



DEPARTMENT OF THE NAVY  
BUREAU OF MEDICINE AND SURGERY  
2300 E STREET NW  
WASHINGTON DC 20372-5300

IN REPLY REFER TO  
BUMEDINST 5450.170  
BUMED-M12  
12 Dec 2011

BUMED INSTRUCTION 5450.170

From: Chief, Bureau of Medicine and Surgery

Subj: MISSION, FUNCTIONS, AND TASKS OF NAVAL MEDICAL RESEARCH UNIT  
DAYTON, OH

Ref: (a) OPNAVNOTE 5400 Ser DNS-33/10U229846 of 28 Sep 2010  
(b) BUMEDINST 5450.165B  
(c) SECNAV M-5210.1 of November 2007

Encl: (1) Mission, Functions, and Tasks of Naval Medical Research Unit, Dayton

1. Purpose. To publish mission, functions, and tasks of the Naval Medical Research Unit, Dayton (NAMRU Dayton) as directed by reference (a).
2. Scope. Applies to all military, civilian, and contract support staff assigned to the Naval Medical Research Unit Dayton, Ohio. The mission is to maximize warfighter performance and survivability through world-class aeromedical and environmental health research by delivering solutions to the field, the Fleet, and for the future.
3. Background. In accordance with reference (a), establishment of the subject shore activity is in accordance with Base Realignment and Closure (BRAC) 2005.
4. Status and Command Relationships. NAMRU Dayton is a shore activity in an active status under a commanding officer and support of Naval Medical Research Center, Silver Spring, MD. NAMRU Dayton is under the area coordination of Commander, Navy Region Midwest, Great Lakes, MI.

a. Command:

Commanding Officer  
Naval Medical Research Unit Dayton  
2624 Q ST BLDG 851  
Wright-Patterson AFB, OH 45433-7955

(SNDL: FH8) (UIC: 41817)  
(PLA: NAVMEDRSCHU DAYTON WRIGHT PATTERSON AFB OH)  
(Activity Code: 4188-700)

b. Echelon of Command:

- 1 - Chief of Naval Operations
- 2 - Chief, Bureau of Medicine and Surgery
- 3 - Commanding Officer, Naval Medical Research Center, Silver Springs, MD (32398)
- 4 - Commanding Officer, Naval Medical Research Unit, Dayton, OH (41817)

5. Supporting Activities. NAMRU Dayton Receives support from: 88<sup>th</sup> Air Base Wing ISSA WP-620 hosts NAMRU Dayton on Wright Patterson AFB (WPAFB).

- a. 88<sup>th</sup> Air Base Wing ISSA WP-620 hosts NAMRU Dayton on WPAFB, OH.
- b. 88<sup>th</sup> Mission Support Group, WPAFB, OH.
- c. Personnel Support Detachment, Great Lakes, MI.
- d. Human Resources Office, Bethesda, MD.

6. Action. Addressee must:

a. Ensure performance of the specific mission, functions, and tasks assigned in enclosure (1).

b. Advise the Chief, Bureau of Medicine and Surgery (BUMED) of any recommended modifications to enclosure (1), in accordance with reference (b).

7. Records Management. Records created as a result of this instruction, regardless of format and media, shall be managed in accordance with reference (c).



M. L. NATHAN

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**MISSION, FUNCTIONS, AND TASKS OF  
NAVAL MEDICAL RESEARCH UNIT, DAYTON**

1. Purpose. To issue the functions and tasks for Naval Medical Research Unit Dayton, Ohio (NAMRU Dayton) in support of the mission issued by OPNAVNOTE 5400 Ser DNS-33/10U229846 of 28 Sep 2010.
2. Mission. To maximize warfighter performance and survivability through world-class aeromedical and environmental health research by delivering solutions to the field, the Fleet, and for the future.
3. Functions and Tasks. NAMRU Dayton is comprised of the Environmental Health Effects Research Directorate, the Aeromedical Research Directorate, the Administrative Directorate, and assistants to the commanding officer (CO); the tasks and functions delineated below:
  - a. Perform basic and applied research to identify causes of, and solutions for, spatial disorientation in flight.
  - b. Perform basic and applied research to identify causes of, and solutions for, pilot and aircrew hypoxia.
  - c. Perform basic and applied research to identify causes of, and solutions for, air- and motion-sickness.
  - d. Perform basic and applied research to identify causes of, and solutions for, operational fatigue in military personnel.
  - e. Perform basic and applied research in the visual and auditory sciences to:
    - (1) Mitigate against health risks posed by operational aviation environments.
    - (2) Develop and test technologies to improve warfighter visual and auditory performance.
  - f. Provide consulting services on aeromedical and aviation safety matters of concern to the fleet and Navy Medicine.
  - g. Perform basic and applied research to assess the toxicities of chemicals and materials used or generated during military operations that may affect military and civilian populations. This research is accomplished using the following core capabilities of the laboratory:
    - (1) Inhalation toxicology.
    - (2) In vitro toxicology.

- (3) Neurological assessment.
- (4) Analytical laboratory.
- (5) Physiologically based pharmacokinetic (PBPK) modeling.
- (6) Risk assessment.

h. Conduct risk and safety assessments using available toxicity information to assist in guiding the development of exposure and safety standards.

(1) Use/develop state-of-the-science computer modeling (*in silico*) approaches such as PBPK modeling and benchmark dose (BMD) modeling.

(2) Develop data to assess potential mechanism or mode of action to guide appropriate choice of dose metrics for assessing risk and recommending exposure standards.