BY ORDER OF THE
SECRETARY OF THE AIR FORCE

AIR FORCE INSTRUCTION 48-102

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Aerospace Medicine

MEDICAL ENTOMOLOGY PROGRAM

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction assigns responsibilities for prevention of vectorborne disease and control of medical pests using an integrated pest management (IPM) approach. It implements AFPD 48-1, *Aerospace Medical Program*, and interfaces with AFI 48-105, *Surveillance, Control of Diseases and Conditions of Public Health or Military Significance.* Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFPD 37-1, Information Management and AFMAN 37-123, Management of Records and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located at **https://webrims.amc.af.mil**.

SUMMARY OF REVISIONS

This document is substantially revised and must be completely reviewed.

This issuance aligns the instruction with AFPD 48-1. It updates several areas to include organizational names and titles. This issuance elaborates the relationship between base medical entomology efforts and the regional and consulting entomologists.

1. Responsibilities:

1.1. This instruction establishes the following responsibilities and authorities (see **Attachment 1** for terms used in this instruction).

2. The Air Force Surgeon General:

2.1. Establishes policy and resources to evaluate worldwide vectorborne disease threats. Interfaces with major commands (MAJCOM), Department of Defense (DoD), and other Federal, state, and international organizations on the need for developing vector, medical pest and vectorborne disease surveillance and suppression programs, including the aerial application of pesticides and disinsection of aircraft.

2.2. Maintains a medical entomology program including consultation, training, and surveillance, for the prevention and control of vectors, medical pests and vectorborne diseases.

2.3. Provides consultation to the Air Force Civil Engineer Support Agency (AFCESA) and other civil engineer staffs to implement IPM for control of vectors, medical pests and vectorborne diseases.

2.4. Serves as the Air Force point of contact for DoD medical entomology research, development, testing, and evaluation.

2.5. Identifies and assists in resolving pest management and pesticide problems involving environmental contamination or occupational health concerns.

2.6. Ensures Air Force training and education programs effectively cover the biology, surveillance, identification, and control of vectors, medical pests and vectorborne diseases.

2.7. Provides representation to the Armed Forces Pest Management Board (AFPMB).

3. MAJCOM Public Health Officer (PHO):

3.1. Coordinates with a medical entomology consultant to determine medical entomology requirements necessary to support contingency operations or unique wing/base level medical entomology concerns. When necessary, the PHO requests deployment of a medical entomologist to provide professional expertise on the biology, surveillance, identification, and control of vectors, medical pests and vectorborne diseases.

3.2. Coordinates with the MAJCOM Pest Management Consultant (PMC) on the control of vectors, medical pests and vectorborne diseases using IPM techniques.

4. MAJCOM Pest Management Consultant:

4.1. Coordinates with the MAJCOM PHO on requirements to support contingency operations.

4.2. Approves installation plans for the insect vector surveillance (mosquito trapping) and other medical pests. Ensures plans emphasize IPM. For ANG, Pest Management Consultant is ANGRC/CEVP.

5. Air Force Institute for Operational Health (AFIOH), Brooks City-Base, Texas:

5.1. Provides consultation, training and base/wing level staff assistance in medical entomology and pest management for installations in CONUS and Alaska. Detachment 3 provides consultation, training and base/wing level staff assistance in medical entomology and pest management for PACAF installations.

5.2. Evaluates new techniques for surveillance, identification, pathogen screening, insecticide resistance, and controlling vectors, medical pests and vectorborne diseases.

5.3. Provides representation to the AFPMB if directed by the Air Force Surgeon General.

6. US Air Force School of Aerospace Medicine (USAFSAM), Brooks City-Base, Texas:

6.1. Trains medical and civil engineer personnel on the biology, identification, surveillance, and control of vectors, medical pests and vectorborne diseases.

6.2. Provides medical entomology support for medical readiness training.

6.3. Supplements consultative support in medical entomology and pest management provided by AFIOH and HQ USAFE/A7CV.

6.4. Provides representation to the AFPMB if directed by the Air Force Surgeon General.

7. HQ United States Air Force in Europe Civil Engineer Directorate Environmental Division (HQ USAFE/A7CV):

7.1. Provides medical entomology and pest management consultation for all USAFE installations.

8. Installation Commander:

8.1. Ensures installation personnel are protected from vectorborne diseases and medical pests.

8.2. Ensures deploying personnel utilize the DoD repellent system, permethrin-treated bed nets, and other personal protective equipment when appropriate to minimize the risk of vectorborne disease.

9. Base Civil Engineer (BCE)

9.1. Plans and executes vector and medical pest control using IPM techniques.

9.2. Continental United States (CONUS) BCEs provide bulk trash disposal according to US Department of Agriculture guidelines and AFJI 48-104, Quarantine Regulations of the Armed Forces, for aircraft arriving from outside CONUS to prevent the introduction of foreign agricultural pests and/or disease vectors.

10. Base Public Health:

10.1. Assists in contingency site selection to minimize vectorborne disease potential.

10.2. Briefs deploying personnel on threat of vectorborne disease and prevention using personal protective measures such as chemoprophylaxis, the DoD repellent system, bed nets and other personal protective equipment.

10.3. Implements a surveillance program to detect vectors and medical pests. Local public health department data may be used to supplement installation data.

10.4. Correlates surveillance data with disease incidence and outbreak potential.

10.5. When surveillance data is missing or incomplete, coordinates with a medical entomology consultant to determine the need for/scope of a vector surveillance plan. This plan will be submitted for approval by the Aerospace Medicine Council and serves the dual role of maintaining baseline data on vectors and medical pests while maintaining war readiness core competency skills. Resubmission of the plan will only be required when/if the criteria for the plan changes based upon a new or emerging threat.

10.6. Recommends control measures to the BCE when vectors or medical pests pose a health threat, interfere with duty performance, or cause a morale problem.

10.7. Maintains liaison concerning vectorborne disease with Federal, state, and local health authorities and foreign medical authorities overseas. Integrates installation surveillance data with civilian programs, whenever possible.

10.8. Assists the United States Department of Agriculture (USDA) and base agencies to meet quarantine inspection programs as outlined in AFJI 48-104. Evaluates the potential for inadvertent transport of medical or economic pests. Note: The USDA is the office of primary responsibility for the enforcement of Quarantine Regulations. Public Health acts as consultant to the USDA and base organizations such as the Security Forces, Civil Engineers, Base Operations and the Installation commander.

10.9. Provides information to health care providers on prevention and control of vectorborne diseases in the local area.

10.10. Participates in planning for emergency vector or medical pest control using aerial application of pesticides. Surveys before and after aerial application to assess efficacy.

11. Base Bioenvironmental Engineering Services:

11.1. Provides technical information to the BCE on the safe storage and use of pesticides.

11.2. Reviews the narrative installation plan prepared by the BCE before it is sent to MAJCOM/CE for approval.

11.3. Monitors the environmental impact of pesticide application, including aerial spraying.

11.4. Monitors the acquisition, storage, and use of pesticides by civil engineering and other base organizations. Monitors the storage and use of pesticides by contractors.

GEORGE PEACH TAYLOR, JR., Lieutenant General, USAF, MC, CFS
Surgeon General

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFPD 37-1, *Air Force Information Management*, 19 Nov 1993

AFMAN 37-123, *Management of Records*, 31 Aug 1994

AFPD 48-1*, Aerospace Medical Program,* 22 July 1993

AFI 48-105, *Surveillance, Control of Diseases and Conditions of Public Health or Military Significance, 29 June 1994*

Terms

DoD Repellent System.—Use of DEET-based repellent on exposed skin, permethrin treatment of uniforms and proper wearing of uniform to minimize exposure to vectors and medical pests. The system is described in Technical Guide 36, *Personal Protective Measures against Insects and Arthropods of Military Significance*, published by the AFPMB.

Economic Pests.—Animals or plants that do not pose a human medical threat, but do pose a threat to agriculture, marine, or terrestrial environments.

Integrated Pest Management.—A pest management strategy that focuses on long-term prevention or suppression of pest problems through a combination of techniques such as monitoring for pest presence, establishing treatment threshold levels, using non-chemical practices to make the habitat less conducive to pest development, improving sanitation, and employing mechanical and physical controls. Pesticides that pose the least possible hazard and are effective in a manner that minimizes risks to people, property, and the environment, are used only after careful monitoring indicates they are needed according to pre-established guidelines and treatment thresholds.

Medical Entomology.—The study of vectors and medical pests emphasizing prevention and control.

Medical Entomology Consultant.—Individual with training in the ecology and control of vectors and medical pests and DoD certification in medical entomology.

Medical Pests.—Animals or plants that do not directly transmit a disease pathogen but are medically important because of biting, stinging, or other annoyance including secondary skin infection.

Pesticides.—Chemicals used to kill pests, including disease vectors, intermediate hosts, and reservoirs. These include insecticides, acaricides, moluscicides, rodenticides, herbicides, fungicides, and other toxicants.

Vectors.—Animals such as mosquitoes, biting flies, filth flies, flesh flies, lice, kissing bugs, fleas, mites, ticks, snails, rodents, bats, etc. capable of inoculating or transferring disease pathogens to humans or domestic animals.

Vectorborne Diseases.—Those illnesses caused by specific infectious agents transmitted from a reservoir to a susceptible host by a vector.