program, Ergonomics, Reproductive Hazards, etc.
2. Medical Surveillance program management includes but is not limited to: (a) validation of personnel assigned to medical surveillance programs based on current industrial hygiene data, (b) medical surveillance/certifications examinations according to the NEHC [Technical Manual Medical Surveillance Procedure Manual and Medical Matrix¹](#) (latest revisions).
3. Fitness for duty medical evaluations (e.g., pre-placement, return-to-work, etc).
4. Medical certification examinations per NEHC Tech Manual Medical Surveillance Procedure Manual and Medical Matrix (latest revisions).
5. Work area visits in concert with IH and Safety by OEM professionals.
6. Epidemiological assessment of injury and illness data to identify trends and focus prevention efforts.
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.
10. Preventive services (e.g. appropriate immunizations to prevent disease due to occupational exposure).
11. Work area health promotion programs.
12. Training and education of workers and professional and support staff.
13. [Employee counseling/referral to employee assistance programs](#) (EAP).
14. Involvement in command risk communication process.

Trend Analysis/Epidemiology

The primary goal of OEM is the prevention of work-related injuries and illnesses. OEM professionals use epidemiological tools to identify trends in the occurrence of injuries and illnesses in their worker population, and then communicate the results of trend analysis to safety, management, IH and workers, so preventive efforts may be implemented. This is discussed further in [Chapter 4](#).

[Occupational Medicine Program Assessment \(OMPA\) and Occupational Medicine Metrics](#) are annual requirements of each OEM program.

Worksite Evaluations

Visits to the worksite are invaluable to the OEM professional. Worksite visits shall be done by the OEM professionals (this includes the OEM Physician as well as the Nurse) to acquaint them with the tasks completed by the patient population of the OEM clinic, and to make recommendations regarding restricted duty or during a fitness for duty evaluation. Worksite evaluations are often necessary for the review of potential exposure related hazards. Worksite evaluations can be conducted by the OEM professional alone or as part of a team. Team evaluations performed in concert with IH or safety professionals are strongly encouraged. See [Chapter 3](#) for details.

Pre-placement Examinations

OEM clinics will be asked to examine applicants for certain positions. The use of pre-placement examinations for certification programs and medical surveillance will be described in more detail in [Chapter 5](#).

The [Rehabilitation Act of 1973](#), as amended, includes sections that impact on pre-placement examinations. Elements of this law are very similar to the Americans with Disabilities Act, which does not cover federal worksites. This will be discussed further in [Chapter 5](#).

Medical Surveillance

Medical Surveillance refers to the application of medical screening tests to individuals and groups of workers with chemical or physical exposures, for the purpose of identifying trends in the occurrence of occupational illnesses and injuries. To be effective, surveillance must be directly linked to preventive action. This requires the use of trend analysis and other epidemiological tools, which are described further in [Chapter 4](#). Details on medical surveillance programs are included in [Chapter 5](#) and on the OSHA site at <http://www.osha.gov/SLTC/medicalsurance/index.html>.

Medical screening and medical surveillance are two fundamental strategies for optimizing employee health. Although the terms are often used interchangeably, they are quite distinct concepts. Medical screening is, in essence, only one component of a comprehensive medical surveillance program. The fundamental purpose of screening is early diagnosis and treatment of the individual and thus has a clinical focus. The fundamental purpose of surveillance is to detect and eliminate the underlying causes such as hazards or exposures of any discovered trends and thus has a prevention focus. Both can contribute significantly to the success of worksite health and safety programs.

Shore based OEM clinics must provide services for operational forces including ships and fleet marine force (FMF) since they frequently do not have the equipment and expertise to complete all medical surveillance evaluations. Service includes all the components of a comprehensive OEM program.

Job Certification

Job certification examinations are medical evaluations required by law or instruction for certain occupations or for individuals performing specific work tasks. The examinations are directed at identifying underlying health conditions or limitations that may result in a medical or safety risk to the employee, co-workers or the public. Examples include examinations for respirator wearers and explosive handlers. Details of job certification programs are in [Chapter 5](#).

Fitness for Duty Examinations

The term "fitness for duty" is used to describe medical examinations required or offered by management as described in [5 CFR 339.302](#). In the broad sense "fitness for duty" exams include all the examinations performed by the OH clinic. 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 risk to the worker from physical and chemical hazards. There are many issues involved with these determinations which are discussed further in [Chapter 5](#).

Treatment of work-related injuries and illnesses

Civilian employees are entitled to choose their provider, and, although they may choose a private physician, the option to choose the OEM clinic should always be available. OEM clinics are ideal for care and treatment of work-related injuries and illnesses. Additionally, the OEM clinic has the responsibility to oversee the worker's ability to return safely to work, regardless of whether the worker chooses a private physician or accepts the care of the OEM clinic. There are many advantages to providing "in-house" injury care, including better trend analysis of workplace injuries as part of a prevention program, generally greater convenience for the employee, and reduced costs to the command and the government. Where available, "in-house" care may extend to treatment by Navy specialists such as orthopedic surgeons and ophthalmologists, or services such as physical therapy for job related situations.

Active duty sick call and acute care 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. OEM professionals are a valuable source of consultation for trend analysis of work related injuries and illnesses, as well as evaluation and management of exposure related events. OEM professionals need to maintain a close working relationship with other medical providers and provide training in the recognition of work-related conditions, and the follow-up of potential workplace hazards which may place other employees at risk. This includes obtaining assistance from industrial hygienists and safety officers.

Treatment of Non-occupational Illnesses and Injuries

OEM clinics should offer medical services to employees, on a one time basis, that reduce the time the employee needs to spend away from work for non-occupational illnesses/injuries and simple medical screening. In addition to reducing time off the job, these services are often more convenient for employees, and provide OEM professionals with additional opportunities for health promotion initiatives. Examples of such services include dressing changes or suture removal after a non-occupational injury or blood pressure checks for individuals with hypertension (a local policy must be in place to address the treatment of individual with higher than normal BP or when complications are noted for suture removal or dressing changes). These services can be offered provided OEM Clinic staffing and resources permit. These services can often be coordinated with the employee's primary care provider.

Health Promotion

The scope of health promotion initiatives sponsored/supported by a particular OEM clinic will vary based on the size of the supported activity, the supported command's intrinsic health promotion assets, and the contribution of an MTF health promotion office, if available. However, per [OPNAVINST 6100.2 Health Promotion Program](#) all naval activities shall establish a health promotion program incorporating at least the following seven elements: alcohol and drug abuse prevention; physical fitness and sports; tobacco use prevention and cessation; nutrition education and weight control; stress management and suicide prevention; hypertension screening, education and control; and back injury prevention.

OEM professionals have many opportunities to integrate health promotion into clinic practice. All contact with patients for injury care or medical screening are opportunities to review such areas as smoking cessation, weight reduction, hypertension control, nutrition and exercise. Abnormal results of spirometry tests 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, which should lead to counseling and referral.

Per [Department of the Navy Civilian Human Resources Manual \(DON CHRM\)](#) within the limitations outlined in [OPNAVINST 6100.2](#) and other applicable directives, all OEM clinics should support command health promotion initiatives to the greatest extent possible. OEM personnel should work closely with their command health promotion officer in the delivery of these and other services. Potential examples of OEM support include offering blood pressure screening, providing lectures on health-related topics, offering/assisting in cholesterol screening, and coordinating/offering smoking cessation classes.

Travel Medicine

OEM clinics have the resources to be qualified to provide [travel medicine](#) consultations. These may include consultation concerning military or civilian personnel traveling on extended unit deployments, individual military or civilian personnel traveling by themselves or in small groups for assist visits, and personnel and their families on recreational travel to third world locations.

Standards for the Deployment of DoD Civilians can be found in United States Central Command ([USCENTCOM INDIVIDUAL PROTECTION AND INDIVIDUAL/UNIT DEPLOYMENT POLICY](#)).

[Overseas medical](#) screenings are described in [OPNAVINST 1300.14C](#). In addition, [SECNAVINST 6420.1D](#) requires workers who deploy aboard submarines to undergo periodic certification examinations. Naval Aviation Engineering Support Unit Instruction 12339.1 requires their technical specialists to undergo a similar certification process due to the likelihood of deployment aboard ships or to remote overseas locations.

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 major area of consultation is workers' compensation cost containment and injury prevention programs, which is described in detail in [Chapter 6. OPNAVINST 5100.23 series](#) requires OEM programs to provide medical review and management of workers' compensation cases. Other examples include placement of employees with limitations, interpretation of medical information from private physicians, ergonomics, risk communication to

employees, evaluation of health hazards in the workplace, health promotion, environmental issues, disaster planning, and emergency response planning.

OEM staff should 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).

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 are also involved in environmental/community health concerns, especially exposures related to hazardous waste sites or at installations with superfund sites. Accordingly, formal courses in risk communication are strongly recommended for OEM professionals. The two links below provide insight to the process of Risk Communication.

<http://www-nehc.med.navy.mil/HERC/index.htm>

<http://www.atsdr.cdc.gov/HEC/primer.html#CARDINAL>

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 work tasks they support so that they can answer health related questions from workers. OEM professionals should also support formal training programs at the worksite such as programs for health promotion, blood borne pathogens, and health effects of hazardous exposures.

OEM professionals should also provide regular training in OEM topics to other medical department personnel. A few examples include workplace hazards, treatment and tracking of work related injuries and illnesses, and regulatory and administrative requirements of OEM programs.

Employee counseling/referral to Employee Assistance Programs (EAP)

OH professionals are in a unique position to recognize employees with personal, family, or substance abuse problems. The points of contact for [EAP for civilian employees](#) and the mechanisms for referral should be identified. In addition, community resources for problems not handled by EAP should be identified. Referral sources for active duty personnel include the command [Drug and Alcohol Program Advisor \(DAPA\) and Navy Family Services Centers](#)

OEM Staffing

The staffing of individual clinics varies greatly depending on the size and complexity of the program. 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.

The roles of these professionals vary greatly depending on the size and complexity of the OEM program. All will be involved to some degree in the areas described under OEM practice. Regardless of the size of the OH clinic, all clinics should 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 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), independent duty corpsman (IDC) or general duty corpsman to perform this function.

OEM clinics may have full or part-time physicians. They may be residency trained, board-certified OEM physicians, other medical specialties, general medical officers, flight surgeons, undersea medical officers or others. The use of non-physician health care providers (HCPs) in the delivery of OEM services is discussed in Appendix B.

All clinics should identify an OEM specialist they can call for consultation. Many are located at large naval hospitals, shipyard clinics, or the NEHC.

Chapter 3

WORKSITE EVALUATION

Introduction

Routine onsite evaluation of the workplace by OEM professionals are an essential element of any comprehensive OSH program as outlined in section [0807 of OPNAVINST 5100.23 Series](#). Per section [0802.2 of OPNAVINST 5100.23 series](#), an annual survey of each workplace is to be made by the cognizant industrial hygienist - i.e., the walk through survey for all potentially hazardous Navy work centers. In addition, onsite workplace evaluation must be performed by OEM nurses and/or physicians in a number of situations: to familiarize the OEM professional with the tasks of the jobs that are being completed by the workforce in their area of responsibility (AOR), in response to a specific employee's complaints or concerns, to investigate an apparent cluster of pattern of related complaints in two or more employees, or as part of a periodic worksite inspection schedule.

Worksite Visit Preparation

In preparation for a worksite visit, OEM professionals should become familiar with all relevant data. Such data may include, but should not necessarily be limited to:

1. Review of the most recent IH survey report for the work center, and if applicable, the corresponding medical surveillance recommendations for the employees in the work space.
2. Results of physical, biological and chemical hazard assessment, such as noise dosimetry and airborne chemical sampling under the annual workplace monitoring plan.
3. Assessment of the presenting complaint(s) of the affected employees who have been evaluated in the OEM clinic.
4. Reports of the periodic safety department inspections of the workplace, and injury/illness data for the work center's employees, particularly when clusters of similar illnesses/injuries or adverse trends in their number or severity have occurred in the worksite. The command OSH officer and OEM, per [OPNAVINST 5100.23 series](#), are responsible for maintaining trend analysis reports.

Worksite Inspection

The inspection itself should be coordinated with the cognizant work center supervisor. While the scope of the evaluation is certainly dictated in part by the specific reason for the visit, some general principles apply for most worksite evaluations by OH personnel.

1. An essential element of the evaluation is identification of physical, biological and/or chemical hazards, use of personal protective equipment (PPE) and the assessment of work practices. It is particularly helpful to have a summary of the recommended PPE from the most recent IH survey available to ascertain whether the recommended PPE is in use.
2. If a particular employee complaint is being investigated, the specific circumstances surrounding that complaint should be thoroughly evaluated.

Documentation of the Worksite Visit

Sufficiently thorough documentation of the visit is important. The documentation should contain the name and phone number of the point of contact at the worksite, the amount of time the

OEM specialist spent at the worksite, a description of the work operations and work practices, and any other information that is pertinent to the OEM professional who is doing the work site visit.

Follow-up of the Worksite Visit

The specific nature of the appropriate follow-up for a worksite 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 worksite evaluation to that individual. If the visit was part of an injury trend analysis, any identified safety/health hazards should be reported to the cognizant work center supervisor(s), the activity occupational safety and health 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 to the particular employee and supervisor) is a must. This protocol demonstrates command concern and instills a sense of well being in the employee and reinforces the availability and interest of the OH department. As a result of the site visits, future employee concerns will be brought to medical attention prior to actual injury or illness. The information obtained can be utilized to alert appropriate OSH personnel of potential areas of concern in a manner which helps protect employees from real or perceived risk of management reprisal for directly reporting workplace hazards.

Chapter 4

EPIDEMIOLOGY AND TREND ANALYSIS IN OCCUPATIONAL AND ENVIRONMENTAL MEDICINE

Introduction

The use of epidemiology and trend analysis refers to methodically examining certain health data (especially aggregated data). It is required by OPNAVINST 5100.23 *series* in sections “0803. Occupational Exposure Assessment,” “0805. Occupational Exposure Registry and Data Bank,” “0807. Occupational Medical Surveillance Program Elements,” “0809. Responsibilities,” and “1710. Asbestos Medical Surveillance Program (AMSP).” Data (“metrics”) from OEM facilities also are required under the Occupational Medicine Program Assessment (OMPA), the documents of which may be viewed at Navy Medicine Online ([NMO](#)).

Purpose

The purpose of epidemiology 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](#)).

Concepts and Terminology

Biomonitoring refers to the detection of exposure by identifying substances or their metabolites or the effects of substances or their metabolites in human tissue or body fluids. Biomonitoring is in contrast, for example, to air sampling, which seeks to establish exposure by identifying substances in breathing-zone air.

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.

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.

Prevention can be considered as having three aspects. “Primary Prevention” refers to preventing exposure to a disease agent. An example is preventing malaria by killing mosquitoes;

without mosquitoes, people will not be exposed to malaria. “Secondary Prevention” consists of identifying the presence of a disease process before symptoms occur, thus enabling treatment that prevents or minimizes morbidity or mortality. An example is identifying a positive tuberculosis (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 tb from developing in the exposed person. “Tertiary Prevention” is taking action to minimize the adverse effects of illness or injury. An example is effective rehabilitation for persons who have experienced a serious injury.

P-value (more properly, “*p*-value”) is a numerical representation from which the percentage of the time an outcome probability is due to chance is calculated. For example, if a difference in rates has a *p*-value = 0.05, it means that there is a 5% likelihood (1 in 20 chance) that the observed difference in rates was due to chance (i.e., there is a 95% chance that the value was observed because of the influence of something that actually affected the rates). The most commonly used *p*-values are 0.05 and 0.01.

Screening is testing for evidence of exposure or exposure-related effects before such exposure causes health effects that would result in medical care.²

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.³ Sentinel events are usually, but not necessarily, serious or catastrophic events.

Site Assessment refers to the evaluation of a workplace for potential health hazards that 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 significant findings and differentiate them from rates likely to be due to chance, random variation, or error.

Surveillance is “the ongoing, systematic collection, analysis, interpretation, and dissemination of data regarding a health-related event for use in public health action to reduce morbidity and mortality and to improve health” ([CDC, 2001](#)).⁴ In other words, surveillance is checking workers to see if they have been overexposed to work hazards—and then doing something about it.

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

Walk-through 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.

Tools

Local resources 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 CHCS 2 (when it becomes widely used) allow for ready computer access to health care data on which to do trend analysis.

Specific surveillance tools that have been developed for use by Navy OEM include the Medical Matrix NEHC-TM OM 6260 (February 2001) and the PC Matrix (the electronic version of the

Medical Matrix). These have been developed to assist OEM personnel in managing surveillance programs in compliance with both OSHA and Navy requirements. In addition to collating and simplifying the requirements of combinations of surveillance requirements for various workplace exposures (and generating SF-600 forms), PC Matrix allows the collection of surveillance data and the generation of electronic data files that can be used to produce summary reports of medical surveillance. The electronic forms of the [Medical Matrix](#) and the [PC Matrix](#) are available for download from the NEHC Web site.

The AMSP is a large surveillance program with specific requirements that data collected be sent to NEHC. NAVMED 6260/5 (Rev. 5-90) reports history and physical findings, and NAVMED 6260/7 (5-90) reports chest X-ray (CXR) B-reading results. [AMSP](#) procedures are available on the NEHC Web site.

The Pediatric Lead Poisoning Prevention Program (PLPP) is somewhat unique among OEM programs, in that it targets a population that is generally too young to work. The goal is reducing environmental exposure to lead (Pb). As Pb exposure has primarily been through Pb-based paint (as the source of Pb in and around housing, including house dust and yard topsoil), elements of the PLPP include relating with the Naval Facilities Engineering Command (NAVFAC). [Details of the PLPP](#) are available on the NEHC Web site.

The Naval Disease Reporting System (NDRS) collects health information from military treatment facilities. The Naval Disease Reporting System – Internet-based (NDRSi) is the latest electronic version, and is available to a limited number of military treatment facilities.

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

Epi Info is public domain software that can be used to perform basic statistical data analysis. [Epi Info 6](#) is available from the Centers for Disease Control and Prevention ([CDC](#)) Web site.

Microsoft Excel® (Excel) is a computer (spreadsheet) program that is capable of storing moderate amounts of data (up to 64 kilobytes of records) and performing some mathematical manipulations and simple statistical functions and graphing, including trend lines.

Microsoft Access® is a computer (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®. Support for such software may be from information technology or clinical epidemiology personnel.

Procedures

The following are all under the cognizance of OEM surveillance programs.

1. Workers regularly exposed to health hazards should be enrolled in the appropriate medical surveillance programs (with or without biomonitoring) according to criteria in the Medical Matrix. Medical Matrix surveillance standards meet or exceed applicable OSHA, Navy and DoD standards.
2. Regular purposeful review of injury and illness data, looking for unusual or unexpected patterns, should be done routinely (See [OPNAVINST 5100 series](#)); 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 NEHC (AMSP, PLPP, and audiometric data using DOEHS-HC).

Examples of Data Analysis

Example 1: Workplace Walk-through

During a workplace walk-through, it is noticed that several hazardous chemicals are used. Most workers do not know where the material safety data sheets (MSDS) are located.

An appropriate response to this basic level of data collection and analysis includes notifying the supervisor that the MSDS 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.

Example 2: Medical Matrix and PC Matrix in Medical Surveillance

As a result of a work-place walk-through and IH sampling data, shipyard workers are known to be overexposed 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 the PC Matrix, 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 work site was evaluated. Nothing unusual was noted in the workplace, but the worker described casting lead soldiers as a hobby. The worker was appropriately counseled about lead exposure, and his lead and zinc protoporphyrin (ZPP) levels were followed closely by a physician.

In addition to the high lead 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 walk-through, 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.

Example 3: Rates of Illness

Seasonal variation in illness rates is expected (e.g., more allergy-related complaints in spring and fall, more influenza in winter, etc.). An experienced nurse at an OEM clinic noticed more cases of bronchitis one summer. Worker population was stable (170, although there was worker turnover), so cases of bronchitis represented an incidence rate of bronchitis per 170 workers. (It is to be noted that rates are usually calculated per 1000—or 100 or 10,000—as the population of

exposed persons or “denominator” generally varies.) 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.

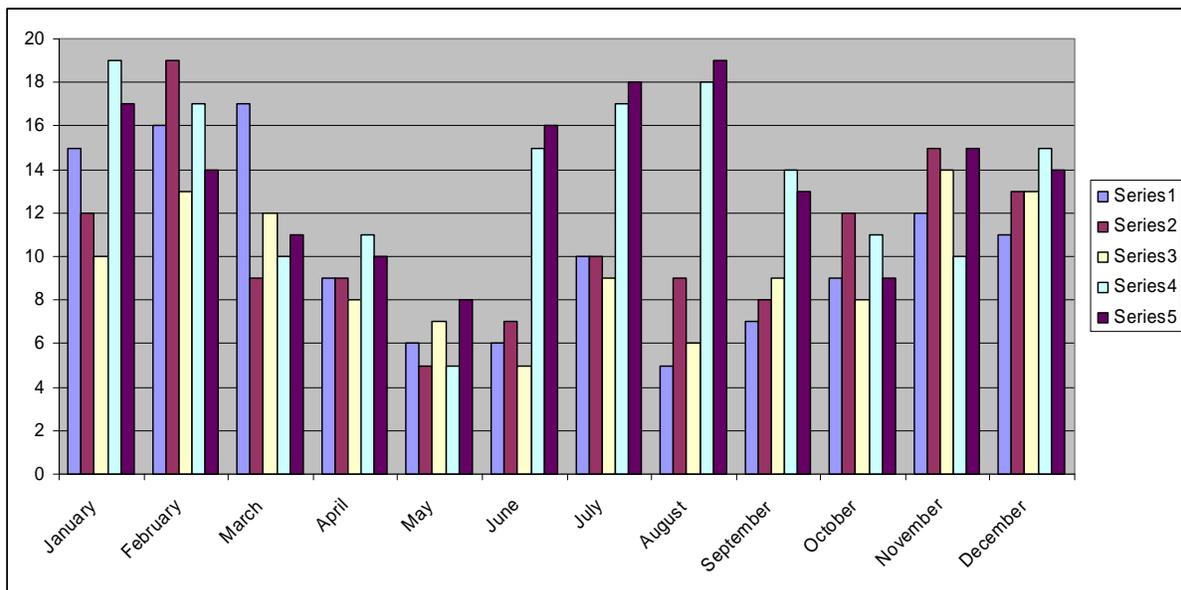


Figure 1 - Bar Graph of Bronchitis Diagnoses by Month over a 5-Year Period
 ("Series" = Years)

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

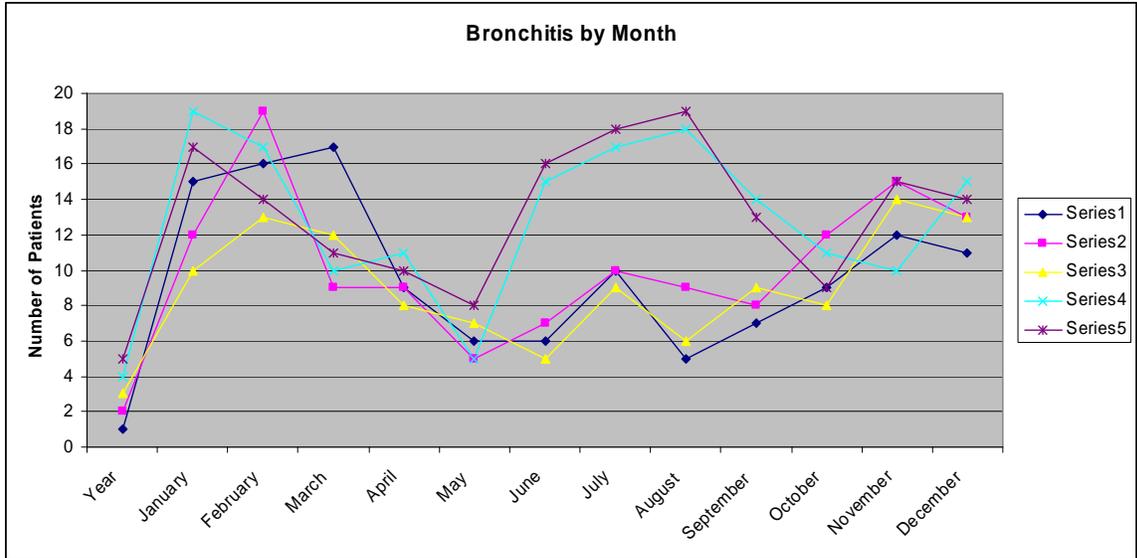


Figure 2 - Graph of Bronchitis Diagnoses by Month over a 5-Year Period ("Series" = Years)

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

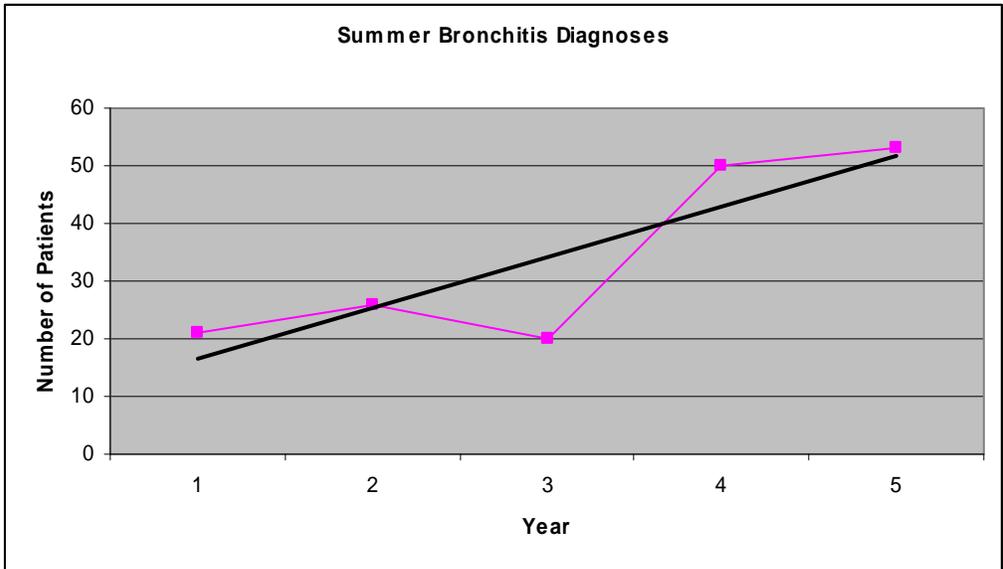


Figure 3 - Summer Bronchitis Diagnoses by Year over a 5-Year Period with Trend Line

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).

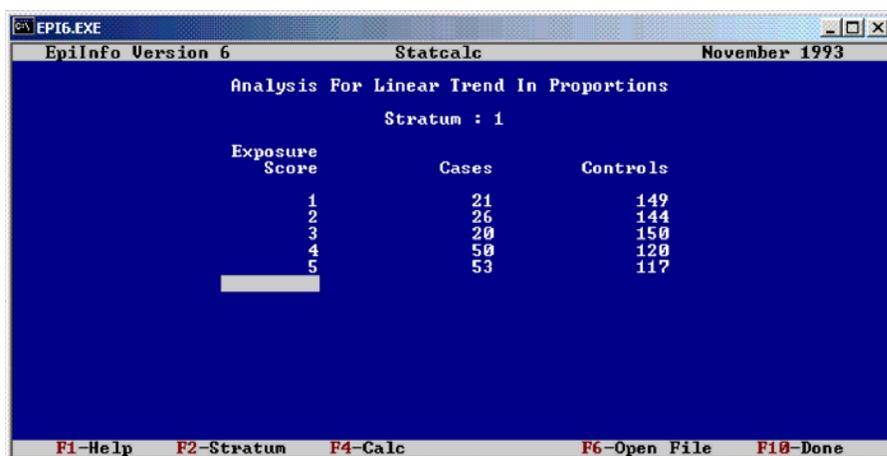


Figure 4 - Entering Data to Epi Info 6 for Analysis for Linear Trend

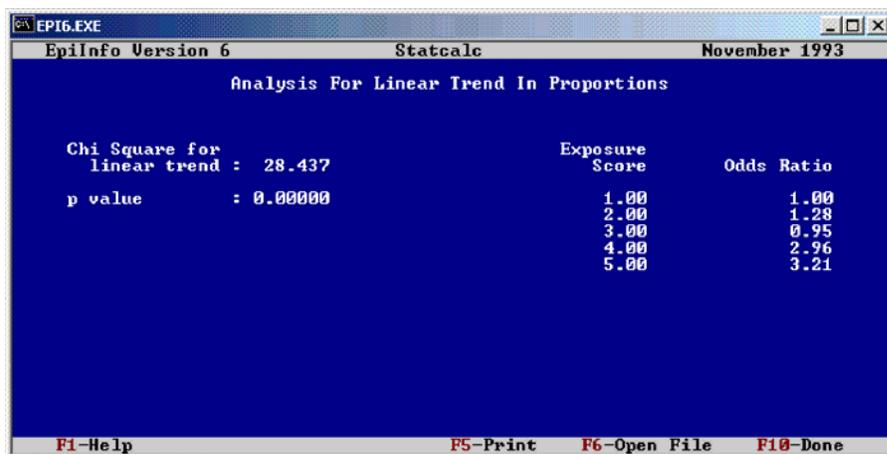


Figure 5 - Results of Statcalc from Epi Info 6 Analysis for Linear Trend

Further analysis revealed that most diagnoses of bronchitis during the summer were among workers in one shop in a large warehouse. A subsequent workplace walk-through 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.

Example 4: Mean Blood Pb Elevation in Workers (Aggregate Health Data Analysis)

Blood Pb levels in workers in one shop revealed elevations in 2 individuals. On further questioning, one person worked evenings and weekends in a private indoor shooting range. The public health department was notified. The range was subsequently found to have inadequate ventilation, with elevated air Pb levels. It was determined that the range was the source of the elevated blood Pb in that worker. The other worker had only slightly elevated blood Pb, but further

investigation determined that the source of his Pb exposure was his hobby of casting toy soldiers and musket balls.

It was noted that the mean blood Pb at the worksite, although normal, was significantly higher than mean levels at all other sites in the catchment area of the MTF. Even though non-occupational sources had been identified for the 2 workers with elevated Pb levels, it was decided that a workplace walkthrough was appropriate. During the walkthrough, workers were noted to be eating in the same area as welding and grinding. Also, during lunch and after hours, one of the workers was found making a “sculpture” of some scrap metal, including high-speed grinding. The scrap metal was from an old bridge, and was covered with several layers of Pb-containing paint. Changes in the procedures of that worksite resulted in decreased subsequent Pb levels.

Example 5: 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).

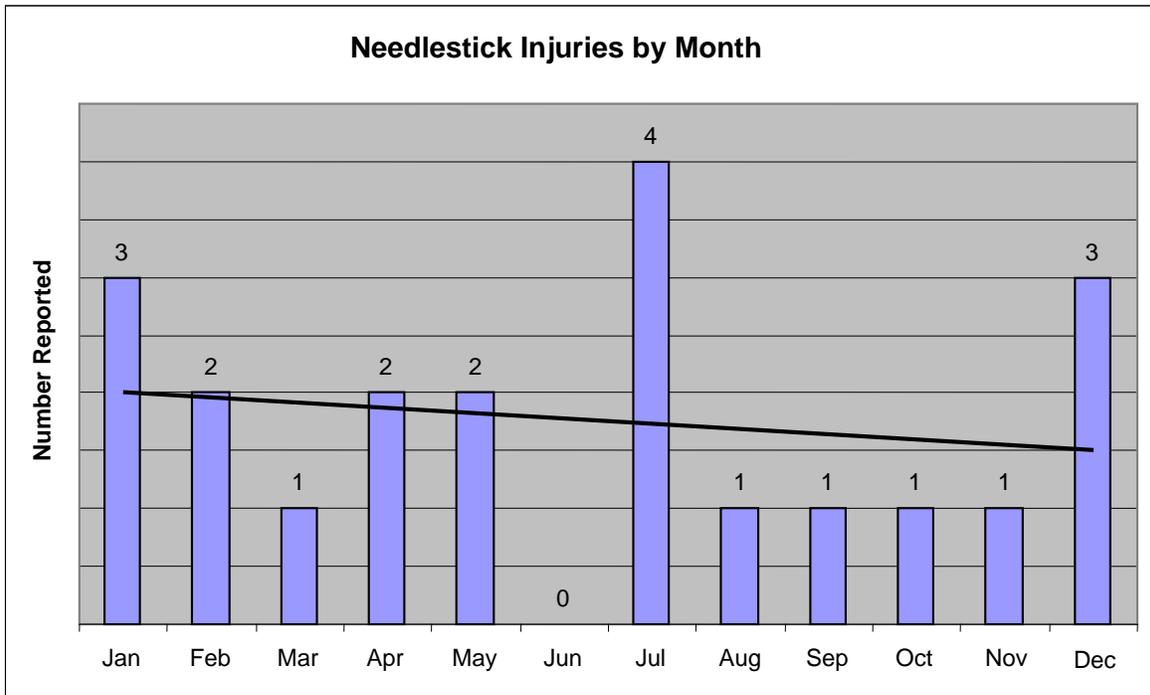


Figure 6 - Bar Chart of Needlestick Injuries with Trend Line

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	4
(Immunology Clinic)	
Surgery Clinic	1
Total	21

Table 4 - Needlestick Injuries by Department

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

Table 3 - Needlestick Injuries by Device

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 5 - Needlestick Injuries by Month

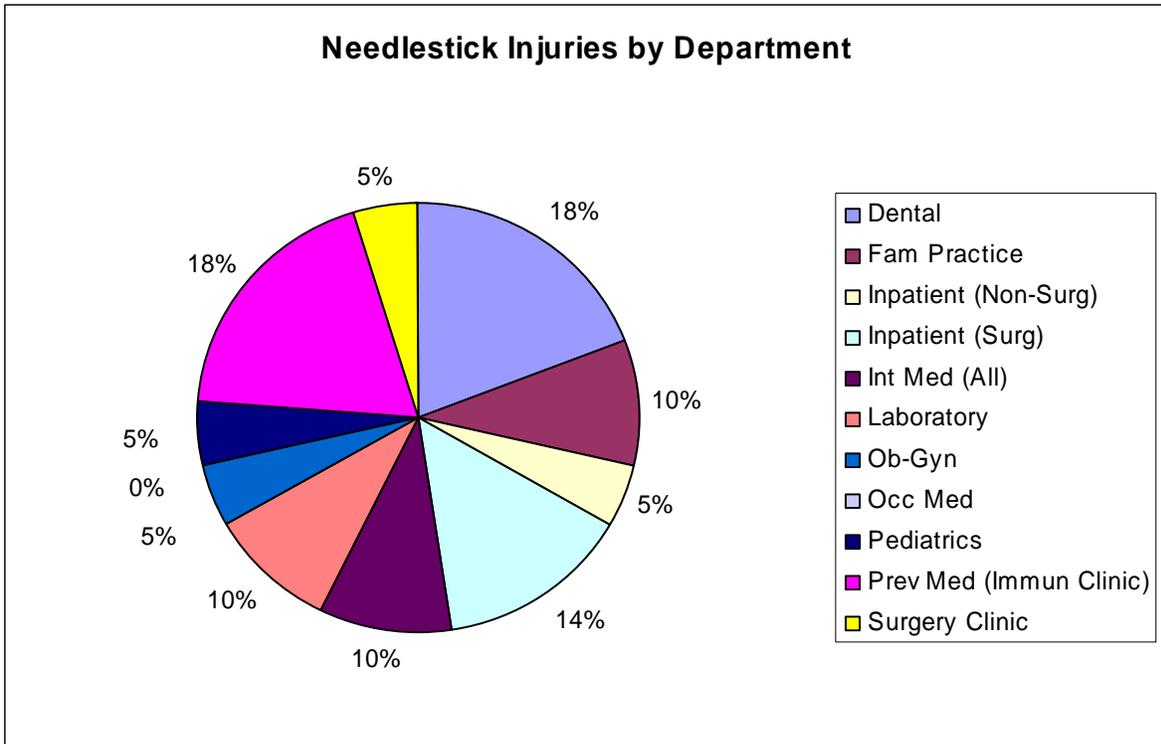


Figure 7 - Pie Chart of Needlestick Injuries by Department

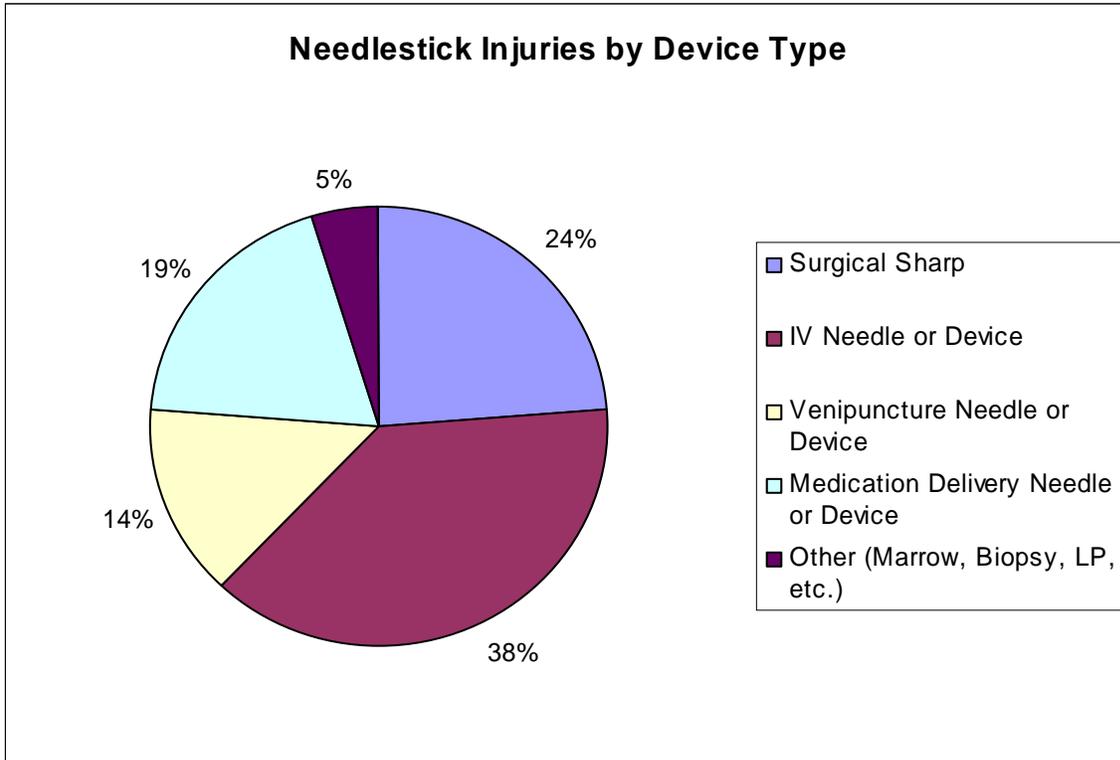


Figure 8 - Pie Chart of Needlestick Injuries by Device Type.

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.

Example 6: 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 9 - 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 1000 workers, especially considering complexity of care.

Rate calculations were made using the following formula:

Rate =

Cases
(in this case, number of MTF visits)

divided by

Controls
(number of exposed persons, in this case workers)

Standardized to a given number
(in this case, per 1000, by
multiplying the Cases/Controls
quotient by 1000)

Figure 10 - Formula for Calculating Rate

For example, MTF-A had a worker population of 2217 (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 1000 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 1000 Workers	323.0	223.0	188.0
Rate of Minor Injury per 1000 Workers	252.6	199.2	169.0
Rate of Moderate or Complex Injury per 1000 Workers	70.4	23.8	19.0
Rate of Mod/Complex Injury or Occupational Illness per 1000 Workers	96.1	24.6	20.2

Figure 11 - 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.

Chapter 5 MEDICAL EXAMINATIONS

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/or the general public. Certain jobs have medical standards (written descriptions of the medical requirements for those jobs). Performing medical examinations is within the scope of service of OEM.

Medical requirements for certain jobs are outlined in the job descriptions. Medical standards for specific occupations and exposures are contained in [NEHC-TM OM 6260 Medical Surveillance Procedures Manual and Medical Matrix](#) (MATRIX),⁵ [NAVMED P-117 Manual of the Medical Department \(MANMED\)](#),⁶ and other Navy instructions and 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 NEHC and BUMED.

Types of Medical Examinations

Occupational medical examinations (OME) may be categorized by their purpose. The following types of OMEs are currently performed.

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

Details on the definition and requirements of each are the subject of the remainder of this manual. Chapter 15 of [MANMED](#)⁷ contains details of military physical examinations.

Pre-placement Medical Examinations

Current US law prohibits discrimination against workers on the basis of disability ([Americans with Disabilities Act \(ADA\) of 1990](#)).⁸ However, after a worker is offered employment, a pre-placement (also called a “baseline”) medical examination may be required ([ADA](#)).⁹ 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 ([ADA](#)).¹⁰ Also, “information obtained regarding the medical condition or history of the applicant” must be “collected and maintained on separate forms and in separate medical files and is treated as a confidential medical record, except that--(i) supervisors and managers may be informed regarding necessary restrictions on the work or duties of the employee and necessary accommodations; (ii) first aid and safety personnel may be informed, when appropriate, if the disability might require emergency treatment” ([ADA](#), Sec. 102. (c)(3)).¹¹ 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. Sometimes, pre-placement exams are done to assure that a worker can do a job without undue risk to the health or safety of himself or

herself or to others. 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").

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 medical qualification standard in OPM [Qualifications Standards Handbook for General Schedule Positions](#)¹² and [Handbook X-118C](#).¹³ X-118C states that "applicants must be physically and mentally able to efficiently perform the essential functions of the position, with or without reasonable accommodation, without hazard to themselves or others." The individual is presumed to be medically qualified in the absence of evidence to the contrary.

According to [5 CFR 339.204](#), "Agencies 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." 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 workers' compensation. As long as the candidate is presently able to do the job, he or she is 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; additionally, 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. [5 CFR 339.104](#) provides a detailed discussion of the meaning of "medical documentation." The Navy pays for examinations done by a Navy-designated provider.

Physical Requirements

The OPM [Qualifications Standards Handbook for General Schedule Positions](#)¹⁴ and [Handbook X-118C](#)¹⁵ detail the physical requirements for each qualification standard in Federal civil service. The OH provider should have a list of the specific physical requirements for each applicant (usually provided by the applicant's human resources office). Generally, these requirements are listed as "Functional Requirements" on [Standard Form \(SF\)-78 Certificate of Medical Examination](#).¹⁶ 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.

Specific Medical Examinations

For specific jobs or job related requirements, testing may be necessary beyond the routine examination (e.g., depth perception testing for crane operators, Titmus color perception testing, etc.). If such 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 responsible OH professional or NEHC should be sought.

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 has been treated for recurrent back injuries, or that a worker was occupationally exposed to asbestos for 20 years, or that a worker was previously disqualified from work, or that a worker is under treatment for severe reactive airways disease may be important.

Regulations Related to Persons with Disability

[5 CFR 339.204](#) and [29 CFR 1630.14](#) provide guidelines on pre-employment inquiries regarding persons with disabilities. With certain exceptions, a command may not conduct a pre-employment medical examination 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 condition an offer of employment on the results of a pre-placement medical examination, provided that all applicants are subjected to such an examination. Other provisions are detailed in [29 CFR 1614](#), the Equal Employment Opportunity Commission (EEOC).¹⁷ The EEOC 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 ([29 CFR 1614.102](#)).¹⁸ An employee seeking reasonable accommodation must submit to a medical examination requested by the employer, or produce medical documentation to support a request for medical accommodation if the limitation is not immediately apparent.

According to [ADA](#), Sec. 101. (9),¹⁹ "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."

Medical Examinations as Part of Medical Surveillance

Medical Surveillance

Public health surveillance is the ongoing systematic collection, analysis, and interpretation of health data for purposes of improving health and safety [[NIOSH](#)]²⁰ (other, similar definitions exist).²¹ Workers actually or potentially exposed to hazards at work are periodically evaluated for evidence of exposure or overexposure, and appropriate steps are taken to minimize or eliminate adverse effects. Surveillance is a type of secondary prevention.

Medical examinations are required as part of many medical surveillance programs. Such exams are usually baseline, periodic or termination. The MEDICAL MATRIX contains all current Navy surveillance programs, and meets or exceeds OSHA requirements.

Medical 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 MEDICAL MATRIX was developed to compile 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), a computerized version of MEDICAL MATRIX was developed called PC Matrix. By using PC Matrix, OH providers can fulfill OSHA and Navy regulations and can simplify the requirements of all pertinent medical surveillance programs for a worker. Thus, a worker enrolled in 5 programs can undergo one history, one physical, and one set of laboratory tests. PC Matrix is designed to generate examinations on form [SF-600, Chronological Record of Medical Care](#) (Facsimile). Programs that require use of specific forms such as the [SF-78, Certificate of Medical Examination](#), and [DD Form 2807-1](#) Report of Medical History are not included in the PC Matrix. PC Matrix can be downloaded from the [NEHC Web site](#). A CD with PC Matrix also can be obtained from the NEHC library, 620 John Paul Jones Circle, Suite 1100, Portsmouth, VA 23708-2103, or commercial phone (757) 953-0953 DSN 377-0953.

The MEDICAL MATRIX contains the **minimum** requirements for medical surveillance and job certification examination, per [OPNAVINST 5100.23 series²²](#) and [OPNAVINST 5100.19 series²³](#). The MEDICAL MATRIX is a primary source of guidance for medical surveillance programs. OSHA regulations issued after the MEDICAL MATRIX is published take precedence over the MEDICAL MATRIX program elements. Requirements for situational examinations are not included in the MEDICAL MATRIX.

A committee of OEM physicians and nurses meet periodically to review and revise the programs in the MEDICAL MATRIX. The document is continuously reviewed in light of current requirements and guidance, with interim changes issued when there are major program changes. Because instructions and guidance change more quickly than this document can be published, it is important that activities maintain current references. Comments and requests for changes to the MEDICAL MATRIX can be sent to NEHC, Attn: OEM Medical Matrix Committee or by e-mail to: occmmed@nehc.med.navy.mil.

Note: counterparts to the Medical/PC Matrix exam forms exist in AHLTA, the tri-service vehicle for the fully electronic record. These are encounter templates and the legacy copies are located in the Occupational & Environmental Medicine sub-folder of “Enterprise Folders.” You can locate the Enterprise Folders by opening the Template Management window with a patient encounter open. Health care providers can then copy the desired Medical/PC Matrix encounter templates to their “My Favorites” folder for day-to-day use. The “add to favorites” option should be used to carry out this function. These templates should be refreshed periodically because the encounter templates are periodically updated. When using these templates, providers should ensure that a qualification assessment is made in the note and that the correct Evaluation & Management (E&M) code has been selected.

Placement (Inclusion) into Medical Surveillance Programs

The MEDICAL MATRIX contains criteria for inclusion in surveillance programs. The decision to place an individual into or remove him from a medical surveillance program is the responsibility of the Medical Department working with IH, line safety officers and supervisors. In accordance with [OPNAVINST 5100.23 series²⁴](#) selection of personnel for medical surveillance should be based primarily on the results of IH surveys 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 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.

Contractors

The Navy has no general obligation to perform medical surveillance or certification examinations for contractors' personnel performing work at Navy facilities except for certain types of personal services contracts or as defined by Status of Forces Agreements. The contractor is responsible for the medical surveillance/certification required by OSHA 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. 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.

Removal from Medical Surveillance Programs

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

1. The worker's job changes and there is no longer adequate exposure to warrant inclusion in surveillance (e.g., 30 days per year), or
2. IH personal sampling data clearly show that exposure does not warrant inclusion in surveillance, or
3. IH survey data document the absence of a hazard or stressor in a job or process, or
4. 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.

Types of Medical Surveillance Examinations

Pre-placement (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](#).)

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, so 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 "Special Examinations" in the MEDICAL 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/or the age of the individual.

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 Asbestos Medical Surveillance Program has unique provisions for individuals removed from exposure).²⁵ 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.

Special examinations

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

Fitness-for-duty examinations (military personnel) per the Manual of the Medical Department ([NAVMED P-117](#))

In addition to the various scheduled and special examinations for military personnel, under the following conditions, a “fitness-for-duty” evaluation may be required.

1. The service member was determined to be unfit for full duty, and is returning to full duty, or
2. 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, a “fitness-for-duty” examination is performed, often with special attention to the condition suspected to be or actually 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 (deployment outside the continental United States (OCONUS) for extended periods, protective military gear use, etc.), fitness-for-duty examinations may be extensive. Documentation should clearly state the findings, duty restrictions (if any) or fitness for full duty (if qualified).

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. In the following situations, however, an examination prior to the worker returning to light or full duty may be appropriate.

1. 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.

2. 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 fitness for duty (generally 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 [below](#).)

Miscellaneous Examination Issues

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. 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.

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.

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.

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.

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.

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 in either of the following situations.

1. The results of a current general medical examination which the command has the authority to order indicate no physical explanation for behavior which may affect the safe and efficient performance of the individual or others.
2. A psychiatric examination is specifically called for in the medical standards or medical evaluation program pertaining to the position.

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.

Pre-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.

Suspected occupational illness

Laboratory tests not required in the MEDICAL 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 Human Resources Office, complete Federal Employees Compensation Act (FECA) documents 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.

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 Form [SF-78](#) what restrictions, if any, are appropriate, based on the medical findings. Employment decisions are the responsibility of the supervisor or manager who uses available medical information as one component influencing his or her decision.

Situational examinations

A situational examination is conducted in response to a specific incident for which an 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 NEHC should be sought if needed.

Although some or all elements of a medical surveillance program may be deemed appropriate follow-up for that individual, a worker should not be enrolled in a program based on an incidental exposure. Incidental exposures or overexposures do not warrant entering a worker in a medical surveillance program.

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 Medical 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.

Procedures

On Form [SF-78](#), 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 are listed in Form [SF-78](#). 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. The examiner should verify that there is written permission from the worker to contact the worker's physician, and discuss with the physician such differences and the implications for the worker's ability to perform job duties. It may be appropriate for the OH provider to discuss with the worker any abnormal findings detected during the examination. The report should be signed by the examiner.

Using the "SOAP" Format

Documenting the medical surveillance evaluation can be effectively accomplished using the 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 (as in 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 4](#)).

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.

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 a fitness-for-duty exam be considered, without disclosing the reason (the diagnosis).

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.

Chapter 6

TREATMENT OF ILLNESSES AND INJURIES IN THE OCCUPATIONAL HEALTH CLINIC

Introduction

OH professionals working in naval medical treatment facilities (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/management of WC cases are integral elements of the NAVOSH Program. Per [NAVMEDCOMINST 6320.3B](#)²⁶ and [NAVMED P-117](#),²⁷ MTFs are authorized to provide emergency and non-emergency care to civilian employees for work-related injuries and illnesses. These authorized services include medical treatment under the [Federal Employees' Compensation Act \(FECA\)](#),²⁸ programs for appropriated fund employees ([20 CFR 10](#) and Department of Labor booklet [CA-550](#))²⁹ and non-appropriated fund employees (NAVMEDCOMINST 6320.3B).³⁰

The [Health Insurance Portability and Accountability Act of 1996 \(HIPAA\)](#)³¹ and the [Privacy Rule](#)³² (45 CFR Parts 160 and 164)³³ established standards for disclosure and transmission of Individually Identifiable Health Information (IIHI) which apply to OH Clinics. IIHI, also known as Protected Health Information (PHI), is defined in 67 FR 53266, Sec. 160.103, Aug. 14, 2002, as a supplement to [45 CFR Part 164](#)³⁴ as of October 15, 2002, as information that is a subset of health information, including demographic information collected from an individual, and:

- (1) Is created or received by a HCP, health plan, employer, or health care clearinghouse; and
- (2) 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
 - (a) That identifies the individual; or
 - (b) With respect to which there is a reasonable basis to believe the information can be used to identify the individual.

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, reporting as required under 29 CFR parts 1904 through 1928, 30 CFR parts 50 through 90, 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.

Background of the Role of the Occupational Medicine Clinic

Primary Prevention

Primary prevention refers to preventing illness or injury, generally by preventing or minimizing exposure. Primary prevention through identification, elimination and control of workplace hazards is a cornerstone of NAVOSH.

Secondary Prevention

Secondary prevention refers to the treatment of illness and injuries early enough to minimize morbidity or mortality. An aggressive, ongoing program of periodic medical surveillance examinations based on current industrial hygiene assessment of the employee's work centers is an important part of secondary prevention of occupational illness. Other sections of this manual provide a more definitive discussion of the operation of a Navy OH clinic; hazard-based medical surveillance examinations are detailed in the [Medical Matrix](#).³⁵

Tertiary Prevention

Despite our best preventive efforts, occupational injuries and illnesses still occur. In these situations, OH professionals play vital roles in optimally managing health care and reducing lost work time at their supported activities. Minimizing morbidity and disability are aspects of tertiary prevention.

Clinical Care

Navy OH professionals provide clinical care to the injured or ill employee within the capabilities of the examining MTF. Per [NAVMEDCOMINST 6320.3B](#),³⁶ emergency and non-emergency OH services for appropriated and non-appropriated fund employees with a work-related illness or injury are authorized through the OH clinic, emergency room, or other clinics, as appropriate. 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 departments) and referrals to military medical specialists (e.g. orthopedic surgeons, dermatologists) in the evaluation and treatment of work-related illnesses and injuries.

Advantages of Navy Treatment of Occupational Injuries

Benefits of "in-house" treatment include convenient access to medical care for civil service employees, reduced medical costs to the Navy, and more rapid return to work for injured or ill employees. Per the Assistant Secretary of Defense (Health Affairs) [Memorandum of 5 March 1997](#), emergency medical care (including initial treatment after on-the-job injury or illness) of DoD employees injured on the job, whether appropriated or non-appropriated fund, will not be billed. Non-emergent or follow-up OH or WC care for non-appropriated fund employees will be billed to the employer at the interagency rate.³⁷ WC 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.³⁸

Summary of Federal Workers' Compensation Programs

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

Appropriated Fund Employees

Appropriated fund employees are covered by [FECA](#).³⁹ It provides compensation benefits for disability due to personal injury (including occupational disease) sustained while in the performance of duty.

Non-appropriated Fund Employees

Non-appropriated fund 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](#)⁴⁰ (section 8171 of Title 33 of the U.S. Code) under Chapter 18 of the Longshoremen's and Harbor Workers' Compensation Act ([LHWCA](#)).⁴¹

Appropriated and Non-appropriated Fund Differences

The administrative aspects of FECA and LHWCA differ in terms of program administration, nature of Office of Workers' Compensation ([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/her work duties. Per Department of Labor Publication [CA-810](#),⁴² 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) provide 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.

Choice of Treating Physician

Both FECA and LHWCA give the 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 MTF's HCPs.

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

[NAVMEDCOMINST 6320.3B](#)⁴³ 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.

Civil service and non-appropriated fund employees have the right to choose to receive care through civilian HCPs. MTFs should strive to provide accessible, timely care of the highest caliber, both as a professional responsibility and for the benefits listed previously (see [Advantages of Navy Treatment of Occupational Injuries](#), above). 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 may be done within the following parameters.

1. Referral to local Navy providers may be done without prior approval.
2. Referral to local private providers or to Navy providers requiring funding for travel must have prior approval.

The Role of the Occupational Medicine Physician

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

1. Actively supporting occupational injury and illness prevention through comprehensive workplace evaluation and medical surveillance programs,
2. Providing medical care within MTF capabilities to active duty and civil service personnel for work-related medical conditions,
3. Remaining abreast of changing Federal regulations, clinical practice guidelines (such as those published by the American College of Occupational and Environmental Medicine, and the [Guide to Clinical Preventive Services, Third Edition](#))⁴⁴ and emerging ethical issues relevant to OEM,
4. Serving as part of a multidisciplinary team in the ongoing review of WC cases,
5. Providing case reviews, utilizing OEM specialist consultation when appropriate,
6. Providing liaison with local civilian HCPs in WC case management, and
7. Providing medical examinations.

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:

1. Ongoing review for trends suggesting a particular work activity or work center requires further evaluation (see [Chapter 4](#)),
2. Periodic, first-hand evaluation of at-risk employees' work centers through site visits (also see [Chapter 4](#)),
3. Medical liaison with private HCPs in occupational illness and injury case management,
4. Review of medical documentation submitted to support an employee's request for WC,
5. Interfacing with occupational safety specialists, injury compensation program administrators (ICPAs), other Human Resources Office employees, and work center supervisors in the activity's review and management of WC cases.

Medical Case Managers

In April 2004, the DoD Medical Case Management Working Group published a white paper that recommended using Medical Case Managers to work as part of command Injury Case Management Teams. To date, DoD Policy has not changed in order for OH clinics to specifically fund Medical Case Managers. A Naval Audit Service Report, [N2004-0034](#),⁴⁵ found “an overall lack of consistent partnership between the ICPAs, supervisors, and safety and OH departments, and an overall lack of implementation of best practices and controls to reduce lost time due to injuries.” Thus, effort and awareness of current practice guidelines may be required for effective teamwork.

The Role of the Occupational Health Nurse

The role of the OH nurse in providing support for injured employees encompasses immediate care and long-term case management.

Immediate Care by the Occupational Health Nurse

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:

1. Providing immediate initial assessment, documentation, nursing diagnosis and implementation of treatment plans,
2. Initiating follow-up of medical care, if the employee elects a private HCP, including advising the employee and the HCP of light duty availability, or facilitating care by a Navy HCP if the employee so chooses,
3. Documenting treatment, pre-existing conditions, and medical and occupational history,
4. Facilitating team communication by coordinating worksite visits with supervisors, safety professionals, industrial hygienists and ICPAs to evaluate ergonomic factors and identify safe light-duty or modified-duty assignments,
5. Making 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,
6. Communicating verbally and in writing with the private HCP, as needed, concerning the treatment plan, prognosis and work status,
7. Assisting in obtaining approvals for surgery and special procedures from OWCP,
8. Making home visits (when needed) to assess the injured employee's status, reviewing treatment plans and helping expedite the employee's return to work,
9. Consulting with claims examiners and technical advisors at OWCP,
10. Serving as the communication liaison between the employee, the attending physician and OWCP,
11. Coordinating with all commands in managing employees returning to work on transitional duty status and assisting in preparing transitional duty job offers,
12. Tracking recovery progress after the employee returns to work, by making contact with the employee, private HCP and supervisor,
13. Assuring that medical treatment and medications charged were actually provided and were appropriate for the condition approved by OWCP,
14. Educating providers and administrators regarding civilian eligibility for treatment and the cost-saving benefit if care is provided by Navy facilities, and
15. Assisting with referral as needed.

Long-Term Case Management

The OH nurse provides “Long-Term Case Management” to employees who have received benefits for an extended period of time. In addition to aspects of immediate care, the OH nurse:

1. Provides assistance in updating medical information for permanent medical placement and reevaluation of employees in long-term transitional duty status,
2. Works with OWCP to manage long-term compensation with the goal of returning employees to work,
3. Coordinates with Department of Labor or OWCP locally contracted rehabilitation nurses, nurse case managers and physicians, and

4. Follows transitional duty cases until they return to regular duty or are referred for medical placement.

References and Resources for Filing Injury Claims

Definitions of Terms

The following are selected terms that commonly are used.

Disability (according to FECA) 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 ([20 CFR 10.5](#)).⁴⁶

Impairment (according to FECA) means any anatomic or functional abnormality or loss. A permanent impairment is any such abnormality or loss after maximum medical improvement has been achieved (20 CFR 10.5).

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 (20 CFR 10.5).

Occupational disease or illness means a condition produced by the work environment over a period longer than a single workday or shift (20 CFR 10.5). 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.

The CFR contains definitions of common terms applying to the care of injured workers:

Federal Employees' Compensation Act ([FECA](#)).⁴⁷ Definitions are especially contained in ([20 CFR 10.5](#)).⁴⁸

Longshoremen's and Harbor Workers' Compensation Act ([LHWCA](#))⁴⁹ and related statutes ([20 CFR 701](#)).⁵⁰

Flow Sheet

The flow sheet at this [link](#) is meant as a help for supervisors and HCPs giving initial care for injured workers.

Additional Resources

Additional resources detailing responsibilities and forms are listed here, with Web links.

Federal Employee's Compensation Act, Compliance Assistance

http://www.dol.gov/esa/regs/compliance/owcp/ca_feca.htm

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

<http://www.dol.gov/esa/regs/compliance/owcp/ca-11.htm>

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

<http://www.dol.gov/esa/regs/compliance/owcp/ca-1.pdf>

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

<http://www.dol.gov/esa/regs/compliance/owcp/ca-2.pdf>

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

<ftp://ftp-fc.sc.egov.usda.gov/OK/forms/ca/ca16.pdf>

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

<http://www.dol.gov/esa/regs/compliance/owcp/ca-17.pdf>

Attending Physician Report (Form CA-20)

<http://www.dol.gov/esa/regs/compliance/owcp/ca-20.pdf>

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

<http://www.dol.gov/esa/owcp/dlhwc/lforms.htm>

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

<http://www.dol.gov/esa/owcp/dlhwc/l-1.pdf>

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

<http://www.dol.gov/esa/owcp/dlhwc/l-201.pdf>

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

<http://www.dol.gov/esa/owcp/dlhwc/l-202.pdf>

Chapter 7 MEDICAL RECORDS

Introduction

In this chapter, the term “medical records” refers to health records / 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.

[SECNAVINST 5212.5D](#) and [DODINST 6055.5](#) implement OSHA and OPM requirements in the Navy community for the handling, maintenance, transfer and retirement of medical records.

The [Health Insurance Portability and Accountability Act of 1996](#) (HIPAA) and [45 CFR Parts 160](#) and [164](#), Standards for Privacy of Individual Identifiable Health Information “The Privacy Rule” mandate protection for individually identifiable health information (IIHI), also known as “protected health information” (PHI) describes uses and disclosures of PHI in the DoD Health Care System.

Definitions

IIHI is defined in [45 CFR Part 164](#) as a subset of health information, including demographic information collected from an individual, and:

- (1) Is created or received by a HCP, health plan, employer, or health care clearinghouse,
- (2) 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,
 - (i) That identifies the individual; or
 - (ii) With respect to which there is a reasonable basis to believe the information can be used to identify the individual.

The Manual of the Medical Department [NAVMED P-117](#), 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, the health records of federal civil service employees are known as.

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.

Per [29 CFR 1910.1020](#),⁵¹ the employee medical record means a record concerning the health status of an employee which is made or maintained by a physician, nurse, or other health care personnel, including: (1) medical and employment questionnaires (including job descriptions and occupational exposures), (2) the results of medical examination (pre-employment, pre-assignment,

periodic, or episodic) and laboratory tests (including chest and other X-ray examinations taken for the purposes of establishing a baseline or detecting occupational illness).

Civilian Medical Records

Civilian employee medical records are also subject to Navy and OPM regulations ([5 CFR 293](#)),⁵² particularly as prescribed in the [Office of Personnel Management \(OPM\) Employee Medical File System \(EMFS\)](#). 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:

1. Agencies must provide employees access to their own EMFS records consistent with regulations contained in Title 5 Code of Federal Regulations [297.204\(c\)](#). 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.
2. 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.
3. Set forth a policy that distinguishes, particularly for purposes of records disclosure, records in the nature of physician treatment records (which are generally not appropriate for disclosure to non-medical officials) from other medical reports properly available to officials making management decisions concerning the employee.
4. Establishes responsibility of informing workers as to the permitted disclosure of certain PHI/IIHI without their consent. It requires covered HCPs 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 worksite if the medical service is provided there.

Retention of Medical Records

Part III, Chapter 6 (Medicine and Dentistry Records) of [SECNAVINST 5212.5D](#) regulates records that relate to the administration of performance of health and dental functions by the BUMED. These include records of examination, care and treatment of individuals, physical fitness, environmental, and health care program records accumulated in connection with carrying out medical department functions.

[29 CFR 1910.1020](#)⁵³ requires that employee medical records are maintained for at least the duration of employment plus thirty (30) years except for some types of records. 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](#) specifies "CXR films shall be preserved in their original state"; this includes PA CXRs taken as part of the asbestos medical surveillance program (which are OSHA mandated).

Medical records and their contents must be retained by the medical department and be accessible to the medical staff without compromising their security.

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 protected health information (PHI). 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](#)).⁵⁴ 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](#) and excerpted below.

Uses and disclosures required by law

A covered entity may use or disclose protected health information 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.

Standard: uses and disclosures for public health activities

Permitted disclosures

A covered entity may disclose protected health information for the public health activities and purposes described in this paragraph to:

A person who may have been exposed to a communicable disease or may otherwise be at risk of contracting or spreading a disease or condition, if the covered entity or public health authority is authorized by law to notify such person as necessary in the conduct of a public health intervention or investigation.

An employer may disclose information regarding an individual, who is a member of the workforce of that employer, if:

A. The covered entity is a covered HCP who is a member of the workforce of such employer or who provides a health care to the individual at the request of the employer:

1. To conduct an evaluation relating to medical surveillance of the workplace; or
2. To evaluate whether the individual has a work-related illness or injury;

B. The protected health information that is disclosed consists of findings concerning a work-related illness or injury or a workplace-related medical surveillance;

C. The employer needs such findings in order to comply with its obligations, under [29 CFR parts 1904-1928](#), [30 CFR parts 50 through 90](#), or under state law having a similar purpose, to record such illness or injury or to carry out responsibilities for workplace medical surveillance;

D. The covered HCP provides written notice to the individual that protected health information relating to the medical surveillance of the workplace and work-related illnesses and injuries is disclosed to the employer:

1. By giving a copy of the notice to the individual at the time the health care is provided; or
2. If the health care is provided on the work site of the employer, by posting the notice in a prominent place at the location where the health care is provided.

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. Refer to [NAVMED P-117](#), [5 CFR 293](#),⁵⁵ [29 CFR 1910.1020](#),⁵⁶ [45 CFR Parts 160](#) and [164](#), and [OPNAVINST 5100.23](#) series 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.

Maintenance of Medical Records

[NAVMED P-117](#) describes some of the routine forms in the medical records and the order in which forms are to be filed. [29 CFR 1910.1020](#)⁵⁷ provides guidance on all OEM records. While in Navy custody, medical records are maintained under the guidance of [NAVMED P-117](#). [OPNAVINST 5100.23](#) series describes information to be maintained in military and civilian employee medical records in compliance with OSHA.

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.

Transfer of Medical Records

Military Medical Records

Transfer these records in accordance with [NAVMED P-117](#). 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.

Civilian Medical Records

Transfer these records in accordance with [NAVMED P-117](#). Transfer may be facilitated if the receiving Human Resources Office (HRO) office notifies the employee's previous Medical Treatment Facility (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) transfers to the receiving MTF. When the employee transfers outside the Navy community to another Federal job, [29 CFR 1910.1020](#)⁵⁸ must be followed, including placing the medical record data in the Standard Form (SF) 66D folder ("blue folder").

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 66D ("orange folder") is required. The order of the medical record must be in compliance with [5 CFR 293](#).⁵⁹

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. 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 clinic 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](#).⁶⁰ "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." Per [44 U.S.C. 2907.1228.154](#) "X-rays over 11 ¾ x 10" in size that are required for long-term retention must be retained by the agency."

Storage of Records

When storing records, whether general or medical, the detailed procedures contained in [SECNAVINST 5212.5D](#), Appendix C must be followed; no Navy command or activity is exempt. If correct transfer procedures are not followed or proper record transfer documents are not provided, the entire records shipment can be returned to the transferring command or the immediate superior in command for correction.

Medical Records

When the individual retires, transfers outside Navy community or leaves Navy employment, the medical record is stored in compliance with [NAVMED P-117](#), [SECNAV 5212.5D](#), [5 CFR 293⁶¹](#) and [29 CFR 1910.1020⁶²](#). Military and civilian employee records are kept at separate locations and must be handled separately.

Military	Civilian
Department of Veterans Affairs Records Service Medical Records Center P.O. Box 5020 St. Louis, MO 63115-0020 (314) 538-4500	Civilian Personnel 111 Winnebago Street St. Louis, MO 63118-4126 www.archives.gov

Medical records forwarded to St. Louis 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.

X-Rays

Currently, neither St. Louis facility accepts radiographs larger than 8.5" X 11" (these do not fit in the medical records). Since OSHA requires CXRs (which are larger than 8.5" X 11") to be retained in their original state, CXRs of military personnel remain in the MTF that took the X-ray, while CXRs of civilian personnel remain in the last MTF that provided OH services.

Asbestos-related Documents

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

Records other than Personal Medical Records

[SECNAVINST 5212.5D](#), Appendix C-9, contains a list and areas of responsibility for regional Federal Record Centers where records other than personnel medical records are to be forwarded. 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 Federal Record Centers (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.

Closing Facilities

General

When an MTF or supported line command is scheduled to close, [SECNAVINST 5212.5D](#) guidelines should be followed for archiving medical records. 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 [SECNAVINST 5212.5D](#). 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.

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. After the transfer of the land, the processes conducted on the site will likely change. Actions to clean up environmental contamination on Navy property will often also lead to changes in the way that the property is used. When land is "cleaned up" and/or 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.

Line Command

When the 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 [SECNAVINST 5212.5D](#). Medical and IH documents of employees with workers compensation claims are considered active and must be retained by the responsible MTF.

Medical Treatment Facilities

When a MTF closes, 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 NPRCs 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.

References

[45 CFR Parts 160](#) and [164](#), Standards for Privacy of Individual Identifiable Health Information "The Privacy Rule."

[DODD 6025.18 Privacy of Individually Identifiable Health Information In DOD Health Care Programs](#)

DODINST 6055.5. Industrial Hygiene and Occupational Health. 10 Jan 89.

[NAVMED P-117. Manual of the Medical Department, Chapter 16, Medical Records.](#)

OPNAVINST 5100.23 series. *Navy Occupational Safety and Health Program Manual.*

[SECNAVINST 5212.5D Navy and Marine Corps Records Disposition Manual. 22 Apr 98](#)

[Public Law 104-191, Health Insurance Portability and Accountability Act of 1996.](#)

Chapter 8

TRAINING AND CERTIFICATION

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 adverse health effects associated with exposure to occupational hazards, medical surveillance procedures, and first aid measures.

[OPNAVINST 5100.23 series](#) requires training programs in all commands with employees on specific programs. Records must be maintained for five years to indicate the training provided, names of attendees and date of training. The training should also be recorded in the employee personnel folder.

Professional Occupational Health Personnel Credentials and Privileging

Physicians, nurse practitioners, audiologists and physicians' assistants providing health care must receive clinical privileges in accordance with [BUMEDINST 6320.66A](#).⁶³ In this process the commander of the medical or dental treatment facility or unit with medical or dental treatment capability, upon recommendations from the Executive Committee of the Medical Staff (ECOMS) or credentials committee as the case may be, grants to individual HCPs the privilege and responsibility of providing medical or dental care within the treatment facility. The recommendations are based on a review of a HCP's credentials--documents constituting the evidence for the education, training, licensure, certification, experience and expertise of the HCP. Temporary clinical privileges are granted to HCPs after verification of credentials and while current clinical competence is assessed. Defined clinical privileges are granted to HCPs after thorough review of their credentials and demonstrated competence. These are granted for a period of no more than two years. The process of renewing clinical privileges follows the same procedures used for granting initial privileges.

Several options exist for granting occupational health 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 would have to 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 supplementals, that factor will usually limit the supplementals to the Operational Medicine and Primary Care Medicine core. The latter "specialty" only requires completion of GME-1 (internship) and can be overseen by any privileged Navy physician. The third option for occupational health 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 responsibilities of the physician 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 (see above instruction).

Certification/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.

Occupational Health Nurses

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

American Board for Occupational Health Nurses, Inc. 201 East Ogden Suite 114 Hinsdale, IL 60521-3652 Telephone (808) 842-2646.

Occupational Medicine Physicians

The sole certifying agency for OEM physicians is the [American Board of Preventive Medicine Inc.](#) ABPM is a member of the American Board of Medical Specialties. Further information is available from:

American Board of Preventive Medicine Inc. 330 South Wells Street, Suite 1018, Chicago, IL (312) 939-2276.

Training and Certification of Other Occupational Health Personnel

The U.S. Navy 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.

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 three years.

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 the NEHC. The certified Audio Technician must be provided the opportunity to attend conferences and courses in order to obtain or recertify their credentials every 5 years.

Pulmonary Function Testing

All personnel performing pulmonary function testing for medical surveillance programs are required to complete successfully a [National Institute for Occupational Safety and Health](#) (NIOSH)

approved course on spirometry. A Navy-sponsored NIOSH approved course is recommended but is not required.

Personnel who conduct Navy-sponsored courses in pulmonary function testing must have the NIOSH approval to conduct such courses.

Sight Screening

All personnel performing sight screening examinations should be trained by qualified technicians on the elements of sight screening and the use of the screening equipment.

Basic Life Support

[BUMEDINST 1500.15A⁶⁴](#) 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.

Annual Training Plans

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

Training Commands

[Chief of Naval Education and Training \(CNET\)](#)

CNET is an echelon 2 command under the Chief of Naval Operations. Its activities include the following:

1. Establishes policy and guidelines for training, projects training needs, and plans resource allocation.
2. Develops personnel qualification standards, and in-service training policies and procedures.
3. Manages the Navy's voluntary education program, and officer and enlisted career development education and training programs.

Naval Occupational Safety & Health, and Environmental Training Center ([NAVOSHENVTRACEN](#)) originally the Safety School, is an Echelon III command reporting directly to CNET. It provides training on occupational safety and health, hazardous materials and environmental protection. Classes are conducted worldwide for military and civilian personnel at major home ports and overseas activities. Course descriptions and prerequisites may be found in the current [Catalog of Navy Training courses](#) (CANTRAC) and the [NAVEDTRA 10500](#) available in CD-ROM format. A program supports professional development training for occupational safety and health professionals (military or civilian) when Navy sponsored classes cannot be provided. Under this program, [NAVOSHENVTRACEN](#) advances tuition/registration fees for selected courses which are listed in "[NAVOSH Training: NAVOSH Registration Fee Advance Program](#)," published by the command.

Resources for Continuing Education

[NEHC](#) offers or coordinates the following Navy courses:

1. NIOSH Approved Course in Spirometry,

2. Navy Hearing Conservation Course,
3. Workplace Monitor Course, and
4. Annual Navy Occupational Health and Preventive Medicine Workshop.

Annual Conferences are held by the [American Association of Occupational Health Nurses](#) and the [American College of Occupational and Environmental Medicine](#). More information regarding the conferences can be obtained from the Web sites.

“[Educational Resource Centers](#)” is a catalog published by [NIOSH](#) which lists courses offered by NIOSH and different universities. It is available from [NAVY KNOWLEDGE ON LINE](#), which provides courses on many topics for active duty and civil service employees.

Audiovisual Aids

[Navy Visual Information \(VI\) Programs](#) maintains Naval Visual Information, the Combat Camera program and other visual information.

The [Defense Automated Visual Information System](#) Web site contains the searchable listings and descriptions of thousands of audiovisual productions and interactive multimedia instruction products used by the Department of Defense.

[The Naval Media Center](#) uses the printed word, video and electronic media to keep the Navy and Marine Corps team (AD and Civilian employees), up-to-date on issues that in clued professional interests and managerial skills. The Media Center also maintains media productions such as the All Hands Magazine and the Navy Live program.

Chapter 9

ASBESTOS MEDICAL SURVEILLANCE PROGRAM

Introduction

BUMED has tasked [NEHC](#) with centrally managing the [Navy AMSP](#). These responsibilities include the following:

1. Providing professional and technical consultation on the medical aspects of occupational exposure to asbestos.
2. 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).

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 [NEHC 6260 TM96-1](#). Navy personnel may be placed in the AMSP if they meet any of the following criteria:

“Asbestos current worker” Program

Military and civilian personnel who meet the exposure criteria defined in [OPNAVINST 5100.23 series](#) are enrolled in the program for "asbestos current worker." This is mandated under OSHA law ([29CFR 1910.1001](#), [29CFR 1926.1101](#) and [29CFR 1915.1001](#)).

“Asbestos past worker” Program

The Navy has developed a program for individuals with a history of past asbestos exposure in view of the long latent period between the first exposure to asbestos and the development of signs or symptoms of asbestos-related diseases. Placement in the AMSP on the basis of past asbestos exposure is a Navy-specific program, i.e., 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:

1. History of enrollment in the Navy AMSP as an “asbestos current worker”; or
2. 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 in the past; or
3. 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 in the past.

Medical Records

[Figure 12 - Summary of AMSP Requirements](#), [below](#) summarizes the medical records required for workers in the AMSP.

Criteria for Removal from the AMSP

Current Workers

[OPNAVINST 5100.23 series](#) details the criteria for removal from the AMSP. As detailed in that series, documentation on the medical record and a letter to NEHC 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.

Past Workers

Removal of an individual from the program may be initiated by either the individual or an OH professional.

1. 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:

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 should be documented in the medical record. No other documentation is required. NEHC does not need to be informed that the individual refuses further evaluation.

2. 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:

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 NEHC stating the reason(s) for removal from the AMSP.

B-readings

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 X-ray findings which may cloud pneumoconiosis findings.

NEHC contracts with NIOSH-certified B-readers to read all AMSP films using the ILO classification for pneumoconiosis. All films must be read by the local radiologist before they are mailed for B-readings. The B-reading must not be relied upon for clinical purposes. The B-reading is designed for epidemiological purposes, not for clinical evaluation. 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.

B-reading protocol

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

1. Use routine medical procedures and NAVMED 6260/7 Report Form (Stock Number 0105-LF-009-9900) to order routine posterior/anterior (PA) CXRs (CXRs) (wet read films not digital) must be taken for individuals in the [Current Asbestos Worker](#). Digital CXRs can be used for the Past Asbestos Worker Program. Complete Section I of NAVMED 6260/7. If digital radiography is used, the X-rays must be printed full-size onto 14" x 17" film for B-reading.

2. Do not ask the B-reader to make comparisons with old films. Do not forward other radiology reports, X-rays or related information. They add extra postage weight (possibly increasing delay and expense), do not contribute to the B-reading (B-readers are to use only a single PA CXR, and are specifically not to consider lateral views, other radiographs, CT scans, etc.), and they are more likely to be lost. All additional X-rays and consultations are the responsibility of the examining physician, in consultation with the local radiologist as needed.

3. Follow the procedures below in preparing AMSP CXRs for B-readings:

a. The local radiologist must read the films before they are forwarded to the B-reader. Use routine procedures established by the X-ray department to track films checked out of the department.

b. Forward only the P/A chest films and NAVMED 6260/7s to the B reader. You must always send both the original and copy of the NAVMED 6260/7 to the B-reader. Do not send the films to NEHC.

c. To obtain authorization for mailing AMSP chest films to the B reader, use the sample letter on the following page to request the DD 1155 (delivery order) from NEHC. The number of radiograph evaluations you request in the letter will be entered in block 19 of DD 1155. If the number of AMSP chest evaluations varies from the number on the DD 1155, contact NEHC to have the order modified before you ship the films and DD 1155 to the B-reader. Failure to comply could result in an unauthorized procurement with funding charged to your activity.

d. Prepare a NAVMED 6260/7 with all of Section I completed for each chest film. If two exposures are required to obtain the P/A chest film (e.g., the worker is very large), count these two chest films as one chest film, and prepare one NAVMED 6260/7 to request one evaluation. Place the NAVMED 6260/7 on top of each corresponding film (do not staple form to film) and stack up to 25 films in one X-ray jacket for efficient packaging. This will enable a mailing case to hold up to 100 AMSP films and forms. The B-reader is not responsible for sorting forms to match films. Films must be securely packed in the film mailing case. Mailing cases are furnished by the NEHC upon request.

e. Forward AMSP films at least monthly in batches of no more than 100 films (i.e., do not hold films longer than one month). Facilities taking more than 100 films per month may request B readings when they have obtained 100 films.

f. Prepare a mailing label for the X-ray mailer case, containing the B-reader's address (found in block 9 of the DD 1155). Prepare a second mailing label with your address to be used by the B-reader in returning the AMSP CXRs and NAVMED 6260/7 forms. Place the second label in the mailing case with the films, NAVMED 6260/7 forms and DD 1155.

g. Mail AMSP films certified "priority 13." This ensures films can be traced in case they are lost in the mail. The DD 1155 must be used within 14 days (21 days for overseas activities) from the date found in block 3 of the DD 1155.

4. The B-reader has fifteen days to read the films. If the films and original NAVMED 6260/7 forms are not returned within two (2) months from the date you mailed the films, or by the date in block 10 of the order document DD 1155, contact NEHC.

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

Requests for Authorization to Ship X-rays for B-readings

Requests must be in writing and forwarded to NEHC by U.S. mail, Naval message, fax (757-953-0670) or e-mail (bishope@nehc.med.navy.mil). An authorized signature is required unless the request is by Naval message.

The format used in the following sample letter must be used to request authorization to ship AMSP CXRs 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 films as one. Use the UIC of the MTF shipping the AMSP CXR.

DATE:

UIC:

From: (REQUESTING ACTIVITY) (Provide complete mailing address including building number, etc.)

To: Contracting Officer, Navy Environmental Health Center, 620 John Paul Jones Circle, Suite 1100, Portsmouth, VA 23708

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

Ref: (a) OPNAVINST 5100.23 series Chapter 17 Asbestos Control

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 is (DATE: 45 days from the date of your request letter).

2. Please forward the order document (DD 1155).

3. Point of contact:

Telephone: DSN: COMM: ()

Telefax: DSN: COMM: ()

E-mail:

AUTHORIZED SIGNATURE

ASBESTOS MEDICAL SURVEILLANCE PROGRAM MEDICAL RECORD

	CURRENT WORKERS	PAST EXPOSED WORKERS
1) DD 2493-1 OSHA. Initial Medical Questionnaire.	X	
2) DD 2493-2 OSHA. Periodic Medical Questionnaire	X	
3) NAVMED 6260/5. Periodic Health Evaluation.	X	X
4) SF 519. X-ray Report	X	X
5) NAVMED 6260/7. "B" Reader X-ray	X	X
6) OPNAV 5100/15. Medical Surveillance Questionnaire	X	X
7) Pulmonary Function Graph	X	X
8) Summary of Care Entry	X	X
9) "Asbestos" label for Medical Record and X-ray jacket	X	X
10) Physician's written opinion	X	

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

NOTE: Chart refers to frequency of chest x-ray for "current" exposure and frequency of evaluation for "past" exposure workers. The frequency of evaluation for "current" workers is annual.

Figure 12 - Summary of AMSP Requirements

Chapter 10

RADIATION HEALTH

Background

The Radiation Health/Protection Program encompasses both ionizing and non-ionizing radiations from manmade sources (i.e., reactor byproduct material, accelerator-produced material, and mechanically generated radiation; e.g., 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 the following: gamma rays, X-rays, alpha particles, beta particles, neutrons, protons, electrons, and other particles and electromagnetic waves capable of producing ions. Non-ionizing radiation, on the other hand, is defined as any electromagnetic radiation, including ultraviolet, visible, or infrared light, radio or microwaves, or laser radiation, which generally does not produce ionizations in its interaction with matter.

Regarding exposures to radiation (primarily ionizing radiation) individuals can be classified into the following main categories: radiation workers, non-radiation workers, and members of the public. First, radiation workers are individuals who receive exposure to radiation in the course of their employment or duties and are identified by their command as being occupationally exposed. In the case of ionizing radiation, there are also individuals classified as non-radiation workers, which are defined as employees or crew members who may receive very low level radiation exposure incidental to their employment at a command or activity but not as an integral part of their skill, trade or work assignment. Lastly, individuals who are not occupationally exposed to radiation shall be considered members of the public. Note that there are typically different exposure limits assigned to the different categories of individuals that may be exposed to radiation.

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 the Code of Federal Regulations (CFR), specifically, Subparts C and D in Part 20 of Title 10 (reference (b)). 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. In addition, 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 and deterministic (non-stochastic) biological effects to the human body. Radiation workers are typically allowed to receive a greater exposure because they 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 (reference (k)). 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 reasonable achievable (ALARA).

Standards and regulations regarding the transportation of radioactive materials are covered in Title 49 of the CFR in reference (d). 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. It should be noted that commands involved in the shipment of radioactive materials are also “permitted” under the Navy’s Master Materials License 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).

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 reference (k), NAVMED P-5055, *Radiation Health Protection Manual*. The purpose of this manual is to specify the radiation health requirements applicable to the Navy and Marine Corps radiation protection programs. A radiation protection program may be defined as the sum of 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. A radiation health protection program is not an end in itself; its purpose is to provide the means to preserve and maintain the health of personnel while they accomplish necessary and purposeful work in or around areas contaminated with radioactive materials or areas where they are exposed to ionizing radiation.

The electronic version of the NAVMED P-5055 can be accessed on the Navy Medicine Web site at <http://navymedicine.med.navy.mil/ndc/index.cfm?docid=11378>, or on the Navy Medicine Web site at <http://navymedicine.med.navy.mil/Files/Media/ecm/sitedata/87D9E82E-802E-D019-AE951E1F51318647/library/NAVMED%20P-5055.pdf>.

The NAVMED P-5055 references the following forms, which can be downloaded from the Navy Medicine Web site at <http://navymedicine.med.navy.mil/default.cfm?seltab=directives>:

- 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

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). The Dosimetry Program for the Navy is managed by the [Naval Dosimetry Center](#), Navy Environmental Health Center Detachment, Bethesda, MD. It should be noted that TLDs only detect ionizing radiation, and can be implemented as personnel dosimeters or can be posted to monitor radiation in various areas in proximity to ionizing radiation.

It is the Navy’s policy that exposures to personnel from ionizing radiation shall be reduced to levels that are considered to be ALARA, and that positive efforts shall be implemented to fulfill this objective without compromising operational and training efforts. Personnel engaged in work in which they may be exposed to ionizing radiation shall be indoctrinated/trained in radiological controls/radiation safety practices and protective measures. In addition, proper protective equipment (e.g., dosimetry, fixed and portable shielding, lead aprons, lead gloves and glasses,

respiratory protection, etc.) and training in their use shall be made available for use by all occupationally exposed personnel.

Note that the [NAVMED P-5055](#) and radiation protection standards do not apply to the individual/patient exposed to ionizing radiation or administered radioactive materials for the diagnosis or treatment of medical or dental conditions of that individual. 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/Protection Program.

Ionizing Radiation – Management of Irradiated or Radioactively Contaminated Individuals

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. Note that 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 or internally on or 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 a compromise in the integrity of the body's skin or protective membranes. Contamination is subdivided into three categories: external contamination, internal contamination, and wound contamination. In contrast, exposures from "non-ionizing" radiations are predominantly from sources external to the body.

Reference (f) 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.

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.

Treatment of life-threatening injuries; e.g., severe trauma, shock, hemorrhage, and respiratory distress, 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 medical treatment facilities (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 NEHC or [BUMED-M342](#). In addition, all overexposures and incidents of radioactive contamination should be reported promptly to BUMED.

Ionizing Radiation – Naval Radioactive Materials Permit (NRMP) Program

The Navy has been issued a Master Materials License of Broadscope (MML) by the Nuclear Regulatory Commission (NRC) to permit Navy and Marine Corps activities 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. 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 in reference (l). This authority does not include some sources of radioactive materials, such as that associated with naval nuclear propulsion plants. The appointment and functions of the NRSC are granted in reference (e).

The Radiation Health Team at the NEHC has been designated in reference (e) as the Technical Support Center for all medical and research uses of radioactive materials under the Navy's MML, with direct reporting to the NRSC. Reference (e) also designates the Radiological Affairs Support Office (RASO) at Naval Weapons Station, Yorktown, VA as the Technical Support Center for all industrial and non-medical uses of radioactive materials.

Note that 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 Program can be found in NRSC Bulletin 2004-03: Notifications and Reports for Reportable Events (reference (m)).

Regulations and guidance regarding the medical and research uses of radioactive materials are published in reference (a), and have also been made available on the NEHC Web site at <http://www-nehc.med.navy.mil/occmcd/nrmp.htm>. This Web site includes links to other Web sites, regulations and regulatory guides, audit guides, and applicable Information Notices and Bulletins. In addition, reference (h) prescribes procedures and responsibilities for the use and control of NRC licensed/permitted and other radioactive material used at naval Medical Department activities.

Ionizing Radiation – Diagnostic X-Ray Survey Program

Regulations for ionizing radiation producing devices are provided by the Food and Drug Administration (FDA) in Parts 1020 and 900 of reference (c). For mammography units, additional standards and evaluation procedures are published by the American College of Radiology (ACR).

Reference (i) 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. In general, all systems must be certified by the FDA and must meet Federal standards for procurement and initial/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 reference (i). Commands requesting evaluations of radiological systems should use the following request form, which can be downloaded from the Navy Medicine Web site at <http://navymedicine.med.navy.mil/default.cfm?seltab=directives>: NAVMED 6470/14 Radiological Equipment Survey Request Form.

All radiological systems, as well as the results of all surveys/evaluations, shall be entered into the Naval X-Ray Systems Tracking database, which is maintained by Naval Medical Center, Portsmouth, VA at <http://www-nmcp.med.navy.mil/Xray/login.asp>. Surveyors needing access to the database can obtain a username and password by contacting the Radiation Safety Department.

The Navy's standards and evaluation procedures for medical and dental X-ray units are published in a highly detailed technical manual in reference (n). This manual and additional Diagnostic X-Ray Survey Program information can be downloaded from the NEHC Web site at <http://www-nehc.med.navy.mil/occmcd/dxrsp.htm>. This survey program 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.

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 also be found in reference (n). In general, the integrity of the shielding shall be evaluated at least annually to verify compliance with the requirements specified in the manual.

The policies and procedures for initial qualification as a Navy Medical Radiological Surveyor, including requalification and qualification upgrades, can be found in reference (n). A current listing of qualified surveyors is maintained by NEHC and can be accessed on the Navy's Radiation Health Web site at <http://rad.usuhs.mil/radhealth/medphys.htm>.

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 also include other electromagnetic radiation such as ultraviolet, visible, or infrared light, radio and microwaves.

Regulations covering the manufacturing and performance of lasers and other light emitting products are provided by the Food and Drug Administration (FDA) in Part 1040 of reference (c). Standards for the safe use of laser systems are published in ANSI Standard Z136.1 in reference (o). Additionally, standards specific for the safe use of lasers in health care facilities is published in ANSI Standard Z136.3 in reference (p). 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 Laser Systems Safety Officer (LSSO), 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 Radiation Safety Officer (RSO).

The Navy's laser safety policy and guidance applicable to military facilities and research laboratories, as well as procedures for dealing with and reporting a laser mishap or overexposure

incident, is published in reference (g). In addition, permissible exposure limits (PELs), medical surveillance requirements, and casualty management procedures for personnel exposed to non-ionizing radiation (including lasers, RF, etc.) is published in reference (j).

General References

Title 10, Code of Federal Regulations (CFR), Part 35. *Medical Use of Byproduct Material*

Title 10, Code of Federal Regulations (CFR), Parts 19, 20, 30, 31 and 71.

Title 21, Code of Federal Regulations (CFR). *Food and Drugs*

Title 49, Code of Federal Regulations (CFR), Parts 171 – 178. *Transportation of Radioactive Materials*

OPNAVINST 6470.3 series. Naval Radiation Safety Committee

BUMEDINST 6470.10 series. Initial Management of Irradiated or Radioactively Contaminated Personnel

BUMEDINST 6470.19 series. Laser Safety at Military Facilities and Research Laboratories

BUMEDINST 6470.20 series. Naval Radioactive Materials Permit (NRMP) Program for Medical Use

BUMEDINST 6470.22 series. Navy Radiological Systems Performance Evaluation Program

BUMEDINST 6470.23 series. Medical Management of Non-Ionizing Radiation Casualties

NAVMED P-5055. Radiation Health Protection Manual

MML No. 45-23645-01NA. U. S. Navy's Master Materials License

Naval Radiation Safety Committee (NRSC) Bulletin 2004-03. *Notifications and Reports for Reportable Events*

NEHC TM 6470.03-1. Navy Radiological Systems Performance Evaluation Manual

ANSI Standard Z136.1. American National Standard for the Safe Use of Lasers

ANSI Standard Z136.3. American National Standard for the Safe Use of Lasers in Health Care Facilities

Chapter 11

EVALUATION OF ABNORMAL AUDIOGRAMS

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 noise in excess of 85 decibels (dB) or exposure to impact noise. The early, typical finding in NIHL is a decrease in the hearing threshold at 4000 hertz (Hz) or 4 kilohertz (kHz) on the audiogram. With continued, unprotected exposure to excessive noise, NIHL continues to decrease and affect the surrounding frequencies. Other forms of occupational hearing loss include conductive hearing loss caused by explosions, trauma or burns, and sensorineural hearing loss caused by exposure to ototoxic substances or blunt head trauma.

All commands, shore and afloat, with noise exposures in excess of specified noise levels are required to have a Hearing Conservation Program as described in OPNAVINST 5100.23 and 5100.19 series respectively. Although the medical department is actively involved in many elements of the hearing conservation program, 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 NEHC [Technical Manual NEHC TM 6260.51.99-2](#) (September 2004).

All personnel (civilian and active duty) require a baseline (pre-placement or reference) audiogram on placement into a hearing conservation program. 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. Because of the importance of the baseline audiogram, it is imperative that this test be the highest quality possible. The individual should not have been exposed to noise for at least 14 hours prior to the baseline audiogram. The individual should also fully understand what is expected of him/her during the test, the audiometric equipment should be calibrated and properly functioning and care should be taken to ensure that noise outside the audio booth does not interfere with testing. Shifts in hearing thresholds from the baseline audiogram may be temporary or permanent. The hearing conservation instruction outlines the procedures for determining a temporary threshold shift (TTS) or a permanent threshold shift (PTS).

Referring an individual with abnormal hearing or a change in hearing for further evaluation

The [American Academy of Otolaryngology](#)-Head and Neck Surgery has published the following suggested criteria for referral to an audiologist or ear specialist. This organization recommends that the original baseline audiogram, rather than a re-established baseline audiogram, should be used for comparison to identify individuals who will be referred for hearing loss.

Suggested Criteria for Referral to an Audiologist

1. Baseline audiogram
 - a. Average hearing level at 500, 1000, 2000, and 3000 Hz is greater than 25 dB in either ear.
 - b. The difference in average hearing level between the better and poorer ears of:
 - (1) more than 15 dB at 500, 1000, and 2000 Hz; or

(2) more than 30 dB at 3000, 4000, and 6000 Hz.

2. Periodic audiogram

Change for the worse in average hearing level, in either ear, compared to the baseline audiogram, of:

- a. more than 15 dB at 500, 1000, or 2000 Hz; or
- b. more than 20 dB at 3000, 4000 and 6000 Hz. (Note: Navy instructions identify a change of and average of 10 dB at 2000, 3000, and 4000 Hz as a significant change. This change is considered an OSHA recordable change if the hearing in these same frequencies exceed 25 dB.)

3. Any audiogram

Variable or inconsistent responses or unusual hearing loss curves.

Suggested Criteria for Referral to a Physician or Ear Specialist

- 1. History of ear pain, drainage, dizziness, severe persistent tinnitus, sudden, fluctuating or rapidly progressive hearing loss, or feeling of fullness or discomfort in one or both ears within the preceding 12 months.
- 2. 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/she develops ear pain, drainage, dizziness, disequilibrium, imbalance or severe persistent tinnitus, or shows significant change in hearing levels defined in the previous section.

In addition to the above recommendations, other sources also suggest referral to an audiologist or ear specialist for the following findings on audiogram:

- 1. 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.
- 2. Any audiogram
 - a. Unilateral or asymmetrical hearing loss, an average difference between ears of 40 dB or greater.
 - b. Any audiogram with a 40 dB or greater threshold at 500 Hz accompanied by a 25 dB or greater threshold at 1000 Hz.
 - c. Any audiogram with a 40 dB or greater difference between ears at any frequency.

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 and the requirement for determining if a PTS is noise-related.

Evaluation of Hearing Loss by the Occupational Health Physician.

On evaluation of an individual with documented hearing loss, the OEM physician has two primary concerns:

- 1. Attempting to identify the etiology of the hearing loss, specifically, is the hearing loss due to noise exposure (occupational or non-occupational), or any of a variety of medical conditions/exposures associated with hearing loss.

2. Ensuring an appropriate plan for follow-up. In attempting to identify the etiology of the hearing loss, the usual techniques of a thorough history, an appropriate physical examination, and review of all audiograms, usually provide enough information to determine if referral to an audiologist or ear specialist is required.

In the history it is important to inquire about changes in hearing, all sources of noise exposure, family history of hearing loss and exposure to ototoxic substances. The HCP should complete a general review of systems, especially noting recent infections or subtle problems with the ears, balance and vertigo. On physical examination, blood pressure measurement, examination of the ears and selected neurologic system examinations are usually appropriate. Minor problems, such as cerumen impaction or serous otitis, can often be treated and the individual can have his/her hearing retested.

If the hearing shift persists, the OEM physician needs to determine the appropriate plan for follow-up. The required plan for follow-up will be based on the differential diagnosis of the hearing loss and may include referral to an audiologist or ear specialist. In some cases the plan may be education, re-fitting of hearing protection and a schedule for repeat hearing tests.

Noise-induced hearing loss is a preventable condition which can lead to significant disability. Whenever the diagnosis of NIHL is made, it is important that the individual is made aware of the diagnosis and is counseled on his/her hearing loss. The individual also needs to be made aware that continued, unprotected exposure to noise, whether occupational or non-occupational, may result in progressive hearing loss. He/she should be encouraged to use hearing protection regularly at work and when engaged in noisy recreational activities.

Endnotes

¹ NEHC-TM OM 6260 Medical Surveillance Procedures Manual and Medical Matrix. Navy Environmental Health Center. Portsmouth, VA. February 2001.

<http://www-nehc.med.navy.mil/downloads/occmcd/Medical%20Matrix%20Feb%202001.pdf>

² Another pertinent definition is found in Rosenstock R, Cullen MR. Textbook of Clinical Occupational and Environmental Medicine. W B Saunders; 1994: "Screening is the administration of a medical test for the purpose of detecting organ dysfunction or disease before the person would normally seek medical care and at a time when intervention is beneficial."

³ The CDC defines a sentinel event as "any unexpected occurrence involving death or serious physical or psychological injury or the risk thereof." [CDC]

⁴ CDC Guidelines Working Group, German RR, chairman. Updated Guidelines for Evaluating Public Health Surveillance Systems, Recommendations from the Guidelines Working Group. Centers for Disease Control and Prevention Morbidity and Mortality Weekly Report; MMWR Recommendations and Reports. July 27, 2001 / 50(RR13);1-35.

⁵ NEHC-TM OM 6260 Medical Surveillance Procedures Manual and Medical Matrix. Navy Environmental Health Center. Portsmouth, VA. February 2001.

<http://www-nehc.med.navy.mil/downloads/occmcd/Medical%20Matrix%20Feb%202001.pdf>

⁶ [NAVMED P-117 Manual of the Medical Department](#). Department of the Navy Bureau of Medicine and Surgery, Washington, DC;6 May 2005.

<http://www.vnh.org/Admin/MMD/001Contents.html>

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- ⁸ Americans with Disabilities Act of 1990, Public Law 336. July 26, 1990.
<http://www.usdoj.gov/crt/ada/pubs/ada.txt>
- ⁹ Americans with Disabilities Act of 1990, Public Law 336. July 26, 1990.
<http://www.usdoj.gov/crt/ada/pubs/ada.txt>
- ¹⁰ Americans with Disabilities Act of 1990, Public Law 336. July 26, 1990.
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<http://www.usdoj.gov/crt/ada/pubs/ada.txt>
- ¹² Office of Personnel Management. Operating Manual Qualifications Standards Handbook for General Schedule Positions. Superintendent of Documents, Stock No. 906-030-00000-4. Superintendent of Documents U.S. Government Printing Office, Washington, DC 20402.
<http://www.opm.gov/qualifications/index.asp>
- ¹³ Office of Personnel Management. Office of Personnel Management Handbook X-118C.
<http://www.opm.gov/qualifications/x-118c/>
- ¹⁴ Office of Personnel Management. Operating Manual Qualifications Standards Handbook for General Schedule Positions. Superintendent of Documents, Stock No. 906-030-00000-4. Superintendent of Documents U.S. Government Printing Office, Washington, DC 20402.
<http://www.opm.gov/qualifications/index.asp>
- ¹⁵ Office of Personnel Management. Office of Personnel Management Handbook X-118C.
<http://www.opm.gov/qualifications/x-118c/>
- ¹⁶ U.S. General Services Administration. Forms Library.
<http://www.gsa.gov/Portal/gsa/ep/formslibrary.do?viewType=DETAIL&formId=D379ECBDBD3D0D7485256E050067AC4D>
- ¹⁷ 29 CFR1614 [Page 255-287] Equal Employment Opportunity Commission.
[http://www.dol.gov/oasam/regs/cfr/29cfr1614\(2001\).htm](http://www.dol.gov/oasam/regs/cfr/29cfr1614(2001).htm)
- ¹⁸ 29 CFR1614 [Page 255-287] Equal Employment Opportunity Commission.
[http://www.dol.gov/oasam/regs/cfr/29cfr1614\(2001\).htm](http://www.dol.gov/oasam/regs/cfr/29cfr1614(2001).htm)
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<http://www.cdc.gov/niosh/topics/surveillance/>
- ²¹ Baker EL, Matte TP. Surveillance for occupational hazards and disease. In Rosenstock L, Cullen MR. Textbook of Clinical Occupational and Environmental Medicine. W.B. Saunders Company 1994. Philadelphia:61-67.
- ²² OPNAV Instruction 5100.23F Navy Occupational Safety and Health (NAVOSH) Program Manual;15 July 2002.
<http://neds.daps.dla.mil/5100.htm> (or access from <http://neds.daps.dla.mil/Directives/table21.html>)

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- ²³ OPNAV Instruction 5100.19D Navy Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat, VOL I/II/III;30 August 2001.
<http://neds.daps.dla.mil/Directives/table20.html>
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<http://neds.daps.dla.mil/5100.htm> (or access from <http://neds.daps.dla.mil/Directives/table21.html>)
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<http://www.vnh.org/Admin/MMD/MMDChapter22.pdfNavy>
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- ²⁹ DOL. Questions and Answers about the Federal Employees' Compensation Act (FECA) Publication CA-550. U. S. Department of Labor. Elaine L. Chao, Secretary. Employment Standards Administration. Victoria Lipnic, Assistant Secretary for Employment Standards. Revised July 2002.
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<http://aspe.hhs.gov/admsimp/pl104191.htm>
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- ³³ 45 CFR Parts 160 and 164, Standards for Privacy of Individual Identifiable Health Information "The Privacy Rule."
http://www.access.gpo.gov/nara/cfr/waisidx_04/45cfr160_04.html
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