Chapter 20

THE MILITARY PUBLIC HEALTH AND OCCUPATIONAL MEDICINE PROGRAMS

The USAF Military Public Health and Occupational Medicine Programs employ many of the concepts and practices of clinical and preventive medicine for the promotion, protection, and improvement of health and the reduction of noneffectiveness due to disease and injury. These programs include the planning, supervision and coordination of all activities and measures designed for the attainment of these goals.

The Military Public Health and Occupational Medicine Service, an integral part of the Aerospace Medicine Service, is primarily responsible for the base-level Military Public Health Program. This Service is headed by a medical officer, aerospace medicine, who has additional duties as a Flight Surgeon. He supervises the personnel of this Service and coordinates with personnel of the other services whose activities contribute to an effective program. Enlisted men of the Preventive Medicine (907XO) career field provide vital assistance in the planning, conduct and evaluation of public health activities. The Service chief may call for assistance from clinical specialists, dentists, veterinarians, nurses, medical administrators, and biomedical specialists. A Public Health activity need not be under his direct supervision or be a primary responsibility of the Military Public Health and Occupational Medicine Service in order to contribute to the program. For example, the Pediatric Service is responsible for the Well-Baby Clinic and may be responsible for maintaining a local Poison Control Center. These are examples of Public Health activities that are not the direct responsibility of the Military Public Health Service.

Responsibilities

Effective Military Public Health and Occupational Medicine programs include activities in the following major areas:

Public Health Administration:

a. Formulation and supervision of programs for control and elimination of the causes of medical noneffectiveness.

b. Coordination of medical and engineering activities directed toward the prevention of injury and disease.

c. Evaluation of the health of military personnel through the analysis and interpretation of biostatistical records and reports.

d. Coordination of all Military Public Health activities with other interested and/or responsible civilian and military health agencies.

e. Interpretation and application of policies and directives concerning general and specific public health programs.

f. Preparation and submission of budgetary and materiel requirements for the operation of the services provided by these programs, for consideration by the Director of Base Medical Services.

Communicable and Preventable Disease Control:

a. Collection and analysis of statistical information on the incidence and prevalence of diseases communicable to man.

b. Epidemiological investigation of the occurrence or outbreak of diseases, and the initiation of appropriate action for control and prevention.

c. Monitorship of the immunization programs required by regulations and directives to insure a satisfactory state of individual and community protection.

Accident and Injury Prevention:

a. Investigation of the causes of death and injury resulting from ground and industrial accidents.

b. Provision of advice to Safety officers on medical matters relating to accidents and injuries.

c. Maintenance of liaison with athletics and recreation personnel concerning the medical aspects related to the use of equipment, physical condition of participating personnel, and conditions and practices conducive to safety.

Bioenvironmental Engineering:

a. Bioenvironmental engineering is the application of engineering principles to the control of man's environment. At base level, a Bioenvironmental Engineer is assigned to the Aerospace Medicine Service and participates primarily in the areas of Military Public Health and Occupational Medicine. It is the Bioenvironmental Engineer who identifies a potentially hazardous situation, such as that involving water pollution, air pollution, high-intensity noise, ionizing radiation or toxic chemicals, evaluates the hazard through detailed study, and designs a control system. The Bioenvironmental Engineer can be of assistance to the Flight Surgeon by insuring that Medical Service programs are established to maintain surveillance over public health problem areas.

b. The Bioenvironmental Engineer generally serves as the Medical Service representative on Construction Review Panels and Facilities Utilization Boards, and reviews all projects involving new construction or modification of existing facilities.

c. When a Bioenvironmental Engineer is not assigned to a base, services for the establishment of a program or survey of specific problem areas are available from the major command surgeon's office and/or from HQ AFLC on a consultation basis, in accordance with AFR 161–17.

Environmental Pollution Control. The entire nation is becoming more concerned with environmental pollution as it may affect the air we breathe and the water we drink. As part of a national effort to abate pollution, the entire Federal Government has been directed by law to assume a role of leadership in this undertaking. The Federal Water Pollution Control Act and the Clean Air Act, as amended, have resulted in the issuance of Executive Orders, DOD directives and, ultimately, Air Force regulations placing certain responsibilities upon the US Air Force Medical Service.

a. AFR 161–22 specifies that the Surgeon General, USAF, will be primarily responsible for coordinating environmental contamination matters with other Federal agencies and health authorities, and for establishing standards and criteria for protection of health and welfare of Air Force personnel. In addition to the programs of major commands that direct their attention to the identification and elimination of environmental pollution sources at all Air Force bases, certain commands are charged with additional responsibilities which direct their efforts toward providing consultation services and accomplishing necessary field investigations and research programs.

b. In the area of waste water treatment requirements, the standard is secondary treatment. Any degree of treatment less than secondary requires the approval of HQ USAF and the Federal Water Pollution Control Administration (FWPCA), Department of Interior. The Air Force is required to comply with directives on pollution standards published by the US Public Health Service (USPHS), Department of Interior or State and local pollution abatement agencies. If State or local standards are not prescribed or are less stringent than those of the Air Force, Health, Education and Welfare (HEW), or FWPCA, the standards of FWPCA will apply.

c. Representatives of the Air Force Medical Service serve on the DOD Environmental Pollution Control Committee, along with members of the US Army and Navy. Problem areas requiring joint efforts are considered and solutions made available to major commands.

d. The AFLC Regional Environ-

mental Health Laboratories have keyed their support efforts to providing consultation services to major commands and bases not possessing the necessary instrumentation or trained personnel.

As can be seen from the above, the Air Force Medical Service has a vital role in supporting the national effort to reduce environmental pollution of our natural resources.

Occupational Health:

a. Under established Federal laws, the Air Force assumes responsibility for the provision of adequate protection of military and civilian personnel against exposure to occupational hazards. Provision of outpatient care and hospitalization, at Government expense, to civilian employees injured or ill as a direct result of occupational activity, is required by the Federal Employees Compensation Act. Emergency care of personnel with nonoccupational, on-the-job medical and dental health problems is authorized under Pub. L. 79–658. Definitive care for these illnesses is provided by the employee's private physician.

b. The conduct of preemployment, placement, and periodic physical examinations is a necessary prerequisite in the assignment and management of military and civilian personnel. The Occupational Medicine Service should provide for the monitoring of these examinations, completion of associated forms, and transmittal of these forms and other information to the proper personnel offices, both military and civilian.

c. The Occupational Medicine Service monitors hospital admissions and outpatient clinic visits for evidence of illnesses and injuries related to occupational exposure. Liaison and rapport with clinic and hospital physicians, together with requirements for formal reporting of occupational diseases and injuries, insure accurate and adequate data collection. Chapter 21 contains information concerning specific occupational illnesses and exposures.

d. Separate facilities or offices for treatment of civilian employees by the Occupational Health Service are neither feasible nor required at most Air Force bases. However, such facilities are required at some of the larger industrial bases and are the responsibility of the Aerospace Medicine Service which monitors staffing, programming and management.

e. Additionally, the Occupational Medicine Service provides health education and counseling, occupational hazard evaluations, bioenvironmental engineering surveys, personal protective equipment monitoring, and liaison with community medical and public health personnel.

Community Environmental Control. The health of Air Force personnel depends, to a great extent, on the provision of a safe water supply, adequate refuse and waste disposal, insect and rodent control, food services sanitation, and adequate and comfortable housing. Military Public Health and Occupational Medicine personnel coordinate, supervise, survey and, in some instances, provide control of these services. The necessity for medical concern in these essential services is apparent in view of epidemics that have occurred as a result of unhealthy conditions existing in these areas due to improper maintenance of health standards.

Epidemiology. This is the field of medicine that concerns itself with the relationships of the various factors and conditions which determine the frequency and distribution of all illnesses. Modern techniques and methods employed in epidemiology are applicable to acute and chronic illnesses, accidents, and injuries. Investigation of a disease condition or an epidemic is based upon observations and data concerning three main factors in the propagation or spread of the disease, namely, *the source, the means of spread,* and *the susceptible individual or group.* To properly assess the public health needs of the military community, it is essential that one understand the application of the terminology and techniques related to epidemiology. Specialized assistance for the investigation of communicable disease outbreaks and for special environmental health surveys can be obtained by consultation with the USAF Epidemiological Laboratory

(AFSC), Lackland AFB, Texas, or one of the Epidemiological Flights in oversea areas.

Nuclear, Biological and Chemical Defense. Each Air Force base has plans for activities in these areas of defense, including medical support. Medical input is required for disaster control and actions to be taken in defense of overt or covert nuclear, biological or chemical accidents or incidents. Activities under the Military Public Health Program include formulation of policy, compilation of plans, and coordination of medical measures for the prevention of illnesses and injuries resulting from chemical, biological, and radiological warfare and for detection and interpretation of the presence of agents used in such warfare.

Health Education. This is an important activity under the Military Public Health and Occupational Medicine Programs. Planning, development, and administration of a base-wide public health education program to promote better health and improve individual and community attitudes toward disease and injury, are vital functions of these programs. To a certain extent, every contact made between medical personnel and the community affords an opportunity for health education. Further, evaluation and correlation of all health activities provide a strong basis for such education. Material, films, brochures, pamphlets, etc., pertaining to health education are available from numerous Government and private agencies at a nominal cost.

Nutrition. The importance of adequate nutrition to the military mission and morale should never be underestimated. Medical participation in menu planning, food services sanitation, nutrition education, and special feedings in-flight and during hospitalization, require the supervision and assistance of the Military Public Health Service.

Research. The planning, initiation, supervision, and accomplishment of research and studies on the causes of noneffectiveness and on the control, prevention, and treatment of all injuries and diseases may require inputs from the Military Public Health Service. Significant, timely, and valuable research may be performed at the base level by energetic and interested physicians and engineers. (See AFR 169–6.)

Medical Intelligence. AFR 200–3 defines the concepts of medical intelligence, the need for and scope of the Medical Intelligence Program, the sources of medical intelligence, and the responsibilities under the program. Under all conditions and especially during wartime, the Flight Surgeon can provide valuable inputs and interpretations related to the Air Force Intelligence system.

Assistance Available

There are several sources of information available to the Flight Surgeon that will assist him in carrying out his responsibilities under the Military Public Health and Occupational Medicine Programs.

Air Force Directives. A library of appropriate manuals, pamphlets and regulations is maintained by the Aerospace Medicine Service. These directives primarily fall under the 160 and 161 Series and are listed in AFR 0–2.

Libraries:

a. The base medical facility library should contain current textbooks, standard references, and medical periodicals dealing with the fields of Military Public Health and Occupational Medicine.

b. The resources of other governmental and civilian medical libraries may be used on an interlibrary loan basis.

c. The National Library of Medicine, Bethesda, Maryland 20014, provides prompt service, without charge, to officers on active duty. Material such as bibliographies on specific medical subjects and copies of articles in current or past issues of medical journals can be made available upon request. Direct communication is authorized and encouraged.

Consultation:

a. The Chief, Military Public Health and Occupational Medicine, should take advantage of the training, experience, and talents of other members of the base medical service and of personnel assigned to other base organizations. The Chief of Aerospace

TABLE 20–1. CONSULTATION SOURCES FOR MILITARY PUBLIC HEALTH AND OCCUPATIONAL MEDICINE

SOURCES	SERVICES AVAILABLE	AUTHORITY	COMMUNICATION
Major commands and numbered air forces	1. Consultation	AFM 161-2	1. Aerospace Medicine Reports (RCS: 1-HAF-M7)
	2. Consultation services of Bioenvironmental Engineers.		2. Letter requesting assistance thru channels. 3. TWX (if urgent). 4. Telephone.
USAF School of Aerospace Medicine (USAFSAM), Brooks AFB, Texas	1. Furnish information on medical problems involving noise. 2. Diagnostic Hearing Center.	AFR 160-3	1. Letter to USAFSAM, Brooks AFB TX 78235. 2. Consultation request per SF 513 to USAFSAM.
	3. Consultation on Military Public Health problems and Occupational Health.		3. Letter to USAFSAM (SMTP).
Regional Environmental Health Labs (AFLC): a. Kelly AFB TX 78241 b. McClellan AFB CA 95652 c. USAF Hosp, APO New York 09220	1. Consultation services of Medical Officers, Engineers and others trained in Occupational Health.	AFM 161-2 AFR 161-17	1. Direct communication to Laboratory; info cy to Surgeon, AFLC.
	2. Determinations of Biological Fluids: a. Lead and mercury in urine and blood. b. Fluoride and thorium in urine. c. Cholinesterase in serum and erythrocytes. d. Blood carboxyhemoglobin.	AFR 161-17	2. Samples sent to Regional Environmental Health Laboratory.

TABLE 20–1. Continued

SOURCES	SERVICES AVAILABLE	AUTHORITY	COMMUNICATION
	3. Determination of Environmental Samples: a. Lead. b. Mercury. c. Fluorides. d. Zinc. e. Cadmium. f. Beryllium g. Arsenic. h. Chromic acid. i. Trichloroethylene and other halogenated hydrocarbons. j. Dust counts. k. Particle size determination. l. Bromides. m. Selenium. n. Silica. 4. Determination of contaminants in aircraft oxygen systems (Kelly AFB only). 5. Other chemical analyses upon special request.		
	6. Water pollution control (Kelly AFB). 7. Air pollution control (McClellan AFB).	AFR 161-22	3. Base to major command to REHL.
USAF Radiological Health Laboratory (AFLC), Wright-Patterson AFB, Ohio	1. Determinations on biological and/or environmental specimens, including soil: a. Radium. b. Plutonium. c. Tritium. d. Strontium.	AFR 161-17	1. Direct communication to USAF Radiological Health Laboratory (HWR), Wright-Patterson AFB OH 45433.

TABLE 20–1. Continued

SOURCES	SERVICES AVAILABLE	AUTHORITY	COMMUNICATION
	e. Uranium. f. Radon breath analysis. g. Gross alpha particle count. h. Gross beta particle count.		
	2. Film Badge Monitoring.	AFR 161-11	2. Exposed film and communications direct to USAF Radiological Health Laboratory (SGHW), Wright-Patterson AFB OH 45433.
Advisory Center on Toxicology, Washington, D. C.	1. Provide advice and information relating to the adverse effects of chemical substances on man, animals and plant life. Examples: Solvents, fuels, insecticides, rodenticides, etc.	AFR 161-18	1. Letter thru channels to HQ USAF (AFMSPA) Wash DC 20333.
AMRL (AFSC), Wright-Patterson AFB, Ohio	1. Furnish information on most recent protective equipment, and on other developments that will support the noise control program.	AFR 160-3	1. Letter to 6570 AMRL, Wright-Patterson AFB OH 45433.
Public Health Services	1. Act as liaison between Armed Forces and local health agencies. 2. Cooperation with Armed Forces in regard to health and sanitation in extra-military areas. 3. Consultation on communicable diseases; insect and rodent control. 4. VD investigation.	AFR 160-1 AFR 161-4 AFR 161-7	1. Letter to Regional Public Health Director thru command or numbered air force Surgeon. 2. Letter to US Dept of Health, Education & Welfare, PHS, Bureau of State Services, Communicable Disease Center, Atlanta GA 30322. 3. Submission of PHS 9.2936 (VD) as prescribed in AFR 161-7.

TABLE 20–1. Continued

SOURCES	SERVICES AVAILABLE	AUTHORITY	COMMUNICATION
Joint Utilization of Certain Armed Forces Laboratory Facilities	1. Army Area Medical Laboratories: a. Perform all types of clinical laboratory procedures as well as examination of meat, dairy products and other foods. b. Conduct epidemiological investigations. c. Provide limited training for laboratory officers and technicians in special fields. 2. Navy: a. Conduct epidemiological investigations, special sanitary surveys, and perform supporting laboratory examinations (not including routine clinical laboratory tests). 3. Air Force: a. Conduct epidemiological investigations. b. Conduct entomological surveys. c. Conduct occupational health surveys.	AFR 160-62	1. Request for lab test on submitted specimens. Senior medical officer makes direct request to CO of Laboratory. 2. Requests for services involving travel of personnel between departments is submitted thru channels to Dept of AF. Telephone or telegraphic requests may be made in an emergency with later written confirmation submitted thru channels.
TAC, Langley AFB, Virginia	1. Insect control by aircraft.	AFR 91-22	1. Initial request is sent thru channels to major command for approval. Approved request is forwarded to TAC, Langley AFB VA 23365.
Armed Forces Epidemiological Board (AFEB), Washington, D. C.	1. Provide scientific and research assistance and advice on matters pertaining to problems in Preventive Medicine, Epidemiology, Tropical & Internal	DOD Directive 5154.8 AFEB	1. Emergencies: Telegraphic (TWX) request from Director, Base Medical Services to HQ USAF (AFMSPA) Wash DC 20333.

TABLE 20–1. Continued

SOURCES	SERVICES AVAILABLE	AUTHORITY	COMMUNICATION
	Medicine, Pathology, Immunization, etc., towards the control and prevention of disease and injury.		2. Normal: Thru normal channels to HQ USAF (AFMSPA) Wash DC 20333. 3. Overseas: Same, except under approval of major command with info to HQ USAF (AFMSPA) Wash DC 20333.
Armed Forces Pest Control Board (AFPCB), Forest Glen Annex, Walter Reed Army Institute of Research, Washington, D. C.	1. Provide consultation on prevention of arthropod-borne diseases and control of arthropod and rodent vectors and reservoirs of disease, and provide entomological information services.	DOD Directive 5154.12 AFPCB	1. Letter thru channels to HQ USAF (AFMSPA) Wash DC 20333.
USAF Epidemiological Laboratory, Lackland AFB, Texas	1. Provide personnel laboratory services consultation and support services on epidemiological problems. 2. Provide consultation and personnel services to: a. Conduct entomological surveys. b. Determine effectiveness of insecticidal applications. c. Perform specialized studies on Epidemiology of Arthropod-borne Diseases. d. Identify insect specimens. e. Investigate significant disease outbreaks on request (hospital staphylococcus outbreaks, etc.). f. Forensic toxicology.	AFR 161-12 USAF Epi Lab AFR 161-1 AFR 161-17	1. On occurrences or conditions requiring reporting under para 5-30, AFM 168-4. 2. Telegraphic (TWX) report from Director, Base Medical Services, to HQ USAF (AFMSPA) Wash DC 20333, with type of assistance requested, and info cys to USAF Epi Lab and major command. 3. Oversea Activities: Same, except thru major command. 4. Insect specimens for identification may be sent direct to Laboratory.

Medicine or the Director of Base Medical Services who is trained in Aerospace Medicine can serve as a very valuable consultant on the management of public health activities and the solution of related problems. Through the cooperative efforts of the Base Civil Engineer and the Bioenvironmental Engineer, considerable assistance can be provided on problems related to water purification, waste disposal, construction of facilities, and control of air and water pollution. Food services personnel, the Veterinary Service officer, and the hospital dietitian can be of assistance on problems concerned with food service, food handlers' hygiene, obesity control, and special crew feeding.

b. The offices of the surgeons of numbered air forces and major commands often have specialists in Aerospace Medicine, Public Health, Bioenvironmental Engineering, Radiobiology, etc., who are available for telephonic or written communication. Regular staff visits by these specialists may be utilized for the purpose of seeking solutions to problems or disseminating policy guidance and procedures.

c. Additional sources of consultation available are listed in table 20–1.

Chapters 21 through 24 of this manual contain additional information and guidance for planning and carrying out the programs defined and discussed in this chapter.