

**500 SERIES  
MEDICAL FACILITIES**

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## 500 MEDICAL FACILITIES

### 500-1 GENERAL

The Office of the Assistant Secretary of Defense Health Affairs (OASD (HA)) has primary responsibility for establishing functional space criteria and standards for medical facility programs necessary to fulfill the Secretary of Defense's responsibilities. The medical program is funded by the Assistant Secretary of Defense, Health Affairs (OASD (HA)); which provides annual programming guidance, performs defense-wide health care facility planning, project programming, reviews and adjusts projects for scope and cost. Using the OASD (HA) criteria, the Office of the Navy Surgeon General (BUMED) programs all medical projects for the Navy. OASD (HA) also presents medical programs to OSD and the Congress for MILCON and UMC approval.

### 500-2 POLICY

This section provides general guidance for planning of Military Healthcare facilities. All Military Healthcare facilities shall be planned with the Department of Defense (DoD) objective to provide facilities that are responsive to the functional requirements of the using Military Department. Joint utilization of military healthcare facilities and medical resources available in the civilian community must be considered in planning healthcare facilities. All medical facilities including medical and dental treatment facilities (MTF's), medical training facilities, medical research facilities, and veterinary treatment facilities should meet the operating requirement and should provide reasonable flexibility to accommodate future changes. The facility should be functional as well as aesthetically pleasing, while still being economical with a practicable life-cycle-cost. The facility must meet the necessary environmental requirements including applicable federal, state, and local environmental standards and criteria.

The Military Healthcare System space planning has two fundamental objectives. Within each objective, there may be multiple levels of determination. The first objective is to develop specific functional area space based upon environmental inputs. Functional areas are driven from a set of environmental inputs. The environmental inputs are defined to indicate demand for space (e.g. program obligations, activity requirements, staffing and equipment). The four major categories of space criteria are patient care, support of patient care, administration, and support of administration. To determine the Program for Design, the environmental inputs are translated into a set of specific space criteria.

The Bureau of Medicine and Surgery (BUMED), subject to approval of the Assistant Secretary of Defense for Health Affairs (OASD (HA)), is responsible for making the ultimate determination of scope and size of Naval Healthcare facilities to be planned, programmed, and constructed for major and minor projects. The following steps are a guide to Healthcare Planning.

**Note:** BUMED activities will be the maintenance UIC for all facilities they occupy entirely in direct support of their mission or are the preponderant user. Stand-by/emergency electrical generation, operational fuel storage of the generators or

building heat systems and electrical transformers in direct support of the medical facilities should have the BUMED activity as the User and Maintenance UIC. The BUMED facility is not a complete and useable facility without the inclusion of these directly supporting utility systems.

The Healthcare facility and local planner will coordinate with the BUMED Echelon 3 Commands (NME, NMW, NCA, and NMSC)) to identify projects to BUMED, Director of Facilities (M4B1), Installations and Logistics as potential MILCON or UMC candidates. BUMED will identify projects to TMA as potential MILCON or UMC candidates for approval.

The Healthcare facility Commanding Officer shall coordinate will the Lead Agent and their BUMED Echelon 3 command for the development of a project-specific Concept of Operations and integrated market-driven business plan. The elements of the business plan should include, but are not limited to:

- Delivery of the TRICARE health benefit to the population enrolled to the Military Treatment Facility (MTF)
- Provision of care to selected beneficiaries to maintain readiness skills
- Clinical competencies to maximize the utilization of the facility after the needs of TRICARE Prime enrollees have been satisfied
- Develop and implement joint programs in multi-service market areas
- Identify and develop sharing initiatives with VA
- Manage the care of all MTF Prime enrollees under Revised Financing and a Basic Facility Requirement (BFR)
- Planning tasks related to project identification and formulation will be programmed and funded from other than MILCON appropriations

The BUMED Echelon 3 command Project Officers shall coordinate with the medical activity to develop DD Form 1391 and provide all supporting documentation on the medical requirements at the installation, and assist the medical activities in obtaining project validations. The BUMED Echelon 3 commands will also coordinate with the installation to provide information systems requirements and cost estimates to integrate the information systems with the installation and the activity.

The BUMED Echelon 3 command Project Officers will develop explicit planning documents for future year projects, including a Healthcare Requirements Analyses (HCRA), Economic Analyses (EA), Construction cost analyses, Make-versus-Buy Analysis, and Program for Design. Each medical MILCON project is unique and circumstances may warrant modification to the guidelines provided. The analyses will normally require the assistance of outside contractors. One or all of the listed documentation may be required.

The BUMED Echelon 3 command Project Officer, Medical Consultant, outside contractor or A/E Firm will forward all completed documentation (i.e. Project Book, HCRA EA, and DEFTAB) to BUMED Facilities (M4B1) for review. BUMED will coordinate with M3 Operations Directorate for review. BUMED will then forward the required documentation to OASD (HA) for review and approval. Once approved,

OASD (HA) will issue a DA to the Design/Construction Agent (NAVFAC/Army Corps of Engineers) to proceed with the Project.

### 500-3 FACILITY DESIGN

The following conversion factors shall be used in programming a Navy Healthcare facility. A net to gross conversion ratio for each department shall be calculated separately. The following steps are required to determine the net area for each department:

General Methodology:

1. Apply the specific net/gross ratio specific for each department.
2. Add all the department gross areas together.
3. Add the additional net/gross conversion factors to determine the overall building gross area.

Listed below are the department net/gross conversion ratios:

**Table 500-1  
Department Net/Gross Ratio**

<b>Administration</b>	<b>Net / Gross Ratio</b>
General Administration	1.40
Medical and Patient Libraries	1.35
Education and Training	1.35
Information Management	1.35
Patient Administration	1.35
<b>Outpatient Services</b>	
Primary Care/Family Practice	1.35
Pediatrics	1.35
Flight Undersea Medicine and Readiness	1.35
Emergency Services	1.35
Women's Health	1.35
Wellness Clinic	1.25
Occupational Therapy	1.30
Physical Therapy	1.30
Audiology / Speech	1.35
Specialty Surgical Clinics	1.35
Orthopedics / Podiatry	1.35
Ophthalmology/ Pulmonary Services	1.35
Allergy / Immunization	1.35
Mental Health	1.35
Preventative/Occupational Medicine	1.35
Dental Clinics	1.35
<b>Inpatient Services</b>	
Nursing Units	1.50
Labor and Delivery/ OB Unit	1.50

Nursery	1.45
Surgery	1.60
<b>Support Ancillary Services</b>	
Food Service	1.35
Logistics	1.25
Pathology	1.25
Radiology / Nuclear Medicine	1.50
Pharmacy	1.25
Vet services	1.35
Chapel	1.20
Patient Services	1.35
Clinical Investigation	1.35

After all the department totals are calculated and totaled, the additional net/gross ratios need to be added. Listed below are the building net/gross conversion ratios, based on building type:

**Table 500-2  
Net To Gross Square Feet Calculations**

<b>Allowances/ Categories</b>	<b>Medical/ Dental Clinics</b>	<b>Ambulatory/ Health Care Facility</b>	<b>Station/ Community Hospital</b>	<b>Regional Medical Centers</b>
MECHANICAL SPACE	13.50%	14.5%	15.0%	16%
ELECTR. SPACE	2.0%	2.0%	3.0%	3.0%
CIRCULATION	14.0%	15.0%	15%	16%
HALF AREAS	1.5%	1.5%	1.5%	1.5%

**Notes:** For addition/alteration projects, up to 15% of the total altered net space may be added to the flexibility allowance to offset physical constraints in the existing facility. This increased allowance must be validated during design.

1. Buildings with multiple floors may need additional circulation ratios for stairs, elevators, etc.
2. For facilities with emergency power systems, other than Hospitals and Regional Medical Centers, increase electrical from 2.0% to 3.0%. Hospitals and Regional Medical Centers have a percentage that already assumes that emergency power systems are required.
3. Communication/network server spaces shall be programmed in Section 2.4: Information Management and throughout all departments.
4. Add 25% to mechanical areas for projects in Germany (requires all floor mounted equipment).

5 Add 8% to circulation areas for projects in Germany (natural daytime lighting requirements).

## **510 HOSPITAL AND OTHER MEDICAL TREATMENT FACILITIES**

### **510 10 HOSPITAL (BD)**

51010-1 **GENERAL.** A Healthcare facility that provides general and specialized medical care for authorized personnel, with both inpatient and outpatient services. This facility will also normally contain clinics, such as Medical, surgical, pediatrics, obstetrical, ICU and CCU. The facility will have a Pharmacy, ambulance, and administrative area. This facility will admit for more than 24-hour stay.

### **510 11 MEDICAL CENTER (SF)**

51011-1 **GENERAL.** A regional medical center. These facilities support both increased surgical capabilities and a surgical graduate education program, not required in smaller hospitals. Applies to Bethesda, Portsmouth and San Diego (Balboa).

### **510 12 PRE-POSITIONED FLEET HOSPITAL WAREHOUSE (UNASSEMBLED) (EA)**

51012-1 Criteria for this category code are currently being written.

### **510 15 HOSPITAL BRANCH / ANNEX (BD)**

51015-1 Criteria for this category code are currently being written.

### **510 20 HOSPITAL LAUNDRY (SF)**

51020-1 Criteria for this category code are currently being written.

### **510 77 HOSPITAL MEDICAL STORAGE (SF)**

51077-1 Criteria for this category code are currently being written.

## **530 LABORATORIES**

### **530 10 DISPENSARY AND OUTPATIENT CLINIC (SF)**

53010-1 **GENERAL.** Free Standing Clinic, outpatient clinic, which occupies a building or part of a building, but is not physically located with a hospital or medical center that provides routine and emergency care to authorized personnel.

**530 20 MEDICAL LABORATORY (SF)**

53020-1 **GENERAL.** A facility, detached from a hospital that provides laboratory support to the hospital and/or other medical activities. The analysis and diagnostic laboratory includes chemistry, diagnostics and microbiology testing sections and a quality assurance and technical support section. Contact the Bureau of Medicine and Surgery (BUMED) or the appropriate BUMED Echelon 3 command when planning this facility.

**530 30 MORGUE (SF)**

53030-1 **GENERAL.** A facility, either detached or within a hospital, for the identification, preparation, and holding of human remains.

**530 40 VIVARIUM CLINIC (SF)**

53040-1 **GENERAL.** The vivarium clinic is a medical research laboratory for keeping and raising animals and plants under natural conditions for observation and research. This clinic may also do biological defense and other research for war and peacetime protection. Contact the Bureau of Medicine and Surgery (BUMED) or the BUMED Echelon 3 command when planning this facility.

**530 45 VETERINARY TREATMENT FACILITY (SF)**

53045-1 **GENERAL.** This facility is used to provide food safety and quality assurance, care for government owned animals (working dogs and horses), and animal disease prevention and control. Veterinary services are to examine, immunize and treat for the prevention and control of diseases or conditions that are transmissible to humans or animals, or may constitute a military community health problem. Conditions that are not transmissible from one animal to another or to a human generally are not treated at this facility. A veterinary treatment facility (VTF) is equipped and staffed to perform the entire spectrum of veterinary services required by a military installation. A VTF includes offices for the veterinarian and section chiefs, conference room, library, food inspection room, waiting room, x-ray facilities, pharmacy, clinical laboratory room, inside rabies quarantine kennel rooms, inside-outside kennel area for hospitalized government owned animals, toilets and showers, employee lounge, locker and dressing rooms, linen room and storage space for records, supplies and cleaning equipment. Table 53045-1 provides space allowance for individual components of a Veterinary Treatment Facility. It should be noted that not all components may be required for each Facility.

**Note: Cat Codes 530-40 and 530-45 should be used when the tenant is an Army Veterinarian conducting food inspections. This is the only instance where it is a BUMED funding responsibility and requires the BUMED Activity as the Tenant / User and Maintenance UIC.**

For a veterinary clinic operated by MWR in support of the base populations' pet animals or for a military working dog (MWD) kennel, please use Category Code 730 76. These are not BUMED activities.

Table 53045-1

Type of Space	Net Square Feet
<b>I. Clinical Spaces</b>	
Exam. Rms.	120
Surgical Suite	200
Clean Utility Room	80
Dirty Utility Room	80
X-ray (incl. processing space)	250
Kennel (quarantine)	80
Pharmacy Store Room	120
Food Inspection Room and Laboratory	470
Clinic Laboratory Area	120
Stray Animal Confinement Kennels	10/40
Utility and Supply Area	150
Rabies Quarantine Kennels	40
Hospitalization Kennels	40
Utility Area for Kennels	140
Kennel Inside and Outside	60
<b>II. Support Spaces</b>	
Chief Veterinarian Office	140
Administrative Support Area	120
Reception Area and Control Area	140
Clinical Records Holding Area	50
Employees' Lounge	140
Patient Handler Waiting Room	200
Conference Room/Library	250

### **530 50 ENVIRONMENTAL PREVENTATIVE MEDICINE LABORATORY (SF)**

53050-1 Criteria for this category code are currently being written.

### **530 60 MEDICAL WAREHOUSE (SF)**

53060-1 **GENERAL.** A storage facility for medical equipment and supplies that is continuously withdrawn and replenished. Storage of war reserve medical supplies is included in depot storage facilities.

## 530 70      **AMBULANCE SHELTER (SF)**

53070-1      **GENERAL.** A covered space used to shield the Ambulance, its driver and its patients from exposure to the elements.

## 540            **DENTAL CLINICS**

540-1            A dental clinic is an oral health care service facility equipped and staffed to perform dental procedures for general practices, a specialty, or a grouping of specialties. A dental facility will normally include treatment areas, administrative, support and storage areas.

### 540 10        **DENTAL CLINIC (SF)**

54010-1        **GENERAL.** The Bureau of Medicine and Surgery (BUMED), subject to the approval of the Assistant Secretary of Defense (Health Affairs), is responsible for the determination of scope of dental clinics planned, programmed, and constructed. The following information is provided as a guide to be utilized for planning and preliminary programming purposes.

Step 1: Beneficiary Population. Determine the active duty beneficiary population. On average there will be 1 dental officer per 800 active duty beneficiaries.

Step 2: Staffing. Obtain staffing figures for the planning year from the Authorized Manpower documentation for the military personnel and the authorized positions for the civilian personnel. The planning documents must be submitted via the BUMED Echelon 3 to the BUMED Manpower Division (M1) for confirmation of support for any increased staffing, both military and civilian.

Step 3: Dental Treatment Rooms (DTR's). Determine the number of required DTR's from the following criteria.

- 1 DTR for each dentist in training.
- 2 DTR's for each general duty dentist assigned to clinical dentistry. 2 DTR's for each Prothodontist, Periodontist, Endodontist, Oral Surgeon, Pedodontist, and Comprehensive General Dentist assigned to clinical dentistry.
- 3 DTR's for each Orthodontist.

NOTE: When the total number of dentists is five (5) or less, use a DTR factor of 2 DTR's per dentist Clinics with six (6) dentists will have a minimum of 10 DTR's.

- 1 Oral Hygiene Treatment Room (OHTR) for each oral hygienist or technician functioning as oral hygienist.

Step 4: Clinic Space Required. After calculating the number of DTR's required, consult table 540-10A to determine the gross area required. Interpolation is

required. These figures include space allowance for all functions that are in direct support of the dental clinic, such as administration, locker rooms, conference rooms, limited prosthetic laboratory, storage of operating supplies, a central sterile and dental X-ray. This also includes waiting rooms, mechanical spaces, restrooms, circulation, walls and partitions, and consultation rooms. Interpolation, as explained at the front of the 500 series, is necessary.

**Table 54010-1  
Space Allowances for Dental Clinics**

Number of DTR's and OHTR's	Gross Area per DTR and OHTR (sq.m / GSF)
2	93 sq.m. / 1000 GSF
3	93 sq.m. / 1000 GSF
4	84 sq.m. / 900 GSF
6	84 sq.m. / 900 GSF
8	75 sq.m. / 800 GSF
10	75 sq.m. / 800 GSF
12	70 sq.m. / 750 GSF
18	70 sq.m. / 750 GSF
25	70 sq.m. / 750 GSF
30	65 sq.m. / 700 GSF
40	65 sq.m. / 700 GSF
50	65 sq.m. / 700 GSF
100	61 sq.m. / 650 GSF

Step 5: Optional Functions: (must be specifically justified and documented)

A. Dental Equipment Repair. For clinics with equipment repair technicians assigned, determine the number of repair technicians from Manpower Authorization and consult table 54010-2 to determine the gross area required.

**Table 54010- 2  
Space Allowance for Dental Equipment Repair Technicians**

Number of Repair Technicians	Gross Area - sq. m. / GSF
1	25 sq. m./ 270 GSF
2	46 sq. m. / 500 GSF
3	60 sq. m. / 650 GSF

**Note:** Add 9 sq.m. (100 GSF) more for each additional repair technician.

B. Special Education Functions. Where specifically justified, an education training room can be planned based upon documentation of course title, frequency and duration of courses, and average on board students. A space factor of 2.6 sq.m. (28 GSF) per student will be used to size the facility based upon the average monthly student population that can be justified. Routine classroom/conference room functions are already included in table 54010-1.

C. Full Prosthetic Lab. If authorized and staffed with a full time prosthetic lab technician, additional space may be added for a full prosthetic lab. Consult table 54010-3 for the gross square area required.

**Table 54010- 3  
Space Allowance for a Full Prosthetic Laboratory**

Function	Gross Area - sq. m. / SF
Dental Prosthetic Lab	63 sq.m./ 675 GSF
Ceramic Room	19 sq.m./ 200 GSF
Casting & Grinding	19 sq.m. / 200 GSF
Model Storage	11 sq.m. / 120 GSF
<b>Each technician over 3</b>	<b>8 sq.m.each 85 GSF</b>

**Table 54010- 4  
Space Allowance for Regional Storage**

Number of Branch Clinics served	Gross Area – sq. m. / SF
Up to 5	19 sq. m. / 200 GSF
6 to 10	65 sq. m. / 700 GSF
11 to 20 ( maximum allowable)	93 sq. m. / 1000 GSF

Step 6: Total Gross Square Footage Required. Add the gross square footage for the clinic obtained in step 4 to the gross square footage of the supported options obtained in step 5. The sum is the total space requirement for category code 540-10 and includes all functions that are normally associated with a Dental Clinic.

Step 7: Parking. Based on the 15 Oct 1991 MIL-HDBK-1191 (DOD Medical and Dental Treatment Facilities Design and Construction Criteria), for clinics with less than 30 DTR's, provide 3 parking spaces per DTR For larger clinics, 2.5 spaces per DTR should be planned. One space per organizational vehicle is also authorized.

Step 8: Site Selection. Site facility convenient to active duty beneficiaries. Collocation of Dental Clinics with Medical clinics is operationally efficient and desired. In site selection, provide a minimum of 25% expansion capability of the facility square meters, as calculated in step 6, & parking requirements, calculated in step 7. Facility should be sited convenient to existing utility support.

## **550 DISPENSARIES/ CLINICS**

### **550 10 PRIMARY CARE CLINIC (SF)**

55010-1 **GENERAL**. A primary care clinic may be referred by various names (troop medical clinic, adult clinic, family practice clinic, OCC Health, Outpatient, and others). A primary care clinic provides the office, examination and treatment space for "primary care managers".

**550 20      AMBULATORY CARE CENTER (SF)**

55020-1      **GENERAL.** A health care facility capable of performing outpatient surgical procedures and other medical treatment, not requiring extensive patient convalescence or overnight observation.

**550 30      REHABILITATION CENTER FOR DRUGS AND/OR ALCOHOL (SF)**

55030-1      This facility will provide the necessary administration, counseling, training, berthing, and recreation for rehabilitation of eligible Navy, Marine Corps and other personnel suffering from alcoholism, drug dependency and/or compulsive overeating.

55030-2      A typical Alcohol Rehabilitation Center (ARC) is composed of three major components which are: Berthing, Administration, and Operational Support area. The berthing requirements for all patients are based upon the criteria for category code 721-14, Bachelor Housing - Class A Student Barracks in order to be compatible and consistent with the Navy's treatment modality of group therapy. Each "group sized" bay or module will accommodate 12 beds and an appropriately shared head/shower. Identical berthing modules for female patients should be provided in a separate and distinct location. The number of modules required varies with patient load. A 120 patient facility requires 12 12-bed modules; the apparent extra modules are required to accommodate female patients, patients awaiting transportation and any group overflow.

55030-3      The Administration requirements are derived by using the criteria established for category code 610-10, Administration, keeping in mind that administration includes both command oriented and patient affairs.

55030-4      The Operational Support Area is composed of all those remaining facilities required for the ARC to accomplish the assigned mission. Included within this area is sufficient space for the following types of functions: group therapy rooms, some with discreet observation capability; multi-purpose room, large enough to accommodate entire facility population; a visitors lounge with some privacy; traditional classrooms with audiovisual capability; library; patients lounge; secure medical exam room and a small laboratory capability; and storage space. A planning factor of 18 square meter (190 gross square feet) per patient is used to provide for these facilities. In the event that no parking is available, the criteria for category code 852-10, Parking Area, is used to determine the parking space requirements for the organizational and nonorganizational vehicles.

55030-5      The following example illustrates the methodology used to determine the space requirements for a typical ARC treating 120 patients and having a staff complement of 50 personnel.

Table 55030-1

ARC	Component	Gross Area	
		Square Meter	Square Foot
Berthing—Class A Student (Cat Code 721-14):	120 patients x 7 sq.m. (75.3 sf)/patient =	840	9,307
Net to gross conversion = (Includes lounges, general circulation, mechanical space, etc.)	1.71 X 840 sq.m. (9,037 sf) =	1,436	15,453
Administrative Office (Cat Code 610-10):	14 sq.m. (162.5 gsf) X 50 personnel =	700	8,125
Operational Support Area:	120 patients X 190 gsf per patient =	2,119	22,800
	<b>Total ARC Space</b>	5,095	55,685
Parking	Component	Square Meter	Square Yard
Non-Organizational			
Admin = 50 pn X 60% (factor)	35 spaces		
Patient = 120 pn X 75%	90 spaces		
	Total: 125 spaces @ 33 sq.m. (39.5 sq.yds.) =	4,125	4,933
Organizational			
Vans = 10 pn x 75%	8 spaces @ 33 sq.m. (39.5 sq.yds.) =	264	316
	<b>Total Parking Space</b>	4,389	5,249

**NOTE:** These planning factors are the maximum space allowances for this type of facility. Smaller areas are permitted as appropriate. However, in all cases, the berthing requirements must conform to the Class A Student space requirement as given in the criteria for category code 721-14, Bachelor Housing.