VOLUME X

MEDICAL JOINT-CROSS SERVICE GROUP

2005 BASE CLOSURE AND REALIGNMENT REPORT

MAY 9, 2005

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON, DC

May 9, 2005

MEMORANDUM FOR SECRETARY OF DEFENSE

FROM: Chairman, Medical Joint Cross Service Group

SUBJECT: 2005 Base Realignment and Closure Recommendations

References: (a) Defense Base Closure And Realignment Act of 1990, Section 2903 (c)(5)

(b) Secretary of Defense Memorandum, "Transformation Through Base Realignment and Closure Memorandum" dated 15 November 2002

This is the Medical Joint Cross-Service Group (JCSG) Base Realignment and Closure (BRAC) Report for BRAC 2005, as required by Section 2903(c)(5) of the Defense Base Closure and Realignment Act of 1990, as amended. I certify that the information contained in this report is accurate and complete to the best of my knowledge and belief. I look forward to working with the Commission as our recommendations proceed through the BRAC process.

George Peach Taylor Jr.
GEORGE PEACH TAYLOR, JR.
Lieutenant General, USAF, MC, CFS
Chairman

Attachment:
Report

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I EXECUTIVE SUMMARY

The Medical Joint Cross-Service Group (JCSG) was chartered to review Department of Defense healthcare functions and to provide base closure and realignment (BRAC) recommendations based on that review. Assigned functions included Department of Defense (DoD) Healthcare Education and Training; Healthcare Services; and Medical and Dental Research, Development and Acquisition (RD&A). The Air Force Surgeon General chaired the Medical JCSG, and other principal members included senior medical members from the Military Departments, the Joint Staff, and the Office of the Secretary of Defense (OSD). The report that follows details the group's strategies, processes, and recommendations to the Secretary of Defense for consideration for the 2005 BRAC Commission.

Responsibilities and Strategy

The Medical JCSG was responsible for a comprehensive review of assigned functional areas, an evaluation of alternatives, and the subsequent development and documentation of realignment and closure recommendations for the Secretary of Defense. In developing its analytical process, the Medical JCSG established internal policies and procedures consistent with DoD policy memoranda, the force structure plan prepared by the Chairman of the Joint Chiefs of Staff, installation inventory, BRAC final selection criteria, and the requirements of the Defense Base Closure and Realignment Act of 1990, as amended.

The Military Healthcare System (MHS) is tasked with ensuring that DoD maintains medically ready operational forces and that the DoD has trained, proficient and deployable medics to support the warfighter. In addition, DoD must foster and deliver research, development and acquisition of unique military medical and dental technology and techniques. In its current form, the DoD healthcare delivery system accomplishes this mission through two complementary organizations: the Direct Care System which includes military treatment facilities, and the TRICARE health benefit program which provides access for beneficiaries to the civilian healthcare system.

The Medical JCSG developed key strategies to guide deliberations based on the key objectives above. These strategies came from an analysis of the BRAC criteria. The Medical JCSG focused its efforts on:

- Supporting the warfighter and their families in-garrison and deployed;
- Maximizing military value while reducing infrastructure footprint and maintaining an adequate surge capability;

- Maintaining or improving access to care for all beneficiaries, including retirees, using combinations of the Direct Care and TRICARE systems;

- Enhancing jointness, taking full advantage of the commonality in the Services' healthcare delivery, healthcare education and training, and medical/dental research, development and acquisition functions;

- Identifying and maximizing synergies gained from co-location or consolidation opportunities; and

- Examining out-sourcing opportunities allowing DoD to better leverage the large US health care system investments.

The MJCSG's final recommendations were based on a review of the entire Military Healthcare System, including the TRICARE program, with a view towards advancing these strategies. To facilitate efforts, the MJCSG developed categories of functions for evaluation, and organized into subgroups corresponding to these functions. Each subgroup, in turn, developed strategies for evaluating its functions. These strategies were based on the Medical JCSG key focus areas and guided by BRAC criteria 1-8.

Analytical Process

The Medical JCSG approach to the BRAC process involved iterative and concurrent actions in close collaboration with the Military Departments and the other Joint Cross Service Groups. The Medical JCSG Principals formed the deliberative body; subgroups generated ideas, proposed the overall scope for analyses and brought forth recommendations for consideration. All data collection was conducted and certified in accordance with BRAC process guidance.

The Medical JCSG subgroups developed attributes and metrics to determine the capacity of all installations for their assigned functions. The metrics were used to develop questions designed to solicit necessary data, which were subsequently issued to all DoD installations in the form of a controlled data call. The Medical JCSG approved all attributes, metrics and questions.

The Medical JCSG used the responses from the installations (submitted in the form of certified data) to perform a capacity analysis and review surge requirements. At each step in the process, adequacy and quality of the data was independently validated by the DoD Inspector General.

Once the Medical JCSG acquired capacity information, it conducted military value assessments of each function at each installation. The Medical JCSG subgroups developed military value data call questions from BRAC selection criteria 1-4 to generate data for the quantitative portion of military value analysis, which includes both quantitative data, as well as military judgment. Using the installation's responses, the Medical JCSG subgroups identified realignment or closure scenarios that corroborated their strategies and were supported by data. The Medical JCSG determined that these scenarios meet the Medical JCSG's charter and goals by advancing jointness, achieving synergy, capitalizing on technology, exploiting best practices, and minimizing redundancy, while maintaining the fundamental healthcare mission of the Military Healthcare System. Once scenarios were developed, the remaining selection criteria (criteria 5-8) were assessed, using standard DoD's procedures and/or models.

The Medical JCSG ultimately approved 22 candidate recommendations for presentation to the Infrastructure Steering Group (ISG) and Infrastructure Executive Council (IEC). All Medical JCSG decisions were made by vote, and dissenting opinions were entered into the meeting minutes and presented to the ISG/IEC.

Review and adjudication by the ISG and IEC resulted in the candidate recommendations presented in section IV.

Summary of Results

The MJCSG recommends:

- Closing Brooks City-Base. Relocate Human Systems Research, Human Systems Development & Acquisition, Aerospace Medicine and Occupational Health Education and Training, and Naval Health Research Center Electro-Magnetic Energy Detachments to Wright-Patterson Air Force Base (AFB); OH; relocate AF Audit Agency and 341st Recruiting Squadron to Randolph AFB, TX; relocate Army Medical Research Detachment to Fort Sam Houston, TX; relocate Air Force Center for Environmental Excellence to Lackland AFB, TX.

- Realigning Walter Reed Medical Center as follows: relocate all tertiary medical services to National Naval Medical Center, Bethesda (NNMC), MD, establishing it as the Walter Reed National Military Medical Center Bethesda; relocate all other patient care functions to DeWitt Hospital, Fort Belvoir, VA; disestablish Armed Forces Institute of Pathology (AFIP) by relocating military relevant functions to NNMC Bethesda, Dover AFB, and Fort Sam Houston; relocate Combat Casualty Care sub-function (less neuroprotection research) of Walter Reed Army Institute of Research and Naval Medical Research Center to Fort Sam Houston; relocate the Medical Biological Defense elements of Walter Reed Army Institute of Research and Naval Medical Research Center to Fort Detrick; relocate Medical Chemical Defense element of Walter Reed Army Institute of Research to Aberdeen Proving Ground.

- Realigning Lackland AFB, TX, by relocating the inpatient medical function to Brooke Army Medical Center, Ft Sam Houston, TX, establishing it as a Regional Military Medical Center, and converting Wilford Hall Medical Center into an ambulatory care center. Realign Naval Air Station Great Lakes, IL; Sheppard Air Force Base, TX; Naval Medical Center Portsmouth, VA; Naval Medical Center San Diego by relocating their medical enlisted basic and specialty training to Fort Sam Houston, TX.

- Realign Marine Corps Air Station (MCAS) Cherry Point, Fort Eustis, Air Force Academy, Andrews AFB, MacDill AFB, Keesler AFB, Scott AFB, NAS Great Lakes, and Fort Knox, by disestablishing the inpatient mission and converting the hospital to a clinic with an ambulatory surgery center.

- Realigning McChord Air Force Base, WA, by relocating all medical functions to Fort Lewis, WA.

- Creating Joint Centers of Excellence for Battlefield Health and Trauma research at Fort Sam Houston, TX; Infectious Disease research at Walter Reed – Forest Glen, MD; Aerospace Medicine research at Wright Patterson AFB, OH; Regulated medical product development and acquisition at Fort Detrick, MD; Medical Biological Defense research at Fort Detrick, MD; and Chemical Biological Defense research, development & acquisition at Aberdeen Proving Ground, MD These actions realign several facilities to include: leased spaces, Ft Belvoir, Tyndall AFB, Forrest Walter Reed Glen Annex, DC, and others as described in the Recommendation below.

- In addition, the Medical JCSG inputs are reflected in recommendations covering closure and realignments of active duty bases that have been developed by the Military Departments and other Joint Cross Service Groups.

II ORGANIZATION AND CHARTER

a. Group Identity and Organization

On November 15, 2002, the Secretary of Defense formally initiated the 2005 Defense Base Realignment and Closure (BRAC) process. He established the Infrastructure Executive Council (IEC) and the subordinate Infrastructure Steering Group (ISG) to oversee and operate the BRAC 2005 process. The ISG established seven functional groups which formed the basis for its recommendations: Industrial;

Supply and Storage; Technical; Education and Training; Headquarters and Support Activities; Intelligence; and Medical.

The Medical JCSG was tasked with identifying, analyzing, and quantifying all functions within the Military Health System (MHS). The Medical JCSG's area of responsibility, as approved by the Secretary, included all functions within the MHS with no exclusions. The Air Force Surgeon General was selected as Chair for the Medical JCSG. For each MHS function, a senior Medical JCSG member was assigned as a Principal to lead analytical efforts. Functions and assignments were:

- Healthcare Education and Training – Navy Surgeon General

- Healthcare Services – Acting Deputy Assistant Secretary (Health Budgets and Financial Policy), Office of the Assistant Secretary of Defense (Health Affairs)

- Deployable Force Sizing – Joint Staff Surgeon

- Medical and Dental Research, Development and Acquisition – Army Deputy Surgeon General

- Joint Medical and Dental Infrastructure – Medical Officer of the Marine Corps

The Medical JCSG developed its recommendations in three functional areas: Healthcare Services, Healthcare Education and Training, and Medical/Dental Research, Development, and Acquisition. The Medical JCSG determined that Joint Medical and Dental Infrastructure should not be a separate function. Infrastructure is an essential part of capacity determination and that any effective determination of excess capacity must be subsumed within the Healthcare Education and Training, Healthcare Services, and Medical and Dental Research, Development and Acquisition functions. After a review of the medical support for the war plans as developed by the Combatant Commanders, the 20 year force structure plan and the medical manpower requirements as detailed in the FY04-FY10 Program Objective Memorandum, the Deployment Force Sizing subgroup determined that the current force size was appropriate for the wartime support requirements. The subgroups of Joint Medical/Dental Infrastructure and Deployment Force Sizing therefore provided support that is incorporated into the other subgroups' analyses.

Figure 1 presents an overview of the plan the Medical JCSG used for analysis of MHS functions. To support this analytical process, the Medical JCSG empanelled over 30 members to support deliberations.

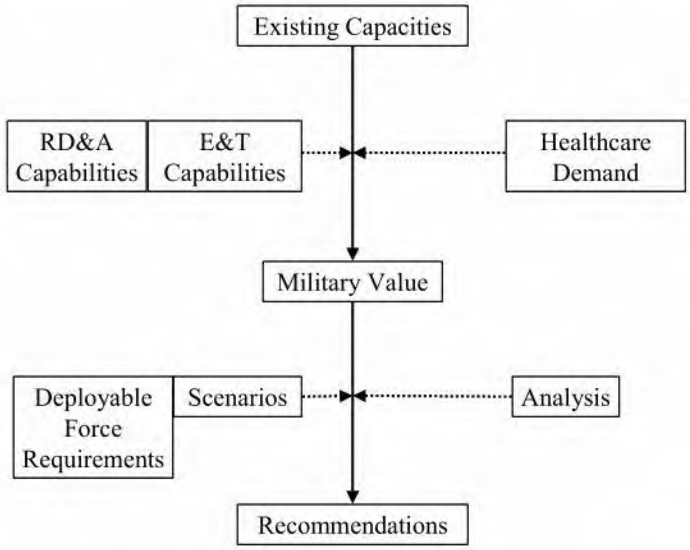


Figure 1. Medical JCSG Plan of Analysis.

b. Functions Evaluated

1. Healthcare Services

The Healthcare Services subgroup evaluated all clinical medical and dental care delivery functions, including all specialty care, required by the population surrounding a military treatment facility. The population is defined as active duty members, active duty family members, retired military and retired military family members either enrolled to that treatment facility for care or residing within 40 miles of the treatment facility. The baseline period for data on clinical throughput was set to Fiscal Year02 as the most recent period of data available to the Medical JCSG at the inception of BRAC 2005. Physical assets supporting the MHS (including the campus facilities, capital/investment equipment, Class VIII storage, and blood) were also evaluated.

The Medical JCSG developed a three-fold analytical framework for the evaluation of healthcare. The Medical JCSG calculated capacity and quantitative military value for each function within each facility. First, the Medical JCSG analyzed data (using the DoD approved optimization model) to identify an optimal approach to reducing excess capacity while minimizing the impacts on average military value across the MHS healthcare functions. This analysis approach was also constrained to ensure sufficient workload to ensure provider currency and surge capability.

Second, the Medical JCSG evaluated hospitals' efficiency at providing inpatient care, in an effort to reduce excess capacity by disestablishing inpatient services at those facilities with low inpatient workloads that do not benefit efficiencies of scale and optimum clinical opportunity to maintain currency in the medical staff supporting those operations. The subgroup obtained approval through the Medical

JCSG to use Average Daily Patient Load (ADPL) to measure efficiency since ADPL is a direct reflection of the average number of beds filled per day by a facility. The subgroup then recommended the disestablishment of the inpatient services at those facilities with an ADPL of less than ten, as long as adequate civilian capacity existed (as determined by TRICARE Management Activity network adequacy reports and informed by the DoD BRAC Beneficiary Working Group).

Third, the Medical JCSG assessed Multi-Service Markets (MSM) to determine if excess capacity could be reduced in each MSM. For all analyses, the Medical JCSG's goal was to ensure services would be located where they would best meet beneficiary demand.

2. Healthcare Education and Training

The Education and Training (E&T) subgroup of the Medical JCSG evaluated all aspects of medical and dental education and training to identify potential opportunities to realign and consolidate programs within and between the Military Departments. This evaluation included both enlisted and officer training, encompassing initial and graduate education, along with continuing education. Graduate medical, dental and specialty training programs throughout the Military Healthcare System were evaluated to include enrollment information. Military medical programs required for operational and mission readiness were identified and evaluated for potential consolidation. The E&T subgroup analyzed continuing medical education to identify military unique programs and reviewed the distribution of current programs and courses. The group identified student throughput, average current student load, and maximum capacity for each program, and measured the classroom capacity for each facility against current programs and throughput permitting estimation of excess capacity at each facility.

The E&T Military Value strategy identified military unique training throughout the MHS. The E&T analysis identified on two key aspects of military medical training: the training required to meet military medicine and operational requirements, and the ability of the military system to provide training equivalent to the civilian sector in a reduced time frame for many enlisted healthcare training programs. Student throughput and facility condition also played a part in the military value matrix score for medical education and training.

The E&T subgroup monitored the impacts of recommended changes in the DoD clinical infrastructure on the ability of the Department to execute its Graduate Medical and Dental Education (GME) programs. The E&T subgroup informed the Medical JCSG on the impacts of their decisions on in-house GME programs.

3. Medical/Dental Research Development and Acquisition

The Medical/Dental Research, Development and Acquisition (RD&A) Medical JCSG subgroup evaluated all aspects of DoD's ability to sustain those capabilities required to effectively discover, develop, acquire and field, medical solutions to address evolving warfighter needs. This evaluation included all aspects of medical and dental research and development, from basic research to advanced demonstration, and encompassed both the initial procurement of developmental items and acquisition of non-developmental items required to sustain and optimize the health and performance of warfighters in the operational theater.

The Medical/Dental Research, Development and Acquisition subgroup evaluated assigned activities to determine the potential for consolidation and mission enhancement, with the goal of establishing Centers of Excellence. For each program, technical and administrative Full Time Equivalents (FTEs), the local commander's estimate of maximum sustainable FTEs within existing facilities, and the used and total available square footage (measured against Fiscal Year03 programs) were utilized to estimate current usage, current capacity, surge capacity requirement and maximum capacity. Subsequent analysis focused on FTEs as the most accurate metric for conducting capacity and military value analysis.

c. Overarching Strategy

The DoD Healthcare system comprises two complementary parts: the Direct Care System comprised of the military treatment facility infrastructure, and the TRICARE health benefit program that provides beneficiaries access to the civilian healthcare system. These clinical healthcare service elements of the system are supported by both medical education and training elements that provide a skilled cadre of military medical professionals who can perform both in-garrison and deployed missions, and RD&A elements that contribute to the current and future readiness of the military health services system to address operational medical problems. The Medical JCSG recommendations affect the Direct Care System and its supporting elements while considering ability of the TRICARE system, as well as the civilian healthcare system to absorb workload where appropriate.

The Medical JCSG developed key strategies to guide the deliberations. These strategies came from an analysis of the BRAC Selection Criteria.

Military Value

- The current and future mission capabilities and the impact on operational readiness of the total force of the Department of Defense, including the impact on joint warfighting, training, and readiness.

- The availability and condition of land, facilities, and associated airspace (including training areas suitable for maneuver by ground, naval, or air forces throughout a diversity of climate and terrain areas and staging areas for the use of the Armed Forces in homeland defense missions) at both existing and potential receiving locations.

- The ability to accommodate contingency, mobilization, surge, and future total force requirements at both existing and potential receiving locations to support operations and training.

- The cost of operations and the manpower implications.

Other Considerations

- The extent and timing of potential costs and savings, including the number of years, beginning with the date of completion of the closure or realignment, for the savings to exceed the costs.

- The economic impact on existing communities in the vicinity of military installations.

- The ability of the infrastructure of both the existing and potential receiving communities to support forces, missions, and personnel.

- The environmental impact, including the impact of costs related to potential environmental restoration, waste management, and environmental compliance activities.

The Medical JCSG focused its efforts on:

- Supporting the warfighter and their families both in-garrison and deployed (the primary mission of the Direct Care System)

- Maximizing military value while reducing infrastructure footprint and maintaining an adequate surge capability

- Maintaining or improving access to care for all beneficiaries using combinations of the Direct Care and TRICARE systems

- Enhance jointness by taking full advantage of the commonality in the Services' healthcare delivery, healthcare education and training, and medical/dental research, development and acquisition functions

- Identifying and maximizing synergies gained from co-location or consolidation opportunities

- Examining out-sourcing opportunities that may allowing DoD to better leverage the US civilian health care system investments

Each of the three MJCSG subgroups developed strategies based on the Medical JCSG key focus areas, and guided by BRAC criteria 1-4. These strategies were approved by the Medical JCSG. The subgroups, functions, and strategies for each are:

- *Healthcare Services*
- Functions: Primary Care, Specialty Care, Inpatient Care, Dental Activities
- Strategy:
  - Match the Direct Care System to the beneficiary population demand
  - Ensure adequate healthcare delivery opportunities for the active duty medical staffs to maintain a ready medical force
  - Reduce infrastructure to match beneficiary demand, while maintaining an adequate and appropriate surge capability as detailed below
- *Healthcare Education & Training*
- Functions: Enlisted Medical Training, Officer Medical Training
- Strategy:
  - Consolidate like training to take advantage of savings from economies of scale without loss of throughput capacity
  - Outsource training that is well established, available and more cost efficient in the civilian community
- *Medical and Dental Research, Development & Acquisition (RD&A)*
  - Functions: Aerospace and Operational Medicine Research, Environmental Medicine and Physiology Research, Hyperbaric and Undersea Medicine Research, Occupational Health and Medical Informatics Research, Infectious Diseases Research, Medical Biological Defense Research, Medical Chemical Defense Research, Combat Casualty Care Research, Medical Systems Acquisition, Information Management/Information Technology Acquisition

- Strategy:
  - Consolidate medical and dental RD&A to take advantage of economies of scale and opportunities for jointness
  - Create Centers of Excellence in medical RD&A areas that will provide critical mass to enhance medical RD&A efficiency and effectiveness
  - Align Medical/Dental RD&A activities with related, non-medical military RD&A activities where appropriate to gain economies of scale and promote critical mass to enhance quality

d. Special Considerations

The MHS mission includes providing ready medical forces to support military operations. The MHS is also a key component affecting the quality of life of service members and their dependents, highlighting the importance of sizing of military treatment facilities to support the beneficiary population. To address the latter factor, the Medical JCSG included in its analysis an assessment of population demographics local to each military treatment facility in question.

In some cases, the population of active duty and active duty beneficiaries surrounding a military treatment facility does not furnish a clinical caseload of sufficient acuity and complexity to keep medical skills current for providers assigned to that military treatment facility. Some military treatment facilities have developed partnering arrangements with nearby facilities (civilian or federal) to provide an appropriate case mix as well as access to enhanced medical infrastructure, such as intensive care units. Historically, the MHS has often expanded its beneficiary population (at selected facilities) to include retirees to enhance clinical opportunities for uniformed providers. In fact, the largest military treatment facilities are located in areas with substantial non-active duty beneficiary populations as well as large numbers of active duty and their dependents. Since facilities with such populations serve as "medical training platforms" for operationally needed medical specialties, population characteristics represent a significant factor in facility capacity. The Medical JCSG implemented capacity measures that accounted for the nature of the total available patient populations at each facility.

The Medical/Dental Research, Development and Acquisition Subgroup reviewed the DoD's ability to sustain those capabilities required to effectively discover, develop, acquire and field medical solutions to address evolving warfighter needs that cannot be met by non-DoD activities. Attainment of these capabilities is dependent on coupling the requisite medical, regulatory (FDA licensure) and scientific/technical expertise with a physical infrastructure that facilitates innovation and productivity.

III ANALYTICAL APPROACH/ANALYSIS

Foundational elements of the BRAC 2005 analytical approach included a detailed discussion of data control mechanisms and data certification, the role of auditors, capacity calculation, and military value calculation have been summarized in Volume One of the Department of Defense's submission to the BRAC Commission. This volume also provides a discussion of military judgment, a review and listing of Selection Criteria 1-8, the role of Policy, and Principle, an overview of the Integration process, and a discussion of the DoD Optimization Model. For review, a brief summary of each specific process the Medical JCSG followed is given below.

a. Capacity Analysis

Capacity analysis was the first of the quantitative analyses performed, and served multiple purposes throughout the BRAC process. The Medical JCSG developed and tested questions, formulas, and filters for validity, adequacy and quality. The Military Departments and Defense Agencies issued a controlled data call in question format to their installations. To assure an equal assessment for all installations, these questions were distributed to all United States (including territories) installations. Analysis of these responses allowed the specific identification of relevant activities by conducting an inventory of installations performing the functions under the purview of the Medical JCSG. This analysis identified those activities that either required more scrutiny in the subsequent analytical phases, or to refinements that provided an analytical basis for their exclusion from further consideration. The additional scrutiny identified opportunities for improvement in efficiency and effectiveness, allowed the formulation of foundational assumptions, selectively fed the military value models, and provided an assessment of an installation's ability to accept additional medical missions.

1. Healthcare Services Capacity Analysis:

The Healthcare Services subgroup analyzed three functions (Inpatient, Outpatient and Dental) of 181 military facilities to determine their specific capacity as well as the overall MHS capacity. The Medical JCSG set the metric of "Current Usage" as workload performed during FY02, the year with the most complete clinical data for the period of the analysis. The Medical JCSG also approved the use of the following acuity weighted metrics: Relative Weighted Products (RWP) for Inpatient care, Relative Value Units (RVU) for Outpatient care and Dental Weighted Values (DWV) for Dental care. These terms are all associated with a well-documented method used by the military medical and dental community to assign a numerical value to the amount of resources consumed during health care transactions.

The first two measures are standards used by MEDICARE to value healthcare services for billing purposes. MEDICARE defines a value of 1.00 as the normative value for any particular transaction ("transactions" are patient/provider interactions, such as taking of a medical history, administration of an immunization, taking an x-ray or an emergency room visit for a broken bone). Values greater than 1.00 represent transactions requiring relatively more resources on average, whereas values less than 1.00 represent transactions that require relatively fewer resources. Numerical values are generally reviewed annually and updated based on multiple factors including, but not limited to, changes in practice patterns and technology. RVUs and RWPs are based on the Centers for Medicare and Medicaid Services CMS (Medicare) values with CHAMPUS (Civilian Health and Medical Program of the Uniformed Services) Maximum Allowable Charge (CMAC) adjustments. The DoD TRICARE Management Activity (TMA) maintains and updates the values every calendar year.

The DWV, according to the DoD Medical Expense Reporting System (MEPRS) Manual (DoD 6010.13-M, Nov 21, 2000), is a weighted value that has been developed for military dental clinical procedures based on American Dental Association (ADA) weighted procedure codes. Additionally, composite lab values (CLVs) are used to measure the intensity of dental laboratory procedures.

The Healthcare Services subgroup used these measures to develop formulas using certified data (e.g., Current Usage, rooms, beds, etc.), and benchmarks (e.g., RVUs per provider, and 80% bed occupancy rate for Medical Centers) to calculate Current and Maximum. The formulas along with the benchmarks were developed through subject matter experts and approved by the Medical JCSG Principals. The subgroup then compared usage to capacity to determine Excess Capacity and entered the results of this comparison to the optimization model to identify candidates for scenarios.

Analysis of the data indicated that there is little excess capacity in Dental Care. There is, however, 206,000 RWPs worth of excess capacity for inpatient capacity. Execution of the Medical JCSG Recommendations should reduce this excess by 36,000 RWPs or 17.6 percent.

Table 1. Summary of Healthcare Capacity Analysis

	Current Usage	Current Capacity	Surge Requirement	Maximum Capacity	Excess Capacity	% Excess
Healthcare Primary Care (RVUs)	11,727,315	16,322,989	16,322,989	18,769,424	7,042,103	38%
Healthcare Specialty Care (RVUs)	19,588,481	20,120,942	20,120,942	22,659,846	3,071,370	14%
Healthcare Inpatient Care (RWPs)	224,303	297,529	291,823	430,418	206,122	48%
Healthcare Dental Care (DWVs)	2,084,051	1,261,120	1,261,120	1,348,160	(735,891)	0%

The complete Healthcare Services capacity analysis is included in the Medical JCSG Capacity Analysis Report, located at Appendix A of this document.

2. Healthcare Education and Training Capacity Analysis:

The Healthcare Education and Training capacity analysis explored the full range of medical education and training, initial and graduate officer training programs, initial and specialized enlisted training, and continuing education of all medical personnel. The Medical JCSG directed the Education and Training subgroup to query all medical activities to ascertain what educational programs existed at each site. The data call required each affected installation to provide the name of each program, the average number of students, the maximum number that could be enrolled, and the number of students who successfully completed each course. Affected installations provided the number of classroom, laboratory and clinical hours required for each course. The Medical JCSG also required each activity to identify the number and size of each standard and laboratory classroom it utilized.

The Education and Training subgroup used this information to calculate current capacity and excess capacity at each activity. The subgroup identified current and maximum classroom capacity and student throughput, calculated excess, and evaluated potential consolidations based on this data. The E&T subgroup inventoried all graduate medical education currently provided throughout the MHS as well as current program capacity, number of students enrolled, and the identification of potential additional capacity.

Although not directly analyzed for realignment and closure of programs, continuing education provided at each installation was captured for completeness. Continuing education programs include medical military operational readiness programs as well as professional healthcare provider courses required to ensure proficiency in current standards of care. The group captured continuing education information in its data call to ensure that military unique programs were not inadvertently eliminated subsequent to an activity realignment or closure.

The three Military Department Surgeons Generals determined the number of students per medical specialty that must be trained within the MHS in-house graduate medical education system. Medical JCSG subject matter experts (SMEs) used this information to calculate how many officers could be trained in the civilian sector. These calculations permitted the Medical JCSG to monitor graduate medical capacity against requirements during scenario development; continuously evaluating the remaining capacity of the MHS for ability to meet graduate medical education requirements.

Table 2 provides a summary of the capacity analysis.

Table 2. Summary of Medical/Dental Education and Training Capacity Analysis

	Current Usage	Current Capacity	Surge Requirement	Maximum Capacity	Excess Capacity	% Excess
Education & Training Classrooms (Students)	7,348	9,493	9,493	16,557	9,210	56%
Education & Training Labs (Students)	3,210	4,152	3,210	14,061	10,851	77%
Education & Training Clinical (Hrs/week)	7,956,185	7,956,185	7,956,185	9,386,780	1,430,596	15%

The complete Healthcare Education and Training capacity analysis is included in the Medical JCSG Capacity Analysis Report, at Appendix A of this document.

3. Medical/Dental Research and Development Capacity Analysis:

The Medical/Dental RDA subgroup employed identical Medical JCSG-approved capacity metrics and formulas across all of its functions, including two measures of capacity:

- Full time equivalents (FTEs)
- Workdays for specialized and unique equipment (e.g., research simulators, special containment laboratories, controlled environment chambers, etc.)

The subgroup equated current usage (i.e., current FTEs and equipment workdays used) to current capacity requirements, and incorporated a 10% surge requirement that it determined from a review of historical RD&A activities. The subgroup determined maximum capacity in FTEs for each responding activity based on its FY03 infrastructure, while maximum capacity for equipment workdays was set as the total available workdays for each reported item of major equipment.

Because there are no standards for optimal space utilization within medical/dental RD&A facilities, the group initially attempted to relate workload (FTEs) to physical plant via a determination of a theoretical optimal ratio of square feet to FTEs for each function. Once FTE and square footage data were obtained, however, it became apparent that there were large variations in the ratio within a particular function. Because it was impossible to reliably relate workload to square footage, the group decided to use FTEs as the primary measure of capacity. Although equipment workdays are also linked to throughput, there is no feasible method to aggregate these measures into a composite that accurately represents capacity. The Medical JCSG approved using the FTE metric as the primary metric for evaluating RD&A functions at relevant installations. The Medical JCSG also addressed limitations on capacity imposed by equipment availability during the scenario development phase through recommendations to replace or relocate major equipment items.

When judged using FTEs as a metric, the overall excess Medical Dental RD&A capacity within the DoD system proved very small, approximately 3 percent of maximum capacity. Many activities are operating at full capacity. Among the units performing the Aerospace and Operational Medicine sub-function, however, the group found a somewhat larger amount of excess capacity (25 percent overall, with most of the excess existing in units located at Brooks City-Base). The Medical JCSG also found a small amount of excess capacity (approximately 10 percent of maximum capacity) within the Medical Chemical Defense function.

Table 3. Medical RD&A Capacity Summary

	Current Usage	Current Capacity	Surge Requirement	Maximum Capacity	Excess Capacity	% Excess
Medical/Dental RD&A Personnel (FTEs)	3,976	3,990	4,373	4,524	151	3%

The complete Medical/Dental Research and Development capacity analysis is included in the Medical JCSG Capacity Analysis Report located at Appendix A of this document.

b. Military Value Analysis

The intent of the military value analysis was to develop a method for informing the Medical JCSG on the quantitative determination of military value for the activities under its consideration. The rankings that resulted from the Military value model provided the starting point for scenario development. The group constructed scenarios using quantitative military value as a primary consideration, but also utilized results of capacity analysis and application of military judgment..

Military judgment is the deliberative process of forming an opinion by discerning and comparing military value applying the approved principles and professional military experience. The Medical JCSG principals, as senior military leaders in the MHS with broad experience, provided the professional military judgment input to the scenario development.

1. Healthcare Services

The Healthcare Services subgroup based their quantitative military value analysis of Health Care Services on weights developed using a consensus methodology by subject matter experts from each branch of the Military Services as approved by the Medical JCSG.

Generally, scoring on individual questions was based on the range of possible values across all facilities. Once the range was established, the subgroup developed a ten-point scale for its scores, using linear cut points to determine the scores for each aspect of military value. The subgroup further determined that the historically demonstrated ability of a facility to support the mission and operational needs of an activity warranted a higher score.

The Medical JCSG ultimately defined a total of six attributes and 16 metrics that correlate to one of the four Military value Final Selection Criteria for Health Care Services. Each metric had a predetermined weight, which was multiplied by the percentage score obtained from each question. The six attributes identified by the sub-group were:

- Demand - A facility's value in meeting the mission is primarily related to the population that it serves. By locating treatment facilities in major markets, that facility provides services to those located there and the population provides the necessary workload needed to keep providers current in their medical skills.

- Civilian Capacity - Military bases are often located in remote or medically underserved areas. It is therefore of Military value to provide health care services in these locations via military treatment facilities.

- Physical Capacity and Facility Condition - The facility capacity and its condition are major components and a large element of mission/operational effectiveness and productivity.

- Operational and Mission Responsiveness - The ability to respond to deployment, mission and operational needs via supplies and beds space.

- Cost Efficiency - The facility's ability to make effective use of financial resources in order to perform its missions. Cost Effectiveness is measured by the cost per unit of workload. These are adjusted for the relative costliness of care provided in the community.

- Throughput - Military Treatment Facilities that produce more workload reduce purchased care costs and, in general, have the ability to reduce costs because of economies of scale.

The complete Healthcare Services Military value scoring plan is included in the Medical JCSG Military value Framework at Appendix B. The Healthcare Education and Training Military value calculations are included in the Medical JCSG Military value Report, at Appendix C.

2. Healthcare Education and Training

In designing the requirements for its installations essential to military value, the Medical JCSG identified key elements of the current military medical education system that were critical from the subject matter expert perspective. Military medical education is centered on operational readiness as medical personnel have to be trained and ready to deploy with the warfighter, keep military personnel fit for duty, and treat illness and injury when it occurs. These duties are complex and require medical personnel of all specialties and skill levels to remain proficient in their areas of expertise.

Using a consensus methodology, the E&T subgroup and subject matter experts (representing all the branches of the Military Services) developed attributes and metrics to assess military value for the MJCSG principals to consider and approve. Generally, scoring on individual questions was based on the range of possible values across all activities. Once the range was established, scores were developed on a ten-point linear point scale. The Medical JCSG approved a total of four attributes and seven associated metrics that pertain to the four Final Selection Criteria that constituted Military Value. The four attributes of Military Value identified by the subgroup were:

- Military Unique Training: Training specific to military needs or situations, or which has no equivalent in the civilian sector.

- Operational/Readiness: An activity's ability to successfully produce fully trained students who meet all standardized requirements.

- Physical Capacity and Facility Condition: The age and general condition of the facility.

- Joint/Integrated Training: The extent to which mission-supporting relationships exist with other Services and other local organizations (DoD or non-DoD)

The Medical JCSG determined that programs which were military unique were an essential component of military value for Healthcare Education and Training. Greater value was assigned to activities that conducted programs that were essential to military medicine and had components unique to the military. Historically, the Services have developed enlisted healthcare support training programs that provide unique military medical skill sets where there is no civilian equivalent. These activities scored high in military value. In addition to these, there are additional enlisted medical training programs that have civilian equivalents but that can complete their training significantly faster than their civilian counterparts. When activities have programs designed to provide civilian-equivalent training in a shorter timeframe, they were given a higher military value score. Higher military value scores were assigned to activities that were able to produce a greater percentage of successful completions with a large throughput. Newer facilities and those in better physical condition received higher scores, as did those where training could be completed in the same geographical area (no requirement for temporary duty or transfer). Using this scoring schema, the E&T subgroup identified those activities and facilities that could best conduct essential military medical education while keeping excess capacity at a minimum.

The complete Healthcare Education and Training Military Value scoring plan is included in the Medical JCSG Military Value Framework at Appendix B. The

Healthcare Education and Training Military Value calculations are included in the Medical JCSG Military Value Report at Appendix C.

3. Medical /Dental Research, Development and Acquisition

The Medical JCSG approved seven attributes and 19 associated metrics that pertain to Final Selection Criteria 1-4. The seven attributes of Medical RD&A military value approved by the Medical JCSG were:

- Mission Scope/Uniqueness - The fraction of the overall DoD mission currently supported by an activity and the extent to which an activity is unique within the DoD in supporting specific mission elements.

- Workforce - The quality of the workforce, its uniqueness within the DoD, and its technical ability to perform work across the spectrum of DoD medical/dental RDA missions.

- Physical Plant Mission - The uniqueness within the DoD of the specialized equipment present at an activity.

- Physical Plant: Condition - The general condition of the buildings and equipment located at an activity.

- Beneficial Relationships - The extent to which mission-supporting relationships exist with other Services and other local organizations (DoD or non-DoD).

- Operational Responsiveness - The degree to which an activity can directly support operations.

- Cost Effectiveness - The relative effectiveness of an activity compared to other activities engaged in similar work.

Each metric was defined by a mathematical formula that included normalization functions as necessary to control for the impact of organizational size on metric values, and to allow metrics to be combined with one another into a single measure of military value. The relative contributions of these attributes and metrics to military value (i.e., their weights) were determined by subject matter experts from each of the three Military Services and the Office of the Secretary of Defense. Weights were determined using a software implementation of the Analytic Hierarchy Process (AHP).

The metrics included in the medical/dental RD&A military value formula measured the capability of each medical/dental RD&A activity, relative to all other medical/dental RD&A activities, to conduct the complete spectrum of DoD medical/dental RD&A missions, including consideration of both workforce capabilities (e.g., skills, training, etc.) and facility capabilities (e.g., specialized equipment, condition, etc.). Military value was based on the historically demonstrated ability of activities to provide RD&A support to operations, and by relative productivity. In addition to determining an overall military value score for each activity, function-specific military value scores were determined based on the proportion of work performed by the activity within each function.

The Medical JCSG relied principally on its own analysis, but talso considered related analyses conducted by the Technical JCSG. The Technical JCSG developed its own independent methodology to evaluate Biomedical RD&A, a broad technical function that corresponds closely with the Medical Dental RD&A function assessed by the Medical JCSG. In recognition of the overlapping responsibilities, early in the analytical process a formal data-sharing agreement between the two JCSGs was developed. The Technical JCSG shared with the Medical JCSG its data and military value scores for the Biomedical function and the Human Systems function, the latter being closely related to several medical/dental RD&A functions. Because the Medical JCSG and Technical JCSG military value scores are based on different methods, they cannot be directly compared with one another, but the comparisons of the relative rankings of activities within each scoring system are meaningful.

The complete Medical/Dental Research, Development and Acquisition Military Value scoring plan is included in the Medical JCSG Military Value Framework at Appendix B. The Medical/Dental Research, Development and Acquisition Military Value calculations are included in the Medical JCSG Military Value Report at Appendix C.

c. Scenario Development

Each Medical Joint Cross-Service subgroup approached scenario development in a way that suited its particular functions, after having its methodology approved by the Medical JCSG.

The Medical JCSG utilized DoD's Optimization tool for complex scenarios that compared large numbers of bases and functions targeted for realignment. The group tailored the Optimization tool's general methodology to support its specific needs and requirements.

In essence, the model's purpose was to take hundreds of possibilities and reduce them to a smaller, more workable subset. For example, the Healthcare Services subgroup used the DoD optimization model to develop alternatives for the best groups of activities/facilities to maintain and still meet healthcare requirements. The model was not as valuable to the E&T subgroup due to the relatively few number of locations performing a particular function. The Medical/Dental RD&A subgroup was also able to narrow its options without the aid of the model, owing to the very limited excess capacity present at most locations and the relatively few number of locations performing a particular function.

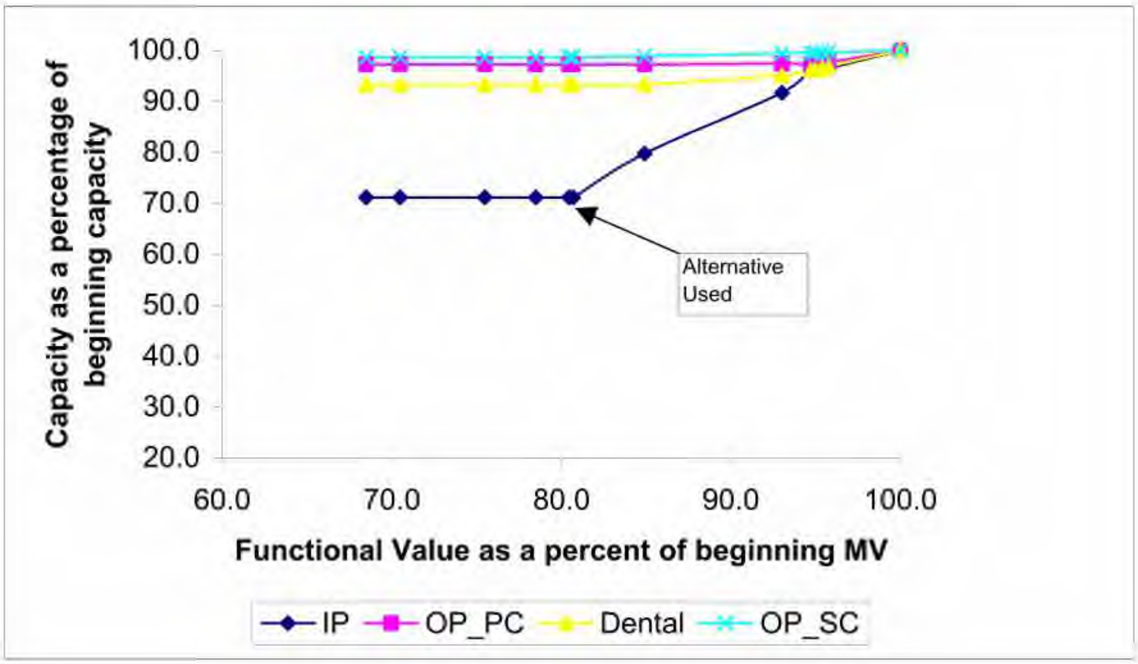
Appendix D presents the "BRAC 2005: Optimization Model for the Medical Joint-Cross Service Group Report" detailing how the MJSG used the optimization model to support the Medical JCSG .

1. Healthcare Services

As mentioned previously, the Medical JCSG used the optimization model for one of its three approaches to evaluate healthcare services. Figure 2 graphically shows the results of the model runs for each case: inpatient (IP), outpatient care (OP_PC), outpatient specialty care (OP_SC) and Dental. Analysis of Figure 2 leads to the result that relatively small reductions in outpatient capacity come at a cost of large decreases in military value making these functions unattractive for further optimization. This appears to be the result of the DoD's efforts over the past ten years to optimize these functions and demonstrates the success of these efforts. The Medical JCSG determined that changes in outpatient and dental capacities would be done on a case by case basis rather than system-wide. For inpatient functions, the relationship between the military value and capacity shows that, sizable capacity reductions are possible for relatively small reductions in military value. This reflects the remaining legacy inpatient infrastructure that is operating at inefficiently small patient loads. Sensitivity analysis on the model results led the Medical JCSG to determine that the solution noted at the arrow on Figure 2 was the best in terms of trade-offs between military value, capacity, and surge.

With this information as guidance, the Healthcare Services subgroup focused their attention to scenario development on the 53 facilities in the MHS that had an inpatient function. Three facilities were immediately eliminated as choices for closure during the scenario development process due to their status as "isolated" as designated by the 1996 Section 733 Update: Report of the Working Group on Sustainment Base and Training. This study was originally directed by an August 1995 Program Decision Memorandum issued by the Deputy Secretary of Defense to identify the number of physicians needed to support wartime operations. The Medical JCSG determined the evaluation of Section 733 Update Study listing of these facilities to still be valid. The DoD BRAC Beneficiary Working Group established by Section 726 of the 2003 National Defense Authorization Act confirmed this finding. The designation of a facility as isolated rests on the ability of the local community to support the healthcare needs of the active duty beneficiary population.

Figure 2. Healthcare Capacity as a Function of Military Value



The Medical JCSG used the same three-fold approach to develop scenarios as they did to evaluate healthcare functions:

- Reduce excess capacity and increase the average military value and retain the maximum Military Value for the Military Health System (MHS) as a whole using the results of the DoD Optimization Model, carefully assessing surge capabilities;

- Reduce inefficiencies by disestablishing inefficient inpatient operations (those with an ADPL of 10 or less); and

- Evaluate Multi-Service Markets for opportunities to consolidate healthcare and reduce infrastructure overhead, while carefully assessing surge capabilities.

This three-fold analysis did result in some overlap where facilities were identified by more than one approach. This overlap was addressed during the MJCSG deliberations.

All 53 hospitals with inpatient activities were evaluated using the first two approaches. The subgroup first identified 12 facilities that had an ADPL of less than 10. Six of these were exempted from closure and no scenarios were developed: three due to designation as isolated facilities by the section 733 Study, and three had or were already in the process of closing their inpatient services. The subgroup developed scenarios on the remaining six. Of these six, the Medical JCSG approved three as recommendations and three were rejected by the Medical JCSG due to inadequate civilian network capacity to absorb the facilities' workload.

After the data was evaluated by the DoD Optimization Model, the model reduced excess capacity (while staying within outlined constraints) and maximized average military value resulting in the proposed closure of inpatient functions at 30 facilities. The Medical JCSG chose to constrain the model using three factors:

- The Fiscal Year02 current usage level of inpatient throughput is more than sufficient to ensure provider currency
- Allocate no more capacity at a facility than its population demands, and
- Allocate workload to facilities at a level that does not exceed individual maximum capacity.

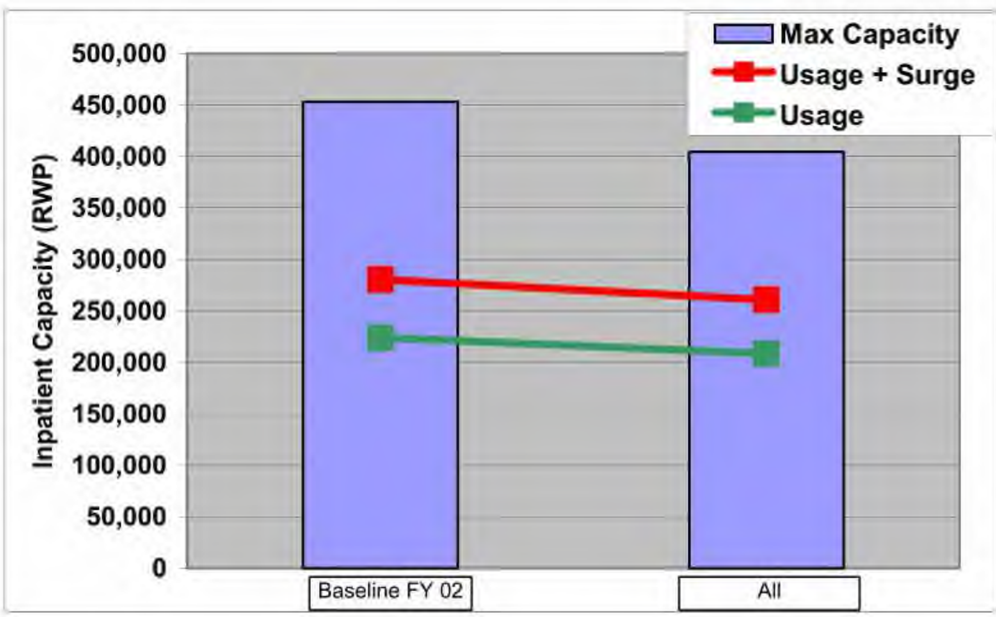
After consideration for isolated facilities, overlap with other approaches, and facilities known to be in the process of closing their inpatient activities, the Medical JCSG directed development of scenarios for full analysis on 15 facilities under this Optimization Model Closure sub-strategy. The Medical JCSG approved five recommendations that were purely based on the DoD Optimization Model results after further considerations of (a) refined capacity and Military Value data, (b) military judgment concerning access to local care, (c) further information on facilities in the process of closing their inpatient activities, and (d) consideration of Army plans to increase the active duty population due to its personnel re-stationing plans.

The Medical JCSG also conducted a in-depth review of Multi-Service Market (MSM) areas because these were not as effectively modeled using the DoD Optimization Model. The Medical JCSG focused on the MSMs because these markets have multiple military treatment facilities and highly overlapping beneficiary populations, in addition to significance of these markets to the military health system from beneficiary, training and force projection aspects. The Medical JCSG also noted that in many cases the facilities in the Multi-Service markets were built during the Cold War and that medical science, practice, and current military doctrine have significantly reduced the facility requirements for medical care. In fact, the Medical JCSG noted that the facilities are currently being operated at levels well below their design capacities. The Medical JCSG directed that analysis include the infrastructure changes that could result if at least one of the medical facilities in a multi-service market was returned to its designed or "as built" capacity. Analysis showed that this approach offered the potential for large reductions in infrastructure without reducing beneficiary access, provider training capabilities, or adequacy of surge capacity.

The Healthcare Services subgroup evaluated all 12 MSMs as part of the third approach. The Medical JCSG directed that 10 scenarios be submitted for full analysis, including alternatives with a single Multi-Service market that affected seven of the MSMs. The Medical JCSG decided to forward eight candidate recommendations from these scenarios. Three realigned both outpatient and inpatient missions from one facility to another, one realigned both outpatient and inpatient missions from one facility to two other facilities, two realigned inpatient missions from one facility to another and two disestablished inpatient missions.

The Medical JCSG continually reviewed the levels of inpatient care in the system to ensure that adequate surge capacity remained in the system. Figure 3 shows the remaining capacity in the medical system before and after the implementation of the Medical JCSG recommendations relative to the Fiscal Year 02 baseline inpatient production of 233,000 RWPs per year.

Figure 3. Inpatient Capacity Reduction for MJCSG Recommendations



2. Healthcare Education and Training:

For scenario development, the Medical JCSG focused on the identification of redundancies within the military medical training system. To date, the MHS has successfully implemented multiple joint military medical training programs. The Medical JCSG evaluated all medical training programs for potential consolidation.

Medical training for enlisted personnel teaches basic medical concepts, however, service-specific curriculum results in training differences that can be problematic in operations where medical personnel support units from other military departments. With the increase in joint operations, joint training to facilitate interoperability and intra-operability is becoming necessary. To assess potential joint options, the Medical JCSG analyzed each of the three basic enlisted medical training locations (Army, Navy and Air Force). Only one of the locations (Fort Sam Houston, TX) was found to have the required physical capacity, clinical rotation capacity, and field training facilities within the local area to support consolidation of all three training programs. Further analyses confirmed this assessment and a scenario developed for an Enlisted Medical Training Center of Excellence. The result was a robust, single location for most (excepting Aerospace medicine training described in the next paragraph) basic and advanced enlisted medical training. The Medical JCSG approved the candidate recommendation for a joint enlisted training program for all services at Fort Sam Houston, TX.

The Medical JCSG developed a scenario to create a joint aerospace medical training program. Currently, the Army and Navy train at Naval Air Station Pensacola, Florida, while the Air Force trains at Brooks City Base, Texas. The Navy medical program is tied closely to the Navy Operational Flight program, the Medical JCSG determined that the Navy Aerospace Medicine program would lose effectiveness if moved from its present location. The Medical JCSG subsequently approved a candidate recommendation to move the Air Force Aerospace Medical Training Program to Wright-Patterson as an enabling scenario to the Brook City Base closure and aligning this training with the parallel movement of aerospace research and development to the same location.

The Medical JCSG approved the realignment of the Armed Forces Institute of Pathology (AFIP) as an enabling scenario to the Walter Reed Base realignment scenario. The AFIP candidate recommendation moves the two military essential functions of the AFIP, the Armed Forces Forensic Pathology Institute and the Deoxyribonucleic Acid (DNA) registry, to Dover Air Force Base. The Medical Museum within AFIP would move to either the National Naval Medical Center or the National Mall, and distributing routine pathology service within the MHS and out-sourcing.

Throughout scenario development the Medical JCSG closely monitored graduate medical and other clinical training programs conducted within military medical treatment facilities to ensure adequate capacity remained if medical facility realignment and closure recommendations were implemented.

3. Medical/Dental Research, Development and Acquisition

Medical/Dental RD&A Scenario development was driven by the goal of achieving transformation through collocation, to the greatest extent possible, of those activities or organizational sub-elements involved in a particular Medical/Dental RD&A function. Historically, each Medical/Dental RD&A function has been performed in multiple locations, with an individual activity often performing multiple functions. This situation resulted from both organizational preferences and platform-specific considerations. The Medical JCSG noted that, while some geographic diversification is necessary to provide researchers with access to operational communities, the level of diversification that currently exists within some functions is not required, and tends to foster duplication of resources and inhibit inter-Service cooperation and coordination. With these inefficiencies in mind, the Medical JCSG adopted several principles to guide scenario development:

- Intellectual critical mass is increased and beneficial technical interaction is promoted when all work of a similar nature, whether medical or non-medical in focus, is performed at the same location.

- Utilization of specialized equipment and avoidance of equipment and facility duplication are promoted when all work of a similar nature, whether medical or non-medical in focus, is performed at the same location

- Co-location of all work of a similar nature at a single site promotes a joint perspective and sharing of expertise and work in areas of joint interest

- Management costs may be reduced when related Service activities co-locate, due to increased opportunities to share management functions

- Co-location of military medical research activities with related military education and clinical activities provides synergistic opportunities for sharing of technical staff among these three major functions

- Relocation of RD&A activities from leased space provided for increased co-location synergies as well as an increase in force protection posture

- Co-location of military medical research activities with related military clinical activities promotes translational research that fosters rapid application of research findings to health care delivery, and provides synergistic opportunities to bring clinical insight into bench research through sharing of staff across the research and health care delivery functions

Based on the above transformational principles, the Medical/Dental RD&A working group developed a set of "Centers of Excellence." The Medical JCSG approved five candidate recommendations that created a total of six centers of excellence: Aerospace and Operational Medicine research; Battlefield Trauma and Health Research, Infectious Diseases Research, Hyperbaric and Undersea Medicine Research, and Medical Chemical Defense Research; and, finally, Medical/Dental RD&A management. Development of these Centers of Excellence would allow for maximizing the utility of medical RD&A investments through the concentration of talent and equipment.

During the development of the final recommendations for the Centers of Excellence, efforts were made to maintain integration with not only the other Medical JCSG recommendations but those of the Technical JCSG as well. This was done to maximize the synergy with other RD&A activities and to ensure that the medical RD&A activities would maintain strong connections to the non-medical research activities.

IV FORCE STRUCTURE PLAN

The Defense Base Closure and Realignment Act of 1990, as amended, required the Secretary of Defense to make his closure and realignment recommendations on the basis of a force structure plan, final selection criteria, and installation inventory. This force structure plan was based on an assessment of probable threats to national security during the 20-year period beginning with fiscal year 2005, the probable end-strength levels and major military units to meet these threats, and the anticipated levels of funding available for national defense purposes during that period.

Medical force structure includes two aspects: force sizing and force posturing. Medical force sizing relates to providing the proper number of medical forces to meet mission requirements. Medical force posturing is placing those forces where they are able to accomplish their training and mission most effectively.

Sizing operational military medical forces is a function of the size of the operational military forces and the concepts of operations for deploying those military forces. The DoD is currently undergoing a shift in its deployment concepts, which may result in the need for smaller, more capable deployed forces. In addition, the medical concept of operations is changing from a theater-centric model of care to one where causalities are rapidly removed to highly capable medical facilities outside the theater operational area. These changes may affect the future sizing of supporting operational medical forces, but the nature and extent of these changes remains in flux. Inspection of the FY06 Program Objective Memorandum and the 20 Year Force Structure plan showed that the current medical capacity/medical force will accommodate the military forces and support current war-planning targets for the foreseeable future. This resulted in the Medical JCSG's decision to use the current medical force size.

In accordance with the BRAC 2005 guidance, personnel not specifically realigned within a recommendation were added to the savings for that recommendation. We anticipate that, during implementation, these savings will be readdressed and may be increased or decreased on a case-by-case basis in line with the needs of the effected Service.

Medical force posturing is embodied in the deliberations of each of the subgroups through their military value computations and exercised through the military judgment of the Medical JCSG.

V SURGE REQUIREMENTS

To execute the defense strategy, U.S. forces need flexible, adaptive, and decisive joint capabilities that can operate across the full spectrum of military contingencies. However, in today's security environment, it is impossible to predict with confidence which nations, combinations of nations, or non-state actors may threaten U.S. interests at home or abroad. To mitigate this risk, the United States must anticipate a broad range of capabilities that an adversary might employ and the necessary capabilities, including the capacity to surge, that the United States must field to dissuade, deter, or defeat an adversary.

The Military Departments and JCSGs were required to account for surge capacities throughout the multiple steps of their analyses. Each JCSG was required to determine any surge capacities necessary to account for assessments provided in the force structure assessment prepared by the Chairman of the Joint Chiefs of Staff, to assess capacity available to surge in the installations evaluated and to use military value analyses to value the capability to accommodate surge. For the last of these, the Medical JCSG required each subgroup to assess the "ability to accommodate contingency, mobilization, surge, and total future force requirements," while criterion one required a consideration of "current and future" mission capabilities.

a. Healthcare Services Surge Requirements

The Military Healthcare System has built in mechanisms to adjust for surge by utilizing the TRICARE program. When outpatient care demand exceeds capacity, facilities can expand hours and/or refer patients to civilian providers who have agreed to participate in the TRICARE network. Referral to the network occurs regularly when the care required is not available, but would be used more methodically if the facility encounters sustained surge. Department of Defense policy on priority of care dictates that retirees will be referred first, followed by active duty family members until the facility reaches a "steady state" of demand and capacity. This effectively makes all of the capacity in a facility, as well as the relevant civilian capacity available to meet surge requirements.

Inpatient care is different because most facilities operate at about 75% bed occupancy (80% for Medical Centers and 70% for all other hospitals) and would fill up all their beds (i.e., go to 100% bed occupancy) before sending patients to participating civilian hospitals. In addition, the National Disaster Medical System (NDMS) allows expansion into Veterans Administration and other civilian hospitals. This also makes a significant surge capacity available to the DoD.

The Medical JCSG approved calculating surge requirement for inpatient care by multiplying Current Usage times 1.25 for Medical Centers and 1.43 for other hospitals. This estimates the amount of workload that would be performed if the facility were at 100% bed occupancy. Figure 3 above shows the remaining capacity in the medical system before and after the implementation of the Medical JCSG recommendations relative to the Fiscal Year 02 baseline inpatient production of 233,000 RWPs per year.

b. Healthcare Education and Training Surge Requirements

The Healthcare Education and Training system has built in mechanisms for addressing surge. For most non-degreed health care providers, (which accounts for the majority of MHS education and training) additional classes could be offered by utilizing a multi-shift class approach for in-house courses and taking advantage of local civilian offerings (i.e. community colleges, universities, etc.). For degreed providers, recruitment of civilian counterparts could be used to increase staffing numbers. These individuals would require indoctrination training, again, easily accommodated by extended hour/multi-shift course offerings. However, the long lead-times required to fully educate and train providers limits the development of meaningful short-term surge capacity. Based in these considerations the Medical JCSG did not identify a surge requirement for this function.

c. Medical/Dental Research, Development and Acquisition

The Medical JCSG recognized that the surge requirements for Medical/Dental RD&A are difficult to directly assess because of (a) substantial uncertainties over the technical nature of surge requirements (and thus the resources required to address them) and (b) the unpredictability of Research and Development progress (which affects the time and effort required to meet requirements). In the absence of any standards that relate RD&A workloads to requirements, the Medical JCSG estimated a surge requirement for Medical/Dental RD&A equal to 10 percent of current workload, based on an analysis of changes in intramural RDT&E funding levels over a 10 year period. Because the size of the Medical/Dental RD&A workforce is tied to budgets rather than manpower authorizations, changes in requirements that are accompanied by changes in intramural funding can be expected to roughly translate to changes in level of effort expended (typically achieved through use of in-house contractors).

VI RECOMMENDATIONS

Summary of Recommendations:

- Closed nine inpatient functions in favor of market consolidation (2) or out-sourcing (7).

- Realigned McChord AFB, WA, clinic and consolidated healthcare at Ft Lewis, WA.

- Closed Brooks City Base.

- Reorganized healthcare in the National Capital Region by realigning all healthcare at Walter Reed Army Medical Center main campus to the Joint Walter Reed National Military Medical Center at Bethesda, MD. and Ft Belvoir, VA. Disestablished the Armed Forces Institute of Pathology, redistributing military unique functions, allowing the disposal of the current Walter Reed Army Medical Center main campus facilities.

- Reorganized healthcare in San Antonio, TX by realigning inpatient care from Wilford Hall Medical Center, Lackland AFB to a Joint Regional Medical Center at Ft Sam Houston, TX. Resized the current Wilford Hall Medical Center to an ambulatory care center. Co-located all (except Aerospace Medicine) enlisted medical training to Ft. Sam Houston.

- Consolidated medical Research, Development and Acquisition activities into Joint Centers of Excellence for Aerospace Medicine Research, Infectious Disease Research, Battlefield Health and Trauma Research, Regulated Medical Product Development and Acquisition, Medical Biological Defense Research, and Chemical/Biological Defense Research, Development & Acquisition.

- In addition, the MJCSG inputs are reflected in recommendations covering closure and realignments of active duty bases that have been developed by the Military Departments and other Joint Cross Service Groups.

a. Convert Inpatient Services to Clinics

Recommendation: Realign Marine Corps Air Station Cherry Point, NC by disestablishing the inpatient mission at Naval Hospital Cherry Point; converting the hospital to a clinic with an ambulatory surgery center.

Realign Fort Eustis, VA, by disestablishing the inpatient mission at the Fort Eustis Medical Facility; converting the hospital to a clinic with an ambulatory surgery center.

Realign the United States Air Force Academy, CO, by relocating the inpatient mission of the 10th Medical Group to Fort Carson Medical Facility, CO; converting the 10th Medical Group into a clinic with ambulatory surgery center.

Realign Andrews Air Force Base, MD, by disestablishing the inpatient mission at the 89th Medical Group; converting the hospital to a clinic with an ambulatory surgery center.

Realign MacDill Air Force Base, FL, by disestablishing the inpatient mission at the 6th Medical Group; converting the hospital to a clinic with an ambulatory surgery center.

Realign Keesler Air Force Base, MS, by disestablishing the inpatient mission at the 81st Medical Group; converting the medical center to a clinic with an ambulatory surgery center.

Realign Scott Air Force Base, IL, by disestablishing the inpatient mission at the 375th Medical Group; converting the hospital to a clinic with an ambulatory surgery center.

Realign Naval Station Great Lakes, IL, by disestablishing the inpatient mission at Naval Hospital Great Lakes; converting the hospital to a clinic with an ambulatory surgery center.

Realign Fort Knox, KY, by disestablishing the inpatient mission at Fort Knox's Medical Facility; converting the hospital to a clinic with an ambulatory surgery center.

Justification: The Department will rely on the civilian medical network for inpatient services at these installations. This recommendation supports strategies of reducing excess capacity and locating military personnel in activities with higher military value with a more diverse workload, providing them with enhanced opportunities to maintain their medical currency to meet COCOM requirements. Additionally, a robust network with available inpatient capacity of Joint Accreditation of Hospital Organizations (JCAHO) and/or Medicare accredited civilian/VA hospitals is located within 40 miles of the referenced facilities.

Payback: The total estimated one-time cost to the Department of Defense to implement this recommendation is $12.925M. The net of all costs and savings to the Department during the implementation period is a savings of $250.876M. Annual recurring savings to the Department after implementation are $60.165M with payback expected immediately. The net present value of the costs and savings to the Department over 20 years is a savings of $818.094M.

Economic Impact on Communities: Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 69 jobs (38 direct jobs and 31 indirect jobs) over the 2006-2011 period in the New Bern, NC Micropolitan Statistical Area, which is 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 78 jobs (34 direct jobs and 44 indirect jobs) over the 2006-2011 period in the Virginia Beach-Norfolk-Newport News, VA-NC Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 11 jobs (6 direct jobs and 5 indirect jobs) over the 2006-2011 period in the Colorado Springs, CO Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 265 jobs (160 direct jobs and 105 indirect jobs) over the 2006-2011 period in the Washington-Arlington-Alexandria, DC-VA-MD-WV Metropolitan Division, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 35 jobs (19 direct jobs and 16 indirect jobs) over the 2006-2011 period in the Tampa-St. Petersburg-Clearwater, FL Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 352 jobs (212 direct jobs and 140 indirect jobs) over the 2006-2011 period in the Gulfport-Biloxi, MS Metropolitan Statistical Area, which is 0.23 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 143 jobs (77 direct jobs and 66 indirect jobs) over the 2006-2011 period in the St. Louis, MO-IL Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 122 jobs (45 direct jobs and 77 indirect jobs) over the 2006-2011 period in the Lake County-Kenosha County, IL-WI Metropolitan Division, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 147 jobs (85 direct jobs and 62 indirect jobs) over the 2006-2011 period in the Elizabethtown, KY Metropolitan Statistical Area, which is 0.22 percent of economic area employment.

The aggregate economic impact of all recommended actions on these economic regions of influence was considered and is at Appendix B of Volume I.

Community Infrastructure: A review of community attributes indicates no issues regarding the ability of the infrastructure of the community to support missions, forces and personnel. Civilian inpatient capacity exists in the area to provide services to the eligible population. There are no known community infrastructure impediments to implementation of all recommendations affecting the installations in this recommendation.

Environmental Impacts: This recommendation could have a minimal impact on water resources at Fort Carson where increased installation population may require upgrade of water infrastructure. This recommendation has no impact on air quality, cultural, archeological, or tribal resources; dredging; land use constraints or sensitive resource areas; marine mammals, resources, or sanctuaries; noise; waste management; or wetlands. This recommendation will require spending approximately $100K for environmental compliance activities. This cost was included in the payback calculation. This recommendation does not otherwise impact the costs of environmental restoration, waste management, and environmental compliance activities. The aggregate environmental impact of all recommended BRAC actions affecting the bases in this recommendation has been reviewed. There are no known environmental impediments to implementation of this recommendation.

b. McChord Air Force Base

Recommendation: Realign McChord Air Force Base, WA, by relocating all medical functions to Fort Lewis, WA.

Justification: The primary rationale for this recommendation is to promote jointness and reduce excess capacity. This recommendation supports strategies of reducing excess capacity and locating military medical personnel in areas with enhanced opportunities for medical practice. McChord AFB's medical facility produced 44,283 Relative Value Units (RVUs) in FY02, which is well below the Military Health System average of 166,692 RVUs. It's Healthcare Services Functional Military Value of 51.45, is much lower than that of Ft Lewis (73.30). Military personnel stationed at McChord AFB's Medical Facility can be placed in activities of higher military value with a more diverse workload, providing them with enhanced opportunities to maintain their medical currency and making them better able to support Army medical readiness requirements. Approximately 169 military and civilian authorizations will be realigned to Fort Lewis in order to maintain the current level of effort in providing care to the McChord AFB beneficiary population. The remaining civilian authorizations and contractors at McChord AFB that represent unnecessary overhead will be eliminated. Military personnel that are filling similar "overhead positions" will be redistributed by the Service to replace civilian and contract medical personnel elsewhere in the Military Health System activities of higher military value. The large savings along with the reduction of inefficiencies and workload available supports this action. While the jobs are lost in the military system the same type of job is available in the community.

Payback: The total estimated one-time cost to the Department of Defense to implement this recommendation is $1.091M. The net of all costs and savings to the Department during the implementation period is a savings of $55.124M. Annual recurring savings to the Department after implementation are $11.635M with a payback expected immediately. The net present value of the costs and savings to the Department over 20 years is a savings of $164.394M.

Economic Impact on Communities: Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 101 jobs (55 direct jobs and 46 indirect jobs) over the 2006-2011 period in the Tacoma, WA Metropolitan Division, which is less than 0.1 percent of economic area employment. The aggregate economic impact of all recommended actions on this economic region of influence was considered and is at Appendix B of Volume I.

Community Infrastructure: A review of community attributes indicates no issues regarding the ability of the infrastructure of the communities to support missions, forces and personnel. Civilian inpatient capacity exists in the area to provide services to the eligible population. There are no known community infrastructure impediments to implementation of all recommendations affecting the installations in this recommendation.

Environmental Impact: This recommendation has no impact on air quality, cultural, archeological, or tribal resources; dredging; and use constraints or sensitive resource areas; marine mammals, resources, or sanctuaries; noise; threatened and endangered species or critical habitat; waste management; water resources; or wetlands. This recommendation will require spending approximately $100K for environmental compliance activities. This cost was included in the payback calculation. This recommendation does not otherwise impact the costs of environmental restoration, waste management, and environmental compliance activities. The aggregate environmental impact of all recommended BRAC actions affecting the bases in this recommendation has been reviewed. There are no known environmental impediments to implementation of this recommendation.

c. Brooks City Base, TX

Recommendation: Close Brooks City-Base, San Antonio, TX. Relocate the Air Force Audit Agency and 341st Recruiting Squadron to Randolph AFB. Relocate the United States Air Force School of Aerospace Medicine, the Air Force Institute of Occupational Health, the Naval Health Research Center Electro-Magnetic Energy Detachment, the Human Systems Development and Acquisition function, and the Human Effectiveness Directorate of the Air Force Research Laboratory to Wright Patterson Air Force Base, OH. Consolidate the Human Effectiveness Directorate with the Air Force Research Laboratory, Human Effectiveness Directorate at Wright Patterson Air Force Base, OH. Relocate the Air Force Center for Environmental Excellence, the Air Force Medical Support Agency, Air Force Medical Operations Agency, Air Force Element Medical Defense Agency, Air Force Element Medical-DoD, Air Force-Wide Support Element, 710th Information Operations Flight and the 68th Information Operations Squadron to Lackland Air Force Base, TX. Relocate the Army Medical Research Detachment to the Army Institute of Surgical Research, Fort Sam Houston, TX. Relocate the Non-Medical Chemical Biological Defense Development and Acquisition to Edgewood Chemical Biological Center, Aberdeen Proving Ground, MD. Disestablish any remaining organizations.

Realign Holloman AFB by disestablishing the high-onset gravitational force centrifuge and relocating the physiological training unit (49 ADOS/SGGT) to Wright-Patterson AFB.

Justification: This recommendation enables technical synergy, and positions the Department of the Air Force to exploit a center-of-mass of scientific, technical, and acquisition expertise required by the Force Structure Plan of 2025. Greater synergy across technical capabilities and functions will be achieved by consolidating geographically separate units of the Air Force Research Laboratory

The end state will co-locate the Human Systems Development & Acquisition function and the Human Systems Research function with Air Force Aerospace Medicine and Occupational Health education and training. This action will co-locate the Development & Acquisition for Human Systems with the Research function and will concentrate acquisition expertise for Human Systems at one site. Additionally, the relocation of the physiological training unit from Holloman AFB with the relocation of the high-onset gravitational-force centrifuge, enables the continued use of a critical piece of equipment required for both Human Systems Research and Aerospace Medicine Education and Training. This end state will also increase synergy with the Air Platform Research and Development & Acquisition functions and continue the efficient use of equipment and facilities implemented under Biomedical Reliance and BRAC 91 at Wright Patterson AFB, OH.

Co-location of combat casualty care research activities with related military clinical activities of the trauma center currently located at Brooke Army Medical Center, Fort

Sam Houston TX, promotes translational research that fosters rapid application of research findings to health care delivery, and provides synergistic opportunities to bring clinical insight into bench research through sharing of staff across the research and health care delivery functions. The availability of a co-located military trauma center also provides incentives for recruitment and retention of military physicians as researchers, and is a model that has proven highly successful in civilian academic research centers.

Edgewood Chemical and Biological Center, Aberdeen Proving Ground, is home to the military's most robust infrastructure supporting research utilizing hazardous chemical agents. Relocation of the Non-medical Chemical Biological Defense Development and Acquisition to Aberdeen Proving Ground will increase synergy, focus on joint needs, and efficient use of equipment and facilities by co-locating Tri-Service and Defense activities performing functions in chemical-biological defense and medical RDA.

This recommendation also moves the Air Force Center for Environmental Excellence (AFCEE) to Lackland AFB, where it will be co-located the Air Force Real Property Agency (AFRPA) that is being relocated to Lackland in a separate recommendation. The military value of AFCEE is 265th out of 336 entities evaluated by the Major Administrative and Headquarters (MAH) military value model. Lackland Air Force Base is ranked 25th out of 336.

Payback: The total estimated one-time cost to the Department of Defense to implement this recommendation is $325.285M. The net of all costs and savings to the Department during the implementation period is a cost of $45.934M. The annual recurring savings to the Department after implementation is $102.064M, with a payback expected in 2 years. The net present value of the costs and savings to the Department over 20 years is a savings of $940.707M.

Economic Impact on Communities: Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 29 jobs (17 direct jobs and 12 indirect jobs) in the Alamogordo, NM Micropolitan Statistical Area, which is 0.11 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 4,081 jobs (2097 direct jobs and 1984 indirect jobs) in the San Antonio, TX Metropolitan Statistical Area, which is 0.4 percent of economic area employment.

The aggregate economic impact of all recommended actions on these economic regions of influence was considered and is at Appendix B of Volume I.

Community Infrastructure: A review of community attributes indicates no issues regarding the ability of the infrastructure of the communities to support missions, forces, and personnel. There are no known community infrastructure impediments to implementation of all recommendations affecting the installations in this recommendation.

Environmental Impact: This recommendation is expected to impact air quality at Fort Sam Houston, Wright-Patterson, and Aberdeen Proving Ground. New source review permitting and permit modifications may be required. This recommendation has the potential to impact cultural or historic resources at Fort Sam Houston, Randolph, Lackland, Aberdeen Proving Ground, Brooks, and Wright-Patterson. Additional operations at Fort Sam Houston and Wright-Patterson may further impact threatened and endangered species leading to additional restrictions on training or operations. Significant mitigation measures to limit releases at Fort Sam Houston may be required to reduce impacts to water quality and achieve US EPA water quality standards. Increases in population and operations at Aberdeen Proving Ground may require upgrades/purchase of additional waste management services. Modification of the hazardous waste program at Randolph and Wright-Patterson may be necessary. Additional operations may impact wetlands at Wright-Patterson and Lackland, which may restrict operations. This recommendation has no impact on dredging; marine mammals, resources, or sanctuaries; land use constraints or sensitive resource areas; or noise. This recommendation will require spending approximately $ 451K for waste management and environmental compliance activities. This cost was included in the payback calculation. Brooks City Base reports $4.19M in environmental restoration costs. Because the Department has a legal obligation to perform environmental restoration regardless of whether an installation is closed, realigned, or remains open, this cost was not included in the payback calculation. This recommendation does not otherwise impact the costs of environmental restoration, waste management, or environmental compliance activities. The aggregate environmental impact of all recommended BRAC actions affecting the bases in this recommendation has been reviewed. There are no known environmental impediments to implementation of this recommendation.

d. Walter Reed National Military Medical Center Bethesda

Recommendation: Realign Walter Reed Army Medical Center, Washington, DC, as follows: relocate all tertiary (sub-specialty and complex care) medical services to National Naval Medical Center, Bethesda, MD, establishing it as the Walter Reed National Military Medical Center Bethesda, MD; relocate Legal Medicine to the new Walter Reed National Military Medical Center Bethesda, MD; relocate sufficient personnel to the new Walter Reed National Military Medical Center Bethesda, MD, to establish a Program Management Office that will coordinate pathology results, contract administration, and quality assurance and control of DoD second opinion consults worldwide; relocate all non-tertiary (primary and specialty) patient care functions to a new community hospital at Ft Belvoir, VA; relocate the Office of the Secretary of Defense supporting unit to Fort Belvoir, VA; disestablish all elements of the Armed Forces Institute of Pathology except the National Medical Museum and the Tissue Repository; relocate the Armed Forces Medical Examiner, DNA Registry, and Accident Investigation to Dover Air Force Base, DE; relocate enlisted histology technician training to Fort Sam Houston, TX; relocate the Combat Casualty Care Research sub-function (with the exception of those organizational elements performing neuroprotection research) of the Walter Reed Army Institute of Research (Forest Glen Annex) and the Combat Casualty Care Research sub-function of the Naval Medical Research Center (Forest Glen Annex) to the Army Institute of Surgical Research, Fort Sam Houston TX; relocate Medical Biological Defense Research of the Walter Reed Army Institute of Research (Forest Glen Annex) and Naval Medical Research Center (Forest Glen Annex) to Fort Detrick, MD, and consolidate it with US Army Medical Research Institute of Infectious Diseases; relocate Medical Chemical Defense Research of the Walter Reed Army Institute of Research (Forest Glen Annex) to Aberdeen Proving Ground, MD, and consolidate it with the US Army Medical Research Institute of Chemical Defense; and close the main post.

Justification: This recommendation will transform legacy medical infrastructure into a premier, modernized joint operational medicine platform. This recommendation reduces excess capacity within the National Capital Region (NCR) Multi-Service Market (MSM: two or more facilities co-located geographically with "shared" beneficiary population) while maintaining the same level of care for the beneficiaries. Walter Reed Army Medical Center (AMC) has a military value of 54.46 in contrast to the higher military values of National Naval Medical Center (NNMC) Bethesda (63.19) and DeWitt Hospital (58). This action relocates medical care into facilities of higher military value and capacity. By making use of the design capacity inherent in NNMC Bethesda (18K RWPs) and an expansion of the inpatient care at DeWitt Hospital (13K RWPs), the entire inpatient care produced at Walter Reed AMC (17K RWPs) can be relocated into these facilities along with their current workload (11K RWPs and 1.9K RWPs, respectively). This strategically relocates healthcare in better proximity to the beneficiary base, which census data indicates is concentrating in the southern area of the region. As a part of this action, approximately 2,069 authorizations (military and civilian) will be realigned to DeWitt Hospital and 797 authorizations will be realigned to NNMC Bethesda in order to maintain the current level of effort in providing care to the NCR beneficiary population. DeWitt Hospital will assume all patient care missions with the exception of the specific tertiary care missions that will go to the newly established Walter Reed National Military Medical Center at Bethesda. Specialty units, such as the Amputee Center at WRAMC, will be relocated within the National Capitol Region. Casualty care is not impacted. Development of a premier National Military Medical Center will provide enhanced visibility, as well as, recruiting and retention advantages to the Military Health System. The remaining civilian authorizations and contractors at

Walter Reed AMC that represent unnecessary overhead will be eliminated. Military personnel filling similar "overhead positions" are available to be redistributed by the Service to replace civilian and contract medical personnel elsewhere in Military Healthcare System activities of higher military value.

Co-location of combat casualty care research activities with related military clinical activities of the trauma center currently located at Brooke Army Medical Center, Fort Sam Houston TX, promotes translational research that fosters rapid application of research findings to health care delivery, and provides synergistic opportunities to bring clinical insight into bench research through sharing of staff across the research and health care delivery functions.

This action will co-locate Army, Navy, Air Force and Defense Agency program management expertise for non-medical chemical and biological defense research, development and acquisition (each at Aberdeen Proving Ground, MD) and two separate aspects of medical chemical and biological research: medical biological defense research (at Ft. Detrick, MD) and medical chemical defense research (at Aberdeen Proving Ground, MD). It will:

Promote beneficial technical interaction in planning and headquarters-level oversight of all defense biomedical R&D, fostering a joint perspective and sharing of expertise and work in areas of joint interest;

Create opportunities for synergies and efficiencies by facilitating integrated program planning to build joint economies and eliminate undesired redundancy, and by optimizing use of a limited pool of critical professional personnel with expertise in medical product development and acquisition;

Foster the development of common practices for DoD regulatory interactions with the U.S. Food and Drug Administration; and

Facilitate coordinated medical systems lifecycle management with the medical logistics organizations of the Military Departments, already co-located at Fort Detrick.

The Armed Forces Institute of Pathology (AFIP) was originally established as the Army Medical Museum in 1862 as a public and professional repository for injuries and disease specimens of Civil War soldiers. In 1888, educational facilities of the Museum were made available to civilian medical professions on a cooperative basis. In 1976, Congress established AFIP as a joint entity of the Military Departments subject to the authority, control, and direction of the Secretary of Defense. As a result of this recommendation, in the future the Department will rely on the civilian market for second opinion pathology consults and initial diagnosis when the local pathology labs capabilities are exceeded.

Payback: The total estimated one-time cost to the Department of Defense to implement this recommendation is $988.759M. The net of all costs and savings to the Department during the implementation period is a cost of $724.204M. Annual recurring savings to the Department after implementation are $99.565M with a payback expected in 10 years. The net present value (NPV) of the costs and savings to the Department over 20 years is a savings of $301.249M.

Economic Impact on Communities: Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 6,011 (3,567 direct jobs and 2,444 indirect jobs) in the Washington-Arlington-Alexandria, DC-VA-MD-WV Metropolitan Division, which is 0.22 percent of economic area employment. The aggregate economic impact of all recommended actions on this economic region of influence was considered and is at Appendix B of Volume I.

Community Infrastructure: A review of community attributes indicates no issues regarding the ability of the infrastructure of the communities to support missions, forces and personnel. Civilian inpatient capacity exists in the area to provide services to the eligible population.

There are no known community infrastructure impediments to implementation of all recommendations affecting the installations in this recommendation.

Environmental Impact: This recommendation has a potential impact on air quality at NNMC Bethesda, MD, Fort Belvoir, VA, Dover AFB, Aberdeen Proving Ground and Fort Detrick. New source review permitting and air conformity analyses may be required. Additional operations at Dover may impact archaeological resources and historic properties. New construction could impact historic resources at Fort Sam Houston, Fort Belvoir, and Aberdeen Resources must be evaluated on a case-by-case basis at Fort Belvoir, Aberdeen Proving Ground, and Fort Detrick. Consultation with SHPO will be required to ensure protection of cultural resources at Walter Reed. Additional operations may impact sensitive resources at Dover and constrain operations. Additional operations at Aberdeen may further impact threatened/endangered species leading to additional restrictions on training or operations. Modification to the hazardous waste program at Dover may be required. Significant mitigation measures to limit releases may be required at Aberdeen to reduce impacts to water quality and achieve US EPA water quality standards. Additional operations may impact wetlands at Dover, which may restrict operations. This recommendation has no impact on dredging; marine mammals, resources, or sanctuaries; noise; or wetlands. This recommendation will require spending approximately $2.769M for waste management and environmental compliance activities. This cost was included in the payback calculation. This recommendation does not otherwise impact the costs of environmental restoration, waste management, and environmental compliance activities. The aggregate environmental impact of all recommended BRAC actions affecting the bases in this recommendation has been reviewed. There are no known environmental impediments to implementation of this recommendation.

e. San Antonio *Regional Medical Center*

Recommendation: Realign Lackland Air Force Base, TX, by relocating the inpatient medical function of the 59th Medical Wing (Wilford Hall Medical Center) to the Brooke Army Medical Center, Ft Sam Houston, TX, establishing it as the San Antonio Regional Military Medical Center, and converting Wilford Hall Medical Center into an ambulatory care center.

Realign Naval Air Station Great Lakes, IL, Sheppard Air Force Base, TX, Naval Medical Center Portsmouth, Naval Medical Center San Diego, CA, by relocating basic and specialty enlisted medical training to Fort Sam Houston, TX.

Justification: The primary rationale for this recommendation is to transform legacy medical infrastructure into a modernized joint operational medicine platform. This recommendation reduces excess capacity within the San Antonio Multi-Service Market (MSM: two or more facilities co-located geographically with "shared" beneficiary population) while maintaining the level of care for the beneficiaries, enhancing opportunities for provider currency, and maintaining surge capacity. By making use of the design capacity inherent in Brooke Army Medical Center (BAMC), the entire inpatient care produced at WHMC can be relocated into this facility. In terms of military value, while BAMC had a slightly lower quantitative military value score than WHMC, the difference was so small as to not be a meaningful discriminator. Additionally, the small difference is primarily attributable to the efficiency of the Dental Clinic at WHMC, a facility that is excluded from this recommendation. It was the military judgment of the MJCSG that in the context of this recommendation, the condition of the facilities and their average weighted age were the most important elements of the military value of the two locations. In this area, BAMC received a significantly higher score than WHMC. Additionally, it is more cost effective and timely to return BAMC to it's inherent design capacity and convert WHMC to an ambulatory care center, than to do the reverse. BAMC is located in a more centralized location, enabling it to better support the broader population area. WHMC and BAMC support Level 1 Trauma Centers, this capability is maintained in this recommendation by expanding the BAMC Level 1 Trauma Center to the capacity of both trauma centers. It was therefore the military judgment of the MJCSG that regionalization at BAMC provided the highest overall military value to the Department. Development of a premier Regional Military Medical Center will provide enhanced visibility, as well as, recruiting and retention advantages to the Military Health System. The remaining civilian authorizations and contractors at Wilford Hall Medical Center that represent unnecessary overhead will be eliminated. Military personnel filling similar "overhead positions" are available to be redistributed by the Service to replace civilian and contract medical personnel elsewhere in Military Healthcare System activities of higher military value. While the jobs are lost in the military system the same type of job is available in the community.

This recommendation also co-locates all (except Aerospace Medicine) medical basic and specialty enlisted training at Fort Sam Houston, TX, with the potential of transitioning to a joint training effort. This will result in reduced infrastructure and excess system capacity, while capitalizing on the synergy of the co-location similar training conducted by each of the three Services. In addition, the development of a joint training center will result in standardized training for medical enlisted specialties enhancing interoperability and joint deployability.

Co-location of medical enlisted training with related military clinical activities of the San Antonio Regional Medical Center at Brooke Army Medical Center, Fort Sam Houston TX, provides synergistic opportunities to bring clinical insight into the training environment, real-time. As a result, both the healthcare delivery and training experiences are exponentially enhanced.

Payback: The total estimated one-time cost to the Department of Defense to implement this recommendation is $1,040.870M. The net of all costs and savings to the Department during the implementation period is a cost of $826.717M. Annual recurring savings to the Department after implementation are $129.036M with a payback expected in 10 years. The net present value of the costs and savings to the Department over 20 years is a savings of $476.247M.

Economic Impact on Communities: Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 4,373 jobs (1,926 direct jobs and 2,447 indirect jobs) over the 2006-2011 period in the Lake County-Kenosha County, IL-WI Metropolitan Division, which is 0.88 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 3,101 jobs (1,630 direct jobs and 1,471 indirect jobs) over the 2006-2011 period in the San Diego-Carlsbad-San Marcos, CA Metropolitan Statistical Area, which is 0.17 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 3,963 jobs (2,378 direct jobs and 1,585 indirect jobs) over the 2006-2011 period in the Wichita Falls, TX Metropolitan Statistical Area, which is 4.26 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 1,013 jobs (489 direct jobs and 524 indirect jobs) over the 2006-2011 period in the Virginia Beach-Norfolk-Newport News Metropolitan Statistical Area, which is 0.1 percent of economic area employment.

The aggregate economic impact of all recommended actions on these economic regions of influence was considered and is at Appendix B of Volume I.

Community Infrastructure: A review of community attributes indicates no issues regarding the ability of the infrastructure of the communities to support missions, forces, and personnel. Civilian inpatient capacity exists in the area to provide services to the eligible population. There are no known community infrastructure impediments to implementation of all recommendations affecting the installations in this recommendation.

Environmental Impact: This recommendation is expected to impact air quality at Fort Sam Houston. Title V permit, permit modification, and a New Source Review may be required. This recommendation has the potential to impact cultural or historic resources at Fort Sam Houston and Lackland AFB. Additional operations at Fort Sam Houston may further impact federally listed species leading to additional restrictions on training or operations. A hazardous waste program modification may be required at Lackland AFB. Significant mitigation measures to limit releases may be required at Fort Sam Houston to reduce impacts to water quality and achieve US EPA water quality standards. This recommendation has no impact on dredging; land use constraints or sensitive resource areas; marine mammals, resources, or sanctuaries; noise; or wetlands. This recommendation will require spending approximately $1.15M for environmental compliance activities. This cost was included in the payback calculation. This recommendation does not otherwise impact the costs of environmental restoration, waste management, and environmental compliance activities. The aggregate environmental impact of all recommended BRAC actions affecting the bases in this recommendation has been reviewed. There are no known environmental impediments to implementation of this recommendation.

f. Joint Centers of Excellence For Chemical, Biological, and Medical Research and Development and Acquisition

Recommendation: Realign Building 42, 8901 Wisconsin Ave, Bethesda, MD, by relocating the Combat Casualty Care Research sub-function of the Naval Medical Research Center to the Army Institute of Surgical Research, Fort Sam Houston, TX.

Realign Naval Station Great Lakes, IL, by relocating the Army Dental Research Detachment, the Air Force Dental Investigative Service, and the Naval Institute for Dental and Biomedical Research to the Army Institute of Surgical Research, Fort Sam Houston TX.

Realign 13 Taft Court and 1600 E. Gude Drive, Rockville, MD, by relocating the Walter Reed Army Institute of Research, Division of Retrovirology to the Walter Reed Army Institute of Research, Walter Reed Army Medical Center – Forest Glen Annex, MD, establishing it as a Center of Excellence for Infectious Disease.

Realign Naval Air Station Pensacola, FL, by relocating the Naval Aeromedical Research Laboratory to Wright-Patterson AFB, OH.

Realign 12300 Washington Ave, Rockville, MD, by relocating the Medical Biological Defense Research sub-function to the U. S. Army Medical Research Institute of Infectious Diseases, Ft. Detrick, MD.

Realign Potomac Annex-Washington, DC, by relocating Naval Bureau of Medicine, Code M2, headquarters-level planning, investment portfolio management and program and regulatory oversight of DoD Biomedical Science and Technology programs and FDA-regulated medical product development within the biomedical RDA function to a new Joint Biomedical Research, Development and Acquisition Management Center at Fort Detrick, MD.

Realign 64 Thomas Jefferson Drive, Frederick, MD, by relocating the Joint Program Executive Office for Chemical Biological Defense, Joint Project Manager for Chemical Biological Medical Systems headquarters-level planning, investment portfolio management and program and regulatory oversight of DoD Biomedical Science and Technology programs and FDA-regulated medical product development within the RDA function to a new Joint Biomedical Research, Development and Acquisition Management Center at Fort Detrick, MD.

Realign Fort Belvoir, VA, by relocating the Chemical Biological Defense Research component of the Defense Threat Reduction Agency to Edgewood Chemical Biological Center, Aberdeen Proving Ground, MD.

Realign Tyndall AFB, FL, by relocating Non-medical Chemical Biological Defense Research to Edgewood Chemical Biological Center, Aberdeen Proving Ground, MD, and consolidating it with Air Force Research Laboratory.

Realign Naval Surface Warfare Center, Dahlgren Division, VA, by relocating Non-medical Chemical Biological Defense Research and Development & Acquisition to Edgewood Chemical Biological Center, Aberdeen Proving Ground, MD.

Realign Naval Surface Warfare Center, Crane Division, IN, by relocating the Non-medical Chemical Biological Defense Development and Acquisition to Edgewood Chemical Biological Center, Aberdeen Proving Ground, MD.

Realign Skyline 2 and 6, Falls Church, VA, by relocating the Joint Program Executive Office for Chemical Biological Defense to Edgewood Chemical Biological Center, Aberdeen Proving Ground, MD.

Justification: This recommendation creates Joint Centers of Excellence for Battlefield Health and Trauma research at Fort Sam Houston, TX; Infectious Disease research at Walter Reed – Forest Glenn Annex, MD; Aerospace Medicine research at

Wright Patterson AFB, OH; Regulated Medical Project development & acquisition at Fort Detrick, MD; Medical Biological Defense research at Fort Detrick, MD; and Chemical Biological Defense research, development & acquisition at Aberdeen Proving Ground, MD. These actions will increase synergy, focus on joint needs, and efficient use of equipment and facilities by co-locating Tri-Service and Defense activities performing functions in chemical-biological defense and medical RDA. Fort Sam Houston is the best location for the Center for Battlefield Health and Trauma because it is the only current biomedical S&T location that also includes a military trauma center, providing enhanced translational research opportunities and ability to recruit and retain physician-scientists. Walter Reed Army Medical Center, Forest Glen Annex, is the CONUS hub of the worldwide Army and Navy activities in infectious diseases of military significance. Fort Detrick, MD, is the site of an Interagency Biodefense Campus and the military's only Bio-Safety Level 4 containment facilities for medical research. The realignment of Air Force Aerospace medical and non-medical R&D to Wright Patterson AFB, OH, with co-location of associated education and training activities relocated in another recommendation, makes this location most suitable for a joint center for Aerospace Medical Research. Fort Detrick, MD is home of Tri-Service medical logistics as well the Department's largest Medical RDA management activity. Edgewood Chemical and Biological Center, Aberdeen Proving Ground, is home to the military's most robust infrastructure supporting research utilizing hazardous chemical agents. These actions will also reduce the use of leased space within the National Capital Region, and increase the force protection posture of the realigning activities. Specific benefits occurring as a result of this recommendation include:

Promote beneficial technical and management interaction in the functional research areas of combat casualty care including combat dentistry and maxillofacial care, infectious disease, aerospace medicine, medical and non-medical chemical and biological defense research, as well as in the functional area of medical development and acquisition, fostering a joint perspective and sharing of expertise and work in areas of joint interest.

Build joint economies and optimize use of limited pools of critical professional personnel with expertise in unique mission areas.

Co-location of combat casualty care research activities with related military clinical activities of the trauma center currently located at Brooke Army Medical Center, Fort Sam Houston TX, promotes translational research that fosters rapid application of research findings to health care delivery, and provides synergistic opportunities to bring clinical insight into bench research through sharing of staff across the research and health care delivery functions. The availability of a co-located military trauma center also provides incentives for recruitment and retention of military physicians as researchers, and is a model that has proven highly successful in civilian academic research centers.

Reduce the number of DoD animal facilities.

Provide increased opportunities to share management and scientific support functions across Services and reduce costs.

Foster the development of common practices for DoD regulatory interactions with the U.S. Food and Drug Administration.

Facilitate coordinated medical systems lifecycle management with the medical logistics organizations of the Military Departments, already co-located at Fort Detrick.

Promote jointness, enable technical synergy, and position the Department of Defense to exploit a center-of-mass of scientific, technical, and acquisition expertise with the personnel necessary to provide defense against current and emerging chemical and biological warfare threats.

Complete earlier consolidations of military Service Chemical Biological Defense programs into a joint, consolidated Chemical Biological Defense program.

Directly support the Department's Strategy for Homeland Defense and Civil Support.

Payback: The total estimated one-time cost to the Department of Defense to implement this recommendation is $ 73.914M. The net of all costs and savings to the Department during the implementation period is a cost of $45.930M. Annual recurring savings to the Department after implantation are $ 9.185M with a payback expected in 7 years. The net present value of the costs and savings to the Department over 20 years is a savings of $45.975M.

Economic Impact on Communities: Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 269 jobs (151 direct jobs and 118 indirect jobs) over the 2006-2011 period in the Bethesda-Frederick-Gaithersburg, MD Metropolitan Division, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 99 jobs (68 direct and 31 indirect jobs) over the 2006-2011 period in the Martin County, IN economic area, which is 1.16 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 250 jobs (99 direct and 151 indirect jobs) over the 2006-2011 period in the Lake County-Kenosha County IL-WI Metropolitan Division, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 69 jobs (34 direct jobs and 35 indirect jobs) over the 2006-2011 period in the Panama City-Lynn Haven, FL Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 95 jobs (40 direct jobs and 55 indirect jobs) over the 2006-2011 period in the Pensacola-Ferry Pass-Brent, FL Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 38 jobs (19 direct jobs and 19 indirect jobs) over the 2006-2011 period in the Washington-Arlington-Alexandria, DC-VA-MD-WV Metropolitan Division, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 321 jobs (148 direct jobs and 173 indirect jobs) over the 2006-2011 period in the King George County, VA economic area, which is 2.27 percent of economic area employment.

The aggregate economic impact of all recommended actions on these economic regions of influence was considered and is at Appendix B of Volume I.

Community Infrastructure: A review of community attributes indicates no issues regarding the ability of the infrastructure of the communities to support missions, forces, and personnel. There are no known community infrastructure impediments to implementation of all recommendations affecting the installations in this recommendation.

Environmental Impact: This recommendation may impact air quality at Fort Detrick, Fort Sam Houston, Aberdeen Proving Ground, Wright-Patterson AFB, NAS Great Lakes, and BUMED (Potomac Annex). This recommendation may impact cultural, archeological, or tribal resources at Fort Detrick, Fort Sam Houston, Aberdeen Proving Ground, and Wright-Patterson. Additional operations may further impact threatened and endangered species at Wright-Patterson and Aberdeen leading to additional restrictions on training or operations. Significant mitigation measures to limit releases at both Fort Sam Houston and Aberdeen Proving Ground may be required to reduce impacts to water quality and achieve US EPA water quality standards.

Additional operations at Wright-Patterson, may impact wetlands, which could restrict operations.

This recommendation has no impact on dredging; land use constraints or sensitive resource areas; marine mammals, resources, or sanctuaries; noise; or waste management. This recommendation will require spending $6.948M for environmental compliance activities. This cost was included in the payback calculation. This recommendation does not otherwise impact the costs of environmental restoration, waste management, and environmental compliance activities. The aggregate environmental impact of all recommended BRAC actions affecting the bases in this recommendation has been reviewed. There are no known environmental impediments to implementation of this recommendation.

APPENDICES

A. MJCSG Final Capacity Report, including results

B. MJCSG Final Military Value Framework

C. MJCSG Final Military Value Report, including results

D. MJCSG Optimization Model

E. MJCSG Acronyms

F. MJCSG Glossary

MEDICAL JOINT CROSS SERVICE GROUP

CAPACITY OF THE DOD MILITARY HEALTH SYSTEM IN SUPPORT OF BRAC 2005 DELIBERATIONS

MAY 5, 2005

George Peach Taylor Jr
GEORGE PEACH TAYLOR, JR.
Lieutenant General, USAF, MC, CFS
Chairman

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1 Summary

1.1 Mission and Scope

As part of the 2005 Base Realignment and Closure (BRAC) process, the Medical Joint Cross Service Group (MJCSG) is tasked with identifying, analyzing, and quantifying all functions within the Military Health System (MHS). The MJCSG's function, as approved by the Secretary, includes all functions within the MHS with no exclusions. Within the approved scope of MJCSG work, MHS activities are distributed among five broad functional areas. This structure provides an effective framework to evaluate the potential of cross service and joint opportunities for improving the Military Health System's military value. The structure also enhances the MHS's continued transformation to best support warfighting needs and the medical benefit. For each MHS function, a senior MJCSG member was assigned to lead analytical efforts. Functions and assignments follow:

- *Healthcare Education and Training* – VADM Donald Arthur, Surgeon General of the Navy
- *Healthcare Services* – Mr. Edward Chan, Acting Deputy Assistant Secretary (Health Budgets and Financial Policy), Office of the Assistant Secretary of Defense (Health Affairs)
- *Deployable Force Sizing* – MG Porr, Joint Staff Surgeon
- *Medical and Dental Research, Development and Acquisition* – MG Joseph Webb, Deputy Surgeon General of the Army
- *Joint Medical and Dental Infrastructure* – RDML Thomas Cullison, Medical Officer of the Marine Corps

The Medical Joint Cross Service Group organizational structure is shown graphically in Figure 1.

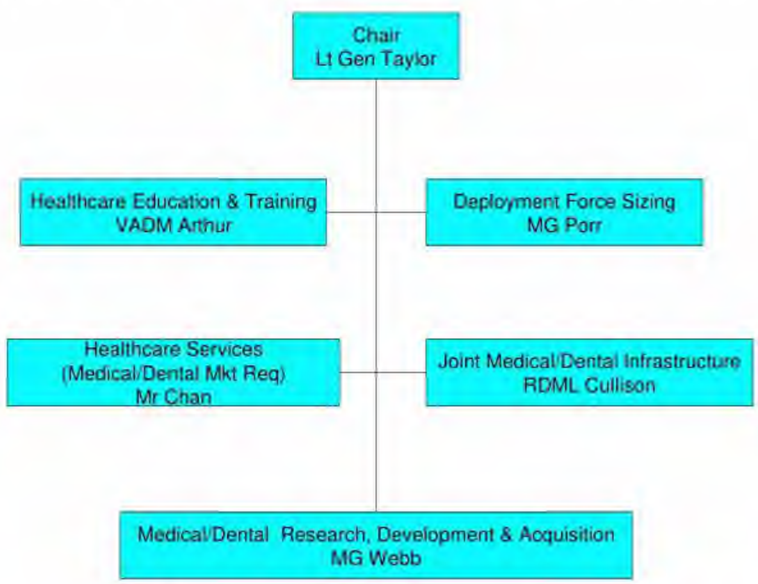

Figure 1. Medical Joint Cross Service Group Structure

The Medical Joint Cross Service Group BRAC 2005 recommendations will be developed in three functional areas: Healthcare Services, Healthcare Education and Training, and Medical/Dental Research, Development, and Acquisition. The subgroups of Joint Medical/Dental Infrastructure and Deployment Force Sizing provide support that is incorporated into the other subgroups analyses.

Figure 2 presents an overview of the MJCSG plan for analysis of MHS functions. To support the analytical process, the MJCSG currently empanels 30 members to support MJCSG deliberations. Other than a few members as far a field as California, the MJCSG staff is located in the Washington DC metropolitan area. Personnel support the MJCSG as an additional duty. A web-based E-Room supported by MJCSG staff was established to facilitate intra-Group communication.

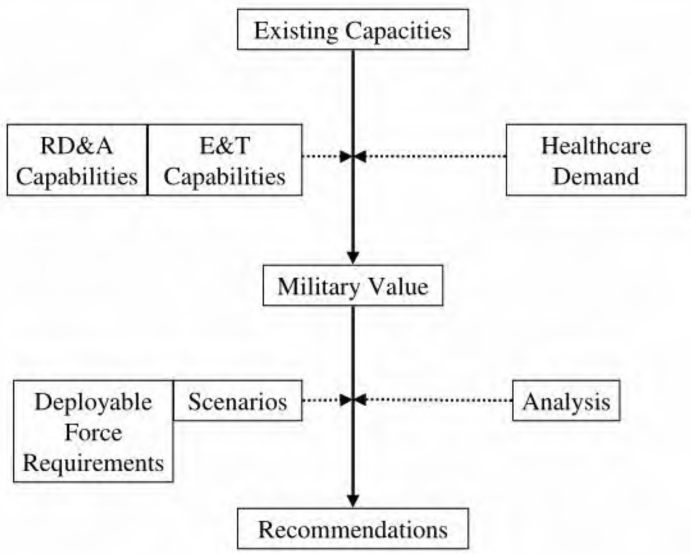

Figure 2. MJCSG Plan of Analysis

As the deliberations progressed, the MCJSG determined that Joint Medical and Dental Infrastructure should not be a separate function. Infrastructure is an essential part of capacity determination, and that to effectively determine excess capacity, it must be encompassed in the Healthcare Education and Training, Healthcare Services, and Medical and Dental Research, Development and Acquisition functions.

The MCJSG also determined that the Deployable Force Sizing function, although an important primary readiness issue, does not have direct influence on excess capacity determination. Excess capacity must be calculated given existing infrastructure data and current throughput. After considerable review, the MJCSG determined that the current medical force size was adequate to meet the requirements of the various warplans. Therefore, the MJCSG, after a review of the FY06 Program Objective Memorandum and the 20 Year Force Structure _plan, maintained the current force structure without change.

1.1.1 Special Considerations

The MHS mission includes providing ready medical forces to deploy in support of contingent military operations. The MHS is also a key component affecting the quality of life of service members and their dependents, highlighting the importance of sizing of military treatment facilities to support the surrounding beneficiary population. To address the latter factor, the MJCSG included, in its analysis, an assessment of the population demographics local to the military treatment facility.

The population of active duty and active duty beneficiaries normally does not furnish a caseload of sufficient acuity and complexity to promote maintenance of currency for the full spectrum of medical skills needed to support the warfighters. Historically, the MHS has expanded its beneficiary population at selected facilities to include retirees, enabling achievement of the needed caseload. In fact, the largest military treatment facilities are located in areas with a substantial retiree population as well as large numbers of active duty and their dependents. Since facilities with such populations serve as "medical training platforms" for operationally needed medical specialties, population characteristics represent a significant factor in facility capacity. Many military treatment facilities have developed partnering arrangements with nearby facilities (civilian or federal) to provide enhanced capabilities in physical plant and subspecialty support. The MJCSG has therefore implemented capacity measures that take into account the nature of the total available patient populations at each facility.

Additionally, the Medical/Dental Research, Development and Acquisition Workgroup reviewed the DOD's ability to sustain those capabilities required to effectively discover, develop, acquire and field medical solutions to address evolving warfighter needs which cannot be met by the civilian sector. Attainment of these capabilities is dependent on coupling the requisite medical, regulatory (FDA licensure) and scientific/technical expertise with a physical infrastructure that facilitates innovation and productivity.

1.1.2 Scope of the Capacity Report

A 14 May 2004 Memorandum for the Chairman of the MJCSG from the Infrastructure Steering Group (ISG) directed that the MJCSG Capacity Report calculate current usage, current capacity, surge requirement, maximum potential capacity, and excess capacity for the following subgroups, and for all locations:

- Healthcare Education and Training
- Healthcare Services
- Medical/Dental Research, Development and Acquisition.

Appendix A contains the detailed results of the MJCSG Capacity data call. A zero was placed in the tables in Appendix A for any activity that did not claim any capacity in that particular medical function or subfunction. The data presented in Appendix A represents the certified data available on the date of the report.

Appendix B is a listing of the capacity questions that were forwarded to the activities through the Services.

Appendix C provides a listing of Military hospitals designated into the categories of Medical Center, Teaching Hospital, and Community Hospital.

Data contained in this report is current on the date specified and does not represent updates to the capacity data provided by the Military Departments since the data set for this version of the report was finalized.

1.2 Summary of Results

Table 1. MJCSG Capacity Summary

	Current Usage	Current Capacity	Surge Requirement	Maximum Capacity	Excess Capacity	% Excess
Education & Training Class-rooms (Students)	7,348	9,493	9,493	16,557	9,210	56%
Education & Training Labs (Students)	3,210	4,152	3,210	14,061	10,853	77%
Education & Training Clinical (Hrs/Week)	131,624	131,624	131,624	160,562	28,939	18%
Healthcare Primary Care (RVUs)	11,727,315	16,322,989	16,322,989	18,769,424	7,042,103	38%
Healthcare Specialty Care (RVUs)	19,588,481	20,120,942	20,120,942	22,659,846	3,071,371	14%
Healthcare Inpatient (RWPs)	224,303	297,529	291,823	430,418	206,122	48%
Healthcare Dental (DWVs)	2,084,051	1,261,120	1,261,120	1,348,160	(735,891)	0%
RD&A Personnel (FTEs)	3,976	3,990	4,373	4,524	151	3%

The results indicate that the Military Healthcare System has excess capacity in all areas except one. Notable in this analysis is the negative maximum capacity demonstrated by the Healthcare Dental analysis. Review of the data indicates that this sub-function may already be substantially optimized. The DoD Dental System is distinguished by its focused and limited nature, an effective contracting strategy that has been in execution for 10 years, and a robust civilian dental care system. It appears that, over the past ten years, the Military Dental System developed a balance between its deployed and in-garrison requirements and has substantially adjusted its infrastructure.

The excess capacities shown in the remaining Healthcare and Education & Training functions appears to be a function of the changes that have occurred since BRAC 1995 both in the nature of medical practice (increasingly outpatient focused) and as the Services have redefined their warfighting requirements. The Military Health System has adjusted its care accordingly, but the platforms it operates on were largely built in the 1950s through the 1980s. Although the medical forces have generally been resized to address the new warfighting realities and the maturation of the DOD's healthcare contracting strategy, the infrastructure still largely embodies buildings constructed under a cold war strategy that emphasizes large casualty flows into stateside facilities from the combat zones and minimal reliance on civilian heathcare.

The RD&A capacities appear to be matched with their requirements as would be expected in an area that is highly sensitive to program funding streams and has a minimal deployment requirement.

Missing from this table is an assessment of a local community's ability healthcare systems to absorb any part of the DoD Healthcare mission. This analysis will be accomplished on a location specific basis during the later stages of the BRAC 2005 MJCSG deliberations.

2 Function descriptions and definitions

The terms *acuity, weighted value, Relative Weighted Product (RWP), Relative Value Unit (RVU),* and *Dental Weighted Value (DWV)* are associated with a well-documented method used by the medical and dental community to assign a numerical value to the amount of resources consumed during health care transactions.

- RWP is the measure used for inpatient care,
- RVU is the measure used for outpatient care, and
- DWV is the measure used for dental care.

The first two values are standard values used by MEDICARE to value healthcare services for billing purposes. A value of 1.00 is defined as the average for any particular transaction ("transactions" are patient/provider interactions, such as taking of a medical history, administration of an immunization, taking an x-ray or an emergency room visit for a broken bone). Values greater than 1.00 represent transactions requiring more resources on average, whereas, values less than 1.00 represent transactions needing fewer resources. Numerical values are generally reviewed annually and updated based on many factors including, but not limited to, changes in practice patterns and technology.

The RVUs and RWPs are based on the Centers for Medicare and Medicaid Services CMS (Medicare) values with CHAMPUS Maximum Allowable Charge (CMAC) adjustments. TRICARE Management Activity (TMA) has a contractor that maintains and updates the values every calendar year.

The DVW according to the DOD Medical Expense Reporting System (MEPRS) Manual (DoD 6010.13-M, Nov 21, 2000) is a weighted value that has been developed for dental clinical procedures based on American Dental Association (ADA) weighted procedure codes. Additionally, composite lab values (CLVs) are used to measure the intensity of dental laboratory procedures.

A Full Time Equivalent (FTE) is a term associated with the calculation of manpower requirements. A FTE is a quantifiable term referring to work performed. For the purposes of the

2005 BRAC, Healthcare Education and Training, Healthcare Services and Medical and Dental RD&A functions define the FTE as 2087 hours. This definition is consistent with guidance provided by the Office of Personnel Management and Office of Management and Budget (OMB) Circular No. A-11 (2004).

Data collected by the MJCSG workgroups for the purpose of the 2005 BRAC was taken from the following years with the respective rationale:

The Healthcare Education and Training formulas for *dedicated classroom square footage* is based on field, classroom and laboratory dedicated space as of the date reported. Data used for this report is for military facilities. *Training program capacity data* is an average of FY02 and FY03 student load and hours. Data for FY02 and FY03 was the most recent complete compiled data available at the time the data call was made.

All Healthcare Services formulas utilized FY02 data and published calculated figures for that year. It requires four months to a year to compile claims-based data. Data for FY02 is the most recent complete compiled data available at the time that the data calls were forwarded to the Services for execution. Data used for this report is for military/civilian facilities.

All Medical and Dental RD&A formulas utilized FY03 data and published calculated figures for that year, as was recommended by their subject matter experts (SMEs) at the time the data call was made.

The MJCSG will utilize a set of open source data to inform its deliberations. The use of this open source data has been approved by the Infrastructure Steering Group. Open source data used includes:

a. American Medical Association, Physician's Professional Record (AMA-PPD), December 31, 2003 will be used to determine the number of civilian physicians stratified by primary care or specialty care. The American Medical Association (AMA) is recognized as the national source for data on all physicians.

b. American Dental Association Database, © Copyrighted by American Dental Association, 2003 will be used to determine the number of civilian dentists available in the defined markets. The American Dental Association (ADA) is recognized as the national source for data on all dentists.

c. Health Forum, LLC, an affiliate of the American Hospital Association, AHA Annual Survey Database, Fiscal Year 2002 will be used to determine the number of civilian hospitals and the numbers of licensed and certified short-term, general beds available in the defined markets. [1] The American Hospital Association (AHA) is a nationally recognized organization that represents and serves all types of hospitals, health care networks, and their patients and communities.

d. Population will be from U.S. Census Bureau. A mapping software package, ArcView 8.x converted Census Block Group population data to zip code population counts by overlay-

[1] Hospital bed are to be used if certified by either the Joint Commission on the Accreditation of Healthcare Organizations, JCAHO, or the U.S. Department of Health and Human Services' Centers for Medicare and Medicaid Services, CMS.

ing Block Group centroids onto zip code areas.[2] The population data will be used to provide ratios of the number of physicians (both primary care and specialty care) to population as well as hospital beds to population in the defined market areas for comparison to national benchmarks.

2.1 Healthcare Education and Training

The Healthcare Education and Training function covers the infrastructure supporting the development of mission-ready medical forces, including professional healthcare providers and medical support staff. It also includes formal degree training in academic facilities, post graduate, non-degree specialty training conducted in civilian and military facilities and training specifically developed to prepare medical personnel for leadership roles. Sub-functions are identified as:

- Health professions initial entry-level training
- Health professions advanced education
- Health professions continuing education

2.1.1 Assumptions

The following MJCSG assumptions were applied to the Healthcare Education and Training analysis:

- Classroom space is the key infrastructure constraint and limits DOD's ability to provide most medical/dental education and training. Classroom spaces are generally generic and can support many different curricula. For example, much training requires only a place for students to sit and take notes, blackboard and projection equipment. Medical classes can be held in any basic classroom, allowing inclusion of DOD classroom spaces not currently being used for medical training.
- Graduate healthcare professional training (internships and residencies) does not have a key infrastructure component since it occurs as a part of normal healthcare in appropriate facilities.
- Student lodging is not a key component for medical/dental education and training.
- Service-specific training remains a key part of producing fully trained medical personnel.
- Field training and exercises, such as the Combat Casualty Care Course (C4), are part of the education and training process.

[2] Zip code data are estimated from block groups (BGs). BGs are assigned to residential ZIP Codes by overlaying the centroids of component blocks on ZIP boundaries. Expressed as latitude/longitude coordinates, centroids approximate the geographic centers of blocks. If the centroid of a block falls within the ZIP Code, it is included. Blocks are then aggregated, and the ratio of block totals to block groups is used to apportion demographic characteristics to a ZIP Code.

2.1.2 Sub-functions, attributes, and metrics

The sub-functions for Healthcare Education and Training are:

- Health professions initial entry-level education. This function includes all professional, direct patient care, and technical school training focused on ensuring the trainee obtains the minimal requirements necessary for a skill identifier (i.e. Navy Officer Billet Classification (NOBC), Navy Enlisted Classification (NEC), Army Military Occupational Specialty (MOS), Air Force Specialty Code (AFSC), etc.).
- Health professions advanced education: This function includes post-graduate and additional training designed to expand capabilities of professional and support staff within their specialties.
- Health professions continuing education: This function includes follow-on training necessary to maintain provider and support staff proficiency/certification in current medical techniques within their specialty, as well as respective wartime skill sets.

The attributes for each of these sub-functions are:

- Available classrooms
- Student throughput

The metrics associated with these attributes are:

- The number of dedicated standard classrooms and standard classroom square footage.
- The number of dedicated laboratory classrooms and the laboratory classroom square footage.
- The length of education and training programs (in weeks).
- The number of times per year each program is offered.
- The maximum number of students each program can accommodate per offering.
- The average number of students each program accommodates per offering.
- The average number of classroom hours per week for each program.
- The average number of laboratory classroom hours per week for each program.
- The average number of clinical hours per week for each program.

2.2 Healthcare Services

The Healthcare Services function is the measurement of the medical support, including all specialties required by a defined population supported by a military treatment facility. The population includes active duty, retired, and dependent healthcare requirements, and the services individual policy-driven medical support.

The Healthcare Services function was divided into three sub-functions:

- Outpatient care

- Inpatient care
- Dental care

2.2.1 Assumptions

The MJCSG made the following assumptions regarding Healthcare Services:

- Primary care exam rooms are interchangeable. This means that for purposes of estimating capacity, exam rooms for each type of primary care provider is the same.
- Specialty care exam rooms, to include specialty care treatment rooms and procedure rooms, are interchangeable. This means that for purposes of estimating capacity, exam rooms for each type of specialty care provider is the same.
- Inpatient beds (ICU and non-ICU) are interchangeable. This means that for purposes of estimating capacity, there is no differentiation between the various types of inpatient beds. Non-ICU-beds may be converted to ICU beds and vice versa without substantial change in facility footprint.
- Dental treatment rooms (DTRs) are interchangeable. This means that for purposes of estimating capacity, DTRs used by general dentists and specialists are treated equally.
- Military treatment facilities are staffed in accordance with (IAW) the Joint Commission on Accreditation of Healthcare Organization (JCAHO) Standards of Care Guidelines.
- Military provider productivity was adjusted based on their respective availability due to military requirements.
- Inpatient acuity equals the current average acuity of military treatment facilities by facility type—medical centers, teaching hospitals, and community hospitals.

All inpatient military treatment facilities have been categorized by the respective service Surgeon Generals for the purpose of MJCSG analysis. A complete list of Medical Centers, Teaching Hospitals and Community Hospitals is found in appendix C.

Operating Rooms were originally considered as part of the overall capacity calculation of a facility. However, based on military judgment, the MJCSG determined Relative Weighted Products (RWPs) to be a better measure of inpatient capacity as RVUs are more consistently applied throughout the system.

2.2.2 Sub-functions, attributes, and metrics

The sub-functions for Healthcare Services follow:

- Outpatient: This function includes all ambulatory care and encompasses both primary and specialty care provided in military treatment facilities.

- Inpatient: This function includes all inpatient care and encompasses both ICU and non-ICU care provided in military treatment facilities.
- Dental: This function includes all dental care and encompasses both general and specialty care provided in military treatment facilities.

The attributes for these three sub-functions are:

- Military Treatment Facility (MTF) enrollment
- MTF workload

The metrics for outpatient care are:

- Number of beneficiaries enrolled through TRICARE Prime to the MTF
- Number of primary care exam rooms
- Number of specialty care exam rooms
- Number of primary care RVUs
- Number of specialty care RVUs
- Number of primary care visits
- Number of specialty care visits

The metrics for inpatient care are:

- Number of enrolled beneficiaries
- Number of inpatient beds
- Number of RWPs

The metrics for dental care are:

- Number of Active Duty (AD) enrolled to the MTF
- Number of dental treatment rooms (DTRs)
- Number of dental weighted values (DWVs)
- Number of dental visits

2.3 Medical/ Dental Research, Development and Acquisition (RDA)

The Medical/Dental Research, Development and Acquisition function includes all aspects of research and development, from basic research to advanced demonstration and acquisition. This includes the initial procurement as well as acquisition of non-developmental items required to provide a continuous stream of transformational capabilities and systems to sustain and optimize the health and performance of warfighters.

The Medical/Dental Research, Development and Acquisition Workgroup reviewed the DoD's ability to sustain those capabilities required to effectively discover, develop, acquire and field medical solutions to address evolving warfighter needs. Attainment of these capabilities is dependent on coupling the requisite medical, regulatory (FDA licensure) and scientific/technical expertise with a physical infrastructure that facilitates innovation and productivity.

2.3.1 Assumptions:

The MJCSG made the following assumptions regarding Medical/Dental RDA:

- There will be a continued future military requirement for medical and dental research, development and acquisition that will not be met by the private sector or other government agencies (National Institutes of Health, Department of Veterans Affairs, Centers for Disease Control).
- The expeditionary nature of future military operations will require an effective Medical/Dental RDA infrastructure as a platform from which urgent solutions to exigent military and Homeland Defense problems can be provided.
- Current throughput is equal to the current throughput requirement (i.e., current capacity equals current usage).
- The proportion of basic research being performed by an activity that is relevant to a sub-function is equivalent to the proportion of total applied research of the activity that is performed within the sub-function.
- The requirement for indirect (i.e., management and support) effort is proportional to the level of technical effort required for a sub-function, and does not vary by sub-function.

2.3.2 Sub-functions, Attributes, and Metrics:

There are eleven sub-functions for Medical/Dental RDA, each encompassing distinct areas of scientific and/or engineering expertise and specialized knowledge[3]. These sub-functions fall into one of two broader areas:

- Science and Technology, including:
  - Basic research and technology maturation activities necessary to understand human health and performance.
  - The pursuit of novel materiel and non-materiel biomedical approaches to prevent disease and injury and sustain health and performance.
  - The demonstration of these novel approaches, their feasibility, effectiveness and safety.

- Advanced Development and Acquisition, including:
  - System development, demonstration and procurement activities directed towards the development and initial fielding of novel medical products

[3] Medical Dental RDA capacity data was initially collected according to 13 so-called *capability domains*, which were, in effect, the initially identified sub-functions for the Medical Dental RDA function. Due to considerations that emerged subsequent to data collection, 11 new sub-functions were defined and the collected data was reapportioned from the original capability domains into the new sub-functions. The definitions of the original 13 capability domains and the process for reapportionment of data are described in *Section 3.3.1, Analysis Approach*.

and medical enterprise information management/information technology systems.
- o The procurement of commercial off the shelf (COTS) medical products and non-regulated medical support items for sustainment of tactical military medical units that deploy to support military operations.

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  - o The demonstration of these novel approaches, their feasibility, effectiveness and safety.

- Advanced Development and Acquisition, including:
  - o System development, demonstration and procurement activities directed towards the development and initial fielding of novel medical products and medical enterprise information management/information technology systems.
  - o The procurement of commercial off the shelf (COTS) medical products and non-regulated medical support items for sustainment of tactical military medical units that deploy to support military operations.

The following sub-functions are included within the Science and Technology area:

- *Aerospace and Operational Medicine Research* – efforts directed towards understanding and countering adverse performance and health effects of aviator operational and occupational environments and systems hazards.

- *Environmental Medicine and Physiology Research* – efforts directed towards understanding and countering adverse performance and health effects of extreme climates and terrestrial altitude, optimizing biomechanical and ergonomic interactions of warfighters with individual systems (protective systems, uniforms, etc.), improving physical training and performance sustainment, and monitoring and modeling individual human physiology and performance.

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- *Hyperbaric and Undersea Medicine Research* – efforts directed towards understanding and countering adverse performance and health effects of diver and submarine operational and occupational environments and systems hazards.

- *Occupational Health and Medical Informatics Research* – efforts directed towards understanding the determinants of and improving general force fitness and health readiness; improving psychological resilience and preventing psychiatric casualties; and the development of medical modeling and simulation tools for situational awareness, medical command and control, and operational modeling, and training.

- *Infectious Diseases Research* – efforts directed towards discovery and exploration of candidate medical technologies (e.g., vaccines, drugs, diagnostics, vector controls) and medical strategies for prevention and treatment of endemic infectious diseases of military importance.

- *Medical Biological Defense Research* – efforts directed towards discovery and exploration of candidate medical technologies (e.g., vaccines, drugs, diagnostics) and medical strategies for prevention, treatment, and management of casualties caused by biological warfare agents.

- *Medical Chemical Defense Research* – efforts directed towards discovery and exploration of candidate medical technologies (e.g., drugs, diagnostics) and medical strategies for prevention, treatment, and management of casualties caused by chemical warfare agents. Owing to partial overlaps in technical expertise and facilities required, this sub-function also includes toxicological research directed towards understanding, detecting, and minimizing the adverse health impacts of exposure to hazardous non-CW threat chemicals that occur as a result of military occupational or operational activities.

- *Medical Radiological Defense Research* – efforts directed towards discovery and exploration of candidate medical technologies (e.g., diagnostic systems, drugs, biologicals) and medical strategies for prevention, treatment, and management of casualties caused by ionizing radiation.

- *Combat Casualty Care Research* – efforts directed towards discovery and exploration of candidate medical technologies (e.g., diagnostic and therapeutic systems, drugs, biologicals) and medical and surgical strategies for medical management of combat casualties in field settings and during evacuation. Also includes efforts focused on technologies and strategies for prevention and field management of dental-related incapacitation.

The following sub-functions are included within the Advanced Development and Acquisition area:

- *Medical Systems Acquisition* – efforts directed advanced development and initial fielding of novel medical products whose development is subject to the regulatory oversight of the U.S. Food and Drug Administration, and procurement of commercial off-the-shelf (COTS) medical products and other medical support items for sustainment of both field medical and line units.

- *Information Management and Information Technology Acquisition* – acquisition activities directed towards the development and procurement of medical enterprise information management/information technology systems.

The attributes for the sub-functions are:

- Workload - Workload quantifies the number of personnel available at each activity to perform the mission, as well as the number of personnel who could be accommodated within existing facilities. It is the principal output measure for the Medical/Dental RDA function.
- Physical Plant - Physical plant quantifies the extent and type of facilities available to perform the work, and defines their present utilization. Physical plant metrics define the resources available to meet the workload requirement.

The metrics associated with these attributes are:

- Full-time equivalents (current and estimated maximum).
- Workdays used and available for major equipment/facilities (by type of item).

3 Capacity analysis

The first steps in the process for determining excess capacity for the MJCSG functions are the calculation of current usage, current capacity, surge requirement, and maximum capacity.

Current usage represents the usage of the medical infrastructure in its current configuration with the personnel available. This capacity represents the "as-is" usage and in-directly measures how efficiently the current infrastructure is being used. This capacity includes under/overstaffing as well as resource and population demand levels. This capacity was provided by each DOD medical activity under the purview of the Medical Joint Cross Service Group.

Current capacity is the amount of output that can be produced by the current configuration of the DOD medical infrastructure, without regard for staffing, resourcing or population demand levels. This capacity is computed from the current medical infrastructure configuration.

The surge requirement is the potential to provide output above the current workload levels for up to 30 days. At the 30 day point, both the facility and its associated personnel would require reconstitution and re-enforcement to continue to operate at the surge levels.

Maximum capacity is the amount of output that can be produced and sustained given the current infrastructure at the activity. The computations for determining maximum capacity focus on the infrastructure and *not* the personnel required to meet the throughput. For the purposes of this report, the maximum capacity is not less than current capacity. As BRAC redistributes missions and their associated workload across facilities, the Services will redistribute medical personnel accordingly.

Figure 3 shows, if there is no defined operational surge requirement, excess capacity may be calculated as maximum capacity less current workload. However, if a surge requirement does exist, excess capacity is maximum capacity less the sum of the surge requirement and current usage.

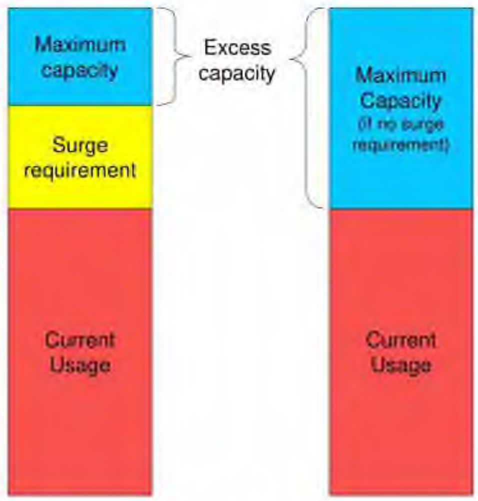

Figure 3. Excess Capacity

The following sections detail each MJCSG function and sub-functions process in the calculation of current usage, surge requirements, current capacity, maximum capacity and excess capacity.

3.1 Healthcare Education and Training

The Medical/Dental Education and Training function has three sub-functions (advanced education, entry-level training and continuing education) the formulas for computing capacity are the same for each sub-function.

3.1.1 Classrooms

Current usage is defined in terms of the average number of students the system needs to support with classroom-based education and training. The formula utilized is:

$$\text{Student FTEs} = \frac{\sum_{p \in \text{Programs}} (\text{Avg. students}_p \times \frac{\text{Program length}_p}{\text{Weeks per year}} \times \text{Times offered}_p \times \text{Class hours}_p)}{\text{Hours per week}}$$

Average $Students_p$ is the average number of students enrolled per program. An educational program (such as Pharmacy Technician Training) will offer several courses per year, often of varying lengths, unlike college where there is one academic year and a set number of students. Hence, there are many offerings of the same courses within one year. The throughput required, based on a program, will be related to the Average $Students_p$ rather than the total number of students per year.

A student taking a program spends a percentage of his/her work-year in class. That percentage is the fraction of the year the program runs, prorated by the fraction of a full-time week he/she spends in class. Current usage is obtained by adding up this function for all students enrolled in all programs.

The following narrative is offered to augment our technical explanation of classroom current usage and current capacity calculations:

The averages in the formulas are utilized to allow for calculations across a wide spectrum of programs, variance of student attendance (between programs and courses), variance of program length (programs may vary from 1-2 weeks to 4 years), and number of times a program is conducted over the course of the year. Average student load reflects student attendance in FY 02 and 03, while maximum student load would be the attendance if every available seat had been utilized. The number of students enrolled in a session reflects the number of trainees required to support military operations at that point in time, not the number of students that the program can accommodate. Unlike a university, where the student load is consistent throughout the year, the calculation of the student man years (FTE) is more complex for the MJCSG.

Current capacity is defined as the number of students the system can support as a function of its current configuration of programs. That is, with the same programs, with the same number of course offerings per year, same number of classrooms, and in the same location, current capacity is the number of students the system could train if every available slot in program was filled. The formula utilized is:

$$\text{Student FTEs} = \frac{\sum\limits_{p \in \text{Programs}} \left(\text{Max. students}_p \times \dfrac{\text{Program length}_p}{\text{Weeks per year}} \times \text{Times offered}_p \times \text{Class hours}_p\right)}{\text{Hours per week}}$$

The MJCSG decided that computing a surge requirement for this subfunction was unnecessary. For example, Education and training facilities can surge workload by extending to a second shift within the same infrastructure. It is also possible that the military could meet part of its surge requirement by sending some of their personnel to civilian programs for those programs or parts of programs that do not have military unique components.

Maximum capacity is defined as the number of students the system can handle under normal classroom usage, if the only restriction is a space restriction. The formula utilized is:

$$\text{Student FTEs} = \frac{\sum_{s \in Size} \text{Total classroom square feet}_s}{\text{Square feet per student} \times \text{Scheduling ineff. factor}}$$

Note that while the usage and capacity measures are a function of the average or maximum number of students, classroom hours per week, and the total classroom square feet, there are other factors in this equation. These other factors or parameters do not come from the BRAC data calls, but are assumptions the MJCSG has made based on industry standards and professional judgment. The specific assumptions we made for these parameters are as follows:

- Weeks per year – It is assumed that the infrastructure is available for instruction for 52 weeks in a year.

- Hours per week – It is assumed that a typical workweek is 40 hours. That is, classes are only scheduled during the typical 8 to 5 workday Monday through Friday.

- Square feet per student – The DOD standard of 30 square feet per student is assumed, IAW Interservice Training Review Organization (ITRO) Procedures Manual.

- Scheduling-inefficiencies factor – Given the challenge of scheduling classroom space for various programs, it is not reasonable to expect that all classrooms would be used all of the time. Consequently, a scheduling-inefficiencies factor of 1.25 was built in. This implicitly means that a classroom facility is operating at capacity when classrooms are in use 80 percent of the time.

The capacity data for these calculations comes from the following questions: (These questions are presented in their entirety in Appendix B).

- DOD 4240 – Standard classrooms
- DOD 4241 – Training programs

3.1.2 Laboratories

Current usage is defined in terms of the average number of students the system needs to support with laboratory-classroom-based education and training. The formula utilized is:

$$\text{Student FTEs} = \frac{\sum_{p \in \text{Programs}} (\text{Avg. students}_p \times \frac{\text{Program length}_p}{\text{Weeks per year}} \times \text{Times offered}_p \times \text{Lab hours}_p)}{\text{Hours per week}}$$

A student taking a program spends a percentage of his/her work-year in a laboratory-classroom. That percentage is the fraction of the year the program runs, prorated by the fraction of a full-time week he/she spends in the laboratory-classroom. Current usage is obtained by adding up this function for all students enrolled in all programs.

Current capacity is defined as the number of students the system can support as a function of its current configuration of programs. That is, with the same programs, with the same number of course offerings per year, same number of laboratory classrooms, and in the same location, current capacity is the number of students the system could train if every opening in program was filled. The formula utilized is:

$$\text{Student FTEs} = \frac{\displaystyle\sum_{p \in \text{Programs}} \left(\text{Max. students}_p \times \frac{\text{Program length}_p}{\text{Weeks per year}} \times \text{Times offered}_p \times \text{Lab hours}_p\right)}{\text{Hours per week}}$$

The MJCSG decided that computing a surge requirement for this subfunction was unnecessary. For example, laboratory facilities can surge workload by extending to a second shift within the same infrastructure. It is also possible that the military could meet part of its surge requirement by sending some of their personnel to civilian programs. This only works for those programs or parts of programs that do not have military unique components.

Maximum capacity is defined as the number of students the system can handle under normal laboratory-classroom usage, if the only restriction is a space restriction. In other words, the number of students the system could support given laboratory classroom square feet. The formula utilized is:

$$\text{No. of students} = \frac{\displaystyle\sum_{s \in Size} \text{Total laboratory classroom square feet}_s}{\text{Square feet per student} \times \text{Scheduling ineff. factor}}$$

Note that while the usage and capacity measures are a function of the average or maximum number of students, laboratory classroom hours per week, and the total laboratory classroom square feet, there are other factors in this equation. These other factors or parameters do not come from the BRAC data calls, but are assumptions the MJCSG has made based on industry standards and professional judgment. The specific assumptions made for these parameters follow:

- Weeks per year – It is assumed that the infrastructure is available for instruction for 52 weeks in a year.
- Hours per week – It is assumed that a typical workweek is 40 hours. That is, classes are only scheduled during the typical 8 to 5 workday Monday through Friday.
- Square feet per student – The DOD standard of 30 square feet per student is assumed, IAW Inter-service Training Review Organization (ITRO) Procedures Manual.
- Scheduling-inefficiencies factor – It is recognized that given the challenge of scheduling laboratory-classroom space for various programs, it is not reasonable to expect that all

laboratory classrooms be used all of the time. Consequently, a scheduling-inefficiencies factor of 1.25 has been built in. This implicitly means that a laboratory-classroom facility is operating at capacity when laboratory classrooms are in use 80 percent of the time.

The capacity data for these calculations comes from the following questions: (The questions are presented in their entirety in Appendix B).

- DOD 4239 – Laboratory classrooms
- DOD 4241 – Training programs

3.1.3 Clinical

Current usage is defined in terms the average number of clinical hours per week the system needs to support its education and training across all programs. The formula utilized is:

$$\text{No. of clinical hours per week} = \sum_{p \in \text{Programs}} (\text{Average number of students}_p \times \text{Clinical hours per week}_p)$$

Current capacity is defined as the same as Current Usage for the Education and Training function, because the military departments establish both annually. Requirements for training programs vary from one year to the next, making a fixed value unfeasible.

The MJCSG decided that computing a surge requirement for this subfunction was unnecessary. For example, clinical facilities can surge workload by extending to a second shift within the same infrastructure. It is also possible that the military could meet part of its surge requirement by sending some of their personnel to civilian programs. This only works for those programs or parts of programs that do not have military unique components.

Maximum capacity is defined as the maximum number of clinical hours per week the facility could support across all programs. The formula utilized is:

$$\text{No. of clinical hours per week} = \sum_{p \in \text{Programs}} (\text{Max. number of students}_p \times \text{Clinical hours per week}_p)$$

The capacity data for these calculations comes from the following question: (The question is presented in it's entirety in Appendix B).

- DOD 4241-Training programs

3.2 Healthcare services

3.2.1 Outpatient care

Current usage is defined in relative value units (RVUs), which is a standard complexity measure for ambulatory care. Outpatient care includes productivity of the separate operating systems: primary care (PC) or specialty care (SC). The formula utilized is:

$$\text{RVUs} = \text{FY 2002 PC or SC RVUs}$$

Current capacity is defined in RVUs for both primary care and specialty care as a function of the number of exam rooms (ERs) "in use" in the military treatment facility. The formula utilized is:

$$\text{RVUs} = \frac{(\text{ERs In Use} \times \text{RVUs per provider} \times \text{Avail. factor})}{\text{ERs per provider}}$$

- Availability factor represents provider availability as defined below

The factors or parameters in the equation do not come from the BRAC data calls, but are assumptions the MJCSG has made based on industry standards and professional judgment. Specific assumptions used follow:

- RVUs per provider – The RVUs per provider for PC and SC are 3,729 and 4,257, respectively. These represent the average annual RVU output for civilian physicians according to data from the American Medical Group Association (AMGA).
- Availability factor – Because military physicians do more than provide the peacetime benefit mission, they cannot be expected to produce as many RVUs in a year as a civilian physician. The judgment of the MJCSG is that the clinical output of a military physician is 80 percent of a civilian physician, which gives an availability factor of 0.8. However, not all physicians in military treatment facilities are military. Civilian and contract physicians provide a significant portion of the care in the MHS. Because these physicians only provide for the peacetime benefit mission, their availability factor is 1.0. Given the relative mix of military and civilian providers in the military treatment facilities, the estimated availability factor is 0.9.
- Exam rooms per provider – In the Military Healthcare System, each primary care physician requires 2 exam rooms, and each specialty care physician requires 1.5 exam rooms, including treatment and procedure rooms.

Current capacity is the number of RVUs that can be produced in the exam rooms that are currently "in use" assuming a certain number of exam rooms per provider and providers being in the clinic for a certain percentage of their time.

The MJCSG determined that adding on a *surge requirement* is unnecessary. Military treatment facilities can surge workload by extending the workday from 8 to 12 hours. Additionally, the military treatment facilities or direct care system is only part of the MHS. Civilian providers in the Tricare network can absorb some portion of the additional workload of the surge requirement. Furthermore, if necessary to care for active duty personnel in the direct care system, the Services can shift some of the care it currently provides to active duty family members, retirees and retiree dependents to network providers.

Maximum capacity is defined in RVUs for both primary care and specialty care as a function of the total number of exam rooms (in use or not) in the military treatment facility. The formula utilized is:

$$\text{RVUs} = \frac{(\text{Total ERs} \times \text{RVUs per provider} \times \text{Avail. factor})}{\text{ERs per provider}}$$

- Other factors in the equation as previously described

Maximum capacity is the number of RVUs that can be produced in the number of exam rooms that a facility has, whether they are currently "in use" as exam rooms or not. These calculations also assume that there are a certain number of exam rooms per provider and that providers are in the clinic for a certain percentage of their time.

The capacity data for these calculations comes from the following questions: (The questions are presented in their entirety in Appendix B).

- DOD 528, (along with 4288-4290 from the supplemental data call) Ambulatory care exam rooms
- DOD 546, (along with 4298-4300 from the supplemental data call) Ambulatory care utilization

3.2.2 Inpatient care

Common terms:

The specific assumptions made for parameters in this section are:

- Relative weighted Product (RWP) – Standard measure of output that is adjusted for the complexity and resource requirements of an inpatient procedure.

- RWPs per bed day – This is the average number of RWPs that an occupied bed generates per day. This figure was computed from the data for each type of hospital (medical centers, teaching hospitals and community hospitals) on the basis that complexity varies by hospital type.

$$\text{RWPs per bed day} = ((\text{Annual RWPs} / (\text{Average daily patient load (ADPL)} \times 365))$$

  Accordingly, the RWPs per bed day are .266 for medical centers, .247 for teaching hospitals, and .246 for community hospitals.

- Occupancy Rate – The definition of the capacity of a hospital is not computed on the assumption that it can fill 100 percent of its beds. A 100 percent occupancy rate is not reasonable due to spikes in workload for seasonal or other reasons. Accordingly, inpatient capacity is computed assuming an occupancy rate of 0.8 for medical centers and 0.7 for teaching and community hospitals. This means that a medical center is at maximum capacity when on average 80 percent of its beds are occupied. The remaining 20 percent of beds are required to meet the spikes in demand.

Current usage is defined in RWPs reported from the facilities. The formula utilized for current workload for inpatient care is:

$$\text{RWPs} = \text{FY 2002 RWPs}$$

Current capacity is defined in RWPs for inpatient care based on the number of "staffed" beds in the military treatment facility. The formula utilized to determine current capacity for either ICU or other beds is:

$$\text{RWPs} = \text{Staffed Beds} \times \text{RWPs per bed day} \times 365 \text{ days per year} \times \text{Occupancy Rate}$$

Staffed beds are beds that have appropriate physical and human resources to meet minimum standards of care. Equipped beds are defined as beds that have appropriate physical resources but lack personnel resources to make them operational. Occupancy rate is the average percentage of beds that are occupied.

Current capacity is the number of RWPs that can be provided by a facility's staffed beds, assuming that it operates at a certain occupancy rate.

The Military Health System has several mechanisms to adjust for surge. Department of Defense priority of care steers how these mechanisms are employed. Inpatient surge requirement is calculated under the assumption (approved by MJCSG Principals) that most facilities normally operate at about 75% bed occupancy (80% for Medical Centers and 70% for all other hospitals) in order to allow for seasonal variation in disease. In a surge, the MTFs would fill up all their beds (i.e., go to 100% bed occupancy). If there were additional demand they would send patients to participating veterans' and civilian hospitals. . The healthcare sub-group calculated surge requirement for inpatient by multiplying Current Usage times 1.25 for Medical Centers and 1.43 for other hospitals. This estimates the amount of workload that would be performed if the facility was at 100% bed occupancy. Additionally, the military treatment facilities or direct care system is only part of the MHS. Civilian providers in the TRICARE network can absorb some portion of the additional workload of the surge requirement. Furthermore, if necessary to care for active duty personnel in the direct care system, the Services can shift some of the care it currently provides to active duty family members, retirees and retiree dependents to network providers.

Maximum capacity is defined in RWPs for inpatient care as a function of the number of "staffed and equipped beds" in the military treatment facility. The formula utilized to determine maximum capacity for inpatient beds is:

$$\text{RWPs} = \text{All Beds} \times \text{RWPs per bed day} \times 365 \text{ days per year} \times \text{Occupancy Rate}$$

Maximum capacity is the number of RWPs that can be provided by a facility's staffed and equipped beds assuming that it operates at a certain occupancy rate. Beds include all beds whether they are in use or not. Note that while it is stated that maximum capacity RWPs is a function of beds, there are two other factors in the equation. These other factors or parameters do not come from the BRAC data calls, but are assumptions the MJCSG has made based on industry standards and professional judgment.

The capacity data for these calculations comes from the following questions: (The questions are presented in their entirety in Appendix B).

- DOD 541 – Inpatient beds
- DOD 545 – Inpatient utilization

3.2.3 Dental care

Current usage is defined in terms of the active duty (AD) population that the infrastructure can accommodate in its current configuration. This is equal to the FY02 AD population plus the non-permanent party AD population. Using FY 2002 as the baseline avoids perturbing effects caused by increased mobilization of the Reserve Component and increased overall deployment rate in FY 2003.

Current capacity: Defined in AD population as a function of the number of "in use" DTRs in the military treatment facility. This represents the theoretical throughput for the infrastructure.

$$\text{AD Population} = \frac{(\text{In use DTRs} \times \text{AD panel per dentist})}{\text{DTRs per provider}}$$

- AD panel per dentist – It is assumed that each dentist can care for a panel of 800 AD personnel.
- Dental treatment rooms per dentist – It is assumed that each dentist needs 2.5 DTRs to care for its AD panel. (This figure includes DTR for requirements for the dentist's hygienist.)

The MJCSG determined that computing a *surge requirement* was unnecessary. Military treatment facilities can surge workload by extending the workday from 8 to 12 hours. Additionally, the military treatment facilities or direct care system is only part of the MHS. Civilian providers in the TRICARE network can absorb some portion of the additional workload of the surge requirement. Furthermore, if necessary to care for active duty personnel in the direct care system, the Services can shift some of the care it currently provides to active duty family members, retirees and retiree dependents to network providers.

Maximum capacity is defined in terms of the AD population that the infrastructure can support as a function of the number of dental treatment rooms (DTRs) in the military treatment facility.

Dental treatment rooms include all DTRs whether they are currently in use or not. Note that while the maximum capacity AD population is a function of DTRs, there are two other factors in the equation. These other factors or parameters do not come from the BRAC data calls, but are assumptions made based on industry standards and professional judgment.

$$\text{AD Population} = \frac{(\text{All DTRs} \times \text{AD panel per dentist})}{\text{DTRs per provider}}$$

- AD panel per dentist – It is assumed that each dentist can care for a panel of 800 AD personnel.
- Dental treatment rooms per dentist – It is assumed that each dentist needs 2.5 DTRs to care for its AD panel. (This figure includes DTR for requirements for the dentist's hygienist.)

The capacity data for these calculations comes from the following questions: (The questions are presented in their entirety in Appendix B).

- DOD 530, (along with 4291-4293 from the supplemental data call) Dental treatment rooms
- DOD 542, (along with 4294-4296 from the supplemental data call) Medical/dental enrollment
- DOD 543, (along with 4297 from the supplemental data call) Non-permanent parties utilizing medical resources

3.3 Medical/Dental RDA

3.3.1 Analysis approach

Although the Medical/Dental RDA function has eleven sub-functions, the metrics and formulas for computing capacity are the same for all sub-functions. Two measures of capacity were employed, one for the attribute of Workload and one for the attribute of Physical Plant:

- FTEs
- Workdays for specialized and unique equipment (e.g., research simulators, special containment laboratories, etc..)

An early problem faced by the MJCSG was that there are no standards for optimal space utilization within medical/dental RDA facilities. The initial analysis approach attempted to overcome this problem and relate workload (FTEs) to physical plant via a determination of a theoretical optimal ratio of square feet to FTEs for each sub-function. The "optimal" ratio was considered to be the total square footage available for a sub-function (including any excess space) divided by the activity commander's estimate of the maximum FTEs that an activity could support within the sub-function under conditions of optimal use. In adopting this approach, the MJCSG explicitly assumed that the ratio would be approximately constant across all activities performing the same sub-function. Once FTE and square footage data were obtained, however, it became apparent that there were large variations in the ratio within a particular sub-function. Thus, it was not possible to reliably relate workload to square footage, and FTEs were used instead as the primary measure of capacity. Although it was recognized that equipment workdays are also linked to throughput, (i.e., personnel use equipment), there is no feasible method to aggregate these measures into a composite measure that accurately represents capacity. The FTE metric is likely to be the major driving factor for the RDA function, but depending on conditions, either factor can become limiting.

FTE and workday data were collected with respect to 13 capability domains that were defined to cover both the spectrum of Medical/Dental RDA activities (i.e., from basic research through procurement) and the technical scope of the Medical/Dental RDA mission (e.g., infectious diseases, combat casualty care, medical biological defense, enterprise IM/IT systems, etc.). Resolution of capacity data to the level of capability domains was deemed necessary to ensure that any realignments of capacity sustained critical masses of expertise in highly specialized areas and maintained the link between specialized personnel expertise and specialized equipment that is necessary for productive, high quality work within a domain. Capability domains used for the Science and Technology area correspond to a taxonomy that has been used for several years in DOD oversight and reporting of science and technology efforts, while those used for the Acquisition area provide a breakout along functional lines, according to the types of technologies being developed and the methods of acquisition.

FTE data for indirect management and support activities were solicited separately from those for direct technical activities. However, most reporting activities allocated all management and support FTEs to the capability domains prior to submission of their data to the MJCSG. For those few activities that did not take this approach, the MJCSG elected to similarly allocate their indirect FTEs to the capability domains prior to any capacity calculations; allocation was made on a pro-rata basis, according to the FY03 distribution of FTEs among the capability domains reported by these activities.

At the outset of the capacity analysis, the capability domains were, in effect, equivalent to Medical/Dental RDA sub-functions but, as will be explained below, they were eventually superseded by the revised set of sub-functions identified in Section 2.3.2.

Capability Domains for the Science and Technology area are as follows:

- *Basic Research: Biological Sciences.* Basic research aimed at discovering and understanding fundamental biological principles and processes underlying military health and performance at the system/organism, cellular, subcellular, and molecular levels, and basic biomedical research focused on physiological and pathogenic mechanisms of militarily relevant injuries and diseases, and discovery of novel approaches to medical countermeasures.

- *Basic Research: Cognitive & Neural Science: Human Performance.* Basic research aimed at determining and understanding psychological and neurological factors influencing human cognitive performance (including sensory processing and integration) under military operational conditions.

- *Technology Maturation: Chemical-Biological: Medical Chemical Defense.* Technology maturation efforts (beyond basic research) focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., drugs, diagnostics) and medical strategies for prevention, treatment, and management of casualties caused by chemical warfare agents.

- *Technology Maturation: Chemical-Biological: Medical Biological Defense.* Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., vaccines, drugs, diagnostics) and medical strategies for prevention, treatment, and management of casualties caused by biological warfare agents.

- *Technology Maturation: Biomedical: Infectious Diseases.* Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., vaccines, drugs, diagnostics, vector controls) and medical strategies for prevention and treatment of endemic infectious diseases of military importance.

- *Technology Maturation: Biomedical: Combat Casualty Care.* Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., diagnostic and therapeutic systems, drugs, biologicals) and medical and surgical strategies for medical management of combat casualties in field settings and during evacuation. Also includes efforts focused on technologies and strategies for prevention and field management of dental-related incapacitation.

- *Technology Maturation: Biomedical: Military Operational Medicine.* Technology maturation efforts (beyond basic research), focused on developing information on human responses to environmental and occupational threats and/or systems hazards present in military operational settings, and on evaluating policy and doctrinal alternatives and exploring systems (e.g, warfighter monitoring, drugs, nutritional supplements) to prevent injury and performance degradation caused by these threats.

- *Technology Maturation: Biomedical: Medical Radiological Defense.* Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., diagnostic systems, drugs, biologicals) and medical strategies for prevention, treatment, and management of casualties caused by ionizing radiation.

- *Technology Maturation: Human Systems: Protection, Sustainment & Physical Performance.* Technology maturation efforts (beyond basic research), focused on developing information on human systems interactions to support development of personal protective systems, and improve sustainment and physical performance. It includes combat clothing and individual equipment; combat rations and field-feeding equipment; logistics readiness; physical aiding and enhancement; vehicle escape and crash safety; warrior survival and rescue; aerial delivery; and dismounted, mounted, and aircrew warrior systems integration, including warfighter systems analysis.

Within the above definitions, the term "Basic Research" refers to those activities typically funded by RDT&E budget activity 6.1. The term "Technology Maturation" refers to exploratory development typically funded by RDT&E budget activities 6.2 and/or 6.3.

Capability Domains for the Acquisition area:

- *Medical/Dental Acquisition: Pharmaceuticals & Biologicals.* System development and demonstration activities and procurement activities directed towards the advanced development and initial fielding of novel pharmaceuticals and biologicals whose development is subject to the regulatory oversight of the U.S. Food and Drug Administration Centers for Drug Evaluation and Research and Biologics Evaluation and Research.

- *Medical/Dental Acquisition: Medical Devices.* System development and demonstration activities and procurement activities directed towards the advanced development and initial fielding of novel medical devices whose development is subject to the regulatory oversight of the U.S. Food and Drug Administration Center for Devices and Radiological Health.

- *Medical/Dental Acquisition: COTS and Assemblages.* Acquisition activities directed towards the procurement of COTS medical products and non-regulated medical support items for sustainment of TO&E units.

- *Medical/Dental Acquisition: Enterprise IM/IT Systems.* Acquisition activities directed towards the development and procurement of medical enterprise information management/information technology systems.

In the above definitions, the term "Acquisition" refers to both system development and demonstration activities typically funded by RDT&E budget activities 6.4 and/or 6.5, and procurement activities typically funded by Operations and Maintenance and/or Procurement funding.

MJCSG review of the capacity data indicated that there was insufficient excess capacity in any one of the original capability domains to adequately guide scenario development. In order to allow the assessment of functionally driven realignments of capacity, the MJCSG approved additional manipulations of capacity data to regroup them into the structure shown in Table 2

Table 2. Rearranged Medical R,D&A Capacity Alignment

<table>
<tr><th>Capability Domain</th><th>Intermediate Category</th><th>Final Sub-Function</th></tr>
<tr><td>1. Basic Research: Biological Sciences</td><td>None (FTEs allocated to #'s 3, 5, 6, 7, 8 or 9)</td><td>--</td></tr>
<tr><td>2. Basic Research: Cognitive & Neural Science: Human Performance</td><td rowspan="5">ST-MOM</td><td>Environmental Medicine and Physiology Research</td></tr>
<tr><td>3. Technology Maturation: Biomedical: Military Operational Medicine</td><td>Aerospace and Operational Medicine Research</td></tr>
<tr><td rowspan="3">4. Tech Maturation: Human Sys: Protection Sustainment & Phys Perform</td><td>Hyperbaric and Undersea Medicine Research</td></tr>
<tr><td>Occupational Health and Medical Informatics Research</td></tr>
<tr><td rowspan="2">Medical Chemical Defense Research</td></tr>
<tr><td>5. Technology Maturation: Chem-Bio: Medical Chemical Defense</td><td>ST-CHEM</td></tr>
<tr><td>6. Technology Maturation: Chem-Bio: Medical Biological Defense</td><td>ST-BIO</td><td>Medical Biological Defense Research</td></tr>
<tr><td>7. Technology Maturation: Biomedical: Medical Radiological Defense</td><td>ST-RAD</td><td>Medical Radiological Defense Research</td></tr>
<tr><td>8. Technology Maturation: Biomedical: Infectious Diseases</td><td>ST-ID</td><td>Infectious Disease Research</td></tr>
<tr><td>9. Technology Maturation: Biomedical:</td><td>ST-CCC</td><td>Battlefield Medicine & Trauma Re-</td></tr>
</table>

Combat Casualty Care		search
10. Medical/Dental Acquisition: Pharmaceuticals & Biologicals	Medical/Dental Acquisition: Pharmaceuticals & Biologicals	Medical Systems Acquisition
11. Medical/Dental Acquisition: Medical Devices	Medical/Dental Acquisition: Medical Devices	
12. Medical/Dental Acquisition: COTS and Assemblages	Medical/Dental Acquisition: COTS and Assemblages	
13. Medical/Dental Acquisition: Enterprise IM/IT Systems	Medical/Dental Acquisition: Enterprise IM/IT Systems	Information Management and Information Technology Acquisition

3.3.2 Current Usage and Current Capacity

Current usage and current capacity calculations were first made at the level of the original 13 capability domains used for data collection, and then transformed into the 11 sub-functions as described in section 3.3.1.

Current usage is defined by the FY03 output (in FTEs):

$$\mathrm{FTE_c} = \sum_{a \in Activities} \left(\mathrm{FTE_c}\right)_a$$

Where $\mathrm{FTE_c}$ = the number of FTEs supporting the capability domain that were produced by an activity in FY03.

Current capacity is that amount of work that can be produced within current facilities by employees working normal hours (i.e., 40 hours per week).

Since the majority of all FTEs represent full-time employees, FTEs are assumed to equate to the number of personnel working within an activity. Moreover, these employees are assumed to work normal 40-hour workweeks. With these assumptions, current capacity is equivalent to current usage, and is also defined by the above equation.

In the case of specialized equipment workdays, the number of workdays cannot be directly related back to output in the form of FTEs. For each item of equipment, the current usage is the number of workdays that the item of equipment was used. Data were captured for each type of equipment, and for a particular type of equipment:

$$\text{Used Workdays}_e = \sum_{a \in Activities} \left(\text{Workdays}_e^{Used}\right)_a$$

Where Workdays_e^{Used} = the number of workdays that specialized equipment of type *e* was used at an activity in FY03.

The current capacity for a particular type of equipment is the total number of workdays that the equipment was available for work (i.e., after accounting for required maintenance or other functions that limit use of the equipment):

$$\text{Available Workdays}_e = \sum_{a \in Activities} \left(\text{Workdays}_e^{Available}\right)_a$$

Where $\text{Workdays}_e^{Available}$ = the number of workdays that specialized equipment of type *e* was available at an activity in FY03.

Since the available days for a particular type of equipment may be used to support multiple capability domains, the current capacity can only be determined for an activity as a whole.

3.3.3 Maximum Potential Capacity

Maximum capacity is the total output that could theoretically be achieved if all current buildings and facilities were optimally utilized. The maximum output for a particular capability domain was calculated by the equation:

$$\text{FTE}_c = \sum_{a \in Activities} \left(\text{FTE}_c^{\max}\right)_a$$

Where $\text{FTE}_c^{\max}$ = the activity commander's estimate of the number of technical FTEs within the capability domain that can optimally perform the current mission at a maximum sustainable level within the current facilities

Although FTEs are typically the primary driver of maximum potential facility capacity, total available workdays per year for each major item of specialized equipment may limit maximum potential capacity in some instances. There is no way to directly relate available workdays to output (i.e., FTEs). However, the impact of this parameter was taken into consideration during scenario evaluation, through the application of military judgment, in order to identify and assess realignment and closure alternatives that would entail expensive relocations of specialized equipment. Since specialized equipment linkages to capability domains were identified and the number of workdays that each item of equipment is currently used were identified for each activity, potential reallocations of workload among activities that were based on FTE requirements were secondarily assessed with respect to specialized equipment. This secondary assessment evaluated (1) whether required equipment of the same type was available at both donor and recipient organizations, and (2) whether there were sufficient unused workdays available at the recipient activity to accommodate the number of workdays used at the donor activity.

Due to the potential for a lack of consistency at the field level in allocating data to the appropriate sub-functions, the MJCSG views the certified personnel data and space availability that were reported by the Services and Defense Agencies in response to scenario data calls as the definitive source of capacity data for evaluating its specific scenario recommendations concerning medical/dental RDA sub-functions and activities.

3.3.4 Surge Requirement

The ability to accommodate *surge requirements* is an inherent mission responsibility of the DoD RDA infrastructure. Surge requirements have arisen in the past and are expected in the future due to changes in the scope of the mission as well as emergent operational problems that require a contingency R&D effort to resolve. In addition, R&D efforts directed as special interest items by Congress, while usually executed extramurally, inevitably utilize some intramural resources for management and administration, and in some cases involve intramural technical work.

3.3.4.1 Estimation of Medical/Dental RDA Surge Requirement

It is difficult to quantify the requirement because of (a) substantial uncertainties over the technical nature of surge requirements (and thus the resources required to address them) and (b) the unpredictability of R&D progress (which affects the time and effort required to meet requirements). There are no standards that relate RDA workloads to requirements. Nor are there reliable historical data that document changes in workload, or changes in square footage or equipment utilization over time, as a result of changing requirements.

The MJCSG based its determination of the surge factor for Medical/Dental RDA on an assessment of changes in RDT&E funding levels over time. It is believed that changes in funding provide some insight into the level of infrastructure flexibility that is required. This belief is based in the observation that the size of the Medical/Dental RDA workforce is tied to budgets, rather than manpower authorizations, and so changes in requirements that are accompanied by changes in intramural funding can be expected to roughly translate to changes in level of effort expended (typically achieved through use of in-house contractors). This, in turn, places demands on physical infrastructure. Thus, as a rough approximation, changes in intramural funding level reflect changes in infrastructure requirements.

Figure 4. Intramural Funding Variation

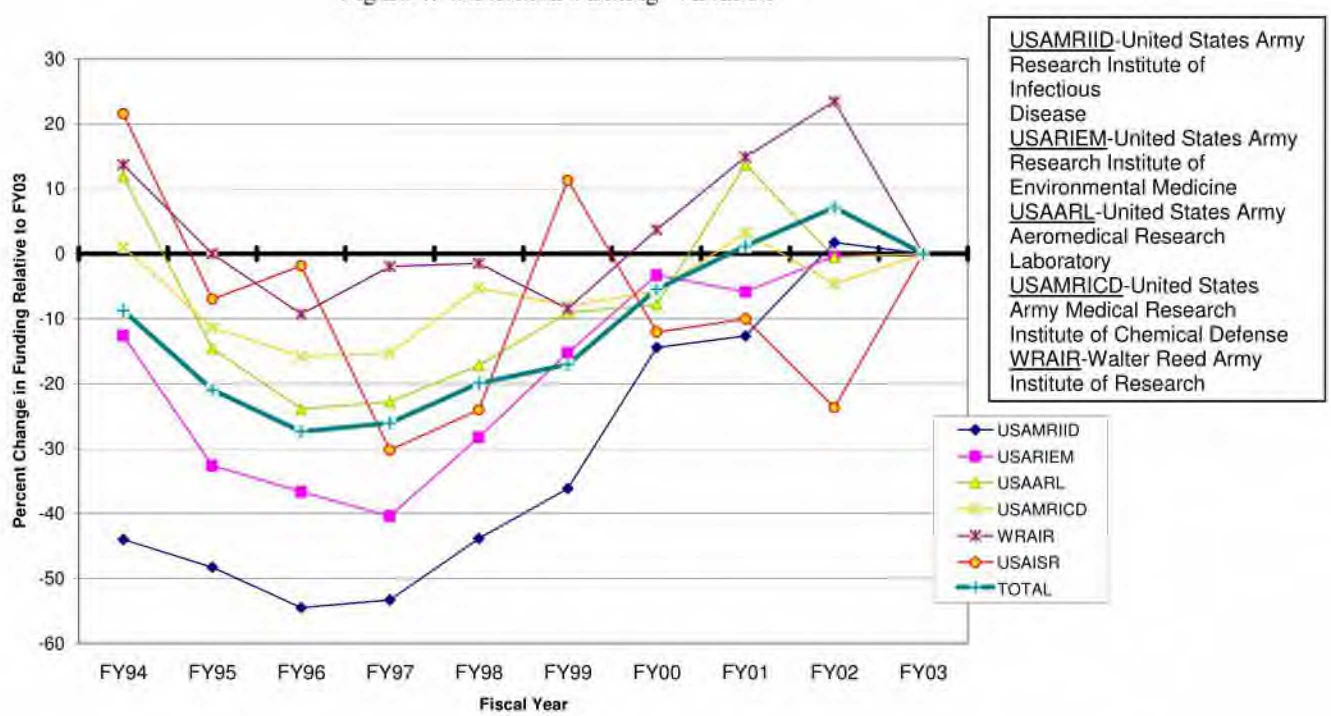

Figure 4 shows the changes over time in intramurally-executed funding at 6 USAMRMC laboratories, expressed as the percentage change in inflation-adjusted dollars relative to the FY03 funding received by each laboratory. It should be noted that the facilities used in each case are known to have varied over the time period shown for at least some of the laboratories listed in this figure (e.g., WRAIR). It can be seen from this figure that overall funding is quite variable from year to year, and that relative to FY03, funding has historically been up to 7% higher than the base year of FY03 that is being used as a measure of current requirements for BRAC analysis.

Surge requirements are typically focused in a particular technical area, and since the technical capabilities of the different laboratories are largely non-overlapping, the requirements cannot be distributed evenly across the entire RDA enterprise. Rather, they impact one (or sometimes two) laboratories that have the appropriate expertise and facilities to address the requirement. Thus, it is necessary to look at variability of funding at individual organizations as well as overall funding variability. When the analysis of funding variability is taken to the level of individual laboratories, several instances are observed in which spikes of 10-15% above FY03 funding occurred, and in one case a spike of 23% occurred. Some organizations such as USAMRIID and USAMRICD are currently surging (i.e., are at or near their historical peak levels of funding, representing substantial increased demand in the past 5 years for biological and chemical defense countermeasure research). Others are significantly below their peak, but based on historical variability, there is a reasonable likelihood that they will return to levels near or above their peak in the long term. Although the data in Figure 1 are limited to Army medical RDA laboratories, the fluctuations seen are believed to be representative of those that occur in the other Services.

Based on an analysis of historical fluctuations in intramural funding over the past 10 years, the MJCSG concluded that the surge requirements for medical-dental RDA are those resources that can support 10% of the current workload:

$$\text{Surge FTE}_c = 0.1\times \sum_{a\in Activities}\left(\text{FTE}_c^{\text{tech}}\right)_a$$

In terms of resources, the surge requirement for specialized equipment utilization is considered to be 10% of currently used workdays per year for each major type of equipment.

As with current requirements, calculations were first made at the level of the original 13 capability domains used for data collection, and then transformed into the 11 sub-functions described in section 2.3.2.

APPENDIX A

A.1 Education and Training

A.3.1 Classrooms - Healthcare Education & Training

	Current Usage (Students)	Current Capacity (Students)	Surge Rqmnt (Students)	Max Capacity (Student)	Excess Capacity (Students)	Capacity Avail to Surge (Students)
USA						
ABERDEEN PROVING GROUND	0	0	0	0	0	0
ANNISTON ARMY DEPOT	0	0	0	0	0	0
CARLISLE BARRACKS	0	0	0	0	0	0
DUGWAY PROVING GROUND	0	0	0	16	16	16
FORT BELVOIR	2	5	5	48	47	47
FORT BENNING	8	8	8	0	-8	-8
FORT BLISS	53	53	53	296	243	243
FORT BRAGG	24	24	24	55	31	31
FORT BUCHANAN	0	0	0	0	0	0
FORT CAMPBELL	32	30	30	96	64	64
FORT CARSON	4	5	5	45	41	41
FORT DETRICK	0	0	0	0	0	0
FORT DIX	0	0	0	0	0	0
FORT DRUM	2	3	3	50	49	49
FORT EUSTIS	1	1	1	11	11	11
FORT GORDON	106	167	167	270	164	164
FORT HOOD	17	17	17	97	80	80
FORT HUACHUCA	0	0	0	0	0	0
FORT JACKSON	0	0	0	0	0	0
FORT KNOX	0	0	0	64	64	64
FORT LEAVENWORTH	0	0	0	16	16	16
FORT LEE	0	0	0	0	0	0
FORT LEONARD WOOD	4	5	5	56	52	52
FORT LEWIS	82	85	85	290	208	208
FORT MCCOY	0	0	0	0	0	0
FORT MCPHERSON	0	0	0	0	0	0
FORT MEADE	1	1	1	45	44	44
FORT MONMOUTH	0	0	0	0	0	0
FORT MONROE	0	0	0	0	0	0
FORT MYER	0	0	0	0	0	0
FORT POLK	0	0	0	56	55	55
FORT RICHARDSON	0	0	0	0	0	0
FORT RILEY	16	31	31	13	-3	-3
FORT RUCKER	15	25	25	155	139	139
FORT SAM HOUSTON	2,204	3,127	3,127	6,187	3,983	3,983
FORT SILL	0	0	0	0	0	0
FORT STEWART	2	2	2	0	-2	-2
FORT WAINWRIGHT	0	0	0	0	0	0
NTC AND FORT IRWIN CA	0	0	0	0	0	0
PRESIDIO OF MONTEREY	0	0	0	0	0	0
RED RIVER ARMY DEPOT	0	0	0	0	0	0
REDSTONE ARSENAL	0	0	0	0	0	0
ROCK ISLAND ARSENAL	0	0	0	0	0	0
SCHOFIELD BARRACKS	3	3	3	116	113	113
TRIPLER ARMY MEDICAL	50	65	65	105	55	55
US ARMY GARRISON SELFRIDGE	0	0	0	0	0	0
WALTER REED ARMY MEDICAL	177	178	178	400	223	223
WEST POINT MIL RESERVATION	1	2	2	23	22	22
WHITE SANDS MISSILE RANGE	0	0	0	28	28	28
YUMA PROVING GROUND	0	0	0	0	0	0
USAF						
ALTUS AFB	0	0	0	0	0	0
ANDERSEN AFB	0	0	0	0	0	0
ANDREWS AFB	58	80	80	13	-45	-45
BARKSDALE AFB	0	1	1	61	60	60

	Current Usage (Students)	Current Capacity (Students)	Surge Rqmnt (Students)	Max Capacity (Student)	Excess Capacity (Students)	Capacity Avail to Surge (Students)
USAF						
BEALE AFB	0	0	0	0	0	0
BOLLING AFB	1	1	1	0	-1	-1
BROOKS CITY-BASE	1,513	2,118	2,118	814	-699	-699
BUCKLEY AFB	0	0	0	7	7	7
CANNON AFB	0	0	0	17	17	17
CHARLESTON AFB	0	0	0	0	0	0
COLUMBUS AFB	1	1	1	18	17	17
DAVIS-MONTHAN AFB	0	0	0	33	33	33
DOVER AFB	0	0	0	0	0	0
DYESS AFB	0	0	0	22	22	22
EDWARDS AFB	0	0	0	6	6	6
EGLIN AFB	23	24	24	57	34	34
EIELSON AFB	0	0	0	0	0	0
ELLSWORTH AFB	0	0	0	22	22	22
ELMENDORF AFB	2	3	3	84	82	82
FAIRCHILD AFB	0	0	0	0	0	0
FRANCIS E. WARREN AFB	0	0	0	7	7	7
GOODFELLOW AFB	0	0	0	13	13	13
GRAND FORKS AFB	0	0	0	0	0	0
HANSCOM AFB	0	0	0	0	0	0
HICKAM AFB	0	0	0	0	0	0
HILL AFB	0	0	0	0	0	0
HOLLOMAN AFB	0	0	0	0	0	0
HURLBURT FIELD	1	1	1	0	-1	-1
KEESLER AFB	46	60	60	43	-4	-4
KIRTLAND AFB	12	13	13	0	-12	-12
LACKLAND AFB	254	282	282	142	-112	-112
LANGLEY AFB	62	62	62	86	24	24
LAUGHLIN AFB	0	0	0	0	0	0
LITTLE ROCK AFB	0	0	0	9	9	9
LOS ANGELES AFB	0	0	0	0	0	0
LUKE AFB	0	0	0	11	11	11
MACDILL AFB	2	3	3	27	25	25
MALMSTROM AFB	0	0	0	0	0	0
MAXWELL AFB	0	0	0	24	24	24
MCCHORD AFB	0	0	0	0	0	0
MCCONNELL AFB	0	0	0	0	0	0
MCGUIRE AFB	0	0	0	13	13	13
MINOT AFB	0	0	0	0	0	0
MOODY AFB	1	2	2	0	-1	-1
MOUNTAIN HOME AFB	0	0	0	0	0	0
NELLIS AFB	3	6	6	64	61	61
OFFUTT AFB	27	53	53	131	104	104
PATRICK AFB	0	0	0	0	0	0
PETERSON AFB	1	1	1	80	79	79
POPE AFB	0	0	0	0	0	0
RANDOLPH AFB	0	0	0	0	0	0
ROBINS AFB	0	0	0	0	0	0
SCHRIEVER AFB	0	0	0	0	0	0
SCOTT AFB	14	25	25	92	78	78
SEYMOUR JOHNSON AFB	0	0	0	10	10	10
SHAW AFB	0	0	0	0	0	0
SHEPPARD AFB	717	902	902	2,257	1,540	1,540
TINKER AFB	0	0	0	15	15	15
TRAVIS AFB	130	141	141	220	90	90
TYNDALL AFB	0	0	0	0	0	0
UNITED STATES AIR FORCE	6	8	8	11	5	5
VANCE AFB	0	0	0	0	0	0

	Current Usage (Students)	Current Capacity (Students)	Surge Rqmnt (Students)	Max Capacity (Student)	Excess Capacity (Students)	Capacity Avail to Surge (Students)
USAF						
VANDENBERG AFB	0	0	0	0	0	0
WHITEMAN AFB	0	0	0	0	0	0
WRIGHT-PATTERSON AFB	86	100	100	111	26	26
USN						
CBC GULFPORT	0	0	0	11	11	11
CBC PORT HUENEME	0	0	0	0	0	0
JOINT RESERVE BASE FORT	0	0	0	0	0	0
JOINT RESERVE BASE NEW	0	0	0	0	0	0
JOINT RESERVE BASE WILLOW	0	0	0	0	0	0
MCAGCC TWENTYNINE PALMS	10	12	12	95	85	85
MCAS CHERRY POINT	0	0	0	44	44	44
MCAS NEW RIVER	0	0	0	0	0	0
MCAS STATION MIRAMAR	0	0	0	0	0	0
MCAS YUMA	0	0	0	0	0	0
MCB CAMP LEJEUNE	1	2	2	24	23	23
MCB CAMP PENDLETON	24	25	25	243	220	220
MCB HAWAII CAMP SMITH	0	0	0	0	0	0
MCB HAWAII KANEOHE	0	0	0	0	0	0
MCB QUANTICO	0	0	0	31	31	31
MCLB ALBANY	0	0	0	11	11	11
MCLB BARSTOW	0	0	0	0	0	0
MCRD PARRIS ISLAND	0	0	0	0	0	0
MCRD SAN DIEGO	0	0	0	0	0	0
NAB CORONADO	0	0	0	0	0	0
NAB LITTLE CREEK	0	0	0	0	0	0
NAES LAKEHURST	0	0	0	0	0	0
NAF EL CENTRO	0	0	0	0	0	0
NAS ATLANTA	0	0	0	5	5	5
NAS BRUNSWICK	2	2	2	0	-2	-2
NAS CORPUS CHRISTI	3	4	4	43	39	39
NAS FALLON	0	0	0	0	0	0
NAS JACKSONVILLE	15	17	17	128	113	113
NAS KEY WEST	0	0	0	7	7	7
NAS KINGSVILLE	0	0	0	0	0	0
NAS LEMOORE	3	4	4	22	19	19
NAS MERIDIAN	0	0	0	21	21	21
NAS NORTH ISLAND	0	0	0	0	0	0
NAS OCEANA	0	0	0	0	0	0
NAS OCEANA DAM NECK ANNEX	0	0	0	0	0	0
NAS PATUXENT RIVER	0	0	0	0	0	0
NAS POINT MUGU	0	0	0	0	0	0
NAS WHIDBEY ISLAND	0	0	0	58	57	57
NAS WHITING FIELD	0	0	0	8	8	8
NAVAL SUB BASE BANGOR	9	10	10	41	32	32
NAVAL SUB BASE KINGS BAY	0	0	0	16	16	16
NAVAL SUB BASE NEW LONDON	0	0	0	38	38	38
NAVSTA ANNAPOLIS	1	1	1	97	97	97
NAVSTA BREMERTON	0	0	0	0	0	0
NAVSTA EVERETT	0	0	0	0	0	0
NAVSTA GREAT LAKES	469	523	523	784	315	315
NAVSTA INGLESIDE	0	0	0	0	0	0
NAVSTA MAYPORT	0	0	0	0	0	0
NAVSTA NEWPORT	0	0	0	84	84	84
NAVSTA NORFOLK	33	40	40	65	32	32
NAVSTA PASCAGOULA	0	0	0	8	8	8
NAVSTA PEARL HARBOR	34	42	42	149	115	115
NAVSTA SAN DIEGO	33	40	40	90	57	57

	Current Usage (Students)	Current Capacity (Students)	Surge Rqmnt (Students)	Max Capacity (Student)	Excess Capacity (Students)	Capacity Avail to Surge (Students)
USN						
NH BEAUFORT	0	0	0	0	0	0
NH BREMERTON	5	5	5	66	61	61
NH CHARLESTON	0	0	0	16	16	16
NH GUAM	0	0	0	41	41	41
NMC PORTSMOUTH	280	282	282	412	132	132
NMC SAN DIEGO	253	308	308	155	-98	-98
NNMC BETHESDA	347	398	398	1,072	726	726
NSA MECHANICSBURG	0	0	0	0	0	0
NSA MILLINGTON	0	0	0	43	43	43
NSA NEW ORLEANS	0	0	0	67	67	67
NSA PANAMA CITY	0	0	0	0	0	0
NSCS ATHENS	0	0	0	0	0	0
NSU SARATOGA SPRINGS	0	0	0	0	0	0
NSWC DAHLGREN	0	0	0	0	0	0
NSWC INDIAN HEAD	0	0	0	0	0	0
NSY NORFOLK	0	0	0	0	0	0
NSY PORTSMOUTH	0	0	0	60	60	60
NWS CHARLESTON	0	0	0	0	0	0
NWS EARLE	0	0	0	0	0	0
NWS SEAL BEACH	0	0	0	0	0	0
NWS YORKTOWN	23	26	26	68	45	45
PENSACOLA	85	90	90	543	457	457
WASHINGTON NAVY YARD	0	0	0	0	0	0

<u>Assumptions</u>

Hours per Week	40
Scheduling Inefficiency Factor	1.25
Square Ft per Student	30
Weeks per Year	52

A.3.1 Laboratory - Healthcare Education & Training

	Current Usage (Students)	Current Capacity (Students)	Surge Rqmnt (Students)	Max Capacity (Students)	Excess Capacity (Students)	Capacity Avail to Surge (Students)
USA						
ABERDEEN PROVING GROUND	0	0	0	0	0	0
ANNISTON ARMY DEPOT	0	0	0	0	0	0
CARLISLE BARRACKS	0	0	0	0	0	0
DUGWAY PROVING GROUND	0	0	0	0	0	0
FORT BELVOIR	0	0	0	0	0	0
FORT BENNING	0	1	0	41	41	41
FORT BLISS	5	5	5	276	271	271
FORT BRAGG	15	15	15	27	12	12
FORT BUCHANAN	0	0	0	0	0	0
FORT CAMPBELL	3	3	3	0	-3	-3
FORT CARSON	5	7	5	112	107	107
FORT DETRICK	0	0	0	0	0	0
FORT DIX	0	0	0	0	0	0
FORT DRUM	1	1	1	0	-1	-1
FORT EUSTIS	4	6	4	0	-4	-4
FORT GORDON	4	5	4	134	131	131
FORT HOOD	1	2	1	0	-1	-1
FORT HUACHUCA	0	0	0	0	0	0
FORT JACKSON	42	42	42	0	-42	-42
FORT KNOX	0	0	0	3	3	3
FORT LEAVENWORTH	0	0	0	0	0	0
FORT LEE	0	0	0	0	0	0
FORT LEONARD WOOD	1	1	1	19	18	18
FORT LEWIS	5	6	5	262	257	257
FORT MCCOY	0	0	0	0	0	0
FORT MCPHERSON	0	0	0	0	0	0
FORT MEADE	0	0	0	0	0	0
FORT MONMOUTH	0	0	0	0	0	0
FORT MONROE	0	0	0	0	0	0
FORT MYER	0	0	0	0	0	0
FORT POLK	5	8	5	0	-5	-5
FORT RICHARDSON	0	0	0	0	0	0
FORT RILEY	5	10	5	25	20	20
FORT RUCKER	0	0	0	0	0	0
FORT SAM HOUSTON	958	1,424	958	7,680	6,721	6,721
FORT SILL	0	0	0	0	0	0
FORT STEWART	0	0	0	0	0	0
FORT WAINWRIGHT	0	0	0	0	0	0
NTC AND FORT IRWIN CA	0	0	0	0	0	0
PRESIDIO OF MONTEREY	0	0	0	0	0	0
RED RIVER ARMY DEPOT	0	0	0	0	0	0
REDSTONE ARSENAL	0	0	0	0	0	0
ROCK ISLAND ARSENAL	0	0	0	0	0	0
SCHOFIELD BARRACKS	0	0	0	0	0	0
TRIPLER ARMY MEDICAL	11	16	11	0	-11	-11
US ARMY GARRISON SELFRIDGE	0	0	0	0	0	0
WALTER REED ARMY MEDICAL	28	30	28	20	-8	-8
WEST POINT MIL RESERVATION	2	2	2	7	6	6
WHITE SANDS MISSILE RANGE	0	0	0	0	0	0
YUMA PROVING GROUND	0	0	0	0	0	0
USAF						
ALTUS AFB	0	0	0	0	0	0
ANDERSEN AFB	0	0	0	0	0	0
ANDREWS AFB	1	2	1	8	7	7
BARKSDALE AFB	0	0	0	0	0	0
BEALE AFB	0	0	0	0	0	0

	Current Usage (Students)	Current Capacity (Students)	Surge Rqmnt (Students)	Max Capacity (Students)	Excess Capacity (Students)	Capacity Avail to Surge (Students)
USAF						
BOLLING AFB	0	0	0	0	0	0
BROOKS CITY-BASE	90	116	90	152	62	62
BUCKLEY AFB	0	0	0	0	0	0
CANNON AFB	0	0	0	24	24	24
CHARLESTON AFB	0	0	0	0	0	0
COLUMBUS AFB	0	0	0	0	0	0
DAVIS-MONTHAN AFB	0	0	0	20	20	20
DOVER AFB	0	0	0	0	0	0
DYESS AFB	0	0	0	0	0	0
EDWARDS AFB	0	0	0	0	0	0
EGLIN AFB	0	0	0	0	0	0
EIELSON AFB	0	0	0	0	0	0
ELLSWORTH AFB	0	0	0	16	16	16
ELMENDORF AFB	0	0	0	0	0	0
FAIRCHILD AFB	0	0	0	0	0	0
FRANCIS E. WARREN AFB	0	0	0	0	0	0
GOODFELLOW AFB	0	0	0	0	0	0
GRAND FORKS AFB	0	0	0	0	0	0
HANSCOM AFB	0	0	0	0	0	0
HICKAM AFB	0	0	0	0	0	0
HILL AFB	0	0	0	0	0	0
HOLLOMAN AFB	0	0	0	0	0	0
HURLBURT FIELD	0	0	0	0	0	0
KEESLER AFB	34	36	34	22	-12	-12
KIRTLAND AFB	11	12	11	0	-11	-11
LACKLAND AFB	50	67	50	35	-14	-14
LANGLEY AFB	336	336	336	0	-336	-336
LAUGHLIN AFB	0	0	0	0	0	0
LITTLE ROCK AFB	0	0	0	0	0	0
LOS ANGELES AFB	0	0	0	0	0	0
LUKE AFB	0	0	0	13	13	13
MACDILL AFB	0	0	0	5	5	5
MALMSTROM AFB	0	0	0	0	0	0
MAXWELL AFB	0	0	0	0	0	0
MCCHORD AFB	0	0	0	14	13	13
MCCONNELL AFB	0	0	0	0	0	0
MCGUIRE AFB	0	0	0	0	0	0
MINOT AFB	0	0	0	0	0	0
MOODY AFB	0	0	0	0	0	0
MOUNTAIN HOME AFB	0	0	0	0	0	0
NELLIS AFB	3	12	3	0	-3	-3
OFFUTT AFB	52	110	52	8	-44	-44
PATRICK AFB	0	0	0	0	0	0
PETERSON AFB	0	0	0	0	0	0
POPE AFB	0	0	0	0	0	0
RANDOLPH AFB	0	0	0	0	0	0
ROBINS AFB	0	0	0	0	0	0
SCHRIEVER AFB	0	0	0	0	0	0
SCOTT AFB	2	4	2	13	11	11
SEYMOUR JOHNSON AFB	0	0	0	21	21	21
SHAW AFB	0	0	0	0	0	0
SHEPPARD AFB	647	874	647	2,865	2,218	2,218
TINKER AFB	0	0	0	0	0	0
TRAVIS AFB	5	7	5	135	130	130
TYNDALL AFB	0	0	0	0	0	0
UNITED STATES AIR FORCE	0	0	0	0	0	0
VANCE AFB	0	0	0	0	0	0
VANDENBERG AFB	0	0	0	0	0	0
WHITEMAN AFB	0	0	0	0	0	0

	Current Usage (Students)	Current Capacity (Students)	Surge Rqmnt (Students)	Max Capacity (Students)	Excess Capacity (Students)	Capacity Avail to Surge (Students)
USAF						
WRIGHT-PATTERSON AFB	2	2	2	0	-2	-2
USN						
CBC GULFPORT	0	0	0	0	0	0
CBC PORT HUENEME	0	0	0	0	0	0
JOINT RESERVE BASE FORT	0	0	0	0	0	0
JOINT RESERVE BASE NEW	0	0	0	0	0	0
JOINT RESERVE BASE WILLOW	0	0	0	0	0	0
MCAGCC TWENTYNINE PALMS	2	2	2	0	-2	-2
MCAS CHERRY POINT	0	0	0	0	0	0
MCAS NEW RIVER	0	0	0	0	0	0
MCAS STATION MIRAMAR	0	0	0	0	0	0
MCAS YUMA	0	0	0	0	0	0
MCB CAMP LEJEUNE	0	0	0	0	0	0
MCB CAMP PENDLETON	44	53	44	0	-44	-44
MCB HAWAII CAMP SMITH	0	0	0	0	0	0
MCB HAWAII KANEOHE	0	0	0	0	0	0
MCB QUANTICO	0	0	0	0	0	0
MCLB ALBANY	0	0	0	0	0	0
MCLB BARSTOW	0	0	0	0	0	0
MCRD PARRIS ISLAND	0	0	0	0	0	0
MCRD SAN DIEGO	0	0	0	0	0	0
NAB CORONADO	0	0	0	0	0	0
NAB LITTLE CREEK	0	0	0	0	0	0
NAES LAKEHURST	0	0	0	0	0	0
NAF EL CENTRO	0	0	0	0	0	0
NAS ATLANTA	0	0	0	0	0	0
NAS BRUNSWICK	0	0	0	0	0	0
NAS CORPUS CHRISTI	0	0	0	0	0	0
NAS FALLON	0	0	0	0	0	0
NAS JACKSONVILLE	2	3	2	32	30	30
NAS KEY WEST	0	0	0	0	0	0
NAS KINGSVILLE	0	0	0	0	0	0
NAS LEMOORE	0	0	0	0	0	0
NAS MERIDIAN	0	0	0	0	0	0
NAS NORTH ISLAND	0	0	0	0	0	0
NAS OCEANA	0	0	0	0	0	0
NAS OCEANA DAM NECK ANNEX	0	0	0	0	0	0
NAS PATUXENT RIVER	0	0	0	0	0	0
NAS POINT MUGU	0	0	0	0	0	0
NAS WHIDBEY ISLAND	0	0	0	0	0	0
NAS WHITING FIELD	0	0	0	0	0	0
NAVAL SUB BASE BANGOR	4	4	4	48	44	44
NAVAL SUB BASE KINGS BAY	0	0	0	0	0	0
NAVAL SUB BASE NEW LONDON	0	0	0	0	0	0
NAVSTA ANNAPOLIS	0	0	0	0	0	0
NAVSTA BREMERTON	0	0	0	0	0	0
NAVSTA EVERETT	0	0	0	0	0	0
NAVSTA GREAT LAKES	271	302	271	700	429	429
NAVSTA INGLESIDE	0	0	0	0	0	0
NAVSTA MAYPORT	0	0	0	0	0	0
NAVSTA NEWPORT	0	0	0	0	0	0
NAVSTA NORFOLK	8	9	8	0	-8	-8
NAVSTA PASCAGOULA	0	0	0	0	0	0
NAVSTA PEARL HARBOR	7	9	7	0	-7	-7
NAVSTA SAN DIEGO	6	8	6	0	-6	-6
NH BEAUFORT	0	0	0	0	0	0
NH BREMERTON	0	0	0	12	12	12
NH CHARLESTON	0	0	0	0	0	0

	Current Usage (Students)	Current Capacity (Students)	Surge Rqmnt (Students)	Max Capacity (Students)	Excess Capacity (Students)	Capacity Avail to Surge (Students)
USN						
NH GUAM	0	0	0	0	0	0
NMC PORTSMOUTH	182	182	182	207	25	25
NMC SAN DIEGO	105	137	105	0	-105	-105
NNMC BETHESDA	210	233	210	741	531	531
NSA MECHANICSBURG	0	0	0	0	0	0
NSA MILLINGTON	0	0	0	0	0	0
NSA NEW ORLEANS	0	0	0	0	0	0
NSA PANAMA CITY	0	0	0	0	0	0
NSCS ATHENS	0	0	0	0	0	0
NSU SARATOGA SPRINGS	0	0	0	0	0	0
NSWC DAHLGREN	0	0	0	0	0	0
NSWC INDIAN HEAD	0	0	0	0	0	0
NSY NORFOLK	0	0	0	0	0	0
NSY PORTSMOUTH	0	0	0	0	0	0
NWS CHARLESTON	0	0	0	0	0	0
NWS EARLE	0	0	0	0	0	0
NWS SEAL BEACH	0	0	0	0	0	0
NWS YORKTOWN	23	26	23	445	422	422
PENSACOLA	25	29	25	46	21	21
WASHINGTON NAVY YARD	0	0	0	0	0	0

Assumptions

Hours per Week	40
Scheduling Inefficiency Factor	1.25
Square Ft per Student	30
Weeks per Year	52

A.3.1 Clinical - Healthcare Education & Training

	Current Usage (Hrs per week)	Current Capacity (Hrs per week)	Surge Rqmnt (Hrs per week)	Max Capacity (Hrs per week)	Excess Capacity (Hrs per week)	Capacity Avail to Surge (Hrs per week)
USA						
ABERDEEN PROVING GROUND	0	0	0	0	0	0
ANNISTON ARMY DEPOT	0	0	0	0	0	0
CARLISLE BARRACKS	0	0	0	0	0	0
DUGWAY PROVING GROUND	0	0	0	0	0	0
FORT BELVOIR	360	360	360	1,200	840	840
FORT BENNING	11,855	11,855	11,855	18,060	6,206	6,206
FORT BLISS	46,942	46,942	46,942	46,942	0	0
FORT BRAGG	39,997	39,997	39,997	41,274	1,277	1,277
FORT BUCHANAN	0	0	0	0	0	0
FORT CAMPBELL	72,287	72,287	72,287	73,359	1,073	1,073
FORT CARSON	1,023	1,023	1,023	1,395	372	372
FORT DETRICK	0	0	0	0	0	0
FORT DIX	0	0	0	0	0	0
FORT DRUM	72	72	72	120	48	48
FORT EUSTIS	1,120	1,120	1,120	1,200	80	80
FORT GORDON	267,456	267,456	267,456	435,412	167,956	167,956
FORT HOOD	26,780	26,780	26,780	32,500	5,720	5,720
FORT HUACHUCA	0	0	0	0	0	0
FORT JACKSON	0	0	0	0	0	0
FORT KNOX	0	0	0	0	0	0
FORT LEAVENWORTH	40	40	40	40	0	0
FORT LEE	0	0	0	0	0	0
FORT LEONARD WOOD	0	0	0	0	0	0
FORT LEWIS	218,225	218,225	218,225	261,870	43,645	43,645
FORT MCCOY	0	0	0	0	0	0
FORT MCPHERSON	0	0	0	0	0	0
FORT MEADE	720	720	720	720	0	0
FORT MONMOUTH	0	0	0	0	0	0
FORT MONROE	0	0	0	0	0	0
FORT MYER	0	0	0	0	0	0
FORT POLK	720	720	720	1,170	450	450
FORT RICHARDSON	0	0	0	0	0	0
FORT RILEY	12,539	12,539	12,539	25,078	12,539	12,539
FORT RUCKER	0	0	0	0	0	0
FORT SAM HOUSTON	150,143	150,143	150,143	205,920	55,777	55,777
FORT SILL	0	0	0	0	0	0
FORT STEWART	1,200	1,200	1,200	1,320	120	120
FORT WAINWRIGHT	0	0	0	0	0	0
NTC AND FORT IRWIN CA	0	0	0	0	0	0
PRESIDIO OF MONTEREY	0	0	0	0	0	0
RED RIVER ARMY DEPOT	0	0	0	0	0	0
REDSTONE ARSENAL	0	0	0	0	0	0
ROCK ISLAND ARSENAL	0	0	0	0	0	0
SCHOFIELD BARRACKS	104	104	104	104	0	0
TRIPLER ARMY MEDICAL	68,224	68,224	68,224	83,200	14,976	14,976
US ARMY GARRISON SELFRIDGE	0	0	0	0	0	0
WALTER REED ARMY MEDICAL	944,680	944,680	944,680	973,940	29,260	29,260
WEST POINT MIL RESERVATION	3,859	3,859	3,859	6,129	2,270	2,270
WHITE SANDS MISSILE RANGE	0	0	0	0	0	0
YUMA PROVING GROUND	0	0	0	0	0	0
USAF						
ALTUS AFB	0	0	0	0	0	0
ANDERSEN AFB	0	0	0	0	0	0
ANDREWS AFB	48,729	48,729	48,729	63,655	14,926	14,926
BARKSDALE AFB	96	96	96	128	32	32

	Current Usage (Hrs per week)	Current Capacity (Hrs per week)	Surge Rqmnt (Hrs per week)	Max Capacity (Hrs per week)	Excess Capacity (Hrs per week)	Capacity Avail to Surge (Hrs per week)
USAF						
BEALE AFB	0	0	0	0	0	0
BOLLING AFB	165	165	165	198	33	33
BROOKS CITY-BASE	45,117	45,117	45,117	60,285	15,168	15,168
BUCKLEY AFB	0	0	0	0	0	0
CANNON AFB	0	0	0	0	0	0
CHARLESTON AFB	0	0	0	0	0	0
COLUMBUS AFB	0	0	0	0	0	0
DAVIS-MONTHAN AFB	0	0	0	0	0	0
DOVER AFB	0	0	0	0	0	0
DYESS AFB	0	0	0	0	0	0
EDWARDS AFB	0	0	0	0	0	0
EGLIN AFB	16,245	16,245	16,245	18,810	2,565	2,565
EIELSON AFB	0	0	0	0	0	0
ELLSWORTH AFB	0	0	0	0	0	0
ELMENDORF AFB	560	560	560	700	140	140
FAIRCHILD AFB	0	0	0	0	0	0
FRANCIS E. WARREN AFB	0	0	0	0	0	0
GOODFELLOW AFB	0	0	0	0	0	0
GRAND FORKS AFB	0	0	0	0	0	0
HANSCOM AFB	0	0	0	0	0	0
HICKAM AFB	0	0	0	0	0	0
HILL AFB	0	0	0	0	0	0
HOLLOMAN AFB	0	0	0	0	0	0
HURLBURT FIELD	0	0	0	0	0	0
KEESLER AFB	145,123	145,123	145,123	161,634	16,511	16,511
KIRTLAND AFB	4,453	4,453	4,453	5,256	803	803
LACKLAND AFB	1,482,502	1,482,502	1,482,502	1,666,880	184,378	184,378
LANGLEY AFB	5,226	5,226	5,226	5,829	603	603
LAUGHLIN AFB	0	0	0	0	0	0
LITTLE ROCK AFB	0	0	0	0	0	0
LOS ANGELES AFB	0	0	0	0	0	0
LUKE AFB	0	0	0	0	0	0
MACDILL AFB	3,191	3,191	3,191	5,273	2,081	2,081
MALMSTROM AFB	0	0	0	0	0	0
MAXWELL AFB	0	0	0	0	0	0
MCCHORD AFB	245	245	245	392	147	147
MCCONNELL AFB	0	0	0	0	0	0
MCGUIRE AFB	0	0	0	0	0	0
MINOT AFB	0	0	0	0	0	0
MOODY AFB	374	374	374	544	170	170
MOUNTAIN HOME AFB	0	0	0	0	0	0
NELLIS AFB	2,662	2,662	2,662	4,826	2,163	2,163
OFFUTT AFB	12,341	12,341	12,341	22,876	10,535	10,535
PATRICK AFB	0	0	0	0	0	0
PETERSON AFB	0	0	0	0	0	0
POPE AFB	0	0	0	0	0	0
RANDOLPH AFB	0	0	0	0	0	0
ROBINS AFB	0	0	0	0	0	0
SCHRIEVER AFB	0	0	0	0	0	0
SCOTT AFB	17,248	17,248	17,248	32,032	14,784	14,784
SEYMOUR JOHNSON AFB	0	0	0	0	0	0
SHAW AFB	0	0	0	0	0	0
SHEPPARD AFB	39,479	39,479	39,479	52,710	13,231	13,231
TINKER AFB	0	0	0	0	0	0
TRAVIS AFB	133,834	133,834	133,834	171,428	37,594	37,594
TYNDALL AFB	0	0	0	0	0	0
UNITED STATES AIR FORCE	5,480	5,480	5,480	8,049	2,569	2,569
VANCE AFB	0	0	0	0	0	0

	Current Usage (Hrs per week)	Current Capacity (Hrs per week)	Surge Rqmnt (Hrs per week)	Max Capacity (Hrs per week)	Excess Capacity (Hrs per week)	Capacity Avail to Surge (Hrs per week)
USAF						
VANDENBERG AFB	0	0	0	0	0	0
WHITEMAN AFB	0	0	0	0	0	0
WRIGHT-PATTERSON AFB	131,624	131,624	131,624	160,562	28,939	28,939
USN						
CBC GULFPORT	0	0	0	0	0	0
CBC PORT HUENEME	0	0	0	0	0	0
JOINT RESERVE BASE FORT	0	0	0	0	0	0
JOINT RESERVE BASE NEW	0	0	0	0	0	0
JOINT RESERVE BASE WILLOW	0	0	0	0	0	0
MCAGCC TWENTYNINE PALMS	558	558	558	786	228	228
MCAS CHERRY POINT	0	0	0	0	0	0
MCAS NEW RIVER	0	0	0	0	0	0
MCAS STATION MIRAMAR	0	0	0	0	0	0
MCAS YUMA	0	0	0	0	0	0
MCB CAMP LEJEUNE	750	750	750	1,350	600	600
MCB CAMP PENDLETON	57,876	57,876	57,876	64,792	6,916	6,916
MCB HAWAII CAMP SMITH	0	0	0	0	0	0
MCB HAWAII KANEOHE	0	0	0	0	0	0
MCB QUANTICO	0	0	0	0	0	0
MCLB ALBANY	0	0	0	0	0	0
MCLB BARSTOW	0	0	0	0	0	0
MCRD PARRIS ISLAND	0	0	0	0	0	0
MCRD SAN DIEGO	0	0	0	0	0	0
NAB CORONADO	0	0	0	0	0	0
NAB LITTLE CREEK	0	0	0	0	0	0
NAES LAKEHURST	0	0	0	0	0	0
NAF EL CENTRO	0	0	0	0	0	0
NAS ATLANTA	0	0	0	0	0	0
NAS BRUNSWICK	31	31	31	33	2	2
NAS CORPUS CHRISTI	770	770	770	966	196	196
NAS FALLON	0	0	0	0	0	0
NAS JACKSONVILLE	30,371	30,371	30,371	38,220	7,849	7,849
NAS KEY WEST	0	0	0	0	0	0
NAS KINGSVILLE	0	0	0	0	0	0
NAS LEMOORE	204	204	204	252	48	48
NAS MERIDIAN	0	0	0	0	0	0
NAS NORTH ISLAND	0	0	0	0	0	0
NAS OCEANA	0	0	0	0	0	0
NAS OCEANA DAM NECK ANNEX	0	0	0	0	0	0
NAS PATUXENT RIVER	0	0	0	0	0	0
NAS POINT MUGU	0	0	0	0	0	0
NAS WHIDBEY ISLAND	66	66	66	66	0	0
NAS WHITING FIELD	0	0	0	0	0	0
NAVAL SUB BASE BANGOR	0	0	0	0	0	0
NAVAL SUB BASE KINGS BAY	0	0	0	0	0	0
NAVAL SUB BASE NEW LONDON	0	0	0	0	0	0
NAVSTA ANNAPOLIS	24	24	24	48	24	24
NAVSTA BREMERTON	0	0	0	0	0	0
NAVSTA EVERETT	0	0	0	0	0	0
NAVSTA GREAT LAKES	2,982	2,982	2,982	3,360	378	378
NAVSTA INGLESIDE	0	0	0	0	0	0
NAVSTA MAYPORT	0	0	0	0	0	0
NAVSTA NEWPORT	108	108	108	144	36	36
NAVSTA NORFOLK	26,944	26,944	26,944	33,152	6,208	6,208
NAVSTA PASCAGOULA	0	0	0	0	0	0
NAVSTA PEARL HARBOR	21,792	21,792	21,792	26,400	4,608	4,608
NAVSTA SAN DIEGO	27,064	27,064	27,064	31,824	4,760	4,760

	Current Usage (Hrs per week)	Current Capacity (Hrs per week)	Surge Rqmnt (Hrs per week)	Max Capacity (Hrs per week)	Excess Capacity (Hrs per week)	Capacity Avail to Surge (Hrs per week)
USN						
NH BEAUFORT	0	0	0	0	0	0
NH BREMERTON	800	800	800	800	0	0
NH CHARLESTON	0	0	0	0	0	0
NH GUAM	0	0	0	0	0	0
NMC PORTSMOUTH	646,246	646,246	646,246	692,282	46,036	46,036
NMC SAN DIEGO	1,085,364	1,085,364	1,085,364	1,435,588	350,224	350,224
NNMC BETHESDA	2,075,733	2,075,733	2,075,733	2,388,150	312,417	312,417
NSA MECHANICSBURG	0	0	0	0	0	0
NSA MILLINGTON	0	0	0	0	0	0
NSA NEW ORLEANS	0	0	0	0	0	0
NSA PANAMA CITY	0	0	0	0	0	0
NSCS ATHENS	0	0	0	0	0	0
NSU SARATOGA SPRINGS	0	0	0	0	0	0
NSWC DAHLGREN	0	0	0	0	0	0
NSWC INDIAN HEAD	0	0	0	0	0	0
NSY NORFOLK	0	0	0	0	0	0
NSY PORTSMOUTH	0	0	0	0	0	0
NWS CHARLESTON	0	0	0	0	0	0
NWS EARLE	0	0	0	0	0	0
NWS SEAL BEACH	0	0	0	0	0	0
NWS YORKTOWN	52	52	52	60	8	8
PENSACOLA	17,380	17,380	17,380	18,150	770	770
WASHINGTON NAVY YARD	0	0	0	0	0	0

<u>Assumptions</u>

Hours per Week	40
Scheduling Inefficiency Factor	1.25
Square Ft per Student	30
Weeks per Year	52

A.2 Healthcare Services

A.3.2.1 Ambulatory Care - Primary

	Current Usage (RVUs)	Current Capacity (RVUs)	Surge Rqmt (RVUs)	Max Capacity (RVUs)	Excess Capacity (RVUs)	Capacity Avail to Surge (RVUs)
USA						
ABERDEEN PROVING GROUND	40,175	90,609	90,609	112,422	72,247	72,247
ANNISTON ARMY DEPOT	5,534	8,390	8,390	8,390	2,856	2,856
CARLISLE BARRACKS	40,827	57,050	57,050	57,050	16,223	16,223
DUGWAY PROVING GROUND	2,519	10,068	10,068	11,746	9,227	9,227
FORT BELVOIR	256,756	112,422	112,422	130,879	-125,877	-125,877
FORT BENNING	231,870	162,760	162,760	167,794	-64,076	-64,076
FORT BLISS	102,965	211,420	211,420	125,845	22,880	22,880
FORT BRAGG	379,238	609,091	609,091	609,091	229,853	229,853
FORT BUCHANAN	0	15,101	15,101	15,101	15,101	15,101
FORT CAMPBELL	188,662	239,945	239,945	273,504	84,842	84,842
FORT CARSON	130,437	276,860	276,860	276,860	146,423	146,423
FORT DETRICK	163,316	18,457	18,457	18,457	-144,859	-144,859
FORT DIX	3,004	16,779	16,779	20,135	17,131	17,131
FORT DRUM	68,308	241,623	241,623	241,623	173,315	173,315
FORT EUSTIS	86,947	72,151	72,151	77,185	-9,762	-9,762
FORT GORDON	202,720	350,689	350,689	387,604	184,884	184,884
FORT HOOD	285,387	458,077	458,077	458,077	172,690	172,690
FORT HUACHUCA	39,372	72,151	72,151	72,151	32,779	32,779
FORT JACKSON	138,929	134,235	134,235	159,404	20,475	20,475
FORT KNOX	98,470	172,828	172,828	172,828	74,358	74,358
FORT LEAVENWORTH	58,876	52,016	52,016	52,016	-6,860	-6,860
FORT LEE	91,298	112,422	112,422	112,422	21,124	21,124
FORT LEONARD WOOD	126,171	144,303	144,303	144,303	18,132	18,132
FORT LEWIS	219,239	607,413	607,413	607,413	388,174	388,174
FORT MCCOY	3,772	16,779	16,779	57,050	53,278	53,278
FORT MCPHERSON	61,799	55,372	55,372	57,050	-4,749	-4,749
FORT MEADE	75,616	97,320	97,320	97,320	21,705	21,705
FORT MONMOUTH	39,472	31,881	31,881	35,237	-4,236	-4,236
FORT MONROE	0	18,457	18,457	18,457	18,457	18,457
FORT MYER	35,460	38,593	38,593	53,694	18,234	18,234
FORT POLK	76,357	147,659	147,659	295,317	218,960	218,960
FORT RICHARDSON	13,648	35,237	35,237	45,304	31,656	31,656
FORT RILEY	79,980	82,219	82,219	117,456	37,475	37,475
FORT RUCKER	77,637	107,388	107,388	291,961	214,324	214,324
FORT SAM HOUSTON	162,339	238,267	238,267	238,267	75,928	75,928
FORT SILL	229,506	179,539	179,539	246,657	17,151	17,151
FORT STEWART	202,889	211,420	211,420	218,132	15,243	15,243
FORT WAINWRIGHT	35,496	134,235	134,235	328,876	293,380	293,380
NTC AND FORT IRWIN CA	43,329	48,660	48,660	60,406	17,077	17,077
PRESIDIO OF MONTEREY	22,518	70,473	70,473	87,253	64,735	64,735
RED RIVER ARMY DEPOT	8,105	1,678	1,678	1,678	-6,427	-6,427
REDSTONE ARSENAL	40,064	53,694	53,694	58,728	18,664	18,664
ROCK ISLAND ARSENAL	1,766	6,712	6,712	6,712	4,946	4,946
SCHOFIELD BARRACKS	61,903	93,965	93,965	95,642	33,740	33,740
TRIPLER ARMY MEDICAL	206,719	104,032	104,032	112,422	-94,297	-94,297
US ARMY GARRISON SELFRIDGE	5,968	8,390	8,390	8,390	2,422	2,422
WALTER REED ARMY MEDICAL	86,977	137,591	137,591	140,947	53,970	53,970
WEST POINT MIL RESERVATION	55,881	55,372	55,372	55,372	-509	-509
WHITE SANDS MISSILE RANGE	10,340	15,101	15,101	15,101	4,762	4,762
YUMA PROVING GROUND	8,579	3,356	3,356	3,356	-5,223	-5,223
USAF						
ALTUS AFB	30,853	30,203	30,203	30,203	-650	-650
ANDERSEN AFB	34,780	21,813	21,813	21,813	-12,967	-12,967
ANDREWS AFB	116,627	171,150	171,150	171,150	54,523	54,523
BARKSDALE AFB	58,253	62,084	62,084	62,084	3,831	3,831
BEALE AFB	8,185	31,881	31,881	31,881	23,696	23,696

	Current Usage (RVUs)	Current Capacity (RVUs)	Surge Rqmt (RVUs)	Max Capacity (RVUs)	Excess Capacity (RVUs)	Capacity Avail to Surge (RVUs)
USAF						
BOLLING AFB	54,776	35,237	35,237	35,237	-19,540	-19,540
BROOKS CITY-BASE	10,603	10,068	10,068	11,746	1,143	1,143
BUCKLEY AFB	19,241	16,779	16,779	16,779	-2,462	-2,462
CANNON AFB	50,721	31,881	31,881	90,609	39,887	39,887
CHARLESTON AFB	32,134	57,050	57,050	57,050	24,916	24,916
COLUMBUS AFB	24,902	16,779	16,779	16,779	-8,122	-8,122
DAVIS-MONTHAN AFB	59,494	114,100	114,100	127,523	68,029	68,029
DOVER AFB	41,552	93,965	93,965	152,692	111,141	111,141
DYESS AFB	0	30,203	30,203	30,203	30,203	30,203
EDWARDS AFB	21,842	40,271	40,271	40,271	18,429	18,429
EGLIN AFB	113,051	147,659	147,659	147,659	34,608	34,608
EIELSON AFB	53,816	25,169	25,169	25,169	-28,647	-28,647
ELLSWORTH AFB	36,314	26,847	26,847	30,203	-6,111	-6,111
ELMENDORF AFB	47,220	152,692	152,692	169,472	122,252	122,252
FAIRCHILD AFB	60,936	53,694	53,694	58,728	-2,208	-2,208
FRANCIS E. WARREN AFB	0	43,626	43,626	46,982	46,982	46,982
GOODFELLOW AFB	20,066	31,881	31,881	40,271	20,205	20,205
GRAND FORKS AFB	31,900	26,847	26,847	33,559	1,659	1,659
HANSCOM AFB	20,042	31,881	31,881	31,881	11,839	11,839
HICKAM AFB	31,538	48,660	48,660	48,660	17,122	17,122
HILL AFB	58,838	83,897	83,897	87,253	28,415	28,415
HOLLOMAN AFB	45,639	124,167	124,167	124,167	78,528	78,528
HURLBURT FIELD	44,946	45,304	45,304	45,304	358	358
KEESLER AFB	89,077	355,723	355,723	355,723	266,646	266,646
KIRTLAND AFB	50,973	65,440	65,440	65,440	14,467	14,467
LACKLAND AFB	173,915	243,301	243,301	354,045	180,130	180,130
LANGLEY AFB	64,703	226,522	226,522	226,522	161,819	161,819
LAUGHLIN AFB	23,402	31,881	31,881	31,881	8,479	8,479
LITTLE ROCK AFB	44,732	60,406	60,406	67,118	22,386	22,386
LOS ANGELES AFB	26,000	41,948	41,948	41,948	15,948	15,948
LUKE AFB	74,207	97,320	97,320	115,778	41,571	41,571
MACDILL AFB	46,889	88,931	88,931	88,931	42,042	42,042
MALMSTROM AFB	24,586	63,762	63,762	95,642	71,056	71,056
MAXWELL AFB	50,772	77,185	77,185	191,285	140,513	140,513
MCCHORD AFB	35,742	48,660	48,660	53,694	17,952	17,952
MCCONNELL AFB	51,906	40,271	40,271	95,642	43,736	43,736
MCGUIRE AFB	64,788	50,338	50,338	58,728	-6,060	-6,060
MINOT AFB	43,833	142,625	142,625	216,454	172,621	172,621
MOODY AFB	35,216	62,084	62,084	80,541	45,325	45,325
MOUNTAIN HOME AFB	37,115	36,915	36,915	50,338	13,223	13,223
NELLIS AFB	59,143	192,963	192,963	201,353	142,210	142,210
OFFUTT AFB	96,941	152,692	152,692	167,794	70,853	70,853
PATRICK AFB	67,755	60,406	60,406	60,406	-7,350	-7,350
PETERSON AFB	47,612	75,507	75,507	75,507	27,895	27,895
POPE AFB	38,323	41,948	41,948	41,948	3,625	3,625
RANDOLPH AFB	88,704	137,591	137,591	140,947	52,243	52,243
ROBINS AFB	45,061	129,201	129,201	152,692	107,631	107,631
SCHRIEVER AFB	0	0	0	0	0	0
SCOTT AFB	90,760	169,472	169,472	171,150	80,390	80,390
SEYMOUR JOHNSON AFB	30,156	68,795	68,795	224,844	194,688	194,688
SHAW AFB	54,326	68,795	68,795	87,253	32,927	32,927
SHEPPARD AFB	83,641	114,100	114,100	114,100	30,459	30,459
TINKER AFB	98,441	87,253	87,253	92,287	-6,154	-6,154
TRAVIS AFB	112,707	184,573	184,573	406,061	293,354	293,354
TYNDALL AFB	61,706	62,084	62,084	70,473	8,767	8,767
UNITED STATES AIR FORCE	80,753	57,050	57,050	57,050	-23,703	-23,703
VANCE AFB	20,879	21,813	21,813	23,491	2,613	2,613
VANDENBERG AFB	21,516	65,440	65,440	65,440	43,924	43,924
WHITEMAN AFB	42,296	46,982	46,982	46,982	4,686	4,686

	Current Usage (RVUs)	Current Capacity (RVUs)	Surge Rqmt (RVUs)	Max Capacity (RVUs)	Excess Capacity (RVUs)	Capacity Avail to Surge (RVUs)
USAF						
WRIGHT-PATTERSON AFB	89,765	82,219	82,219	83,897	-5,868	-5,868
USN						
CBC GULFPORT	23,533	31,881	31,881	31,881	8,348	8,348
CBC PORT HUENEME	34,338	78,863	78,863	98,998	64,661	64,661
JOINT RESERVE BASE FORT	13,971	20,135	20,135	20,135	6,164	6,164
JOINT RESERVE BASE NEW	4,778	13,424	13,424	13,424	8,646	8,646
JOINT RESERVE BASE WILLOW	11,368	10,068	10,068	10,068	-1,301	-1,301
MCAGCC TWENTYNINE PALMS	39,116	58,728	58,728	58,728	19,612	19,612
MCAS CHERRY POINT	56,237	125,845	125,845	125,845	69,608	69,608
MCAS NEW RIVER	9,457	36,915	36,915	41,948	32,491	32,491
MCAS STATION MIRAMAR	53,880	83,897	83,897	87,253	33,373	33,373
MCAS YUMA	14,904	36,915	36,915	58,728	43,824	43,824
MCB CAMP LEJEUNE	194,491	216,454	216,454	216,454	21,962	21,962
MCB CAMP PENDLETON	136,965	197,997	197,997	228,200	91,235	91,235
MCB HAWAII CAMP SMITH	7,226	5,034	5,034	6,712	-514	-514
MCB HAWAII KANEOHE	30,850	63,762	63,762	63,762	32,912	32,912
MCB QUANTICO	63,041	80,541	80,541	80,541	17,500	17,500
MCLB ALBANY	20,483	21,813	21,813	21,813	1,330	1,330
MCLB BARSTOW	5,618	8,390	8,390	8,390	2,771	2,771
MCRD PARRIS ISLAND	44,116	8,390	8,390	8,390	-35,726	-35,726
MCRD SAN DIEGO	27,942	67,118	67,118	67,118	39,176	39,176
NAB CORONADO	6,699	13,424	13,424	40,271	33,571	33,571
NAB LITTLE CREEK	122,701	52,016	52,016	52,016	-70,685	-70,685
NAES LAKEHURST	4,569	10,068	10,068	10,068	5,499	5,499
NAF EL CENTRO	2,861	10,068	10,068	10,068	7,206	7,206
NAS ATLANTA	15,528	15,101	15,101	15,101	-427	-427
NAS BRUNSWICK	25,913	43,626	43,626	50,338	24,425	24,425
NAS CORPUS CHRISTI	63,574	48,660	48,660	48,660	-14,914	-14,914
NAS FALLON	13,508	23,491	23,491	23,491	9,983	9,983
NAS JACKSONVILLE	171,349	199,675	199,675	338,943	167,594	167,594
NAS KEY WEST	26,137	33,559	33,559	33,559	7,422	7,422
NAS KINGSVILLE	8,553	21,813	21,813	25,169	16,616	16,616
NAS LEMOORE	76,362	78,863	78,863	78,863	2,501	2,501
NAS MERIDIAN	15,568	26,847	26,847	26,847	11,279	11,279
NAS NORTH ISLAND	33,588	127,523	127,523	139,269	105,681	105,681
NAS OCEANA	80,461	109,066	109,066	115,778	35,317	35,317
NAS OCEANA DAM NECK ANNEX	32,547	35,237	35,237	40,271	7,724	7,724
NAS PATUXENT RIVER	65,151	45,304	45,304	45,304	-19,847	-19,847
NAS POINT MUGU	7,495	0	0	0	-7,495	-7,495
NAS WHIDBEY ISLAND	78,374	93,965	93,965	93,965	15,590	15,590
NAS WHITING FIELD	17,892	26,847	26,847	26,847	8,955	8,955
NAVAL SUB BASE BANGOR	18,484	28,525	28,525	30,203	11,719	11,719
NAVAL SUB BASE KINGS BAY	56,451	62,084	62,084	105,710	49,259	49,259
NAVAL SUB BASE NEW LONDON	48,695	83,897	83,897	127,523	78,828	78,828
NAVSTA ANNAPOLIS	37,859	52,016	52,016	75,507	37,648	37,648
NAVSTA BREMERTON	0	15,101	15,101	15,101	15,101	15,101
NAVSTA EVERETT	0	41,948	41,948	41,948	41,948	41,948
NAVSTA GREAT LAKES	338,330	402,705	402,705	406,061	67,731	67,731
NAVSTA INGLESIDE	17,094	16,779	16,779	16,779	-314	-314
NAVSTA MAYPORT	62,445	70,473	70,473	73,829	11,384	11,384
NAVSTA NEWPORT	50,590	75,507	75,507	104,032	53,442	53,442
NAVSTA NORFOLK	147,187	119,134	119,134	119,134	-28,053	-28,053
NAVSTA PASCAGOULA	10,538	13,424	13,424	13,424	2,886	2,886
NAVSTA PEARL HARBOR	97,592	78,863	78,863	78,863	-18,729	-18,729
NAVSTA SAN DIEGO	52,966	53,694	53,694	72,151	19,185	19,185
NH BEAUFORT	41,514	78,863	78,863	78,863	37,349	37,349
NH BREMERTON	83,281	167,794	167,794	167,794	84,513	84,513
NH CHARLESTON	27,714	119,134	119,134	125,845	98,131	98,131

	Current Usage (RVUs)	Current Capacity (RVUs)	Surge Rqmt (RVUs)	Max Capacity (RVUs)	Excess Capacity (RVUs)	Capacity Avail to Surge (RVUs)
USN						
NH GUAM	37,723	72,151	72,151	72,151	34,428	34,428
NMC PORTSMOUTH	136,926	296,995	296,995	296,995	160,069	160,069
NMC SAN DIEGO	327,762	293,639	293,639	308,741	-19,021	-19,021
NNMC BETHESDA	140,796	226,522	226,522	278,538	137,741	137,741
NSA MECHANICSBURG	1,941	5,034	5,034	5,034	3,093	3,093
NSA MILLINGTON	23,088	26,847	26,847	26,847	3,759	3,759
NSA NEW ORLEANS	15,920	35,237	35,237	35,237	19,317	19,317
NSA PANAMA CITY	3,671	3,356	3,356	3,356	-315	-315
NSCS ATHENS	4,792	10,068	10,068	10,068	5,276	5,276
NSU SARATOGA SPRINGS	2,307	11,746	11,746	11,746	9,439	9,439
NSWC DAHLGREN	13,286	11,746	11,746	11,746	-1,541	-1,541
NSWC INDIAN HEAD	7,050	13,424	13,424	13,424	6,373	6,373
NSY NORFOLK	7,197	18,457	18,457	18,457	11,260	11,260
NSY PORTSMOUTH	8,853	28,525	28,525	28,525	19,672	19,672
NWS CHARLESTON	32,192	36,915	36,915	40,271	8,079	8,079
NWS EARLE	3,788	8,390	8,390	10,068	6,280	6,280
NWS SEAL BEACH	497	3,356	3,356	3,356	2,859	2,859
NWS YORKTOWN	4,643	13,424	13,424	13,424	8,781	8,781
PENSACOLA	286,941	134,235	134,235	134,235	-152,706	-152,706
WASHINGTON NAVY YARD	12,308	13,424	13,424	13,424	1,116	1,116

<u>Assumptions</u>

AMGA RVUs per Provider	Primary Care	3728.75
ERs per Provider	Primary Care	2
Non-availability Factor	Primary Care	0.9

A.3.2.1 Ambulatory Care - Specialty

	Current Usage (RVUs)	Current Capacity (RVUs)	Surge Rqmnt (RVUs)	Max Capacity (RVUs)	Excess Capacity (RVUs)	Capacity Avail to Surge (RVUs)
USA						
ABERDEEN PROVING GROUND	27,161	61,302	61,302	63,856	36,695	36,695
ANNISTON ARMY DEPOT	0	0	0	0	0	0
CARLISLE BARRACKS	20,736	51,085	51,085	56,193	35,457	35,457
DUGWAY PROVING GROUND	0	5,108	5,108	12,771	12,771	12,771
FORT BELVOIR	311,547	53,639	53,639	74,073	-237,474	-237,474
FORT BENNING	229,879	227,326	227,326	260,531	30,652	30,652
FORT BLISS	296,852	427,834	427,834	476,364	179,512	179,512
FORT BRAGG	625,980	1,167,283	1,167,283	1,167,283	541,304	541,304
FORT BUCHANAN	0	0	0	0	0	0
FORT CAMPBELL	325,453	178,796	178,796	204,338	-121,114	-121,114
FORT CARSON	355,448	260,531	260,531	260,531	-94,917	-94,917
FORT DETRICK	0	0	0	0	0	0
FORT DIX	0	5,108	5,108	7,663	7,663	7,663
FORT DRUM	99,943	74,073	74,073	74,073	-25,870	-25,870
FORT EUSTIS	121,882	107,278	107,278	135,374	13,493	13,493
FORT GORDON	299,747	426,556	426,556	546,605	246,858	246,858
FORT HOOD	599,665	444,436	444,436	444,436	-155,229	-155,229
FORT HUACHUCA	36,308	89,398	89,398	89,398	53,090	53,090
FORT JACKSON	162,587	183,905	183,905	194,121	31,534	31,534
FORT KNOX	180,192	176,242	176,242	176,242	-3,950	-3,950
FORT LEAVENWORTH	67,942	48,530	48,530	48,530	-19,412	-19,412
FORT LEE	55,672	48,530	48,530	48,530	-7,142	-7,142
FORT LEONARD WOOD	197,198	91,952	91,952	91,952	-105,246	-105,246
FORT LEWIS	691,711	740,727	740,727	740,727	49,016	49,016
FORT MCCOY	0	0	0	0	0	0
FORT MCPHERSON	0	0	0	0	0	0
FORT MEADE	91,312	66,410	66,410	66,410	-24,902	-24,902
FORT MONMOUTH	0	10,217	10,217	35,759	35,759	35,759
FORT MONROE	0	33,205	33,205	33,205	33,205	33,205
FORT MYER	35,885	53,639	53,639	61,302	25,416	25,416
FORT POLK	174,767	43,422	43,422	76,627	-98,140	-98,140
FORT RICHARDSON	0	71,518	71,518	97,061	97,061	97,061
FORT RILEY	100,985	265,640	265,640	457,207	356,222	356,222
FORT RUCKER	61,028	140,483	140,483	309,062	248,034	248,034
FORT SAM HOUSTON	739,442	957,836	957,836	957,836	218,394	218,394
FORT SILL	212,432	260,531	260,531	311,616	99,184	99,184
FORT STEWART	214,688	206,893	206,893	219,664	4,976	4,976
FORT WAINWRIGHT	100,585	109,832	109,832	109,832	9,247	9,247
NTC AND FORT IRWIN CA	31,075	35,759	35,759	48,530	17,455	17,455
PRESIDIO OF MONTEREY	19,263	0	0	0	-19,263	-19,263
RED RIVER ARMY DEPOT	0	7,663	7,663	7,663	7,663	7,663
REDSTONE ARSENAL	18,300	15,325	15,325	17,880	-420	-420
ROCK ISLAND ARSENAL	0	12,771	12,771	12,771	12,771	12,771
SCHOFIELD BARRACKS	60,381	102,169	102,169	107,278	46,896	46,896
TRIPLER ARMY MEDICAL	418,840	618,124	618,124	618,124	199,284	199,284
US ARMY GARRISON SELFRIDGE	0	0	0	0	0	0
WALTER REED ARMY MEDICAL	1,061,332	513,400	513,400	513,400	-547,932	-547,932
WEST POINT MIL RESERVATION	70,596	117,495	117,495	117,495	46,899	46,899
WHITE SANDS MISSILE RANGE	15,437	7,663	7,663	7,663	-7,774	-7,774
YUMA PROVING GROUND	0	2,554	2,554	2,554	2,554	2,554
USAF						
ALTUS AFB	6,856	10,217	10,217	12,771	5,915	5,915
ANDERSEN AFB	0	10,217	10,217	10,217	10,217	10,217
ANDREWS AFB	242,229	411,231	411,231	452,099	209,870	209,870
BARKSDALE AFB	38,015	38,313	38,313	38,313	299	299
BEALE AFB	11,285	17,880	17,880	17,880	6,594	6,594

	Current Usage (RVUs)	Current Capacity (RVUs)	Surge Rqmnt (RVUs)	Max Capacity (RVUs)	Excess Capacity (RVUs)	Capacity Avail to Surge (RVUs)
USAF						
BOLLING AFB	0	17,880	17,880	17,880	17,880	17,880
BROOKS CITY-BASE	5,382	0	0	0	-5,382	-5,382
BUCKLEY AFB	0	0	0	0	0	0
CANNON AFB	0	10,217	10,217	15,325	15,325	15,325
CHARLESTON AFB	1,495	5,108	5,108	5,108	3,614	3,614
COLUMBUS AFB	0	17,880	17,880	17,880	17,880	17,880
DAVIS-MONTHAN AFB	62,605	53,639	53,639	89,398	26,793	26,793
DOVER AFB	27,022	33,205	33,205	43,422	16,400	16,400
DYESS AFB	0	15,325	15,325	15,325	15,325	15,325
EDWARDS AFB	13,806	0	0	0	-13,806	-13,806
EGLIN AFB	223,850	66,410	66,410	66,410	-157,440	-157,440
EIELSON AFB	0	7,663	7,663	7,663	7,663	7,663
ELLSWORTH AFB	19,171	10,217	10,217	10,217	-8,954	-8,954
ELMENDORF AFB	146,371	293,736	293,736	293,736	147,365	147,365
FAIRCHILD AFB	55,089	12,771	12,771	12,771	-42,317	-42,317
FRANCIS E. WARREN AFB	0	2,554	2,554	2,554	2,554	2,554
GOODFELLOW AFB	5,548	33,205	33,205	33,205	27,657	27,657
GRAND FORKS AFB	22,809	25,542	25,542	25,542	2,733	2,733
HANSCOM AFB	9,763	5,108	5,108	5,108	-4,655	-4,655
HICKAM AFB	24,305	0	0	0	-24,305	-24,305
HILL AFB	49,247	30,651	30,651	43,422	-5,825	-5,825
HOLLOMAN AFB	60,229	12,771	12,771	12,771	-47,458	-47,458
HURLBURT FIELD	6,836	12,771	12,771	12,771	5,935	5,935
KEESLER AFB	281,655	352,484	352,484	352,484	70,829	70,829
KIRTLAND AFB	41,817	120,049	120,049	125,157	83,341	83,341
LACKLAND AFB	794,838	980,824	980,824	1,254,127	459,289	459,289
LANGLEY AFB	107,484	273,303	273,303	273,303	165,819	165,819
LAUGHLIN AFB	3,431	5,108	5,108	5,108	1,677	1,677
LITTLE ROCK AFB	23,683	17,880	17,880	17,880	-5,803	-5,803
LOS ANGELES AFB	0	0	0	0	0	0
LUKE AFB	65,519	204,338	204,338	212,001	146,482	146,482
MACDILL AFB	113,445	104,723	104,723	104,723	-8,722	-8,722
MALMSTROM AFB	23,758	45,976	45,976	56,193	32,435	32,435
MAXWELL AFB	22,252	17,880	17,880	79,181	56,929	56,929
MCCHORD AFB	8,541	0	0	0	-8,541	-8,541
MCCONNELL AFB	0	25,542	25,542	33,205	33,205	33,205
MCGUIRE AFB	57,274	51,085	51,085	63,856	6,581	6,581
MINOT AFB	17,562	0	0	10,217	-7,345	-7,345
MOODY AFB	17,601	25,542	25,542	33,205	15,604	15,604
MOUNTAIN HOME AFB	35,701	40,868	40,868	45,976	10,275	10,275
NELLIS AFB	190,150	206,893	206,893	229,881	39,731	39,731
OFFUTT AFB	121,476	102,169	102,169	125,157	3,681	3,681
PATRICK AFB	44,086	51,085	51,085	51,085	6,998	6,998
PETERSON AFB	0	0	0	0	0	0
POPE AFB	0	0	0	0	0	0
RANDOLPH AFB	0	0	0	0	0	0
ROBINS AFB	54,279	107,278	107,278	178,796	124,517	124,517
SCHRIEVER AFB	0	0	0	0	0	0
SCOTT AFB	150,697	109,832	109,832	109,832	-40,865	-40,865
SEYMOUR JOHNSON AFB	54,825	5,108	5,108	5,108	-49,716	-49,716
SHAW AFB	18,309	74,073	74,073	79,181	60,872	60,872
SHEPPARD AFB	84,169	122,603	122,603	122,603	38,434	38,434
TINKER AFB	67,479	143,037	143,037	145,591	78,112	78,112
TRAVIS AFB	221,863	355,038	355,038	651,329	429,466	429,466
TYNDALL AFB	25,730	15,325	15,325	17,880	-7,850	-7,850
UNITED STATES AIR FORCE	142,725	160,916	160,916	160,916	18,191	18,191
VANCE AFB	0	5,108	5,108	7,663	7,663	7,663
VANDENBERG AFB	38,526	40,868	40,868	40,868	2,342	2,342
WHITEMAN AFB	8,395	58,747	58,747	58,747	50,352	50,352

	Current Usage (RVUs)	Current Capacity (RVUs)	Surge Rqmnt (RVUs)	Max Capacity (RVUs)	Excess Capacity (RVUs)	Capacity Avail to Surge (RVUs)
USAF						
WRIGHT-PATTERSON AFB	261,940	403,568	403,568	434,219	172,279	172,279
USN						
CBC GULFPORT	2,904	5,108	5,108	5,108	2,204	2,204
CBC PORT HUENEME	23,564	45,976	45,976	45,976	22,412	22,412
JOINT RESERVE BASE FORT	1	0	0	0	-1	-1
JOINT RESERVE BASE NEW	1,554	5,108	5,108	5,108	3,554	3,554
JOINT RESERVE BASE WILLOW	0	2,554	2,554	2,554	2,554	2,554
MCAGCC TWENTYNINE PALMS	73,045	33,205	33,205	33,205	-39,840	-39,840
MCAS CHERRY POINT	77,772	120,049	120,049	120,049	42,277	42,277
MCAS NEW RIVER	7,140	0	0	0	-7,140	-7,140
MCAS STATION MIRAMAR	15,644	51,085	51,085	61,302	45,657	45,657
MCAS YUMA	12,938	5,108	5,108	15,325	2,388	2,388
MCB CAMP LEJEUNE	209,746	288,628	288,628	286,074	76,328	76,328
MCB CAMP PENDLETON	332,738	212,001	212,001	214,555	-118,182	-118,182
MCB HAWAII CAMP SMITH	0	0	0	0	0	0
MCB HAWAII KANEOHE	19,687	15,325	15,325	15,325	-4,362	-4,362
MCB QUANTICO	874	45,976	45,976	45,976	45,102	45,102
MCLB ALBANY	0	17,880	17,880	17,880	17,880	17,880
MCLB BARSTOW	1,512	7,663	7,663	7,663	6,150	6,150
MCRD PARRIS ISLAND	28,087	7,663	7,663	7,663	-20,424	-20,424
MCRD SAN DIEGO	67,417	86,844	86,844	86,844	19,427	19,427
NAB CORONADO	682	5,108	5,108	5,108	4,427	4,427
NAB LITTLE CREEK	27,474	5,108	5,108	5,108	-22,366	-22,366
NAES LAKEHURST	4,096	0	0	0	-4,096	-4,096
NAF EL CENTRO	60	0	0	0	-60	-60
NAS ATLANTA	23	2,554	2,554	2,554	2,531	2,531
NAS BRUNSWICK	10,630	20,434	20,434	48,530	37,900	37,900
NAS CORPUS CHRISTI	30,918	68,964	68,964	86,844	55,926	55,926
NAS FALLON	3,665	5,108	5,108	5,108	1,444	1,444
NAS JACKSONVILLE	264,289	275,857	275,857	378,026	113,737	113,737
NAS KEY WEST	2,582	22,988	22,988	22,988	20,406	20,406
NAS KINGSVILLE	0	15,325	15,325	15,325	15,325	15,325
NAS LEMOORE	57,430	74,073	74,073	74,073	16,643	16,643
NAS MERIDIAN	4,985	10,217	10,217	10,217	5,232	5,232
NAS NORTH ISLAND	29,361	7,663	7,663	7,663	-21,699	-21,699
NAS OCEANA	18,487	20,434	20,434	20,434	1,947	1,947
NAS OCEANA DAM NECK ANNEX	8,572	0	0	0	-8,572	-8,572
NAS PATUXENT RIVER	0	0	0	0	0	0
NAS POINT MUGU	4,807	0	0	0	-4,807	-4,807
NAS WHIDBEY ISLAND	69,830	61,302	61,302	61,302	-8,529	-8,529
NAS WHITING FIELD	1,162	7,663	7,663	7,663	6,501	6,501
NAVAL SUB BASE BANGOR	9,244	0	0	0	-9,244	-9,244
NAVAL SUB BASE KINGS BAY	10,796	17,880	17,880	28,097	17,301	17,301
NAVAL SUB BASE NEW LONDON	64,556	81,735	81,735	104,723	40,167	40,167
NAVSTA ANNAPOLIS	58,839	38,313	38,313	38,313	-20,526	-20,526
NAVSTA BREMERTON	42,621	30,651	30,651	30,651	-11,970	-11,970
NAVSTA EVERETT	0	30,651	30,651	30,651	30,651	30,651
NAVSTA GREAT LAKES	141,280	692,196	692,196	704,967	563,688	563,688
NAVSTA INGLESIDE	1	7,663	7,663	7,663	7,662	7,662
NAVSTA MAYPORT	35,818	22,988	22,988	22,988	-12,830	-12,830
NAVSTA NEWPORT	56,293	109,832	109,832	125,157	68,864	68,864
NAVSTA NORFOLK	51,447	5,108	5,108	5,108	-46,339	-46,339
NAVSTA PASCAGOULA	431	2,554	2,554	2,554	2,123	2,123
NAVSTA PEARL HARBOR	56,112	66,410	66,410	66,410	10,298	10,298
NAVSTA SAN DIEGO	55,643	33,205	33,205	38,313	-17,329	-17,329
NH BEAUFORT	55,122	43,422	43,422	43,422	-11,700	-11,700
NH BREMERTON	158,180	155,808	155,808	155,808	-2,372	-2,372
NH CHARLESTON	51,292	120,049	120,049	120,049	68,757	68,757

	Current Usage (RVUs)	Current Capacity (RVUs)	Surge Rqmnt (RVUs)	Max Capacity (RVUs)	Excess Capacity (RVUs)	Capacity Avail to Surge (RVUs)
USN						
NH GUAM	65,518	45,976	45,976	45,976	-19,542	-19,542
NMC PORTSMOUTH	858,024	881,209	881,209	881,209	23,185	23,185
NMC SAN DIEGO	806,311	978,270	978,270	1,167,283	360,972	360,972
NNMC BETHESDA	698,267	819,908	819,908	1,103,427	405,161	405,161
NSA MECHANICSBURG	2,832	0	0	0	-2,832	-2,832
NSA MILLINGTON	6,510	12,771	12,771	12,771	6,261	6,261
NSA NEW ORLEANS	11,072	12,771	12,771	12,771	1,699	1,699
NSA PANAMA CITY	292	2,554	2,554	2,554	2,262	2,262
NSCS ATHENS	0	0	0	0	0	0
NSU SARATOGA SPRINGS	0	10,217	10,217	10,217	10,217	10,217
NSWC DAHLGREN	4,747	0	0	0	-4,747	-4,747
NSWC INDIAN HEAD	2,370	0	0	0	-2,370	-2,370
NSY NORFOLK	25,882	5,108	5,108	5,108	-20,774	-20,774
NSY PORTSMOUTH	24,092	30,651	30,651	30,651	6,559	6,559
NWS CHARLESTON	0	0	0	0	0	0
NWS EARLE	4,995	0	0	0	-4,995	-4,995
NWS SEAL BEACH	326	7,663	7,663	7,663	7,337	7,337
NWS YORKTOWN	1,833	5,108	5,108	5,108	3,275	3,275
PENSACOLA	2,550,653	388,243	388,243	411,231	-2,139,422	-2,139,422
WASHINGTON NAVY YARD	32	5,108	5,108	7,663	7,631	7,631

<u>Assumptions</u>

AMGA RVUs per Provider	Specialty Care	4257.05
ERs per Provider	Specialty Care	1.5
Non-availability Factor	Specialty Care	0.9

A.3.2.2 Inpatient Care

	Current Usage (RWPs)	Current Capacity (RWPs)	Surge Rqmnt (RWPs)	Max Capacity (RWPs)	Excess Capacity (RWPs)	Capacity Avail to Surge (RWPs)
USA						
FORT BELVOIR	1,854	2,920	2,648	3,115	1,261	1,261
FORT BENNING	2,911	4,867	4,158	9,863	6,953	6,953
FORT BLISS	7,190	7,290	8,987	11,012	3,822	3,822
FORT BRAGG	8,617	12,175	10,772	12,330	3,713	3,713
FORT CAMPBELL	3,140	4,133	4,486	8,266	5,127	5,127
FORT CARSON	2,447	3,879	3,495	5,214	2,768	2,768
FORT EUSTIS	345	954	493	2,861	2,516	2,516
FORT GORDON	7,977	8,608	9,971	10,779	2,802	2,802
FORT HOOD	5,831	9,669	8,330	19,857	14,026	14,026
FORT JACKSON	1,016	3,561	1,451	3,815	2,799	2,799
FORT KNOX	1,534	1,908	2,191	2,226	692	692
FORT LEONARD WOOD	1,817	2,925	2,596	7,694	5,877	5,877
FORT LEWIS	12,191	14,192	15,239	16,441	4,249	4,249
FORT POLK	965	2,226	1,378	4,451	3,487	3,487
FORT RILEY	1,401	1,780	2,002	2,798	1,397	1,397
FORT SAM HOUSTON	14,059	16,286	17,574	17,061	3,002	3,002
FORT SILL	2,256	3,434	3,223	8,775	6,519	6,519
FORT STEWART	1	6,168	1	12,336	12,336	12,336
FORT WAINWRIGHT	935	1,272	1,336	4,006	3,071	3,071
NTC AND FORT IRWIN CA	493	1,208	705	1,208	715	715
TRIPLER ARMY MEDICAL	13,144	15,045	16,429	32,416	19,272	19,272
WALTER REED ARMY MEDICAL	16,553	20,241	20,691	20,241	3,688	3,688
WEST POINT MIL RESERVATION	1,023	2,206	1,462	2,206	1,183	1,183
USAF						
ANDREWS AFB	3,247	4,413	4,639	8,955	5,708	5,708
EGLIN AFB	2,888	3,893	4,125	8,176	5,289	5,289
ELMENDORF AFB	2,467	5,278	3,524	10,556	8,089	8,089
KEESLER AFB	6,190	10,469	7,737	11,943	5,753	5,753
LACKLAND AFB	18,931	17,992	23,664	18,302	-629	-629
LANGLEY AFB	1,235	1,844	1,764	2,607	1,372	1,372
LUKE AFB	211	1,081	301	1,208	997	997
MACDILL AFB	502	509	717	509	7	7
MOUNTAIN HOME AFB	438	890	625	1,272	834	834
NELLIS AFB	1,600	6,104	2,285	6,104	4,505	4,505
SCOTT AFB	1,547	1,882	2,210	1,882	335	335
TRAVIS AFB	5,587	4,963	6,984	13,184	7,597	7,597
UNITED STATES AIR FORCE	983	954	1,404	1,844	861	861
WRIGHT-PATTERSON AFB	3,299	5,273	4,124	5,894	2,595	2,595
USN						
MCAGCC TWENTYNINE PALMS	624	1,399	891	1,590	966	966
MCAS CHERRY POINT	897	1,463	1,282	1,780	883	883
MCB CAMP LEJEUNE	3,937	7,722	5,624	7,722	3,785	3,785
MCB CAMP PENDLETON	3,437	5,646	4,910	6,749	3,312	3,312
NAS JACKSONVILLE	3,185	3,893	4,549	3,893	709	709
NAS LEMOORE	427	1,017	610	1,017	590	590
NAS WHIDBEY ISLAND	786	1,335	1,123	1,590	804	804
NAVSTA GREAT LAKES	943	2,289	1,347	4,388	3,445	3,445
NH BEAUFORT	694	1,463	991	1,463	769	769
NH BREMERTON	2,018	2,271	2,882	3,569	1,551	1,551
NH GUAM	1,501	2,162	2,145	2,162	661	661
NMC PORTSMOUTH	16,660	16,673	20,825	37,844	21,184	21,184
NMC SAN DIEGO	19,268	20,783	24,085	22,257	2,989	2,989
NNMC BETHESDA	10,513	13,028	13,141	15,200	4,687	4,687
PENSACOLA	2,588	3,893	3,697	7,787	5,199	5,199

		Current Usage (RWPs)	Current Capacity (RWPs)	Surge Rqmnt (RWPs)	Max Capacity (RWPs)	Excess Capacity (RWPs)	Capacity Avail to Surge (RWPs)
Assumptions							
Days per Year				365			
Occupancy Rate - Comm	Community Hospitals			0.7			
Occupancy Rate - MC	Medical Centers			0.8			
Occupancy Rate - Teach	Teaching Hospitals			0.7			

A.3.2.3 Dental Services

	Current Usage (AD Population)	Current Capacity (AD Population)	Surge Rqmnt (AD Population)	Max Capacity (AD Population)	Excess Capacity (AD Population)	Capacity Avail to Surge (AD Population)
USA						
ABERDEEN PROVING GROUND	7,653	6,080	6,080	6,080	-1,573	-1,573
ANNISTON ARMY DEPOT	0	0	0	0	0	0
CARLISLE BARRACKS	4,818	2,880	2,880	3,200	-1,618	-1,618
DUGWAY PROVING GROUND	136	0	0	960	824	824
FORT BELVOIR	8,123	8,320	8,320	8,320	197	197
FORT BENNING	25,537	28,160	28,160	40,320	14,783	14,783
FORT BLISS	9,849	9,920	9,920	9,920	71	71
FORT BRAGG	41,765	42,560	42,560	43,840	2,075	2,075
FORT BUCHANAN	2,500	960	960	960	-1,540	-1,540
FORT CAMPBELL	33,473	20,480	20,480	22,400	-11,073	-11,073
FORT CARSON	14,720	16,320	16,320	16,320	1,600	1,600
FORT DETRICK	1,510	2,240	2,240	2,240	730	730
FORT DIX	26,888	2,240	2,240	2,240	-24,648	-24,648
FORT DRUM	39,580	14,720	14,720	14,720	-24,860	-24,860
FORT EUSTIS	8,778	13,760	13,760	15,040	6,262	6,262
FORT GORDON	14,152	8,640	8,640	8,640	-5,512	-5,512
FORT HOOD	42,160	44,800	44,800	44,800	2,640	2,640
FORT HUACHUCA	28,314	8,000	8,000	8,000	-20,314	-20,314
FORT JACKSON	51,439	12,800	12,800	12,800	-38,639	-38,639
FORT KNOX	15,229	12,160	12,160	12,160	-3,069	-3,069
FORT LEAVENWORTH	7,485	6,400	6,400	6,720	-765	-765
FORT LEE	8,905	4,480	4,480	4,480	-4,425	-4,425
FORT LEONARD WOOD	40,021	12,480	12,480	15,040	-24,981	-24,981
FORT LEWIS	37,467	20,480	20,480	21,120	-16,347	-16,347
FORT MCCOY	2,000	1,600	1,600	1,600	-400	-400
FORT MCPHERSON	6,642	4,480	4,480	4,480	-2,162	-2,162
FORT MEADE	11,745	8,640	8,640	8,640	-3,105	-3,105
FORT MONMOUTH	3,152	960	960	960	-2,192	-2,192
FORT MONROE	800	960	960	1,920	1,120	1,120
FORT MYER	3,520	3,840	3,840	3,840	320	320
FORT POLK	8,766	7,680	7,680	7,680	-1,086	-1,086
FORT RICHARDSON	2,241	5,760	5,760	6,400	4,159	4,159
FORT RILEY	116,343	17,920	17,920	17,920	-98,423	-98,423
FORT RUCKER	11,261	5,120	5,120	6,080	-5,181	-5,181
FORT SAM HOUSTON	25,985	11,200	11,200	11,200	-14,785	-14,785
FORT SILL	13,244	20,480	20,480	20,800	7,556	7,556
FORT STEWART	54,240	11,200	11,200	11,200	-43,040	-43,040
FORT WAINWRIGHT	7,773	8,000	8,000	8,000	227	227
NTC AND FORT IRWIN CA	4,980	5,120	5,120	5,120	140	140
PRESIDIO OF MONTEREY	5,956	3,200	3,200	3,200	-2,756	-2,756
RED RIVER ARMY DEPOT	754	0	0	0	-754	-754
REDSTONE ARSENAL	10,560	1,920	1,920	1,920	-8,640	-8,640
ROCK ISLAND ARSENAL	137	0	0	0	-137	-137
SCHOFIELD BARRACKS	26,902	7,040	7,040	7,040	-19,862	-19,862
TRIPLER ARMY MEDICAL	26,902	1,280	1,280	1,280	-25,622	-25,622
US ARMY GARRISON SELFRIDGE	860	1,280	1,280	1,280	420	420
WALTER REED ARMY MEDICAL	33,412	4,160	4,160	6,080	-27,332	-27,332
WEST POINT MIL RESERVATION	6,855	5,120	5,120	5,120	-1,735	-1,735
WHITE SANDS MISSILE RANGE	460	1,280	1,280	3,200	2,740	2,740
YUMA PROVING GROUND	457	0	0	0	-457	-457
USAF						
ALTUS AFB	2,430	3,520	3,520	3,840	1,410	1,410
ANDERSEN AFB	2,717	3,520	3,520	3,520	803	803
ANDREWS AFB	9,115	6,080	6,080	6,080	-3,035	-3,035
BARKSDALE AFB	5,931	9,280	9,280	9,280	3,349	3,349

	Current Usage (AD Population)	Current Capacity (AD Population)	Surge Rqmnt (AD Population)	Max Capacity (AD Population)	Excess Capacity (AD Population)	Capacity Avail to Surge (AD Population)
USAF						
BEALE AFB	3,486	4,160	4,160	4,160	674	674
BOLLING AFB	5,051	6,400	6,400	6,400	1,349	1,349
BROOKS CITY-BASE	1,428	1,920	1,920	1,920	492	492
BUCKLEY AFB	3,156	3,200	3,200	3,200	44	44
CANNON AFB	3,296	3,200	3,200	4,480	1,184	1,184
CHARLESTON AFB	4,711	5,440	5,440	6,720	2,009	2,009
COLUMBUS AFB	1,548	2,240	2,240	2,880	1,332	1,332
DAVIS-MONTHAN AFB	7,790	5,440	5,440	5,760	-2,030	-2,030
DOVER AFB	5,115	7,360	7,360	7,360	2,245	2,245
DYESS AFB	5,163	5,440	5,440	5,440	277	277
EDWARDS AFB	3,807	4,800	4,800	5,760	1,953	1,953
EGLIN AFB	9,910	8,000	8,000	8,960	-950	-950
EIELSON AFB	3,130	4,480	4,480	4,480	1,350	1,350
ELLSWORTH AFB	3,443	3,200	3,200	6,080	2,637	2,637
ELMENDORF AFB	7,222	8,000	8,000	8,000	778	778
FAIRCHILD AFB	3,994	2,880	2,880	4,480	486	486
FRANCIS E. WARREN AFB	3,915	4,480	4,480	4,480	565	565
GOODFELLOW AFB	2,582	3,840	3,840	3,840	1,258	1,258
GRAND FORKS AFB	2,991	3,840	3,840	3,840	849	849
HANSCOM AFB	3,301	2,880	2,880	2,880	-421	-421
HICKAM AFB	5,184	4,480	4,480	5,760	576	576
HILL AFB	5,650	5,440	5,440	5,440	-210	-210
HOLLOMAN AFB	3,442	5,120	5,120	5,120	1,678	1,678
HURLBURT FIELD	7,788	5,760	5,760	5,760	-2,028	-2,028
KEESLER AFB	5,629	11,200	11,200	15,360	9,731	9,731
KIRTLAND AFB	4,358	5,440	5,440	5,440	1,082	1,082
LACKLAND AFB	19,276	28,160	28,160	29,760	10,484	10,484
LANGLEY AFB	8,966	8,320	8,320	8,320	-646	-646
LAUGHLIN AFB	1,446	2,560	2,560	2,560	1,114	1,114
LITTLE ROCK AFB	5,728	8,960	8,960	8,960	3,232	3,232
LOS ANGELES AFB	2,726	3,200	3,200	3,200	474	474
LUKE AFB	6,875	6,400	6,400	6,400	-475	-475
MACDILL AFB	6,893	6,080	6,080	7,360	467	467
MALMSTROM AFB	3,817	5,120	5,120	5,120	1,303	1,303
MAXWELL AFB	6,043	4,480	4,480	4,480	-1,563	-1,563
MCCHORD AFB	3,497	5,440	5,440	6,080	2,583	2,583
MCCONNELL AFB	3,357	3,520	3,520	4,800	1,443	1,443
MCGUIRE AFB	21,610	6,720	6,720	7,680	-13,930	-13,930
MINOT AFB	4,854	5,120	5,120	6,400	1,546	1,546
MOODY AFB	4,310	3,520	3,520	3,520	-790	-790
MOUNTAIN HOME AFB	4,016	4,480	4,480	4,480	464	464
NELLIS AFB	7,063	8,320	8,320	8,320	1,257	1,257
OFFUTT AFB	7,789	4,800	4,800	4,800	-2,989	-2,989
PATRICK AFB	2,929	4,800	4,800	6,400	3,471	3,471
PETERSON AFB	6,667	4,160	4,160	4,160	-2,507	-2,507
POPE AFB	5,067	5,120	5,120	5,760	693	693
RANDOLPH AFB	4,035	6,720	6,720	6,720	2,685	2,685
ROBINS AFB	8,133	8,320	8,320	8,320	187	187
SCHRIEVER AFB	0	960	960	960	960	960
SCOTT AFB	10,164	8,640	8,640	11,840	1,676	1,676
SEYMOUR JOHNSON AFB	4,590	9,600	9,600	9,600	5,010	5,010
SHAW AFB	5,821	9,280	9,280	9,280	3,459	3,459
SHEPPARD AFB	13,184	7,680	7,680	9,280	-3,904	-3,904
TINKER AFB	8,854	6,720	6,720	6,720	-2,134	-2,134
TRAVIS AFB	10,228	9,600	9,600	10,240	12	12
TYNDALL AFB	4,096	4,480	4,480	4,480	384	384
UNITED STATES AIR FORCE	6,414	7,040	7,040	7,040	626	626
VANCE AFB	1,293	1,280	1,280	1,280	-13	-13

	Current Usage (AD Population)	Current Capacity (AD Population)	Surge Rqmnt (AD Population)	Max Capacity (AD Population)	Excess Capacity (AD Population)	Capacity Avail to Surge (AD Population)
USAF						
VANDENBERG AFB	3,642	4,800	4,800	4,800	1,158	1,158
WHITEMAN AFB	3,727	5,120	5,120	5,120	1,393	1,393
WRIGHT-PATTERSON AFB	9,228	12,160	12,160	12,160	2,932	2,932
USN						
CBC GULFPORT	5,339	3,200	3,200	3,200	-2,139	-2,139
CBC PORT HUENEME	7,117	2,880	2,880	4,160	-2,957	-2,957
JOINT RESERVE BASE FORT	5,682	5,120	5,120	5,120	-562	-562
JOINT RESERVE BASE NEW	3,032	1,280	1,280	1,280	-1,752	-1,752
JOINT RESERVE BASE WILLOW	1,695	1,600	1,600	3,200	1,505	1,505
MCAGCC TWENTYNINE PALMS	20,126	2,560	2,560	2,560	-17,566	-17,566
MCAS CHERRY POINT	8,798	13,120	13,120	13,440	4,642	4,642
MCAS NEW RIVER	141	2,240	2,240	2,240	2,099	2,099
MCAS STATION MIRAMAR	11,755	2,880	2,880	2,880	-8,875	-8,875
MCAS YUMA	3,882	2,880	2,880	2,880	-1,002	-1,002
MCB CAMP LEJEUNE	48,339	31,360	31,360	31,680	-16,659	-16,659
MCB CAMP PENDLETON	60,562	16,960	16,960	18,560	-42,002	-42,002
MCB HAWAII CAMP SMITH	308	0	0	0	-308	-308
MCB HAWAII KANEOHE	2,487	0	0	0	-2,487	-2,487
MCB QUANTICO	27,398	8,640	8,640	8,640	-18,758	-18,758
MCLB ALBANY	1,294	1,280	1,280	1,280	-14	-14
MCLB BARSTOW	545	640	640	640	95	95
MCRD PARRIS ISLAND	9,404	17,920	17,920	17,920	8,516	8,516
MCRD SAN DIEGO	30,535	8,000	8,000	8,320	-22,215	-22,215
NAB CORONADO	4,510	3,520	3,520	3,520	-990	-990
NAB LITTLE CREEK	12,684	10,880	10,880	10,880	-1,804	-1,804
NAES LAKEHURST	344	1,280	1,280	2,560	2,216	2,216
NAF EL CENTRO	711	640	640	640	-71	-71
NAS ATLANTA	6,190	1,920	1,920	1,920	-4,270	-4,270
NAS BRUNSWICK	11,708	3,200	3,200	3,200	-8,508	-8,508
NAS CORPUS CHRISTI	4,509	7,040	7,040	7,040	2,531	2,531
NAS FALLON	1,807	1,600	1,600	1,600	-207	-207
NAS JACKSONVILLE	14,956	13,440	13,440	14,080	-876	-876
NAS KEY WEST	3,092	2,240	2,240	2,240	-852	-852
NAS KINGSVILLE	1,330	3,840	3,840	3,840	2,510	2,510
NAS LEMOORE	11,318	4,160	4,160	4,160	-7,158	-7,158
NAS MERIDIAN	2,930	4,800	4,800	4,800	1,870	1,870
NAS NORTH ISLAND	21,717	4,160	4,160	5,440	-16,277	-16,277
NAS OCEANA	14,565	6,400	6,400	8,320	-6,245	-6,245
NAS OCEANA DAM NECK ANNEX	4,147	3,200	3,200	5,760	1,613	1,613
NAS PATUXENT RIVER	6,193	3,200	3,200	3,200	-2,993	-2,993
NAS POINT MUGU	1,029	0	0	960	-69	-69
NAS WHIDBEY ISLAND	17,243	6,400	6,400	6,400	-10,843	-10,843
NAS WHITING FIELD	3,347	2,880	2,880	2,880	-467	-467
NAVAL SUB BASE BANGOR	10,196	5,760	5,760	6,400	-3,796	-3,796
NAVAL SUB BASE KINGS BAY	7,724	5,760	5,760	5,760	-1,964	-1,964
NAVAL SUB BASE NEW LONDON	57,787	2,560	2,560	2,560	-55,227	-55,227
NAVSTA ANNAPOLIS	11,828	7,680	7,680	7,680	-4,148	-4,148
NAVSTA BREMERTON	453	0	0	0	-453	-453
NAVSTA EVERETT	0	0	0	0	0	0
NAVSTA GREAT LAKES	46,674	36,160	36,160	36,800	-9,874	-9,874
NAVSTA INGLESIDE	3,291	5,120	5,120	5,120	1,829	1,829
NAVSTA MAYPORT	15,840	9,280	9,280	9,280	-6,560	-6,560
NAVSTA NEWPORT	28,411	1,600	1,600	1,600	-26,811	-26,811
NAVSTA NORFOLK	74,036	35,840	35,840	40,640	-33,396	-33,396
NAVSTA PASCAGOULA	2,709	2,560	2,560	2,560	-149	-149
NAVSTA PEARL HARBOR	16,945	6,400	6,400	8,320	-8,625	-8,625
NAVSTA SAN DIEGO	40,496	20,480	20,480	23,040	-17,456	-17,456

	Current Usage (AD Population)	Current Capacity (AD Population)	Surge Rqmnt (AD Population)	Max Capacity (AD Population)	Excess Capacity (AD Population)	Capacity Avail to Surge (AD Population)
USN						
NH BEAUFORT	438	640	640	640	202	202
NH BREMERTON	4,044	8,320	8,320	8,960	4,916	4,916
NH CHARLESTON	1,119	0	0	0	-1,119	-1,119
NH GUAM	2,445	960	960	960	-1,485	-1,485
NMC PORTSMOUTH	9,299	2,880	2,880	2,880	-6,419	-6,419
NMC SAN DIEGO	15,015	1,280	1,280	1,280	-13,735	-13,735
NNMC BETHESDA	14,030	32,960	32,960	34,560	20,530	20,530
NSA MECHANICSBURG	276	0	0	0	-276	-276
NSA MILLINGTON	5,961	3,840	3,840	3,840	-2,121	-2,121
NSA NEW ORLEANS	5,305	3,200	3,200	3,200	-2,105	-2,105
NSA PANAMA CITY	1,468	960	960	960	-508	-508
NSCS ATHENS	1,194	640	640	640	-554	-554
NSU SARATOGA SPRINGS	5,158	1,280	1,280	1,600	-3,558	-3,558
NSWC DAHLGREN	2,457	1,280	1,280	1,280	-1,177	-1,177
NSWC INDIAN HEAD	747	960	960	960	213	213
NSY NORFOLK	3,888	2,880	2,880	2,880	-1,008	-1,008
NSY PORTSMOUTH	2,154	1,280	1,280	1,280	-874	-874
NWS CHARLESTON	16,430	3,200	3,200	3,200	-13,230	-13,230
NWS EARLE	680	1,280	1,280	2,560	1,880	1,880
NWS SEAL BEACH	0	0	0	0	0	0
NWS YORKTOWN	3,827	1,280	1,280	1,280	-2,547	-2,547
PENSACOLA	42,845	14,720	14,720	14,720	-28,125	-28,125
WASHINGTON NAVY YARD	16,042	10,880	10,880	10,880	-5,162	-5,162

Assumptions

AD Panel per Dentist	Specialty Care	800
	General Care	800
DTRs per Dentist	Specialty Care	2.5
	General Care	2.5

A.3 Research Development and Acquisition

A.3.3 RDA - Personnel FTEs

	Current Usage (FTEs)	Current Capacity (FTEs)	Surge Rqmnt (FTEs)	Max Capacity (FTEs)	Excess Capacity (FTEs)	Capacity Avail to Surge (FTEs)
Aerospace and Operational Medicine Research						
BROOKS CITY-BASE						
311th Human Systems Wing - Human Systems Program	4.00	4.00	4.40	4.00	-0.40	0.00
Air Force School of Aerospace Medicine	112.66	112.66	123.93	222.66	98.73	110.00
Army Medical Research Detachment - Brooks City Base	24.00	24.00	26.40	30.00	3.60	6.00
Naval Health Research Center Detachment - Brooks AFB	14.00	14.00	15.40	14.00	-1.40	0.00
BUMED WASHINGTON DC						
Navy Bureau of Medicine & Surgery (Code M2) - Washington DC	2.00	2.00	2.20	2.00	-0.20	0.00
FORT RUCKER						
Army Aeromedical Research Laboratory	116.00	116.00	127.60	164.00	36.40	48.00
NMC SAN DIEGO						
Naval Health Research Center - San Diego	4.90	4.90	5.39	12.60	7.21	7.70
PENSACOLA						
Naval Aerospace Medical Research Laboratory	15.00	15.00	16.50	13.00	-3.50	-2.00
WALTER REED ARMY MEDICAL CENTER						
Walter Reed Army Institute of Research - WRAMC	61.01	61.01	67.11	64.66	-2.45	3.65
Aerospace and Operational Medicine Research Total	353.57	353.57	388.93	526.92	137.99	173.35
Combat Casualty Care Research						
BROOKS CITY-BASE						
Army Medical Research Detachment - Brooks City Base	6.00	6.00	6.60	8.00	1.40	2.00
Naval Health Research Center Detachment - Brooks AFB	0.00	0.00	0.00	0.00	0.00	0.00
BUMED WASHINGTON DC						
Navy Bureau of Medicine & Surgery (Code M2) - Washington DC	2.00	2.00	2.20	2.00	-0.20	0.00
FORT DETRICK						
Army Medical Materiel Development Activity	1.00	1.00	1.10	1.00	-0.10	0.00
Army Medical Research & Materiel Command - HQ	22.41	22.50	24.66	23.34	-1.32	0.92
FORT SAM HOUSTON						
Army Institute of Surgical Research	123.00	123.00	135.30	130.00	-5.30	7.00
NAVSTA GREAT LAKES						
Air Force Dental Investigative Service - Great Lakes	10.00	10.00	11.00	10.00	-1.00	0.00
Army Dental Research Detachment - Great Lakes	42.00	42.00	46.20	49.00	2.80	7.00
Naval Institute for Dental & Biomedical Research	17.00	17.00	18.70	22.00	3.30	5.00
NMC SAN DIEGO						
Naval Health Research Center - San Diego	0.00	0.00	0.00	0.00	0.00	0.00
WALTER REED ARMY MEDICAL CENTER						
Armed Forces Institute of Pathology	41.60	41.60	45.76	44.00	-1.76	2.40
Naval Medical Research Center - Silver Spring	58.14	58.14	63.96	59.00	-4.96	0.86
Walter Reed Army Institute of Research - WRAMC	202.00	202.00	222.20	209.00	-13.20	7.00
WRIGHT-PATTERSON AFB						
Naval Health Research Center Detachment - Wright-Patterson AFB	0.00	0.00	0.00	0.00	0.00	0.00
Combat Casualty Care Research Total	525.16	525.24	577.68	557.34	-20.34	32.18
Environmental Medicine and Physiological Research						
FORT DETRICK						
Army Medical Research & Materiel Command - HQ	21.15	22.10	23.26	23.94	0.68	2.80
SOLDIER SYSTEMS CENTER						
Army Research Institute of Environmental Medicine	147.00	147.00	161.70	176.00	14.30	29.00
Environmental Medicine and Physiological Research Total	168.15	169.10	184.96	199.94	14.98	31.80
Hyperbaric and Undersea Medicine Research						
BUMED WASHINGTON DC						
Navy Bureau of Medicine & Surgery (Code M2) - Washington DC	2.00	2.00	2.20	2.00	-0.20	0.00
NAVAL SUB BASE NEW LONDON						
Naval Submarine Medical Research Laboratory	26.00	26.00	28.60	32.00	3.40	6.00

	Current Usage (FTEs)	Current Capacity (FTEs)	Surge Rqmnt (FTEs)	Max Capacity (FTEs)	Excess Capacity (FTEs)	Capacity Avail to Surge (FTEs)
Hyperbaric and Undersea Medicine Research						
NSA PANAMA CITY						
Naval Experimental Diving Unit - Panama City FL	112.00	112.00	123.20	116.00	-7.20	4.00
WALTER REED ARMY MEDICAL CENTER						
Naval Medical Research Center - Silver Spring	9.86	9.86	10.84	10.00	-0.84	0.14
Hyperbaric and Undersea Medicine Research Total	149.86	149.86	164.84	160.00	-4.84	10.14
Infectious Diseases Research						
BROOKS CITY-BASE						
Naval Health Research Center Detachment - Brooks AFB	0.00	0.00	0.00	0.00	0.00	0.00
BUMED WASHINGTON DC						
Navy Bureau of Medicine & Surgery (Code M2) - Washington DC	2.00	2.00	2.20	2.00	-0.20	0.00
FORT DETRICK						
Army Medical Materiel Development Activity	2.00	2.00	2.20	2.00	-0.20	0.00
Army Medical Research & Materiel Command - HQ	20.52	22.34	22.57	25.18	2.61	4.66
Army Medical Research Institute of Infectious Diseases	15.00	15.00	16.50	16.00	-0.50	1.00
NAVSTA GREAT LAKES						
Naval Institute for Dental & Biomedical Research	1.00	1.00	1.10	3.00	1.90	2.00
NMC SAN DIEGO						
Naval Health Research Center - San Diego	8.00	8.00	8.80	15.00	6.20	7.00
WALTER REED ARMY MEDICAL CENTER						
Armed Forces Institute of Pathology	31.20	31.20	34.32	33.00	-1.32	1.80
Naval Medical Research Center - Silver Spring	121.00	121.00	133.10	121.00	-12.10	0.00
Walter Reed Army Institute of Research - WRAMC	434.00	434.00	477.40	440.00	-37.40	6.00
WRIGHT-PATTERSON AFB						
Naval Health Research Center Detachment - Wright-Patterson AFB	0.00	0.00	0.00	0.00	0.00	0.00
Infectious Diseases Research Total	634.72	636.54	698.19	657.18	-41.01	22.46
Medical Biological Defense Research						
ABERDEEN PROVING GROUND						
Army Medical Research Institute of Chemical Defense	13.00	13.00	14.30	17.00	2.70	4.00
BROOKS CITY-BASE						
Air Force School of Aerospace Medicine	9.33	9.33	10.26	21.33	11.07	12.00
Naval Health Research Center Detachment - Brooks AFB	0.00	0.00	0.00	0.00	0.00	0.00
DEFENSE THREAT REDUCTION AGENCY						
DTRA CB Directorate	0.00	0.00	0.00	3.00	3.00	3.00
FORT DETRICK						
Army Medical Research & Materiel Command - HQ	11.99	12.36	13.19	13.19	-0.01	1.19
Army Medical Research Institute of Infectious Diseases	556.00	556.00	611.60	576.00	-35.60	20.00
NAVSTA GREAT LAKES						
Naval Institute for Dental & Biomedical Research	2.00	2.00	2.20	6.00	3.80	4.00
NMC SAN DIEGO						
Naval Health Research Center - San Diego	0.00	0.00	0.00	0.00	0.00	0.00
WALTER REED ARMY MEDICAL CENTER						
Armed Forces Institute of Pathology	20.80	20.80	22.88	22.00	-0.88	1.20
Naval Medical Research Center - Silver Spring	48.00	48.00	52.80	63.00	10.20	15.00
Walter Reed Army Institute of Research - WRAMC	116.00	116.00	127.60	122.00	-5.60	6.00
WRIGHT-PATTERSON AFB						
Naval Health Research Center Detachment - Wright-Patterson AFB	0.00	0.00	0.00	0.00	0.00	0.00
Medical Biological Defense Research Total	777.12	777.49	854.84	843.52	-11.32	66.39
Medical Chemical Defense Research						
ABERDEEN PROVING GROUND						
Army Medical Research Institute of Chemical Defense	195.00	195.00	214.50	249.00	34.50	54.00
DEFENSE THREAT REDUCTION AGENCY						
DTRA CB Directorate	1.00	1.00	1.10	6.00	4.90	5.00

	Current Usage (FTEs)	Current Capacity (FTEs)	Surge Rqmnt (FTEs)	Max Capacity (FTEs)	Excess Capacity (FTEs)	Capacity Avail to Surge (FTEs)
Medical Chemical Defense Research						
FORT DETRICK						
Army Center for Environmental Health Research	24.00	24.00	26.40	28.00	1.60	4.00
Army Medical Research & Materiel Command - HQ	23.36	24.25	25.70	26.08	0.38	2.72
NMC SAN DIEGO						
Naval Health Research Center - San Diego	0.00	0.00	0.00	0.00	0.00	0.00
WALTER REED ARMY MEDICAL CENTER						
Armed Forces Institute of Pathology	10.40	10.40	11.44	11.00	-0.44	0.60
Walter Reed Army Institute of Research - WRAMC	135.00	135.00	148.50	140.00	-8.50	5.00
WRIGHT-PATTERSON AFB						
Naval Health Research Center Detachment - Wright-Patterson AFB	10.00	10.00	11.00	24.00	13.00	14.00
Medical Chemical Defense Research Total	398.76	399.65	438.64	484.08	45.44	85.32
Medical Radiological Defense Research						
BROOKS CITY-BASE						
Naval Health Research Center Detachment - Brooks AFB	0.00	0.00	0.00	0.00	0.00	0.00
BUMED WASHINGTON DC						
Navy Bureau of Medicine & Surgery (Code M2) - Washington DC	2.00	2.00	2.20	2.00	-0.20	0.00
NMC SAN DIEGO						
Naval Health Research Center - San Diego	0.00	0.00	0.00	0.00	0.00	0.00
WRIGHT-PATTERSON AFB						
Naval Health Research Center Detachment - Wright-Patterson AFB	0.00	0.00	0.00	0.00	0.00	0.00
Medical Radiological Defense Research Total	2.00	2.00	2.20	2.00	-0.20	0.00
Occupational Health and Medical Informatics Research						
BUMED WASHINGTON DC						
Navy Bureau of Medicine & Surgery (Code M2) - Washington DC	2.00	2.00	2.20	2.00	-0.20	0.00
NMC SAN DIEGO						
Naval Health Research Center - San Diego	2.10	2.10	2.31	5.40	3.09	3.30
WALTER REED ARMY MEDICAL CENTER						
Walter Reed Army Institute of Research - WRAMC	55.99	55.99	61.59	59.34	-2.25	3.35
Occupational Health and Medical Informatics Research Total	60.09	60.09	66.10	66.74	0.64	6.65
Information Management and Information Technology Acquisition						
BROOKS CITY-BASE						
311th Human Systems Wing - Human Systems Program	7.00	7.00	7.70	7.00	-0.70	0.00
Naval Health Research Center Detachment - Brooks AFB	0.00	0.00	0.00	0.00	0.00	0.00
BUMED WASHINGTON DC						
Navy Bureau of Medicine & Surgery (Code M2) - Washington DC	2.00	2.00	2.20	2.00	-0.20	0.00
FORT DETRICK						
Army Medical Research & Materiel Command - HQ	12.32	18.92	13.55	27.17	13.62	14.85
FORT SAM HOUSTON						
Army Medical Information Technology Center	108.00	108.00	118.80	115.00	-3.80	7.00
NMC SAN DIEGO						
Naval Health Research Center - San Diego	0.00	0.00	0.00	0.00	0.00	0.00
PENTAGON						
Program Executive Office, Joint Medical Information	408.00	408.00	448.80	479.00	30.20	71.00
WRIGHT-PATTERSON AFB						
Naval Health Research Center Detachment - Wright-Patterson AFB	0.00	0.00	0.00	0.00	0.00	0.00
Information Management and Information Technology	537.32	543.92	591.05	630.17	39.12	92.85
Medical Systems Acquisition						
BROOKS CITY-BASE						
311th Human Systems Wing - Human Systems Program	33.00	33.00	36.30	33.00	-3.30	0.00
Naval Health Research Center Detachment - Brooks AFB	0.00	0.00	0.00	0.00	0.00	0.00

	Current Usage (FTEs)	Current Capacity (FTEs)	Surge Rqmnt (FTEs)	Max Capacity (FTEs)	Excess Capacity (FTEs)	Capacity Avail to Surge (FTEs)
Medical Systems Acquisition						
BUMED WASHINGTON DC						
Navy Bureau of Medicine & Surgery (Code M2) - Washington DC	4.00	4.00	4.40	4.00	-0.40	0.00
FORT DETRICK						
Army Medical Materiel Agency	34.86	34.86	38.35	35.86	-2.49	1.00
Army Medical Materiel Development Activity	57.00	57.00	62.70	57.00	-5.70	0.00
Army Medical Research & Materiel Command - HQ	18.00	21.50	19.80	26.25	6.45	8.25
Army Medical Research Acquisition Activity	95.00	95.00	104.50	97.00	-7.50	2.00
FORT RUCKER						
Army Aeromedical Research Laboratory	5.00	5.00	5.50	8.00	2.50	3.00
FORT SAM HOUSTON						
Army Institute of Surgical Research	8.00	8.00	8.80	14.00	5.20	6.00
NMC SAN DIEGO						
Naval Health Research Center - San Diego	0.00	0.00	0.00	0.00	0.00	0.00
WALTER REED ARMY MEDICAL CENTER						
Walter Reed Army Institute of Research - WRAMC	111.00	111.00	122.10	113.00	-9.10	2.00
WRIGHT-PATTERSON AFB						
Naval Health Research Center Detachment - Wright-Patterson AFB	3.00	3.00	3.30	8.00	4.70	5.00
Medical Systems Acquisition Total	368.86	372.36	405.75	396.11	-9.64	27.25
Grand Total	3,975.60	3,989.81	4,373.16	4,523.99	150.83	548.39

<u>Assumptions</u>

Adjustment Factor	FTEs	0.1

APPENDIX B

DOD #527: Medical classroom space

Question: For your permanently established medical/dental facilities, what is the number of Classrooms currently in use (see amplification)?
Source / Reference: facility master plan, facility commander
Amplification: Dedicated classroom - A room whose primary function is medical/dental education
Space Available Classroom - a room whose primary function is other than medical/dental education (i.e., conference room, break room, cafeteria) that is routinely (minimum once per week) used as a classroom. Rooms that are only occasionally used for training should not be included in this number

Please fill in the following table(s)

Medical/Dental facility size	# of Dedicated classrooms (Rooms)	Usage of Dedicated Classrooms (day/yr)	# of Space-A Classrooms (Rooms)	Usage of Space-A classrooms (day/yr)
Small (<200 SF)				
Medium (201-1500 SF)				
Large (>1500 SF)				

DOD #528: Medical Ambulatory Care

Question: For your permanently estbalished medical/dental facilities, provide the number of exam rooms by type (primary care clinic vs specialty clinic). Provide the number of exam rooms that are not currently being used for patient care.

Source / Reference: Facility Commander, facility master plan

Amplification: 1 An exam room must be larger than 80 SF and contains at minimum, a working sink and all of the necessary supporting equipment to conduct routine exams. Primary care functions include family practice, general outpatient clinics, physical exams, internal medicine, obstetrics and gynecology, pediatrics and pediatric subspecialties to include adolescent and well baby clinics.

2. Exam rooms not being used for patient care include rooms being used for offices, break rooms, storage, conference rooms, duty rooms, etc.

Please fill in the following table(s)

Medical/Dental facility rooms	Primary Care Clinic Exam Rooms (Exam Rms)	Specialty Clinic Exam Rooms (Exam Rms)	Specialty Clinic Treatement and Procedure (Exam Rms)
Exam rooms in use			
Exam Rooms not in use			
Total #			

DOD #529: Medical Operating/Delivery Rooms

Question: For your permanently estbalished medical/dental facilities, what is the number of Operating Rooms, Delivery Rooms, and Labor, Delivery & Recovery (LDR) rooms currently in use? What is the number of available Operating Rooms, Delivery Rooms, and LDRs that are not currently in use?
Source / Reference: Facility master plan, facility commander
Amplification: A room can only be considered to be available and not in use if it can be reconverted to use as an OR/DR/LDR because no permanent physical alterations have occurred (i.e., medical gases, air handling, OR lights, etc)

Please fill in the following table(s)

Medical/Dental facility rooms	Operating Rooms (OR)	Delivery Rooms (DR)	LDRs (LDR)
In use			
Available			
Total			

DOD #530: Dental Care

Question: For your permanently estbalished medical/dental facilities, what is the number of general and specialty dental treatment rooms (DTRs) currently in use? What is the number of general and specialty DTRs not currently in use?

Source / Reference: Facility Master Plan, Dental Facility Commander

Amplification: Dental Treatment Rooms (DTRs) in use are those currently being utilized for patient care. DTRs not in use are those that are being utilized for other than patient care (i.e., vacant, offices, storage, break and duty rooms).

Please fill in the following table(s)

Medical/Dental facility rooms	General (DTR)	Specialty (DTR)
# of DTRs in use		
# of DTRs not in use		
Total # of DTRs		

DOD #531: Medical Class VIII Storage

Question: For Medical and Dental activities provide the following information for medical/dental logistics storage facilities:

Source / Reference: Medical Facility Commander

Amplification: 1. Direct question to installation medical logistics office. Logistics square footage (SF) includes space used for Material Management contract and administrative functions to include the receipt, inspection, maintenance storage, and distribution of equipment and supplies.

2. Special Items; (i.e. Robotics, Carousel, Automated picking Units, Cross-docking, Pallet Racking Systems, Pyxis, Omni Cell)

Please fill in the following table(s), adding rows as necessary

Bldg # (Text)	Logistics Space (SF)	Climate Control Space (SF)	Refrigerated Space (SF)	Freezer Space (SF)	Special Items (List)[5]

[5] Choose a value from this list: Robotics, Carousel, Automated Picking Units, Cross-docking, Pallet Racking Systems, Pyxis, OmniCell

DOD #532: Medical / Dental Unused Space

Question: For Medical and Dental activities, what is the excess/unused space (e.g., operating rooms or kitchens in hospital facilities downsized to clinic operations) in any of the medical buildings? What amount of space is being used by non-medical (e.g. Line, NAF) in medical buildings? What amount of space is being utilized for Non-DOD Medical care (i.e. VA Utilization).

Source / Reference: Facility Master Plan, Facility Commander

Amplification: 1. Direct question to installation medical facilities office.

2. Only complete this portion if you are the primary "owner" of the building in cases where more than one tenant shares or jointly occupies the facility.

3. Medical functions include all functions that work for the medical/dental facility commander (e.g. medical administration and medical logistics).

4. Provide a brief description of space (clinical converted to admin, kitchen, logistics, food storage, admin, ORs, exam rooms, etc).

Please fill in the following table(s), adding rows as necessary

Discription of Space (Text)	Quantity of Space (SF)	Specify either Unused or Name of activity occupying space (Text)

DOD #533: Reserve Clinic Ambulatory Care Utilization

Question: For reserve medical/dental clinics, provide the number of physical exams and outpatient visits for FY 01, FY 02, and FY 03.
Source / Reference: Medical Expense and Performance Reporting System (MEPRS), Composite Health Care System (CHCS) Reporting System or equivalent reserve reporting system
Amplification: Do not double count physical exams as outpatient visits.

Please fill in the following table(s)

Medical Clinic	Physical Exams (FY 01) (Count)	Physical Exams (FY 02) (Count)	Physical Exams (FY 03) (Count)	Outpatient Visits (FY 01) (Count)	Outpatient Visits (FY 02) (Count)	Outpatient Vists (FY 03) (Count)
Medical Clinic						

DOD #534: Reserve Clinic Dental Utilization

Question: For reserve medical/dental clinics, provide the number of dental visits for FY 01, FY 02, FY 03.
Source / Reference: Medical Expense and Performance Reporting System (MEPRS), Composite Health Care System (CHCS) Reporting System or equivalent reserve reporting system

Please fill in the following information

Requested Information	Answers
FY01 Dental Visits	
FY02 Dental Visits	
FY03 Dental Visits	

DOD #535: Medical Reserve Clinic Investment Equipment

Question: For reserve medical/dental clinics, identify each piece of investment equipment (greater than $250,000), provide the following.
Source / Reference: Joint Medical Asset Repository (JMAR), Defense Medical Logistics Standards System (DMLSS), Defense Property Accountability System (DPAS), Service Legacy System

Please fill in the following table(s), adding rows as necessary

Equipment Nomenclature (Text)	Date of Acquisition (Text)	Date of Lease/rent (Text)	# of Procedures performed in FY 02 (Procedures)	Total # of Hours Equipment was fully operational in FY 02 (Hrs/Yr)	Total number of hours equipment was fully operational in FY 03 (Hrs/Yr)	Total # of procedures per hour per manufacturer's spec (Procedures)

DOD #536: Medical / Dental Investment Equipment

Question: For your permanently estbalished medical/dental facilities, provide the following for each piece of Investment Equipment (>$250,000) :

Source / Reference: Joint Medical Asset Repository (JMAR), Defense Medical Logistics Standard System (DMLSS), Defense Property Accountability System (DPAS), Service Legacy Systems

Please fill in the following table(s), adding rows as necessary

Equipment Nomenclature (Text)	Date of Acquisition (Text)	Date of Lease/Rent (Text)	# of Procedures performed in FY02 (Procedures)	# of Procedures in FY03 (Procedures)	Total # of hours equipment was fully operational in FY02 (Hrs/Yr)	Total # of hours equipment was fully operational in FY03 (Hrs/Yr)	Total # of procedures per hr per manufacturer's spec (Procedures)

DOD #537: Medical Education and Training

Question: For your permanently established medical/dental facilities, what is the total number of student days for FY01, FY02 and FY03, include students from all programs (not limited to GME)?

Do you have an accredited Graduate Medical Education (GME) Program located on your installation?
Source / Reference: Facility Commander
Amplification: Student days include all programs at your facilities, not limited to GME.

For your facility to have an accredited GME program it must operate within the military facility located on the installation.

Please fill in the following information

Requested Information	Answers
Total # Student Days (FY01) (Day)	
Total # Student Days (FY02) (Day)	
Total # Student Day (FY03) (Day)	
Accredited GME Program (Yes/No)	

DOD #538: Reserve Clinic Ambulatory Care

Question: For reserve medical/dental clinics, provide the number of exam rooms that are deemed used and those not currently being used for patient care?
Source / Reference: Reserve Medical Commander
Amplification: 1. An exam room must be larger that 80 SF and contain at a minimum a working sink and all of the necessary supporting equipment to conduct rountine exams. 2. Exam rooms not being used for patient care include rooms being used for offices, break rooms, storage, conference rooms, duty rooms, etc.

Please fill in the following table(s)

Exam Rooms	Primiary Care Clinic Exam Rooms (Count)
Exam Rooms in use	
Exam Rooms not in use	
Total #	

DOD #539: Reserve Clinic Dental Care

Question: For reserve medical/dental clinics, what is the number of general dental treatment rooms (DTRs) currently in use? What is the number of general DTRs not currently in use?
Source / Reference: Reserve Medical Commander
Amplification: DTRs in use are those currently being utilized for patient care. DTRs not in use are those that are being utlized for other than patient care (i.e. vacant, offices, storage, break and duty rooms).

Please fill in the following table(s)

DTRs	General DTRs (Count)
# of DTRs in use	
# of DTRs not in use	
Total # of DTRs	

DOD #540: Medical Scope of Services

Question: For your permanently estbalished medical/dental facilities, identify the scope of services provided at your installation.
Source / Reference: Facility business plan, facility commander
Amplification: Include all medical services on the installation in one consolidated list.

Please fill in the following table(s)

Service	Service Provided (Yes/No)
Allergy/immunization	
Ambulance Service	
Blood Donor Center	
Cardiac Care Unit	
Cardiology/Pulmonary	
Central materiel Service	
Chaplain	
Clinic Admin	
Clinical Investigation	
Command Suite	
Comptroller (Resource Management)	
Contracting Services	
Dentistry	
Dermatology	
Detoxification Unit	
Medical Education & Training	
Emergency Room Svcs	
ENT/Audiology	
Family Practice Clinic	
Flight/Undersea Med	
Food Service (Nutritional Medicine)	
Gastroenterology	
General Surgery	
Hematology/Oncology	
Information Mgmt	
Intensive Care Unit	
Internal Medicine	
Light Care Unit	
Medical Logistics	
Medical Library	
Medical/Surgical Unit	
Nephrology	
Neurology/Endocrin	
Neurosurgery	
Nuclear Medicine	
Nursery	
Nursing Administration	

Obstetrical Unit	
Obstetrics/Gynecology	
Ophthamology/Optometry	
Orthopedics/Podiatry	
Pathology	
Patient Admin	
Patient Services	
Pediatric Unit	
Pediatrics	
Pharmacy	
Physical/Occ Therapy	
Plans, Ops & Training (Medical Readiness)	
Preventive/Occ Medicine	
Primary Care Clinics	
Psychiatric Unit	
Psychiatry	
Psychology	
Radiology	
Radiotherapy	
Social Work	
Surgical Services	
TRICARE	
Urology	
Veterinary Medicine	
Others	

DOD #541: Medical Inpatient Beds

Question: For your permanently estbalished medical/dental facilities, provide the number of Staffed, Equipped and Contingency Beds by type (ICU, OB, Other and Rooms not Currently Utilized for Inpatient care).
Source / Reference: Facility Commander, facility master plan
Amplification: 1. Staffed Bed - Bed that is actually staffed based on workload as opposed to the number of beds the hospital may have been built or configured to contain.
2. Equipped Bed - bed the hospital was originally built or subsequently reconfigured to support. Room must include electrical and medical gas utility support for each bed. Beds and other supporting equipment must be present and immediately available. Wheeling beds in the room from a storage room down the hall does not meet this requirement. Equipped beds may not necessarily be staffed, but are maintained as ready for use.
3. Contingency Bed - bed that can be used in wards or rooms designed for patient beds. Beds are spaced on six (6) foot centers and include embedded electrical and gas utilities support for each bed. Beds must be setup and ready within 72 hours. Use of portable gas or electrical utilities does not meet this requirement. This measure is applicable only for hospitals and medical centers. Expansion beds outside of the facility (gym, tentage, etc) are not considered for this measurement.
4. Patient rooms not being used for patient care, including all those being used as storage, break rooms, duty rooms, offices, etc.
5. OB beds include 1) Labor, Delivery, Recovery, Post-Partum (LDRPs) beds and 2) Post-Partum beds.

Please fill in the following table(s)

Medical/Dental facility rooms	ICU (Beds)	OB (Beds)	Other Beds (Beds)	Patient rooms not used for inpatient care (Beds)	Total Beds (excluding not used) (Beds)
Staffed					
Equipped					
Contingency					
Total					

DOD #542: Medical /Dental Enrollment

Question: For your permanently estbalished medical/dental facilities, provide the following enrollment information:
- Active Duty (AD) enrolled in TRICARE Prime
- Active Duty Family Members (ADFM) enrolled in TRICARE Prime
- Non-Active Duty/Dependant (NAD/NADD) under 65 enrolled in TRICARE Prime
- Non-Active Duty/Dependant (NAD/NADD) over 65 enrolled in TRICARE for Life (TFL)
- Non-Active Duty/Dependant (NAD/NADD) enrolled in Plus
- Total Enrolled Population excluding Plus

Source / Reference: DEERS Extract of M2 (MHS Mart); end of FY Report

Please fill in the following table(s)

Beneficiaries Enrolled in TRICARE Prime	AD (Pers)	ADFM (Pers)	NAD+NADD <65 (Pers)	NAD+NADD >65 (Pers)	Plus (Pers)	Total Enrolled Population excluding Plus (Pers)[6]
FY01						
FY02						
FY03						

[6] Source: TRICARE Management Agency (TMA), Falls Church, VA

DOD #543: Non-Permanent Party Utilizing Medical Resources

Question: For your permanently established medical/dental facilities, identify the Active Duty Student Load and reserve component personnel not permanently assigned to the catchment area but utlizing medical services in FY01, FY02 and FY03.
Source / Reference: Medical Facility Commander
Amplification: This captures all non permanent party personnel not enrolled to your MTF but utlize the services of your MTF.

Please fill in the following information

Requested Information	Answers
Non permanent party personnel (FY01) (Pers)	
Non permanent party personnel (FY02) (Pers)	
Non permanent party personnel (FY03) (Pers)	

DOD #544: Medical Staffing

Question: For your permanently established medical/dental facilities, provide the following staffing numbers for FY01, FY02, FY03: (Note: See definitions in amplification; do not deviate from definition)
- Primary Care Providers
- Specialty Care Providers
- Physician Extenders
- Dentists
- Other Direct Care Providers
- Nurses
- Direct Care Paraprofessionals
- Administrative Personnel

Source / Reference: Facility Commander

Amplification: 1. Include military, civilian and contract personnel. Do not include partnerships or volunteers.
2. Primary Care includes General Medical Officers, Flight Surgeons, Diving Medical Officers, Family Practice, Internal Medicine, General Pediatrics, Pediatric Subspecialties, and Obstetrics and Gynecology.
3. Specialty care includes all other physician providers not included in the primary care category.
4. Physician extenders include physcian assistants and Nurse Practicionar.
5. Dentists include general and specialty dentists.
6. Other Direct Care Providers include Optometrists, Audiologists, Physical Therapists, Nurse Anesthetists, Podiatrists, etc.
7. Nurses, to include general, intensive care, emergency, etc.
8. Direct Care Paraprofessions include dental hygienists, corpsmen, medical technicians, physical therapy technicians, psychology technicians, licensed practical nurses, etc.
9. Administrative staff inlcudes clerks, typist, human resource, finance, personnel, administrative technicians, supply, etc.

Please fill in the following table(s)

Staff Type	Primary Care Providers (Pers)	Specialty Care Providers (Pers)	Physician Extenders Providers (Pers)	Dentist (Pers)	Other Direct Care Providers (Pers)	Nurses (Pers)	Direct Care Paraprofessionals (Pers)	Admin, Logistical, or Clerical (Pers)
FY01								
FY02								
FY03								

Staff Type	Other (Pers)
FY01	
FY02	
FY03	

DOD #545: Medical Inpatient Utilization

Question: For your permanently established medical/dental facilities, provide the relative weighted procedure (RWP) for FY01, FY02 and FY03. Provide the average daily patient load (ADPL) for FY01, FY02 and FY03.
Source / Reference: Medical Expense and Performance Reporting System (MEPRS), Composite Health Care System (CHCS) Reporting System
Amplification: 1. OB beds include Labor, Delivery, Recovery, Post-Partum (LDRPs) beds and Post-Partum beds.

Please fill in the following table(s)

Medical/Dental facility beds	RWP, FY01 (RWP)	RWP, FY02 (RWP)	RWP, FY03 (RWP)	ADPL, FY01 (ADPL)	ADPL, FY02 (ADPL)	ADPL, FY03 (ADPL)
ICU						
OB						
All Other Beds						
Total						

DOD #546: Medical Ambulatory Care Utilization

Question: For your permanently established medical/dental facilities, provide Relative Value Units (RVUs) and Outpatient Visits for FY02 and FY03.
Source / Reference: Medical Expense and Performance Reporting System (MEPRS), Composite Health Care System (CHCS) Reporting System

Please fill in the following table(s)

Medical/Dental facility rooms	RVUs (FY01) (RVU)	RVUs (FY02) (RVU)	RVUs (FY03) (RVU)	Outpatient Visits (FY01) (Visits)	Outpatient Visits (FY02) (Visits)	Outpatient Visits (FY03) (Visits)
Primary Care Clinic Exam Rooms						
Specialty Clinic Exam Rooms						
Total						

DOD #547: Medical Operating/Delivery Room Procedures

Question: For your permanently established medical/dental facilities, provide the number of Operating room (OR), Delivery Room (DR) and Labor, delivery, and recovery (LDR) procedures in FY01, FY02 and FY03.
Source / Reference: Medical Expense and Performance Reporting System (MEPRS), Composite Health Care System (CHCS) Reporting System

Please fill in the following information

Requested Information	Answers
FY01 OR Procedures (OR Procedures)	
FY02 OR Procedures (OR Procedures)	
FY03 OR Procedures (OR Procedures)	
FY01 Delivery Room Procedures (OB deliveries)	
FY02 Delivery Room Procedures (OB deliveries)	
FY03 Delivery Room Procedures (OB deliveries)	
FY01 LDR Procedures (OB deliveries)	
FY02 LDR Procedures (OB deliveries)	
FY03 LDR Procedures (OB deliveries)	

DOD #548: Medical Dental Utilization

Question: For your permanently established medical/dental facilities, provide the number of Dental Weighted Values for FY01, FY02 and FY03. Provide the number of Dental visits for FY01, FY02 and FY03.
Source / Reference: Medical Expense and Performance Reporting System (MEPRS), Composite Health Care System (CHCS) Reporting System

Please fill in the following table(s)

Medical/Dental facility	Dental Weighted Values (FY02) (WV)	Dental Weighted Values (FY03) (WV)	Dental Visits (FY02) (Visits)	Dental Visits (FY03) (Visits)	Dental Visits (FY01) (Visits)	Dental Weighted Value (FY01) (Visits)
General						
Specialty						
Total						

DOD #549: Medical Current Workload

Question: For your permanently estbalished medical/dental facilities, provide the current workload with current staffing and resources in terms of the number of outpatient visits, admissions, laboratory tests (weighted), radiology procedures (weighted), pharmacy units (weighted) for Active Duty, Active Duty Family Members, Non-active Duty and Family Members.
Source / Reference: Medical/dental facility commander

Please fill in the following table(s)

Current Workload	Outpatient Visits (Visits)	Admissions (Pers)	Laboratory Tests (weighted) (WV)	Radiology Procedures (weighted) (WV)	Pharmacy Units (weighted) (WV)
AD					
ADFM					
NAD & NADD					

DOD #550: Medical Surge Workload w/ current staff and facility

Question: For your permanently established medical/dental facilities, provide the maximum workload with current staff and resources in terms of the number of outpatient visits, admissions, laboratory tests (weighted), radiology procedures (weighted), pharmacy units (weighted) for Active Duty, Active Duty Family Members, Non-Active Duty and Family members.
Source / Reference: Medical/dental facility commander
Amplification: Laboratory, Radiology and Pharmacy surge requirement includes all inpatient and outpatient work-load.

Essay - Briefly describe how you arrived at the maximum workload given current staffing, equipment, and facilities.

Please fill in the following table(s)

Maximum Workload	Outpatient Visits (Visits)	Admis-sions (Pers)	Laboratory Tests (weighted) (WV)	Radiology Pro-cedures (weighted) (WV)	Pharmacy Units (weighted) (WV)	Essay - Describe criteria, constraints & assumptions. (Text)
Patients						

DOD #551: Medical Surge Workload @ full staffing & current facility

Question: For your permanently established medical/dental facilities, provide the maximum workload with unlimited staff and resources, but the same physical plant in terms of the number of outpatient visits, admissions, laboratory tests (weighted, radiology procedures (weighted), pharmacy units (weighted) for Active Duty, Active Duty Family Members, Non-Active Duty and Family members.
Source / Reference: Medical Facility commander
Amplification: This workload assumes staff and capacity to operate 24 hours per day, 7 days per week.

Essay - Briefly describe how you arrived at the maximum workload given unlimited staffing and resources but the same physical plant.

Please fill in the following table(s)

Maximum Workload w/ inc staff	Outpatient Visits (Visits)	Admissions (Pers)	Laboratory Tests (weighted) (WV)	Radiology Procedures (weighted) (WV)	Pharmacy Units (weighted) (WV)	Essay - Describe criteria, constraints & assumptions. (Text)
Patients						

DOD #552: Medical Pharmacy

Question: For your permanently established medical/dental facilities, provide the inpatient and outpatient pharmacy workload data including automation, # of pharmacists, # of pharmacy techs, unit dose issues, new and refill scripts, sterile products, hours of operations, and days open per week.
Source / Reference: Medical Expense and Performance Reporting System (MEPRS), PDTS
Amplification: Outpatient automation includes high speed, high volume technology such as a robot.
Inpatient automation includes a modular, integrated order fulfillment system.
Clinic Issue - Handout or prepared issue to a clinic for subsequent issue to an individual patient
Bulk Issue: Line item issued to clinics or wards to be used within the clinic or ward.
Unit dose: Count each dose
Sterile Product: Parenteral bottle, bag or syringe that is prepared by the pharmacy that has a number of additive parenterals and is ready for administration

Please fill in the following table(s)

Medical/Dental facility workload type	Automation (Yes/No)	# of Pharmacists (Pers)	# of Pharmacy Technicians (Pers)	Unit Dose Issues (scripts)	# New Scripts (scripts)	# Refill Scripts (scripts)	Sterile Products (scripts)	Hours of operation per day (Hrs)
Inpatient								
Outpatient								

Medical/Dental facility workload type	Days Open per Week (Day)
Inpatient	
Outpatient	

DOD #553: Medical Blood Programs

Question: For your permanently established medical/dental facilities, answer the following:

1. Does your installation support the drawing of large volumes of blood from the base/installation population?
2. Does your installation transport or ship large volumes of blood products?
3. Does your installation temporarily or permanently store blood or blood products?
4. Does your installation process blood for infectious disease markers IAW FDA guidelines (i.e. hepatitis, HIV)?

Source / Reference: Medical Facility Commander

Amplification: Does not include Red Cross Blood Draws

Please fill in the following information

Requested Information	Answers
Draw Blood (Yes/No)	
Transport Blood (Yes/No)	
Store Blood (Yes/No)	
Infectious Disease Markers (Yes/No)	

DOD #554: Medical Capability Domains

Question: For your Medical and Dental Research, Development, and Acquisition activities, enter "yes" in appropriate column(s) to identify those capability domains (a) that are supported within your activity's mission (i.e., for which your activity receives programmed funds or has programmed Full Time Equivalents), (b) in which direct mission-funded or reimbursible work was performed in FY03, or (c) that your activity possesses capability to support (i.e., domains for which your activity possesses appropriately skilled personnel and appropriate facilities). Identify all domains that apply. See the Amplification section for definitions of the capability domain that are listed in the table.

Source / Reference: Comptroller Records, Commander/Director Assessment

Amplification: 1. Direct question to installation activities performing Medical and Dental Research, Development, and Acquisition (RDA) functions.

2. The capability domains to be used in classifying an activity's capabilities are defined as follows:

Basic Research: Biological Sciences. Basic research aimed at discovering and understanding fundamental biological principles and processes underlying military health and performance at the system/organism, cellular, subcellular, and molecular levels, and basic biomedical research focused on physiological and pathogenic mechanisms of militarily relevant injuries and diseases, and discovery of novel approaches to medical countermeasures.

Basic Research: Cognitive & Neural Science: Human Performance. Basic research aimed at determining and understanding psychological and neurological factors influencing human cognitive performance (including sensory processing and integration) under military operational conditions.

Technology Maturation: Chemical-Biological: Medical Chemical Defense. Technology maturation efforts (beyond basic research) focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., drugs, diagnostics) and medical strategies for prevention, treatment, and management of casualties caused by chemical warfare agents.

Technology Maturation: Chemical-Biological: Medical Biological Defense. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., vaccines, drugs, diagnostics) and medical strategies for prevention, treatment, and management of casualties caused by biological warfare agents.

Technology Maturation: Biomedical: Infectious Diseases. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., vaccines, drugs, diagnostics, vector controls) and medical strategies for prevention and treatment of endemic infectious diseases of military importance.

Technology Maturation: Biomedical: Combat Casualty Care. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., diagnostic and therapeutic systems, drugs, biologicals) and medical and surgical strategies for medical management of combat casualties in field settings and during evacuation. Also includes efforts focused on technologies and strategies for prevention and field management of dental-related incapacitation.

Technology Maturation: Biomedical: Military Operational Medicine. Technology maturation efforts (beyond basic research), focused on developing information on human responses to environmental and occupational threats and/or systems hazards present in military operational settings, and on evaluating policy and doctrinal alternatives and exploring systems (e.g, warfighter monitoring, drugs, nutritional supplements) to prevent injury and performance degradation caused by these threats.

Technology Maturation: Biomedical: Medical Radiological Defense. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., diagnostic systems, drugs, biologicals) and medical strategies for prevention, treatment, and management of casualties caused by ionizing radiation.

Technology Maturation: Human Systems: Protection, Sustainment & Physical Performance. Technology maturation efforts (beyond basic research), focused on developing information on human systems interactions to support development of personal protective systems, and improve sustainment and physical performance. It includes combat clothing and individual equipment; combat rations and field-feeding equipment; logistics readiness; physical aiding and enhancement; vehicle escape and crash safety; warrior survival and rescue; aerial delivery; and dismounted, mounted, and air-crew warrior systems integration, including warfighter systems analysis.

Medical/Dental Acquisition: Pharmaceuticals & Biologicals. System development and demonstration activities and procurement activities directed towards the advanced development and initial fielding of novel pharmaceuticals and biologicals whose development is subject to the regulatory oversight of the U.S. Food and Drug Administration Centers for Drug Evaluation and Research and Biologics Evaluation and Research.

Medical/Dental Acquisition: Medical Devices. System development and demonstration activities and procurement activities directed towards the advanced development and initial fielding of novel medical devices whose development is subject to the regulatory oversight of the U.S. Food and Drug Administration Center for Devices and Radiological Health.

Medical/Dental Acquisition: COTS and Assemblages. Acquisition activities directed towards the procurement of commercial off the shelf (COTS) medical products and non-regulated medical support items for sustainment of TO&E units.

Medical/Dental Acquisition: Enterprise IM/IT Systems. Acquisition activities directed towards the development and procurement of medical enterprise information management/information technology systems.

Please fill in the following table(s)

Capability Domains	Within Activity Mission (Yes/No)[7]	Work Conducted in FY03 (Yes/No)[8]	Possess Capability to Support (Yes/No)[9]
Basic Research: Biological Sciences			
Basic Research: Cognitive & Neural Science: Human Performance			
Technology Maturation: Chem-Bio: Medical Chemical Defense			
Technology Maturation: Chem-Bio: Medical Biological Defense			
Technology Maturation: Biomedical: Infectious Diseases			
Technology Maturation: Biomedical: Combat Casualty Care			
Technology Maturation: Biomedical: Military Operational Medicine			
Technology Maturation: Biomedical: Medical Radiological Defense			
Tech Maturation: Human Sys: Protection Sustainment & Phys Perform			
Medical/Dental Acquisition: Pharmaceuticals & Biologicals			
Medical/Dental Acquisition: Medical			

[7] Amplification: Enter yes if the capability domain is supported within your activity's mission (i.e., your activity receives programmed funds or has programmed Full Time Equivalents supporting the domain)
[8] Source: Comptroller Records; Amplificaiton: Enter Yes if direct mission-funded or reimbursible work supporting the capability domain was performed in FY03
[9] Amplification: Enter Yes if your activity possesses capability to support the capability domain (i.e., your activity possesses appropriately skilled personnel and appropriate facilities to perform work in the area)

Devices			
Medical/Dental Acquisition: COTS and Assemblages			
Medical/Dental Acquisition: Enterprise IM/IT Systems			

DOD #555: Full Time Equivalents

Question: For each medical and dental research, development, and acquisition activity at your installation, identify the capability domain and indirect category in which work was performed. Enter in the appropriate column (a) actual Full Time Equivalents (FTEs) supporting the domain for FY03; (b) actual FTEs for the peak year during the period from FY94 to FY03; and (c) the activity commander/technical director's estimated FTEs for a workforce optimized for maximum sustainable performance of your current mission. Capability domains are defined in the Amplification section. Actual FTEs to be reported for FY03 and the peak year are those FTEs that were supported by direct mission funding plus reimbursables and other sources. All FTEs for the activity must be counted: technical staff should be allocated to the appropriate capability domain, while the Management and Support indirect categories should be used for FTEs that are not directly allocable to a capability domain. For this question, FTE estimates should be provided for military, civilian government personnel, on-site contractors, and Intergovernmental Personnel Act appointees. For the Technical Director's estimate, the total FTEs across all capability domains and indirect categories should reflect the maximum estimated capacity of your facility, assuming that funding and personnel hiring restrictions were lifted, but that your facility is constrained to its current configuration (i.e., no expansion, space renovations or upgrades). One FTE is defined as 2087 hours per year. The peak year is defined as the year in which the total number of FTEs for the activity as a whole was maximal. If the facilities have been substantially altered since FY94, the peak year should only be selected from among those years following the conversion of the facility to its FY03 configuration.
Source / Reference: Personnel Records, Comptroller Records, Activity Commander/Technical Director
Amplification:
1. Direct question to installation activities performing Medical and Dental Research, Development, and Acquisition (RDA) functions.

2. Capability domains are defined as follows:

Basic Research: Biological Sciences. Basic research aimed at discovering and understanding fundamental biological principles and processes underlying military health and performance at the system/organism, cellular, subcellular, and molecular levels, and basic biomedical research focused on physiological and pathogenic mechanisms of militarily relevant injuries and diseases, and discovery of novel approaches to medical countermeasures.

Basic Research: Cognitive & Neural Science: Human Performance. Basic research aimed at determining and understanding psychological and neurological factors influencing human cognitive performance (including sensory processing and integration) under military operational conditions.

Technology Maturation: Chemical-Biological: Medical Chemical Defense. Technology maturation efforts (beyond basic research) focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., drugs, diagnostics) and medical strategies for prevention, treatment, and management of casualties caused by chemical warfare agents.

Technology Maturation: Chemical-Biological: Medical Biological Defense. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., vaccines, drugs, diagnostics) and medical strategies for prevention, treatment, and management of casualties caused by biological warfare agents.

Technology Maturation: Biomedical: Infectious Diseases. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., vaccines, drugs, diagnostics, vector controls) and medical strategies for prevention and treatment of endemic infectious diseases of military importance.

Technology Maturation: Biomedical: Combat Casualty Care. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., diagnostic and therapeutic systems, drugs, biologicals) and medical and surgical strategies for medical management of combat casualties in field settings and during evacuation. Also includes efforts focused on technologies and strategies for prevention and field management of dental-related incapacitation.

Technology Maturation: Biomedical: Military Operational Medicine. Technology maturation efforts (beyond basic research), focused on developing information on human responses to environmental and occupational threats and/or systems hazards present in military operational settings, and on evaluating policy and doctrinal alternatives and exploring systems (e.g, warfighter monitoring, drugs, nutritional supplements) to prevent injury and performance degradation caused by these threats.

Technology Maturation: Biomedical: Medical Radiological Defense. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., diagnostic systems, drugs, biologicals) and medical strategies for prevention, treatment, and management of casualties caused by ionizing radiation.

Technology Maturation: Human Systems: Protection, Sustainment & Physical Performance. Technology maturation efforts (beyond basic research), focused on developing information on human systems interactions to support development of personal protective systems, and improve sustainment and physical performance. It includes combat clothing and individual equipment; combat rations and field-feeding equipment; logistics readiness; physical aiding and enhancement; vehicle escape and crash safety; warrior survival and rescue; aerial delivery; and dismounted, mounted, and air-crew warrior systems integration, including warfighter systems analysis.

Medical/Dental Acquisition: Pharmaceuticals & Biologicals. System development and demonstration activities and procurement activities directed towards the advanced development and initial fielding of novel pharmaceuticals and biologicals whose development is subject to the regulatory oversight of the U.S. Food and Drug Administration Centers for Drug Evaluation and Research and Biologics Evaluation and Research.

Medical/Dental Acquisition: Medical Devices. System development and demonstration activities and procurement activities directed towards the advanced development and initial fielding of novel medical devices whose development is subject to the regulatory oversight of the U.S. Food and Drug Administration Center for Devices and Radiological Health.

Medical/Dental Acquisition: COTS and Assemblages. Acquisition activities directed towards the procurement of commercial off the shelf (COTS) medical products and non-regulated medical support items for sustainment of TO&E units.

Medical/Dental Acquisition: Enterprise IM/IT Systems. Acquisition activities directed towards the development and procurement of medical enterprise information management/information technology systems.

Please fill in the following table(s)

Capability Domain or Indirect Category	FY03 FTEs (FTEs)	Peak Year FTEs (FTEs)	Estimated Max FTEs (FTEs)	Confidence Level (Text)[10]
Basic Research: Biological Sciences				
Basic Research: Cognitive & Neural Science: Human Performance				
Technology Maturation: Chem-Bio: Medical Chemical Defense				
Technology Maturation: Chem-Bio: Medical Biological Defense				
Technology Maturation: Biomedical: Infectious Diseases				
Technology Maturation: Biomedical: Combat Casualty Care				
Technology Maturation: Biomedical: Military Operational Medicine				

[10] Choose a value from this list: High, Medium, Low

Technology Maturation: Biomedical: Medical Radiological Defense				
Tech Maturation: Human Systems: Protection, Sustainment & Perf				
Medical/Dental Acquisition: Pharmaceuticals & Biologicals				
Medical/Dental Acquisition: Medical Devices				
Medical/Dental Acquisition: COTS and Assemblages				
Medical/Dental Acquisition: Enterprise IM/IT Systems				
Management				
Support				
TOTAL				

DOD #556: Medical Major Equipment and Facilities

Question: Identify each medical and dental research, development and acquistion-related activities and equipment located with-in your facilities. Include in the list any formally approved major critical facilities or equipment, to include unique equipment and IM/IT infrastructure, that is/are planned for installation or procurement. For each reported item, select a type from the list provided in the 'Description' field, and identify in the appropriate field:

(a) the location of the item (including activity name, installation, and building number, or for leased space, list city and street address);
(b) significant characteristics that define the capabilities of the facility or piece of equipment [e.g., operating characteristics, accreditations (type and year of accreditation), etc.];
(c) its square footage;
(d) the number of workdays the item was used in FY03;
(e) the total available workdays for the item in FY03; and
(f) the capability domain(s) for which the item was used at any time from FY01 through FY03 [see capability domain definitions in Amplification section; enter "Yes" for all that apply].

In determining the number of workdays used in FY03, do not include any usage of the facility or equipment for purposes other than its intended R&D function. Total available workdays for FY03 should be the number of actual workdays in FY03 less any days the facility/equipment item was unavailable for R&D due to requirements for routine maintenance, scheduled upgrades, inspections or other similar reasons.

Report, at a minimum, the following items, if such facilities/equipment are present at your activity, and under 'Characteristics', include the characteristics identified in parentheses after each:

- Biosafety Level 2 Labs (list each suite as a separate item; identify whether there is an approved biosurety plan for the facility)
- Biosafety Level 3 Labs (list each suite as a separate item; identify whether there is an approved biosurety plan for the facility)
- Biosafety Level 4 Labs (list each suite as a separate item; identify whether there is an approved biosurety plan for the facility; identify whether the suite has aerosol capability)
- Dilute Chemical Surety Material Labs
- Chemical Surety Material Labs
- Hypobaric Chambers (list each chamber as a separate item; identify whether they are man-rated)
- Hyperbaric Chambers (list each chamber as a separate item; identify whether they are man-rated)
- Anechoic Chambers (list each chamber as a separate item)
- Climatic Chambers (list each chamber as a separate item; identify temperature and humidity ranges, wind or rain generation capability, etc.)
- AAALAC Accredited Animal Facilities (identify the total average census by species for FY 03 and the maximum census by species when the facility is at 100% overall usage)
- Man-rated Research Simulator Facilities (this category includes fixed- and rotary-wing aircraft, multi-axis ride platforms, G-force simulators, etc.; list each type as a separate item and specify the type in the 'Characteristics' field)
- cGMP Biological Production Plant (list each suite as a separate item)
- cGMP Pharmaceutical Production Plant (list each suite as a separate item)
- Genomic Chip Fabrication Facility (list each facility separately)
- Electron Microscope Facility (identify the different types of microscopes that are present and the number of each)
- Medical Imaging Device Facilities (list only those facilities used for research; identify the specific types of devices that are present, e.g., CT, NMR, Ultrasound, X-ray, etc., and the number of each type)
- Clinical Studies Areas (identify the number of beds included in the facility)

In addition to those items listed above, report any other major facilities/equipment, limited to those items that are (a) integral to the building in which they are located (e.g., require special engineering, such as reinforced floors, electromagnetic shielding, special ventilation, etc.) and (b) would cost at least $250 K to relocate. Use the "Other" designation in the 'Description' field for any items of this type, and provide a further identification of each item in the 'Characteristics' field.

Source / Reference: Facility Records as of 30 Sep 2003
Amplification: 1. Direct question to installation activites performing Medical and dental Research, Development, and Acquisition (RDA) functions.
2. Capability domains are defined as follows:
Basic Research: Biological Sciences. Basic research aimed at discovering and understanding fundamental biological principles and processes underlying military health and performance at the system/organism, cellular, subcellular, and molecular levels, and basic biomedical research focused on physiological and pathogenic mechanisms of militarily relevant injuries and diseases, and discovery of novel approaches to medical countermeasures.

Basic Research: Cognitive & Neural Science: Human Performance. Basic research aimed at determining and understanding psychological and neurological factors influencing human cognitive performance (including sensory processing and integration) under military operational conditions.

Technology Maturation: Chemical-Biological: Medical Chemical Defense. Technology maturation efforts (beyond basic research) focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., drugs, diagnostics) and medical strategies for prevention, treatment, and management of casualties caused by chemical warfare agents.

Technology Maturation: Chemical-Biological: Medical Biological Defense. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., vaccines, drugs, diagnostics) and medical strategies for prevention, treatment, and management of casualties caused by biological warfare agents.

Technology Maturation: Biomedical: Infectious Diseases. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., vaccines, drugs, diagnostics, vector controls) and medical strategies for prevention and treatment of endemic infectious diseases of military importance.

Technology Maturation: Biomedical: Combat Casualty Care. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., diagnostic and therapeutic systems, drugs, biologicals) and medical and surgical strategies for medical management of combat casualties in field settings and during evacuation. Also includes efforts focused on technologies and strategies for prevention and field management of dental-related incapacitation.

Technology Maturation: Biomedical: Military Operational Medicine. Technology maturation efforts (beyond basic research), focused on developing information on human responses to environmental and occupational threats and/or systems hazards present in military operational settings, and on evaluating policy and doctrinal alternatives and exploring systems (e.g, warfighter monitoring, drugs, nutritional supplements) to prevent injury and performance degradation caused by these threats.

Technology Maturation: Biomedical: Medical Radiological Defense. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., diagnostic systems, drugs, biologicals) and medical strategies for prevention, treatment, and management of casualties caused by ionizing radiation.

Technology Maturation: Human Systems: Protection, Sustainment & Physical Performance. Technology maturation efforts (beyond basic research), focused on developing information on human systems interactions to support development of personal protective systems, and improve sustainment and physical performance. It includes combat clothing and individual equipment; combat rations and field-feeding equipment; logistics readiness; physical aiding and enhancement; vehicle escape and crash safety; warrior survival and rescue; aerial delivery; and dismounted, mounted, and air-crew warrior systems integration, including warfighter systems analysis.

Medical/Dental Acquisition: Pharmaceuticals & Biologicals. System development and demonstration activities and procurement activities directed towards the advanced development and initial fielding of novel pharmaceuticals and biologicals whose development is subject to the regulatory oversight of the U.S. Food and Drug Administration Centers for Drug Evaluation and Research and Biologics Evaluation and Research.

Medical/Dental Acquisition: Medical Devices. System development and demonstration activities and procurement activities directed towards the advanced development and initial fielding of novel medical devices whose development is subject to the regulatory oversight of the U.S. Food and Drug Administration Center for Devices and Radiological Health.

Medical/Dental Acquisition: COTS and Assemblages. Acquisition activities directed towards the procurement of commercial off the shelf (COTS) medical products and non-regulated medical support items for sustainment of TO&E units.

Medical/Dental Acquisition: Enterprise IM/IT Systems. Acquisition activities directed towards the development and procurement of medical enterprise information management/information technology systems.

Please fill in the following information

Requested Information	Answers
Description (Text)[11]	
Location (Text)[12]	
Characteristics (Text)[13]	
Square Footage (SF)[14]	
FY03 Days Used (Day)[15]	
FY03 Days Available (Day)[16]	
Basic Research: Biological Sciences (Text)[17]	
Basic Research: Cognitive & Neural Science: Human Performance (Text)[18]	
Technology Maturation: Chem-Bio: Medical Chemical Defense (Text)[19]	

[11] Choose a value from this list: Biosafety Level 2 Lab, Biosafety Level 3 Lab, Biosafety Level 4 Lab, Dilute Chemical Surety Material Lab, Chemical Surety Material Lab, Hypobaric Chamber, Hyperbaric Chamber, Anechoic Chamber, Climatic Chamber, AAALAC Accredited Animal Facility, cGMP Biological Production Plant, cGMP Pharmaceutical Production Plant, Genomic Chip Fabrication Facility, Electron Microscope Facility, Medical Imaging Device Facility, Clinical Study Area, Other (Specify in Characteristics); Amplificaiton: Select the most appropriate description for the item being reported; if no descriptions are appropriate, select "Other" and identify item in Characteristics field

[12] Amplification: Identify the activity name, installation, and building number where the facility/equipment item is located, or for leased space, list activity name, city, and street address.

[13] Amplification: Briefly describe significant operating and other characteristics of the facility/equipment item. Be sure to include the specific characteristics relevant to particular types of facilities/equipment as identified in the question.

[14] Source: Facility records

[15] Source: Facility Records; Amplificaiton: Do not include any usage of the facility or equipment for purposes other than its intended R&D function.

[16] Source: Facility Records; Amplificaiton: Enter the number of actual workdays in FY03 less any days the facility/equipment item was unavailable for R&D due to requirements for routine maintenance, scheduled upgrades, inspections or other similar reasons.

[17] Amplification: Enter "Yes" if facility/equipment item was used to conduct work within capability domain at any time during FY01-FY03.

[18] Amplification: Enter "Yes" if facility/equipment item was used to conduct work within capability domain at any time during FY01-FY03.

[19] Amplification: Enter "Yes" if facility/equipment item was used to conduct work within capability domain at any time during FY01-FY03.

Technology Maturation: Chem-Bio: Medical Biological Defense (Text)[20]	
Technology Maturation: Biomedical: Infectious Diseases (Text)[21]	
Technology Maturation: Biomedical: Combat Casualty Care (Text)[22]	
Technology Maturation: Biomedical: Military Operational Medicine (Text)[23]	
Technology Maturation: Biomedical: Medical Radiological Defense (Text)[24]	
Tech Maturation: Human Sys: Protection Sustainment & Phys Perform (Text)[25]	
Medical/Dental Acquisition: Pharmaceuticals & Biologicals (Text)[26]	
Medical/Dental Acquisition: Medical Devices (Text)[27]	
Medical/Dental Acquisition: COTS and Assemblages (Text)[28]	
Medical/Dental Acquisition: Enterprise IM/IT Systems (Text)[29]	

[20] Amplification: Enter "Yes" if facility/equipment item was used to conduct work within capability domain at any time during FY01-FY03.
[21] Amplification: Enter "Yes" if facility/equipment item was used to conduct work within capability domain at any time during FY01-FY03.
[22] Amplification: Enter "Yes" if facility/equipment item was used to conduct work within capability domain at any time during FY01-FY03.
[23] Amplification: Enter "Yes" if facility/equipment item was used to conduct work within capability domain at any time during FY01-FY03.
[24] Amplification: Enter "Yes" if facility/equipment item was used to conduct work within capability domain at any time during FY01-FY03.
[25] Amplification: Enter "Yes" if facility/equipment item was used to conduct work within capability domain at any time during FY01-FY03.
[26] Amplification: Enter "Yes" if facility/equipment item was used to conduct work within capability domain at any time during FY01-FY03.
[27] Amplification: Enter "Yes" if facility/equipment item was used to conduct work within capability domain at any time during FY01-FY03.
[28] Amplification: Enter "Yes" if facility/equipment item was used to conduct work within capability domain at any time during FY01-FY03.
[29] Amplification: Enter "Yes" if facility/equipment item was used to conduct work within capability domain at any time during FY01-FY03.

DOD #557: Available and Used Medical RDA Space

Question: Identify each medical and dental research, development and acquisition-related activities with-in your facilities (including activity name, installation, and building number) and provide a breakout of its technical space (e.g., laboratory), administrative space (e.g., office) and other space (e.g., utilities, storage, etc.) in the columns provided. For each building and type of space (i.e., technical, administrative, and other), identify (a) available square feet; and (b) the square feet of space actually in use by your activity for its designed purpose. In determining available square footage, classify space according to its designed purpose, and report all space of each type that is currently available within your activity, INCLUDING space that is currently being used for purposes other than that for which it was designed (e.g., laboratories being used for storage), and space being used by others outside your activity. In determining square footage of space in use, do NOT include space currently being used for purposes other than that for which the space was designed (e.g., laboratory space being used for offices or storage), and do not include space being used by others outside your activity.
Source / Reference: Facilities Records as of 30 Sep 2003
Amplification: Direct question to installation activities performing Medical and Dental Research, Devleopment and Acquisition (RDA) functions.

Please fill in the following table(s), adding rows as necessary

Activity Name (Text)	Installation (Text)30	Building Number (Text)[31]	Leased (Yes/No)[32]	Technical Space Currently Available (SF)	Technical Square Footage Used (SF)	Administrative Space Currently Available (SF)	Administrative Square Footage Used (SF)	Other Space Currently Available (SF)

Activity Name (Text)	Other Square Footage Used (SF)

[30] Amplification: Enter the installation where the building being reported is located, or for leased space outside the installation, enter city and state.
[31] Amplification: Enter the building number for the building being reported, or for leased space outside the installation, enter street address.
[32] Amplification: If space is being leased, enter Yes; otherwise enter No.

Reference #MED003 (DoD #4239) : Medical/Dental Education and Training - Dedicated Laboratory Classrooms
JCSG: Medical
Function(s): Medical_22apr04
This question is a Capacity question.
Question: Indicate the number of laboratory classrooms which are dedicated to medical/dental education and training. Count each classroom only once.
Source / Reference: Medical Education and Training Department/Officer
Amplification: Only Laboratory Classrooms dedicated to medical/dental education and training should be included. List the number of classrooms by size and provide the total square footage for each group of classrooms (small, medium, and large). Count each classroom only once. Laboratory classrooms include clinical, dental, chemistry benches, computer labs, etc.

A sample scenario: Hospital Delta has 4 laboratory classrooms (175 sqft, 200 sqft, 950 sqft, 1600 sqft). This would be reported as 2 small laboratory classrooms = 375 sqft, 1 medium laboratory classroom = 950 sqft, and 1 large laboratory classroom = 1600 sqft.

A sample scenario: Hospital Delta has
Please fill in the following table(s), adding rows as necessary

Activity Name (Text) string200	# of Small (<=200 sqft) Laboratory Classrooms (#) numeric	Total Small Laboratory Classroom Square Footage (#) numeric	# of Medium (201-1500 sqft) Laboratory Classrooms (#) numeric	Total Medium Laboratory Classroom Square Footage (#) numeric	# of Large (>=1501 sqft) Laboratory Classrooms (#) numeric	Total Large Laboratory Classroom Square Footage (#) numeric

Reference #MED004 (DoD #4240) : Medical/Dental Education and Training - Dedicated Standard Classrooms
JCSG: Medical
Function(s): Medical_22apr04
This question is a Capacity question.
Question: Indicate the number of standard classrooms which are dedicated to medical/dental education and training. Count each classroom only once.
Source / Reference: Medical Education and Training Department/Officer
Amplification: Only Standard Classrooms dedicated to medical/dental education and training should be included. List the number of classrooms by size and provide the total square footage for each group of classrooms (small, medium, large). Do not count classrooms more than once.

A sample scenario: Hospital Delta has 8 standard classrooms dedicated to education and training (100sqft, 150sqft, 200sqft, 400sqft, 350sqft, 900sqft, 1200sqft, 2500sqft). This would be reported as 3 small classrooms with a total square footage of 450sqft; 4 medium classrooms with a total square footage of 2850sqft, and 1 large classroom with a total square footage of 2500sqft.

Please fill in the following table(s), adding rows as necessary

Activity Name (Text) string200	# of Small (<= 200 sqft) Standard Classrooms (#) numeric	Total Sq Ft of Small Classrooms (#) numeric	# of Medium (201-1500 sqft) Standard Classrooms (#) numeric	Total Sq Ft of Medium Standard Classrooms (#) numeric	# of Large (>= 1501 sqft) Standard Classrooms (#) numeric	Total Sq Ft of Large Standard Classrooms (#) numeric

Reference #MED005 (DoD #4241) : Medical/Dental Education and Training - Training Programs

JCSG: Medical

Function(s): Medical_22apr04

This question is a Capacity question.

Question: For each medical/dental education and training program at your facility, provide the following information: Activity Name (name of clinic/MTF or School), Program Title, length of Program (in weeks), number of times the course is offered per year, the maximum number of students per course for each course offered, average number of students per each course offered, average classroom hours per week for each course offered, average clinical hours per week for each course offered, and average laboratory hours per week for each course offered. Average FY02 and FY03 to get your average student load and hours.

Source / Reference: Medical Education and Training Department/ Officer

Amplification: Complete a separate entry for each course offered at your activity. Include only those courses which result in a certificate or degree, not routine continuing education, safety training, life support classes, etc. Do include graduate and initial programs (i.e. basic medical and dental, nurse, technician programs, allied health, residencies, fellowships, etc.) If the course has two components (i.e. part one classroom and part two clinical), enter two separate line items and report numbers separately.

A sample scenario: Hospital Lima has a respiratory technician course which runs for 18 months, and is offered once a year. It can host a maximum of 30 students per offering, but the average is 21 students. An average of 25 hours per week is spent in the classroom, 5 in the laboratory, and 10 in the clinic. Hospital Lima also conducts a field medical course which runs for 5 weeks and is held 6 times a year. It hosts a maximum of 25 students per offering, but averages 25 students. An average of 20 hours per week is spent in the classroom and 20 hours in the clinic (or field clinic). In addition, Hospital Lima offers a hematology technician course for certified laboratory technicians, which runs for 12 weeks and is offered 3 times a year. It can host 15 students per offering, but average 10 students. The first 6 weeks (Part A) are spent in the classroom for a total of 40 hours per week and the second 6 weeks (Part B) are spent in the laboratory for total of 40 hours per week. Lastly, Hospital Lima has 1 residency program in family practice. It runs for 24 months and is offered 1 time a year. It can host up to 6 residents per year, and averages 6 residents per year. An average of 4 hours per week is spent in the classroom and 36 hours a week is spent in the clinic. They also offer annual safety training, BLS certification 2 times a year, and CHCS training; which would not be reported.

This would be reported as: Program (Resp Care), 78 weeks, 1 year, Max 30 students, Avg 21 students, 25 hours classroom, 5 hours laboratory, 10 hours clinic. Program (Field Med), 5 weeks, Max 25 students, Avg 25 Students, 20 hours classroom, 0 hours Laboratory, 20 hours clinic. Program (Hem Tech – Part A), 6 weeks, Max 15 students, Avg 10 students, 40 hours classroom, 0 hours laboratory, 0 hours clinical. Program (Hem Tech – Part B), 6 weeks, Max 15 students, Avg 10 students, 0 hours classroom, 40 hours laboratory, 0 hours clinical. Program (Family Practice GME), 104 weeks, 1 per year, Max 6 students, Avg 6 students, 4 hours classroom, 0 hour laboratory, 36 hours clinical.

Please fill in the following table(s), adding rows as necessary

Activity Name (Text) string200	Program Title (Text) string200	Program Length (weeks) (#) numeric	# of Times Offered Per Year (#) numeric	Max # of Students Per Course Iteration (#) numeric	Avg # of Student Per Course (#) numeric	Avg Classroom Hours Per Week (Hr) numeric	Avg Clinical Hours Per Week (Hr) numeric	Avg Lab Hours Per Week (Hr) numeric

Reference #MED006 (DoD #4242) : Medical/Dental RDA Major Facilities/Equipment

JCSG: Medical

Function(s): Medical/Dental RDA

This question is a Capacity question.

Question: Identify the Medical/Dental RDA-related major facilities and equipment items located at your activity. Include any formally approved major critical facilities or equipment, to include unique equipment and IM/IT infrastructure, that is/are planned for installation or procurement. For each reported item, select a type from the list provided in the 'Description' field, and identify in the appropriate field:

(a) its location (include activity name and building number, or for leased space, list city and street address);

(b) significant characteristics that define the item's capabilities [e.g., operating characteristics, accreditations (type and year of accreditation), etc.];

(c) square footage;

(d) total number of workdays the item was used in FY03 (for any capability domain – see Amplification);

(e) total available workdays for the item in FY03;

(f) capability domain for which the item was used during FY01-FY03; if item was used for work supporting multiple domains, use a separate row for each domain, repeating the information from items (a) thru (e); and

(g) % of total used workdays from FY01-FY03 applicable to the capability domain listed in item (f).

In determining workdays used in FY03, do not include any use of the facility or equipment for purposes other than its intended R&D function. Total available workdays for FY03 should be the number of actual workdays in FY03 less any days the item was unavailable due to requirements for routine maintenance, scheduled upgrades, inspections or other similar reasons.

Report, at a minimum, the following items, if present at your activity, and under 'Characteristics', include characteristics identified in parentheses after each:
- BSL 3 Labs (list each suite as a separate item; identify whether there is an approved biosurety plan for the facility)
- BSL 4 Labs (list each suite as a separate item; identify whether there is an approved biosurety plan for the facility; identify whether the suite has aerosol capability)
- Dilute Chemical Surety Material Labs
- Chemical Surety Material Labs
- Hypobaric Chambers (list each chamber as a separate item; identify whether they are man-rated)
- Hyperbaric Chambers (list each chamber as a separate item; identify whether they are man-rated)
- Anechoic Chambers (list each chamber as a separate item)
- Climatic Chambers (list each chamber as a separate item; identify temperature and humidity ranges, wind or rain generation capability, etc.)
- AAALAC Accredited Animal Facilities (identify the total average census by species for FY 03 and the maximum census by species when the facility is at 100% overall usage)
- Man-rated Research Simulator Facilities (this category includes fixed- and rotary-wing aircraft, multi-axis ride platforms, G-force simulators, etc.; list each type as a separate item and specify the type in the 'Characteristics' field)
- cGMP Biological Production Plant (list each suite as a separate item)
- cGMP Pharmaceutical Production Plant (list each suite as a separate item)
- Genomic Chip Fabrication Facility (list each facility separately)
- Electron Microscope Facility (identify the different types of microscopes that are present and the number of each)
- Medical Imaging Device Facilities (list only facilities used for research; identify the specific types of devices that are present, e.g., CT, NMR, Ultrasound, X-ray, etc., and the number of each type)
- Clinical Studies Areas (identify number of beds included in the facility)

In addition to the items above, report any other major facilities/equipment that are (a) integral to the building in which they are located (e.g., require special engineering, such as reinforced floors, electromagnetic shielding, special ventilation, etc.) and (b) would cost at least $250K to relocate. Use the “Other” designation in the ‘Description’ field for items of this type, and provide further identification of each item in the ‘Characteristics’ field.
Source / Reference: Facility Records as of 30 Sep 2003, as provided by the installation's medical function/organization.
Amplification: 1. Direct question to installation activites performing Medical and dental Research, Development, and Acquisition (RDA) functions.
2. Capability domains define the type of medical/dental RDA work performed. Full definitions of medical/dental RDA capability domains are provided in the BRAC Library.

3. In determining the percentage allocation of equipment usage across capability domains, allocation should be based on actual usage records if such records permit a determination of the relevant capability domain. If available records will not permit such a determination, allocation may be estimated based on the percentage of funding received by the organization that is allocable to each capability domain, number of users, or other similar pro-rata determination.

Please fill in the following table(s), adding rows as necessary

Item Description (List) multiple choice	Location (Text) string200	Characteristics (Text) string1250	Square Footage (SF) numeric	FY03 Days Used (Day) numeric	FY03 Days Available (Day) numeric	Capability Domain (Text) multiple choice[33]	% of Total Days Used (for Capability Domain) (%) numeric

Reference #MED007 (DoD #4243) : Available and Used Medical/Dental RDA Space

JCSG: Medical

Function(s): Medical/Dental RDA

This question is a Capacity question.

Question: Identify each medical and dental research, development and acquisition-related building within your activity (including activity name and building number) and provide a breakout of its technical space (e.g., laboratory), administrative space (e.g., office) and other space (e.g., utilities, storage, etc.) in the columns provided. For each building and type of space (i.e., technical, administrative, and other), identify (a) total available square feet; and (b) the square feet of space actually in use by your activity for its designed purpose. Technical space actually in use should be further broken out according to its specific usage, as defined by Medical/Dental RDA Capability Domains [see definitions in BRAC Library]. If the building is used for more than one capability domain, enter the space used for each domain in a separate row. In determining available square footage, classify space according to its designed purpose, and report all space of each type that is currently available within your activity, INCLUDING space that is currently being used for purposes other than that for which it was designed (e.g., laboratories being used for storage), and space being used by others outside your activity. In determining square footage of space in use, do NOT include space currently being used for purposes other than that for which the space was designed (e.g., laboratory space being used for offices or storage), and do not include space being used by others outside your activity.

Source / Reference: Facilities Records as of 30 Sep 2003, as provided by the installation's medical function/organization.

Amplification: 1. Direct question to installation activites performing Medical and Dental Research, Development, and Acquisition (RDA) functions.

[33] Choose a value from this list: Basic Research: Biological Sciences, Basic Research: Cog & Neural Sci: Human Performanc, Tech Maturation: Chem-Bio: Med Chem Defense, Tech Maturation: Chem-Bio: Med Bio Defense, Tech Maturation: Biomedical: Infectious Diseases, Tech Maturation: Biomedical: Combat Cas Care, Tech Maturation: Biomedical: Mil Operational Med, Tech Maturation: Biomedical: Med Radiol Defense, Tech Maturat'n: HuSys: Protect Sustain & Phys Perf, Med-Dental Acquisition: Pharmaceutics & Biologics, Med-Dental Acquisition: Medical Devices, Med-Dental Acquisition: COTS & Assemblages, Med-Dental Acquisition: Enterprise IM-IT Systems

2. Capability domains define the type of Medical/Dental RDA work performed. Full definitions of Medical/Dental RDA capability domains are provided in the BRAC Library.
3. In determining the percentage allocation of technical space across capability domains, allocation should be based on actual usage records if such records permit a determination of the relevant capability domain. If available records will not permit such a determination, allocation may be estimated based on the percentage of funding received by the organization that is allocable to each capability domain, number of users, or other similar pro-rata determination.
3. Titles of the Medical/Dental RDA Capability Domains are listed below; full definitions of the Medical/Dental RDA Capability Domains are provided in the BRAC Library:
- Basic Research: Biological Sciences
- Basic Research: Cognitive & Neural Science: Human Performance
- Technology Maturation: Chemical-Biological: Medical Chemical Defense
- Technology Maturation: Chemical-Biological: Medical Biological Defense
- Technology Maturation: Biomedical: Infectious Diseases
- Technology Maturation: Biomedical: Combat Casualty Care
- Technology Maturation: Biomedical: Military Operational Medicine
- Technology Maturation: Biomedical: Medical Radiological Defense
- Technology Maturation: Human Systems: Protection, Sustainment & Physical Performance
- Medical/Dental Acquisition: Pharmaceuticals & Biologicals
- Medical/Dental Acquisition: Medical Devices
- Medical/Dental Acquisition: COTS and Assemblages
- Medical/Dental Acquisition: Enterprise IM/IT Systems

Please fill in the following table(s), adding rows as necessary

Activity Name & Building Number (Text) string50	Leased (Y/N) (Text) Yes/No	Technical Space Currently Available (Total) (SF) numeric	Capability Domain (List) multiple choice[34]	Technical Square Footage Used for Capability Domain (SF) numeric	Administrative Space Currently Available (SF) numeric	Administrative Square Footage Used (SF) numeric	Other Space Currently Available (SF) numeric

Reference #MED055 (DoD #4244) : Medical/Dental RDA Capability Domains - Basic Research and Technology Maturation
JCSG: Medical
Function(s): Medical/Dental RDA
This question is a Capacity question.

[34] Choose a value from this list: Basic Research: Biological Sciences, Basic Resrch: Cognitive & Neural Sci: Hum Perform., Tech Maturation: Chem-Bio: Medical Chemical Defens, Tech Maturation: Chem-Bio: Med Biological Defense, Tech Maturation: Biomedical: Infectious Diseases, Tech Maturation: Biomedical: Combat Casualty Care, Tech Maturation: Military Operational Medicine, Tech Maturation:HumSys:Protect Sustain & Phys Perf, Med-Dental Acquisition: Pharmaceutics & Biologics, Med-Dental Acquisition: Medical Devices, Med-Dental Acquisition: COTS & Assemblages, Med-Dental Acquisition: Enterprise IM/IT Systems

Question: For each Medical and Dental Research, Development, and Acquisition (RDA) activity at your installation, identify those basic research and/or technology maturation capability domains (a) that are supported within the activity's mission (i.e., for which the activity receives programmed funds or has programmed Full Time Equivalents), (b) in which direct mission-funded or reimbursable work was performed in FY03, or (c) that the activity possesses capability to support (i.e., domains for which the activity possesses appropriately skilled personnel and appropriate facilities). (Enter the capability domain and enter "yes" in the adjoining columns as applicable.) Use separate rows to list all domains that apply. If a capability domain is applicable to more than one activity, list each activity in a separate row. See the Amplification section for definitions of the capability domains that are to be used in the table. Within these definitions, the term "Basic Research" refers to those activities typically funded by RDT&E budget activity 6.1. The term "Technology Maturation" refers to exploratory development typically funded by RDT&E budget activities 6.2 and/or 6.3. (For additional information, see definitions of RDT&E budget activities in BRAC Library).
Source / Reference: Commander of the Medical/Dental RDA Activity and/or Program Management offices, Comptroller Records
Amplification: Report data separately for each activity. Capability Domain definitions:
-Basic Research: Biological Sciences. Basic research aimed at discovering and understanding fundamental biological principles and processes underlying military health and performance at the system/organism, cellular, subcellular, and molecular levels, and basic biomedical research focused on physiological and pathogenic mechanisms of militarily relevant injuries and diseases, and discovery of novel approaches to medical countermeasures.
-Basic Research: Cognitive & Neural Science: Human Performance. Basic research aimed at determining and understanding psychological and neurological factors influencing human cognitive performance (including sensory processing and integration) under military operational conditions.
-Tech. Maturation: Chemical-Biological: Medical Chemical Defense. Technology maturation efforts (beyond basic research) focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., drugs, diagnostics) and medical strategies for prevention, treatment, and management of casualties caused by chemical warfare agents.
-Tech. Maturation: Chemical-Biological: Medical Biological Defense. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., vaccines, drugs, diagnostics) and medical strategies for prevention, treatment, and management of casualties caused by biological warfare agents.
-Tech. Maturation: Biomedical: Infectious Diseases. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., vaccines, drugs, diagnostics, vector controls) and medical strategies for prevention and treatment of endemic infectious diseases of military importance.
-Tech. Maturation: Biomedical: Combat Casualty Care. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., diagnostic and therapeutic systems, drugs, biologicals) and medical and surgical strategies for medical management of combat casualties in field settings and during evacuation. Also includes efforts focused on technologies and strategies for prevention and field management of dental-related incapacitation.
-Tech. Maturation: Biomedical: Military Operational Medicine. Technology maturation efforts (beyond basic research), focused on developing information on human responses to environ-

mental and occupational threats and/or systems hazards present in military operational settings, and on evaluating policy and doctrinal alternatives and exploring systems (e.g, warfighter monitoring, drugs, nutritional supplements) to prevent injury and performance degradation caused by these threats.
-Tech. Maturation: Biomedical: Medical Radiological Defense. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., diagnostic systems, drugs, biologicals) and medical strategies for prevention, treatment, and management of casualties caused by ionizing radiation.
-Tech. Maturation: Human Systems: Protection, Sustainment & Physical Performance. Technology maturation efforts (beyond basic research), focused on developing information on human systems interactions to support development of personal protective systems, and improve sustainment and physical performance. It includes combat clothing and individual equipment; combat rations and field-feeding equipment; logistics readiness; physical aiding and enhancement; vehicle escape and crash safety; warrior survival and rescue; aerial delivery; and dismounted, mounted, and air-crew warrior systems integration, including warfighter systems analysis
Please fill in the following table(s), adding rows as necessary

Activity Name (Text) string100	Capability Domain (List) multiple choice[35]	Within Activity Mission? (Yes/No)	Work Conducted in FY03? (Yes/No)	Possess Capability to Support? (Yes/No)
		Yes/No	Yes/No	Yes/No

Reference #MED056 (DoD #4245) : Medical/Dental RDA Capability Domains - Acquisition
JCSG: Medical
Function(s): Medical/Dental RDA
This question is a Capacity question.
Question: For each Medical and Dental Research, Development, and Acquisition (RDA) activity at your installation, identify those medical/dental acquisition capability domains (a) that are supported within the activity's mission (i.e., for which the activity receives programmed funds or has programmed Full Time Equivalents), (b) in which direct mission-funded or reimbursable work was performed in FY03, or (c) that the activity possesses capability to support (i.e., domains for which the activity possesses appropriately skilled personnel and appropriate facilities). (Enter the capability domain and enter "yes" in the adjoining columns as applicable.) Use separate rows to list all domains that apply. If a capability domain is applicable to more than one activity, list each activity in a separate row. See the Amplification section for definitions of the capability domains that are to be used in the table. Within these definitions, the term "Acquisition" refers to both system development and demonstration activities typically funded by RDT&E budget activities 6.4 and/or 6.5, and procurement activities typically funded by Operations and Maintenance and/or Procurement funding. (For additional information, see definitions of RDT&E budget activities in BRAC Library).

[35] Choose a value from this list: Basic Research: Biological Sciences, Bas. Res.: Cognitive/Neural Sci: Human Performance, Tech. Maturation: Chem-Bio: Med. Chemical Defense, Tech. Maturation: Chem-Bio: Med. Biol. Defense, Tech. Maturation: Biomedical: Infectious Diseases, Tech. Maturation: Biomedical: Combat Casualty Care, Tech. Maturation: Biomedical: Mil Operational Med, Tech. Maturation: Biomedical: Med Radiol. Defense, Tech Matur: HumSys: Protect Sustain & Phys Perform

Source / Reference: Commander of the Medical/Dental RDA Activity and/or Program Management offices, Comptroller Records
Amplification: Capability domain definitions:
Medical/Dental Acquisition: Pharmaceuticals & Biologicals. System development and demonstration activities and procurement activities directed towards the advanced development and initial fielding of novel pharmaceuticals and biologicals whose development is subject to the regulatory oversight of the U.S. Food and Drug Administration Centers for Drug Evaluation and Research and Biologics Evaluation and Research.

Medical/Dental Acquisition: Medical Devices. System development and demonstration activities and procurement activities directed towards the advanced development and initial fielding of novel medical devices whose development is subject to the regulatory oversight of the U.S. Food and Drug Administration Center for Devices and Radiological Health.

Medical/Dental Acquisition: COTS and Assemblages. Acquisition activities directed towards the procurement of commercial off the shelf (COTS) medical products and non-regulated medical support items for sustainment of TO&E units.

Medical/Dental Acquisition: Enterprise IM/IT Systems. Acquisition activities directed towards the development and procurement of medical enterprise information management/information technology systems.
Please fill in the following table(s), adding rows as necessary

Activity Name (Text) string100	Capability Domain (List) multiple choice[36]	Within Activity Mission? (Yes/No) Yes/No	Work Conducted in FY03? (Yes/No) Yes/No	Possess Capability to Support? (Yes/No) Yes/No

Reference #MED057 (DoD #4246) : Medical/Dental RDA Full Time Equivalents
JCSG: Medical
Function(s): Medical/Dental RDA
This question is a Capacity question.
Question: For each medical and dental research, development, and acquisition activity at your installation, list the Medical/Dental RDA capability domains and indirect categories in which work was performed. For each domain or indirect category, enter in the appropriate column (a) actual Full Time Equivalents (FTEs) supporting the domain or indirect category for FY03; (b) actual FTEs for the peak year during the period from FY94 to FY03; and the activity commander/technical director's estimated FTEs for a workforce optimized for maximum sustainable performance of your current mission. (Enter the capability domain and enter the FTEs for the domain in the adjoining columns as applicable.) Use separate rows to list all domains that apply. If a capability domain is applicable to more than one activity at the installation, list each activity in a separate row. See the Amplification section for definitions of the capability domains that are

[36] Choose a value from this list: Med/Dental Acquisit'n: Pharmaceuticals/Biologicals, Med/Dental Acquisition: Medical Devices, Med/Dental Acquisition: COTS and Assemblages, Med/Dental Acquisition: Enterprise IM/IT Systems

to be used in the table. Actual FTEs to be reported for FY03 and the peak year are those FTEs that were supported by direct mission funding plus reimbursables and other sources. All FTEs for the activity must be counted: technical staff should be allocated to the appropriate capability domain (i.e., to the area in which their work was actually performed in FY03), while the Management and Support indirect categories should be used for FTEs that are not directly allocable to a capability domain. Technical FTEs should include those personnel directly engaged in the conduct of research, development or acquisition (RDA) functions; this category includes professional staff such as scientists and engineers, as well as technical support personnel (e.g., laboratory technicians) who are directly involved in the performance of RDA work. The Support category should be used for personnel who are not directly engaged in the conduct of the RDA functions of the activity, but provide essential services such as administrative support, logistic support, equipment or facility maintenance, library services, etc. The Management category should be used for professionals whose principal role is oversight and supervision of technical or support staff. For this question, FTE estimates should be provided for military, civilian government personnel, on-site contractors, and Intergovernmental Personnel Act appointees. For the Technical Director's estimate, the total FTEs across all capability domains and indirect categories should reflect the maximum estimated capacity of your facility, assuming that funding and personnel hiring restrictions were lifted, but that your facility is constrained to its current configuration (i.e., no expansion, space renovations or upgrades). One FTE is defined as 2087 hours per year. The peak year is defined as the year in which the total number of FTEs for the activity as a whole was maximal. If the facilities have been substantially altered since FY94, the peak year should only be selected from among those years following the conversion of the facility to its FY03 configuration.
Source / Reference: Commander of the Medical/Dental RDA Activity and/or Program Management offices, Personnel Records, Comptroller Records
Amplification: Data should be reported separately for each activity (vice an installation level of detail). Complete definitions of Medical/Dental RDA capability domains that are to be used in categorizing FTEs are provided in the BRAC Library. Within these definitions, the term "Basic Research" refers to those activities typically funded by RDT&E budget activity 6.1. The term "Technology Maturation" refers to exploratory development typically funded by RDT&E budget activities 6.2 and/or 6.3. The term "Acquisition" refers to both system development and demonstration activities typically funded by RDT&E budget activities 6.4 and/or 6.5, and procurement activities typically funded by Operations and Maintenance and/or Procurement funding. For additional information, see definitions of RDT&E budget activities in BRAC Library.

For definitions of Medical/Dental RDA capability domains, see BRAC Library
Please fill in the following table(s), adding rows as necessary

Activity Name (Text)	Capability Domain (List)	FY03 FTEs (FTEs)	Peak Year FTEs (FTEs)	Estimated Max FTEs (FTEs)
string100	multiple choice[37]	numeric	numeric	numeric

[37] Choose a value from this list: Basic Research: Biological Sciences, Bas. Res.: Cognitive/Neural Sci: Human Performance, Tech. Maturation: Chem-Bio: Med. Chemical Defense, Tech. Maturation: Chem-Bio: Med. Biol. Defense, Tech. Maturation: Biomedical: Infectious Diseases, Tech. Maturation: Biomedical: Combat Casualty Care, Tech. Maturation: Biomedical: Mil Operational Med, Tech. Maturation: Biomedical: Med Radiol. Defense, Tech Matur:Hum Sys: Protect Sustain & Phys Perform, Med/Dental Acquisit'n: Pharmaceuticals/Biologicals, Med/Dental

APPENDIX C

Source	Fenceline	Facility Type
USA	FORT BLISS	Medical Center
USA	FORT BRAGG	Medical Center
USA	FORT GORDON	Medical Center
USA	FORT LEWIS	Medical Center
USA	FORT SAM HOUSTON	Medical Center
USAF	KEESLER AFB	Medical Center
USAF	LACKLAND AFB	Medical Center
USN	NMC PORTSMOUTH	Medical Center
USN	NMC SAN DIEGO	Medical Center
USN	NNMC BETHESDA	Medical Center
USAF	TRAVIS AFB	Medical Center
USA	TRIPLER ARMY MEDICAL CENTER	Medical Center
USA	WALTER REED ARMY MEDICAL CENTER	Medical Center
USAF	WRIGHT-PATTERSON AFB	Medical Center
USAF	ANDREWS AFB	Teaching Hospital
USN	PENSACOLA NAVAL HOSPITAL	Teaching Hospital
USAF	EGLIN AFB	Teaching Hospital
USA	FORT BELVOIR	Teaching Hospital
USA	FORT BENNING	Teaching Hospital
USA	FORT HOOD	Teaching Hospital
USN	MCB CAMP LEJEUNE	Teaching Hospital
USN	MCB CAMP PENDLETON	Teaching Hospital
USN	NAS JACKSONVILLE	Teaching Hospital
USN	NH BREMERTON	Teaching Hospital
USAF	OFFUTT AFB	Teaching Hospital
USA	WEST POINT MIL RESERVATION	Teaching Hospital
USAF	ELMENDORF AFB	Community Hospital
USA	FORT CAMPBELL	Community Hospital
USA	FORT CARSON	Community Hospital
USA	FORT EUSTIS	Community Hospital
USA	FORT JACKSON	Community Hospital
USA	FORT KNOX	Community Hospital
USA	FORT LEONARD WOOD	Community Hospital
USA	FORT POLK	Community Hospital
USA	FORT RILEY	Community Hospital
USA	FORT SILL	Community Hospital
USA	FORT STEWART	Community Hospital
USA	FORT WAINWRIGHT	Community Hospital
USAF	LANGLEY AFB	Community Hospital
USAF	LUKE AFB	Community Hospital
USAF	MACDILL AFB	Community Hospital
USN	MCAGCC TWENTYNINE PALMS	Community Hospital
USN	MCAS CHERRY POINT	Community Hospital
USAF	MOUNTAIN HOME AFB	Community Hospital

Source	Fenceline	Facility Type
USN	NAS LEMOORE	Community Hospital
USN	NAS WHIDBEY ISLAND	Community Hospital
USN	NAVSTA GREAT LAKES	Community Hospital
USAF	NELLIS AFB	Community Hospital
USN	NH BEAUFORT	Community Hospital
USN	NH GUAM	Community Hospital
USA	NTC AND FORT IRWIN CA	Community Hospital
USAF	SCOTT AFB	Community Hospital
USAF	UNITED STATES AIR FORCE ACADEMY	Community Hospital

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MEDICAL JOINT CROSS SERVICE GROUP

MILTARY VALUE FRAMEWORK REPORT

FEBUARY 11, 2005

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

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SECTION 1. INTRODUCTION

The Medical Joint Cross Service Group's (MJCSG) functions as approved by the Secretary, includes all functions within the Military Health System (MHS) with no exclusions. The July 16, 2003, memorandum notifying the MJCSG of the approved functions moved two functions originally identified in the MJCSG report of functions under different Joint Cross-Service Groups (JCSGs). These functions were the Human Systems Research function, which was placed under the Technical Joint Cross-Service Group and the Class VIII Supply Management function, which was placed under the Supply & Storage Joint Cross-Service Group. In both cases, the MJCSG will participate with the respective JCSG to provide support and technical/functional expertise for the Joint review of these functions.

The MJCSG functions were divided into five broad functions. Each MJCSG member was assigned one of these functions to lead the subsequent analytical effort. The assignments are:

1) Health Care Education and Training – VADM Michael Cowan, Surgeon General of the Navy

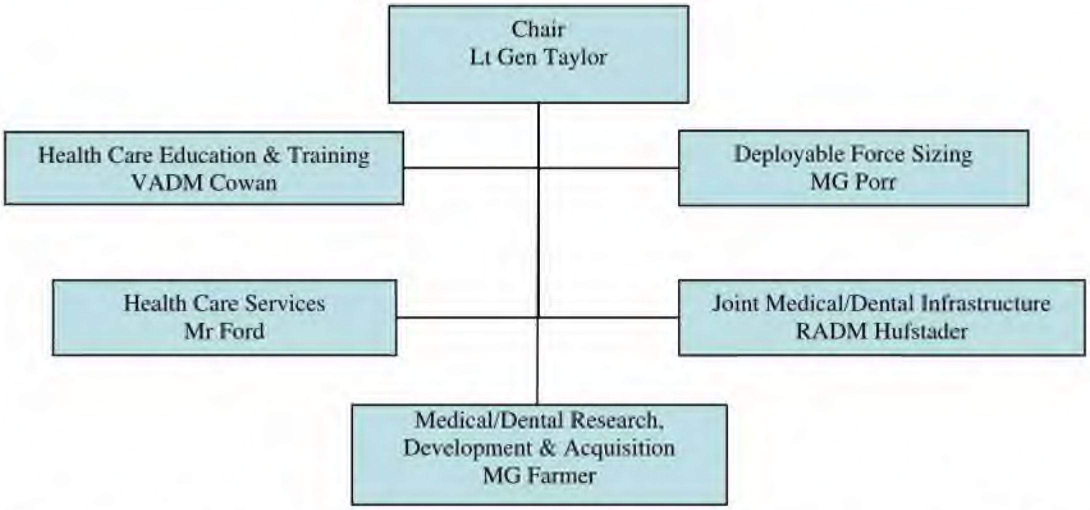
2) Health Care Services (formerly Medical and Dental Market Requirements) – Mr. Nelson Ford, Deputy Assistant Secretary (Health Budgets and Financial Policy), Office of the Assistant Secretary of Defense (Health Affairs)

3) Deployable Force Sizing – MG Porr, Joint Staff Surgeon

4) Medical and Dental Research, Development and Acquisition – MG Ken Farmer, Deputy Surgeon General of the Army

5) Joint Medical and Dental Infrastructure – RADM R. Hufstader, Medical Officer of the Marine Corps

Figure 1: Medical Joint Cross Service Group Structure.



This structure provides the best coverage of the functions within the Military Heath System. Grouping of functions provides an effective framework for evaluating the potential for cross service and Joint opportunities for improving the Military Health System's Military Value while emphasizing its continued transformation to best support warfighting needs and the medical benefit.

The Medical Joint Cross Service Group currently has empanelled 84 military, 21 civilian, and 2 contract personnel. The contract personnel are subject matter experts who are providing their expertise to the Medical Joint Cross Service Group in addition to their other contracted duties. A small number of these personnel are located outside the Washington DC area, including one in California. These personnel support the Medical Joint Cross Service Group as an additional duty and represent the Group's subject matter experts. In some cases, the work of the Medical Joint Cross Service Group now requires, on average, 10-15% of the man-hours available from its members and participants.

The Medical Joint Cross-Service Group has leveraged available technology and established a web-based E-Room to facilitate intra-Group communication. Support for this E-Room has been provided from within the Medical Joint Cross Service Group.

MILITARY VALUE DEFINITION

The Military Value analysis establishes the analytical basis for adding or subtracting missions/activities to or from facilities and installations. It is the combination of the assessment of a facility's capability to perform specific functions based upon the first four DoD Final Selection criteria, and a calculation of the relative Military Value of facilities performing similar functions. As directed in the authorizing legislation, Military Value is the primary consideration in making recommendations for the closure or realignment of military installations. Key aspects to the Military Value Analysis Process include; a careful review of Military Value Final Selection Criteria, and weights; selection/identification of attributes, metrics, questions, and weights; and preparation of a plan to score data call responses. The Services will conduct the Military Value Data Call, and the JCSGs score the data and determine the Military Value.

The Medical Joint Cross Service Group Military Value analysis will include three sub functions: Health Care Education and Training, Health Care Services, and Medical/Dental Research, Development and Acquisition. These three sub functions are scored individually and include an assessment of the facilities condition and ability to support the function. The three sub functions will be combined into a single military value score for each medical facility in accordance with Table 1 below. This weighting was developed by the members of the Medical Joint Cross Service Group and represents the consensus of the principal members. This weighting provides an avenue for assigning a relative military value for all medical facilities that may be present at a location and is weighted towards the central military Health Care mission, Health Care Services, without denying the significance of the other sub functional areas inherent to the medical mission.

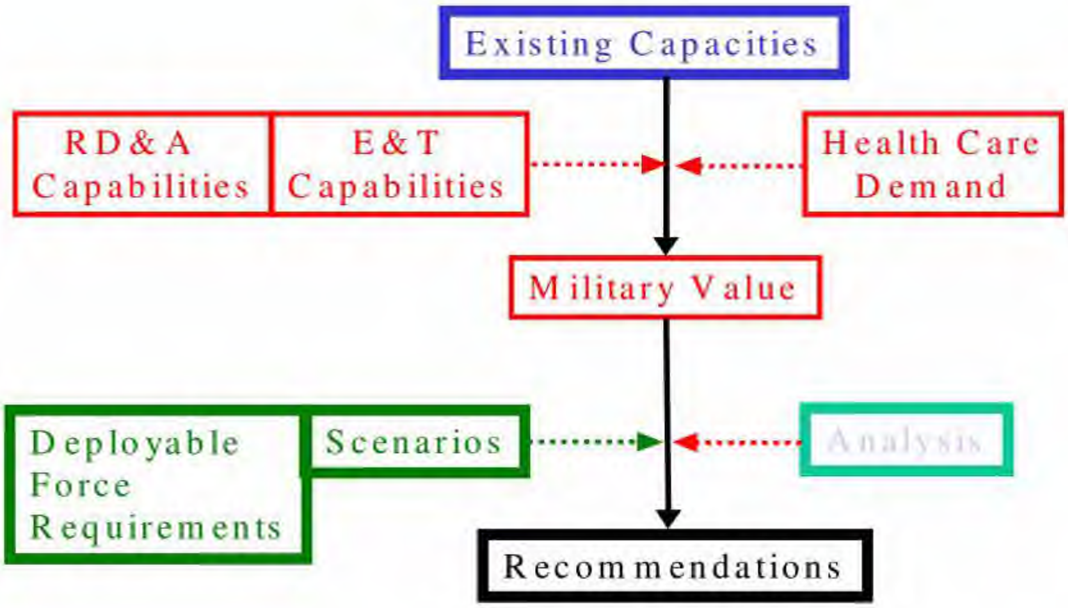
Table 1: Composite Medical Military Value Score

Function	Weight
Health Care Education & Training	20%
Health Care Services	60%
Medical/Dental Research, Development & Acquisition	20%

The Campaign Plan depicted below outlines how the military value analysis fits into the overall MJCSG strategy for developing recommendations for the BRAC 2005 exercise. The basic strategy for developing the Deployable Force Sizing Sub-Group, to the MJCSG BRAC 2005 recommendations, will be to ensure the military medical capabilities necessary to support contingency operations remain. Current Service baseline readiness requirements are already known based on previous strategic planning guidance (2MTW). However, the future force and/or readiness requirements can not be determined until the completion and issuance of pending Strategic and Contingency Planning Guidance (SPG/CPG), Joint Strategic Capabilities Plan (JSCP) and the results from the USD P&R and OSD PA&E Medical Readiness Review in the MHS to support the 1-4-2-1 scenarios.

DoD is awaiting a single translation of the National Security Strategy (NSS) into military objectives, priorities, and risk tolerance. Combatant Commanders are being assigned a much larger role in shaping the defense strategy articulated in the SPG. We anticipate the SPG to direct us on joint capabilities planning in support of this new strategy rather than programmatic solutions. No specific timelines for completion have been established. The MJCSG will consider the results of the new joint capabilities based approach, if available, during the scenario development phase in determining the baseline medical force.

Figure 2: MJCSG Campaign Plan



The mission of the Military Health System includes providing ready medical forces to deploy in support of contingent military operations. The Military Health System is also a key component affecting the Quality of Life of service members and their dependents highlighting the importance of sizing of military treatment facilities to support the surrounding beneficiary population. The Medical Joint Cross Service Group addressed this requirement by including an assessment of the population demographics local to the military treatment facility.

As with any other professional skill, maintaining currency in medical skills requires a caseload with minimum acuity and complexity. The population of active duty and active duty beneficiaries do not possess the needed caseload. Historically, the Military Health System has expanded its beneficiary population at selected military treatment facilities to include retirees to achieve the necessary workloads. In fact, the largest of the military treatment facilities are located in areas that include not only large numbers of active duty and their dependents, but also large retiree populations. Allowing these largest facilities to serve as "medical training platforms" for operationally needed medical specialties. This drives a need to consider the total available population of beneficiaries as a contributor to the Military Value calculations of a faculty. Along these same lines, some military treatment facilities have developed partnering arrangements with nearby faculties (civilian or federal) to provide the needed case mix and are assessed in the Military Value calculations.

DOD FINAL SELECTION CRITERIA 1-4

OSD provided four criteria for determining Military Value. By statute, these criteria are to receive priority consideration in the formulation of BRAC recommendations. Other criteria, referred to as Other Considerations, address Return on Investment, and Economic, Community and Environmental impacts. The Medical Joint Cross Service Group has a reviewed the DoD responses to the public comments on the Selection Criteria and determines that there are no significant issues that must be addressed specifically by the Medical Joint Cross Service Group in its BRAC deliberations.

Criteria 1: *Current/Future Missions (shortened to Mission for purposes of this document).* The current and future mission capabilities and the impact on operational readiness of DoD's Total Force including impacts on Joint warfighting, training and readiness.

Criteria 2: *Availability/Condition of Infrastructure (shortened to Facilities for the purpose of this document).* The availability and condition of land, facilities and associated airspace (including training areas suitable for maneuver by ground, naval, or air forces throughout a diversity of climate and terrain areas and staging areas for the use of the Armed Forces in homeland defense missions) at both existing and potential receiving locations.

Criteria 3: *Contingency, Mobilization, Future Total Force (shortened to Contingency for the purpose of this document*) The ability to accommodate contingency, mobilization, and future total force requirements at both existing and potential receiving locations to support operations and training.

Criteria 4: *Cost/Manpower Impact (shortened to Cost for purposed of this document).* The cost of operations and the manpower implications.

GENERAL ASSUMPTIONS

An important aspect of medical practice is the requirement that skills be maintained through continuous practice. This highlights the importance of the demographics of the population surrounding a medical activity. These demographics will have a part in determining its Military Value, particularly for the medical specialties. This results in the novel requirement to rank the Military Value a population consisting of members, their families, and other beneficiaries in a market area. Health Care availability in the local, off-base market is an important aspect of cost control and provides additional opportunities for maintaining medical proficiencies through partnerships with local civilian and other federal medical activities.

Medical care is a universal activity and local civilian medical capacity represents an opportunity to provide enhanced access to medical care for DoD beneficiaries without increasing the military treatment facility staffing. A part of the Military Value scoring for a military treatment facility will include an assessment of the potential for transferring medical care into the local civilian medical system.

Several medical activities display unique geographical aspects or fulfill service specific missions. These activities would be noted in the Military Value scoring. Medical facilities with a unique capability, such as a G-Force simulator, that represents a high capital cost will receive a higher

Military Value. During the scenario deliberations the number and locations of these capabilities will be combined with Service imperatives for maintaining these capabilities and then be addressed.

Most medical training activities are not assumed to possess a strong correlation to their location and their Military Value is not related to strongly to location. Some enlisted and officer medical training may be dependent on ranges, maneuver training area, and airspace and this was noted in the military value scoring. The Medical Joint Cross Service Group assumed that the billeting capacity of a host facility, and its surrounding community, would be sufficient for the student loading. Likewise, professional medical education, to include residencies and internships, does not *a priori* need to be provided in a military treatment facility. Military treatment facilities with local or other federal partnering arrangements are an avenue for delivering this capability and will receive an addition to their Military Value.

SECTION 2. JCSG MILITARY VALUE ANALYSIS APPROACH

2.1 HEALTH CARE EDUCATION AND TRAINING

DEFINITION OF THE FUNCTION:

This function covers the infrastructure supporting the development of mission-ready medical forces, including professional Health Care providers and medical support staff. It also includes formal degree training in academic facilities, post-graduate, non-degree specialty training conducted in civilian and military facilities and training specifically developed to prepare medical personnel for leadership roles. This function does not address basic military training and professional military education. Health profession training includes doctors, dentists, nurses, physician assistants, and other non-provider professions, as well as corpsmen and other paraprofessionals within the overall analysis. This function has been further parsed into four subordinate functions: Health Professions Education, Health Professions Entry-level Training, Health Professions Continuing Education, and Health Professions Management and Leadership Training.

2.1.1 INTRODUCTION

The analysis of military value of education and training (ET) activities will be based on an assessment of the relative capabilities of various activities to conduct the spectrum of DoD medical/dental ET missions, including both training capabilities (e.g., skills, operational requirements, CBRE, etc.) and facility capabilities (e.g., specialized equipment, condition, etc.). In addition, value will be based on the historically demonstrated ability of activities to provide military unique ET, and to provide equivalent training in a more efficient or joint environment.

In performing the analysis of military value, the following assumptions will be made:

- All elements of the medical/dental ET mission will continue into the future.
- All elements of the medical/dental ET mission are important, but emphasis will be placed on military unique elements and Joint opportunities.

- Each mission-related core competency and unique facility capability must be sustained at some level to preserve capability to perform the mission.

- BRAC-associated closures and transfers will have to be carefully evaluated to ensure that the equivalent training is being produced and that facilities and training conditions are adequate.

A consequence of these assumptions is that the closure of any activity that provides a unique capability in support of a particular element of the medical/dental ET mission, or provides unique capabilities in support of that mission, will have an immediate impact on the ability of the DoD to continue to meet the full spectrum of mission requirements. The experience of past base realignment and closure actions has shown that careful transition planning is required to minimize disruptive impacts resulting from realignment or closure of such activities. Closures of activities that are not unique in their missions or capabilities may reduce the DoD capacity to train personnel without careful prior planning and realignment.

2.1.2 MILITARY VALUE APPROACH AND SCORING PLAN

2.1.2.1 Scoring Plan Development

The Medical/Dental ET subgroup defined a total of 4 attributes and 8 associated metrics that pertain to the 4 Military Value Final Selection Criteria. Each metric will result in a percentage of the total, and that percentage will be multiplied by the weight attached to the question and metrics. The relative contributions of these attributes and metrics to military value (i.e., their weights) were determined by subject matter experts from each of the three Services and the Office of the Secretary of Defense. Subject matter experts included individuals with backgrounds in medical/dental ET, and were drawn from all spectrums of the ET process.

Weights were determined using comparison of the different ET elements, and the degree of their contribution to the ET process. The criteria were ranked in order of their importance to the ET process, and a consensus of the subject matter experts was reached prior to an assignment of weight. For each attribute that was characterized by multiple metrics, members of the Medical/Dental ET subgroup determined the relative weights of the metrics pertaining to the attribute through comparisons of the different metrics to each other. The relative weights of all attributes, metrics and questions were similarly developed through pairwise comparisons.

A sensitivity analysis was conducted, utilizing notional, uncertified data, on the resulting military value algorithm to determine the likelihood that it would differentiate among various medical/dental ET activities. While the possible range of overall scores is 0-100, a more realistic range of scores is from approximately 4 to 92, since there are a few metrics for which no real-world organization is likely to score zero. However, this range (i.e., 0-100) assumes that there are actual organizations that will have the lowest (or highest) possible score for every single metric. In reality, no single real-world organization is going to be worst on every single metric, nor, will there be an organization that is best on every single metric. So the actual range of values is expected to be less. To conduct the sensitivity analysis, four actual medical/dental ET activities were selected. For each activity, likely normalized scores were estimated for each metric, and the overall military value score was calculated based on the weights of the metrics. Estimates of metric values for each activity were derived from already available in-house data sources, or were based on general knowledge regarding each activity. The result of this analysis was a low score of 6.42 at a hospital with essentially no training. A small hospital with a single graduate medical program scored 28.50. A medical schoolhouse with no graduate programs scored 42.80. A medical center having both graduate and initial training scored 84.30. Thus, it is anticipated that the selected metrics and weights will have sufficient sensitivity to clearly differentiate activities from one another.

2.1.2.2 Final Selection Criteria and Attributes

The following four attributes of Military Value were identified:

- *Operational/Mission Readiness* - The training required to support our current mission of operational medical support for the war on terror, and providing the benefit to all eligible recipients.
- *Physical Capacity* - The physical capacity and location of training, and the enhancement of medical services provided as a byproduct of the medical education ant training programs.
- *Military Unique Training* - The military unique components of the medical education and training programs, as well as the ability to provide equivalent training in a reduced timeframe.
- *Joint/Integrated Training* - The extent to which medical/dental education and training programs exist with other Services and other local organizations (DoD or non-DoD)

The above four attributes are variously described by eight metrics. Each attribute is uniquely aligned to at least one of the four DoD Military Value Final Selection Criteria for BRAC '05 as shown in Table 2.

Table 2: Relation of Attributes to Military Value Final Selection Criteria Education and Training

Military Value Final Selection Criterion	Attribute (No. Of Metrics)
1. The current and future mission capabilities and the impact on operational readiness of the Department of Defense's total force, including impacts on joint warfighting, training and readiness.	• Operation/Mission Readiness (1 metric) • Military Unique Training (2 metrics) • Joint/Integrated Training (2 metrics)
2. The availability and condition of land, facilities and associated airspace (including training areas suitable for maneuver by ground, naval, or air forces throughout a diversity of climate and terrain areas and staging areas for the use of the Armed Forces in homeland defense missions) at both existing and potential receiving locations.	• Physical Capacity (2 metrics)
3. The ability to accommodate contingency, mobilization, and future total force requirements at both existing and potential receiving locations to support operations and training.	• Military Unique Training (2 metrics)
4. The cost of operations and the manpower implications.	• Physical Capacity (2 metrics) • Military Unique Training (2 metrics)

2.1.2.3 Metrics

A total of eight metrics were defined, each of which relates to a single attribute. Each metric has a predetermined weight, which will be multiplied by the percentage score obtained from each question. Most metrics will require the collection of new data through the Military Value data call. In some cases, all or part of the data required to generate the metric will be obtained from data collected through the Capacity Data Call.

2.1.2.4 Scoring Plan

Appendix A presents the scoring plan for Medical/Dental ET activities, identifying weights for each Final Selection criterion, attribute, and question. In Table 3 below, the weight listed for each question is not a total weight, per se, but rather indicates the contribution that the data from the question provides to the overall metric. As described above, metrics are derived from a percentage, which is then multiplied by the weight given to the question, metric, attribute and criteria. Once all the data is calculated, a single score from 0 to 100 will be derived for each activity. These activities will then be ranked from 1 to (n), for highest to lowest for a military value score. Programs offered at each facility will be noted, to determine where future realignment may be possible. A summary table of the weighting for the military value scoring is presented in Table 3 below.

Table 3: Education & Training Scoring Summary.

Criteria		Attributes		Metrics			Questions		
Name	Weight	Name	Weight	Name	Weight	Points	Name	Weight	Points
C1: Mission	45	A1: Operational Readiness	45%	M1: Throughput as a % of total	100%	20.25	(Throughput*trng length)/Total Trnd- Graduate	50%	10.13
							(Throughput*trng length)/Total Trnd- Initial	50%	10.13
		A3: Military Unique Training	20%	M5: Prog w/o Civ Counterpart	70%	6.30	% of Prog w/o civilian counterpart - CE	50%	3.15
							% of Prog w/o civilian counterpart - Initial	50%	3.15
				M6: Military Trng Time Efficiency	30%	2.70	% of Equivalent Prgms in shorter time than civilian - initial	100%	2.70
		A4: Joint/Integrated Training	35%	M7: Civilian Joint Ventures	50%	7.88	% Prgms joint sponsored w/civilian institutions - Graduate	50%	3.94
							% Prgms joint sponsored w/civilian institutions - Initial	50%	3.94
				M8: Integrated/Interservice Trng	50%	7.88	% Prgms integrated/interservice - Graduate	50%	3.94
							% Prgms integrated/interservice - Initial	50%	3.94
C2: Facilities	20	A2: Physical Capacity and Facility Condition	100%	M2: Facilities	100%	20.00	Q15: FCI	50%	10.00
							Q16: Weighted Age	50%	10.00
C3: Contingency	25	A3: Military Unique Training	100%	M5: Prog w/o Civ Counterpart	70%	17.50	% of Prog w/o civilian counterpart - CE	50%	8.75
							% of Prog w/o civilian counterpart - Initial	50%	8.75
				M6: Military Trng Time Efficiency	30%	7.50	% of Equivalent Prgms in shorter time than civilian - initial	100%	7.50
C4: Cost	10	A2: Physical Capacity and Facility Condition	70%	M4: Ability to Train Onsite	100%	7.00	% Complete training in area - Graduate	40%	2.80
							% Complete training in area - Initial	60%	4.20
		A3: Military Unique Training	30%	M6: Military Trng Time Efficiency	100%	3.00	% of Equivalent Prgms in shorter time than civilian - initial	100%	3.00

2.1.3 DATA CALL

New Military Value Data Call questions are provided in Appendix A. Some Military Value metrics will be derived from responses to Capacity Data call questions, as noted.

2.1.4 ISSUES IMPACTING ANALYSIS

Throughput is determined by manning needs, rather than the ability of an activity to provide training seats. The last three training cycles were averaged to normalize this effect. Also, civilian and inter-service training programs were queried separately to identify which programs might be difficult to relocate to another location, and which already provide Joint service training opportunities.

2.2 HEALTH CARE SERVICES.

DEFINITION OF THE FUNCTION:

Health Care Services is the measurement of the medical support, including all specialties, required by a defined population surrounding a military treatment facility. The population includes active duty, retired, and dependant Health Care requirements, and the services individual policy-driven medical support. The physical assets supporting the military Health Care system (including the campus facilities, capital/investment equipment, Class VIII storage, and blood) will also be evaluated.

2.2.1 INTRODUCTION

The analysis of Military Value of Health Care Services will be based on weights developed using a consensus methodology with subject matter experts representing all the services. In general, scoring on individual questions was based on the range of possible values across all facilities with significant outliers discarded. Once the range was established, scores were developed on a ten-point scale using linear cut points. The analysis of Military Value of medical/dental infrastructure will be based on assessment of the relative capabilities of various activities to conduct the spectrum of DoD medical/dental missions. In addition, value will be based on the historically demonstrated ability of the facilities to support the mission and operational needs of the activity.

In performing the analysis of military value, the following assumptions will be made:

- All elements of the medical/dental market mission will continue into the future.
- All elements of the medical/dental market mission are important, but emphasis will be placed on services supporting the Active Duty members to underscore the support for force readiness.

- A major factor in the weighting of infrastructure Military Value will be the age and condition of the facility.
- BRAC-associated closures and transfers will have to be carefully evaluated to ensure that the health care services necessary for operational missions will be continued.

2.2.2 MILITARY VALUE APPROACH AND SCORING PLAN HEALTH CARE SERVICES

2.2.2.1 Scoring Plan Development

The Health Care Services subgroup defined a total of 6 attributes and 17 metrics that pertain to two of the Military Value Final Selection Criteria for Health Care Services. A summary table of the weighting for the military value scoring is presented in Table 5 below.

A sensitivity analysis was conducted, utilizing notional, uncertified data, on the resulting military value algorithm to determine the likelihood that it would differentiate among various medical activities. While the possible range of overall scores is 0-100, a more realistic range of scores is from approximately 6 to 88, since there are a few metrics for which no real-world organization is likely to score zero. However, this range (i.e., 0-100) assumes that there are actual organizations that will have the lowest (or highest) possible score for every single metric. In reality, no single real-world organization is going to be worst on every single metric, nor, will there be an organization that is best on every single metric. So the actual range of values is expected to be less. To conduct the sensitivity analysis, nine actual medical/dental activities were selected, five hospitals and four clinics. For each activity, likely normalized scores were estimated for each metric, and the overall military value score was calculated based on the weights of the metrics. Estimates of metric values for each activity were derived from already available in-house data sources, or were based on general knowledge regarding each activity. The result of this analysis was a low score of 6 at a small clinic in a location with adequate civilian capacity. A large clinic in an isolated area scored 60. A small hospital with adequate civilian capacity scored 25. A medical center with a large military population scored 88. Thus, it is anticipated that the selected metrics and weights will have sufficient sensitivity to clearly differentiate activities from one another.

2.2.2.2 Final Selection Criteria and Attributes

- *Demand* - A facility's value in meeting the mission is primarily related to the population that it serves. By locating treatment facilities in major markets, that facility provides services to those located there and the population provides the necessary workload needed to keep providers current in their medical skills.

- *Civilian Capacity* - Military bases are many times located in remote or medically underserved areas. It is therefore of Military Value to provide health care services in these locations via military treatment facilities.

- *Physical Capacity and Facility Condition* - The facility capacity and its condition are a major component of infrastructure, and a large element of mission/operational effectiveness and productivity.

- *Operational and Mission Responsiveness* - The ability to respond to deployment, mission and operational needs via supplies and beds space.

- *Cost Efficiency* - Cost Effectiveness is measured by the cost per unit of workload. These are adjusted for the relative costliness of care provided in the community.

- *Throughput* - Military Treatment Facilities that produce more workload reduce purchase care costs and, in general, have the ability to reduce costs because of economies of scale.

The above 6 attributes are variously measured by 17 metrics. Each attribute is uniquely aligned to one of the 4 DoD Military Value Final Selection Criteria for BRAC '05 as shown in Table 4.

Table 4: Relation of Attributes to Military Value Final Selection Criteria Medical Service Market Requirements

Military Value Final Selection Criterion	Attribute (No. of Metrics)
1. The current and future mission capabilities and the impact on operational readiness of the Department of Defense's total force, including impacts on joint warfighting, training and readiness.	• Demand (2 metrics) • Civilian Capacity (2 metrics)
2. The availability and condition of land, facilities and associated airspace (including training areas suitable for maneuver by ground, naval, or air forces throughout a diversity of climate and terrain areas and staging areas for the use of the Armed Forces in homeland defense missions) at both existing and potential receiving locations.	• Physical Capacity and Facility Condition (2 Metrics)
3. The ability to accommodate contingency, mobilization, and future total force requirements at both existing and	• Operational/Mission Responsiveness (3 metrics)

potential receiving locations to support operations and training.	
4. The cost of operations and the manpower implications.	• Cost/Efficiency (2metrics) • Throughput (5 metrics)

2.2.2.3 Metrics

A total of 17 metrics were defined, each of which relates to a single attribute. Each metric has a predetermined weight, which will be multiplied by the percentage score obtained from each question. Most metrics will require the collection of new data through the Military Value data call. In some cases, all or part of the data required to generate the metric will be obtained from the data collected through the Capacity Data Call.

2.2.2.4 Scoring Plan

Appendix B presents the scoring plan for Health Care Service activities, identifying weights for each Final Selection criterion, attribute, and question. The weights listed for each question is not an actual weight, per se, but rather indicates the contribution that the data from the question provides to the overall metric. Metrics are derived from a percentage, which is then multiplied by the weight given to the question, metric, attribute, and criteria. Once the data is calculated, a single score from 0 to 100 will be derived for each activity. These activities will then be ranked from 1 to (n), for highest to lowest for a military value score. Programs offered at each facility will be noted, to determine where future realignment may be possible.

Table 5: Health Care Services Scoring Summary.

Criteria		Attributes		Metrics			Questions		
Name	Weight	Name	Weight	Name	Weight	Points	Name	Weight	Points
C1: Mission	45	A1: Demand	60%	M1: Eligible Population	70%	18.90	Active Duty Eligibles	85.7%	16.20
							AD Family Members Eligibles	7.1%	1.35
							Other Eligibles	7.1%	1.35
				M2: Enrolled Population	30%	8.10	AD Family Members Enrolled	66.7%	5.40
							Other non-AD Enrolled	33.3%	2.70
		A2: Civilian Capacity	40%	M3 Civilian/VA Beds	50%	9.00	# of Civilian/VA Hospitals	20%	1.80
							# of Civilian/VA Beds per population	80%	7.20
				M4: Civilian/VA Providers	50%	9.00	# Primary Care providers per population	60%	5.40
							# Specialty Care providers per population	25%	2.25
							# Dentists per population	15%	1.35
C2: Facilities	25	A3: Physical capacity and facility condition	100%	M5: Facilities	100%	25.00	FCI	50%	12.5
							Weighted Age	50%	12.5
C3: Contingency	10	A4: Operations/mission responsiveness	100%	M7: Blood	40%	4.00	On-Site FDA testing	100%	4.00
				M8: Class VIIIA	20%	2.00	Proximity	100%	2.00
				M9: Contingency beds	40%	4.00	Contingency beds	100%	4.00
C4: Cost	20	A5: Cost/Efficiency	40%	M10: Inpatient Costs	35%	2.80	Cost per RWP	100%	2.80
				M11: Outpatient Costs	50%	4.00	Cost per RVU	100%	4.00
				M12: Dental Costs	15%	1.20	Cost per DWV	100%	1.20
		A6: Throughput	60%	M13: Inpatient Care	30%	3.60	Total RWP	100%	3.60
				M14: Outpatient Care	40%	4.80	Total RVU	100%	4.80
				M15: Dental Care	10%	1.20	Total DWV	100%	1.20
				M16: Pharmacy	10%	1.20	Total Scripts	100%	1.20
				M17: Ancillary	10%	1.20	Total weighted Rad Procedures	77%	0.92
							Total weighted Lab Procedures	23%	0.28

2.2.2.5 Data Call

Health Care Services data call questions are provided in Appendix B. Some Military Value metrics will be derived from responses to Capacity Data call questions, as noted in the table.

2.2.2.6 Issue Impacting Analysis

The major issue impacting the analysis will be the interdependence of facilities within the same general market. Care will need to be given to adequately analyze the impacts of changes in one facility on the value of other facilities in the same area. Populations that are currently served by one Military Treatment Facility may be shifted to others in that area. It is not possible at this time to determine if excess space is a positive or negative factor for an activity until the potential realignment of the force is proposed. Once force posture is determined by the Services, medical/dental space evaluation and potential modifications could be calculated.

2.3 MEDICAL AND DENTAL RESEARCH, DEVELOPMENT AND ACQUISITION

DEFINITION OF THE FUNCTION:

This function includes all aspects of research, from basic research to advanced demonstration, required to provide a continuous stream of transformational capabilities and systems to sustain and optimize the health and performance of war fighters. The Medical and Dental Research, Development and Acquisition Workgroup reviewed the DoD's ability to sustain those capabilities that are required to effectively discover, develop, acquire and field medical solutions to evolving war fighter needs. Attainment of these capabilities is dependent on coupling the requisite medical, regulatory (FDA licensure) and scientific/technical expertise with a physical infrastructure that facilitates innovation and productivity.

2.3.1 INTRODUCTION

The analysis of military value of medical/dental RDA activities was based on an assessment of the relative capabilities of various activities to conduct the spectrum of DoD medical/dental RDA missions, including both workforce capabilities (e.g., skills, training, etc.) and facility capabilities (e.g., specialized equipment, condition, etc.). In addition, value was based on the historically demonstrated ability of activities to provide RDA support to operations, and their relative productivity.

In performing the analysis of military value, the following assumptions were made:

- All elements of the medical/dental RDA mission will continue into the future.

- All elements of the medical/dental RDA mission (and therefore, all mission-related core competencies) are of equal value.
- Each mission-related core competency and unique facility capability must be sustained at some level to preserve capability to perform the mission.
- BRAC-associated closures and transfers will adversely affect the ability of an activity to conduct its portion of the DoD mission and sustain its mission-related core competencies for a significant period of time.

A consequence of these assumptions is that the closure of any activity that is unique in its ability to support a particular element of the medical/dental RDA mission, or provide unique capabilities in support of that mission, will have an immediate impact on the ability of the DoD to continue to meet the full spectrum of mission requirements. The experience of past base realignment and closure actions has shown that careful transition planning is required to minimize disruptive impacts resulting from realignment of such activities. Closures of activities that are not unique in their missions or capabilities will reduce the DoD capacity to perform certain mission elements in the short- to mid-term, but will allow continued mission performance across the full spectrum of requirements, albeit at a reduced level.

2.3.2 MILITARY VALUE APPROACH AND SCORING PLAN

2.3.2.1 Approach to Scoring Plan Development

The Medical/Dental RDA subgroup defined a total of 7 attributes and 19 associated metrics that pertain to the 4 Military Value Final Selection Criteria. Each metric was defined by a mathematical formula that included normalization functions as necessary. The relative contributions of these attributes and metrics to military value (i.e., their weights) were determined by subject matter experts from each of the three Services and the Office of the Secretary of Defense. Subject matter experts included individuals with backgrounds in either medical/dental science and technology (S&T), or medical/dental advanced development and acquisition.

Weights were determined using a software implementation of the Analytic Hierarchy Process (AHP). [1] AHP is a method that allows individuals or groups of individuals to develop an algorithm (also known as a decision model) that assigns overall weights to each element in a decision (in this case, the attributes and metrics of military value). Weights are developed through a series of comparative judgments of the relative importance of different pairs of elements. By comparing each element with every other element, an overall algorithm is developed that integrates across all elements.

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[1]Weights were derived using Team Expert Choice software (Expert Choice, Inc.), which is based on the Analytic Hierarchy Process of decision making as developed by Thomas Saaty (Saaty, T.L., "The Analytic Hierarchy Process", McGraw Hill, New York, 1980.)

For each attribute that was characterized by multiple metrics, members of the Medical/Dental RDA subgroup determined the relative weights of the metrics pertaining to the attribute through pair-wise comparisons of the different metrics to each other. The relative weights of all attributes to each other were similarly developed through pair-wise comparisons, with the weights of Final Selection criteria derived directly from the attribute weights. In all but one case, there was a one-to-one relationship between questions and metrics, so it was not necessary to weight questions (i.e., each question had a weight of 100 with respect to the metric, on a 0-100 scale). In the single case where multiple questions contributed differentially to a metric, the questions were weighted relative to each other using the same pair-wise comparison process.

The three Services and DoD were each allowed two votes for each pairwise comparison that was conducted during the weighting process: one vote was taken from an S&T organizational perspective, and the other from an advanced development/acquisition organizational perspective. After initial weighting of all attributes and metrics was completed, it was determined that there were no significant differences in the attribute or metric weights when viewed from these two perspectives, and so the final weights reflect the averaged weights from both sets of votes.

A sensitivity analysis was conducted, utilizing notional, uncertified data, on the resulting military value algorithm to determine the likelihood that it would differentiate among various medical/dental RDA activities. While the possible range of overall scores is 0-100, a more realistic range of scores is from approximately 5 to 100, since there are a few metrics for which no real-world organization is likely to score zero. However, this range (i.e., 5-100) assumes that there are actual organizations that will have the lowest (or highest) possible score for every single metric. In reality, no single real-world organization would be expected to be worst on every single metric, nor would there be an organization that is best on every single metric. So the actual range of values was expected to be less. To conduct the sensitivity analysis, two actual medical/dental RDA activities were selected, one of which was expected to score among the highest activities, and the other that was expected to come out among the lowest. For each of the two activities, likely normalized scores were estimated for each metric, and the overall military value score was calculated based on the weights of the metrics. Estimates of metric values for each activity were derived from already available in-house data sources, or were based on general knowledge regarding each activity. In a few cases where there was no reasonable basis for estimating a metric value for one or both activities, the values were set equal for both activities, so that the metric did not contribute to the overall final differential in military value score. The result of this analysis was that the "high scoring" activity had a total score of 60, while the "low scoring" activity had a score of 18. Thus, it was anticipated that the selected metrics and weights would have sufficient sensitivity to clearly differentiate activities from one another.

2.3.2.2 Final Selection Criteria and Attributes

The following 7 attributes of Military Value were identified:

- *Mission Scope/Uniqueness* - The fraction of the overall DoD mission currently supported by an activity and the extent to which an activity is unique within the DoD in supporting specific mission elements

- *Workforce* - The quality of the workforce, its uniqueness within the DoD, and its technical ability to perform work across the spectrum of DoD medical/dental RDA missions

- *Physical Plant: Mission* - The uniqueness within the DoD of the specialized equipment present at an activity

- *Beneficial Relationships* - The extent to which mission-supporting relationships exist with other Services and other local organizations (DoD or non-DoD)

- *Physical Plant: Condition* - The general condition of the buildings and equipment located at an activity

- *Operational Responsiveness* - The degree to which an activity can directly support operations through a variety of actions

- *Cost Effectiveness* - The relative effectiveness of an activity compared to other activities engaged in similar work

The above 7 attributes were variously measured by 19 metrics. Each attribute is uniquely aligned to one of the 4 DoD Military Value Final Selection Criteria for BRAC '05 as shown in Table 6.

Table 6: Relation of Attributes to Military Value Final Selection Criteria Medical/Dental Research, Development and Acquisition (RDA)

Military Value Final Selection Criterion	Attribute (No. of Metrics)
1. The current and future mission capabilities and the impact on operational readiness of the Department of Defense's total force, including impacts on joint warfighting, training and readiness.	• Mission Scope/Uniqueness (2 metrics) • Workforce (6 metrics) • Physical Plant: Mission (1 metric) • Beneficial Relationships (2 metrics)
2. The availability and condition of land, facilities and associated airspace (including training areas suitable for maneuver by ground, naval, or air forces throughout a diversity of climate and terrain areas and staging areas for the use of the Armed Forces in homeland defense missions) at both existing and potential receiving locations.	• Physical Plant: Condition (2 metrics)
3. The ability to accommodate contingency, mobilization, and future total force requirements at both existing and potential receiving locations to support operations and training.	• Operational Responsiveness (1 metric)
4. The cost of operations and the manpower implications.	• Cost Effectiveness (5 metrics)

2.3.2.3 Metrics

A total of 19 metrics were defined, each of which related to a single attribute. Each metric was described by a formula that combines the raw data obtained from activities into a dimensionless value ranging from a minimum of zero (lowest military value) to a maximum of one (highest military value). Most metrics required the collection of data through the Military Value data call. In some cases, all or part of the data required to generate the metric was obtained from data collected through the Capacity data call.

To control for the impact of organizational size, raw measures were normalized when necessary by dividing the raw measure by the number of FTEs performing the work. (FTEs were considered to be a better normalizing measure than funding, as funding can vary unpredictably across activities according to the proportion of military to civilian staff and the level of installation support.[2]) In most cases, raw measures were also normalized to the score of the activity that received the highest score for the measure, so that the "best" activity for any particular metric received a normalized score of one for that metric. In a few cases, normalization of results to the "best" activity was unnecessary because the metric naturally varied from zero to one, with a high score of one having an objective meaning with respect to military value. The formulas and rationale for each metric are provided in Appendix C

The normalization of metrics and use of a consistent range of potential values (i.e., 0 to 1) across all metrics allowed weights to be consistently applied to metrics in a linear algorithm. Normalization also avoided the problem of potential distortions in overall scoring that could occur due to large quantitative variations in the range of possible responses for different metrics.

2.3.2.4 Scoring Plan

Appendix C, **Table 12** presents the scoring plan for medical/dental RDA activities, identifying weights for each Final Selection criterion, attribute, and question. As described above, metrics were derived from raw data resulting from questions, and these raw data were typically normalized using data from the question itself (e.g., an activity's raw score was divided by the raw score for the highest scoring activity), and/or data from other questions (e.g., an activity's raw score was normalized to the number of FTEs at the activity). *Thus, an activity's answer to a particular question cannot simply be multiplied by the weight of the question to provide the value of the metric.* Rather the weight shown for each question indicates the contribution that the data from the question contributes to the overall metric. The formulas in Appendix A provide additional description of how data from questions was converted into metric values. Questions identified by their titles in the table are provided in full in Appendix C to this report.

Owing to past consolidations and other reasons, a number of installations exist at which multiple Service-unique medical/dental RDA activities are located. Although military value data was collected and analyzed at the activity level, data for all medical/dental RDA activities at the same installation was also combined and similarly analyzed so that an integrated view of the overall military value of an installation could be assessed. Because of the nature of the formulas used to calculate metrics, the metric scores of individual activities located at the same installation could not simply be added or averaged to determine the installation score. Rather, the raw data from each activity at the installation was pooled, treated as if the various activities were a single activity, and compared to other installations using the same metric formulas used to assess individual activities.

[2] Although the level of installation support is a factor related to ability to perform work cost effectively at any given location, the impact of this factor will be considered during scenario development, rather than during the initial value determination.

The military value score derived by the methods described above and in Appendix C provides the overall military value of an activity with respect to the full breadth of activities encompassed by the medical/dental RDA function. However, the medical/dental RDA working group also sought to assess military value of activities and installations with respect to each of 11 sub-functions (defined in the MJCSG Capacity Report). For this purpose, a sub-function military value score was derived from the overall military value score of each activity by the following formula:

$$MV_{SF} = MV_{RDA} \times \frac{FTE_F}{FTE_T}$$

$$MV_{RDA} \text{ x } FTE_F / FTE_T$$

Where MV_F is the sub-function military value score of the activity,

MV_{RDA} is the overall medical/dental RDA military value score of the activity,

FTE_F is the number of full time equivalents working within the sub-function in FY03, and

FTE_T is the total number of full time equivalents working within the activity for FY03

A summary table of the scoring plan is presented below Table 7.

Table 7: RD&A: Scoring Summary.

Criteria		Attributes		Metrics			Questions		
Name	Weight	Name	Weight	Name	Weight	Points	Name	Weight	Points
C1: Mission	55%	A1: Mission Scope/Uniqueness	31%	M1: Capability Domains Supt in FY03	61%	10.40	Q1: Capability Domains supported in FY03	100%	10.40
				M2: Mission Uniqueness	39%	6.65	Q2: Med/Den RDA full time equivalents	100%	6.65
		A2: Workforce	41%	M3: # of S&T Core Comp Supt in FY03	12%	2.71	Q3: # of S&T Core Comp Supt in FY03	100%	2.71
				M4: # of AD/Acq Core Comp Supt in FY03	13%	2.93	Q4: # of AD/Acq Core Comp Supt in FY03	100%	2.93
				M5: # of S&T Core Comp w/ Ability to Supt	26%	5.86	Q5: # of S&T Core Comp w/ Ability to Supt	100%	5.86
				M6: # of AD/Acq Core Comp w/ Ability to Supt	19%	4.28	Q6: # of AD/Acq Core Comp w/ Ability to Supt	100%	4.28
				M7: Workforce Uniqueness	17%	3.83	Q7: Workforce Uniqueness	100%	3.83
				M8: Education Level	13%	2.93	Q8: # of Doctoral degrees	68%	1.99
							Q9: # of Masters degrees	25%	0.73
							Q10: # of Bachelor degrees	7%	0.21
		A3: Physical Plant - Mission	18%	M9: Facility Uniqueness	100%	9.90	Q11: Facility Uniqueness	100%	9.90
		A4: Beneficial Relationships	10%	M10: Jointness	65%	3.58	Q12: Mission jointness; funding jointness; workforce jointness; organization/mgmt jointness	100%	3.58
				M11: Collaborations/Agreements w/ Local Org	35%	1.93	Q13: Collaborations/agreements w/ local organizations	100%	1.93
C2: Facilities	5%	A5: Physical Plant - Condition	100%	M12: Building Condition	25%	1.25	Q14: Building Condition	100%	1.25
				M13: Specialized facility/ Equipment Utilization	75%	3.75	Q15: Specialized facility/ Equipment Utilization	100%	3.75
C3: Contingency	23%	A6: Operational Effectiveness	100%	M14: Operational Support Actions	100%	23.00	Q16: Operational Support Actions	100%	23.00
C4: Cost	17%	A7: Cost Effectiveness	100%	M15: S&T Output per FTE	28%	4.76	Q17: S&T Output per FTE	100%	4.76
				M16: Contracting Output (Value) per FTE	15%	2.55	Q18: Contracting Output (Value) per FTE	100%	2.55
				M17: Logistics Management Action per FTE	12%	2.04	Q19: Logistics Management Action per FTE	100%	2.04
				M18: Projects Managed per FTE	28%	4.76	Q20: Projects Managed per FTE	100%	4.76
				M19: Regulatory Actions per FTE	18%	3.06	Q21: Regulatory Actions per FTE	100%	3.06

2.3.3 DATA CALL

Military Value data call questions are provided in Table 13, Appendix C. Some Military Value metrics were derived from responses to Capacity Data call questions, as noted in the table.

2.3.4. ISSUES IMPACTING ANALYSIS

The Military Value analysis process provided no way to clearly visualize and account for mission-essential organizational linkages that cross functional areas (or may extend beyond the DoD to other Federal agencies). Examples include close working relationships between S&T organizations and materiel developers, between DoD research and educational organizations, between RDA organizations and operational communities, and between DoD and other federal laboratories. While the existence of such linkages did not necessarily preclude base closure and realignment recommendations, they did influence the direction of recommendations to ensure that those linkages deemed critical for organizational viability would be sustained by newly realigned organizations.

A range of reasonably differentiated military value scores from approximately 20 to 60 was anticipated based on the sensitivity analysis described in Section 2.3.2.1. However, in reality, activity scores varied from 1.23 to 41.69. While the total range of scores is similar to what was expected, there was some clustering of data: out of 30 activities for which scores could be calculated 17 fell in a range between 10 and 20. Sub-function military value scores were helpful in differentiating activities that otherwise appeared very similar with respect to their overall value.

An unexpected outcome was the strong discriminating effect of the Operational Response metric on overall RDA scores. The Operational Response metric was intended to capture the value of activities that have a primary RDA mission and secondarily provide significant levels of operational support. A factor that was not appreciated in the design of the military value formula is that there are also activities that have a primary mission of providing operational support and a secondary RDA mission. Because of the high contribution of the Operational Performance metric to the overall military value score, activities of the latter type received very high scores, with approximately 50-80% of their total score being driven by this single metric. Of the eight activities that displayed the highest military value score, 3 fell into this category. Because these activities do not have a primary RDA mission, it is somewhat misleading to compare their overall RDA score to those of activities that have RDA as their primary mission

SECTION 3. ISSUES IMPACTING OVERALL ANALYSIS

As the data from the Capacity and Military Value Data Calls is received, a significant issue is the manpower needed to reduce the data to develop the Capacity and Military Value analysis. In both cases the transcription of the data into the analysis framework will be time consuming and error prone. The MJCSG does not have the expertise available to address this need. In addition, the MJCSG foresees the need for technical expertise to help understand and build the models used in the scenario phase to develop the BRAC recommendations. The MJCSG has investigated the use of focused contractor support to address these needs. We've received a bid of $350,000 to gain the support of three contract personnel through the end of CY 04. Request that the ISG members provide this funding

APPENDIX A

Table 8: Education and Training Military Value Scoring Plan

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
Criterion 1: *The current and future mission capabilities and the impact on operational readiness of the Department of Defense's total force, including impacts on joint warfighting, training and readiness.*	45				The operational mission is given the largest weight as it drives force structure. Force structure drives training requirements.
• **Attribute: Operational/Mission Readiness**		45			Training programs train to service defined manning requirements.
o Metric: Throughput			100		Throughput provides an assessment of each facility's contribution in meeting the service's overall manning requirements
§ Question: List the graduate programs, and provide the number of training starts and the number of graduates for the 3 most recently completed training cycles.				50	Graduate education training is important in ensuring that an appropriate number of trained specialists were available to support the war fighter.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
§ Question: List the initial officer and enlisted programs, and provide the number of starts and the number of graduates (achieves minimum requirements for a skill identifier) for the 3 most recently completed training cycles.				50	Initial training provides trained personnel for all aspects of operational medicine.
• **Attribute**: **Military Unique**		20			Operating in military unique situations requires training.
o **Metric:** Programs without civilian counterpart			70		Many civilian programs come close to approximating military programs, but do not provide elements required for military operations.
§ Question: What is the percentage of continuing education programs without civilian counterpart or with military unique components?				50	Military medical sustainment training and field medical programs are crucial to deployment readiness.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
§ Question: What is the percentage of programs without civilian counterpart or with military unique components for initial officer and enlisted training (achieves minimum requirements for a skill identifier)?				50	Initial training is weighted high because it is the core of military specific training, and completing locally saves time and money.
○ **Metric:** Military Training Time Efficiency			30		An important aspect of military training programs is the ability to provide the complete training package (professional and military) in a shorter more efficient timeframe
§ Question*:* What is the percentage of initial officer and enlisted training programs (achieves minimum requirements for a skill identifier) that require less time than civilian equivalents?				100	Permits service members to report for duty, and be fully functional more quickly.
• **Attribute: Joint/Integrated Training Programs**		35			Training is resource intensive, joint/integrated programs allow for a collaborative effort between the services/civilian community
○ **Metric**: Civilian Joint Training			50		Utilizing local civilian programs to enhance military training.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
§ Question: What percentage of your graduate programs are jointly sponsored with a civilian institution?				50	Military graduate education programs jointly sponsored with civilian institutions results in a sharing of personnel, facilities and other resources to mutual benefit.
§ Question: What percent of your programs for initial officer and enlisted training (achieves minimum requirements for a skill identifier) are jointly sponsored with a civilian institution?				50	Utilizing civilian training programs enhances the scope of the military program and decreases onsite staff.
o **Metric**: Interservice/Integrated Training			50		Increases efficiency and operational effectiveness of military training programs.
§ Question: What percent of your current programs are interservice/integrated for graduate education?				50	Integrated military graduate education programs result in a sharing of personnel, facilities and other resources to mutual benefit. Increases perspective of military medicine and interoperability of the MHS.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
§ Question: What percent of your current programs are interservice/integrated for initial officer and enlisted training (achieves minimum requirements for a skill identifier)?				50	Increases the perspective of the service member, and increases interoperability in theatre.
Criterion 2: *The availability and condition of land, facilities and associated airspace (including training areas suitable for maneuver by ground, naval, or air forces throughout a diversity of climate and terrain areas and staging areas for the use of the Armed Forces in homeland defense missions) at both existing and potential receiving locations.*	20				The condition of facilities and associated equipments contributes to the overall military value of a medical/dental training activity. Also, it is essential to maintain those opportunities and facilities that permit military unique training.
• **Attribute**: **Physical Capacity and Facility Condition**		100			Physical location and facilities required for training.
o **Metric:** Facilities			100		Age and Condition of facilities is directly linked to the value of infrastructure.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
§ Question: For medical facilities: What is the Average Weighted Age of each medical facility greater than 2,000 SF on the installation? This question is also applicable to medical education and research facilities that are not CATCODE 500. Installations will complete a variable size grid that includes: building number, FAC code, Size (SF), Year Built, and Average Weighted Age calculation. Amplification: Calculate the average weighted age of each facility to incorporate additions, alterations and renovations. Calculate the age of the medical facility by subtracting the year built from 2003. • (Chronologi cal Building Age*Building Gross Square Feet)/• Total Building Gross Square Feet = Average Weighted Age For example: If a 20,000 SF facility was built in 1980 and had major renovations to 75,000 SF in 1995 and a 100,000 SF addition was added in 2002, then the Average Weighted Age for the facility would be (125,000 SF X				50	Provides the foundation skills to meet the mission.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
300,000 SF = 13 years and not 24 years that you would calculate if you only used the original year the facility was built.					

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
§ Question: For medical facilities: What is the FCI (Facilities Condition Index) of each medical facility greater than 2,000 SF on the installation? This question is also applicable to medical education and research facilities that are not CATCODE 500. Installations will complete a variable size grid that includes: building number, FAC Code, Size (SF), project backlog, plant replacement value, and FCI calculation. Amplification: Facilities Condition Index is calculated by determining the O&M facilities backlog for each medical facility and dividing the project backlog by the Plant Replacement Value for the medical facility. (Plant Replacement Value may also be called the Cost Replacement Value (CRV). Count all unexecuted projects by facility with a cost greater that $25K. Any JCAHO "Plan for Improvement" deficiencies should be included In the Project Backlog.				50	Graduate education potentially provides a greater range of services than would otherwise be provided by the treatment facility.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
Criterion 3: *The ability to accommodate contingency, mobilization, and future total force requirements at both existing and potential receiving locations to support operations and training.*	25				A primary benefit of the DoD's medical/dental training programs is their ability to provide operational forces with specialized medical support and expert consultation on emergent problems, and deployable operational support on an as-needed basis. These capabilities directly contribute to the success of current operations. The ability of medial/dental training activities to provide this support is therefore a strong contributor to military value.
• **Attribute: Military Unique**		100			Operating in military unique situations requires training.
o **Metric**: Programs without civilian counterpart			70		Many civilian programs come close to approximating military programs, but do not provide elements required for military operations.
§ Question: What is the percentage of the total of continuing education programs offered at your activity that are without civilian counterpart or military unique components?				50	Military medical sustainment training is crucial to deployment readiness.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
§ Question: What is the percentage of the total initial officer and enlisted training (achieves minimum requirements for a skill identifier) programs offered at your activity without civilian counterpart or within military unique components?				50	Initial training is weighted high because it is the core of military specific training.
○ **Metric**: Military Training Time Efficiency			30		Decreases time that providers are removed from MHS
§ Question: What is the percentage of the total initial officer and enlisted training programs (achieves minimum requirements for a skill identifier) that require less time than civilian equivalents?				100	Importance of effective utilization.
Criterion 4: *The cost of operations and the manpower implications.*	10				Cost and manpower implications for training needs to considered.
• **Attribute: Physical Capacity and Facility Condition**		70			Physical location and facilities required for training.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
o **Metric**: Ability to provide all program requirements within the local area			100		The ability to train the complete package on site (includes local geographic area) important as opposed to programs that require TAD or PCS moves to accomplish training
§ Question: What is the percentage of the total of graduate and advanced training programs offered at your activity that can be completed without temporary duty outside the local area?				40	Provides the foundation skills to meet the mission.
§ Question: What is the percentage of initial officer and enlisted training (achieves minimum requirements for a skill identifier) that can be completed without temporary duty outside the local area?				60	Training required to ensure core competency and meet military mission.
• **Attribute**: **Military Unique**		30			Operating in military unique situations requires training.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
o **Metric:** Military Training Time Efficiency			100		An important aspect of military training programs is the ability to provide the complete training package (professional and military) in a shorter more efficient timeframe.
§ Question: What is the percentage of the total initial officer and enlisted training programs (achieves minimum requirements for a skill identifier) that require less time than civilian equivalents?				100	Permits service members to report for duty, and be fully functional more quickly.

Table 9: Education and Training (ET) Military Value Question Scoring

Attribute 1: Metric 1: Throughput
Attribute: Operational/Mission Readiness
BRAC Selection Criterion: (1) Mission Requirements & Impacts (4) Cost/Manpower
Data Required: *Number of program starts and number of graduates for the 3 most recent completion cycles for all the programs provided at your facility. List each program separately and indicate whether the program is an initial officer/enlisted program or an advanced graduate program.*
Formula: $$\text{Throughput} = \frac{\text{Program Graduates (for each program offered at your activity)}}{}$$ where Program graduates are averaged over the 3 most recent completion cycles are divided by program starts are averaged over the 3 most recent completion cycles.
Rationale/Comments: The greater the ability of a program to produce qualified graduates = higher value. Activities with more than one program will have the data averaged, so that each activity will results in a single score.

Attribute 2: Metric 1: Ability to provide program requirements in local area
Attribute: Physical Capacity and Facility Condition
BRAC Selection Criterion: (1) Mission Requirements & Impacts (2) Availability & Condition of Land & Facilities (4) Cost/Manpower
Data Required: The number of programs which can complete requirements in the local area, and the total number of programs offered at each activity. Report initial officer and enlisted programs separate from advanced graduate programs.
Formula: $$\text{Programs Completed Locally} = \frac{\text{Programs Completed Within Local Area (Programs offered at your activity)}}{}$$ where Percentage of total training programs that can be completed without temporary duty outside the local area.
Rationale/Comments: The ability of a program to produce qualified graduates locally, results in both a time and fiscal resource benefit = higher value. .

Attribute 2: Metric 2: Facilities Condition Index (Facilities)

Attribute: Physical Capacity and Facility Condition

BRAC Selection Criterion: (1) Mission Requirements & Impacts (2) Availability & Condition of Land & Facilities (4) Cost/Manpower

Data Required: Facility Condition Index (FCI) for each medical facility >2,000 SF will be provided by installation. This data will be weighted by Plant Replacement Value (PRV) to determine a cumulative score for the installation.

Formula:
Installation FCI = Sum (Facility FCI X PRV)/ Sum of Total PRV

Scoring:

Installation FCI	Score
0 - 0.050	1.0
0.051 - 0.100	.6
0.101 - 0.350	.3
> 0.350	0.0

Rationale/Comments: Facilities requiring significant dollar investment divert financial resources from the mission.

Attribute 3: Metric 1: Average Weighted Age of Each Medical Facility (Facilities)

Attribute: Physical Capacity and Facility Condition

BRAC Selection Criterion: (1) Mission Requirements & Impacts (2) Availability & Condition of Land & Facilities (4) Cost/Manpower

Data Required: Average Weighted Age (AWA) for each medical facility >2,000 SF will be provided by installation. This data will be weighted by facility size to determine a cumulative score for the installation.

Formula:
Installation AWA = Sum (Facility AWA X Facility Size) / Sum of Total Installation Size

Scoring:

Installation AWA (years)	Score
0 - 5	1.0
6 - 10	0.9
11 - 15	0.8
16 - 20	0.7
21 - 25	0.6
26 - 30	0.5
31 - 35	0.4
36 - 40	0.3
41 - 45	0.2
46 - 50	0.1
> 50	0.0

Rationale/Comments: Older facilities that have not been maintained on a regular basis degrade ability to perform mission.

Attribute 3: Metric 1: Training Programs Without Civilian Counterpart
Attribute: Military Unique
BRAC Selection Criterion: (1) Mission Requirements & Impacts (2) Availability & Condition of Land & Facilities (3) Ability to Accommodate Requirements to Support Operations & Training
Data Required: Number of Programs without Civilian Counterpart, and total number of training programs provided at the activity. List initial officer and enlisted programs separately from the advanced graduate programs.
Formula: Programs with All or Some Military Unique Components = $\dfrac{\text{Programs Military Unique Components (Programs offered at your activity)}}{}$ where Percentage of total training programs that have either some or all of their required elements which military unique components.
Rationale/Comments: Military specific training is required for sustainment and crucial to deployment readiness = higher value.

Attribute 3: Metric 2: Military Training Efficiency
Attribute: Military Unique
BRAC Selection Criterion: (1) Mission Requirements & Impacts (3) Ability to Accommodate Requirements to Support Operations & Training (4) Cost/Manpower
Data Required: Number of Initial Training Programs completed in less time than civilian equivalent programs, and total number of initial training programs for each activity.
Formula: Equivalent Programs Requiring Less Time = Initial Programs Completed In Less Time Than Civilian Equivalent (Programs offered at your activity) / Total Programs (Programs offered at your activity)   where   Percentage of total initial training programs that can produce graduates in less time than civilian equivalent programs.
Rationale/Comments: Permits service members to report for duty, and be fully functional more quickly = higher value.

Attribute 4: Metric 1: Civilian Joint Training
Attribute: Joint/Integrated Training Programs
BRAC Selection Criterion: (1) Mission Requirements & Impacts
Data Required: Number of Programs that are Jointly Sponsored by Civilian Institutions, and total number of training programs offered at each activity. Provide the initial officer and enlisted programs separately from the advanced graduate programs.
Formula: Joint Civilian Sponsored Programs = Programs Jointly Sponsored by Civilian Institutions (Programs offered at your activity) / Total Programs (Programs offered at your activity)   where   Percentage of total training programs that are jointly sponsored by Civilian Institutions.
Rationale/Comments: Utilizing local civilian programs to enhance military training = higher value.

Attribute 4: Metric 1: Interservice Integrated Training
Attribute: Joint/Integrated Training Programs
BRAC Selection Criterion: (1) Mission Requirements & Impacts
Data Required: Number of Interservice Integrated Programs, and Total Number of Training Programs offered at each activity. Provide initial officer and enlisted programs separately from advanced graduate programs.
Formula: $$\text{Interservice Integrated Programs} = \frac{\text{Interservice Integrated Programs (Programs offered at your activity)}}{\text{Total Programs (Programs offered at your activity)}}$$ where Percentage of total training programs that are interservice integrated.
Rationale/Comments: Conserves resources, increase the perspective of the service member and increases interoperability in theatre = higher value.

APPENDIX B

Table 10: Healthcare Services Value Scoring Plan

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
Criterion 1: *The current and future mission requirements and the impact on operational readiness of the Department of Defense's total force, including impacts on joint warfighting, training and readiness.*	45				The mission of the Military Health System is to enhance DoD and our nation's security by providing health support for the full range of military operations and sustaining the health of all those entrusted to our care
• **Attribute: Demand**		60			A facility's value in meeting the mission is primarily related to the population that it serves. By locating treatment facilities in major markets, that facility provides services to those located there and the population provides the necessary workload needed to keep providers current in their medical skills.
o **Metric**: Eligible population			70		Eligible populations make up the market that a facility could potentially serve.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
§ Question: What is the number of AD eligible for medical care within the inpatient catchment area and outpatient PRISM area?				85.7	Active duty members must get their care through the Military Health System. They have top priority for care in Military Treatment facilities. Keeping Active Duty members medically ready must be the highest priority.
§ Question: What is the number of ADFM eligible for medical care within the inpatient catchment area and outpatient PRISM area?				7.1	Active Duty Family Members have the next level of priority. Providing medical benefits for this population in military treatment facilities reduces stress on the member and enhances retention.
§ Question: What is the number of other beneficiaries eligible for medical care within the inpatient catchment area and the outpatient PRISM area?				7.1	Other eligible beneficiaries provide clinical cases not necessarily seen in active duty or their family members.
o **Metric:** Enrolled population			30		Beneficiaries who enroll with Military Treatment Facilities commit to having their care managed in exchange for lower co-payments. Facilities that have a large enrolled population are assured of a certain level of demand.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
§ Question: No Military value Question. Use Capacity Data Call DoD #542. Active Duty and Active Duty family members enrolled				66.7	Providing medical benefits for this population in military treatment facilities reduces stress on the member and enhances retention.
§ Question: No Military Value Question. Use Capacity Data Call DoD #542. Total enrolled				33.3	Other eligible beneficiaries provide clinical cases not necessarily seen in active duty or their family members.
• **Attribute: Civilian Capacity**		40			Military bases are many times located in remote or medically underserved areas. It is therefore of military value to provide health care services in these locations with military treatment facilities.
o **Metric:** Civilian/VA Beds			50		This metric measures the ability of the civilian community to provide inpatient care.
§ Question: # of civilian/VA hospitals				20	Lack of any civilian inpatient care facility increases the military value of a military treatment facility. The presence of only one civilian facility implies little competition in the area.
§ Question: # of civilian/VA beds				80	Indicates the ability of the civilian inpatient facilities to accommodate military beneficiaries.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
o **Metric:** Civilian/VA providers			50		This metric measures the ability of the civilian community to provide outpatient care.
§ Question: No Military Value question. Use HHS Area Resource File. # of Primary Care providers per population				60	Indicates the ability of the civilian primary care providers to accommodate military beneficiaries.
§ Question: No Military Value question. Use HHS Area Resource File. # of Specialty Care providers per population				25	Indicates the ability of the civilian specialty care providers to accommodate military beneficiaries.
§ Question: No Military Value question. Use HHS Area Resource File. # Dentists per Population				15	Indicated the ability of the civilian dental providers to accommodate military beneficiaries.
Criterion 2: The availability and condition of land, facilities and associated airspace, including training areas suitable for maneuver by ground, naval, or air forces throughout a diversity of climate and terrain areas and staging areas for the use of the Armed Forces in homeland defense missions, at both existing and potential receiving locations.	25				
• **Attribute: Physical Capacity and Facility Condition**		100			

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
o **Metric:** Facilities			100		

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
§ Question: For medical facilities (medical, funding source): What is the Installation Medical Facilities Average Weighted Age including all medical facilities greater than 2,000 SF on the Installation? Do not include stand-alone medical research and development buildings. Installations will complete a variable size grid that includes: building number, FAC code, Size (SF), Year Built, Building Average Weighted Age calculation, and Size x Building Average Weighted Age calculation. Amplification: Step 1: Calculate the Building Average Weighted Age of each medical facility greater than 2,000 SF to incorporate additions, alterations and renovations. Building Average Weighted Age = • (Building Age for that section of the building that has been renovated or addition * Building Size for that section of the building) / • Total Building Size				50	Older facilities that have not been maintained on a regular basis degrade ability to perform mission

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
Calculate the building age for that section of the building that has been renovated or addition by subtracting the year built (or renovated) from 2004. Building Size will be measured in Gross Square Feet. Alteration and renovation projects are considered in this calculation when they included major renovations that updated the engineering systems in this area. Minor alterations i.e. floor upgrades or minor wall changes do not constitute major renovations. For example if a 200,000 SF hospital was built in 1980 and had major renovations to 75,000 SF in 1995 and a 100,000 SF addition was added in 2002 then the Building Average Weighted Age for this facility would be: (125,000 SF x 24 years + 75,000 SF x 9 years + 100,000 SF x 2 years)/300,000 SF = 13 years and not 24 years that you would calculate if you only used the original year the facility was built. Note, round the calculation to the nearest whole year. Step 2: Calculate the Installation Medical Facilities Average Weighted Age. Installation Medical Facilities Average Weighted Age = • (Building Average Weighted Age * Building Size) / • Total					

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
Example: Continuing with the previous example, the Installation has a second medical facility consisting of a 100,000 SF building with a Building Average Weighted Age of 25. From the previous example, the first medical facility is 300,000 SF with a Building Average Weighted Age of 13 years. The Medical Facilities Installation Average Weighted Age would be: (100,000 SF x 25 years + 300,000 SF x 13 years) / (100,000 SF + 300,000 SF) = 16 years					

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
§ Question: For medical facilities (medical, funding source): What is the Installation Medical Facilities Condition Index including all medical facilities greater than 2,000 SF on the Installation? Do not include stand-alone medical research and development buildings. Installations will complete a variable size grid that includes: building number, FAC code, Cost of unexecuted projects, Plant Replacement Value (PRV), Building Medical Facility Condition Index (BMFCI) calculation, and BMFCI x PRV calculation. **Amplification:** Step1: Calculate the Building Medical Facilities Condition Index (BMFCI) for each medical facility greater than 2,000 SF. BMFCI = Total cost of unexecuted projects for that building / Plant Replacement Value (PRV) for that building Total cost of unexecuted projects includes all projects by facility with cost greater than $25,000 and without construction award by 15 Mar 04. Planned projects that have is replacing in this data call. Only list the new replacement facility under construction using its project cost as				50	Facilities requiring significant dollar investment divert financial resources from the mission.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
sufficient project information that a project number (either in a medical database, i.e. DMLSS or an Installation engineering database) and initial cost estimate have been developed but are not funded will be considered "unexecuted" projects. Include O&M and MILCON funded projects through FY07 - do not include projects programmed in FY08 – FY11. Plant Replacement Value (may also be called the Cost Replacement Value - CRV) is determined from the Facility Sustainment Model (FSM). Note: The BMFCI should typically be less than 1, but could be greater than 1 if a replacement facility (MILCON or O&M) is planned. If a replacement facility project is under construction, then it is "executed." Do not include the building that this project Example: An installation has two medical facilities a hospital (PRV = $40M) and a medical warehouse (PRV = $5M). A FY06 MILCON replacement hospital has been programmed (but not executed) at a cost of $50M. The FCI for the hospital is $50M/$40M = 1.25. There is a $50K planned renovation to the medical warehouse that will not start construction until Jul 04. The medical warehouse FCI is $50,000/$5,000,000 = 0.01 Step 2: Calculate the Installation					

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
IMFCI = • (Building Medical Facility Condition Index * PRV for that building) / • Total of all Buildings PRV Example: Continuing with the previous example, the IMFCI = (1.25 x $40M + 0.01 x $5M) / ($40M + $5M) = 1.11 Round the IMFCI to 2 decimal places.					
Criterion 3: *The ability to accommodate contingency, mobilization, and future total force requirements at both the existing and potential receiving locations to support operations and training.*	10				
• **Attribute: Operation/Mission Responsiveness**		100			
○ **Metric:** Class VIIIb (Blood)			40		
§ Question: For medical facilities: If your facility has FDA testing for blood, what is the actual number of units that you process per day, and what is the theoretical maximum you could process per day?				100	Pertains to those locations that perform FDA testing on site i.e., Fort Knox, Fort Hood, Lackland AFB. Services have limited locations that are capable of performing this function, and how much they are capable of producing.
○ **Metric: Class VIIIa**			20		

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
§ Question: For medical facilities: What percentage of the medical logistics warehouse storage space is physically attached to the primary medical facility on the Installation and does not require outside travel to access the primary medical facility?				100	The closer the warehouse, the lower the cost to handle materiel and shorter time to deliver. Lower costs occur when the warehouse in close proximity through reduction in manpower and vehicle costs.
o **Metric: Contingency Beds**			40		Measures the MTFs ability to provide inpatient care to increased number of casualties due to combat operations after being evacuated back to CONUS.
§ No military value question. Use capacity data question DOD #541 Medical Inpatient Beds.				100	Contingency beds as defined in capacity data call determine a hospitals potential capacity to provide inpatient care to casualties
Criterion 4: *The cost of operations and the manpower implications*	20				Cost effectiveness and throughput are a significant factor in determining the desirability of having a Military Treatment Facility.
• **Attribute: Cost/Efficiency**		40			Cost Effectiveness is measured by the cost per unit of workload. These are adjusted for the relative costliness of care provided in the civilian community.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
o **Metric**: Inpatient costs			35		Inpatient costs measure the cost of providing care for a discharge adjusted for the complexity of that discharge.
§ Question: What is the total inpatient cost (MEPRS A) for FY03?				100	See rationale for associated metric.
o **Metric:** Outpatient costs			50		Outpatient costs measure the cost of providing care for a visit adjusted for the complexity of that visit.
§ Question: What is the total outpatient cost (MEPRS B) for FY03?				100	See rationale for associated metric.
o **Metric:** Dental costs			15		Dental costs measure the cost of providing care for a visit adjusted for the complexity of that visit.
§ Question: What is the total dental cost (MEPRS C) for FY03?				100	See rationale for associated metric.
• **Attribute: Throughput**		60			Military Treatment Facilities that produce more workload reduce purchase care costs and, in general, have the ability to reduce costs because of economies of scale.
o **Metric:** Inpatient care			30		Measures the total volume of inpatient care adjusted for complexity.
§ **Question: What was the total number of RWPs produced in FY03?**				100	See rationale for associated metric.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
o **Metric: Outpatient care**			40		Measures the total volume of outpatient care adjusted for complexity.
§ Question: What was the total of number RVUs produced in FY03?				100	See rationale for associated metric.
o **Metric: Dental Care**			10		
§ Question: What was the total number of DWUs produced in FY03?				100	Dental work units describe the demand for care from the beneficiary poipulation
o **Metric: Pharmacy**			10		Providing prescription drugs is a major benefit. Furthermore, prescriptions provided in the Military Treatment Facilities, in general, cost the government less than those provided in civilian pharmacies because of government pricing.
§ Question: Total prescriptions				100	See rationale for associated metric.
o **Metric: Ancillary**			10		Measures the total volume of ancillary care adjusted for complexity.
§ Question: What was the total number of weighted radiological procedures produced in FY03?				77	Measures the volume of radiological procedures.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
§ Question: What was the total number of laboratory procedures produced in FY03?				23	Measures the volume of laboratory procedures.

Table 11: Formulas for Calculation of Healthcare Services Military Value Metrics

Metric 1.1: Active Duty Eligible Population

Attribute: A1: Demand

BRAC Selection Criterion:
(C1) Mission

Data Required: Number of Active Duty Members eligible for health care near a facility.

Question: For your permanently established medical/dental facilities, provide the following eligible population information as of September 2003:
- Active Duty (AD) eligible for medical care within the inpatient catchment area and outpatient PRISM area (mark N/A for catchment area population if the facility is not a hospital)

Amplification:
DEERS Extract of M2 (MHS Mart); Fiscal Month 12 Report
For dental only clinics, use the PRISM area of the closest medical facility

Scoring:
Score (for Hospitals)

Number of Eligibles	Score
Over 35,000	1.0
31,501-35,000	0.9
28,001-31,500	0.8
24,501–28,000	0.7
21,001-24,500	0.6
17,501-21,000	0.5
14,001-17,500	0.4
10,501-14,000	0.3
7,001-10,500	0.2
3,501-7,000	0.1

0-3,500	0.0

Score (for Clinics)

Number of Eligibles	Score
Over 12,000	1.0
10,801-12,000	0.9
9,601-10,800	0.8
8,401–9,600	0.7
7,201-8,400	0.6
6,001-7,200	0.5
4,801-6,000	0.4
3,601-4,800	0.3
2,401-3,600	0.2
1,201-2,400	0.1
0-1,200	0.0

Metric 1.2: Active Duty Family Member Eligible Population

Attribute: A1: Demand

BRAC Selection Criterion:
(C1) Mission

Data Required: Number of Active Duty Family Members eligible for health care near a facility.

Question: For your permanently established medical/dental facilities, provide the following eligible population information as of September 2003:
- Active Duty Family Members (ADFM) eligible for medical care within the inpatient catchment area and outpatient PRISM area (mark N/A for catchment area population if the facility is not a hospital)

Amplification:
DEERS Extract of M2 (MHS Mart); Fiscal Month 12 Report
For dental only clinics, use the PRISM area of the closest medical facility

Scoring:

Score (for Hospitals)

Number of AD Family Member Eligibles	Score
Over 45,000	1.0
40,501-45,000	0.9
36,001-40,500	0.8
31,501–36,000	0.7
27,001-31,500	0.6
22,501-27,000	0.5
18,001-22,500	0.4
13,501-18,000	0.3
9,001-13,500	0.2
4,501-9,000	0.1
0-4,500	0.0

Score (for Clinics)

Number of AD Family Member Eligibles	Score
Over 15,000	1.0
13,501-15,000	0.9
12,001-13,500	0.8
10,501–12,000	0.7
9,001-10,500	0.6
7,501-9,000	0.5
6,001-7,500	0.4
4,501-6,000	0.3
3,001-4,500	0.2
1,501-3,000	0.1
0-1,500	0.0

Metric 1.3: Other Eligible Population

Attribute: A1: Demand

BRAC Selection Criterion:
(C1) Mission

Data Required: Number of Other Beneficiaries eligible for health care near a facility.

Question: For your permanently established medical/dental facilities, provide the following eligible population information as of September 2003:
Non-Active Duty/Dependant (NAD/NADD) under 65 eligible for medical care within the inpatient catchment area and outpatient PRISM area (mark N/A for catchment area population if the facility is not a hospital)

Amplification:
DEERS Extract of M2 (MHS Mart); Fiscal Month 12 Report
For dental only clinics, use the PRISM area of the closest medical facility

Scoring:
Score (for Hospitals)

Number of Other Eligibles	**Score**
Over 70,000	1.0
63,001-70,000	0.9
56,001-63,000	0.8
49,001–56,000	0.7
42,001-49,000	0.6
35,001-42,000	0.5
28,001-35,000	0.4
21,001-28,000	0.3
14,001-21,000	0.2

7,001-14,000	0.1
0-7,000	0.0

Score (for Clinics)

Number of Other Eligibles	Score
Over 30,000	1.0
27,001-30,000	0.9
24,001-27,000	0.8
21,001–24,000	0.7
18,001-21,000	0.6
15,001-18,000	0.5
12,001-15,000	0.4
9,001-12,000	0.3
6,001-9,000	0.2
3,001-6,000	0.1
0-3,000	0.0

Metric 2.1: Active Duty Family Member Enrolled Population

Attribute: A1: Demand

BRAC Selection Criterion:
(C1) Mission

Data Required:
Capacity Data Call Question DOD #542: Medical /Dental Enrollment
Question: For your permanently established medical/dental facilities, provide the following enrollment information:
- Active Duty (AD) enrolled in TRICARE Prime

- Active Duty Family Members (ADFM) enrolled in TRICARE Prime
- Non-Active Duty/Dependant (NAD/NADD) under 65 enrolled in TRICARE Prime
- Non-Active Duty/Dependant (NAD/NADD) over 65 enrolled in TRICARE for Life (TFL)
- Non-Active Duty/Dependant (NAD/NADD) enrolled in Plus
- Total Enrolled Population excluding Plus

Source / Reference: DEERS Extract of M2 (MHS Mart); end of FY Report

Please fill in the following table(s)

Beneficiaries Enrolled in TRICARE Prime	AD (Pers)	ADFM (Pers)	NAD+NADD <65 (Pers)	NAD+NADD >65 (Pers)	Plus (Pers)	Total Enrolled Population excluding Plus (Pers)[3]
FY01						
FY02						
FY03						

Question: For your permanently established medical/dental facilities, provide the following enrollment information:
What is the total number of Active Duty Family Members (ADFM) enrolled in TRICARE Prime

Amplification:
DEERS Extract of M2 (MHS Mart); Fiscal Month 12 Report
For dental only clinics, use the PRISM area of the closest medical facility

Scoring:
Score (for Hospitals)

Active Duty Family Member Enrolled	Score
Over 20,000	1.0
18,001-20,000	0.9
16,001-18,000	0.8

[3] Source: TRICARE Management Agency (TMA), Falls Church, VA

14,001–16,000	0.7
12,001-14,000	0.6
10,001-12,000	0.5
8,001-10,000	0.4
6,001-8,000	0.3
4,001-6,000	0.2
2,001-4,000	0.1
0-2,000	0.0

Score (for Clinics)

Active Duty Family Member Enrolled	Score
Over 12,000	1.0
10,801-12,000	0.9
9,601-10,800	0.8
8,401–9,600	0.7
7,201-8,400	0.6
6,001-7,200	0.5
4,801-6,000	0.4
3,601-4,800	0.3
2,401-3,600	0.2
1,201-2,400	0.1
0-1,200	0.0

Metric 2.2: Other Enrolled Population
Attribute: A1: Demand
BRAC Selection Criterion: (C1) Mission
Data Required:

Capacity Data Call Question DOD #542: Medical /Dental Enrollment

Question: For your permanently established medical/dental facilities, provide the following enrollment information:
- Active Duty (AD) enrolled in TRICARE Prime
- Active Duty Family Members (ADFM) enrolled in TRICARE Prime
- Non-Active Duty/Dependant (NAD/NADD) under 65 enrolled in TRICARE Prime
- Non-Active Duty/Dependant (NAD/NADD) over 65 enrolled in TRICARE for Life (TFL)
- Non-Active Duty/Dependant (NAD/NADD) enrolled in Plus
- Total Enrolled Population excluding Plus

Source / Reference: DEERS Extract of M2 (MHS Mart); end of FY Report

Please fill in the following table(s)

Beneficiaries Enrolled in TRICARE Prime	AD (Pers)	ADFM (Pers)	NAD+NAD D <65 (Pers)	NAD+NAD D >65 (Pers)	Plus (Pers)	Total Enrolled Population excluding Plus (Pers)[4]
FY01						
FY02						
FY03						

Question: For your permanently established medical/dental facilities, provide the following enrollment information: Non-Active Duty/Dependant (NAD/NADD) under 65 enrolled in TRICARE Prime

Amplification:
DEERS Extract of M2 (MHS Mart); Fiscal Month 12 Report
For dental only clinics, use the PRISM area of the closest medical facility

Scoring:
Score (for Hospitals)

Other Enrolled	Score

[4] Source: TRICARE Management Agency (TMA), Falls Church, VA

Over 15,000	1.0
13,501-15,000	0.9
12,001-13,500	0.8
10,501–12,000	0.7
9,001-10,500	0.6
7,501-9,000	0.5
6,001-7,500	0.4
4,501-6,000	0.3
3,001-4,500	0.2
1,501-3,000	0.1
0-1,500	0.0

Score (for Clinics)

Other Enrolled	Score
Over 7,000	1.0
6,301-7,000	0.9
5,601-6,300	0.8
4,901–5,600	0.7
4,201-4,900	0.6
3,501-4,200	0.5
2,801-3,500	0.4
2,101-2,800	0.3
1,401-2,100	0.2
701-1,400	0.1
0-700	0.0

Metric 3.1: Civilian/VA Hospitals

Attribute: A2: Civilian Capacity

BRAC Selection Criterion:
(C1) Mission

Data Required: Number of Civilian/VA Hospitals from DHHS Area Resource File

Question: For your permanently established medical/dental facilities, provide the following enrollment information:
What is the number of civilian/VA hospitals within the catchment area?

Scoring:
Score (for Hospitals)

Civilian/VA Hospitals	Score
No Hospitals	1.0
1 Hospital	0.8
2 or more hospitals	0.0

Score (for Clinics)
0.0

Metric 3.2: Civilian/VA Hospitals Beds per population

Attribute: A2: Civilian Capacity

BRAC Selection Criterion:
(C1) Mission

Data Required: Number of Civilian/VA Hospital Beds per population from DHHS Area Resource File

Question: For your permanently established medical/dental facilities, provide the following enrollment information:
What is the number of civilian/VA hospital beds within the catchment area divided by the civilian population divided by civilian US average?

Scoring:

Score (for Hospitals)

Civilian/VA Hospital Beds per Population	Score
<81.9% Civilian Average	1.0
82%-83.9% Civilian Average	0.9
84%-85.9% Civilian Average	0.8
86%-87.9% Civilian Average	0.7
88%-89.9% Civilian Average	0.6
90%-91.9% Civilian Average	0.5
92%-93.9% Civilian Average	0.4
94%-95.9% Civilian Average	0.3
96%-97.9% Civilian Average	0.2
98%-99.9% Civilian Average	0.1
100% or more Civilian Average	0.0

Score (for Clinics)
0.0

Metric 4.1: Civilian Primary Care Providers per population

Attribute: A2: Civilian Capacity

BRAC Selection Criterion: (C1) Mission

Data Required: Number of Civilian Primary Care Providers per population from DHHS Area Resource File

Question: For your permanently established medical/dental facilities, provide the following enrollment information:
What is the number of Civilian Primary Care Providers within the catchment area/PRISM area divided by the civilian population divided by civilian US average?

Amplification: For hospitals, catchment area data will be used; for clinics PRISM area data will be used.

Scoring:
Score

Civilian Primary Care Providers within the catchment/PRISM area per Population	Score
<81.9% Civilian Average	1.0
82%-83.9% Civilian Average	0.9
84%-85.9% Civilian Average	0.8
86%-87.9% Civilian Average	0.7
88%-89.9% Civilian Average	0.6
90%-91.9% Civilian Average	0.5
92%-93.9% Civilian Average	0.4
94%-95.9% Civilian Average	0.3
96%-97.9% Civilian Average	0.2
98%-99.9% Civilian Average	0.1
100% or more Civilian Average	0.0

Metric 4.2: Civilian Specialty Providers per population

Attribute: A2: Civilian Capacity

BRAC Selection Criterion:
(C1) Mission

Data Required: Number of Civilian Specialty Providers per population from DHHS Area Resource File

Question: For your permanently established medical/dental facilities, provide the following enrollment information:
What is the number of Civilian Specialty Providers within the catchment area/PRISM area divided by the civilian population divided by civilian US average?

Amplification: For hospitals, catchment area data will be used; for clinics PRISM area data will be used.

Scoring:
Score

Civilian Specialty Providers within the catchment/PRISM area per Population	Score
<81.9% Civilian Average	1.0
82%-83.9% Civilian Average	0.9
84%-85.9% Civilian Average	0.8
86%-87.9% Civilian Average	0.7
88%-89.9% Civilian Average	0.6
90%-91.9% Civilian Average	0.5
92%-93.9% Civilian Average	0.4
94%-95.9% Civilian Average	0.3
96%-97.9% Civilian Average	0.2
98%-99.9% Civilian Average	0.1
100% or more Civilian Average	0.0

Metric 4.3: Civilian Dentists per population

Attribute: A2: Civilian Capacity

BRAC Selection Criterion:
(C1) Mission

Data Required: Number of Civilian Dentists per population from DHHS Area Resource File

Question: For your permanently established medical/dental facilities, provide the following enrollment information:
What is the number of Civilian Dnetists within the catchment area/PRISM area divided by the civilian population divided by civilian US average?

Amplification: For hospitals, catchment area data will be used; for clinics PRISM area data will be used.

Scoring:

Score (for Hospitals)

Dentists within the catchment/PRISM area per Population	Score
<81.9% Civilian Average	1.0
82%-83.9% Civilian Average	0.9
84%-85.9% Civilian Average	0.8
86%-87.9% Civilian Average	0.7
88%-89.9% Civilian Average	0.6
90%-91.9% Civilian Average	0.5
92%-93.9% Civilian Average	0.4
94%-95.9% Civilian Average	0.3
96%-97.9% Civilian Average	0.2
98%-99.9% Civilian Average	0.1
100% or more Civilian Average	0.0

Metric 5.1: Facilities (Installation Medical Facilities Condition Index - IMFCI)

Attribute: A3: Physical capability and facility condition

BRAC Selection Criterion:
(C2) Facilities

Data Required: Installation Medical Facilities Condition Index (IMFCI) for each medical facility > 2,000 SF.

Question: For medical facilities (medical, funding source): What is the Installation Medical Facilities Condition Index including all medical facilities greater than 2,000 SF on the Installation? Do not include stand-alone medical research and development buildings.

Installations will complete a variable size grid that includes: building number, FAC code, unexecuted projects cost, Plant Replacement Value (PRV), Building Medical Facility Condition Index (BMFCI) calculation, and BMFCI x PRV calculation.

	Bldg #	FAC Code	Unexecuted Project Cost	PRV	Building Medical Facility Condition Index (BMFCI)	BMFCI x PRV
Medical Facility #1						
Medical Facility #2						

Amplification:
Step1: Calculate the Building Medical Facilities Condition Index (BMFCI) for each medical facility greater than 2,000 SF.

BMFCI = Total cost of unexecuted projects for that building / Plant Replacement Value (PRV) for that building

Total cost of unexecuted projects includes all projects by facility with cost greater than $25,000 and without construction award by 15 Mar 04. Planned projects that have sufficient project information that a project number (either in a medical database, i.e. DMLSS or an Installation engineering database) and initial cost estimate have been developed but are not funded will be considered "unexecuted" projects. Include O&M and MILCON funded projects through FY07 - do not include projects programmed in FY08 – FY11.

Plant Replacement Value (may also be called the Cost Replacement Value - CRV) is determined from the Facility Sustainment Model (FSM).

Note: The BMFCI should typically be less than 1, but could be greater than 1 if a replacement facility (MILCON or O&M) is planned. If a replacement facility project is under construction, then it is "executed." Do not include the building that this project is replacing in this data call. Only list the new replacement facility under construction using its project cost as the PRV and having zero unexecuted facility projects – the FCI will be 0.

Example: An installation has two medical facilities a hospital (PRV = $40M) and a medical warehouse (PRV = $5M). A FY06 MILCON replacement hospital has been programmed (but not executed) at a cost of $50M. The FCI for the hospital is $50M/$40M = 1.25. There is a $50K planned renovation to the medical warehouse that will not start construction until Jul 04. The medical warehouse FCI is $50,000/$5,000,000 = 0.01

Step 2: Calculate the Installation Medical Facilities Condition Index (IMFCI):

IMFCI = • (Building Med ical Facility Condition Index * PRV for that building) / • Total of all Buildings PRV

Example: Continuing with the previous example, the IMFCI = (1.25 x $40M + 0.01 x $5M) / ($40M + $5M) = 1.112.

Round the IMFCI to 3 decimal places.

Scoring:

Installation Medical Facility Condition Index	Score
0.000 – 0.100	1.0
0.101 – 0.200	0.9
0.201 – 0.300	0.8
0.301 – 0.500	0.6
0.501 - 0.700	0.4
- 0.701 – 0.900	0.2
> 0.901	0.0

Metric 5.2: Facilities (Installation Medical Facilities Average Weighted Age)
Attribute: A3: Physical capability and facility condition
BRAC Selection Criterion:

(C2) Facilities

Data Required: Installation Medical Facilities Average Weighted Age for each medical facility > 2,000 SF.

Question: For medical facilities (medical, funding source): What is the Installation Medical Facilities Average Weighted Age including all medical facilities greater than 2,000 SF on the Installation? Do not include stand-alone medical research and development buildings.

Installations will complete a variable size grid that includes: building number, FAC code, Size (SF), Year Built, Building Average Weighted Age calculation, and Size x Building Average Weighted Age calculation.

	Building Number	FAC Code	Size (SF)	Year Built	Building Avg. Wt. Age (BAWA)	Size x BAWA
Medical Facility #1						
Medical Facility #2						

Amplification:

Step 1: Calculate the Building Average Weighted Age (BAWA) of each medical facility greater than 2,000 SF to incorporate additions, alterations and renovations.

Building Average Weighted Age (BAWA) = • (Building Age for that section of the building that has been renovated or addition * Building Size for that section of the building) / • Total Building Size

Calculate the building age for that section of the building that has been renovated or addition by subtracting the year built (or renovated) from 2004.

Building Size will be measured in Gross Square Feet.

Alteration and renovation projects are considered in this calculation when they included major renovations that updated the engineering systems in this area. Minor alterations i.e. floor upgrades or minor wall changes do not constitute major renovations.

For example if a 200,000 SF hospital was built in 1980 and had major renovations to 75,000 SF in 1995 and a 100,000 SF addition was added in 2002 then the Building Average Weighted Age for this facility would be: (125,000 SF x 24 years + 75,000 SF x 9 years + 100,000 SF x 2 years)/300,000 SF = 13 years and not 24 years that you would calculate if you only used the original year the facility was built. Note, round the calculation to the nearest whole year.

Step 2: Calculate the Installation Medical Facilities Average Weighted Age (IMFAWA).

Installation Medical Facilities Average Weighted Age (IMFAWA) = • (Building Average W eighted Age * Building Size) / • Total of all Buildings Size

Example: Continuing with the previous example, the Installation has a second medical facility consisting of a 100,000 SF building with a Building Average Weighted Age of 25. From the previous example, the first medical facility is 300,000 SF with a Building Average Weighted Age of 13 years. The Medical Facilities Installation Average Weighted Age would be: (100,000 SF x 25 years + 300,000 SF x 13 years) / (100,000 SF + 300,000 SF) = 16 years

Scoring:

Installation Medical Facilities Average Weighted Age (years)	Score
0 – 5	1.0
6 – 10	0.9
11 – 15	0.8
16 – 20	0.7
21 – 25	0.6
26 – 30	0.5
31 – 35	0.4
36 – 40	0.3
41 – 45	0.2
46 – 50	0.1
> 50	0.0

Rationale/Comments: Older facilities that have not been maintained on a regular basis degrade ability to perform mission.

Metric 6: Equipment - Medical Investment Equipment Age

Attribute: A3: Physical capacity and facility condition

BRAC Selection Criterion:
(C2) Facilities

Data Required: From Capacity Data Call, DOD #536 Medical/Dental Investment Equipment: Date of acquisition
Capacity Data Call Question DoD #536: Medical / Dental Investment Equipment
Question: For your permanently established medical/dental facilities, provide the following for each piece of Investment Equipment (>$250,000):
Source / Reference: Joint Medical Asset Repository (JMAR), Defense Medical Logistics Standard System (DMLSS), Defense Property Accountability System (DPAS), Service Legacy Systems

Please fill in the following table(s), adding rows as necessary

Equipment Nomenclature (Text)	Date of Acquisition (Text)	Date of Lease/Rent (Text)	# of Procedures performed in FY02 (Procedures)	# of Procedures in FY03 (Procedures)	Total # of hours equipment was fully operational in FY02 (Hrs/Yr)	Total # of hours equipment was fully operational in FY03 (Hrs/Yr)	Total # of procedures per hr per manufacturer's spec (Procedures)

Formula:

1. Calculate equipment age by subtracting acquisition date from 2003
2. Calculate a score for each piece of equipment

Equipment Age (years)	Score
0 – 3	1.0
4 – 6	0.7
7 – 9	0.4
> = 10	0.0

3. Calculate an average equipment score for the facility
Average Equipment Score = Sum of all equipment scores / number of pieces of equipment

4. Rank order facilities by average equipment score from youngest to oldest.

Scoring:

Rank Order	Score
#1 (youngest average equipment score)	1.0
#2	1.0 – 0.3/n = x
#n (oldest average equipment score)	0.3

Rationale/Comments: Indication of continued usefulness of medical equipment. Sets a baseline age for consideration of life-cycle cost.

**Data provided in capacity data call*

Metric 7.1: Blood (Installation Population)

Attribute:
(A4) Operations/mission responsiveness

BRAC Selection Criterion:
(C3) Contingency

Data Required:
From Military Value Data Call: For Medical Facilities: How many DoD civilians were located on the Installation in FY01, 02, 03?
From Capacity Data Call: DOD #542 Medical/Dental Enrollment: (1) number of Active Duty (AD) enrolled in TRICARE Prime, (2) number of Active Duty Family Members (ADFM) enrolled in Tricare Prime, (3) number of Non-Active Duty/Dependents under 65 (NAD +NADD < 65) enrolled in Tricare Prime; and DOD #543 Non-Permanent Party Utilizing Medical Resources (4) number of Non-permanent party personnel.

Capacity Data Call Question DOD #542: Medical /Dental Enrollment

Question: For your permanently established medical/dental facilities, provide the following enrollment information:
- Active Duty (AD) enrolled in TRICARE Prime
- Active Duty Family Members (ADFM) enrolled in TRICARE Prime
- Non-Active Duty/Dependant (NAD/NADD) under 65 enrolled in TRICARE Prime
- Non-Active Duty/Dependant (NAD/NADD) over 65 enrolled in TRICARE for Life (TFL)
- Non-Active Duty/Dependant (NAD/NADD) enrolled in Plus
- Total Enrolled Population excluding Plus

Source / Reference: DEERS Extract of M2 (MHS Mart); end of FY Report

Please fill in the following table(s)

Beneficiaries Enrolled in TRICARE Prime	AD (Pers)	ADFM (Pers)	NAD+NADD <65 (Pers)	NAD+NADD >65 (Pers)	Plus (Pers)	Total Enrolled Population excluding Plus (Pers)[5]
FY01						
FY02						
FY03						

[5] Source: TRICARE Management Agency (TMA), Falls Church, VA

Capacity Data Call Question DOD #543: Non-Permanent Party Utilizing Medical Resources

Question: For your permanently established medical/dental facilities, identify the Active Duty Student Load and reserve component personnel not permanently assigned to the catchment area but utilizing medical services in FY01, FY02 and FY03.

Source / Reference: Medical Facility Commander

Amplification: This captures all non-permanent party personnel not enrolled to your MTF but utilize the services of your MTF.

Please fill in the following information

Requested Information	Answers
Non permanent party personnel (FY01) (Pers)	
Non permanent party personnel (FY02) (Pers)	
Non permanent party personnel (FY03) (Pers)	

Formula:

1. Calculate the 3-year average (FY01-03) of the DoD Civilians located on the Installation.
2. Calculate the 3-year average (FY01-03) of the Active Duty (AD) enrolled in TRICARE Prime.
3. Calculate the 3-year average (FY01-03) of the AD Family Members (ADFM) enrolled in TRICARE Prime.
4. Calculate the 3-year average (FY01-03) of the Non-Active Duty/Dependent under 65 (NAD +NADD < 65) enrolled in TRICARE Prime.
5. Calculate the 3-year average (FY01-03) of the non-permanent party personnel.
6. Calculate the potential blood donor population by adding together the averages of DoD Civilians, AD, ADFM, NAD+NADFM, and non-permanent party populations.

Scoring:

Potential Blood Donor Population (Raw)	Score
> 8,000	1
4,000 – 8,000	0.5
< 4,000	0

Rationale/Comments: Blood is a perishable product with a shelf life of 35 – 42 days depending on the anticoagulant used. The only source of this product is human donors, hence the need for donors. While blood can be purchased from other commercial sources there is usually a shortage of product.

Metric 7.2: Blood (On-Site FDA Testing)
Attribute: (A4) Operations/mission responsiveness
BRAC Selection Criterion: (C3) Contingency
Data Required: (1) Actual number of blood units that a facility currently test per day. (2) Theoretical maximum number of blood units that a facility could process per day.
Formula: Rank order facilities from highest to lowest by number of current test per day, 1 to n. **Scoring:**

Rank Order	Score
#1 (highest current daily test)	1.0
#2	1.0 – 0.5/n = x
#n (lowest current daily test)	0.5

Rationale/Comments: The DoD has limited locations that are capable of performing this function.

Metric 8: Class VIIIA (Warehouse Proximity)

Attribute:
A4: Operations/mission responsiveness

BRAC Selection Criterion:
(C3) Contingency

Data Required: Percentage of warehouse storage space physically attached to the primary medical facility

Formula: None

Scoring:

% of warehouse storage space physically attached	Score
100	1.0
50 – 99	0.5
< 50	0.0

Rationale/Comments: The closer the warehouse, the lower the cost to handle materiel and shorter time to deliver. Lower costs occur when the warehouse is in close proximity through the reduction in manpower and vehicle costs.

Metric 9: Contingency Beds (Contingency Beds)

Attribute:
(A2) Operations/mission responsiveness

BRAC Selection Criterion:
(C3) Contingency beds

Data Required: From capacity data call DOD #541 Medical Inpatient Beds: Total Number of contingency beds

Capacity Data Call Question DOD #541: Medical Inpatient Beds

Question: For your permanently established medical/dental facilities, provide the number of Staffed, Equipped and Contingency Beds by type (ICU, OB, Other and Rooms not Currently Utilized for Inpatient care).

Source / Reference: Facility Commander, facility master plan

Amplification: 1. Staffed Bed - Bed that is actually staffed based on workload as opposed to the number of beds the hospital may have been built or configured to contain.
2. Equipped Bed - bed the hospital was originally built or subsequently reconfigured to support. Room must include electrical and medical gas utility support for each bed. Beds and other supporting equipment must be present and immediately available. Wheeling beds in the room from a storage room down the hall does not meet this requirement. Equipped beds may not necessarily be staffed, but are maintained as ready for use.
3. Contingency Bed - bed that can be used in wards or rooms designed for patient beds. Beds are spaced on six (6) foot centers and include embedded electrical and gas utilities support for each bed. Beds must be setup and ready within 72 hours. Use of portable gas or electrical utilities does not meet this requirement. This measure is applicable only for hospitals and medical centers. Expansion beds outside of the facility (gym, tentage, etc) are not considered for this measurement.
4. Patient rooms not being used for patient care, including all those being used as storage, break rooms, duty rooms, offices, etc.
5. OB beds include 1) Labor, Delivery, Recovery, Post-Partum (LDRPs) beds and 2) Post-Partum beds.

Please fill in the following table(s)

Medical/Dental facility rooms	ICU (Beds)	OB (Beds)	Other Beds (Beds)	Patient rooms not used for inpatient care (Beds)	Total Beds (excluding not used) (Beds)
Staffed					
Equipped					
Contingency					
Total					

Formula: None

Scoring:

Total Number of Contingency Beds	Score
> =100	1.0
50 –99	0.7
1 - 49	0.3

0	0	
Rationale/Comments: Determines a medical facilities military value to provide inpatient care to casualties.		

**Data provided in capacity data call*

Metric 10.1: Inpatient Costs

Attribute: A2: Cost/Efficiency

BRAC Selection Criterion:
(C4) Cost

Data Required: Average Inpatient Costs per RWP adjusted for local wage index

Question: For your permanently established medical facilities, what was the total inpatient cost (MEPRS A) for FY2003?
For your permanently established inpatient medical facilities, what was the total number of Relative Weighted Products (RWPs) produced in FY2003?
Local Wage Index from Centers for Medicare and Medicaid Services

Amplification: Average Inpatient Costs per RWP adjusted for local Wage index = Total Inpatient Cost/Total RWPs X Local Wage Index

Scoring:
Score (for Hospitals)

Average Inpatient Costs per RWP adjusted for local wage index	Score
7,500 or Less	1.0

7,501-8,000	0.9
8,001–8,500	0.8
8,501-9,000	0.7
9,001-9,500	0.6
9,501-10,000	0.5
10,001-10,500	0.4
10,501-11,000	0.3
11,001-11,500	0.2
11,501-12,000	0.1
12,001 or More	0.0

Score (for Clinics)
0.0

Metric 11.1: Outpatient Costs

Attribute: A2: Cost/Efficiency

BRAC Selection Criterion:
(C4) Cost

Data Required: Average Outpatient Costs per RVU adjusted for local wage index

Question: For your permanently established medical facilities, what was the total outpatient cost (MEPRS B) for FY2003?
For your permanently established medical facilities, what was the total number of simple work Relative Value Units (RVUs) produced in FY2003?
Local Wage Index from Centers for Medicare and Medicaid Services

Amplification: Average Outpatient Costs per RVU adjusted for local Wage index = Total Inpatient Cost/Total RVUs X Local Wage Index

Scoring:
Score (for Hospitals)

Average Outpatient Costs per RVU adjusted for local wage index	Score
125 or Less	1.0
126-135	0.9
136-145	0.8
146-155	0.7
156-165	0.6
166-175	0.5
176-185	0.4
186-195	0.3
196-205	0.2
206-215	0.1
216 or more	0.0

Score (for Clinics)

Average Outpatient Costs per RVU adjusted for local wage index	Score
110 or Less	1.0
111-140	0.9
141-170	0.8
171-200	0.7
201-230	0.6
231-260	0.5
261-290	0.4
291-320	0.3
321-350	0.2
351-380	0.1
381 or more	0.0

Metric 12.1: Dental Costs

Attribute: A2: Cost/Efficiency

BRAC Selection Criterion:
(C4) Cost

Data Required: Average Dental Costs per DWV adjusted for local wage index

Question: For your permanently established medical facilities, what was the total dental cost (MEPRS C) for FY2003?
For your permanently established medical facilities, what was the total number Dental Weighted Values (DWVs) produced in FY2003?
Local Wage Index from Centers for Medicare and Medicaid Services

Amplification: Average Dental Costs per DWV adjusted for local Wage index = Total Dental Cost/Total DWVs X Local Wage Index

Scoring:

Average Outpatient Costs per DWV adjusted for local wage index	Score
125 or Less	1.0
126-135	0.9
136-145	0.8
146-155	0.7
156-165	0.6
166-175	0.5
176-185	0.4
186-195	0.3
196-205	0.2
206-215	0.1
216 or more	0.0

Metric 13.1: Inpatient Care

Attribute: A2: Throughput

BRAC Selection Criterion:
(C4) Cost

Data Required: Number of RWPs

Question: For your permanently established inpatient medical facilities, what was the total number of Relative Weighted Products (RWPs) produced in FY2003?

Scoring:
Score (for Hospitals)

Total Number of RWPs	Score
More than 10,000	1.0
9,001-10,000	0.9
8,001–9,000	0.8
7,001-8,000	0.7
6,001-7,000	0.6
5,001-6,000	0.5
4,001-5,000	0.4
3,001- 4,000	0.3
2,001-3,000	0.2
1,001-2,000	0.1
0 – 1,000	0.0

Score (for Clinics)
0.0

Metric 14.1: Outpatient Care

Attribute: A2: Throughput

BRAC Selection Criterion:
(C4) Cost

Data Required: Number of RVUs

Question: For your permanently established medical facilities, what was the total number of simple work Relative Value Units (RVUs) produced in FY2003?

Scoring:

Score (for Hospitals)

Total Number of RVUs	Score
Over 450,000	1.0
405,001-450,000	0.9
360,001-405,000	0.8
315,001–360,000	0.7
270,001-315,000	0.6
225,001-270,000	0.5
180,001-225,000	0.4
135,001-180,000	0.3
90,001-135,000	0.2
45,001-90,000	0.1
0-45,000	0.0

Score (for Clinics)

Total Number of RVUs	Score
More than 100,000	1.0
90,001-100,000	0.9
80,001–90,000	0.8
70,001-80,000	0.7
60,001-70,000	0.6
50,001-60,000	0.5
40,001-50,000	0.4
30,001- 40,000	0.3
20,001-30,000	0.2
10,001-20,000	0.1

0 – 10,000	0.0

Metric 15.1: Dental Care

Attribute: A2: Throughput

BRAC Selection Criterion:
(C4) Cost

Data Required: Number of DWVs

Question: For your permanently established medical facilities, what was the total number of Dental Weighted Values (DWVs) produced in FY2003?

Scoring:

Total Number of DWVs	Score
More than 100,000	1.0
90,001-100,000	0.9
80,001–90,000	0.8
70,001-80,000	0.7
60,001-70,000	0.6
50,001-60,000	0.5
40,001-50,000	0.4
30,001- 40,000	0.3
20,001-30,000	0.2
10,001-20,000	0.1
0 – 10,000	0.0

Metric 16.1: Pharmacy

Attribute: A2: Throughput

BRAC Selection Criterion:
(C4) Cost

Data Required: Number of Prescriptions

Question: For your permanently established medical facilities, what was the total number of prescriptions (new and refills) produced in FY2003?

Scoring:
Score (for Hospitals)

Total Number of Prescriptions	Score
Over 800,000	1.0
720,001-800,000	0.9
640,001-720,000	0.8
560,001–640,000	0.7
480,001-560,000	0.6
400,001-480,000	0.5
320,001-400,000	0.4
240,001-320,000	0.3
160,001-240,000	0.2
80,001-160,000	0.1
0-8,0000	0.0

Score (for Clinics)

Total Number of Prescriptions	Score
More than 300,000	1.0
270,001-300,000	0.9
240,001–270,000	0.8

210,001-240,000	0.7
180,001-210,000	0.6
150,001-180,000	0.5
120,001-150,000	0.4
90,001- 120,000	0.3
60,001-90,000	0.2
30,001-60,000	0.1
0 – 30,000	0.0

Metric 17.1: Radiology
Attribute: A2: Throughput
BRAC Selection Criterion: (C4) Cost
Data Required: Number of Weighted Radiological Procedures
Question: For your permanently established medical facilities, what was the total number of weighted radiological procedures produced in FY2003? **Scoring:** Score (for Hospitals)

Total Number of Weighted Radiological Procedures	Score
More than 300,000	1.0
270,001-300,000	0.9
240,001–270,000	0.8
210,001-240,000	0.7
180,001-210,000	0.6
150,001-180,000	0.5
120,001-150,000	0.4
90,001- 120,000	0.3
60,001-90,000	0.2
30,001-60,000	0.1
0 – 30,000	0.0

Score (for Clinics)

Total Number of Weighted Radiological Procedures	Score
Over 35,000	1.0
31,501-35,000	0.9
28,001-31,500	0.8
24,501–28,000	0.7
21,001-24,500	0.6
17,501-21,000	0.5
14,001-17,500	0.4
10,501-14,000	0.3
7,001-10,500	0.2
3,501-7,000	0.1
0-3,500	0.0

Metric 17.1: Laboratory
Attribute: A2: Throughput
BRAC Selection Criterion: (C4) Cost
Data Required: Number of Weighted Laboratory Procedures
Question: For your permanently established medical facilities, what was the total number of weighted laboratory procedures produced in FY2003? **Scoring:** Score (for Hospitals)

Total Number of Weighted Laboratory Procedures	Score
More than 2,000,000	1.0
1,800,001-2,000,000	0.9
1,600,001–1,800,000	0.8
1,400,001-1,600,000	0.7
1,200,001-1,400,000	0.6
1,000,001-1,200,000	0.5
800,001-1,000,000	0.4
600,001- 800,000	0.3
400,001-600,000	0.2
200,001-400,000	0.1
0 – 200,000	0.0

Score (for Clinics)	
Total Number of Weighted Laboratory Procedures	Score
More than 160,000	1.0
144,001-160,000	0.9
128,001–144,000	0.8
112,001-128,000	0.7
96,001-112,000	0.6
80,001-96,000	0.5
64,001-80,000	0.4
48,001- 64,000	0.3
32,001-48,000	0.2
16,001-32,000	0.1
0 – 16,000	0.0

APPENDIX C

Table 12: Medical/Dental RDA Military Value Scoring Plan

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
Criterion 1: *The current and future mission capabilities and the impact on operational readiness of the Department of Defense's total force, including impacts on joint warfighting, training and readiness.*	54.6				Force health, both in terms of prevention and treatment, has a significant impact on readiness and warfighting capability. Through the execution of the medical/dental RDA mission, medical/dental RDA activities directly support the current and future mission needs of the DoD, and for this reason, the ability to fulfill the complete scope of the medical/dental RDA mission was deemed the most critical criterion.
• **Attribute: Mission Scope/Uniqueness**		31			The ability of a medical/dental RDA activity to support current and future force needs is derived from the extent of the mission that is supported. Activities that uniquely perform an identified subelement of the medical/dental RDA mission are of particular value because disruptions of their efforts strongly increases the risk of mission failure within that subelement of the mission.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
○ **Metric:** Capability Domains Supported in FY03			61		Capability domains define subelements of the mission and are areas in which efforts are needed to discover, develop, acquire and field the medical solutions (products and information) necessary to maintain the current and future operational readiness of the DoD total force. The number of capability domains reflects the fraction of the overall medical/dental RDA mission that an activity supports, and thus is a measure of its impact on current and future readiness and warfighting.
§ Question: Medical Capability Domains *(in Capacity Data Call)*				100	See rationale for associated metric.
○ **Metric:** Mission Uniqueness			39		Capability domains define subelements of the mission and are areas in which efforts are needed to discover, develop, acquire and field the medical solutions (products and information) necessary to maintain the current and future operational readiness of the DoD total force. An activity which has a high percentage of the total DoD workforce supporting a particular capability domain represents a unique resource within DoD and is therefore of high value (see rationale for associated attribute).

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
§ Question: Medical and Dental RDA Full Time Equivalents *(in Capacity Data Call)*				100	See rationale for associated metric.
• **Attribute: Workforce**		41			The medical/dental RDA workforce has a highly specialized set of skills that are the most important element for successful performance of the medical/dental RDA mission.
o **Metric:** Number of Research (S&T) Core Competencies Supported in FY03			12		Research core competencies define the specialties needed to discover and mature medical technologies (products and information) necessary to support the current and future operational readiness of the DoD total force. A workforce with multiple core competencies has a greater ability to perform all required elements of the medical/dental RDA mission, and therefore represents high value.
§ Question: Number of Research (S&T) Core Competencies Supported in FY03				100	See rationale for associated metric.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
○ **Metric:** Number of Advanced Development/Acquisition Core Competencies Supported in FY03			13		Advanced development/Acquisition core competencies define the specialties needed to develop, acquire and field the medical technologies (products and information) necessary to support the current and future operational readiness of the DoD total force. A workforce with multiple core competencies has a greater ability to perform all required elements of the medical/dental RDA mission, and therefore represents high value.
§ Question: Number of Advanced Development/Acquisition Core Competencies Supported in FY03				100	See rationale for associated metric.
○ **Metric:** Number of Research (S&T) Core Competencies With Ability To Support			26		Research core competencies define the specialties needed to discover and mature medical technologies (products and information) necessary to support the current and future operational readiness of the DoD total force. A workforce that has the ability to work within a relatively larger number of core competencies has a greater ability to flexibly apply its workforce as conditions or priorities change, and therefore represents a greater capacity to perform all required elements of the medical/dental RDA mission.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
§ Question: Number of Research and Development Core Competencies With Ability to Support				100	See rationale for associated metric.
o **Metric:** Number of Advanced Development/Acquisition Core Competencies With Ability To Support			19		Advanced development/Acquisition core competencies define the specialties needed to develop, acquire and field the medical technologies (products and information) necessary to support the current and future operational readiness of the DoD total force. A workforce that has the ability to work within a relatively larger number of core competencies has a greater ability to flexibly apply its workforce as conditions or priorities change, and therefore represents a greater capacity to perform all required elements of the medical/dental RDA mission.
§ Question: Number of Advanced Development/Acquisition Core Competencies With Ability To Support				100	See rationale for associated metric.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
○ **Metric:** Workforce Uniqueness			17		Core competencies define the areas needed to discover, mature, develop, acquire and field the medical technologies necessary to maintain the current and future operational readiness of the DoD total force. An activity which has a high percentage of the total DoD workforce supporting a particular core competency represents a unique resource within DoD whose loss could directly compromise the ability of DoD to perform a subelement of the medical/dental RDA mission. Such unique resources are therefore of relatively higher value.
§ Question: Number of Research (S&T) Core Competencies Supported in FY03; Number of Advanced Development/ Acquisition Core Competencies Supported in FY03				100	See rationale for associated metric.
○ **Metric:** Educational Level			13		Medical and dental research and development is a highly specialized endeavor, and educational level is an indicator of the specialization of a workforce to their task. A higher average education level represents a more specialized workforce that is likely to produce work of higher quality and may be difficult to replace, and is therefore considered to be of high value.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
§ Question: Number of Doctoral Degrees				68	Doctoral degrees (including Ph.D., M.D., and D.D.S. degrees) are generally mandatory for technical leadership of medical and dental R&D activities, and so the relative proportion of the workforce that holds such degrees is a contributor to the overall educational level.
§ Question: Number of Masters Degrees				25	Masters level degrees in scientific areas are often held by highly skilled technicians engaged in medical and dental R&D activities, and can contribute to the quality of performance. Professional masters degrees (such as M.B.A.'s) can also contribute to quality of work in less technical acquisition areas. Thus, the relative proportion of the workforce that holds such degrees is a contributor to the overall educational level.
§ Question: Number of Bachelors Degrees				7	Bachelors degrees are generally considered mandatory for basic laboratory technicians engaged in medical and dental R&D activities, and can contribute to the quality of performance in less technical acquisition areas. Thus, the relative proportion of the workforce that holds such degrees is a contributor to the overall educational level.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
• **Attribute: Physical Plant - Mission**		18			Effective performance of medical/dental RDA frequently requires specialized facilities or equipment. Those facilities or items of specialized equipment that are uniquely located at a single activity in DoD are of particular value because BRAC-related loss of access to these facilities/equipment items strongly increases the risk of mission failure within that subelement of the mission that is supported by the facility or equipment item.
o **Metric:** Facility Uniqueness			100		See rationale for associated attribute.
§ Question: Major Equipment and Facilities *(in Capacity Data Call)*				100	See rationale for associated attribute.
• **Attribute: Beneficial Relationships**		10			Medical/dental R&D is generally a highly collaborative effort, and relationships with other organizations are generally deemed beneficial as they increase the responsiveness, cost effectiveness, speed and/or quality of an effort.
o **Metric:** Jointness			65		Jointness is a measure of the benefit derived from existing relationships within DoD, and among organizations located together at a single installation. A high degree of jointness is considered beneficial to DoD, and is therefore of high value.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
§ Question: Mission Jointness; Funding Jointness; Workforce Jointness; Organization/ Management Jointness				100	Jointness is a concept that may be measured in several ways, none of which is necessarily more accurate than the other. Jointness may be indicated by interservice reliance as reflected by (a) performance of joint missions, (b) multi-service funding, (c) level of service diversity within the workforce, or (d) by the level of interservice sharing in organization costs and management functions. Of these 4 different parameters of jointness, the parameter that results in the highest military value score for a particular activity will be selected as the most accurate measure.
○ **Metric:** Collaborations & Agreements with Local Organizations			35		Local organizations, including other DoD or government activities, universities, industrial research organizations, etc., may provide resources that facilitate the accomplishment of the activity's, and therefore DoD's mission. The extent to which agreements exist with local organizations indicates the ability of the local environment to support the activity's needs, as well as the dependence of the activity on the local organizations. A high degree of collaboration is considered beneficial to the activity, and is therefore of high value.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
§ Question: Collaborations & Agreements with Local Organizations				100	See rationale for associated metric.
Criterion 2: *The availability and condition of land, facilities and associated airspace (including training areas suitable for maneuver by ground, naval, or air forces throughout a diversity of climate and terrain areas and staging areas for the use of the Armed Forces in homeland defense missions) at both existing and potential receiving locations.*	5.4				The condition of facilities and associated equipments contributes to the overall military value of a medical/dental RDA activity, as well-maintained facilities and equipment contribute to productivity and enhances workforce recruitment and retention in the long run.
• **Attribute: Physical Plant - Condition**		100			Medical/dental RDA activities are directly affected by the quality of the facilities (i.e., buildings) where the work is performed. These activities also may require specialized facilities and equipment in order to complete their mission.
○ **Metric:** Building Condition			25		The condition of the buildings is an indicator of the quality of the site for an activity, and is derived directly from the Building Medical Facility Condition Index (BMFCI), the ratio of the total cost of unexecuted projects for a building to its Plant Replacement Value.Buildings with low ratios are in good condition or require little investment, and therefore are of high value.
§ Question: Building Condition				100	See rationale for associated metric.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
○ **Metric:** Specialized Facility/ Equipment Utilization			75		Medical research and development may require specialized facilities/equipment. The usage of a particular facility or equipment item is an indicator of both the general value of the item (i.e., valuable items are used frequently) and the condition of the item (items in poor condition have significant down time). High usage levels are therefore of high value.
§ Question: Major Equipment and Facilities *(in Capacity Data Call)*				100	See rationale for associated metric.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
Criterion 3: *The ability to accommodate contingency, mobilization, and future total force requirements at both existing and potential receiving locations to support operations and training.*	22.6				A primary benefit of the DoD's medical/dental RDA programs is their ability to provide operational forces with specialized expert consultation on emergent problems and questions, and deployable operational support on an as-needed basis. These capabilities directly contribute to the success of current operations. The ability of RDA activities to provide this support is therefore a strong contributor to military value.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
• **Attribute: Operational Responsiveness**		100			The ability of a Medical/dental RDA activity to accommodate contingency, mobilization and force requirements is reflected by its operational responsiveness (support) during recent actions.
○ **Metric:** Operational Support Actions			100		Operational responsiveness is indicated by the level of effort an activity has historically extended to provide support to current operations (i.e., Global War on Terrorism thru the end of FY03). Operational support actions may include deployments, reachback consultations, provision of information products, provision of new equipment training, contracting actions to support operational needs, etc. A greater level of effort represents greater operational responsiveness, and is therefore of high value.
§ Question: Operational Support Actions				100	See rationale for associated metric.
Criterion 4: *The cost of operations and the manpower implications.*	17.4				Cost effectiveness is a principal business objective for all medical/dental RDA programs, and should be contributing factor when choosing among alternative activities that offer substantially similar capabilities to perform the mission.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
• **Attribute: Cost Effectiveness**		100			Cost and manpower implications are best expressed in terms of cost effectiveness, which is determined by the ratio of output to input invested. Medical/dental RDA activities, depending on their function, have a variety of outputs including information, procurements, logistical efforts, program management, and regulatory support. Full time equivalents (FTEs) is a more accurate measure of input than dollars invested, as traditional measures of cost such as funding executed by an activity do not necessarily reflect the true cost of the work to the government (see p. 4).
○ **Metric:** Science & Technology Output per FTE			27.5		The output of a medical research program is primarily informational - patents, papers and product transitions. An activity with a higher level of output per unit of workforce represents a more cost efficient effort, and is therefore of high value.
§ Question: Science & Technology Outputs				100	See rationale for associated metric.
○ **Metric:** Contracting Output (Value) per FTE			15		Contracting is one of several principal acquisition activities. An activity with a higher level of output per unit of workforce represents a more cost efficient effort, and is therefore of high value.
§ Question: Contracting Value				100	See rationale for associated metric.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
○ **Metric:** Logistics Management Actions per FTE			12		Logistics support is one of several principal acquisition activities. The total number of logistics management actions is a measure of the volume of logistics support work performed by an activity. An activity with a higher level of output per unit of workforce represents a more cost efficient effort, and is therefore of high value.
§ Question: Logistics Management Actions				100	See rationale for associated metric.
○ **Metric:** Products Managed (Value) per FTE			27.5		A principal acquisition function is product management. The total value of products managed is a measure of the volume of program management work performed. (Products in this case are defined as modernization items either in development, procurement, or fielding that are being handled as individual items.) An activity with a higher level of output per unit of workforce represents a more cost efficient effort, and is therefore of high value.
§ Question: Products Managed (Value)				100	See rationale for associated metric.

Element	Weight				Rationale
	Sel Crit	Attrib	Metric	Question	
○ **Metric:** Regulatory Actions per FTE			18		A KEY ACTIVITY FOR MEDICAL/DENTAL ACQUISITION ORGANIZATION IS THE ABILITY TO CONDUCT WORK IN COMPLIANCE WITH REGULATIONS GOVERNING HUMAN AND ANIMAL USE, AS WELL AS FOOD AND DRUG ADMINISTRATION (FDA) REGULATIONS GOVERNING MEDICAL PRODUCT DEVELOPMENT. THE NUMBER OF REGULATORY ACTIONS COMPLETED IS ONE MEASURE OF THE VOLUME OF REGULATORY AFFAIRS SUPPORT WORK PERFORMED. AN ACTIVITY WITH A HIGHER LEVEL OF OUTPUT PER UNIT OF WORKFORCE REPRESENTS A MORE COST EFFICIENT EFFORT, AND IS THEREFORE OF HIGH VALUE.
§ Question: Regulatory Actions				100	See rationale for associated metric.

Table 13: Formulas for Calculation of Medical/Dental Research, Development and Acquisition (RDA) Military Value Metrics

Metric 1.1: Capability Domains Supported in FY03 (CD_{FY03})
Attribute: Mission Scope/Uniqueness
BRAC Final Selection Criterion: (1) Mission Requirements & Impacts
Data Required: *Number of capability domains supported in FY03**   *Capacity Data Call Question DOD #554: Medical Capability Domains*   **Question:** For your Medical and Dental Research, Development, and Acquisition activities, enter "yes" in appropriate column(s) to identify those capability domains (a) that are supported within your activity's mission (i.e., for which your activity receives programmed funds or has programmed Full Time Equivalents), (b) in which direct mission-funded or reimbursable work was performed in FY03, or (c) that your activity possesses capability to support (i.e., domains for which your activity possesses appropriately skilled personnel and appropriate facilities). Identify all domains that apply. See the Amplification section for definitions of the capability domain that are listed in the table.   **Source / Reference:** Comptroller Records, Commander/Director Assessment   **Amplification:**   1. Direct question to installation activities performing Medical and Dental Research, Development, and Acquisition (RDA) functions.   2. The capability domains to be used in classifying an activity's capabilities are defined as follows: Basic Research: Biological Sciences. Basic research aimed at discovering and understanding fundamental biological principles and processes underlying military health and performance at the system/organism, cellular, subcellular, and molecular levels, and basic biomedical research focused on physiological and pathogenic mechanisms of militarily relevant injuries and diseases, and discovery of novel approaches to medical countermeasures.   Basic Research: Cognitive & Neural Science: Human Performance. Basic research aimed at determining and understanding psychological and neurological factors influencing human cognitive performance (including sensory processing and integration) under military operational conditions.   Technology Maturation: Chemical-Biological: Medical Chemical Defense. Technology maturation efforts (beyond basic research)

focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., drugs, diagnostics) and medical strategies for prevention, treatment, and management of casualties caused by chemical warfare agents.

Technology Maturation: Chemical-Biological: Medical Biological Defense. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., vaccines, drugs, diagnostics) and medical strategies for prevention, treatment, and management of casualties caused by biological warfare agents.

Technology Maturation: Biomedical: Infectious Diseases. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., vaccines, drugs, diagnostics, vector controls) and medical strategies for prevention and treatment of endemic infectious diseases of military importance.

Technology Maturation: Biomedical: Combat Casualty Care. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., diagnostic and therapeutic systems, drugs, biologicals) and medical and surgical strategies for medical management of combat casualties in field settings and during evacuation. Also includes efforts focused on technologies and strategies for prevention and field management of dental-related incapacitation.

Technology Maturation: Biomedical: Military Operational Medicine. Technology maturation efforts (beyond basic research), focused on developing information on human responses to environmental and occupational threats and/or systems hazards present in military operational settings, and on evaluating policy and doctrinal alternatives and exploring systems (e.g, warfighter monitoring, drugs, nutritional supplements) to prevent injury and performance degradation caused by these threats.

Technology Maturation: Biomedical: Medical Radiological Defense. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., diagnostic systems, drugs, biologicals) and medical strategies for prevention, treatment, and management of casualties caused by ionizing radiation.

Technology Maturation: Human Systems: Protection, Sustainment & Physical Performance. Technology maturation efforts (beyond basic research), focused on developing information on human systems interactions to support development of personal protective systems, and improve sustainment and physical performance. It includes combat clothing and individual equipment; combat rations and field-feeding equipment; logistics readiness; physical aiding and enhancement; vehicle escape and crash safety; warrior survival and rescue; aerial delivery; and dismounted, mounted, and aircrew warrior systems integration, including warfighter systems analysis.

Medical/Dental Acquisition: Pharmaceuticals & Biologicals. System development and demonstration activities and procurement activities directed towards the advanced development and initial fielding of novel pharmaceuticals and biologicals whose development is subject to the regulatory oversight of the U.S. Food and Drug Administration Centers for Drug Evaluation and Research and Biologics Evaluation and Research.

Medical/Dental Acquisition: Medical Devices. System development and demonstration activities and procurement activities directed towards the advanced development and initial fielding of novel medical devices whose development is subject to the regulatory oversight of the U.S. Food and Drug Administration Center for Devices and Radiological Health.

Medical/Dental Acquisition: COTS and Assemblages. Acquisition activities directed towards the procurement of commercial off the shelf (COTS) medical products and non-regulated medical support items for sustainment of TO&E units.

Medical/Dental Acquisition: Enterprise IM/IT Systems. Acquisition activities directed towards the development and procurement of medical enterprise information management/information technology systems.

Please fill in the following table(s)

Capability Domains	Within Activity Mission (Yes/No)[6]	Work Conducted in FY03 (Yes/No)[7]	Possess Capability to Support (Yes/No)[8]
Basic Research: Biological Sciences			
Basic Research: Cognitive & Neural Science: Human Performance			
Technology Maturation: Chem-Bio: Medical Chemical Defense			
Technology Maturation: Chem-Bio: Medical Biological Defense			
Technology Maturation: Biomedical: Infectious Diseases			
Technology Maturation: Biomedical: Combat Casualty Care			
Technology Maturation: Biomedical: Military Operational Medicine			
Technology Maturation: Biomedical: Medical Radiological Defense			
Tech Maturation: Human Sys: Protection Sustainment & Phys Perform			
Medical/Dental Acquisition: Pharmaceuticals &			

Biologicals			
Medical/Dental Acquisition: Medical Devices			
Medical/Dental Acquisition: COTS and Assemblages			
Medical/Dental Acquisition: Enterprise IM/IT Systems			

Question: No Military Value Data Call Question.

Formula:

$$CD_{FY03} = \frac{CD_a}{CD_{max}}$$

where
CD_a = Number of Capability Domains supported by Activity in FY03, and CD_{max} = Highest number of Capability Domains supported by any activity in FY03

Rationale/Comments: Higher number of capability domains supported = higher value. Data for each activity are normalized to the highest value reported by any activity.

**Data provided in capacity data call*

Metric 1.2: Mission Uniqueness (U_m)

Attribute: Mission Scope/Uniqueness

BRAC Final Selection Criterion: (1) Mission Requirements & Impacts

Data Required: *FTEs supporting each capability domain in FY03**

Capacity Data Call Question DOD #555: Full Time Equivalents

Question: For each medical and dental research, development, and acquisition activity at your installation, identify the capability domain and indirect category in which work was performed. Enter in the appropriate column (a) actual Full Time Equivalents (FTEs) supporting the domain for FY03; (b) actual FTEs for the peak year during the period from FY94 to FY03; and (c) the activity commander/technical director's estimated FTEs for a workforce optimized for maximum sustainable performance of your current mission. Capability domains are defined in the Amplification section. Actual FTEs to be reported for FY03 and the peak year are those FTEs that were supported by direct mission funding plus reimbursables and other sources. All FTEs for the activity must be counted: technical staff should be allocated to the appropriate capability domain, while the Management and Support indirect categories should be used for FTEs that are not directly allocable to a capability domain. For this question, FTE estimates should be provided for military, civilian government personnel, on-site contractors, and Intergovernmental Personnel Act appointees. For the Technical Director's estimate, the total FTEs across all capability domains and indirect categories should reflect the maximum estimated capacity of your facility, assuming that funding and personnel hiring restrictions were lifted, but that your facility is constrained to its current configuration (i.e., no expansion, space renovations or upgrades). One FTE is defined as 2087 hours per year. The peak year is defined as the year in which the total number of FTEs for the activity as a whole was maximal. If the facilities have been substantially altered since FY94, the peak year should only be selected from among those years following the conversion of the facility to its FY03 configuration.

Source / Reference: Personnel Records, Comptroller Records, Activity Commander/Technical Director

Amplification:

1. Direct question to installation activities performing Medical and Dental Research, Development, and Acquisition (RDA) functions.

2. Capability domains are defined as follows:

Basic Research: Biological Sciences. Basic research aimed at discovering and understanding fundamental biological principles and processes underlying military health and performance at the system/organism, cellular, subcellular, and molecular levels, and basic biomedical research focused on physiological and pathogenic mechanisms of militarily relevant injuries and diseases, and discovery of novel approaches to medical countermeasures.

Basic Research: Cognitive & Neural Science: Human Performance. Basic research aimed at determining and understanding psychological and neurological factors influencing human cognitive performance (including sensory processing and integration) under military operational conditions.

Technology Maturation: Chemical-Biological: Medical Chemical Defense. Technology maturation efforts (beyond basic research) focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., drugs, diagnostics) and medical strategies for prevention, treatment, and management of casualties caused by chemical warfare agents.

Technology Maturation: Chemical-Biological: Medical Biological Defense. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., vaccines, drugs, diagnostics) and medical strategies for prevention, treatment, and management of casualties caused by biological warfare agents.

Technology Maturation: Biomedical: Infectious Diseases. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., vaccines, drugs, diagnostics, vector controls) and medical strategies for prevention and treatment of endemic infectious diseases of military importance.

Technology Maturation: Biomedical: Combat Casualty Care. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., diagnostic and therapeutic systems, drugs, biologicals) and medical and surgical strategies for medical management of combat casualties in field settings and during evacuation. Also includes efforts focused on technologies and strategies for prevention and field management of dental-related incapacitation.

Technology Maturation: Biomedical: Military Operational Medicine. Technology maturation efforts (beyond basic research), focused on developing information on human responses to environmental and occupational threats and/or systems hazards present in military operational settings, and on evaluating policy and doctrinal alternatives and exploring systems (e.g, warfighter monitoring, drugs, nutritional supplements) to prevent injury and performance degradation caused by these threats.

Technology Maturation: Biomedical: Medical Radiological Defense. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., diagnostic systems, drugs, biologicals) and medical strategies for prevention, treatment, and management of casualties caused by ionizing radiation.

Technology Maturation: Human Systems: Protection, Sustainment & Physical Performance. Technology maturation efforts (beyond basic research), focused on developing information on human systems interactions to support development of personal protective systems, and improve sustainment and physical performance. It includes combat clothing and individual equipment; combat rations and field-feeding equipment; logistics readiness; physical aiding and enhancement; vehicle escape and crash safety; warrior survival and rescue; aerial delivery; and dismounted, mounted, and aircrew warrior systems integration, including warfighter systems analysis.

Medical/Dental Acquisition: Pharmaceuticals & Biologicals. System development and demonstration activities and procurement activities directed towards the advanced development and initial fielding of novel pharmaceuticals and biologicals whose development is subject to the regulatory oversight of the U.S. Food and Drug Administration Centers for Drug Evaluation and Research and Biologics Evaluation and Research.

Medical/Dental Acquisition: Medical Devices. System development and demonstration activities and procurement activities directed towards the advanced development and initial fielding of novel medical devices whose development is subject to the regulatory oversight of the U.S. Food and Drug Administration Center for Devices and Radiological Health.

Medical/Dental Acquisition: COTS and Assemblages. Acquisition activities directed towards the procurement of commercial off the shelf (COTS) medical products and non-regulated medical support items for sustainment of TO&E units.

Medical/Dental Acquisition: Enterprise IM/IT Systems. Acquisition activities directed towards the development and procurement of medical enterprise information management/information technology systems.

Please fill in the following table(s)

Capability Domain or Indirect Category	FY03 FTEs (FTEs)	Peak Year FTEs (FTEs)	Estimated Max FTEs (FTEs)	Confidence Level (Text)[9]
Basic Research: Biological Sciences				
Basic Research: Cognitive & Neural Science: Human Performance				
Technology Maturation: Chem-Bio: Medical Chemical Defense				
Technology Maturation: Chem-Bio: Medical Biological Defense				
Technology Maturation:				

Biomedical: Infectious Diseases				
Technology Maturation: Biomedical: Combat Casualty Care				
Technology Maturation: Biomedical: Military Operational Medicine				
Technology Maturation: Biomedical: Medical Radiological Defense				
Tech Maturation: Human Systems: Protection, Sustainment & Perf				
Medical/Dental Acquisition: Pharmaceuticals & Biologicals				
Medical/Dental Acquisition: Medical Devices				
Medical/Dental Acquisition: COTS and Assemblages				
Medical/Dental Acquisition: Enterprise IM/IT Systems				
Management				
Support				
TOTAL				

Question: No Military Value Data Call Question.

Formula:

$$U_m = \sum_{n=1}^{13}$$

CD_n (for Activity)

13

• CD_n (for Activity with highest number of domains uniquely supported)

n=1

where

CD_n = 1 if (Activity FTEs supporting $domain_n$ in FY03 ÷ DoD FTEs supporting $domain_n$ in FY03) $\geq$ 0.7, and
CD_n = 0 if (Activity FTEs supporting $domain_n$ in FY03 ÷ DoD FTEs supporting $domain_n$ in FY03) < 0.7.

Rationale/Comments: Activities whose FTEs supporting any single capability domain represent a high percentage (e.g., >70%) of the DoD's total FTEs supporting the domain in FY03 are relatively unique in providing the capability, and are higher value. A uniqueness subscore (i.e., 1 or zero) is determined for each of the 13 capability domains, and the total across all domains (i.e., the number of domains uniquely supported) provides the raw score for the activity. Raw scores for each activity are normalized to the highest value reported by any activity.

**Data provided in capacity data call*

Metric 2.1: Number of Research (S&T) Core Competencies Supported in FY03 (CCR_{FY03})

Attribute: Workforce

BRAC Final Selection Criterion: (1) Mission Requirements & Impacts

Data Required: Number of S&T core competencies supported in FY03

Question: In the table provided, identify the research (science & technology) core competencies that were supported in FY03 by the professional staff at your activity. Individuals should be reported if they were engaged in basic and/or applied research focusing on maturing technologies for transition into advanced development programs or on providing information products to other end users (for definitions of each core competency listed in the table, see Amplification section.) For each of the core competencies listed in the table, enter the number of professional personnel at your activity who both (1) have significant expertise within the competency area and (2) whose work in FY03 was best described by the indicated competency. Your response should be limited to DoD civilian and military employees. Significant expertise is defined as having either an advanced degree or certification in a field relevant to the competency, or having at least 2 years of direct work experience in the competency area. Individuals should only be counted against a single core competency (i.e., the total number of individuals across all competencies must equal the total number of professional staff within your activity who are directly engaged in research efforts).

Source: Personnel Records, Curricula Vitae, Staff Surveys

Formula:

$$CCR_{FY03} = \frac{CC(S\&T)_a}{CC(S\&T)_{max}}$$

where

$CC(S\&T)_a$ = Number of S&T core competencies supported by Activity in FY03, and

$CC(S\&T)_{max}$ = Highest number of S&T core competencies supported by any activity in FY03

Amplification: Research (S&T) core competency definitions are as follows:

- Vaccines for ID/BW Threats. Discover and mature technologies for vaccines to prevent and/or minimize morbidity and mortality caused by endemic pathogens and biological warfare agents
- Drugs/Biologicals for ID/BW Threats. Discover and mature technologies for drugs and non-vaccine biologicals to prevent and/or minimize morbidity and mortality caused by endemic pathogens and biological warfare agents
- Diagnostics for ID/BW Threats. Discover and mature technologies for test methods, reagents, and systems to diagnose infectious diseases and biological warfare agent exposure
- Countermeasures for Disease Vectors. Discover and mature technologies for capabilities (personal protective measures, vector controls and animal reservoir controls) to control transmission of infectious diseases

- Disease Surveillance Tools. Discover and mature technologies for detection, identification, and assessment of militarily relevant disease and biological threats
- BW Casualty Management Techniques. Discover/validate/disseminate medical management techniques for enhanced field treatment of casualties caused by biological warfare agents
- Drugs/Biologicals for Chemical Hazards and CW Threats. Discover and mature technologies for pharmaceuticals and biologicals for pretreatment, prophylaxis, immediate post-exposure treatment, and field medical management of individuals exposed to chemical hazards and CW agents
- Topical Protectants/Decontaminants for Chemical Hazards and CW Threats. Discover and mature technologies for skin protectants and decontaminants to prevent or remove chemical contamination
- Diagnostics for Chemical Hazards and CW Threats. Discover and mature technologies for diagnostic systems for management of casualties caused by chemical hazards and CW agents
- Therapeutic Systems for Chemical Hazards and CW Threats. Discover and mature technologies for therapeutic systems for management of casualties caused by chemical hazards and CW agents
- Chemical Hazard and Threat Assessment. Discover/validate information on and predictive models of human biological response to chemical hazards and threat agents associated with military systems or operational environments (to include both CW and non-CW agents); discover and mature technologies for detection, identification, and assessment of chemical hazards and threats; and sustain the DoD knowledge base to support development of non-medical materiel, operational doctrine, and guidance to operational commanders.
- Chemical Casualty Management Techniques. Discover and mature technologies for medical management techniques for enhanced field treatment of casualties caused by chemical hazards and threat agents
- Thermal Stress and Performance. Discover/validate information on and predictive models of human physiologic response to hypothermic and hyperthermic stresses; assess nutritional, pharmacological and behavioral countermeasures for such stresses; discover and mature technologies for systems for thermal stress monitoring; and sustain the DoD knowledge base to support development of non-medical materiel, operational doctrine, and guidance to operational commanders
- Hyperbaric/Hypobaric Stress and Performance. Discover/validate information on and predictive models of human physiologic response to hyperbaric and hypobaric stress; assess nutritional, pharmacological and behavioral countermeasures for such stresses; discover and mature technologies for systems for hyper/hypobaric stress monitoring; and sustain the DoD knowledge base to support development of non-medical materiel, operational doctrine, and guidance to operational commanders
- Cognitive/Emotional Stress and Performance. Discover/validate information on and predictive models of human psychological response to cognitive and emotional stresses (sleep deprivation, sustained task performance, traumatic situations, deployment); assess nutritional, pharmacological and behavioral countermeasures for such stresses; discover and mature technologies for systems for cognitive/emotional stress monitoring; and sustain the DoD knowledge base to support development of non-medical

materiel, operational doctrine, and guidance to operational commanders
- Biomechanical Stress and Physical Performance. Discover/validate information on and predictive models of human physiological response to biomechanical stresses associated with systems or occupational activities, assess physical and behavioral countermeasures for such stresses, assess physical and behavioral countermeasures for such stresses, and sustain the DoD knowledge base to support development of non-medical materiel, operational doctrine, and guidance to operational commanders
- RFR/Microwave Hazards and Threats. Discover/validate information on and predictive models of human physiological response to radio frequency and microwave range radiation; discover and mature technologies for dosimetric systems and countermeasures; and sustain the DoD knowledge base to support development of non-medical materiel, operational doctrine, and guidance to operational commanders
- Ocular Hazards and Visual Performance. Discover/validate information on and predictive models of human physiological response to laser radiation and other ocular hazards; assess physical, pharmacological and behavioral countermeasures for prevention or treatment of laser and other ocular injuries and enhancing visual performance; and sustain the DoD knowledge base to support development of non-medical materiel, operational doctrine, and guidance to operational commanders
- Auditory Hazards and Auditory Performance. Discover/validate information on and predictive models of human physiological response to auditory systems hazards; assess physical, pharmacological and behavioral countermeasures for prevention or treatment of auditory injuries; and sustain the DoD knowledge base to support development of non-medical materiel, operational doctrine, and guidance to operational commanders
- Sensorimotor Performance and Systems Hazards. Discover/validate information on and predictive models of human perception and psychological/psychomotor response to sensory stimuli associated with military systems and systems interfaces, assess physical and behavioral countermeasures for such stresses, and sustain the DoD knowledge base to support development of non-medical materiel, operational doctrine, and guidance to operational commanders
- Health Promotion. Discover/validate information on and predictive models of human health habits and behaviors in military populations, assess behavioral measures to increase health and well-being of military personnel, and sustain the DoD knowledge base to support development of operational doctrine and guidance to operational commanders.
- Hemorrhage Countermeasures. Discover and mature technologies for pharmaceuticals, biologicals, systems, and medical/surgical techniques for field medical management of hemorrhage.
- Hypovolemia Countermeasures. Discover/validate information on and predictive models of human physiological response to hypovolemia secondary to military trauma, and discover and mature technologies for pharmaceuticals, biologicals, diagnostic and therapeutic (i.e., life support) systems, and medical/surgical techniques to minimize morbidity and mortality caused by hypovolemia.
- Neurotrauma Countermeasures. Discover and mature technologies for pharmaceuticals and biologicals and medical/surgical techniques to minimize morbidity and mortality caused by penetrating head injuries.
- Mechanical Soft Tissue Trauma Countermeasures. Discover and mature technologies for pharmaceuticals, biologicals, systems, and medical/surgical techniques to minimize morbidity caused by mechanical trauma to soft tissues.
- Bone Trauma Countermeasures. Discover and mature technologies for pharmaceuticals, biologicals, systems, and medical/surgical techniques to minimize morbidity caused by mechanical trauma to bones (to include the large bones of extremities

and the maxillofacial region)
- Advanced Diagnostics and Treatment. Discover and mature technologies for systems to remotely monitor soldiers, to assist health care providers in triage and treatment of wounded soldiers, and to supply autonomous critical-care life support on the battlefield.
- Oral-Dental-Maxillofacial Complex Disease/Trauma Countermeasures. Discover and mature technologies for pharmaceuticals, biologicals, materials, equipment, and techniques for use by dental and non-dental health providers in the prognosis and prophylaxis of disease and the immediate post-episodic treatment of trauma and other urgencies or emergencies related to the Oral-Dental-Maxillofacial Complex.
- Drugs/Biologicals for Radiological Threats. Discover and mature technologies for pharmaceuticals and biologicals for pretreatment, prophylaxis, immediate post-exposure treatment, and field medical management of individuals exposed to prompt, protracted or low-dose ionizing radiation.
- Diagnostics for Radiological Threats. Discover and mature technologies for diagnostic systems for early triage and management of casualties caused by prompt, protracted or low-dose ionizing radiation.
- Radiological Casualty Management Techniques. Discover/validate/disseminate medical management techniques for enhanced field treatment of casualties caused by ionizing radiation.
- Medical/Dental Informatics, Modeling and Simulation. Discover and mature information and communications technologies for medical/dental modeling and simulation (e.g., operational simulations for training and planning, casualty prediction, medical logistics assessment, etc.).

Sample Table:

Core Competency	Number of Personnel
Vaccines for ID/BW Threats	
Drugs/Biologicals for ID/BW Threats	
Diagnostics for ID/BW Threats	
Countermeasures for Disease Vectors	
Disease Surveillance Tools	
BW Casualty Management Techniques	
Drugs/Biologicals for Chemical Hazards and CW Threats	
Topical Protectants/Decontaminants for Chemical Hazards and CW Threats	
Diagnostics for Chemical Hazards and CW Threats	
Therapeutic Systems for Chemical Hazards and CW Threats	

Chemical Hazard and Threat Assessment	
Chemical Casualty Management Techniques	
Thermal Stress and Performance	
Hyperbaric/Hypobaric Stress and Performance	
Cognitive/Emotional Stress and Performance	
Biomechanical Stress and Physical Performance	
RFR/Microwave Hazards and Threats	
Ocular Hazards and Visual Performance	
Auditory Hazards and Auditory Performance	
Sensorimotor Performance and Systems Hazards	
Health Promotion	
Hemorrhage Countermeasures	
Hypovolemia Countermeasures	
Neurotrauma Countermeasures	
Mechanical Soft Tissue Trauma Countermeasures	
Bone Trauma Countermeasures	
Advanced Diagnostics and Treatment	
Oral-Dental-Maxillofacial Complex Disease/Trauma Countermeasures	
Drugs/Biologicals for Radiological Threats	
Diagnostics for Radiological Threats	
Radiological Casualty Management Techniques	
Medical/Dental Informatics, Modeling and Simulation	

Rationale/Comments: Higher number of core competencies supported = higher value. Data for each activity are normalized to the highest value reported by any activity.

Metric 2.2: Number of Advanced Development/Acquisition Core Competencies Supported in FY03 (CCA_{FY03})
Attribute: Workforce
BRAC Final Selection Criterion: (1) Mission Requirements & Impacts
Data Required: Number of advanced development/acquisition core competencies supported in FY03

Question: In the table provided, identify the advanced development and other acquisition core competencies that were supported in FY03 by the professional staff at your activity. Individuals should be reported if they were engaged in system development and demonstration directed towards the advanced development and initial fielding of military medical systems, or other types of acquisition support. (For definitions of each core competency listed in the table, see Amplification section.) For each of the core competencies listed in the table, enter the number of professional personnel at your activity who both (1) have significant expertise within the competency area and (2) whose work in FY03 was best described by the indicated competency. Your response should be limited to DoD civilian and military employees. Significant expertise is defined as having either an advanced degree or certification in a field relevant to the competency, or having at least 2 years of direct work experience in the competency area. Individuals should only be counted against a single core competency (i.e., the total number of individuals across all competencies must equal the total number of professional staff within your activity who are directly engaged in performance of system development and demonstration and/or other non-R&D acquisition functions.

Source: Personnel Records, Curricula Vitae, Staff Surveys

Formula:

$$CCA_{FY03} = \frac{CC(AD\&A)_a}{CC(AD\&A)_{max}}$$

where
$CC(AD\&A)_a$ = Number of advanced development/acquisition core competencies supported by Activity in FY03, and
$CC(AD\&A)_{max}$ = Highest number of advanced development/acquisition core competencies supported by any activity in FY03

Amplification: Advanced Development/Acquisition Core competency definitions are as follows:
- Clinical Trial Management and Execution. Provide support in the planning, execution, and reporting process of clinical trial conduct. This involves protocol preparation, approval, conduct, support lab and regulatory procedures, data management, and study reports.
- Drug, Biologic, and Vaccine Development. Provide technical scientific/engineering support to the advanced development of new drugs and biologics. Includes conduct of related animal and compound studies, assay development, and provision of technical expert advice.
- Medical/Dental Device Engineering and Development. Provide technical, professional services in the form of market evaluation, test criteria development, technology insertion, configuration management, and other technical support functions required in advanced development or acquisition of FDA regulated medical devices.
- Information Management Software Engineering and Development. Provide technical support functions in the development of new medical/dental related software in support of the Military Health Care System or Service medical departments.
- Information Technology Engineering and Development. Provide technical support functions in he development or acquisition of

hardware that provides Information Technology platforms for operate software applications and necessary communication protocols.

- Contract Management and Support. Provide technical or functional support to the awarding or administration of a contract with an outside agency. This includes all forms of grants and contracts that provide a product or service that support the research, development, and acquisition.
- Integrated Logistics Support. Provide planning and initial management of logistics support for modernization items being introduced into the Service inventory. This includes all of the ILS functions such as maintenance, packaging, handling, type classification, etc.
- Medical/Dental Systems Test and Evaluation. Provides the planning and execution of technical and operational tests required to

fully support milestone decisions and/or product acceptance.

- Program and Inventory Management. Provide leadership to medical/dental product development and acquisition process to include oversight of sub-functions related to cost, schedule, and performance criteria, budgetary requirements and funding execution, customer and related organizational coordination, etc.

Sample Table:

Core Competency	Number of Personnel
Clinical Trial Management and Execution	
Drug, Biologic, and Vaccine Development	
Medical/Dental Device Engineering and Development	
Information Management Software Engineering and Development	
Information Technology Engineering and Development	
Contract Management and Support	
Integrated Logistics Support	
Medical/Dental Systems Test and Evaluation	
Program and Inventory Management	

Rationale/Comments: Higher number of core competencies supported = higher value. Data for each activity are normalized to the highest value reported by any activity.

Metric 2.3: Number of Research (S&T) Core Competencies With Ability To Support (CCR'_{FY03})
Attribute: Workforce
BRAC Final Selection Criterion: (1) Mission Requirements & Impacts
Data Required: Number of S&T core competencies with ability to support
Question: In the table provided, identify the number of professional staff located at your activity in FY03 who have significant expertise relevant to each listed research (science & technology) core competency, regardless of whether they were actually working in the competency area during FY03. (Research core competencies provide basic and/or applied research focusing on maturing technologies for transition into advanced development programs or on providing information products to other end users; for definitions of core competencies, see Amplification section.) Significant expertise is defined as having either an advanced degree or certification in a field relevant to the competency, or having at least 2 years of direct work experience in the competency area. Individuals who possess significant expertise in more than one competency may be counted against as many competencies as appropriate. Your response should be limited to DoD civilian and military employees. **Source:** Personnel Records, Curricula Vitae, Staff Surveys **Formula:** $$CCR'_{FY03} = \frac{CC(S\&T)'_a}{CC(S\&T)'_{max}}$$ where $CC(S\&T)'_a$ = Number of S&T core competencies with ability to support reported by Activity, and $CC(S\&T)'_{max}$ = Highest number of S&T core competencies with ability to support reported by any activity **Amplification**: Research (S&T) core competency definitions are as follows: - Vaccines for ID/BW Threats. Discover and mature technologies for vaccines to prevent and/or minimize morbidity and mortality caused by endemic pathogens and biological warfare agents - Drugs/Biologicals for ID/BW Threats. Discover and mature technologies for drugs and non-vaccine biologicals to prevent and/or minimize morbidity and mortality caused by endemic pathogens and biological warfare agents - Diagnostics for ID/BW Threats. Discover and mature technologies for test methods, reagents, and systems to diagnose infectious diseases and biological warfare agent exposure - Countermeasures for Disease Vectors. Discover and mature technologies for capabilities (personal protective measures, vector controls and animal reservoir controls) to control transmission of infectious diseases - Disease Surveillance Tools. Discover and mature technologies for detection, identification, and assessment of militarily relevant disease and biological threats

- BW Casualty Management Techniques. Discover/validate/disseminate medical management techniques for enhanced field treatment of casualties caused by biological warfare agents
- Drugs/Biologicals for Chemical Hazards and CW Threats. Discover and mature technologies for pharmaceuticals and biologicals for pretreatment, prophylaxis, immediate post-exposure treatment, and field medical management of individuals exposed to chemical hazards and CW agents
- Topical Protectants/Decontaminants for Chemical Hazards and CW Threats. Discover and mature technologies for skin protectants and decontaminants to prevent or remove chemical contamination
- Diagnostics for Chemical Hazards and CW Threats. Discover and mature technologies for diagnostic systems for management of casualties caused by chemical hazards and CW agents
- Therapeutic Systems for Chemical Hazards and CW Threats. Discover and mature technologies for therapeutic systems for management of casualties caused by chemical hazards and CW agents
- Chemical Hazard and Threat Assessment. Discover/validate information on and predictive models of human biological response to chemical hazards and threat agents associated with military systems or operational environments (to include both CW and non-CW agents); discover and mature technologies for detection, identification, and assessment of chemical hazards and threats; and sustain the DoD knowledge base to support development of non-medical materiel, operational doctrine, and guidance to operational commanders.
- Chemical Casualty Management Techniques. Discover and mature technologies for medical management techniques for enhanced field treatment of casualties caused by chemical hazards and threat agents
- Thermal Stress and Performance. Discover/validate information on and predictive models of human physiologic response to hypothermic and hyperthermic stresses; assess nutritional, pharmacological and behavioral countermeasures for such stresses; discover and mature technologies for systems for thermal stress monitoring; and sustain the DoD knowledge base to support development of non-medical materiel, operational doctrine, and guidance to operational commanders
- Hyperbaric/Hypobaric Stress and Performance. Discover/validate information on and predictive models of human physiologic response to hyperbaric and hypobaric stress; assess nutritional, pharmacological and behavioral countermeasures for such stresses; discover and mature technologies for systems for hyper/hypobaric stress monitoring; and sustain the DoD knowledge base to support development of non-medical materiel, operational doctrine, and guidance to operational commanders
- Cognitive/Emotional Stress and Performance. Discover/validate information on and predictive models of human psychological response to cognitive and emotional stresses (sleep deprivation, sustained task performance, traumatic situations, deployment); assess nutritional, pharmacological and behavioral countermeasures for such stresses; discover and mature technologies for systems for cognitive/emotional stress monitoring; and sustain the DoD knowledge base to support development of non-medical materiel, operational doctrine, and guidance to operational commanders
- Biomechanical Stress and Physical Performance. Discover/validate information on and predictive models of human physiological

response to biomechanical stresses associated with systems or occupational activities, assess physical and behavioral countermeasures for such stresses, assess physical and behavioral countermeasures for such stresses, and sustain the DoD knowledge base to support development of non-medical materiel, operational doctrine, and guidance to operational commanders
- RFR/Microwave Hazards and Threats. Discover/validate information on and predictive models of human physiological response to radio frequency and microwave range radiation; discover and mature technologies for dosimetric systems and countermeasures; and sustain the DoD knowledge base to support development of non-medical materiel, operational doctrine, and guidance to operational commanders
- Ocular Hazards and Visual Performance. Discover/validate information on and predictive models of human physiological response to laser radiation and other ocular hazards; assess physical, pharmacological and behavioral countermeasures for prevention or treatment of laser and other ocular injuries and enhancing visual performance; and sustain the DoD knowledge base to support development of non-medical materiel, operational doctrine, and guidance to operational commanders
- Auditory Hazards and Auditory Performance. Discover/validate information on and predictive models of human physiological response to auditory systems hazards; assess physical, pharmacological and behavioral countermeasures for prevention or treatment of auditory injuries; and sustain the DoD knowledge base to support development of non-medical materiel, operational doctrine, and guidance to operational commanders
- Sensorimotor Performance and Systems Hazards. Discover/validate information on and predictive models of human perception and psychological/psychomotor response to sensory stimuli associated with military systems and systems interfaces, assess physical and behavioral countermeasures for such stresses, and sustain the DoD knowledge base to support development of non-medical materiel, operational doctrine, and guidance to operational commanders
- Health Promotion. Discover/validate information on and predictive models of human health habits and behaviors in military populations, assess behavioral measures to increase health and well-being of military personnel, and sustain the DoD knowledge base to support development of operational doctrine and guidance to operational commanders.
- Hemorrhage Countermeasures. Discover and mature technologies for pharmaceuticals, biologicals, systems, and medical/surgical techniques for field medical management of hemorrhage.
- Hypovolemia Countermeasures. Discover/validate information on and predictive models of human physiological response to hypovolemia secondary to military trauma, and discover and mature technologies for pharmaceuticals, biologicals, diagnostic and therapeutic (i.e., life support) systems, and medical/surgical techniques to minimize morbidity and mortality caused by hypovolemia.
- Neurotrauma Countermeasures. Discover and mature technologies for pharmaceuticals and biologicals and medical/surgical techniques to minimize morbidity and mortality caused by penetrating head injuries.
- Mechanical Soft Tissue Trauma Countermeasures. Discover and mature technologies for pharmaceuticals, biologicals, systems, and medical/surgical techniques to minimize morbidity caused by mechanical trauma to soft tissues.
- Bone Trauma Countermeasures. Discover and mature technologies for pharmaceuticals, biologicals, systems, and medical/surgical techniques to minimize morbidity caused by mechanical trauma to bones (to include the large bones of extremities and the maxillofacial region)
- Advanced Diagnostics and Treatment. Discover and mature technologies for systems to remotely monitor soldiers, to assist health

care providers in triage and treatment of wounded soldiers, and to supply autonomous critical-care life support on the battlefield.
- Oral-Dental-Maxillofacial Complex Disease/Trauma Countermeasures. Discover and mature technologies for pharmaceuticals, biologicals, materials, equipment, and techniques for use by dental and non-dental health providers in the prognosis and prophylaxis of disease and the immediate post-episodic treatment of trauma and other urgencies or emergencies related to the Oral-Dental-Maxillofacial Complex.
- Drugs/Biologicals for Radiological Threats. Discover and mature technologies for pharmaceuticals and biologicals for pretreatment, prophylaxis, immediate post-exposure treatment, and field medical management of individuals exposed to prompt, protracted or low-dose ionizing radiation.
- Diagnostics for Radiological Threats. Discover and mature technologies for diagnostic systems for early triage and management of casualties caused by prompt, protracted or low-dose ionizing radiation.
- Radiological Casualty Management Techniques. Discover/validate/disseminate medical management techniques for enhanced field treatment of casualties caused by ionizing radiation.
- Medical/Dental Informatics, Modeling and Simulation. Discover and mature information and communications technologies for medical/dental modeling and simulation (e.g., operational simulations for training and planning, casualty prediction, medical logistics assessment, etc.).

Sample Table:

Core Competency	Number of Personnel
Vaccines for ID/BW Threats	
Drugs/Biologicals for ID/BW Threats	
Diagnostics for ID/BW Threats	
Countermeasures for Disease Vectors	
Disease Surveillance Tools	
BW Casualty Management Techniques	
Drugs/Biologicals for Chemical Hazards and CW Threats	
Topical Protectants/Decontaminants for Chemical Hazards and CW Threats	
Diagnostics for Chemical Hazards and CW Threats	
Therapeutic Systems for Chemical Hazards and CW Threats	
Chemical Hazard and Threat Assessment	
Chemical Casualty Management Techniques	

Thermal Stress and Performance	
Hyperbaric/Hypobaric Stress and Performance	
Cognitive/Emotional Stress and Performance	
Biomechanical Stress and Physical Performance	
RFR/Microwave Hazards and Threats	
Ocular Hazards and Visual Performance	
Auditory Hazards and Auditory Performance	
Sensorimotor Performance and Systems Hazards	
Health Promotion	
Hemorrhage Countermeasures	
Hypovolemia Countermeasures	
Neurotrauma Countermeasures	
Mechanical Soft Tissue Trauma Countermeasures	
Bone Trauma Countermeasures	
Advanced Diagnostics and Treatment	
Oral-Dental-Maxillofacial Complex Disease/Trauma Countermeasures	
Drugs/Biologicals for Radiological Threats	
Diagnostics for Radiological Threats	
Radiological Casualty Management Techniques	
Medical/Dental Informatics, Modeling and Simulation	

Rationale/Comments: Higher number of core competencies that can be supported = higher value. Data for each activity are normalized to the highest value reported by any activity.

Metric 2.4: Number of Advanced Development/Acquisition Core Competencies With Ability To Support (CCA'$_{FY03}$)
Attribute: Workforce
BRAC Final Selection Criterion: (1) Mission Requirements & Impacts
Data Required: Number of advanced development/acquisition core competencies with ability to support
Question: In the table provided, identify the number of professional staff located at your activity in FY03 who have significant expertise relevant to each listed advanced development/acquisition core competency, regardless of whether they were actually

working in the competency area during FY03. (For definitions of core competencies, see Amplification section.) Individuals who possess significant expertise in more than one competency may be counted against as many competencies as appropriate. For individuals who worked within a core competency area during FY03, significant expertise is defined as having either an advanced degree or certification in a field relevant to the competency, or having at least 2 years of direct work experience in the competency area. Individuals who did not work within a core competency area during FY03 may be counted as having significant expertise in the area if they have an appropriate certification for the acquisition lifecycle activity or at least 2 years of prior direct work experience within the competency area. Your response should be limited to DoD civilian and military employees.

Source: Personnel Records, Curricula Vitae, Staff Surveys

Formula:

$$CCA'_{FY03} = \frac{CC(AD\&A)'_a}{CC(AD\&A)'_{max}}$$

where
$CC(AD\&A)'_a$ = Number of advanced development/acquisition core competencies with ability to support reported by Activity, and
$CC(AD\&A)'_{max}$ = Highest number of advanced development/acquisition core competencies with ability to support reported by any activity

Amplification: Advanced Development/Acquisition Core competency definitions are as follows:
- Clinical Trial Management and Execution. Provide support in the planning, execution, and reporting process of clinical trial conduct. This involves protocol preparation, approval, conduct, support lab and regulatory procedures, data management, and study reports.
- Drug, Biologic, and Vaccine Development. Provide technical scientific/engineering support to the advanced development of new drugs and biologics. Includes conduct of related animal and compound studies, assay development, and provision of technical expert advice.
- Medical/Dental Device Engineering and Development. Provide technical, professional services in the form of market evaluation, test criteria development, technology insertion, configuration management, and other technical support functions required in advanced development or acquisition of FDA regulated medical devices.
- Information Management Software Engineering and Development. Provide technical support functions in the development of new medical/dental related software in support of the Military Health Care System or Service medical departments.
- Information Technology Engineering and Development. Provide technical support functions in he development or acquisition of hardware that provides Information Technology platforms for operate software applications and necessary communication protocols.
- Contract Management and Support. Provide technical or functional support to the awarding or administration of a contract with an

outside agency. This includes all forms of grants and contracts that provide a product or service that support the research, development, and acquisition.

- Integrated Logistics Support. Provide planning and initial management of logistics support for modernization items being introduced into the Service inventory. This includes all of the ILS functions such as maintenance, packaging, handling, type classification, etc.
- Medical/Dental Systems Test and Evaluation. Provides the planning and execution of technical and operational tests required to fully support milestone decisions and/or product acceptance.
- Program and Inventory Management. Provide leadership to medical/dental product development and acquisition process to include oversight of sub-functions related to cost, schedule, and performance criteria, budgetary requirements and funding execution, customer and related organizational coordination, etc.

Sample Table:

Core Competency	Number of Personnel
Clinical Trial Management and Execution	
Drug, Biologic, and Vaccine Development	
Medical/Dental Device Engineering and Development	
Information Management Software Engineering and Development	
Information Technology Engineering and Development	
Contract Management and Support	
Integrated Logistics Support	
Medical/Dental Systems Test and Evaluation	
Program and Inventory Management	

Rationale/Comments: Higher number of core competencies that can be supported = higher value. Data for each activity are normalized to the highest value reported by any activity.

Metric 2.5: Workforce Uniqueness (U_w)
Attribute: Workforce
BRAC Final Selection Criterion: (1) Mission Requirements & Impacts
Data Required: Number of professional staff supporting each research (S&T) and advanced development/acquisition core competency in FY03
Question: No Military Value Data Call Question - Derived from response to Questions 2.1 & 2.2 **Formula:** $$U_W = \frac{\sum_{n=1}^{41} CC_n \text{ (for Activity)}}{\sum_{n=1}^{41} CC_n \text{ (for Activity with highest number of core competencies uniquely supported)}}$$ where CC_n = 1 if (Activity FTEs supporting competency$_n$ in FY03 ÷ Number of DoD staff supporting competency$_n$ in FY03) $\geq$ 0.7, and CC_n = 0 if (Activity FTEs supporting competency$_n$ in FY03 ÷ Number of DoD staff supporting competency$_n$ in FY03) < 0.7.
Rationale/Comments: A total of 41 S&T and advanced development/core competencies have been identified by the MJCSG. Activities whose staff aligned to any single core competency represent a high percentage (e.g., $\geq$70%) of the DoD's total staff within the competency in FY03 are relatively unique in providing the competency, and are higher value. A uniqueness subscore (i.e., 1 or zero) is determined for each of the competencies (S&T and Advanced Development/Acquisition), and the total across all competencies (i.e., the number of competencies uniquely supported) provides the raw score for the activity. Raw scores for each activity are normalized to the highest value reported by any activity.

Metric 2.6: Educational Level (EDU)

Attribute: Workforce

BRAC Final Selection Criterion: (1) Mission Requirements & Impacts

Data Required: Number of technical and management staff at each degree level: bachelors, masters, and doctoral level (based on highest level of attainment)

Question 1: Provide the total number of technical and management (supervisory) staff engaged in science and technology (S&T) and advanced development/acquisition activities at your location for FY 03 who possess a doctoral degree (i.e.., Ph.D., M.D., D.D.S., etc.) as their highest degree level attained. Limit your response to DoD civilian and military employees.

Question 2: Provide the total number of technical and management (supervisory) staff engaged in science and technology (S&T) and advanced development/acquisition activities at your location for FY 03 who possess a masters degree (i.e.., M.S., M.A., M.B.A., etc.) as their highest degree level attained. Limit your response to DoD civilian and military employees.

Question 3: Provide the total number of technical and management (supervisory) staff engaged in science and technology (S&T) and advanced development/acquisition activities at your location for FY 03 who possess a bachelors degree as their highest degree level attained. Limit your response to DoD civilian and military employees.
Source: Personnel Records.

Formula:

$$EDU = \frac{AvgE_a}{AvgE_{max}}$$

where
$AvgE_a$ is the weighted average education score for the activity, defined as:

$AvgE_a = (0.103B + 0.372M + D)/(B + M + D)$

in which B, M and D are the number of technical and management staff at the activity with bachelors, masters, and doctoral degrees, respectively, as highest level of attainment and

$AvgE_{max}$ is the weighted average education score (determined as above) for the activity with the highest score.

Rationale/Comments: Higher average educational level is considered to be an indicator of value. Weights are assigned to each

degree level to indicate their relative desirability. Raw weighted average scores for each activity are normalized to the highest value reported by any activity.

Metric 3.1: Facility Uniqueness (U_F)
Attribute: Physical Plant: - Mission
BRAC Final Selection Criterion: (1) Mission Requirements & Impacts
Data Required: *Square footage and available workdays (as applicable) of specialized equipment and facilities of defined types**   *Capacity Data Call Question DOD #556: Medical Major Equipment and Facilities*   **Question**: Identify each medical and dental research, development and acquisition-related activities and equipment located with-in your facilities. Include in the list any formally approved major critical facilities or equipment, to include unique equipment and IM/IT infrastructure, that is/are planned for installation or procurement. For each reported item, select a type from the list provided in the 'Description' field, and identify in the appropriate field: (a) the location of the item (including activity name, installation, and building number, or for leased space, list city and street address);   (b) significant characteristics that define the capabilities of the facility or piece of equipment [e.g., operating characteristics, accreditations (type and year of accreditation), etc.];   (c) its square footage;   (d) the number of workdays the item was used in FY03;   (e) the total available workdays for the item in FY03; and   (f) the capability domain(s) for which the item was used at any time from FY01 through FY03 [see capability domain definitions in Amplification section; enter "Yes" for all that apply].   In determining the number of workdays used in FY03, do not include any usage of the facility or equipment for purposes other than its intended R&D function. Total available workdays for FY03 should be the number of actual workdays in FY03 less any days the facility/equipment item was unavailable for R&D due to requirements for routine maintenance, scheduled upgrades, inspections or other similar reasons.   Report, at a minimum, the following items, if such facilities/equipment are present at your activity, and under 'Characteristics', include the characteristics identified in parentheses after each: - Biosafety Level 2 Labs (list each suite as a separate item; identify whether there is an approved biosurety plan for the facility)   - Biosafety Level 3 Labs (list each suite as a separate item; identify whether there is an approved biosurety plan for the facility)   - Biosafety Level 4 Labs (list each suite as a separate item; identify whether there is an approved biosurety plan for the facility; identify whether the suite has aerosol capability)

- Dilute Chemical Surety Material Labs
- Chemical Surety Material Labs
- Hypobaric Chambers (list each chamber as a separate item; identify whether they are man-rated)
- Hyperbaric Chambers (list each chamber as a separate item; identify whether they are man-rated)
- Anechoic Chambers (list each chamber as a separate item)
- Climatic Chambers (list each chamber as a separate item; identify temperature and humidity ranges, wind or rain generation capability, etc.)
- AAALAC Accredited Animal Facilities (identify the total average census by species for FY 03 and the maximum census by species when the facility is at 100% overall usage)
- Man-rated Research Simulator Facilities (this category includes fixed- and rotary-wing aircraft, multi-axis ride platforms, G-force simulators, etc.; list each type as a separate item and specify the type in the 'Characteristics' field)
- cGMP Biological Production Plant (list each suite as a separate item)
- cGMP Pharmaceutical Production Plant (list each suite as a separate item)
- Genomic Chip Fabrication Facility (list each facility separately)
- Electron Microscope Facility (identify the different types of microscopes that are present and the number of each)
- Medical Imaging Device Facilities (list only those facilities used for research; identify the specific types of devices that are present, e.g., CT, NMR, Ultrasound, X-ray, etc., and the number of each type)
- Clinical Studies Areas (identify the number of beds included in the facility)

In addition to those items listed above, report any other major facilities/equipment, limited to those items that are (a) integral to the building in which they are located (e.g., require special engineering, such as reinforced floors, electromagnetic shielding, special ventilation, etc.) and (b) would cost at least $250 K to relocate. Use the “Other” designation in the ‘Description’ field for any items of this type, and provide a further identification of each item in the ‘Characteristics’ field.

Source / Reference: Facility Records as of 30 Sep 2003

Amplification:

1. Direct question to installation activities performing Medical and dental Research, Development, and Acquisition (RDA) functions.
2. Capability domains are defined as follows:

Basic Research: Biological Sciences. Basic research aimed at discovering and understanding fundamental biological principles and processes underlying military health and performance at the system/organism, cellular, subcellular, and molecular levels, and basic biomedical research focused on physiological and pathogenic mechanisms of militarily relevant injuries and diseases, and discovery of novel approaches to medical countermeasures.

Basic Research: Cognitive & Neural Science: Human Performance. Basic research aimed at determining and understanding psychological and neurological factors influencing human cognitive performance (including sensory processing and integration) under military operational conditions.

Technology Maturation: Chemical-Biological: Medical Chemical Defense. Technology maturation efforts (beyond basic research) focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., drugs, diagnostics) and medical strategies for prevention, treatment, and management of casualties caused by chemical warfare agents.

Technology Maturation: Chemical-Biological: Medical Biological Defense. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., vaccines, drugs, diagnostics) and medical strategies for prevention, treatment, and management of casualties caused by biological warfare agents.

Technology Maturation: Biomedical: Infectious Diseases. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., vaccines, drugs, diagnostics, vector controls) and medical strategies for prevention and treatment of endemic infectious diseases of military importance.

Technology Maturation: Biomedical: Combat Casualty Care. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., diagnostic and therapeutic systems, drugs, biologicals) and medical and surgical strategies for medical management of combat casualties in field settings and during evacuation. Also includes efforts focused on technologies and strategies for prevention and field management of dental-related incapacitation.

Technology Maturation: Biomedical: Military Operational Medicine. Technology maturation efforts (beyond basic research), focused on developing information on human responses to environmental and occupational threats and/or systems hazards present in military operational settings, and on evaluating policy and doctrinal alternatives and exploring systems (e.g, warfighter monitoring, drugs, nutritional supplements) to prevent injury and performance degradation caused by these threats.

Technology Maturation: Biomedical: Medical Radiological Defense. Technology maturation efforts (beyond basic research), focused on characterizing the feasibility, effectiveness and safety of candidate medical technologies (e.g., diagnostic systems, drugs, biologicals) and medical strategies for prevention, treatment, and management of casualties caused by ionizing radiation.

Technology Maturation: Human Systems: Protection, Sustainment & Physical Performance. Technology maturation efforts (beyond basic research), focused on developing information on human systems interactions to support development of personal protective systems, and improve sustainment and physical performance. It includes combat clothing and individual equipment; combat rations and field-feeding equipment; logistics readiness; physical aiding and enhancement; vehicle escape and crash safety; warrior survival and rescue; aerial delivery; and dismounted, mounted, and air-crew warrior systems integration, including warfighter systems analysis.

Medical/Dental Acquisition: Pharmaceuticals & Biologicals. System development and demonstration activities and procurement activities directed towards the advanced development and initial fielding of novel pharmaceuticals and biologicals whose development is subject to the regulatory oversight of the U.S. Food and Drug Administration Centers for Drug Evaluation and Research and Biologics Evaluation and Research.

Medical/Dental Acquisition: Medical Devices. System development and demonstration activities and procurement activities directed towards the advanced development and initial fielding of novel medical devices whose development is subject to the regulatory oversight of the U.S. Food and Drug Administration Center for Devices and Radiological Health.

Medical/Dental Acquisition: COTS and Assemblages. Acquisition activities directed towards the procurement of commercial off the shelf (COTS) medical products and non-regulated medical support items for sustainment of TO&E units.

Medical/Dental Acquisition: Enterprise IM/IT Systems. Acquisition activities directed towards the development and procurement of medical enterprise information management/information technology systems.

Please fill in the following information

Requested Information	Answers
Description (Text)10	
Location (Text)11	
Characteristics (Text)12	
Square Footage (SF)13	
FY03 Days Used (Day)14	
FY03 Days Available (Day)15	
Basic Research: Biological Sciences (Text)16	
Basic Research: Cognitive & Neural Science: Human Performance (Text)17	
Technology Maturation: Chem-Bio: Medical Chemical Defense (Text)18	
Technology Maturation: Chem-Bio: Medical Biological Defense (Text)19	
Technology Maturation: Biomedical: Infectious Diseases (Text)20	
Technology Maturation: Biomedical: Combat Casualty Care (Text)21	
Technology Maturation: Biomedical: Military Operational Medicine (Text)22	
Technology Maturation: Biomedical: Medical Radiological Defense (Text)23	

Tech Maturation: Human Sys: Protection Sustainment & Phys Perform (Text)24	
Medical/Dental Acquisition: Pharmaceuticals & Biologicals (Text)25	
Medical/Dental Acquisition: Medical Devices (Text)26	
Medical/Dental Acquisition: COTS and Assemblages (Text)27	
Medical/Dental Acquisition: Enterprise IM/IT Systems (Text)28	

Question: No Military Value Data Call Question.

Formula:

$$U_F = \frac{\sum_{n=1}^{m} F_n \text{ (for Activity)}}{\sum_{n=1}^{m} F_n \text{ (for Activity with highest number of unique facilities)}}$$

where
$F_n = 1$ if (Square footage or available workdays for items of type n for the activity ÷ square footage or available workdays for all items of type n within DoD) ≥ 0.7, and
$F_n = 0$ if (Square footage or available workdays for items of type n for the activity ÷ square footage or available workdays for all items of type n within DoD) < 0.7.
m = the total number of different types of specialized equipment and facilities identified by the MJCSG (or reported by activities in accordance with MJCSG criteria)

Rationale/Comments: Activities are higher value if they possess specialized equipment/facilities that are relatively unique in the DoD (i.e., the activity possesses ≥70% of the facilities of a particular type). A uniqueness subscore (i.e., 1 or zero) is determined for each of the different types of equipment/facilities, and the total across all types provides the raw score for the activity. Raw scores for each activity are normalized to the highest value reported by any activity.

**Data provided in capacity data call*

Metric 4.1: Jointness (J)

Attribute: Beneficial Relationships

BRAC Final Selection Criterion: (1) Mission Requirements & Impacts

Data Required: % FY03 funding supporting joint mission(s); % FY03 funding from Defense Agencies and "Other" Services; % FY03 workforce assigned from Defense Agencies and "Other" Services; level of organizational sharing (qualitative 5 point scale)

Question 1 (J_m): Identify (1) your total FY03 funding, and (2) the percentage of your FY03 funding that was executed to fulfill a DoD executive or lead agent responsibility or other Joint mission.

Question 2 (J_f): Identify (1) your total FY03 funding, and (2) the percentage of your FY03 funding that was received from Defense agencies or (for Service activities) from Defense agencies or Services other than the parent Service of your activity.

Question 3 (J_w): Identify (1) the number of individuals in your FY03 DoD workforce (military and civilian government employees), and (2) the percentage of your FY03 DoD workforce that was assigned from Defense agencies or (for Service activities) from Defense agencies or Services other than the parent Service of your activity.

Question 4 (J_o): Which of the following best describes your activity?

a) Service-unique organization with service-unique management

b) Service-unique organization co-located with other related service-unique organization(s), with limited (<25%) sharing of facilities (space or equipment) among co-located organizations

c) Service-unique organization co-located with other related service-unique organization(s), with limited (<25%) sharing of facilities among co-located organizations and partial sharing of management functions (e.g., administrative functions, acquisition/logistics support, facilities management, personnel management, etc.)

d) Service-unique organization co-located with other related service-unique organization(s), with extensive (25% or greater) sharing of facilities among co-located organizations, but no significant sharing of management functions

e) Service-unique organization co-located with other related service-unique organization(s), with extensive (25% or greater) sharing of facilities among co-located organizations and partial sharing of management functions (e.g., administrative functions, acquisition/logistics support, facilities management, personnel management, etc.)

f) Joint organization under a joint command structure, or part of a Defense agency

Formula:

$$J = \mathrm{MAX}\{J_m, J_F, J_W, J_O\}$$

where J_M = Mission Jointness, defined as the fraction of FY03 funding supporting joint mission(s),

J_F = Funding Jointness, defined as lesser of either (a) 1.0 or (b) 2 times the fraction of FY03 funding from Defense Agencies and "Other" Services,

J_W = Workforce Jointness, defined as lesser of either (a) 1.0 or (b) 2 times the fraction of the FY03 workforce assigned from Defense Agencies and "Other" Services, and

J_O = Organization/Management Jointness, the level of organizational sharing as defined by a qualitative 5 point scale:

Score **Description**

0.00 Service-unique organization with service-unique management

0.25 Service-unique organization co-located with other related service-unique organization(s), with limited (<25%) sharing of facilities (space or equipment) among co-located organizations

0.50 Service-unique organization co-located with other related service-unique organization(s), with limited (<25%) sharing of facilities among co-located organizations and partial sharing of management functions (e.g., administrative functions, acquisition/logistics support, facilities management, personnel management, etc.), *OR*

Service-unique organization co-located with other related service-unique organization(s), with extensive (25% or greater) sharing of facilities among co-located organizations, but no significant sharing of management functions

0.75 Service-unique organization co-located with other related service-unique organization(s), with extensive (25% or greater) sharing of facilities among co-located organizations and partial sharing of management functions (e.g., administrative functions, acquisition/logistics support, facilities management, personnel management, etc.)

1.00 Joint organization under a joint command structure, or part of a Defense agency

Rationale/Comments: Degree of Jointness is determined based on whichever of 4 different measures provides the highest score.

Metric 4.2: Collaborations & Agreements With Local Organizations (COLLAB)

Attribute: Beneficial Relationships

BRAC Final Selection Criterion: (1) Mission Requirements & Impacts

Data Required: Number of active formal collaborations and other agreements with organizations within 50 mile radius, *Technical FTEs**

Question: List all currently active collaborations or agreements that (a) facilitate accomplishing or performing your mission and (b) exist between your activity and an organization that is within a 50 mile radius of your activity. Such organizations may include operational military units, FFRDCs, universities and colleges, other government organizations, commercial activities, etc.. Limit your response to formal collaborations or agreements documented by memoranda of understanding, material transfer agreements, letters, or similar documentation. Do not include installation support agreements. For each collaboration or agreement, (1) identify the name of the organization with which the collaboration or agreement exists, and (2) provide a short (50 words or less) description of the purpose or nature of the collaboration or agreement.

Formula:

$$\text{COLLAB} = \frac{\left(\frac{\text{CA}}{\text{FTE}}\right)_{\text{Activity}}}{\left(\frac{\text{CA}}{\text{FTE}}\right)_{\text{Max}}}$$

where

CA is the number of active collaborations and other agreements for an activity in FY03,

FTE is the total number of Technical FTEs for the activity in FY03 (i.e., FTEs aligned to a Capability Domain), and $(\text{CA/FTE})_{max}$ is the ratio of collaborations & agreements per Technical FTE at the activity reporting the highest ratio

[If FTE for an activity equal zero, COLLAB is undefined and will be set to a normalized value of zero]

Amplification:

Sample Table:

Organization	Description

Rationale/Comments: Local organizations, to include other DoD or government activities, universities, industrial research organizations, etc., can provide resources that facilitate the accomplishment of the DoD mission. The extent to which agreements exist with local organizations indicates the ability of the local environment to support DoD needs. Since the number of such agreements is partly a function of the size of an activity, the number of agreements is first normalized to the size of the activity by dividing by Technical FTEs, and then the activity's raw score is normalized to the score of the activity having the highest number of agreements per FTE.

**Data provided in capacity data call*

Metric 5.1: Building Condition (B)

Attribute: Physical Plant: Condition

BRAC Final Selection Criterion: (2) Availability & Condition of Land & Facilities

Data Required: Building Medical Facility Condition Index (BMFCI); Building Square Footage

Question: Identify each medical and dental research, development and acquisition-related building within your activity, and provide the following information in the appropriate column:
- Name of the activity
- Installation where the building is located
- Building number
- Total square footage of building
- Building Medical Facility Condition Index (BMFCI) [BMFCI is defined as the ratio of the total cost of unexecuted projects for the building to the Plant Replacement Value for the building; see Amplification for further details of calculating BMFCI]

Formula:

$$B = 1 - \left(\sum_{n=1}^{m} \frac{(BMFCI_n)(SF_n)}{SF_{Total}} \right)$$

where $BMFCI_n$ is the Building Medical Facility Condition Index of the nth building,

SF_n is the square footage of the nth building,

SF_{Total} is the combined total square footage of all buildings for the activity, and

m is the total number of buildings for the activity

Amplification: BMFCI = Total cost of unexecuted projects for that building / Plant Replacement Value (PRV) for that building

Total cost of unexecuted projects includes all projects by facility with cost greater than $25,000 and without construction award by 15 Mar 04. Planned projects that have not been funded shall be considered as "unexecuted" projects if there is sufficient auditable project information (i.e., a project number has been established -- in a medical database such as DMLSS or an Installation engineering database -- and an initial cost estimate has been developed). Include O&M and MILCON funded projects through FY07

- do not include projects programmed in FY08 - FY11.

Plant Replacement Value (may also be called the Cost Replacement Value - CRV) is determined from the Facility Sustainment Model (FSM).

Sample Table:

Activity Name	Installation	Building Number	Square Feet	Building Medical Facility Condition Index

Rationale/Comments: Value is based on the weighted average condition across all buildings occupied by the activity, with weighting based on square footage. The Building Medical Facility Condition Index is the ratio of the total cost of unexecuted projects for that building to the Plant Replacement Value (PRV) for that building. A building with a low ratio (e.g., <.25) is in good condition and requires little or no investment, while a building in poor condition has a high ratio (>.75).

Metric 5.2: Specialized Facility/Equipment Utilization (SFUse)

Attribute: Physical Plant: Condition

BRAC Final Selection Criterion: (2) Availability & Condition of Land & Facilities

Data Required: *See Capacity Data Call Question DoD #556 - Medical Major Equipment and Facilities under Metric 3.1 (Facility Uniqueness), above. Data from this question (FY03 days used for each type of facility/equipment item) will be used to determine the value of the metric. No new question is required for the Military Value data call*

Formula:

$$SFUse = \frac{\left(\dfrac{\sum_{n=1}^{m} (\text{Days Used})_n}{365m} \right)_{\text{Activity}}}{\left(\dfrac{\sum_{n=1}^{m} (\text{Days Used})_n}{365m} \right)_{\text{Max (Activity with highest average utilization)}}}$$

where

$(\text{Days Used})_n$ = the number of days that the nth facility/equipment item was used in FY03, and

m = the number of specialized equipment/facility items reported by the activity

[If m=0, SFUse is undefined and will be set to a normalized value of zero]

Rationale/Comments: The number of days that a particular facility or equipment item is used is an indirect measure of both the general value of the item (i.e., valuable items are used frequently) and the condition of the item (items that are in poor condition have significant down time). Fractional FY03 usage (based on 365 days a year) is averaged across all items possessed by the activity, and normalized to the highest average fractional usage reported by any activity. Since some activities neither have nor need specialized equipment, this metric will be set to a normalized value of 1 (maximum value) when no specialized equipment is reported in order to avoid penalizing such activities.

Metric 6.1: Operational Support Actions ($OUTPUT_{Op}$)

Attribute: Operational Responsiveness

BRAC Final Selection Criterion: (3) Ability to Accommodate Requirements to Support Operations & Training

Data Required: Number of workdays spent in operational support actions conducted from 11 Sep 01 thru 30 Sep 03

Question: Identify the number of workdays (based on an 8 hour workday) spent in the conduct of operational support actions of any type during the period from 11 September 2001 through 30 September 2003. The following is a non-exhaustive list of types of support actions that should be included: individual deployments of personnel to support operational requirements; consultations provided from CONUS to operational forces; provision of new equipment training; provision of information products, such as information papers or pamphlets, in response to requests from operational forces; tests conducted to support operational needs; and contracts awarded to support operational needs. Other types of documented support actions should be included as deemed appropriate.

Formula:

$$OUTPUT_{Op} = \frac{OSA_a}{OSA_{max}}$$

where
OSA_a is the number of workdays for operational support actions (all types) conducted by the activity, and

OSA_{max} is the number of workdays for operational support actions conducted by the activity with the largest number of workdays for such support

Rationale/Comments: The ability of an activity to provide operational support is measured by the level of effort utilized in support actions conducted since the beginning of the Global War on Terrorism, thru the end of FY03. A variety of different operational support actions (to include deployments, reachback consultations, provision of information products, provision of new equipment training, contracting actions to support operational needs, etc.) may be conducted. Raw numbers are normalized to the activity with the highest number.

Metric 7.1: Science & Technology Output per FTE ($OUTPUT_{S\&T}$)

Attribute: Cost Effectiveness

BRAC Final Selection Criterion: (4) Cost & Manpower Implications

Data Required: FY03 Number of: patent disclosures, scientific papers (all types), and product transitions (to advanced development, procurement, or other end user); *S&T FTEs**

Question: Identify the number of (1) patent disclosures, (2) scientific papers, and (3) product transitions from science and technology programs completed by the activity in FY03. Scientific papers should include all types of papers, to include peer-reviewed publications, technical reports, book chapters, and peer-reviewed conference abstracts, with the exception that multiple publications of the same information in different types of papers (e.g., an abstract and a peer-reviewed publication describing the same work) should only be counted as a single paper. Abstracts that are not peer-reviewed may not be counted. Product transitions should include all transitions of materiel technologies or information products from science and technology programs to advanced development program managers, procurement activities, or other end users. (The number of transitions of information products should exclude any scientific papers counted separately in that category).

Formula:

$$OUTPUT_{S\&T} = \frac{(OST/FTE_{S\&T})_a}{(OST/FTE_{S\&T})_{max}}$$

where
$(OST/FTE_{S\&T})_a$ is the ratio of the number of patent disclosures, scientific papers and product transitions completed by the activity to the total number of S&T FTEs at the activity (i.e., FTEs aligned to an S&T Capability Domain), and

$(OST/FTE_{S\&T})_{max}$ is the ratio of the number of patent disclosures, scientific papers and product transitions completed by the activity to the total number of FTEs at the activity, for the activity with the highest ratio

[If $FTE_{S\&T} = 0$ for an activity, $OUTPUT_{S\&T}$ is undefined and will be set to a normalized value of zero]

Amplification:
Sample Table:

Output Type	Number
Patent Disclosures	
Scientific Papers	
Product Transitions	
Total	

Rationale/Comments: The scientific output, measured as the sum of all patents, papers and product transitions, normalized to the size of the activity by FTE, is an overall measure of cost effectiveness of the activity. All types of papers, to include peer reviewed publications, technical papers, book chapters, and peer-reviewed abstracts are considered equally, with the exception that multiple publications of the same information in different types of papers should be considered as only a single paper. Likewise, all types of product transitions are considered equally. Output per FTE for each activity are additionally normalized to the activity with the highest output per FTE.

**Data provided in capacity data call*

Metric 7.2: Contracting Output (Value) per FTE ($OUTPUT_{ConVal}$)

Attribute: Cost Effectiveness

BRAC Final Selection Criterion: (4) Cost & Manpower Implications

Data Required: Funded value of medical/dental RDA-related contracts awarded in FY03 that the activity either awarded or provided acquisition support for; FTEs devoted to contract support

Question: Identify (1) the funded value of medical/dental RDA-related contracts that were awarded in FY03 for which your activity either (a) served as the awarding organization, or (b) provided acquisition support, such as technical experts for Source Selection Boards; and (2) the total Full Time Equivalents for DoD employees (military and civilian) and support contractors performing medical/dental RDA-related contracting or contracting support functions during FY03.

Formula:

$$OUTPUT_{ConVal} = \frac{(OCV/FTE_{Con})_a}{(OCV/FTE_{Con})_{max}}$$

where

$(OCV/FTE_{Con})_a$ is the ratio of the funded value of medical/dental RDA-related contracts awarded in FY03 that the activity either awarded or provided acquisition support for, to the total number of FTEs at the activity involved in contract support, and

$(OCV/FTE_{Con})_{max}$ is the ratio of the funded value of medical/dental RDA-related contracts awarded in FY03 that the activity either awarded or provided acquisition support for, to the total number of FTEs at the activity involved in contract support, for the activity with the highest ratio

[If $FTE_{Con} = 0$ for an activity, $OUTPUT_{ConVal}$ is undefined and will be set to a normalized value of zero]

Amplification:

Sample Table:

Description	Number
Funded Value of Contracts ($K)	
Number of Contracting Support FTEs	

Rationale/Comments: Funded value of contracts awarded is one measure of the volume of contracting work performed. The ability to perform work efficiently increases value. Raw numbers for each activity are normalized to the number of contracting staff, and further normalized to the activity that had the greatest output per FTE in FY03.

Metric 7.3: Logistic Management Actions per FTE ($OUTPUT_{Log}$)

Attribute: Cost Effectiveness

BRAC Final Selection Criterion: (4) Cost & Manpower Implications

Data Required: Number of logistics management actions completed in FY03 (type classifications, requisitions, logistics support plans prepared, assemblages built, new equipment training plans completed, and fieldings supported); FTEs devoted to logistics management

Question: Identify (1) the number of logistics management actions (i.e., Type Classifications, Requisitions, Logistic Support Plans, Assemblages Built, New Equipment Training Plans, and Fieldings) completed by your activity in FY03, and (2) the total Full Time Equivalents for DoD employees (military and civilian) and support contractors devoted to logistics management during FY03.

Formula:

$$OUTPUT_{Log} = \frac{(OLog/FTE_{Log})_a}{(OLog/FTE_{Log})_{max}}$$

where

$(OLog/FTE_{Log})_a$ is the ratio of the number of logistics management actions completed by the activity in FY03 to the total number of logistics management FTEs at the activity, and

$(OLog/FTE_{Log})_{max}$ is the ratio of the number of logistics management actions completed by the activity in FY03 to the total number of logistics management FTEs at the activity, for the activity with the highest ratio

[If $FTE_{Log} = 0$ for an activity, $OUTPUT_{Log}$ is undefined and will be set to a normalized value of zero]

Amplification:

Sample Table:

Description	Number
Number of Logistics Management Actions Completed	
Number of Logistics Management FTEs	

Rationale/Comments: Number of logistics management actions is one measure of the volume of logistics support work performed. The ability to perform work efficiently increases value. Raw numbers for each activity are normalized to the number of logistics management staff, and further normalized to the activity that had the greatest output per FTE in FY03.

Metric 7.4: Products Managed (Value) per FTE ($OUTPUT_{PMVal}$)
Attribute: Cost Effectiveness
BRAC Final Selection Criterion: (4) Cost & Manpower Implications
Data Required: Total FY03 funds for all products managed in FY03; FTEs devoted to acquisition program management

Question: Identify (1) the total FY03 funds for all products managed by your activity during FY03, and (2) the total Full Time Equivalents for DoD employees (military and civilian) and support contractors devoted to acquisition Program Management during FY03. Products are defined as modernization items that are in either advanced development, procurement, or fielding and are being handled as individual items. Assemblages are to be considered as a single product regardless of the number of component items.

Formula:

$$OUTPUT_{PMVal} = \frac{(OPV/FTE_{PM})_a}{(OPV/FTE_{PM})_{max}}$$

where
$(OPV/FTE_{PM})_a$ is the ratio of the total FY03 funds for all products managed by the activity in FY03 to the total number of acquisition program management FTEs at the activity, and

$(OPV/FTE_{PM})_{max}$ is the ratio of the total FY03 funds for all products managed by the activity in FY03 to the total number of acquisition program management FTEs at the activity, for the activity with the highest ratio

[If FTE_{PMVal} = 0 for an activity, $OUTPUT_{PMVal}$ is undefined and will be set to a normalized value of zero]

Amplification:
Sample Table:

Description	Number
FY03 Product Funding ($K)	
Number of Acquisition Program Management FTEs	

Rationale/Comments: Total value of products managed is one measure of the volume of program management work performed. (Products in this case are defined as modernization items either in development, procurement, or fielding that are being handled as individual items. Assemblages are considered as one product regardless of the number of components items.) The ability to perform work efficiently increases value. Raw numbers for each activity are normalized to the number of program management staff, and further normalized to the activity that had the greatest output per FTE in FY03.

Metric 7.5: Regulatory Actions per FTE ($OUTPUT_{Reg}$)

Attribute: Cost Effectiveness

BRAC Final Selection Criterion: (4) Cost & Manpower Implications

Data Required: Number of regulatory actions completed in FY03 (animal care and use actions, Institutional Review Board protocol reviews, QA/QC monitoring reports completed, FDA discussions held, FDA submissions completed, environmental documents completed, and final clinical trials reports completed); FTEs devoted to regulatory affairs support and oversight

Question: Identify (1) the number of regulatory actions completed by your activity in FY03 in support of DoD medical/dental RDA programs, and (2) the total Full Time Equivalents for DoD employees (military and civilian) and support contractors devoted to regulatory affairs support and oversight during FY03. Regulatory actions are defined as animal care and use actions, Institutional Review Board protocol reviews, Quality Assurance/Quality Control monitoring documents completed, FDA discussions held, FDA submissions completed, environmental documents completed, and final research reports completed for regulatory oversight bodies (i.e., Institutional Review Boards, Animal Care and Use Committees, etc.).

Formula:

$$OUTPUT_{Reg} = \frac{(OReg/FTE_{Reg})_a}{(OReg/FTE_{Reg})_{max}}$$

where

$(OReg/FTE_{Reg})_a$ is the ratio of the number of regulatory actions completed by the activity in FY03 to the total number of regulatory affairs support and oversight FTEs at the activity, and

$(OReg/FTE_{Reg})_{max}$ is the ratio of the number of regulatory actions completed by the activity in FY03 to the total number of regulatory affairs support and oversight FTEs at the activity, for the activity with the highest ratio

[If $FTE_{Reg} = 0$ for an activity, $OUTPUT_{Reg}$ is undefined and will be set to a normalized value of zero]

Amplification:

Sample Table:

Description	Number
Number of Regulatory Actions	
Number of Regulatory Affairs Support & Oversight FTEs	

Rationale/Comments: Number of regulatory actions completed is one measure of the volume of regulatory affairs support work performed. The ability to perform work efficiently increases value. Raw numbers for each activity are normalized to the number of

regulatory affairs support staff, and further normalized to the activity that had the greatest output per FTE in FY03.

MEDICAL JOINT CROSS-SERVICE GROUP

MILTARY VALUE REPORT

APRIL 26, 2005

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

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SECTION 1. INTRODUCTION

The Medical Joint Cross-Service Group (MJSCG) assembled this Military Value analysis to support the 2005 Department of Defense recommendations for base closures and realignments inside the United States.

The basic premise of the Medical Joint Cross-Service Group was to reduce excess capacity guided by military value, while preserving both the training platforms for military medics and ensuring adequate access to care for existing users of the military medical facilities. The TRICARE program of military treatment facilities and civilian contracts has matured greatly since its inception in 1993 and is serving the entire population effectively. In addition, training, as well as research, development and acquisition activities, are increasingly linked to both line and civilian capabilities. With a focus on the eight BRAC criteria, the overarching strategies of the Medical Joint Cross Service Group. The strategies should be the same} are:

- Maximizing military value while reducing infrastructure footprint
- Supporting warfighters and their families in peace and wartime
- Maintaining or improving access to care for all beneficiaries using combinations of the Direct Care and TRICARE systems
- Enhancing jointness by taking full advantage of commonalities in the Services' healthcare delivery methods; healthcare education and training; and medical/dental research, development and acquisition functions
- Identifying and Maximizing potential synergies gained from co-location or consolidation
- Examining DoD opportunities for out-sourcing, allowing the Department to better leverage the US health care system

1.1 STATEMENT OF APROACH

The MJCSG Military Value (MV) analysis included three sub functions: Healthcare Education and Training, Healthcare Services, and Medical/Dental Research, Development and Acquisition. The MJCSG scored these three sub functions individually and included an assessment of the facility's condition and ability to support the function. The three sub functions were then combined into a single military value score for each medical facility in accordance with Table 1. The weightings described in Table 1 where determined by the MJCSG principals as an appropriate measure of the relative scores for the military value sub functions. This weighting provides an avenue for assigning a relative military value for all medical activities that may be present at a location and is weighted towards the military Healthcare mission, Healthcare Services, without denying the significance of the other sub functional areas inherent to the medical mission.

Table 1 Composite Medical Military Value Score

Function	Weight
Healthcare Education & Training	20%
Healthcare Services	60%
Medical/Dental Research, Development & Acquisition	20%

1.2 MODIFICATION OF APPROVED APPROACH AND RATIONALE

The Campaign Plan depicted in the Medical JCSG's final Military Value Framework Report was followed with the following modifications:

1.21 EDUCATION AND TRAINING

Originally, the Education and Training function was parsed into four subordinate functions, Health Professions Education, Health Professions Entry-level Training, Health Professions Continuing Education, and Health Professions Management and Leadership Training. These subordinate functions, now three in number, are titled, Health Professions Entry-level Training, Health Professions Continuing Education, and Health Professions Graduate Training. The Medical JCSG determined these titles better represent the subordinate functions while maintaining the proper scope.

The Education and Training workgroup also identified a typographical error in the final Military Value Framework Report in the Final Selection Criteria. There are only seven metrics that describe the four attributes of Final Military Value Selection Criteria for Education and Training.

Upon review of the Education and Training scoring criteria, attributes, and metrics, the Medical JCSG eliminated the Information Technology metric associated with the Physical Capacity and Facility Condition attribute for Criterion 2. Although, an important aspect of a facility, the MJCSG determined that the existing cable plant would not be a decisive factor in the realignment and closure process. This decision was made before the release of the military value data call, and the corresponding question was not included. With the elimination of the Education and Training Information Technology metric, the weight of Facilities metric increased from 75% to 100%.

All other Education and Training Military Value data call questions were utilized in calculations.

The Education and Training workgroup, with concurrence of the Medical JCSG, modified values for Criterion 4. The attribute of Physical Capacity and Facility Condition weight was corrected to 70 with addition of a Military Unique Training attribute, weighted at 30. (This was mistakenly omitted from this table in the Military Value Framework document). Additionally the weight of *Sel Crit* decreased to 10 (Typo in Military Value Framework document).

The Education and Training workgroup identified improper terminology usage in the corresponding formula for use with DoD question # 2633. The correct terminology is Plant

Replacement Value rather than facility size. The corresponding table in the Military Value Framework has been modified to reflect this correction:

Question fielded replaced size with Plant Replacement Value (PRV)

Attribute 2: Metric 2: Facilities Condition Index (Facilities)

Attribute: Physical Capacity and Facility Condition

BRAC Selection Criterion: (1) Mission Requirements & Impacts (2) Availability & Condition of Land & Facilities (4) Cost/Manpower

Data Required: Facility Condition Index (FCI) for each medical facility >2,000 SF will be provided by installation. This data will be weighted by ~~facility size~~ Plant Replacement Value (PRV) to determine a cumulative score for the installation.

Formula:

Installation FCI = Sum (Facility FCI X ~~Facility Size~~ PRV)/ Sum of Total ~~Installation Size~~ PRV

Scoring:

Installation FCI	Score
0 - 0.050	1.0
0.051 - 0.100	.6
0.101 - 0.350	.3
> 0.350	0.0

Rationale/Comments: Facilities requiring significant dollar investment divert financial resources from the mission.

1.22 HEALTHCARE SERVICES

Healthcare Services modified the number of metrics, but not the type of attributes utilized in their Military Value Final Selection Criterion. The group eliminated a total of three Capacity data call questions, and one Military Value data call question from the Military Value scoring plan. The modifications were approved by the MJCSG. The questions eliminated were:

DoD Capacity question #536 regarding medical equipment and DoD Capacity questions #542 and #543, both addressing the potential military and military dependent population available for blood donation.

Military Value question #2618, addressing the potential DoD civilian population available for blood donation.

DoD question #536 was created to evaluate throughput and identify unique equipment resources. Reported results were so inconsistent as to be unusable. Issuance of a new question would have been required to resolve the extensive response discrepancies. The MJCSG evaluated the expected data range of the question and determined that it would not significantly alter results. With the elimination of the Equipment metric for criterion 2, Physical Capacity and Facility Condition attribute the weight of the Facility metric increased from 75% to 100%.

DoD questions #542 and #543 were to be used to determine the available military, and military dependent employee population as a potential blood donor pool. The questions resulted in a wide variety of responses. Upon reevaluation by the MJCSG, availability of a potential blood donor pool was found to not be a determining factor in the decision to realign or close a medical activity. The elimination of the question did not change the weight of the metric for Class VIII (Blood), Operation/Mission Responsiveness attribute for criterion 3.

DoD Military Value question # 2618 was to be used to determine the available DoD civilian employee population as a potential blood donor pool. The question resulted in a wide variety of responses. As the MJCSG found availability of a potential blood donor pool not to be a determining factor in the decision to realign or close a medical activity, the question was eliminated. The elimination of the question did not change the weight of the metric for Class VIII (Blood), Operation/Mission Responsiveness attribute for criterion 3.

The Healthcare Services working group corrected *Table 1: Healthcare Services Military Value Scoring Plan* and *Table 2, Healthcare Services Scoring Summary* in the Military Value Framework to reflect the above stated elimination the equipment metric and question from criterion 2 Facilities along with one population question from criterion 3, Contingency. In addition, *Appendix B, Table 2, Formulas for Calculation of Healthcare Services Military Value Metrics* was also updated.

The Healthcare Services working group corrected *Table 1: Healthcare Services Military Value Scoring Plan* in the Military Value Framework to accurately include the Dental Cost metric and related question.

The Healthcare Services workgroup requested change the title to the table named "*Relation of Attributes to Military Value Final Selection Criteria Medical Service Market Requirements*" to read, "*Relation of Attributes to Military Value Final Selection Criteria Healthcare Services*". In the early stages of MJCSG processes, the Healthcare Services function was named the Medical Service Market Requirement.

1.23 MEDICAL/DENTAL RESEARCH, DEVELOPMENT AND ACQUISITION

The RDA working group determined that the approved military value formula provided a score reflecting the overall military value of an activity with respect to the full breadth of activities encompassed by the medical/dental RDA function. This score did not differentiate values by sub-functions. Determining military value at the sub-function level is required for assessment of transformational alternatives, and the MJCSG computed a sub-function score from the overall score. The sub-function score for an activity is the overall score for the activity times the fraction of total full-time equivalents (FTEs) who worked in that sub-function during FY03. The sum of all sub-function scores for an activity equals the overall score for that activity. The underlying formula and metrics for determination of the overall score were not changed. The sub-functional MV scores and their basis were briefed to the Medical JCSG, along with the overall MV scores. Because the overall MV score depended on capability domains, the overall score was first calculated using the capability domain data, and then converted to the new sub functions based on FTE data that had been translated from capability domains into the new sub functions. This approach was approved b y the Medical JCSG.

All Medical/Dental Research Development and Acquisition Military Value data call questions were utilized in calculations.

SECTION 2. MILITARY VALUE SCORES

2.1 HEALTH CARE EDUCATION AND TRAINING

Installation/Location	Numerical Military Value
BROOKS_CITY-BASE	70.60
PENSACOLA	69.26
SHEPPARD_AFB	67.47
FORT_BRAGG	66.34
ANDREWS_AFB	63.56
NAVSTA_GREAT_LAKES	63.49
FORT_SAM_HOUSTON	62.95
NMC_PORTSMOUTH	61.62
NMC_SAN_DIEGO	60.35
KEESLER_AFB	57.42
LACKLAND_AFB	56.03
EGLIN_AFB	54.91
NWS_YORKTOWN	52.95
FORT_HOOD	48.10
OFFUTT_AFB	45.50
WALTER_REED_ARMY_MEDICAL_CENTER	44.25
TRAVIS_AFB	44.14
FORT_BELVOIR	43.80
FORT_CARSON	38.58
NNMC_BETHESDA	37.15
SCOTT_AFB	34.99
FORT_BENNING	33.18
FORT_LEWIS	31.34
FORT_JACKSON	31.31
WEST_POINT_MIL_RESERVATION	30.36
MACDILL_AFB	28.12
NELLIS_AFB	28.04
WRIGHT-PATTERSON_AFB	27.32
FORT_EUSTIS	27.20
LANGLEY_AFB	25.23
MCB_CAMP_LEJEUNE	24.73
TRIPLER_ARMY_MEDICAL_CENTER	24.71
FORT_GORDON	24.29
NAVSTA_NORFOLK	22.03
COLUMBUS_AFB	21.90
FORT_POLK	21.29
ELMENDORF_AFB	20.97
NAS_JACKSONVILLE	19.96
HOLLOMAN_AFB	19.00
MCB_CAMP_PENDLETON	17.67
NH_BREMERTON	17.27
NAVSTA_SAN_DIEGO	17.13
FORT_CAMPBELL	17.09
LITTLE_ROCK_AFB	17.00
BARKSDALE_AFB	16.86
BOLLING_AFB	16.02
CHARLESTON_AFB	15.55
FORT_BLISS	15.48
LAUGHLIN_AFB	14.00
VANCE_AFB	14.00
UNITED_STATES_AIR_FORCE_ACADEMY	13.20
FORT_RILEY	13.09
SCHOFIELD_BARRACKS	12.93
RANDOLPH_AFB	12.00
FORT_DETRICK	11.90
FORT_KNOX	11.90
MCB_QUANTICO	11.90
FORT_MEADE	11.20
NAVSTA_NEWPORT	11.04
SHAW_AFB	11.00
FORT_LEAVENWORTH	10.13

Installation/Location	Numerical Military Value
MCRD_PARRIS_ISLAND	10.13
NTC_AND_FORT_IRWIN_CA	9.92
FORT_SILL	9.53
LUKE_AFB	9.00
NH_GUAM	7.74
FORT_STEWART	7.48
ABERDEEN_PROVING_GROUND	6.00
FORT_LEONARD_WOOD	5.31
DUGWAY_PROVING_GROUND	5.06
KIRTLAND_AFB	4.00
HURLBURT_FIELD	2.38
MOODY_AFB	1.70
NH_BEAUFORT	1.70
MAXWELL_AFB	1.49
ELLSWORTH_AFB	0.92
NAVSTA_PEARL_HARBOR	0.79
ALTUS_AFB	0.00
ANDERSEN_AFB	0.00
ANNISTON_ARMY_DEPOT	0.00
BEALE_AFB	0.00
BUCKLEY_AFB	0.00
CANNON_AFB	0.00
CARLISLE_BARRACKS	0.00
CBC_GULFPORT	0.00
CBC_PORT_HUENEME	0.00
DAVIS-MONTHAN_AFB	0.00
DOVER_AFB	0.00
DYESS_AFB	0.00
EDWARDS_AFB	0.00
EIELSON_AFB	0.00
FAIRCHILD_AFB	0.00
FORT_BUCHANAN	0.00
FORT_DIX	0.00
FORT_DRUM	0.00
FORT_HUACHUCA	0.00
FORT_LEE	0.00
FORT_MCCOY	0.00
FORT_MCPHERSON	0.00
FORT_MONMOUTH	0.00
FORT_MONROE	0.00
FORT_MYER	0.00
FORT_RICHARDSON	0.00
FORT_RUCKER	0.00
FORT_WAINWRIGHT	0.00
FRANCIS_E__WARREN_AFB	0.00
GOODFELLOW_AFB	0.00
GRAND_FORKS_AFB	0.00
HANSCOM_AFB	0.00
HICKAM_AFB	0.00
HILL_AFB	0.00
JOINT_RESERVE_BASE_FORT_WORTH	0.00
JOINT_RESERVE_BASE_NEW_ORLEANS	0.00
JOINT_RESERVE_BASE_WILLOW_GROVE	0.00
LOS_ANGELES_AFB	0.00
MALMSTROM_AFB	0.00
MCAGCC_TWENTYNINE_PALMS	0.00
MCAS_CHERRY_POINT	0.00
MCAS_NEW_RIVER	0.00
MCAS_STATION_MIRAMAR	0.00
MCAS_YUMA	0.00
MCB_HAWAII_CAMP_SMITH	0.00

Installation/Location	Numerical Military Value
MCB_HAWAII_KANEOHE	0.00
MCCHORD_AFB	0.00
MCCONNELL_AFB	0.00
MCGUIRE_AFB	0.00
MCLB_ALBANY	0.00
MCLB_BARSTOW	0.00
MCRD_SAN_DIEGO	0.00
MINOT_AFB	0.00
MOUNTAIN_HOME_AFB	0.00
NAB_CORONADO	0.00
NAB_LITTLE_CREEK	0.00
NAES_LAKEHURST	0.00
NAF_EL_CENTRO	0.00
NAS_ATLANTA	0.00
NAS_BRUNSWICK	0.00
NAS_CORPUS_CHRISTI	0.00
NAS_FALLON	0.00
NAS_KEY_WEST	0.00
NAS_KINGSVILLE	0.00
NAS_LEMOORE	0.00
NAS_MERIDIAN	0.00
NAS_NORTH_ISLAND	0.00
NAS_OCEANA	0.00
NAS_OCEANA_DAM_NECK_ANNEX	0.00
NAS_PATUXENT_RIVER	0.00
NAS_POINT_MUGU	0.00
NAS_WHIDBEY_ISLAND	0.00
NAS_WHITING_FIELD	0.00
NAVAL_SUB_BASE_BANGOR	0.00
NAVAL_SUB_BASE_KINGS_BAY	0.00
NAVAL_SUB_BASE_NEW_LONDON	0.00
NAVSTA_ANNAPOLIS	0.00
NAVSTA_BREMERTON	0.00
NAVSTA_EVERETT	0.00
NAVSTA_INGLESIDE	0.00
NAVSTA_MAYPORT	0.00
NAVSTA_PASCAGOULA	0.00
NH_CHARLESTON	0.00
NSA_MECHANICSBURG	0.00
NSA_MILLINGTON	0.00
NSA_NEW_ORLEANS	0.00
NSA_PANAMA_CITY	0.00
NSCS_ATHENS	0.00
NSU_SARATOGA_SPRINGS	0.00
NSWC_DAHLGREN	0.00
NSWC_INDIAN_HEAD	0.00
NSY_NORFOLK	0.00
NSY_PORTSMOUTH	0.00
NWS_CHARLESTON	0.00
NWS_EARLE	0.00
NWS_SEAL_BEACH	0.00
PATRICK_AFB	0.00
PETERSON_AFB	0.00
POPE_AFB	0.00
PRESIDIO_OF_MONTEREY	0.00
RED_RIVER_ARMY_DEPOT	0.00
REDSTONE_ARSENAL	0.00
ROBINS_AFB	0.00
ROCK_ISLAND_ARSENAL	0.00
SCHRIEVER_AFB	0.00
SEYMOUR_JOHNSON_AFB	0.00

Installation/Location	Numerical Military Value
TINKER_AFB	0.00
TYNDALL_AFB	0.00
US_ARMY_GARRISON_SELFRIDGE	0.00
VANDENBERG_AFB	0.00
WASHINGTON_NAVY_YARD	0.00
WHITE_SANDS_MISSILE_RANGE	0.00
WHITEMAN_AFB	0.00
YUMA_PROVING_GROUND	0.00

2.2 HEALTH CARE SERVICES

Installation/Location	Numerical Military Value
FORT_BRAGG	87.21
NMC_PORTSMOUTH	79.89
NMC_SAN_DIEGO	77.76
FORT_HOOD	75.10
MCB_CAMP_LEJEUNE	75.01
FORT_CAMPBELL	73.85
MCB_CAMP_PENDLETON	73.75
FORT_LEWIS	73.30
SCHOFIELD_BARRACKS	73.18
LACKLAND_AFB	70.31
FORT_SAM_HOUSTON	67.85
FORT_DRUM	66.45
FORT_CARSON	66.28
FORT_STEWART	65.98
NAVSTA_PEARL_HARBOR	64.33
NAS_JACKSONVILLE	63.65
MCB_QUANTICO	63.55
NNMC_BETHESDA	63.19
NAVSTA_NORFOLK	62.98
FORT_BLISS	61.35
NELLIS_AFB	59.91
NAVSTA_SAN_DIEGO	58.63
FORT_RUCKER	58.14
FORT_BELVOIR	58.00
MAXWELL_AFB	57.93
EGLIN_AFB	57.88
NH_BREMERTON	57.77
FORT_LEE	57.62
FORT_SILL	57.32
LANGLEY_AFB	57.14
FORT_LEONARD_WOOD	57.13
TRAVIS_AFB	56.74
FORT_BENNING	56.68
HURLBURT_FIELD	56.42
ROBINS_AFB	55.67
TINKER_AFB	55.46
PENSACOLA	55.04
WALTER_REED_ARMY_MEDICAL_CENTER	54.46
HILL_AFB	54.20
FORT_JACKSON	54.03
TRIPLER_ARMY_MEDICAL_CENTER	53.48
UNITED_STATES_AIR_FORCE_ACADEMY	52.82
OFFUTT_AFB	52.79
FORT_GORDON	52.40
FORT_MONROE	52.33
NAVSTA_GREAT_LAKES	51.88
MCCHORD_AFB	51.45
FORT_MEADE	51.06
TYNDALL_AFB	50.83
FORT_HUACHUCA	50.78
PETERSON_AFB	50.66
WRIGHT-PATTERSON_AFB	49.81
MCGUIRE_AFB	49.50
NAS_LEMOORE	49.41
FORT_RILEY	49.09
MOODY_AFB	48.89
RANDOLPH_AFB	48.83
DAVIS-MONTHAN_AFB	48.63
NAS_WHIDBEY_ISLAND	48.43
LUKE_AFB	48.27
ANDREWS_AFB	48.14

Installation/Location	Numerical Military Value
FORT_POLK	48.09
SHAW_AFB	47.92
MCAGCC_TWENTYNINE_PALMS	47.90
MCAS_CHERRY_POINT	47.70
ELMENDORF_AFB	47.24
NAS_CORPUS_CHRISTI	47.01
FORT_EUSTIS	46.90
MCRD_PARRIS_ISLAND	46.82
SHEPPARD_AFB	46.80
WHITEMAN_AFB	45.66
HOLLOMAN_AFB	44.81
FORT_KNOX	44.50
PATRICK_AFB	44.42
MCCONNELL_AFB	43.79
CARLISLE_BARRACKS	43.73
MOUNTAIN_HOME_AFB	43.44
MALMSTROM_AFB	43.26
POPE_AFB	43.14
NAVSTA_NEWPORT	43.10
DOVER_AFB	42.24
PRESIDIO_OF_MONTEREY	42.24
DYESS_AFB	42.10
FORT_DETRICK	42.06
ALTUS_AFB	42.05
BOLLING_AFB	42.01
CANNON_AFB	41.97
LAUGHLIN_AFB	41.92
SEYMOUR_JOHNSON_AFB	41.80
LITTLE_ROCK_AFB	41.60
KIRTLAND_AFB	41.55
NAS_PATUXENT_RIVER	41.32
MINOT_AFB	41.16
CHARLESTON_AFB	40.84
FAIRCHILD_AFB	40.77
KEESLER_AFB	39.40
NH_CHARLESTON	39.34
HICKAM_AFB	39.30
REDSTONE_ARSENAL	38.30
BARKSDALE_AFB	37.94
VANDENBERG_AFB	37.91
BEALE_AFB	37.57
NAVSTA_MAYPORT	37.53
MACDILL_AFB	37.08
LOS_ANGELES_AFB	36.74
FORT_LEAVENWORTH	36.07
ELLSWORTH_AFB	35.78
EDWARDS_AFB	35.61
COLUMBUS_AFB	35.59
NTC_AND_FORT_IRWIN_CA	35.39
FRANCIS_E__WARREN_AFB	35.15
HANSCOM_AFB	34.68
NAVAL_SUB_BASE_NEW_LONDON	34.18
GOODFELLOW_AFB	33.40
EIELSON_AFB	33.12
NAS_NORTH_ISLAND	32.82
ABERDEEN_PROVING_GROUND	32.75
NAS_OCEANA	31.49
FORT_MCPHERSON	31.41
BUCKLEY_AFB	31.34
JOINT_RESERVE_BASE_FORT_WORTH	31.17
ROCK_ISLAND_ARSENAL	31.05

Installation/Location	Numerical Military Value
NAB_LITTLE_CREEK	31.04
CBC_GULFPORT	30.89
FORT_MONMOUTH	30.53
FORT_MYER	29.87
FORT_BUCHANAN	29.79
ANDERSEN_AFB	29.68
SCOTT_AFB	29.31
NAVSTA_ANNAPOLIS	28.68
NAS_WHITING_FIELD	28.27
GRAND_FORKS_AFB	28.24
MCAS_STATION_MIRAMAR	28.12
VANCE_AFB	28.04
WEST_POINT_MIL_RESERVATION	27.62
ANNISTON_ARMY_DEPOT	27.35
NSA_MILLINGTON	27.33
NAVAL_SUB_BASE_KINGS_BAY	27.30
FORT_MCCOY	27.18
NAVSTA_PASCAGOULA	26.68
BROOKS_CITY-BASE	26.14
RED_RIVER_ARMY_DEPOT	25.00
SCHRIEVER_AFB	25.00
FORT_DIX	24.36
WHITE_SANDS_MISSILE_RANGE	24.29
NSA_NEW_ORLEANS	24.25
FORT_WAINWRIGHT	24.21
NH_BEAUFORT	23.93
NAS_POINT_MUGU	23.90
NH_GUAM	23.83
NAVSTA_INGLESIDE	23.76
NWS_CHARLESTON	23.24
WASHINGTON_NAVY_YARD	22.95
NAVSTA_BREMERTON	22.81
NSY_NORFOLK	22.36
CBC_PORT_HUENEME	21.75
NAVAL_SUB_BASE_BANGOR	21.48
FORT_RICHARDSON	21.38
DUGWAY_PROVING_GROUND	20.95
MCAS_YUMA	20.87
NSA_PANAMA_CITY	20.34
MCRD_SAN_DIEGO	20.19
NAB_CORONADO	19.94
JOINT_RESERVE_BASE_NEW_ORLEANS	19.91
MCAS_NEW_RIVER	19.89
NAVSTA_EVERETT	19.65
US_ARMY_GARRISON_SELFRIDGE	19.11
YUMA_PROVING_GROUND	18.50
NAS_KEY_WEST	15.46
NAS_ATLANTA	15.02
NAS_BRUNSWICK	14.92
NWS_YORKTOWN	14.38
NAS_KINGSVILLE	13.83
NSWC_DAHLGREN	13.62
NAS_FALLON	13.24
MCB_HAWAII_KANEOHE	13.04
MCLB_ALBANY	12.68
NSCS_ATHENS	12.48
NSY_PORTSMOUTH	12.29
NSU_SARATOGA_SPRINGS	12.23
NAES_LAKEHURST	11.80
JOINT_RESERVE_BASE_WILLOW_GROVE	11.78
NAS_OCEANA_DAM_NECK_ANNEX	11.75

Installation/Location	Numerical Military Value
NSWC_INDIAN_HEAD	11.56
NAF_EL_CENTRO	11.00
MCLB_BARSTOW	10.19
NAS_MERIDIAN	7.60
MCB_HAWAII_CAMP_SMITH	6.15
NSA_MECHANICSBURG	6.14
NWS_EARLE	4.01
NWS_SEAL_BEACH	0.80

2.3 MEDICAL AND DENTAL RESEARCH DEVELOPMENT AND ACQUSITION

Activity	Numerical Military Value
Walter_Reed_Army_Institute_of_Research_-_WRAMC	53.66
Army_Medical_Research___Materiel_Command_-_HQ	38.05
Army_Medical_Research_Institute_of_Infectious_Diseases	33.78
Naval_Medical_Research_Center_-_Silver_Spring	30.22
Army_Medical_Research_Institute_of_Chemical_Defense	28.27
Air_Force_Institute_for_Operational_Health_-_Brooks_City_Base	27.81
Air_Force_School_of_Aerospace_Medicine	26.85
Naval_Experimental_Diving_Unit_-_Panama_City_FL	24.91
Naval_Submarine_Medical_Research_Laboratory	24.07
Armed_Forces_Radiobiological_Research_Institute	22.86
Naval_Health_Research_Center_-_San_Diego	22.15
Naval_Institute_for_Dental___Biomedical_Research	20.31
Naval_Health_Research_Center_Detachment_-_Wright-Patterson_AFB	19.94
Army_Aeromedical_Research_Laboratory	19.89
Program_Executive_Office__Joint_Medical_Information_Systems	17.98
Naval_Aerospace_Medical_Research_Laboratory	17.35
Army_Dental_Research_Detachment_-_Great_Lakes	17.17
Army_Medical_Materiel_Agency	17.08
Army_Institute_of_Surgical_Research	16.51
Army_Medical_Materiel_Development_Activity	16.47
Army_Research_Institute_of_Environmental_Medicine	14.07
Naval_Health_Research_Center_Detachment_-_Brooks_AFB	12.55
Army_Medical_Research_Detachment_-_Brooks_City_Base	12.32
311th_Human_Systems_Wing_-_Human_Systems_Program_Office	12.00
Army_Center_for_Environmental_Health_Research	11.53
Army_Medical_Information_Technology_Center	11.26
Navy_Bureau_of_Medicine___Surgery__Code_M2__-_Washington_DC	10.82
Air_Force_Dental_Investigative_Service_-_Great_Lakes	10.10
Armed_Forces_Institute_of_Pathology	9.28
Army_Medical_Research_Acquisition_Activity	7.57
Naval_Air_Warfare_Center_-_Pax_River	6.08
DTRA_CB_Directorate	2.08
Navy_Clothing___Textile_Laboratory_-_Natick_MA	1.23

2.4 COMBINED MILITARY VALUE SCORE

Installation/Location	Numerical Military Value
FORT_BRAGG	153.55
NMC_PORTSMOUTH	141.51
NMC_SAN_DIEGO	138.11
FORT_SAM_HOUSTON	130.80
LACKLAND_AFB	126.34
PENSACOLA	124.30
FORT_HOOD	123.20
NAVSTA_GREAT_LAKES	115.37
SHEPPARD_AFB	114.27
EGLIN_AFB	112.79
ANDREWS_AFB	111.70
FORT_CARSON	104.86
FORT_LEWIS	104.63
FORT_BELVOIR	101.80
TRAVIS_AFB	100.87
NNMC_BETHESDA	100.34
MCB_CAMP_LEJEUNE	99.73
WALTER_REED_ARMY_MEDICAL_CENTER	98.71
OFFUTT_AFB	98.29
KEESLER_AFB	96.82
BROOKS_CITY-BASE	96.74
MCB_CAMP_PENDLETON	91.42
FORT_CAMPBELL	90.94
FORT_BENNING	89.85
NELLIS_AFB	87.95
SCHOFIELD_BARRACKS	86.11
FORT_JACKSON	85.34
NAVSTA_NORFOLK	85.00
NAS_JACKSONVILLE	83.61
LANGLEY_AFB	82.37
TRIPLER_ARMY_MEDICAL_CENTER	78.19
WRIGHT-PATTERSON_AFB	77.13
FORT_BLISS	76.83
FORT_GORDON	76.68
NAVSTA_SAN_DIEGO	75.76
MCB_QUANTICO	75.45
NH_BREMERTON	75.04
FORT_EUSTIS	74.10
FORT_STEWART	73.46
FORT_POLK	69.37
ELMENDORF_AFB	68.21
NWS_YORKTOWN	67.33
FORT_SILL	66.85
FORT_DRUM	66.45
UNITED_STATES_AIR_FORCE_ACADEMY	66.02
MACDILL_AFB	65.20
NAVSTA_PEARL_HARBOR	65.12
SCOTT_AFB	64.30
HOLLOMAN_AFB	63.81
FORT_LEONARD_WOOD	62.44
FORT_MEADE	62.25
FORT_RILEY	62.18
RANDOLPH_AFB	60.83
MAXWELL_AFB	59.41
SHAW_AFB	58.92
HURLBURT_FIELD	58.80
LITTLE_ROCK_AFB	58.60
FORT_RUCKER	58.14
BOLLING_AFB	58.03
WEST_POINT_MIL_RESERVATION	57.97
FORT_LEE	57.62

Installation/Location	Numerical Military Value
COLUMBUS_AFB	57.49
LUKE_AFB	57.27
MCRD_PARRIS_ISLAND	56.95
FORT_KNOX	56.40
CHARLESTON_AFB	56.39
LAUGHLIN_AFB	55.92
ROBINS_AFB	55.67
TINKER_AFB	55.46
BARKSDALE_AFB	54.80
HILL_AFB	54.20
NAVSTA_NEWPORT	54.14
FORT_DETRICK	53.96
Walter_Reed_Army_Institute_of_Research_-_WRAMC	53.66
FORT_MONROE	52.33
MCCHORD_AFB	51.45
TYNDALL_AFB	50.83
FORT_HUACHUCA	50.78
PETERSON_AFB	50.66
MOODY_AFB	50.59
MCGUIRE_AFB	49.50
NAS_LEMOORE	49.41
DAVIS-MONTHAN_AFB	48.63
NAS_WHIDBEY_ISLAND	48.43
MCAGCC_TWENTYNINE_PALMS	47.90
MCAS_CHERRY_POINT	47.70
NAS_CORPUS_CHRISTI	47.01
FORT_LEAVENWORTH	46.19
WHITEMAN_AFB	45.66
KIRTLAND_AFB	45.55
NTC_AND_FORT_IRWIN_CA	45.30
PATRICK_AFB	44.42
MCCONNELL_AFB	43.79
CARLISLE_BARRACKS	43.73
MOUNTAIN_HOME_AFB	43.44
MALMSTROM_AFB	43.26
POPE_AFB	43.14
DOVER_AFB	42.24
PRESIDIO_OF_MONTEREY	42.24
DYESS_AFB	42.10
ALTUS_AFB	42.05
VANCE_AFB	42.04
CANNON_AFB	41.97
SEYMOUR_JOHNSON_AFB	41.80
NAS_PATUXENT_RIVER	41.32
MINOT_AFB	41.16
FAIRCHILD_AFB	40.77
NH_CHARLESTON	39.34
HICKAM_AFB	39.30
ABERDEEN_PROVING_GROUND	38.75
REDSTONE_ARSENAL	38.30
Army_Medical_Research___Materiel_Command_-_HQ	38.05
VANDENBERG_AFB	37.91
BEALE_AFB	37.57
NAVSTA_MAYPORT	37.53
LOS_ANGELES_AFB	36.74
ELLSWORTH_AFB	36.69
EDWARDS_AFB	35.61
FRANCIS_E__WARREN_AFB	35.15
HANSCOM_AFB	34.68
NAVAL_SUB_BASE_NEW_LONDON	34.18
Army_Medical_Research_Institute_of_Infectious_Diseases	33.78

Installation/Location	Numerical Military Value
GOODFELLOW_AFB	33.40
EIELSON_AFB	33.12
NAS_NORTH_ISLAND	32.82
NH_GUAM	31.56
NAS_OCEANA	31.49
FORT_MCPHERSON	31.41
BUCKLEY_AFB	31.34
JOINT_RESERVE_BASE_FORT_WORTH	31.17
ROCK_ISLAND_ARSENAL	31.05
NAB_LITTLE_CREEK	31.04
CBC_GULFPORT	30.89
FORT_MONMOUTH	30.53
Naval_Medical_Research_Center_-_Silver_Spring	30.22
FORT_MYER	29.87
FORT_BUCHANAN	29.79
ANDERSEN_AFB	29.68
NAVSTA_ANNAPOLIS	28.68
Army_Medical_Research_Institute_of_Chemical_Defense	28.27
NAS_WHITING_FIELD	28.27
GRAND_FORKS_AFB	28.24
MCAS_STATION_MIRAMAR	28.12
Air_Force_Institute_for_Operational_Health_-_Brooks_City_Base	27.81
ANNISTON_ARMY_DEPOT	27.35
NSA_MILLINGTON	27.33
NAVAL_SUB_BASE_KINGS_BAY	27.30
FORT_MCCOY	27.18
Air_Force_School_of_Aerospace_Medicine	26.85
NAVSTA_PASCAGOULA	26.68
DUGWAY_PROVING_GROUND	26.01
NH_BEAUFORT	25.63
RED_RIVER_ARMY_DEPOT	25.00
SCHRIEVER_AFB	25.00
Naval_Experimental_Diving_Unit_-_Panama_City_FL	24.91
FORT_DIX	24.36
WHITE_SANDS_MISSILE_RANGE	24.29
NSA_NEW_ORLEANS	24.25
FORT_WAINWRIGHT	24.21
Naval_Submarine_Medical_Research_Laboratory	24.07
NAS_POINT_MUGU	23.90
NAVSTA_INGLESIDE	23.76
NWS_CHARLESTON	23.24
WASHINGTON_NAVY_YARD	22.95
Armed_Forces_Radiobiological_Research_Institute	22.86
NAVSTA_BREMERTON	22.81
NSY_NORFOLK	22.36
Naval_Health_Research_Center_-_San_Diego	22.15
CBC_PORT_HUENEME	21.75
NAVAL_SUB_BASE_BANGOR	21.48
FORT_RICHARDSON	21.38
MCAS_YUMA	20.87
NSA_PANAMA_CITY	20.34
Naval_Institute_for_Dental___Biomedical_Research	20.31
MCRD_SAN_DIEGO	20.19
NAB_CORONADO	19.94
Naval_Health_Research_Center_Detachment_-_Wright-Patterson_AFB	19.94
JOINT_RESERVE_BASE_NEW_ORLEANS	19.91
MCAS_NEW_RIVER	19.89
Army_Aeromedical_Research_Laboratory	19.89
NAVSTA_EVERETT	19.65
US_ARMY_GARRISON_SELFRIDGE	19.11
YUMA_PROVING_GROUND	18.50

Installation/Location	Numerical Military Value
Program_Executive_Office__Joint_Medical_Information_Systems	17.98
Naval_Aerospace_Medical_Research_Laboratory	17.35
Army_Dental_Research_Detachment_-_Great_Lakes	17.17
Army_Medical_Materiel_Agency	17.08
Army_Institute_of_Surgical_Research	16.51
Army_Medical_Materiel_Development_Activity	16.47
NAS_KEY_WEST	15.46
NAS_ATLANTA	15.02
NAS_BRUNSWICK	14.92
Army_Research_Institute_of_Environmental_Medicine	14.07
NAS_KINGSVILLE	13.83
NSWC_DAHLGREN	13.62
NAS_FALLON	13.24
MCB_HAWAII_KANEOHE	13.04
MCLB_ALBANY	12.68
Naval_Health_Research_Center_Detachment_-_Brooks_AFB	12.55
NSCS_ATHENS	12.48
Army_Medical_Research_Detachment_-_Brooks_City_Base	12.32
NSY_PORTSMOUTH	12.29
NSU_SARATOGA_SPRINGS	12.23
311th_Human_Systems_Wing_-_Human_Systems_Program_Office	12.00
NAES_LAKEHURST	11.80
JOINT_RESERVE_BASE_WILLOW_GROVE	11.78
NAS_OCEANA_DAM_NECK_ANNEX	11.75
NSWC_INDIAN_HEAD	11.56
Army_Center_for_Environmental_Health_Research	11.53
Army_Medical_Information_Technology_Center	11.26
NAF_EL_CENTRO	11.00
Navy_Bureau_of_Medicine___Surgery__Code_M2__-_Washington_DC	10.82
MCLB_BARSTOW	10.19
Air_Force_Dental_Investigative_Service_-_Great_Lakes	10.10
Armed_Forces_Institute_of_Pathology	9.28
NAS_MERIDIAN	7.60
Army_Medical_Research_Acquisition_Activity	7.57
MCB_HAWAII_CAMP_SMITH	6.15
NSA_MECHANICSBURG	6.14
Naval_Air_Warfare_Center_-_Pax_River	6.08
NWS_EARLE	4.01
DTRA_CB_Directorate	2.08
Navy_Clothing___Textile_Laboratory_-_Natick_MA	1.23
NWS_SEAL_BEACH	0.80

2.5 COMPOSITE MILITARY VALUE SCORE

Installation/Location	Numerical Military Value
FORT_BRAGG	65.59
NMC_PORTSMOUTH	60.26
NMC_SAN_DIEGO	58.72
FORT_HOOD	54.68
LACKLAND_AFB	53.39
FORT_SAM_HOUSTON	53.30
FORT_LEWIS	50.24
MCB_CAMP_LEJEUNE	49.95
MCB_CAMP_PENDLETON	47.78
FORT_CAMPBELL	47.73
FORT_CARSON	47.49
PENSACOLA	46.87
SCHOFIELD_BARRACKS	46.49
EGLIN_AFB	45.71
NNMC_BETHESDA	45.34
NAVSTA_GREAT_LAKES	43.82
FORT_BELVOIR	43.56
TRAVIS_AFB	42.87
NAVSTA_NORFOLK	42.19
NAS_JACKSONVILLE	42.18
ANDREWS_AFB	41.59
SHEPPARD_AFB	41.57
NELLIS_AFB	41.56
WALTER_REED_ARMY_MEDICAL_CENTER	41.52
FORT_STEWART	41.08
OFFUTT_AFB	40.77
FORT_BENNING	40.64
MCB_QUANTICO	40.51
FORT_BLISS	39.91
FORT_DRUM	39.87
LANGLEY_AFB	39.33
NAVSTA_PEARL_HARBOR	38.76
FORT_JACKSON	38.68
NAVSTA_SAN_DIEGO	38.60
NH_BREMERTON	38.12
TRIPLER_ARMY_MEDICAL_CENTER	37.03
FORT_SILL	36.30
FORT_GORDON	36.30
WRIGHT-PATTERSON_AFB	35.35
FORT_LEONARD_WOOD	35.34
KEESLER_AFB	35.12
MAXWELL_AFB	35.05
FORT_RUCKER	34.89
FORT_LEE	34.57
UNITED_STATES_AIR_FORCE_ACADEMY	34.33
HURLBURT_FIELD	34.33
FORT_EUSTIS	33.58
ROBINS_AFB	33.40
TINKER_AFB	33.27
FORT_POLK	33.11
FORT_MEADE	32.87
ELMENDORF_AFB	32.54
HILL_AFB	32.52
FORT_RILEY	32.07
RANDOLPH_AFB	31.70
FORT_MONROE	31.40
SHAW_AFB	30.95
MCCHORD_AFB	30.87
LUKE_AFB	30.76
HOLLOMAN_AFB	30.69
TYNDALL_AFB	30.50

Installation/Location	Numerical Military Value
FORT_HUACHUCA	30.47
PETERSON_AFB	30.39
MCRD_PARRIS_ISLAND	30.12
BROOKS_CITY-BASE	29.80
MCGUIRE_AFB	29.70
MOODY_AFB	29.67
NAS_LEMOORE	29.64
DAVIS-MONTHAN_AFB	29.18
FORT_KNOX	29.08
NAS_WHIDBEY_ISLAND	29.06
MCAGCC_TWENTYNINE_PALMS	28.74
MCAS_CHERRY_POINT	28.62
BOLLING_AFB	28.41
LITTLE_ROCK_AFB	28.36
NAS_CORPUS_CHRISTI	28.21
NAVSTA_NEWPORT	28.07
LAUGHLIN_AFB	27.95
MACDILL_AFB	27.87
FORT_DETRICK	27.62
CHARLESTON_AFB	27.62
WHITEMAN_AFB	27.39
PATRICK_AFB	26.65
MCCONNELL_AFB	26.28
CARLISLE_BARRACKS	26.24
BARKSDALE_AFB	26.13
MOUNTAIN_HOME_AFB	26.06
MALMSTROM_AFB	25.95
POPE_AFB	25.88
COLUMBUS_AFB	25.73
KIRTLAND_AFB	25.73
DOVER_AFB	25.34
PRESIDIO_OF_MONTEREY	25.34
DYESS_AFB	25.26
ALTUS_AFB	25.23
CANNON_AFB	25.18
SEYMOUR_JOHNSON_AFB	25.08
NAS_PATUXENT_RIVER	24.79
MINOT_AFB	24.70
SCOTT_AFB	24.58
FAIRCHILD_AFB	24.46
FORT_LEAVENWORTH	23.67
NH_CHARLESTON	23.61
HICKAM_AFB	23.58
NTC_AND_FORT_IRWIN_CA	23.21
REDSTONE_ARSENAL	22.98
VANDENBERG_AFB	22.75
WEST_POINT_MIL_RESERVATION	22.64
BEALE_AFB	22.54
NAVSTA_MAYPORT	22.52
LOS_ANGELES_AFB	22.04
ELLSWORTH_AFB	21.65
EDWARDS_AFB	21.36
FRANCIS_E__WARREN_AFB	21.09
ABERDEEN_PROVING_GROUND	20.85
HANSCOM_AFB	20.81
NAVAL_SUB_BASE_NEW_LONDON	20.51
GOODFELLOW_AFB	20.04
EIELSON_AFB	19.87
NAS_NORTH_ISLAND	19.69
VANCE_AFB	19.62
NWS_YORKTOWN	19.22

Installation/Location	Numerical Military Value
NAS_OCEANA	18.89
FORT_MCPHERSON	18.84
BUCKLEY_AFB	18.80
JOINT_RESERVE_BASE_FORT_WORTH	18.70
ROCK_ISLAND_ARSENAL	18.63
NAB_LITTLE_CREEK	18.62
CBC_GULFPORT	18.54
FORT_MONMOUTH	18.32
FORT_MYER	17.92
FORT_BUCHANAN	17.87
ANDERSEN_AFB	17.81
NAVSTA_ANNAPOLIS	17.21
NAS_WHITING_FIELD	16.96
GRAND_FORKS_AFB	16.94
MCAS_STATION_MIRAMAR	16.87
ANNISTON_ARMY_DEPOT	16.41
NSA_MILLINGTON	16.40
NAVAL_SUB_BASE_KINGS_BAY	16.38
FORT_MCCOY	16.31
NAVSTA_PASCAGOULA	16.01
NH_GUAM	15.84
RED_RIVER_ARMY_DEPOT	15.00
SCHRIEVER_AFB	15.00
NH_BEAUFORT	14.70
FORT_DIX	14.62
WHITE_SANDS_MISSILE_RANGE	14.57
NSA_NEW_ORLEANS	14.55
FORT_WAINWRIGHT	14.52
NAS_POINT_MUGU	14.34
NAVSTA_INGLESIDE	14.25
NWS_CHARLESTON	13.94
WASHINGTON_NAVY_YARD	13.77
NAVSTA_BREMERTON	13.68
DUGWAY_PROVING_GROUND	13.58
NSY_NORFOLK	13.42
CBC_PORT_HUENEME	13.05
NAVAL_SUB_BASE_BANGOR	12.89
FORT_RICHARDSON	12.83
MCAS_YUMA	12.52
NSA_PANAMA_CITY	12.20
MCRD_SAN_DIEGO	12.12
NAB_CORONADO	11.96
JOINT_RESERVE_BASE_NEW_ORLEANS	11.95
MCAS_NEW_RIVER	11.94
NAVSTA_EVERETT	11.79
US_ARMY_GARRISON_SELFRIDGE	11.46
YUMA_PROVING_GROUND	11.10
Walter_Reed_Army_Institute_of_Research_-_WRAMC	10.73
NAS_KEY_WEST	9.28
NAS_ATLANTA	9.01
NAS_BRUNSWICK	8.95
NAS_KINGSVILLE	8.30
NSWC_DAHLGREN	8.17
NAS_FALLON	7.94
MCB_HAWAII_KANEOHE	7.82
Army_Medical_Research___Materiel_Command_-_HQ	7.61
MCLB_ALBANY	7.61
NSCS_ATHENS	7.49
NSY_PORTSMOUTH	7.37
NSU_SARATOGA_SPRINGS	7.34
NAES_LAKEHURST	7.08

Installation/Location	Numerical Military Value
JOINT_RESERVE_BASE_WILLOW_GROVE	7.07
NAS_OCEANA_DAM_NECK_ANNEX	7.05
NSWC_INDIAN_HEAD	6.94
Army_Medical_Research_Institute_of_Infectious_Diseases	6.76
NAF_EL_CENTRO	6.60
MCLB_BARSTOW	6.11
Naval_Medical_Research_Center_-_Silver_Spring	6.04
Army_Medical_Research_Institute_of_Chemical_Defense	5.65
Air_Force_Institute_for_Operational_Health_-_Brooks_City_Base	5.56
Air_Force_School_of_Aerospace_Medicine	5.37
Naval_Experimental_Diving_Unit_-_Panama_City_FL	4.98
Naval_Submarine_Medical_Research_Laboratory	4.81
Armed_Forces_Radiobiological_Research_Institute	4.57
NAS_MERIDIAN	4.56
Naval_Health_Research_Center_-_San_Diego	4.43
Naval_Institute_for_Dental___Biomedical_Research	4.06
Naval_Health_Research_Center_Detachment_-_Wright-Patterson_AFB	3.99
Army_Aeromedical_Research_Laboratory	3.98
MCB_HAWAII_CAMP_SMITH	3.69
NSA_MECHANICSBURG	3.68
Program_Executive_Office__Joint_Medical_Information_Systems	3.60
Naval_Aerospace_Medical_Research_Laboratory	3.47
Army_Dental_Research_Detachment_-_Great_Lakes	3.43
Army_Medical_Materiel_Agency	3.42
Army_Institute_of_Surgical_Research	3.30
Army_Medical_Materiel_Development_Activity	3.29
Army_Research_Institute_of_Environmental_Medicine	2.81
Naval_Health_Research_Center_Detachment_-_Brooks_AFB	2.51
Army_Medical_Research_Detachment_-_Brooks_City_Base	2.46
NWS_EARLE	2.40
311th_Human_Systems_Wing_-_Human_Systems_Program_Office	2.40
Army_Center_for_Environmental_Health_Research	2.31
Army_Medical_Information_Technology_Center	2.25
Navy_Bureau_of_Medicine___Surgery__Code_M2__-_Washington_DC	2.16
Air_Force_Dental_Investigative_Service_-_Great_Lakes	2.02
Armed_Forces_Institute_of_Pathology	1.86
Army_Medical_Research_Acquisition_Activity	1.51
Naval_Air_Warfare_Center_-_Pax_River	1.22
NWS_SEAL_BEACH	0.48
DTRA_CB_Directorate	0.42
Navy_Clothing___Textile_Laboratory_-_Natick_MA	0.25

APPENDIX D

BRAC 2005: Optimization Model for the Medical Joint-Cross Service Group

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Introduction

The legislation for Base Realignment and Closure (BRAC) 2005 establishes an objective process for realignment and closure of military installations. As part of this, the Department of the Navy (DON) was tasked with providing the Department of Defense (DOD) Joint Cross-Service Groups (JCSGs) an optimization methodology to support their analyses.

The *BRAC 2005: Analysis Handbook* details the general optimization methodology we developed to support the JCSGs [1]. We have tailored this general methodology to support each JCSG's specific needs and requirements. This report details the optimization model we developed to support the Medical JCSG (MJCSG).

Model purpose

The purpose of the optimization model is to provide an equitable and analytical means of generating scenario alternatives for realignment and/or closure. The alternatives the model generates are inputs from which BRAC decision makers can create scenarios for further analysis. This means that the results of the optimization model are not by default "the answer." Furthermore, the optimization model is only one source not the only source for scenario alternatives.

General model

The general optimization model maximizes retained military value subject to having the capacity necessary to meet workload requirements. In this model, the way to maximize military value is to do nothing because closing or realigning any activity will reduce the sum of military value across the activities. Consequently, the model includes a penalty for retaining resources (i.e., capacity). The penalty facilitates the tradeoff between retaining military value and eliminating capacity to reduce infrastructure. The higher the penalty the more capacity the model will eliminate.

Capacity and military value are inputs to the optimization model. The MJCSG capacity and military value reports document how they defined and computed capacity and military value [2-3]. Note that military value is static. If an activity or function remains open, the military value of the activity remains unchanged regardless of changes in the workload performed at the activity.

The remainder of this report documents the model we used to support the MJCSG process. We give particular emphasis on the ways we have modified the objective function and constraints of the general optimization model to support the MJCSG's unique requirements.

Medical optimization model

In this section, we describe the medical optimization model and how we've adapted it to meet the specific needs of the MJCSG. This report defines and discusses variables, the objective function, and constraints of this model.

We used the software AMPL (A Mathematical Programming Language) to describe the optimization model.[1] Appendix A contains the specific AMPL code we developed for the MJCSG optimization model. This section discusses the model in conceptual terms and discusses modeling assumptions but does not present the mathematical details of the model. For these, see appendix A and the *BRAC 2005: Analysis Handbook* [1].

Level of analysis

The medical optimization model has locations, activities, and functions, which the model closes or retains. Locations correspond to the installation. At each installation, there may be multiple activities—industrial, supply and storage, technical, education and training, headquarters and support, medical, and intelligence as well as line activities. Within activities, there are functions. For medical these are healthcare services, medical education and training, and medical research, development and acquisition (RDA).

Generally, there is only one medical activity at a location. In these cases, the location and activity are the same. However, this is not the case at locations with RDA functions in addition to healthcare services and/or education and training functions. The reason for this is that the MJCSG kept the RDA functions in separate activities rather than rolling them into the

1. AMPL calls the CPLEX solve to find an optimal solution.

activities consisting of healthcare services and education and training functions.[2]

The MJCSG broke down its three functions into sub-functions, which we used in the optimization model.[3] These sub-functions are:

- Healthcare services
  - Inpatient care (IP)
  - Outpatient primary care (PC)
  - Outpatient specialty care (SC)
  - Dental
- Education and training
  - Classroom-based education and training (classroom E&T)
  - Laboratory-based education and training (lab E&T)
- RDA
  - Information management and information technology (IM/IT) acquisition
  - Medical systems acquisition
  - Aerospace and operational medicine research
  - Environmental medicine and physiological research
  - Hyperbaric and undersea medicine research
  - Occupational health and medical informatics research
  - Medical biological defense research
  - Combat casualty care research
  - Medical chemical defense research
  - Infectious diseases research

2 Note that if the model closes a location, it is not closing the entire installation but it is closing all medical activities at the installation.

3 For the analysis, we analyzed at the sub-function level hereafter referred to as functions.

Variables

The optimization model determines the values of the decision variables that maximize the model's objective function given the data and constraints we impose on it. The medical optimization model has five sets of decision variables as follows:

- Whether each location should be open or closed.
- Whether each activity should be open or closed.
- Whether each function should be open or closed.
- The amount of workload for each function to be performed at each activity.
- The amount of each resource type we add to each activity.

Objective function

The goal or objective function of the optimization model is to maximize the sum of retained military value across all activities. To suit the needs of the various JCSGs, the optimization methodology can focus on activity or functional military value. The MJCSG methodology focuses on functional military value. Because all activities have military value, the way to maximize functional military value is to do nothing—maintain all activities and all functions.

However, because maintaining infrastructure is costly, the objective function facilitates the tradeoff between retaining functional military value and eliminating resources by imposing penalties on resources retained. Specifically, the objective function imposes penalties in the following ways.

- Penalize the number of open locations.
- Penalize the amount of resources at open locations.
- Penalize the amount of resources at open activities.
- Penalize the amount of resources added to activities.

The level of the penalties reflects different tradeoffs between the competing goals of retaining military value and reducing infrastructure. If we set the penalties for the number of locations (ρ^N) and the amount of resources (ρ^R) to 0, the model will close nothing because it does not reduce the value of the objective function to do so.[4] As ρ^N and ρ^R increase, the model will close functions, activities, and locations when the penalty for maintaining the infrastructure is more that the functional military value that it would retain from keeping them open. Similarly, the model will not expand capacity (add resources) at any activity if the penalty (ρ^E) on expanding resources is very high. Hence, the penalty parameters are tools the MJCSG can use to examine an array of possible configurations.

Constraints

Constraints are necessary to ensure that the solution to the objective function is reasonable in that it reflects the conditions and constraints of providing medical functions. Some of these constraints are generic to the optimization model that all JCSGs use while we have tailored or designed others specifically for the MJCSG to reflect its unique issues and requirements.

Basic constraints

The most basic and fundamental constraint is to ensure that the model assigns enough workload for each function across retained activities to meet functional workload requirements. That is, the optimal solution must retain enough capacity (infrastructure) to meet the mission. The units we use to measure requirements are the following:

- Inpatient care—Relative Weighted Products (RWPs)
- Outpatient primary care—Relative Value Units (RVUs)
- Outpatient specialty care—RVUs
- Dental care—active duty (AD) population
- Education and training functions—full time equivalents (FTEs)
- RDA functions—FTEs

4 It will close nothing as along as there are not constraints in the model that force it to close something regardless of the penalty.

Table 1 shows the workload requirements for each function. Generally, the MJCSG set these requirements equal to current workload. For example, inpatient and outpatient care requirements equal FY 2002 workload.[5]

Table 1. Functional requirements

Function (units)	Requirement
Healthcare services functions	
Inpatient care (RWPs)	233,213
Outpatient primary care (RVUs)	11,021,026
Outpatient specialty care (RVUs)	19,375,535
Dental (AD population)	991,200
Education and training functions	
Classroom-based education (FTEs)	7,414
Laboratory-based education (FTEs)	3,231
RDA functions	
IM/IT acquisition (FTEs)	140
Medical systems acquisition (FTEs)	401
Aerospace & operational medicine research (FTEs)	748
Environmental med. & physiological research (FTEs)	260
Hyperbaric & undersea medicine research (FTEs)	39
Occup. health & medical informatics research (FTEs)	72
Medical biological defense research (FTEs)	1,076
Combat casualty care research (FTEs)	627
Medical chemical defense research (FTEs)	613
Infectious diseases research (FTEs)	783

We also constrained the model to ensure that it closes or retains locations and activities in a rational manner. Specifically, we constrain the model in the following ways:

- If a location is closed, ensure that no activities are retained at that location.
- If a location is retained, ensure that at least one activity is retained at that location.

[5] The MJCSG based the dental requirement on the active duty population necessary to provide fulltime workload for 1,239 dental FTEs. Assuming a fulltime panel is 800 active duty personnel, the dental requirement is 991,200 AD population.

- If an activity is closed, ensure that no functions are performed at that activity.
- If an activity is retained, ensure that at least one function is performed at that activity.
- For each function, ensure that functional workload is only assigned to activities that are allowed to perform a particular function.

Isolated activities

The MJCSG included a constraint to ensure that military treatment facilities (MTFs) in medically "isolated" locations remain open. The activities it designated as isolated are the following:

- Altus AFB
- Laughlin AFB
- MCAGCC Twentynine Palms
- Mountain Home AFB
- NAS Whidbey Island
- NH Guam
- Fort Irwin

Minimum assignment

The MJCSG also wanted to ensure that for non-isolated activities, that the model assigns some minimum amount of workload for each function that remains open. Table 2 shows the minimum workload amount by function.[6]

[6] The minimum assignment of 1 FTE for education and training functions reflects the fact that medical education and training covers more than "schoolhouse" training. Many locations perform some education and training functions such as continuing education.

Table 2. Minimum workload assignments

Function (units)	Minimum assignment
Inpatient care (RWPs)	675
Outpatient primary care (RVUs)	7,950
Outpatient specialty care (RVUs)	1,800
Dental (AD population)	800
E&T functions (FTEs)	1
RDA functions (FTEs)	5

Capacity

Another general constraint of the optimization model is that the functional workload the model assigns to an activity cannot exceed each activity's capacity (including potential capacity expansion). With the exception of the inpatient function, this constraint is straightforward—assigned workload multiplied by the production rate cannot exceed the activity's resources.

The inpatient function complicates this because the production rate for inpatient care differs by facility type—medical center, teaching hospital, and community hospital. Table 3 lists the activities in these three groups. The production rates for each function correspond to capacity formulas from the MJCSG Capacity Report [2]. These production rates for inpatient care differ by facility type because the capacity formulas differ by occupancy rate and RWPs per bed day.

Demand constraints

In addition to constraints on resources or physical capacity, we must constrain the medical model by healthcare demand to ensure that we have realistic workload assignments for healthcare services functions. For example, an activity may have the infrastructure capacity to provide 20,000 RWPs of inpatient workload. If this activity has a high military value, the model may try and assign 20,000 RWPs. However, doing so would not be reasonable if the healthcare demand of the beneficiary population around the facility is only 10,000 RWPs.

Table 3. Facility type

Medical centers	Teaching hospitals	Community hospitals	
Fort Bliss	Andrews AFB	Elmendorf AFB	MacDill AFB
Fort Bragg	Eglin AFB	Fort Campbell	MCAGCC Twentynine Palms
Fort Gordon	Fort Belvoir	Fort Carson	MCAS Cherry Point
Fort Lewis	Fort Benning	Fort Eustis	Mountain Home AFB
Fort Sam Houston	Fort Hood	Fort Irwin	NAS Corpus Christi
Keesler AFB	MCB Camp Lejeune	Fort Jackson	NAS Lemoore
Lackland AFB	MCB Camp Pendleton	Fort Knox	NAS Whidbey Island
NMC Portsmouth	NAS Jacksonville	Fort Leonard Wood	NAVSTA Great Lakes
NMC San Diego	NH Bremerton	Fort Polk	NAVSTA Newport
NNMC Bethesda	Offutt AFB	Fort Riley	Nellis AFB
Travis AFB	NAS Pensacola	Fort Sill	NH Beaufort
Tripler AMC	Scott AFB	Fort Stewart	NH Charleston
Walter Reed AMC	West Point	Fort Wainwright	NH Guam
Wright-Patterson AFB		Langley AFB	U.S. Air Force Academy
		Luke AFB	

The MJCSG collected data on the catchment and PRISM[7] populations for each activity. The catachment population is the beneficiary population within a 40-mile radius of the military treatment facility and it is the population base for inpatient care. Similarly, the PRISM population is the beneficiary population within a 20-mile radius and it is the population base for outpatient and dental care. More specifically, the MJCSG collected these data for three population subgroups—active duty, active duty family members, and other beneficiaries.

The critical issue when using demand to limit the assignment of workload is: how much workload do we expect on average per beneficiary? Table 4 shows the demand rates for healthcare functions by beneficiary group that we used in the optimization model.

Table 4. Demand rates per beneficiary

	Catchment population			PRISM population		
Function (units)	AD	ADFM	Other	AD	ADFM	Other
Inpatient care (RWPs)	0.0450	0.0670	0.2336			
Outpatient primary care (RVUs)				2.48	3.18	6.11
Outpatient specialty care (RVUs)				6.54	5.37	6.86
Dental (AD population)				1		

[7] Provider Requirements Integrated Specialty Model (PRISM).

Accordingly, on average for each active duty beneficiary, we expect their demand for inpatient care will be 0.0450 RWPs, 2.48 RVUs for primary care, 6.54 RVUs for specialty care, and one for dental care. Another way to think about these numbers is that for every 1,000 active duty beneficiaries, we expect 45 RWPs or approximately 45 weighted inpatient admissions. Similarly, for outpatient care, we expect 2.48 and 6.54 weighted visits per active duty beneficiary for primary and specialty care, respectively. The demand for dental care is one because the MJCSG measured capacity based on the size of the active duty population that each activity could support.[8]

The demand constraints for inpatient care and outpatient specialty care are different than they are for outpatient primary care and dental care in that they pull from a larger population group. These differences are necessary so that the solution more accurately reflects the way the Military Health System (MHS) provides care. The key difference is that for inpatient care and outpatient specialty care, we allow the model to assign workload based on the market population. For example, if two hospitals with overlapping catchment areas are in the same market, each beneficiary is assigned to the catchment population of one of the hospitals but not both. Consequently, if the MJCSG were to close one of these hospitals, they would want the remaining hospital to be able to treat beneficiaries previously treated at the closed hospital.

Additionally, experience has shown that medical centers act as referral centers—they treat beneficiaries from outside their markets. Hence, the model allows medical centers to provide inpatient and specialty care workload up to some percentage of the demand generated by the local market, thus allowing medical centers to draw workload from outside their markets.

Other workload constraints

While demand constraints limit the assigned workload in relation to the to workload generated by beneficiaries, it does not place limits on the

[8] Note that because dental care is specific to active duty, the MJCSG does not have demand rates for active duty family members or other beneficiaries.

amount of workload the model can draw from the various beneficiary groups. While it is not unreasonable to assume that the system can channel essentially all of the active duty and active duty family member workload to a military treatment facility (if the physical capacity is sufficient to provide the care), it may not be reasonable to assume this for the other beneficiary group. They may not want to come to a military treatment facility and the system cannot force them to do so. Hence, the MJCSG constrained the model to place limits on the amount of workload the model can draw from the other beneficiary group.

The MJCSG imposed these constraints at the market level (locally) and across the system (globally). Because medical centers act as referral centers for inpatient care and outpatient specialty care, the MJCSG did not impose the local workload constraint on markets with a medical center.

Education and training constraints

The modeling effort for education and training encompassed all classroom- and laboratory-based education and training.[9] Because of this broad scope, many activities with relatively small education and training programs were included. Many activities provided a small amount of continuing education while just a few activities are "schoolhouses" providing substantial amounts of classroom- and laboratory-based education and training. As a result, the MJCSG made an effort to constrain the system to force closures in some of its major medical education and training platforms to consolidate its programs into as few activities as possible. Specifically, the MJCSG constrained the system to do the following:

- Consolidate initial enlisted medical education and training at a single activity.
- Consolidate initial enlisted specialty education and training at a single activity.[10]

[9] The clinical-based education and training was excluded from the optimization model because it is not an infrastructure driver.

[10] Given recent guidance from the MJCSG, we have also constrained the model to require that initial enlisted medical education and training and initial enlisted specialty education and training be done at the same activity.

- Consolidate aeromedical enlisted education and training at a single activity.

To facilitate these constraints, it was necessary to (1) specify the activities that can perform the programs and (2) define the requirements for each program. The activities that can perform these programs are as follows:

- Initial enlisted medical education and training—Fort Sam Houston, NAVSTA Great Lakes, and Sheppard AFB.
- Initial enlisted medical specialty education and training—Andrews AFB, Brooks City-Base, Eglin AFB, Elmendorf AFB, Fort Benning, Fort Bliss, Fort Bragg, Fort Campbell, Fort Carson, Fort Eustis, Fort Gordon, Fort Hood, Fort Jackson, Fort Leavenworth, Fort Lewis, Fort Meade, Fort Polk, Fort Riley, Fort Sam Houston, Fort Stewart, Keesler AFB, Kirtland AFB, Lackland AFB, Langley AFB, MacDill AFB, NAVSTA Great Lakes, Nellis AFB, NMC Portsmouth, NMC San Diego, NNMC Bethesda, NWS Yorktown, Offutt AFB, Pensacola, Sheppard AFB, Travis AFB, U.S. Air Force Academy, Walter Reed AMC, West Point, and Wright-Patterson AFB.
- Aeromedical enlisted education and training—Brooks City-Base, Fort Rucker, Pensacola, and Wright-Patterson AFB.

Table 5 shows the requirements for these programs. Note that these requirements are subsets of the classroom- and laboratory-based education and training function requirements listed in table 1.

Table 5. Education and training functional requirements

Function (units)	Requirement
Initial enlisted medical E&T	
Classroom-based education (FTEs)	1,372
Laboratory-based education (FTEs)	954
Initial enlisted specialty medical E&T	
Classroom-based education (FTEs)	2,285
Laboratory-based education (FTEs)	1,637
Aeromedical enlisted E&T	
Classroom-based education (FTEs)	1,557
Laboratory-based education (FTEs)	108

RDA constraints

We set up the model to allow the MJCSG the potential to constrain RDA solutions in two ways.

First, for each RDA function, constrain the model so that it assigns the workload for each function to no more that a certain number of activities rather than allowing it to spread the workload for a given function over many activities.

Second, the workload within an RDA function is not all the same due to the nature of the research. Furthermore, some activities that do research for a function are better able to conduct different segments of this research than other activities doing the same RDA function. Consequently, we constructed a constraint to allow the MJCSG to require that a certain amount of workload in a certain RDA function be done at a certain set of activities.

Other constraints considered, but not used

In addition to all of the constraints we detailed thus far, we programmed several other constraints to allow the MJCSG the option to explore different solutions if they deemed it necessary to impose these constraints.

The first of these was a constraint requiring that the solution retain some minimum number of activities with graduate medical education (GME). Because the MJCSG did not explicitly model GME requirements (because it is not an infrastructure driver), they determined that they would look at the viability of GME programs in the retained activities and make a determination if these activities could provide the necessary GME. The minimum number of activities with GME required in the solution was set at 0 meaning that this constraint was not imposed.

Second, we designed a constraint requiring some minimum level of workload by service. For example, if the MJCSG determined that it was necessary to impose this constraint, it would prevent each service from going below some minimum level of inpatient care workload. This constraint was effectively not imposed as the workload minimum requirement for each function-service combination was set at 0.

Third, we designed a constraint that would force the model to retain any primary care function that had an active duty and active duty family member population large enough to generate 7,950 primary care RVUs. The MJCSG never imposed this constraint.

Finally, we designed constraints to allow the MJSCG the possibility to set workload requirements by multi-service market (MSM). The MJCSG never set multi-service market requirements above 0 meaning that these constraints were not imposed.

References

[1] Don Infrastructure and Analysis Team (DON IAT), *BRAC 2005: Analysis Handbook* (draft), March 2005

[2] Medical Joint Cross-Service Group Capacity Report

[3] Medical Joint Cross-Service Group Military Value Report

Appendix A

The section contains the AMPL (A Mathematical Programming Language) code for model we developed for the Medical Joint Cross-Service Group.

```
#########################################################################
# Optimization Methodology                                              #
# MJCSG Model                                                           #
#                                                                       #
# Eric Christensen                                                      #
# 20 September 2004                                                     #
#########################################################################


set LOCATIONS;
      # Geographic areas where medical activities are located. Note
      # that multiple medical activities may be at the same location.

param closed { LOCATIONS } binary, default 1;
      # Use to force closures of locations. The default of 1 allows
      # the location to remain open.

set ACTIVITIES;
      # The set of medical activities include medical centers,
      # hospitals, clinics, dental centers, schools, research, etc.

param location { ACTIVITIES, LOCATIONS } binary, default 0;
      # Parameter which indicates where activities are located.
      # Activity located at a location if value is 1.

param actDMIS { ACTIVITIES } default 0;
      # The parameter identifies a DMIS with each activity. Note that
      # there may be multiple DMIS per activity in reality. The
      # purpose of this parameter is not to identify the DMISs at an
      # activity, but simply to give a value that can be used to link
      # the results of the link to a U.S. map so the principals can
      # visualize the activities that are open or closed.

set FUNCTIONS;
      # The set of medical functions that activities perform.

param funcClosed { ACTIVITIES, FUNCTIONS } binary, default 1;
      # Use to force closure of specific functions at specific
      # activities. The default of 1 allows the activity-function
      # combination to remain open.

param func_Importance { FUNCTIONS } default 1.0;
```

```
      # Importance to be associated with each type of functions.

set RESOURCES;
      # The set of resources used to perform the functions.

param MV { ACTIVITIES };
      # Overall military value for each activity.

param total_MV := sum { j in ACTIVITIES } MV[j];

param funcval { j in ACTIVITIES, FUNCTIONS } >= 0, <= 100, default MV[j];
      # Functional value for performing a function at an activity
      # (If functional values are not provided, use the military
      # value of the activity.)

param max_funcval { i in FUNCTIONS }
            := max { j in ACTIVITIES } funcval[j,i];
      # This parameter gives the highest functional military value
      # across the set of activities.

check { i in FUNCTIONS } : max_funcval[i] > 0;

param capacity { ACTIVITIES, RESOURCES } >= 0;
      # Capacity (amount) of each resource type at each activity.

param total_capacity { m in RESOURCES }
            := sum { j in ACTIVITIES } capacity[j,m];
      # Total capacity (amount) across all activities for each
      # resource type.

param rate { FUNCTIONS, RESOURCES } >= 0, default 0;
      # The amount of each resource required to produce one unit
      # for a function at an activity.

set OK_ASSIGNMENTS
            := { j in ACTIVITIES, i in FUNCTIONS: funcval[j,i] > 0 };
      # Need to identify the allowable assignment of functions to
      # activities.

param requirement { FUNCTIONS } >= 0;
      # Total requirement for the function.

param p { i in FUNCTIONS } := if requirement[i] > 0 then
            ( max { i1 in FUNCTIONS } requirement[i1] )/
                  requirement[i]
            else 0;
      # Scaled value for a product function based on the overall
      # requirement.


##########################################################################
# Expansion sets and parameters                                          #
##########################################################################
```

```
param maxResExp { ACTIVITIES, RESOURCES } default 0;
      # The increase in resource available for an activity.

param addAllowed { j in ACTIVITIES, m in RESOURCES } :=
            if maxResExp[j,m] > 0 then 1 else 0;
      # Allows capacity expansion in this resource type for this
      # activity if equal to 1; otherwise, no expansion allowed.

set EXP_ALLOWED :=
            { j in ACTIVITIES, m in RESOURCES: addAllowed[j,m] == 1 };
      # Subset of activity/resource combinations where
      # expansion would be allowed.


#########################################################################
# Sets used to find alternative solutions. May be applied to either     #
# activities or functions or both. Version for locations included       #
# here.                                                                 #
#########################################################################


set EXCLD1 within LOCATIONS default {};
      # This is the set of locations in the best solution. Defining
      # this set allows us to exclude the best solution to find the
      # the second-best solution.

set EXCLD2 within LOCATIONS default {};
      # This is the set of locations in the second-best solution.
      # Defining this set allows us to exclude the second-best solution
      # to find the third-best solution.

set EXCLD_INTER := if card (EXCLD2) > 0 then ( EXCLD1 inter EXCLD2 )
            else EXCLD1;
      # This set is the intersection of the best and second-best
      # solutions. That is, this is the set of locations that are in
      # both the best and second-best solutions.

set EXCLD_1DIFF2 := EXCLD1 diff EXCLD2;
      # This is the set of locations in the best solution but not in
      # the second-best solution.

set EXCLD_2DIFF1 := EXCLD2 diff EXCLD1;
      # This is the set of locations in the second-best solution but
      # not in the best solution.

set EXCLD_COMPLEMENT := LOCATIONS diff ( EXCLD1 union EXCLD2 );
      # This is the set of locations that are neither in the best or
      # second-best solution.

param excld_num := max( 0, card( EXCLD_INTER ) - 1 );
      # card(EXCLD_INTER) is the number of locations that are in both
      # the best and second-best solutions.
```

```
##########################################################################
# Parameters used to control the optimization                            #
##########################################################################


param norm_Func_Values binary, default 0;
      # If set to 1, then normalize functional values.

param normed_FV { j in ACTIVITIES, i in FUNCTIONS }
      := if norm_Func_Values = 1 then 100 * funcval[j,i]/max_funcval[i]
            else funcval[j,i];
      # This will normalize the functional values.

param ttl_normed_FV { i in FUNCTIONS }
      := sum { j in ACTIVITIES } normed_FV[j,i];

param rho_resource default 100;
      # Penalty parameter for retaining resources.

param rho_number default 100;
      # Penalty parameter for number of locations.

param rho_val default 100;
      # Penalty parameter that forces unique assignments of requirements
      # to activity-function combinations.

param rho_elastic default 100000;
      # Penalty parameter for control of elastic resource capacity
      # expansion variables.

param minAssign { FUNCTIONS } default 1;
      # Non-zero assignments of workload have to be at least this big.

param bignum := 10000000;


##########################################################################
# Index dictionary                                                       #
#                                                                        #
# i, i1, i2, i3 Function type                                            #
# j, j1, j2, j3 Activity                                                 #
# l, l1, l2, l3 Location                                                 #
# m, m1, m2, m3 Resource type                                            #
##########################################################################


##########################################################################
# Variables                                                              #
##########################################################################


var LocOpen { l in LOCATIONS } binary, <= closed[l];
      # Open or close variable for locations.

var ActOpen { ACTIVITIES } binary;
```

```
      # Open or close variable for the activities.

var FuncOpen { (j,i) in OK_ASSIGNMENTS } binary, <= funcClosed[j,i];
      # Variable used to count the number of open functional activities.

var Assign { OK_ASSIGNMENTS } >=0;
      # Amount of each functional requirement to assign to each activity
      # (constrained by resource capacities and allowable assignments
      # by population group).


#########################################################################
# Variables for expansion                                               #
#########################################################################


var AddRes { j in ACTIVITIES, m in RESOURCES } >= 0, <= maxResExp[j,m];
      # An elastic variable used to expand or add a resource at an
      # activity if expansion is allowed for this activity/resource
      # combination.


#########################################################################
# Variables, ALPHA, BETA, and GAMMA, are used to generate alternative   #
# solutions.                                                            #
#########################################################################


var Alpha binary;
      # This variable ensures that the model excludes at least one
      # location from the intersection of the best and second-best
      # solutions.

var Beta binary;
      # This vaiable ensures that the model excludes at least one
      # location from the complement of the best and second-best
      # solutions.

var Gamma binary;
      # This variable ensures that the model includes at least one
      # location that was in the best solution and not in the second-
      # best solution and includes at least one location in the
      # second-best solution and not in the best solution.


#########################################################################
# Objective functions                                                   #
#########################################################################


# Maximize the total retained activity military value while penalizing
# retained excess resource capacity, the number of open locations,
# and/or expansion allowed.
```

```
maximize max_retained_MV:

sum { j in ACTIVITIES } ActOpen[j] * MV[j]/total_MV

      - rho_number * sum { l in LOCATIONS } LocOpen[l]

      - rho_resource * sum { m2 in RESOURCES } ( sum { j3 in ACTIVITIES }
            ( sum { l2 in LOCATIONS } ( LocOpen[l2] * capacity[j3,m2]
                  + if (j3,m2) in EXP_ALLOWED then AddRes[j3,m2]
                        else 0 ) ) )/total_capacity[m2]

      - rho_resource * sum { m3 in RESOURCES } ( sum { j4 in ACTIVITIES }
            ( ActOpen[j4] * capacity[j4,m3] + if (j4,m3) in EXP_ALLOWED
                        then AddRes[j4,m3] else 0 ) )/total_capacity[m3]

      - rho_elastic * sum { m4 in RESOURCES }
            ( sum { (j5,m4) in EXP_ALLOWED }
                  AddRes[j5,m4]
                        / total_capacity[m4] );

# Maximize the total value of assigned of functional requirements while
# penalizing the retention of excess resource capacity, the number of
# open locations, and/or expansion allowed.


maximize max_retained_funcval:

sum { (j,i) in OK_ASSIGNMENTS }
      func_Importance[i] * normed_FV[j,i]/ttl_normed_FV[i] * FuncOpen[j,i]

      - rho_val * sum { (j1,i1) in OK_ASSIGNMENTS }
            ( Assign[j1,i1] * (100 - normed_FV[j1,i1])/requirement[i1])

      - rho_number * sum { l1 in LOCATIONS } LocOpen[l1]

      - rho_resource * sum { m2 in RESOURCES } ( sum { j3 in ACTIVITIES }
            ( sum { l2 in LOCATIONS } ( LocOpen[l2] * capacity[j3,m2]
                  + if (j3,m2) in EXP_ALLOWED then AddRes[j3,m2]
                        else 0 ) ) )/total_capacity[m2]

      - rho_resource * sum { m3 in RESOURCES } ( sum { j4 in ACTIVITIES }
            ( ActOpen[j4] * capacity[j4,m3] + if (j4,m3) in EXP_ALLOWED
                        then AddRes[j4,m3] else 0 ) )/total_capacity[m3]

      - rho_elastic * sum { m4 in RESOURCES }
            ( sum { (j5,m4) in EXP_ALLOWED }
                  AddRes[j5,m4]
                        / total_capacity[m4] );


# Calculate the maximum production possible using the pseudo values
# for the product lines.


maximize max_production:
```

```
sum { i in FUNCTIONS } p[i] *
      sum { (j,i) in OK_ASSIGNMENTS } Assign[j,i]

      - rho_elastic * sum { m in RESOURCES }
            ( sum { (j2,m) in EXP_ALLOWED }
                  AddRes[j2,m]
                        / total_capacity[m] );


##########################################################################
# Constraints                                                            #
##########################################################################


# Assign all of the functional requirements.

subject to meet_requirements { i in FUNCTIONS }:
      sum { (j,i) in OK_ASSIGNMENTS } Assign[j,i] >= requirement[i];


# Functions cannot be available at a closed activity.

subject to func_at_open_act { j in ACTIVITIES }:
      sum { (j,i) in OK_ASSIGNMENTS } FuncOpen[j,i] <=
            card( FUNCTIONS ) * ActOpen[j];


# An activity cannot be open if no functions are assigned.

subject to active_func_at_open_act { j in ACTIVITIES }:
      ActOpen[j] <= sum { (j,i) in OK_ASSIGNMENTS } FuncOpen[j,i];


# Assignments cannot be made to closed functions at an activity.

subject to function_open { (j,i) in OK_ASSIGNMENTS }:
      Assign[j,i] <= bignum * FuncOpen[j,i];


# Activities cannot be open at a closed location.

subject to act_at_open_loc { l in LOCATIONS }:
      sum { j in ACTIVITIES } location[j,l] * ActOpen[j] <=
            card( ACTIVITIES ) * LocOpen[l];


# An location cannot be open if no activities at the location are open.

subject to active_act_at_open_loc { l in LOCATIONS }:
      LocOpen[l] <= sum { j in ACTIVITIES } location[j,l] * ActOpen[j];
```

```
##########################################################################
# Generate subsets for functions, resources, and assignments. These      #
# subsets al necessary for some constraints and the development of a     #
# csv output file.                                                       #
##########################################################################


# Subsets for each function and function group.

set FUNC_IP within FUNCTIONS;
      # Subset for inpatient care.

set FUNC_OPPC within FUNCTIONS;
      # Subset for outpatient primary care.

set FUNC_OPSC within FUNCTIONS;
      # Subset for outpatient specialty care.

set FUNC_DEN within FUNCTIONS;
      # Subset for dental care.

set FUNC_ETC within FUNCTIONS;
      # Subset for classroom-based education and training.

set FUNC_ETL within FUNCTIONS;
      # Subset for laboratory-based education and training.

set FUNC_ACQIMIT within FUNCTIONS;
      # Subset for Acq_IM_IT.

set FUNC_ACQMEDSYS within FUNCTIONS;
      # Subset for Acq_MedSys.

set FUNC_TMCHEMDEF within FUNCTIONS;
      # Subset for TM_ChemDef.

set FUNC_TMBIODEF within FUNCTIONS;
      # Subset for TM_BioDef.

set FUNC_TMID within FUNCTIONS;
      # Subset for TM_ID.

set FUNC_TMCCC within FUNCTIONS;
      # Subset for TM_CCC.

set FUNC_ENVMEDPHY within FUNCTIONS;
      # Subset for EnvMedPhy.

set FUNC_AEROOPERMED within FUNCTIONS;
      # Subset for AeroOperMed.

set FUNC_OCCHLTHMEDINFO within FUNCTIONS;
      # Subset for OccHlthMedInfo.

set FUNC_HYPERBARDMED within FUNCTIONS;
```

```
      # Subset for Hyperbar_Dmed.

set FUNC_IP_OPSC within FUNCTIONS;
      # Subset for inpatient and specialty care.

set FUNC_OPPC_DEN within FUNCTIONS;
      # Subset for primary care and dental.

set FUNC_MED within FUNCTIONS;
      # Subset of medical functions (excluding dental) in healthcare
      # services functions.

set FUNC_HCS within FUNCTIONS;
      # Subset of healthcare services functions.

set FUNC_ET within FUNCTIONS;
      # Subset of education and training functions.

set FUNC_RDA within FUNCTIONS;
      # Subset of RDA functions.



# Subsets for each resource type.

set RES_BEDS within RESOURCES;
      # Subset for beds.

set RES_PCERS within RESOURCES;
      # Subset for primary care exam rooms.

set RES_SCERS within RESOURCES;
      # Subset for specialty care exam rooms.

set RES_DTRS within RESOURCES;
      # Subset for dental treatment rooms.

set RES_CLASSRMS within RESOURCES;
      # Subset for classroom SQFT.

set RES_LABS within RESOURCES;
      # Subset for laboratory SQFT.

set RES_RDASQFT within RESOURCES;
      # Subset for RDQ SQFT.



# Subset of OK_ASSIGNMENTS for each function or group of functions.

set OK_IP_ASSIGNMENTS
      := { j in ACTIVITIES, i in FUNC_IP: funcval[j,i] > 0 };

set OK_OPPC_ASSIGNMENTS
      := { j in ACTIVITIES, i in FUNC_OPPC: funcval[j,i] > 0 };
```

```
set OK_OPSC_ASSIGNMENTS
      := { j in ACTIVITIES, i in FUNC_OPSC: funcval[j,i] > 0 };

set OK_DEN_ASSIGNMENTS
      := { j in ACTIVITIES, i in FUNC_DEN: funcval[j,i] > 0 };

set OK_ETC_ASSIGNMENTS
      := { j in ACTIVITIES, i in FUNC_ETC: funcval[j,i] > 0};

set OK_ETL_ASSIGNMENTS
      := { j in ACTIVITIES, i in FUNC_ETL: funcval[j,i] > 0};

set OK_ACQIMIT_ASSIGNMENTS
      := { j in ACTIVITIES, i in FUNC_ACQIMIT: funcval[j,i] > 0};

set OK_ACQMEDSYS_ASSIGNMENTS
      := { j in ACTIVITIES, i in FUNC_ACQMEDSYS: funcval[j,i] > 0};

set OK_TMCHEMDEF_ASSIGNMENTS
      := { j in ACTIVITIES, i in FUNC_TMCHEMDEF: funcval[j,i] > 0};

set OK_TMBIODEF_ASSIGNMENTS
      := { j in ACTIVITIES, i in FUNC_TMBIODEF: funcval[j,i] > 0};

set OK_TMID_ASSIGNMENTS
      := { j in ACTIVITIES, i in FUNC_TMID: funcval[j,i] > 0};

set OK_TMCCC_ASSIGNMENTS
      := { j in ACTIVITIES, i in FUNC_TMCCC: funcval[j,i] > 0};

set OK_ENVMEDPHY_ASSIGNMENTS
      := { j in ACTIVITIES, i in FUNC_ENVMEDPHY: funcval[j,i] > 0};

set OK_AEROOPERMED_ASSIGNMENTS
      := { j in ACTIVITIES, i in FUNC_AEROOPERMED: funcval[j,i] > 0};

set OK_OCCHLTHMEDINFO_ASSIGNMENTS
      := { j in ACTIVITIES, i in FUNC_OCCHLTHMEDINFO: funcval[j,i] > 0};

set OK_HYPERBARDMED_ASSIGNMENTS
      := { j in ACTIVITIES, i in FUNC_HYPERBARDMED: funcval[j,i] > 0};

set OK_IP_OPSC_ASSIGNMENTS
            := { j in ACTIVITIES, i in FUNC_IP_OPSC: funcval[j,i] > 0 };
      # Subset for inpatient and specialty care.

set OK_OPPC_DEN_ASSIGNMENTS
            := { j in ACTIVITIES, i in FUNC_OPPC_DEN: funcval[j,i] > 0 };
      # Subset for primary care and dental.

set OK_MED_ASSIGNMENTS
            := { j in ACTIVITIES, i in FUNC_MED: funcval[j,i] > 0 };
      # Subset for medical functions.
```

```
set OK_HCS_ASSIGNMENTS
            := { j in ACTIVITIES, i in FUNC_HCS: funcval[j,i] > 0 };
      # Subset for healthcare services functions.


# Subsets for reporting the results separately for each resource type.

set ACTRES_BEDS
      := { j in ACTIVITIES, m in RES_BEDS };

set ACTRES_PCERS
      := { j in ACTIVITIES, m in RES_PCERS };

set ACTRES_SCERS
      := { j in ACTIVITIES, m in RES_SCERS };

set ACTRES_DTRS
      := { j in ACTIVITIES, m in RES_DTRS };

set ACTRES_CLASSRMS
      := { j in ACTIVITIES, m in RES_CLASSRMS };

set ACTRES_LABS
      := { j in ACTIVITIES, m in RES_LABS };

set ACTRES_RDASQFT
      := { j in ACTIVITIES, m in RES_RDASQFT };

##########################################################################
# Ensure that if an activity is open, that it meets a minimum            #
# assignment constraint unless it is an isolated facility. If it is      #
# isolated it still must meet a minimum assignment constraint for        #
# isolated facilities.                                                   #
##########################################################################


param isolated { ACTIVITIES } binary, default 0;
      # A value of 1 means the activity is an isolated activity.

param minAssignIsolated { FUNCTIONS } default 1;
      # Minimum workload assignment for isolated facilities.


# Ensure the healthcare-services functions in isolated areas remain open.

subject to isolated_activity { (j,i) in OK_HCS_ASSIGNMENTS }:
      FuncOpen[j,i] >= isolated[j];


# Require a minimum assignment.

subject to min_assign { (j,i) in OK_ASSIGNMENTS }:
      Assign[j,i] >= minAssign[i] * FuncOpen[j,i] * (1 - isolated[j])
```

```
          + minAssignIsolated[i] * FuncOpen[j,i] * isolated[j];

#########################################################################
# Sets, parameters, and constraints necessary to ensure the some        #
# minimum amount of RDA workload across all capability domains (all RDA #
# functions) is assigned at an activity.                                #
#########################################################################


param minRDAAssign default 5;
      # Parameter for the minimum RDA assignment across all capability
      # domains combined.

var FuncOpenMod { ACTIVITIES, FUNCTIONS } binary, default 0;
      # This is a variable that is internal to the model. To make this
      # constraint operational, we need a function-open variable that
      # is defined across all activity-function combinations and not
      # just across the set of okay assignments.


# This constraint ensures that our internal function-open variable
# equals the FuncOpen variable when the FuncOpen variable is defined.

subject to modifiedFuncOpen { (j,i) in OK_ASSIGNMENTS }:
      FuncOpenMod[j,i] = FuncOpen[j,i];


# Constraints requiring that the minimum amount of RDA workload assigned
# across all capability domains equals some minimum RDA assignment level.

subject to rda_minAssign { j in ACTIVITIES, i in FUNC_RDA }:
      sum { i1 in FUNC_RDA } ( if (j,i1) in OK_ASSIGNMENTS then
            Assign[j,i1] else 0 ) >= minRDAAssign * FuncOpenMod[j,i];


#########################################################################
# Expansion constraints and adjustments to the production rate for      #
# inpatient care to account for differences between medical centers,    #
# teaching hospitals, and community hospitals.                          #
#########################################################################


# AddRes[j,m] must be set to 0 if Open[j] = 0.

subject to add_res_restrict { (j,m) in EXP_ALLOWED }:
      AddRes[j,m] <= maxResExp[j,m] * ActOpen[j];

param ttlmaxResExp { RESOURCES } >= 0, default 0;
      # Parameter which sets the maximum total resource expansion that
      # can occur across the whole system.


# Constraint to restrict the maximum total resource expansion that can
# occur across the whole system.
```

```
subject to max_add_restrict { m in RESOURCES }:
      sum { j in ACTIVITIES } AddRes[j,m] <= ttlmaxResExp[m];

# The next four parameters allow us to use a different inpatient care
# production rate for medical centers, teaching hospitals, and community
# hospitals. The reason for the adjustment is that the three hospital
# types have differing average workload complexity.

param medcen { ACTIVITIES } binary, default 0;

param thosp { ACTIVITIES } binary, default 0;

param chosp { ACTIVITIES } binary, default 0;

param rate_adjTH { FUNCTIONS, RESOURCES } default 0;

param rate_adjCH { FUNCTIONS, RESOURCES } default 0;


# Subsets for reporting the results separately for medical centers,
# teaching hospitals, and community hospitals.

set ACTFUNC_IP_MC
      := { (j,i) in OK_IP_ASSIGNMENTS: medcen[j] == 1};

set ACTFUNC_IP_TH
      := { (j,i) in OK_IP_ASSIGNMENTS: thosp[j] == 1};

set ACTFUNC_IP_CH
      := { (j,i) in OK_IP_ASSIGNMENTS: chosp[j] == 1};


# Resources needed for assigned functional load cannot exceed the sum
# of available resources plus added resource capacity for each resource
# type.

subject to resources_available { j in ACTIVITIES, m in RESOURCES }:
      sum { (j,i) in OK_ASSIGNMENTS } Assign[j,i] * ( rate[i,m]
            + thosp[j] * rate_adjTH[i,m]+ chosp[j] * rate_adjCH[i,m] )
                  <= capacity[j,m] + addAllowed[j,m] * AddRes[j,m];


#########################################################################
# Sets, parameters, and constraints necessary to ensure that workload   #
# assignment cannot exceed population demand (or AD demand for dental). #
#########################################################################


set POPGROUP;
      # Set for various population groups--both catchment and PRISM.

param demand { FUNCTIONS, POPGROUP } >= 0, default 0;
      # The average healthcare services workload generated per person
      # by population group. Essentially, this is healthcare demand.
```

```
param population { ACTIVITIES, POPGROUP } >= 0, default 0;
      # The number of people in each population group by activity.


# Assigned clinical workload at an activity cannot exceed demand.
# These constraints applies to outpatient care and dental.

subject to pop_demand { (j,i) in OK_OPPC_DEN_ASSIGNMENTS }:
      Assign[j,i] <= sum { g in POPGROUP } demand[i,g] * population[j,g];


set MARKETS;
      # Set of markets that activities are in. This is really
      # healthcare markets with specific emphasis on identifying multi-
      # service markets (MSMs).

param market { ACTIVITIES, MARKETS } binary, default 0;
      # Parameter which indicates the market activities are in. An
      # activity is in the market if value is 1.

param totalpopulation { MARKETS, POPGROUP } >= 0, default 0;
      # The number of people in each population group by activity.

set OK_IP_ACTIVITIES
            := { j in ACTIVITIES: funcval[j,"IP"] > 0 };
      # Identifies the activities that can have inpatient care.

set OK_OPPC_ACTIVITIES
            := { j in ACTIVITIES: funcval[j,"OP_PC"] > 0 };
      # Identifies the activities that can have primary care.

set OK_OPSC_ACTIVITIES
            := { j in ACTIVITIES: funcval[j,"OP_SC"] > 0 };
      # Identifies the activities that can have specialty care.

set OK_DEN_ACTIVITIES
            := { j in ACTIVITIES: funcval[j,"Dental"] > 0 };
      # Identifies the activities that can have dental care.

set OK_ETC_ACTIVITIES
            := { j in ACTIVITIES: funcval[j,"ET_class"] > 0 };
      # Identifies the activities that can have classroom-based E&T.

set OK_ETL_ACTIVITIES
            := { j in ACTIVITIES: funcval[j,"ET_lab"] > 0 };
      # Identifies the activities that can have laboratory-based E&T.


# Assigned clinical workload at an activity cannot exceed demand in
# the MSM. These constraints apply to IP and SC for activities that are
# not medical centers. For medical centers, we allow them to draw
# workload throughout the system (referrals).

param outsideMSM default 1.3;
```

```
      # This parameter limits the amount of workload that can come from
      # outside the MSM.

subject to pop_demand_IP_OPSC { (j,i) in OK_IP_OPSC_ASSIGNMENTS,
      k in MARKETS }: Assign[j,i] * market[j,k] <=
            (sum { g in POPGROUP } demand[i,g] * totalpopulation[k,g])
                  * (1 - medcen[j]) + (sum { g in POPGROUP }
                        demand[i,g] * totalpopulation[k,g])
                              * medcen[j] * outsideMSM;


# Assigned clinical workload in the MSM, cannot exceed demand in the MSM.
# These constraints apply to IP and SC for MSMs without medical centers.
# For MSMs with medical centers, we allow them to draw workload
# throughout the system (referrals).

param MSMmedcen { MARKETS } binary, default 0;
      # Parameter to identify MSMs with a medical center. One means the
      # MSM has a medical center.

subject to mkt_pop_demand_IP { i in FUNC_IP, k in MARKETS }:
      sum { j in OK_IP_ACTIVITIES } Assign[j,i] * market[j,k] <=
            (sum { g in POPGROUP } demand[i,g] * totalpopulation[k,g])
                  * (1 - MSMmedcen[k]) + (sum { g in POPGROUP }
                        demand[i,g] * totalpopulation[k,g])
                              * MSMmedcen[k] * outsideMSM;

subject to mkt_pop_demand_OPSC { i in FUNC_OPSC, k in MARKETS }:
      sum { j in OK_OPSC_ACTIVITIES } Assign[j,i] * market[j,k] <=
            (sum { g in POPGROUP } demand[i,g] * totalpopulation[k,g])
                  * (1 - MSMmedcen[k]) + (sum { g in POPGROUP }
                        demand[i,g] * totalpopulation[k,g])
                              * MSMmedcen[k] * outsideMSM;


#########################################################################
# Variables, sets, parameters, and constraints related to restrictions  #
# and/or for the maximum amount of workload that can come from the      #
# other group.                                                          #
#########################################################################


var AssignBenCat { (j,i) in OK_MED_ASSIGNMENTS, POPGROUP } >= 0;
      # This variable shows the assignment of workload for AD, ADFM,
      # and other beneficiaries for both the catchment and PRISM.


# Constraint to ensure that the sum of the workload assigned to each
# population group equals the Assign workload of all groups.

subject to bencat_assignment { (j,i) in OK_MED_ASSIGNMENTS }:
      sum { g in POPGROUP } AssignBenCat[j,i,g] = Assign[j,i];


# Constraint to ensure that the workload from each population group
```

```
# does not exceed the group's demand at each activity.

subject to bencat_demand_PC { (j,i) in OK_OPPC_ASSIGNMENTS,
      g in POPGROUP }: AssignBenCat[j,i,g]
            <= demand[i,g] * population[j,g];

subject to bencat_demand_IP { (j,i) in OK_IP_ASSIGNMENTS, g in POPGROUP,
      k in MARKETS }: AssignBenCat[j,i,g] * market[j,k] * (1-MSMmedcen[k])
            <= (demand[i,g] * totalpopulation[k,g]) * (1 - medcen[j])
                  + (demand[i,g] * totalpopulation[k,g])
                        * medcen[j] * outsideMSM;


subject to bencat_demand_SC { (j,i) in OK_OPSC_ASSIGNMENTS, g in POPGROUP,
      k in MARKETS }: AssignBenCat[j,i,g] * market[j,k] * (1-MSMmedcen[k])
            <= (demand[i,g] * totalpopulation[k,g]) * (1 - medcen[j])
                  + (demand[i,g] * totalpopulation[k,g])
                        * medcen[j] * outsideMSM;

param ceiling { i in FUNC_HCS, POPGROUP } >= 0, default requirement[i];

param globalplusup { FUNCTIONS, POPGROUP } >= 0, default 1;

# Constraints to ensure that the workload for each population group
# does not exceed some level systemwide (global constraint).

subject to bencat_ceiling_IP { i in FUNC_IP, g in POPGROUP }:
      sum { j in OK_IP_ACTIVITIES } AssignBenCat[j,i,g]
            <= ceiling[i,g] * globalplusup[i,g];

subject to bencat_ceiling_OPPC { i in FUNC_OPPC, g in POPGROUP }:
      sum { j in OK_OPPC_ACTIVITIES } AssignBenCat[j,i,g]
            <= ceiling[i,g] * globalplusup[i,g];

subject to bencat_ceiling_OPSC { i in FUNC_OPSC, g in POPGROUP }:
      sum { j in OK_OPSC_ACTIVITIES } AssignBenCat[j,i,g]
            <= ceiling[i,g] * globalplusup[i,g];


param mktceiling { k in MARKETS, i in FUNC_HCS } >= 0,
      default requirement[i];

param localplusup { FUNCTIONS, POPGROUP } >= 0, default 1;

param other { POPGROUP } binary, default 0;


# Constraints to ensure that the workload for each population group
# does not exceed some local level. This constraint is relaxed for IP
# and SC in markets that have a medical center.

subject to bencat_ceiling_IP_local { k in MARKETS, i in FUNC_IP,
      g in POPGROUP }: sum { j in OK_IP_ACTIVITIES }
            AssignBenCat[j,i,g] * market[j,k] * (1 - MSMmedcen[k])
                  <= (mktceiling[k,i] * other[g] + bignum
```

```
                        * (1 - other[g])) * localplusup[i,g];

subject to bencat_ceiling_OPPC_local { k in MARKETS, i in FUNC_OPPC,
      g in POPGROUP }: sum { j in OK_OPPC_ACTIVITIES }
            AssignBenCat[j,i,g] * market[j,k] <= (mktceiling[k,i]
                  * other[g] + bignum * (1 - other[g]))
                        * localplusup[i,g];

subject to bencat_ceiling_OPSC_local { k in MARKETS, i in FUNC_OPSC,
      g in POPGROUP }: sum { j in OK_OPSC_ACTIVITIES }
            AssignBenCat[j,i,g] * market[j,k] * (1 - MSMmedcen[k])
                  <= (mktceiling[k,i] * other[g] + bignum
                        * (1 - other[g])) * localplusup[i,g];


########################################################################
# Sets, parameters, and constraints necessary to ensure that if a      #
# hospital is open (has inpatient care), it also has specialty care.   #
# Also, defined here are subfunctions of the functions set. A subset   #
# for each function.                                                   #
########################################################################


set HOSPITALS :=
            { j in ACTIVITIES, h in FUNC_IP: funcval[j,h] > 0 };
      # Need to identify the  activities that are hospitals--meaning
      # they have inpatient care.

# If the hospital remains open (inpatient care), the outpatient
# functions for primary and specialty care must remain open.

#subject to hosp_open { (j,h) in HOSPITALS, o in FUNC_OPSC }:
#     FuncOpen[j,o] >= FuncOpen[j,h] * scFunc[j];


########################################################################
# Sets, parameters, and constraints necessary to ensure that some      #
# minimum number of activities with graduate education remain open.    #
########################################################################


param geSiteMin default 0;
      # Parameter indicating the minimum number of graduate education
      # sites with inpatient care that must be in the solution.

param geSites { ACTIVITIES } binary, default 0;
      # Parameter indicating whether a site has graduate education. A
      # site has graduate education is the value is 1 and 0 otherwise.


# Subset for reporting the results separately for graduate education
# sites.

set ACTFUNC_IP_GE
      := { (j,i) in OK_IP_ASSIGNMENTS: geSites[j] == 1};
```

```
# Constraint for the minimum number of graduate education sites.

subject to ge_minimum { i in FUNC_IP }: sum { j in OK_IP_ACTIVITIES }
      FuncOpen[j,i] * geSites[j] >= geSiteMin;


param marketIPMin { MARKETS } default 0;

# Constraint for the minimum number of medical centers that must remain
# in the various markets.

subject to MedCenMin { i in FUNC_IP, k in MARKETS }:
      sum { j in OK_IP_ACTIVITIES } FuncOpen[j,i] * market[j,k]
            * medcen[j] >= marketIPMin[k];


##########################################################################
# Sets, parameters, and constraints necessary to ensure that some        #
# minimum level of requirements are met by service. Note that this      #
# constraint is setup generally, but it really only applies to          #
# healthcare services.                                                   #
##########################################################################


set SERVICES;
      # Set of services.

param service { ACTIVITIES, SERVICES } binary, default 0;
      # Parameter indicating the service an activity belongs to.

param service_req { FUNCTIONS, SERVICES } >= 0, default 0;


# Constraint for some minimum level for the requirement for each function
# to be met by service.

subject to service_requirement { i in FUNCTIONS, s in SERVICES }:
      sum { (j,i) in OK_ASSIGNMENTS } Assign[j,i] * service[j,s] >=
            service_req[i,s];


##########################################################################
# Sets, parameters, and constraints to facilitate consolidation of      #
# initial medical enlisted training at fewer sites than it is at        #
# currently. For the baseline, case, this constraint doesn't apply,     #
# which we operationalize by setting the maximum number of sites        #
# initial training can be done at to the current number of sites.       #
##########################################################################


set INITIAL_ET_ACTIVITIES within ACTIVITIES;
      # Subset of initial medical enlisted education and training
      # activities.
```

```
set OK_INITIAL_ACTIVITIES
      := { j in INITIAL_ET_ACTIVITIES: funcval[j,"ET_class"] > 0
            and funcval[j,"ET_lab"] >0 };
      # Identifies the activities that can have classroom-based and
      # lab-based E&T.

set OK_INITIAL_ASSIGNMENTS
      := { j in OK_INITIAL_ACTIVITIES, i in FUNC_ET: funcval[j,i] > 0 };
            # Activity-function combinations that are appropriate for
            # initial medical enlisted training.

var AssignInitial { OK_INITIAL_ASSIGNMENTS } >= 0;
      # Variable for the amount of initial medical education and
      # training assigned to an activity.

# Constraint ensuring that the number of FTEs assigned for initial medical
# enslisted training is no more than the number of FTEs assigned to the
# activity.

subject to initial_assign { (j,i) in OK_INITIAL_ASSIGNMENTS }:
      AssignInitial[j,i] <= Assign[j,i];


var PosInitialAssign { OK_INITIAL_ASSIGNMENTS } binary;
      # Variable indicating whether an activity has initial medical
      # enlisted education and training workload assigned to the activity.


# Constraints ensuring that PosInitialAssign is 0 if no initial FTEs are
# assigned and 1 if they are assigned.

subject to positive_initial_assign_max { (j,i) in OK_INITIAL_ASSIGNMENTS}:
      PosInitialAssign[j,i] <= AssignInitial[j,i];

subject to positive_initial_assign_min { (j,i) in OK_INITIAL_ASSIGNMENTS}:
      PosInitialAssign[j,i] * bignum >= AssignInitial[j,i];

param numInitialSites := 1;
      # Maximum number of initial medical enlisted education and
      # training sites for which the education and training function
      # can remain open.

param minInitialAssign { FUNC_ET } >= 0, default 0;
      # This is the requirement for initial education.


# Constraint requiring that the number of sites with initial medical
# enlisted education and training cannot exceed some number.

subject to initialtraining { i in FUNC_ET }:
      sum { j in OK_INITIAL_ACTIVITIES } PosInitialAssign[j,i]
            <= numInitialSites;
```

```
# Constraint requiring that the classroom- and lab-based initial training
# be at the same location.

subject to initialtraining_classlab { j in OK_INITIAL_ACTIVITIES,
      i1 in FUNC_ETC, i2 in FUNC_ETL }:
            PosInitialAssign[j,i1] = PosInitialAssign[j,i2];


# Constraint requiring that the amount of education and training
# assigned to the initial medical enlisted training activities meet
# the requirement for this type of education and training.

subject to initial_req { i in FUNC_ET }:
      sum { j in OK_INITIAL_ACTIVITIES } AssignInitial[j,i]
            >= minInitialAssign[i];


##########################################################################
# Sets, parameters, and constraints to facilitate consolidation of       #
# aeromedical enlisted training at fewer sites than it is at currently. #
# For the baseline, case, this constraint doesn't apply, which we        #
# operationalize by setting the maximum number of sites initial          #
# training can be done at to the current number of sites.                #
##########################################################################


set AERO_ET_ACTIVITIES within ACTIVITIES;
      # Subset of aeromedical enlisted education and training
      # activities.


set OK_AERO_ACTIVITIES
      := { j in AERO_ET_ACTIVITIES: funcval[j,"ET_class"] > 0
            and funcval[j,"ET_lab"] >0 };
      # Identifies the activities that can have classroom-based and
      # lab-based E&T.

set OK_AERO_ASSIGNMENTS
      := { j in OK_AERO_ACTIVITIES, i in FUNC_ET: funcval[j,i] > 0 };
            # Activity-function combinations that are appropriate for
            # aeromedical enlisted training.

var AssignAero { OK_AERO_ASSIGNMENTS } >= 0;
      # Variable for the amount of aeromedical education and
      # training assigned to an activity.

# Constraint ensuring that the number of FTEs assigned for aeromedical
# enslisted training is no more than the number of FTEs assigned to the
# activity.

subject to aero_assign { (j,i) in OK_AERO_ASSIGNMENTS }:
      AssignAero[j,i] <= Assign[j,i];
```

```
var PosAeroAssign { OK_AERO_ASSIGNMENTS } binary;
      # Variable indicating whether an activity has aeromedical
      # enlisted education and training workload assigned to the activity.


# Constraints ensuring that PosAeroAssign is 0 if no initial FTEs are
# assigned and 1 if they are assigned.

subject to positive_aero_assign_max { (j,i) in OK_AERO_ASSIGNMENTS}:
      PosAeroAssign[j,i] <= AssignAero[j,i];

subject to positive_aero_assign_min { (j,i) in OK_AERO_ASSIGNMENTS}:
      PosAeroAssign[j,i] * bignum >= AssignAero[j,i];

param numAeroSites := 1;
      # Maximum number of aeromedical enlisted education and
      # training sites for which the education and training function
      # can remain open.

param minAeroAssign { FUNC_ET } >= 0, default 0;
      # This is the requirement for aeromedical education.


# Constraint requiring that the number of sites with aeromedical
# enlisted education and training cannot exceed some number.

subject to aerotraining { i in FUNC_ET }:
      sum { j in OK_AERO_ACTIVITIES } PosAeroAssign[j,i]
            <= numAeroSites;


# Constraint requiring that the classroom- and lab-based aeromedical
# training be at the same location.

subject to aerotraining_classlab { j in OK_AERO_ACTIVITIES,
      i1 in FUNC_ETC, i2 in FUNC_ETL }:
            PosAeroAssign[j,i1] = PosAeroAssign[j,i2];


# Constraint requiring that the amount of education and training
# assigned to the aeromedical enlisted training activities meet
# the requirement for this type of education and training.

subject to aero_req { i in FUNC_ET }:
      sum { j in OK_AERO_ACTIVITIES } AssignAero[j,i]
            >= minAeroAssign[i];


##########################################################################
# Sets, parameters, and constraints to facilitate consolidation of       #
# initial spec. medical enlisted training at fewer sites than it is at   #
# currently. For the baseline, case, this constraint doesn't apply,      #
# which we operationalize by setting the maximum number of sites         #
# initial spec training can be done at to the current number of sites.  #
##########################################################################
```

```
set INITSPEC_ET_ACTIVITIES within ACTIVITIES;
      # Subset of initial spec. medical enlisted education and training
      # activities.


set OK_INITSPEC_ACTIVITIES
      := { j in INITSPEC_ET_ACTIVITIES: funcval[j,"ET_class"] > 0
            and funcval[j,"ET_lab"] >0 };
      # Identifies the activities that can have classroom-based and
      # lab-based E&T.

set OK_INITSPEC_ASSIGNMENTS
      := { j in OK_INITSPEC_ACTIVITIES, i in FUNC_ET: funcval[j,i] > 0 };
            # Activity-function combinations that are appropriate for
            # initial specialty medical enlisted training.

var AssignInitSpec { OK_INITSPEC_ASSIGNMENTS } >= 0;
      # Variable for the amount of initial spec. medical education and
      # training assigned to an activity.

# Constraint ensuring that the number of FTEs assigned for initial spec.
# medical enslisted training is no more than the number of FTEs assigned
# to the activity.

subject to initspec_assign { (j,i) in OK_INITSPEC_ASSIGNMENTS }:
      AssignInitSpec[j,i] <= Assign[j,i];


var PosInitSpecAssign { OK_INITSPEC_ASSIGNMENTS } binary;
      # Variable indicating whether an activity has initial spec. medical
      # enlisted education and training workload assigned to the activity.


# Constraints ensuring that PosInitSpecAssign is 0 if no initial specialty
# FTEs are assigned and 1 if they are assigned.

Subject to positive_initspec_assign_max
      { (j,i) in OK_INITSPEC_ASSIGNMENTS}:
            PosInitSpecAssign[j,i] <= AssignInitSpec[j,i];

subject to positive_initspec_assign_min
      { (j,i) in OK_INITSPEC_ASSIGNMENTS}:
            PosInitSpecAssign[j,i] * bignum >= AssignInitSpec[j,i];

param numInitSpecSites := 1;
      # Maximum number of initial spec. medical enlisted education and
      # training sites for which the education and training function
      # can remain open.

param minInitSpecAssign { FUNC_ET } >= 0, default 0;
      # This is the requirement for initial specialty education.
```

```
# Constraint requiring that the number of sites with initial spec. medical
# enlisted education and training cannot exceed some number.

subject to initspectraining { i in FUNC_ET }:
      sum { j in OK_INITSPEC_ACTIVITIES } PosInitSpecAssign[j,i]
            <= numInitSpecSites;


# Constraint requiring that the classroom- and lab-based initial specialty
# training be at the same location.

subject to initspectraining_classlab { j in OK_INITSPEC_ACTIVITIES,
      i1 in FUNC_ETC, i2 in FUNC_ETL }:
            PosInitSpecAssign[j,i1] = PosInitSpecAssign[j,i2];


# Constraint requiring that the amount of education and training
# assigned to the initial spec. medical enlisted training activities meet
# the requirement for this type of education and training.

subject to initspec_req { i in FUNC_ET }:
      sum { j in OK_INITSPEC_ACTIVITIES } AssignInitSpec[j,i]
            >= minInitSpecAssign[i];


# Constraint ensuring the initial enlisted and initial enlisted specialty
# training be at the same location.

subject to colocate_initspec_classlab { j in OK_INITIAL_ACTIVITIES,
      i in FUNC_ET }:
            PosInitialAssign[j,i] = PosInitSpecAssign[j,i];



##########################################################################
# Sets, parameters, and constraints to facilitate a primary clinic      #
# at every location whose AD and ADFM populations generates at least    #
# 7,950 RVUs. This constraint doesn't apply to the baseline case, but   #
# is an excursion from it to see how the results change if we require   #
# a primary care clinic at every location that meets the minimum        #
# demand. For the baseline case, we "drop" this constrain in the run    #
# file.                                                                 #
##########################################################################
#
#
#set POPADADFM within POPGROUP;
#     # Subset of population group to only include active duty and
#     # active duty family members.
#
#param pcClinic { (j,i) in OK_OPPC_ASSIGNMENTS } binary
#     := if sum { g in POPADADFM } demand[i,g] * population[j,g]
#           >= minAssign[i] then 1 else 0;
#     # This parameter equals 1 if the demand exceeds 7950 RVUs and 0
#     # otherwise. A value of 1 will force primary care to stay open at
#     # an activity.
```

```
#
#
# Constraint to force an activity to keep open the primary care function
# if the active duty and active duty family member demand is at least
# the minimum assignment.
#
#subject to pcClinic_req { (j,i) in OK_OPPC_ASSIGNMENTS }:
#     FuncOpen[j,i] >= pcClinic[j,i];
#
#
##########################################################################
# Constraints used to generate alternative solutions                    #
# Exclude solutions defined by the sets EXCLD1 and EXCLD2.              #
##########################################################################


subject to alt_opt_cond_1:
      sum { s in EXCLD_INTER } LocOpen[s] <= excld_num + 1 - Alpha;

subject to alt_opt_cond_2:
      sum { s in EXCLD_COMPLEMENT } LocOpen[s] >= Beta;

subject to alt_opt_cond3a:
      sum { s in EXCLD_1DIFF2 } LocOpen[s] >= Gamma;

subject to alt_opt_cond_3b:
      sum { s in EXCLD_2DIFF1 } LocOpen[s] >= Gamma;

subject to alt_opt_cond_123:
      Alpha + Beta + Gamma >= 1;


##########################################################################
# Sets for MSMs.                                                         #
##########################################################################


set MKT_NCR within MARKETS;
set MKT_SANANTONIO within MARKETS;
set MKT_TIDEWATER within MARKETS;
set MKT_SANDIEGO within MARKETS;
set MKT_HAWAII within MARKETS;


##########################################################################
# Requirements for MSMs.                                                 #
##########################################################################


param MSMrequirement { MARKETS, FUNCTIONS } >= 0, default 0;

subject to meet_MSM_requirements { i in FUNCTIONS, k in MARKETS }:
      sum { (j,i) in OK_ASSIGNMENTS } Assign[j,i] * market[j,k]
            >= MSMrequirement[k,i];
```

```
##########################################################################
# Maximum number of activities that an RDA function can be done at.     #
##########################################################################

param maxRDAsites { FUNCTIONS } >= 0 , default 2;

set OK_ACQIMIT_ACTIVITIES
            := { j in ACTIVITIES: funcval[j,"Acq_IM_IT"] > 0 };

#subject to maxsites_Acq_IM_IT { i in FUNC_ACQIMIT }:
#     sum { j in OK_ACQIMIT_ACTIVITIES } FuncOpen[j,i] <= maxRDAsites[i];


set OK_ACQMEDSYS_ACTIVITIES
            := { j in ACTIVITIES: funcval[j,"Acq_MedSys"] > 0 };

#subject to maxsites_Acq_MedSys { i in FUNC_ACQMEDSYS }:
#     sum { j in OK_ACQMEDSYS_ACTIVITIES } FuncOpen[j,i]
#           <= maxRDAsites[i];


set OK_TMCHEMDEF_ACTIVITIES
            := { j in ACTIVITIES: funcval[j,"TM_ChemDef"] > 0 };

#subject to maxsites_TM_ChemDef { i in FUNC_TMCHEMDEF }:
#     sum { j in OK_TMCHEMDEF_ACTIVITIES } FuncOpen[j,i]
#           <= maxRDAsites[i];


set OK_TMBIODEF_ACTIVITIES
            := { j in ACTIVITIES: funcval[j,"TM_BioDef"] > 0 };

#subject to maxsites_TM_BioDef { i in FUNC_TMBIODEF }:
#     sum { j in OK_TMBIODEF_ACTIVITIES } FuncOpen[j,i] <= maxRDAsites[i];


set OK_TMID_ACTIVITIES
            := { j in ACTIVITIES: funcval[j,"TM_ID"] > 0 };

#subject to maxsites_TM_ID { i in FUNC_TMID }:
#     sum { j in OK_TMID_ACTIVITIES } FuncOpen[j,i] <= maxRDAsites[i];


set OK_TMCCC_ACTIVITIES
            := { j in ACTIVITIES: funcval[j,"TM_CCC"] > 0 };

#subject to maxsites_TM_CCC { i in FUNC_TMCCC }:
#     sum { j in OK_TMCCC_ACTIVITIES } FuncOpen[j,i] <= maxRDAsites[i];


set OK_ENVMEDPHY_ACTIVITIES
            := { j in ACTIVITIES: funcval[j,"EnvMedPhy"] > 0 };
```

```
#subject to maxsites_EnvMedPhy { i in FUNC_ENVMEDPHY }:
#     sum { j in OK_ENVMEDPHY_ACTIVITIES } FuncOpen[j,i]
#           <= maxRDAsites[i];


set OK_AEROOPERMED_ACTIVITIES
            := { j in ACTIVITIES: funcval[j,"AeroOperMed"] > 0 };

#subject to maxsites_AeroOperMed { i in FUNC_AEROOPERMED }:
#     sum { j in OK_AEROOPERMED_ACTIVITIES } FuncOpen[j,i]
#           <= maxRDAsites[i];


set OK_OCCHLTHMEDINFO_ACTIVITIES
            := { j in ACTIVITIES: funcval[j,"OccHlthMedInfo"] > 0 };

#subject to maxsites_OccHlthMedInfo { i in FUNC_OCCHLTHMEDINFO }:
#     sum { j in OK_OCCHLTHMEDINFO_ACTIVITIES } FuncOpen[j,i]
#           <= maxRDAsites[i];


set OK_HYPERBARDMED_ACTIVITIES
            := { j in ACTIVITIES: funcval[j,"Hyperbar_Dmed"] > 0 };

#subject to maxsites_Hyperbar_Dmed { i in FUNC_HYPERBARDMED }:
#     sum { j in OK_HYPERBARDMED_ACTIVITIES } FuncOpen[j,i]
#           <= maxRDAsites[i];


#########################################################################
# Sets, parameters, and constraints to ensure that certain amounts of   #
# RDA workload are assigned to specific sets of activities.             #
#########################################################################


set TMCHEMDEF_ACTIVITIES within ACTIVITIES;
      # Set of activities to which a certain amount of TM ChemDef
      # workload must be assigned.

param minTMChemDef { FUNC_TMCHEMDEF } >= 0, default 0;
      # Parameter specifying the minimum amount of TM ChemDef workload.


# Constraint ensuring that a certain amount of TM ChemDef workload is
# assigned to a certain group of activities.

subject to minAssignTM_ChemDef { i in FUNC_TMCHEMDEF }:
      sum { j in TMCHEMDEF_ACTIVITIES } Assign[j,i] >= minTMChemDef[i];



set TMBIODEF_ACTIVITIES within ACTIVITIES;
      # Set of activities to which a certain amount of TM BioDef
      # workload must be assigned.
```

```
param minTMBioDef { FUNC_TMBIODEF } >= 0, default 0;
      # Parameter specifying the minimum amount of TM BioDef workload.


# Constraint ensuring that a certain amount of TM BioDef workload is
# assigned to a certain group of activities.

subject to minAssignTM_BioDef { i in FUNC_TMBIODEF }:
      sum { j in TMBIODEF_ACTIVITIES } Assign[j,i] >= minTMBioDef[i];



set TMCCC_ACTIVITIES within ACTIVITIES;
      # Set of activities to which a certain amount of TM CCC
      # workload must be assigned.

param minTMCCC { FUNC_TMCCC } >= 0, default 0;
      # Parameter specifying the minimum amount of TM CCC workload.


# Constraint ensuring that a certain amount of TM CCC workload is
# assigned to a certain group of activities.

subject to minAssignTM_CCC { i in FUNC_TMCCC }:
      sum { j in TMCCC_ACTIVITIES } Assign[j,i] >= minTMCCC[i];
```

APPENDIX E

ACRONYMS

AAALAC - Association for Assessment and Accreditation of Laboratory Animal Care (formerly American Association for the Accreditation of Laboratory Animal Care)

AAP – Army Ammunition Plant

AD – Active Duty

ADA – American Dental Association

ADPL – Average Daily Patient Load

AFB – Air Force Base

AFIP – Armed Forces Institute of Pathology

AFRRI - Armed Forces Radiobiology Research Institute

AFSC – Air Force Specialty Code

AHA –American Hospital Association

AMA – American Medical Association

AMGA – American Medical Group Association

AMPL – A Mathematical Programming Language

ASW – Antisubmarine Warfare Center

AT&L – Acquisition, Technology and Logistics

BG – Block group

BIO - Biological

BRAC – Base Realignment and Closure

BSL – Biosafety Level

BUMED – Bureau of Medicine and Surgery (Navy) cGMP - Clinical Good Manufacturing Practices (USDA)

C4 – Combat Casualty Care Course

CAP – Coriolos Acceleration Platform

CBC – Construction Battalion Center (Navy)

CCC - Combat Casualty Care

CFS – Chief Flight Surgeon

CHAMPUS – Civilian Health and Medical Program of the Uniformed Services

CHCS – Composite Health Care System

CHEM – Chemical

CMAC – CHAMPUS Maximum Allowable Charge

CMS – Centers for Medicare and Medicaid Services

CNR – Center (Office) of Naval Research

COBRA – Cost of Base Realignment Actions

COTS – Commercial-off-the-shelf

CPLEX –

CT - Computed Tomography (imaging technique)

CVL – Composite Lab Value

DMLSS – Defense Medical Logistics Standards System

DNA - Deoxyribonucleic Acid

DoD – Department of Defense

DON – Department of the Navy

DPAS – Defense Property Accountability System

DR – Delivery Room

DTR – Dental Treatment Room

DUSD – Deputy Under Secretary of Defense

DWV – Dental Weighted Value

ER – Exam Room

E&T – Education and Training

FAC - Facility

FDA – Food and Drug Administration

FOIA – Freedom of Information Act

FTE – Full Time Equivalent

FY – Fiscal Year

GAO – Government Accountability Office

GME – Graduate Medical Education

HDD – Human Disorientation Device

Hem - Hematology

IAW – In Accordance With

ICP – Internal Control Process

ICU – Intensive Care Unit

ID – Infectious Disease

I&E – Installations and Environment

IEC – Infrastructure Executive Council

IG – Inspector General

IM – Information Management

ISG – Infrastructure Steering Group

IT – Information Technology

ITRO – Inservice Training Review Organization

JCAHO – Joint Commission on Accreditation of Healthcare Organization

JCSG – Joint Cross-service Groups

JMAR – Joint Medical Asset Repository

LDR – Labor, Delivery and Recovery

LDRP - Labor, Delivery, Recovery and Post-partum

MC – Medical Corp

MCAGCC –Marine Corps Air-Ground Combat Center

MCAS – Marine Corps Air Station

MCB – Marine Corps Base

MCLB – Marine Corps Logistics Base

MCRD – Marine Corps Recruit Depot

MCSA – Marine Corps Supply Activity

MEPRS – Medical Expense Reporting System

MG – Major General

MHS – Military Health System

MILDEP – Military Departments

MJCSG – Medical Joint Service Group

MOM –Military Operational Medicine

MOS – Military Occupational Specialty (Army)

MSM – Multi-Service Markets

MTF – Medical Treatment Facility

MV – Military Value

MWTC – Mountain Warfare Training Center (USMC)

NAB – Naval Air/Amphibious Base

NAD – Non-Active Duty

NADD - Non-Active Duty Dependent

NAES – Naval Air Engineering Station, Naval Air Experimental Station

NAF – Naval Air Facility, Numbered Air Force

NAS – Naval Air Station

NAVSTA – Naval Station

NAVWS – Naval Air Weapons Station

NCTAMS - Naval Computer and Telecommunications Area Master Station

NEC – Navy Enlisted Classification

NH – Naval Hospital

NMC – Naval Missile/Medical Center, Naval Material Command, Naval Media Center

NMITC - Navy & Marine Corps Intelligence Training Center

NMR - Nuclear Magnetic Resonance

NNMC - National Naval Medical Center (Bethesda, MD, USA)

NOBC – Navy Officer Billet Classification

NRL - Naval Research Laboratory

NSA - Naval Support Activity

NSCS - Naval Supply Corps School

NSU – Naval Support Unit

NSWC - Naval Special Warfare Command (SEAL)

NSY – Naval Shipyard

NTC – Naval Training Center

NUWC - Naval Undersea Warfare Center

NWS - Naval Weapons Station

OB - Obstetrics

OIG – Office of the Inspector General

OMB – Office of Management and Budget

OR – Operating Room

OSD – Office of the Secretary of Defense

PAC – Pacific

PC – Primary Care

PDTS – Performance Reporting System

POM – Program Objective Memorandum

PPD – Physician's Professional Record

RAD- Radiation

RDML– Rear Admiral Lower Half

RD&A – Research, Development and Acquisition

RFC – Request for Clarification

RTD&E - Research, Development, Training and Evaluation

RVU – Relative Value Unit

RWP – Relative Weighted Product

SECDEF – Secretary of Defense

SC – Specialty Care

SF – Square Feet

SME – Subject Matter Expert

TFL – Tricare for Life

TMA – Tricare Management Activity

TO&E - Table of Organization and Equipment

TRIGA - Training Research and Isotope Production, General Atomics

USAARL – United States Army Aeromedical Research

USARIEM – United States Army Research Institute of Environmental Medicine

USAMRICD - United States Army Research Institute of Chemical Defense

USAMRIID - United States Army Research Institute of Infectious Diseases

USD – Under Secretary of Defense

USD/AT&L - Under Secretary of Defense/Acquisition Technology and Logistics

VA – Veterans Affairs

VADM – Vice Admiral

VVSD – Visual Vestibular Sphere Device

WRAIR – Walter Reed Army Institute of Research

WRAMC – Walter Reed Army Medical Center

APPENDIX F

GLOSSARY

Base Closure Law - The provisions of Title II of the Defense Authorization Amendments and Base Closure and Realignment Act (Pub. L. 100-526, 102 Stat. 2623, 10 U.S.C. S 2687 note), or the Defense Base Closure and Realignment Act of 1990 (Pub. L. 100-526, Part A of Title XXIX of 104 Stat. 1808, 10 U.S.C. S 2687 note).

Base Realignment and Closure (BRAC) - It is the process DOD has previously used to reorganize its installation infrastructure to more efficiently and effectively support its forces, increase operational readiness and facilitate new ways of doing business. DOD anticipates that BRAC 2005 will build upon processes used in previous BRAC efforts.

Closure - All missions of the installation have ceased or have been relocated. All personnel positions (military, civilian and contractor) have either been eliminated or relocated, except for personnel required for caretaking, conducting any ongoing environmental cleanup, and disposal of the base, or personnel remaining in authorized enclaves.

Cost of Base Realignment Actions (COBRA) - Is an analytical tool used to calculate the costs, savings, and return on investment, of proposed realignment and closure actions.

Commission - The Commission established by section 2902 of the Defense Base Closure and Realignment Act of 1990, as amended.

Community preference - Section 2914(b)(2) of BRAC requires the Secretary of Defense to consider any notice received from a local government in the vicinity of a military installation that the government would approve of the closure or realignment of the installation.

Data certification - Section 2903 (c)(5) of BRAC requires specified DOD personnel to certify to the best of their knowledge and belief that information provided to the secretary of Defense or the 2005 Commission concerning the realignment or closure of a military installation is accurate and complete.

Force structure - Numbers, size and composition of the units that comprise US defense forces; e.g., divisions, ships, air wings, aircraft, tanks, etc.

Infrastructure Executive Council (IEC) - One of two senior groups established by the Secretary of Defense to oversee and operate the BRAC 2005 process. The Infrastructure Executive Council, chaired by the Deputy Secretary of Defense, and composed of the Secretaries of the Military Departments and their Chiefs of Services, the Chairman of the Joint Chiefs of Staff and Under Secretary of Defense (Acquisition, Technology and

Logistics) (USD(AT&L)), is the policy making and oversight body for the entire BRAC 2005 process.

Infrastructure Steering Group (ISG) - The subordinate of two senior groups established by the Secretary of Defense to oversee and operate the BRAC 2005 process. The Infrastructure Steering Group, chaired by the Under Secretary of Defense (Acquisition, Technology and Logistics) (USD(AT&L)), and composed of the Vice Chairman of the Joint Chiefs of Staff, the Military Department Assistant Secretaries for installations and environment, the Service Vice Chiefs, and the Deputy Under Secretary of Defense (Installations & Environment) (DUSD(I&E)), will oversee joint cross-service analyses of common business-oriented functions and ensure the integration of that process with the Military Department and Defense Agency specific analyses of all other functions.

Military Departments - The Military Departments are the Department of the Army, Department of the Navy, which includes the Marine Corps, and Department of the Air Force.

Military installation - A base, camp, post, station, yard, center, homeport facility for any ship, or other activity under the jurisdiction of the Department of Defense, including any leased facility. Such term does not include any facility used primarily for civil works, rivers and harbors projects, flood control, or other projects not under the primary jurisdiction or control of the Department of Defense.

National Environmental Policy Act (NEPA) Analysis - An analysis conducted to evaluate an installation's disposal decisions in terms of the environmental impact. The NEPA analysis is useful to the community's planning efforts and the installation's property disposal decisions. It is used to support DOD decisions on transferring property for community reuse.

Realignment - Includes any action that both reduces and relocates functions and civilian personnel positions, but does not include a reduction in force resulting from workload adjustments, reduced personnel or funding levels, or skill imbalances. Redevelopment authority In the case of an installation to be closed or realigned under the BRAC authority, the term "redevelopment authority" means an entity (including an entity established by a State or local government) recognized by the Secretary of Defense as the entity responsible for developing the redevelopment plan with respect to the installation or for directing the implementation of such plan.

Redevelopment plan - In the case of an installation to be closed or realigned under the BRAC authority, the term "redevelopment plan" means a plan that (A) is agreed to by the local redevelopment authority with respect to the installation; and (B) provides for the reuse or redevelopment of the real property and personal property of the installation that is available for such reuse and redevelopment as a result of the closure or realignment of the installation.

Secretary of Defense Transformation - According to the Department's April 2003 Transformation Planning Guidance document, transformation is "a process that shapes the changing nature of military competition and cooperation through new combinations of concepts, capabilities, people and organizations that exploit our nation's advantages and protect against our asymmetric vulnerabilities to sustain our strategic position, which helps underpin peace and stability in the world."

United States - The 50 states, the District of Columbia, the Commonwealth of Puerto Rico, Guam, the Virgin Islands, American Samoa, and any other territory or possession of the United States.