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14. ABSTRACT With a combined annual budget of \$67+ billion, this study examines the challenges the Department of Defense (DoD) and the Department of Veterans Affairs (VA) have as health care providers to 12 million enrolled beneficiaries. Despite different missions, there are ways they can collaborate to reduce costs, increase services and improve the quality of care. FY 2004 Defense Healthcare Program (DHP) \$15.7 billion budget has shortfalls of \$200+ million. Driven by fiscal constraints, this study's objective was to find a possible resource sharing agreement that would save federal funds while maintaining quality health care at Brooke Army Medical Center (BAMC), Wilford Hall Medical Center (WHMC) and the South Texas Veterans Health Care System (STVHCS). After analyzing FY 2002 and FY 2003 inpatient surgery data, Cardiovascular and Thoracic Surgery high costs and low volume was chosen to analyze at the DRG level to find possible savings. Initial study shows that for certain DRGs, STVHCS and WHMC were more efficient than BAMC. A thorough business case analysis needs to be done to determine if a resource sharing agreement for Cardiovascular and Thoracic Surgery would actually save the projected \$4 million in federal funds annually found in this study.					
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U.S. Army – Baylor University
Graduate Program in Healthcare Administration

Resource Sharing Analysis Between
Brooke Army Medical Center, Wilford Hall Medical Center,
and the South Texas Veterans Health Care System

A Graduate Management Project

Submitted to:

LTC David Ardner

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Captain Stephen C. Sheridan, USA, MS
Administrative Resident, U.S. Army Medical Command

2792 Stanley Road

Ft Sam Houston, Texas 96859-5000

stephen.sheridan@amedd.army.mil

(210) 221-7199

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Abstract

With a combined annual budget of \$67+ billion, this study examines the challenges the Department of Defense (DoD) and the Department of Veterans Affairs (VA) has as health care providers to 12 million enrolled beneficiaries. Despite different missions, there are ways they can collaborate to reduce costs, increase services and improve the quality of care.

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After analyzing FY 2002 and FY 2003 inpatient surgery data, Cardiovascular and Thoracic Surgery high costs and low volume was chosen to analyze at the DRG level to find possible savings. Initial study shows that for certain DRGs, STVHCS and WHMC were more efficient than BAMC. A more thorough business case analysis needs to be done to determine if a resource sharing agreement for Cardiovascular and Thoracic Surgery would actually save the projected \$4 million in federal funds annually found in this study.

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Introduction

From the earliest years of our nation's history, Congress has provided health care for our military service members. The mission of the Department of Defense (DoD) Military Health System (MHS) is to provide health support for the full range of military operations and sustain the health of all those entitled to DoD health care. In fiscal year (FY) 2003, DoD had 8.7+ million eligible beneficiaries receiving health care at a cost of about \$27.2 billion.

The Department of Veterans Affairs (VA) serves America's 26.5 million veterans and their families at a cost of about \$40 billion a year with the primary mission to serve the needs of America's veterans by providing primary care, specialized care, and related medical and social support services. (Brown)

Combined, DoD and the VA have 12 million enrolled beneficiaries. DoD has 14 medical centers, 66 community hospitals, and 489 clinics. The VA has 172 medical centers, 900 ambulatory clinics, 134 nursing homes, 40 domiciliaries, 72 comprehensive home-care programs, and 206 counseling centers. (Santos)

Differences

It is important to note DoD and VA are two separate entities with different missions: DoD fights and wins the

nation's wars, while VA cares for those who bear the scars from those wars. The DoD provides health care through the MHS as a direct care provider and through TRICARE. While the VA provides direct health care to honorably discharged veterans through the Veterans Health Administration (VHA). The services VHA offers that are not available through MHS include long-term care, blind rehab, and spinal cord injury rehab. Cultural and institutional barriers must be broken, torn down, or at least mitigated, to create health care partnerships. (Santos)

Similarities

Having considered their differences, there are still many areas of mission overlap where DoD and VA can collaborate to decrease costs, increase access to services and improve the overall quality of health care provided to their beneficiaries. Both face changing health care practices, an evolving patient population, aging infrastructures, and increasing health care costs with tighter budgets. It is precisely these similarities where Federal collaboration can be best implemented through DoD/VA resource sharing agreements. (Cullinan)

The President's Management Agenda (PMA) outlines four opportunities for improving DoD/VA sharing: 1) improving data sharing between DoD and VA health care systems 2) improving the VA health care enrollment database 3) eliminating dual

eligibility of military retirees for care under DoD and the VA health care systems by requiring annual enrollment in one system or the other, and 4) implementing recommendations of the President's Task Force. (GAO #063)

Iron Triangle of Healthcare.

Quality, access, and cost make up "the Iron Triangle of healthcare". Each side of the "triangle" directly affects the other two sides and a delicate balance must be achieved in order to make excellent health care feasible. DoD and VA health care managers are equally challenged by accessibility, cost and expenditures, and quality of care. Congress continues to pressure both the DoD and the VA to control expenditures while trying to increase access to care and quality of care. DoD/VA sharing agreements play a key role in achieving these goals. (Shi & Shing)

"Providing timely, high-quality care requires effective information sharing." (p. 9 Pres Task Report) DoD and VA are currently developing the Government Computer-Based Patient Record (GCPR), which would allow health care professionals to "share clinical information via a comprehensive, lifelong medical record." (pg 1 GAO-01-459) Better recording, tracking, and reporting of occupational exposure data will improve the ability to understand the causes and origins of service-related

disorders, assist in benefits determinations, and improve the overall health of veterans today and in the future.

Quality

Quality is a “construct,” which cannot be directly measured but can be indirectly assessed by latent variables. Examples of a construct include depression, and adolescent risky behaviors. The 1975 report of the Inter-Society Commission on Heart Disease Resources recommended that cardio surgical programs in a hospital should perform at least 200 procedures annually. The American Board of Thoracic Surgery (ABST) has set a minimum case requirement of 40 Coronary artery bypass graft (CABG), 20 valves, 30 formal pulmonary resections, 4 esophageal resections, and 10 pacemakers for certification. Currently there is no available data linking an individual surgeon’s patient volume and hospital mortality rate, but there is data to suggest that an annual volume of at least 100 – 125 heart procedures per hospital is necessary from a quality standpoint.

VA Handbook 1102.3 Criteria and Standards for Cardiac Surgery Program states that there should be a minimum of 150 cardiac procedures performed at a VA medical center per year. While 100 – 125 cases per year per hospital appears sufficient from a quality standpoint, it is recommended that at least 200 procedures per year per hospital for a program to function

efficiently. Since there is no set standard number of procedures for cardiovascular and thoracic surgery, I'll be using the minimum number of procedures (100 -125/year) set by the ABTS as my benchmark for a quality program. (American College of Surgeons)

Access

An important factor impacting access to care includes the number of TRICARE enrollees being referred to the network for care. Congress is preparing another round of Base Realignment and Closures (BRAC). As an old facility, WHMC is a prime target for BRAC. The replacement cost of a second major DoD medical center in San Antonio, after replacing BAMC just eight years ago, puts significant limitations on the use of the current WHMC. Congressional approval of a MILCON project at or near the \$1 billion level remain highly unlikely.

Neither BAMC or WHMC can absorb the additional inpatient procedures from the other, if all invasive cardiology or cardiovascular-surgery services suddenly shifted to the other facility. In FY02 & FY03 BAMC and WHMC were not able to see all of their TRICARE Prime enrolled patients. BAMC had to refer nine TRICARE Prime enrollee cases in FY03 to the network costing \$255,084? In FY03 WHMC had to refer 28 TRICARE Prime enrollee cases to the network costing \$715,319 that same year. There

were no Non-Prime enrollees referred to network care for FY02 of FY03. In addition to space, staffing will have to be considered to ensure access for the potential additional workload.

Cost

Due to time and data constraints, my study has been limited to direct care costs only. This will skew results, but will be a good starting point to determine if further study is warranted. Direct costs are costs incurred directly for and are readily identifiable to specific work in providing health care. Direct care costs are those healthcare costs funded through the Defense Health Program (DHP) and are reflected by MEPRS. Total costs include appropriations other than DHP, to include Service level military pay (MILPAY). Direct costs are a part of total cost. Areas of total cost not focused on, but that will need to be addressed in future studies prior to making a final decision include the impact military/civilian personnel ratios and revised financing under the TRICARE Next Generation program (T-NEX).

Conditions That Prompted the Study

The FY 2004 Defense Healthcare Program (DHP) budget of \$24.3 billion has shortfalls in excess of \$200+ million. Several DoD/VA Resource Sharing Demonstration projects will be

started in the summer of 2004. Laboratory Data Sharing Interoperability and Joint Credentialing are two Resource Sharing Demonstration projects that are occurring in San Antonio between BAMC, WHMC and STVHCS. T-NEX is getting phased in over the next several years. As T-NEX gets fully implemented in FY09 (25% - FY06, 50% - FY07, 75% - FY08), DoD medical treatment facilities (MTF) commanders will become more at risk for losing direct care dollars.

Rising Health Care Costs

In 2002 national healthcare expenditures increased to \$1.6 trillion, a 9.3 percent increase from 2001 with overall economic growth only 3.6 percent. National health care share of GDP increased to 14.9 percent in 2002 after nearly a decade in the 13.1 - 13.4 percent of GDP range. Hospital spending also increased at 9.5 percent to \$486.5 billion in 2002. Still outpacing growth in other health services, spending on prescription drugs slightly decelerated from 15.9 percent in 2001, to 15.3 percent in 2002. Physician spending for physician services (\$339.5 billion) grew the slowest at 7.7 percent in 2002. (Centers) In comparison to the rest of the world, the U.S. spent \$4,631 per capita on health care in 2000, 69 percent more than Germany, 83 percent more than in Canada, and 134 percent

more than the average of all industrialized nations. (Cooper, Davis)

Beneficiaries

DoD has a changing beneficiary population with active duty personnel declining and dependents and military retirees increasing. Retiree enrollment has risen 8 percent in the past two years due to higher premiums and co-pays in the civilian sector. While the DoD has reprogrammed about \$600 million this year to pay for the growth, the Services will still have to absorb increasing amounts of the cost. Increasing sharing agreements between DoD and the VHA will help cut costs, maximize usage and improve quality by pooling resources, eliminating duplication, removing administrative barriers, and implementing change. (Elliot)

From 1980 to 1998, the veteran population has declined from 30+ million veterans to about 26 million. VA estimates that by 2020 the number of veterans will drop to 16 million. (GAO #117) At the same time the number of veterans aged 85 and older are projected to increase from 150,000 in 1990 to 1+ million by 2010, a population frequently requiring nursing home care. (GAO # 51)

With a total population for the Bexar county (2004) at 1.1 million and with a military population (active, active

dependent, retired, and retired dependent) of about 204,000. That is almost 1 out of every 5 people are related to the military. With a concentration of Army, Air Force, VA and civilian hospitals, San Antonio is one of a few unique multi-service market areas that have a unique opportunity for increased sharing agreements, not found anywhere else in the country except possibly in the Washington D.C. and San Diego area. In Bexar County, DoD has 102,000 enrolled beneficiaries located at Brooke Army Medical Center (BAMC) (40,200), Wilford Hall Medical Center (WHMC) (56,800), Randolph Air Force Base (AFB) (21,800), and Brooks AFB (3,100). (Greene)

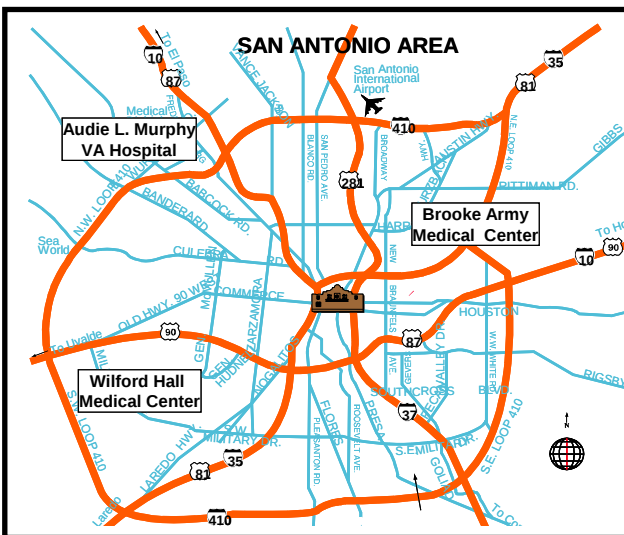


Figure 1. San Antonio multi-market area map

Statement of the Problem

By focusing on the iron triangle (cost, quality, and access), Brooke Army Medical Center (BAMC), Wilford Hall Medical

Center (WHMC) and the South Texas Veterans Health Care System (STVHCS) need to determine if an inpatient surgery resource sharing agreement can save Federal funds while delivering quality care and improving access for their beneficiaries.

Changing Management Methods

DoD and VA resources have changed over the past several years. DoD has closed one-third of its MTFs, and VA has consolidated a number of its health care facilities into 22 Veterans Integrated Service Networks (VISNs). DoD and VA have made significant changes in their health care systems to respond to these changes, mainly adopting managed care principles and shifting treatment from inpatient to outpatient. (GAO #117)

In 1995, DoD created its managed health care system, TRICARE to provide care for its beneficiaries. Care is delivered by the MTF or by a point of service option to receive care at a provider of choice. TRICARE combines the resources of all three Armed Services as well as a civilian network to provide quality care and better access (TRICARE).

Currently, TRICARE has 11 service regions with capitated budgets based on the total number of beneficiaries in the region. Three options DoD beneficiaries can choose from are; TRICARE Prime, similar to a health maintenance organization; TRICARE Extra, similar to a preferred provider organization; and

TRICARE Standard, a fee-for-service benefit. The current TRICARE contracts will be replaced by TRICARE Next Generation (T-NEX) at the end FY 2004, which will combine the 11 service regions into 3 (North, South, and West). (GAO #117)

TRICARE has evolved from Managed Care Support Contracts (MCSC) 1.0 to MCSC 2.0 to the current T-NEX. MCSC 1.0 made MTFs responsible for direct care costs only. MCSC 2.0 started to make MTFs responsible for a small slice of revised financing. T-NEX now has all MTFs responsible for a larger slice of revised financing. The revised financing slice is made up of active duty and TRICARE Prime enrollees. MTFs are now responsible for about half of the entire health care delivery costs (Direct Care & Revised Financing) with TMA Private Sector Care (PSC)(about 1/4) and Military Personnel Account (MPA)(about 1/4) making up the other half.

The reason Federal collaboration is much easier to initiate in T-NEX is because the MCSC Contractor no longer has the first right of refusal, making joint ventures between Federal entities automatic. In MCSC 1.0 there was no revised financing. In MCSC 2.0 MTFs had a small slice of revised financing. In T-NEX MTFs are now responsible for all Prime enrollees and can either gain or lose part of their budget depending on how well they manage their patient population. The four goals of T-NEX is to provide incentives for MTFs to maximize their capacity, provide

management and cost control incentives for managing MTF enrollee healthcare, improve the “real-time” cost impacts of management decisions, and align financial authority with financial responsibility.

In October 1995, VA started to transform its hospital-based health care delivery system into a community-based system. VA developed geographic service areas defined by patient populations, referral patterns, and facility locations into 22 VISNs. Each VISN has operational control and responsibility for a capitated budget for all services and patient care facilities. (GAO # 117)

Literature Review

Sharing Agreements

Resource sharing agreements are written contracts between health care facilities to buy, sell, or exchange resources or services to provide health care through integration of resources to maximize the utilization of resources (people, equipment, and facilities). There are two explicit and one implied purposes for sharing agreements. The two explicit are to help facilities sell services available through the excess capacity beyond the requirements to meet current workload and to help facilities buy medical services not currently available. The one implied

purpose is to get medical services at the lowest possible cost. (STVHC Sharing).

In order to benefit DoD and VA beneficiaries, Congress passed legislation to encourage resource sharing to improve the cost-effectiveness of Federal health care by reducing redundancy and under use of resources. Since the passage of The Economy Act (section 1535, title 31, United States Code) in 1932, DoD and VA have had the authority to share health care resources. In 1944, Public Law 78-346 gave the VA general authority to establish sharing agreements. Congress gave VA specific authority to enter into sharing agreements in 1966 by awarding them competitively or noncompetitively. The Veterans Administration and Department of Defense Health Resources and Emergency Operations Act of 1982 gave DoD and VA health care facilities the ability to enter into local agreements to share health care on a reimbursable basis. (STVHC Sharing)

The National Defense Authorization Act (NDAA) for FY 2003 helps DoD and VA overcome several barriers to sharing and increases sharing. The establishment of a Joint Incentives Program and a Health Care Resources Sharing and Coordination Project is mandated by the NDAA for FY 2003. These initiatives may occur at local, regional, or national levels. DoD and VA are expected to invest at least \$15 million each from their appropriated funds on an annual basis, starting FY 2004 through

FY 2007. The NDAA of FY2003 also requires that DoD and VA better coordinate services and benefits they provide to their beneficiaries while on active duty or after they completed their service to our Nation. (GAO #63)

When planning for a resource sharing agreement, some basic information needs to be obtained. That information includes requirements, capabilities, health care costs and reimbursement mechanisms, existing arrangements, sharing partner information, transportation factors, and attitudes toward sharing. Oversight committees, made up of representatives from both parties, are crucial in resolving problems that arise throughout the process. To ensure success, it is vital to have respective leaders of each facility meet early on in the process and to have their support and commitment. (Parker)

Types of Coordination and Sharing

Local sharing agreements, joint ventures, national sharing initiatives, and other sharing initiatives make up the four major types of DoD and VA sharing. Local sharing agreements allow nearby DoD and VA facilities to exchange health and support services. Joint ventures involve sharing in the construction or operation of hospitals. Joint ventures pool resources to avoid costs to build new facilities or utilize existing facilities. Joint ventures can be broken up into three

categories: DoD and VA services that are integrated into a single facility, VA sharing DoD facility space, and a VA facility constructed adjacent to an existing DoD facility on DoD property. Successful joint venture operations are located in New Mexico, Nevada, Texas, Alaska, Florida, Hawaii, Illinois and California. (GAO # 51)

Under the Sharing Act, the VA/DoD Executive Council is developing national sharing initiatives that can be implemented on a national level. A joint disability discharge initiative is an example of a national sharing initiative, which has eliminated duplicate physical examinations military personnel had to go through in order to receive VA disability benefits. Other collaborative efforts, is a catch all term for all other agreements not specifically covered under the Sharing Act. Some examples of VA/DoD other collaborative efforts include joint purchasing of laboratory services, medical supplies and equipment, pharmaceuticals, and other support services. Laundry services is an example of a local VA/DoD other collaborative effort between BAMC and the VA. Currently there are other joint-purchasing agreements being developed, which include pagers, cell phones, copiers and surgical instruments. (GAO #51)

On Memorial Day 2001, President Bush established a Federal advisory committee with a mission to; identify ways to improve veterans' benefits and services through better coordination of

the two departments; review barriers and challenges that impede coordination and identify opportunities to improve business practices to ensure high quality that includes cost effective health care; and identify opportunities for improved resource utilization between DoD and VA to maximize the use of available resources. (Santos)

DoD and the VA serve different patient populations. Military beneficiaries are predominantly younger families that deliver babies and move every few years. The VA beneficiaries are older, less healthy, and less mobile. DoD has nothing to match the VA's world-renowned services for the severely disabled. The beneficiaries eligible from both the DoD and VA have fought to get the majority of their medical care from the MTFs, which they grew accustomed to while on active duty. (Freedberg)

Barriers and Solutions

Until recently financial reimbursements have been a major barrier to increased sharing between the DoD and VA. Because there was no consistent methodology for computing costs or setting prices, charges for services provided under sharing agreements varied significantly causing a major barrier to resource sharing.

On May 3, 2002, the Under Secretary of Defense for Personnel and Readiness (Mr. David S.C. Chu) and the Deputy Secretary of Veterans Affairs (Mr. Leo MacKay) presented a single financial reimbursement methodology that would be used for determining charges and reimbursements between the DoD and VA. They agreed on using the Civilian Health and Medical Program for the Uniformed Services (CHAMPUS) Maximum Allowable Charges (CMAC) less 10 percent as the financial reimbursement methodology. The CMAC-10% rate would be applied to both institutional and professional charges. Waivers could be granted if the standardized rate did not cover marginal costs or if the standardized rate was higher than local market rates and if both parties desired a larger reduction from CMAC. The new regionally adjusted standardized reimbursement rate will simplify negotiations among facilities, standardize business practices, accounts for local differences, improve data analysis, and clarify billing issues between DoD and VA. The implementation of the new standardized rate structure for ambulatory care started during the first quarter of FY 2003 and for inpatient care during the third quarter of FY 2003.

(DefenseLink)

GAO found that neither DoD nor VA provides sufficient incentives to encourage local sharing agreements. Sharing agreements have been limited to those situations in which both

DoD and VA have substantial mutual benefits. DoD and VA receive different benefits when they are either the provider or the receiver in a sharing agreement. (GAO R#63)

Table 1 shows benefits reported by DoD/VA when providing services. Table 2 shows benefits reported by DoD/VA when receiving services. DoD and VA have similar benefits. By comparing both tables the best opportunities can be found in resource sharing agreements that help fully utilize equipment and staff time while improving beneficiary access and patient satisfaction. (GAO #51)

Table 1. The top four types of provider benefits reported by

DoD	VA
promoted staff proficiency	increased revenue
fully utilized equipment	fully utilized staff time
fully utilized staff time	fully utilized equipment
maintained facility capacity.	promoted staff proficiency

Table 2. The top four types of receiver benefits reported by

DoD	VA
were reduced cost of services	improved beneficiary access
improved beneficiary access	improved patient satisfaction
improved patient satisfaction	reduced cost of services
obtained specialty services	obtained specialty services

Resource Sharing

Military downsizing is causing underutilization of large DoD and VA hospitals. They're struggling to build networks of

smaller, cheaper clinics. Sometimes, a new VA facility fits neatly into the unused space at a base hospital, as is the case at the VA clinic housed in the base hospital at Fort Know, KY. (Freedberg)

DoD/VA sharing has become a model for inter-agency cooperation across the federal government. While local innovations can work around some systemic problems, only national leadership can change them. The answer at the national level is the Joint Executive Council co-chaired by the Under Secretary of Defense for Personnel and Readiness (Mr. David S.C. Chu) and the Deputy Secretary of Veterans Affairs (Mr. Leo MacKay), which was chartered in April 2003. This council was originally created under President Clinton, and was revived and elevated in 2001. (Freedberg)

Joint contracting for pharmaceuticals has been a huge financial success for DoD and Va. By buying in bulk, the two departments avoided \$98 million in FY 2001 and \$379 million in FY 2002. (Chu)

In the past when a veteran in El Paso, Texas, needed specialized care, he would be referred four-hours away to the VA hospital in Albuquerque, N.M. Today, that same veteran can stay in town and go to William Beaumont Army Medical Center (WBAMC), which gives the VA access to expensive expertise and equipment.

The VA in El Paso now reimburses the Army nearly \$5 million a year, saving the VA money and reducing the Army's cost at WBAMC. (Freedburg)

DoD estimates that they have some 600 sharing agreements valued at \$86 million a year with the VA from the East Coast to Hawaii. Unfortunately, that's less than 1 percent of a \$45 billion combined health care budget. (Freedburg)

Current Local Resource Sharing

Several successful local VA/DoD Partnerships in the San Antonio multi-service market include: Burn Patients at BAMC, Blood Services at the Lackland Air Force Base (AFB) Blood Donor Center, and Hyper baric Oxygen Therapy at the School of Aerospace Medicine (Brooks AFB).

Purpose

The purpose of this study is to analyze FY 2002 and FY 2003 inpatient surgical procedures data from BAMC, WHMC, and STVHCS in order to determine if Federal dollars can be saved through resource sharing between BAMC, WHMC and the VA. This is driven by the fiscal constraints that are being placed on the DoD, the VA and its ability to show that it can provide quality medical care at a reasonable cost given its mission. The study hopes to identify a possible DoD/VA inpatient surgical sharing agreement.

Additionally, this study hopes to improve knowledge at BAMC, WHMC and STVMCS and to add to the existing bodies of DoD/VA sharing agreement studies. My hypothesis is that Federal health care dollars can be saved through a DoD/VA sharing agreement in the department of surgery.

Methods and Procedures

Data Sources

DoD and VA inpatient Surgery dispositions data will be gathered through various DoD and VA data sources. The data will cover FY 2002 and FY 2003. The data that is being gathered from the Military Health System Management Analysis and Reporting Tool (MHS MART or M2) will be the workload for the inpatient surgery clinics. M2's data is averaged data that lags approximately four months. All of BAMC's and WHMC inpatient surgery procedures will be analyzed to find three inpatient surgery procedures that have high cost. Then one inpatient surgery procedure from BAMC, WHMC, and STVHCS will be critically analyzed at the DRG level to determine if there is a possible DoD/VA resource sharing opportunity that could save dollars.

Ethical Considerations

There will be no individual patient identification since M2 creates pseudo patient identification numbers to track patients.

Workload data will also be used at the aggregate level. With pseudo patient identifiers, no extra special ethical considerations will be needed to protect patient confidentiality for this study.

Data Reliability and Validity

Cooper & Schindler (2001) define validity as “the extent to which a test measures what we actually wish it to measure” (p. 210). They also define a measure as “reliable to the degree that it supplies consistent results” (p. 215). A weight scale is an excellent example that illustrates the relationship between reliability and validity. If the scale consistently weighs you correctly, then it is both reliable and valid. If the scale consistently overweighs you by five pounds, then the scale is reliable, but not valid. In order to ensure that I make the right recommendation, it is vital that my data be both reliable and valid. For this reason, I chose to use MEPRS data from M2 because it provides a uniform system of healthcare cost management through detailed uniform reporting of personnel utilization data by work centers, using a cost assignment methodology. (MEPRS manual)

Results

A flow chart of my research process is located in Appendix

A. For DoD data, Ms. Mary Turner from MEDCOM's ACSR Management Division ran BAMC and WHMC MEPRS' data for FY 2002 and FY 2003. For VA data, Mr. Jose Hernandez from STVHCS ran the KLF (Kathy L. Frisbee, a VA programmer that founded the internet based query tool) Report 198 for STX 671 for FY02 and FY03. BAMC, WHMC and STVHCS surgery data was placed into Microsoft Excel (Microsoft Corporation, 2000). Appendices B and C show FY02 and FY03 Inpatient Surgery. Cardiovascular and Thoracic Surgery, Urology and Neurosurgery were the top three in total expenses for inpatient surgery for FY02 and FY 03.

The Medical Expense and Performance Reporting System (MEPRS) is a cost accounting system that accumulates and reports expenses, manpower, and workload performed by DoD fixed dental treatment facilities (DTFs) and medical treatment facilities (MTFs). MEPRS gathers expenses and workload data into functional categories. MEPRS uses step down accounting, which disperses costs down through functional categories, which are further divided into summary accounts and sub accounts. The MTF then tailors the sub accounts to meet its specific needs. MEPRS codes (also known as functional cost codes) are step downed into 4 digits. Identified by a letter A through G, the first digit of the MEPRS code represents functional categories. The second digit of the MEPRS code is a summary account, while the third

digit represents a sub account and the fourth digit is site specific. For this study, I only drilled down to level three.

MEPRS establishes uniform reporting methodologies that provide consistent financial and operating performance data to assist managers who are responsible for health care delivery. Congress and the DoD base facility, dollar, and manpower decisions on MEPRS data.

BAMC's and WHMC's inpatient surgery Cardiovascular and Thoracic Surgery (3rd digit MEPRS code: ABB) was selected to be critically analyzed at the Diagnosis Related Group (DRG) level (table 3) due to high total costs and low disposition volume. DRGs 104 – 110 cover Coronary Artery Bypass Graft (CABG) and Valve surgeries. Results are listed in Appendices D and E.

Table 3. DRG Code and Descriptions

DRG codes	Description
104	Cardiac Valve & Oth Maj Cardio thoracic Proc w/ Card Cath
105	Cardiac Valve & Oth Maj Cardio thoracic Proc w/o Card Cath
106	Coronary Bypass w PTCA
107	Coronary Bypass w Cardiac Cath
108	Other Cardio thoracic Procedures
109	Coronary Bypass w/o PTCA or Cardiac Cath
110	Major Cardiovascular Procedures w/ Cardiac Cath

Discussion

Cost

For DRG codes 104 through 110 (Coronary Artery Bypass

Graft), I compared BAMC, WHMC and STVHCS to find out which medical facility had the lowest average cost per disposition (see table 4). BAMC did not have any of the lowest average cost per disposition for either FYs. The specific results can be found in Appendices D and E.

Table 4. FY02/03 Med Center w/ Lowest Average Cost/Disposition

DRG codes	FY 02	FY03
104	STVHCS	STVHCS
105	WHMC	WHMC
106	WHMC	WHMC
107	STVHCS	STVHCS
108	WHMC	STVHCS
109	WHMC	STVHCS
110	STVHCS	STVHCS

Initial results suggest that by referring patients to the medical facility with the lowest average price per disposition, a potential \$3.89 million could have been saved in FY03 for DRGs 104 - 110. Having only looked at direct costs, these initial findings don't provide a totally accurate picture of the cost impact of this proposal. However, the analysis does provide a starting point for future analysis, which should include a comparison of both direct Defense Health Program Operation & Maintenance (DHP O&M) and military pay (MILPAY) costs. Current cost analysis has flaws because total cost was not considered, which includes the differences in staffing structure between the

Army and Air Force; pending possible BRAC for WHMC; and the effects of T-NEX implementation.

The Army and Air Force manpower staffing structure are slightly different, which skews results when only looking at direct care costs. The Army utilizes about a 50% military to 50% civilian mix, while the Air Forces uses a higher percentage of military *which* is closer to a 63% military to 37% civilian mix. The Army tends to appear more costly than the Air Force, since military salaries are not included in direct care costs.

Access

With low patient volume (see Table 5) at BAMC and WHMC, these DRGs appear to be ideal opportunities to create centers of excellence. By consolidating services, surgeons could become more proficient. BAMC recently signed an agreement with the Temple VA for their cardio thoracic patients. It is estimated that BAMC will see an additional 170 procedures a year. This will require additional staffing, which would change the results found in my study. A thorough analysis will now have to be completed to see the impact of this new Temple VA agreement before deciding on whether or not to proceed with initial findings. This additional patient workload will also impact GME training.

Table 5. DRG 104 – 110 Patient Volume for FY02 & FY03

BAMC	FY 02 WHMC	STVHCS	BAMC	FY 03 WHMC	STVHCS
109	179	220	117	108	236

Quality

Currently BAMC and WHMC are barely making the recommended 100-125 cardio thoracic procedures per year by the ABTS. *This creates risks for both bad clinical outcomes and subsequent litigations, as well as impacting the ability of either facility to maintain their individual GME programs with such low case-load volumes as well.* This will no longer be a problem for BAMC with the additional procedures from the Temple VA. With many medical facilities in the San Antonio market, GME training is robust with collaboration. Further collaboration needs to be looked into as a possible closure to WHMC looms on the horizon.

Follow Up Study

Before making a final decision, further study is needed in order to determine if these initial findings are accurate. Specifically total cost, impact of BRAC, and T-NEX need to be addressed. Having direct costs only, the total cost needs to be researched. The impact of the different military to civilian staffing ratios need to be determined. While the additional

patient workload from the Temple VA will help with improving the quality of BAMC's GME program, the impact on access and cost will have to be further analyzed.

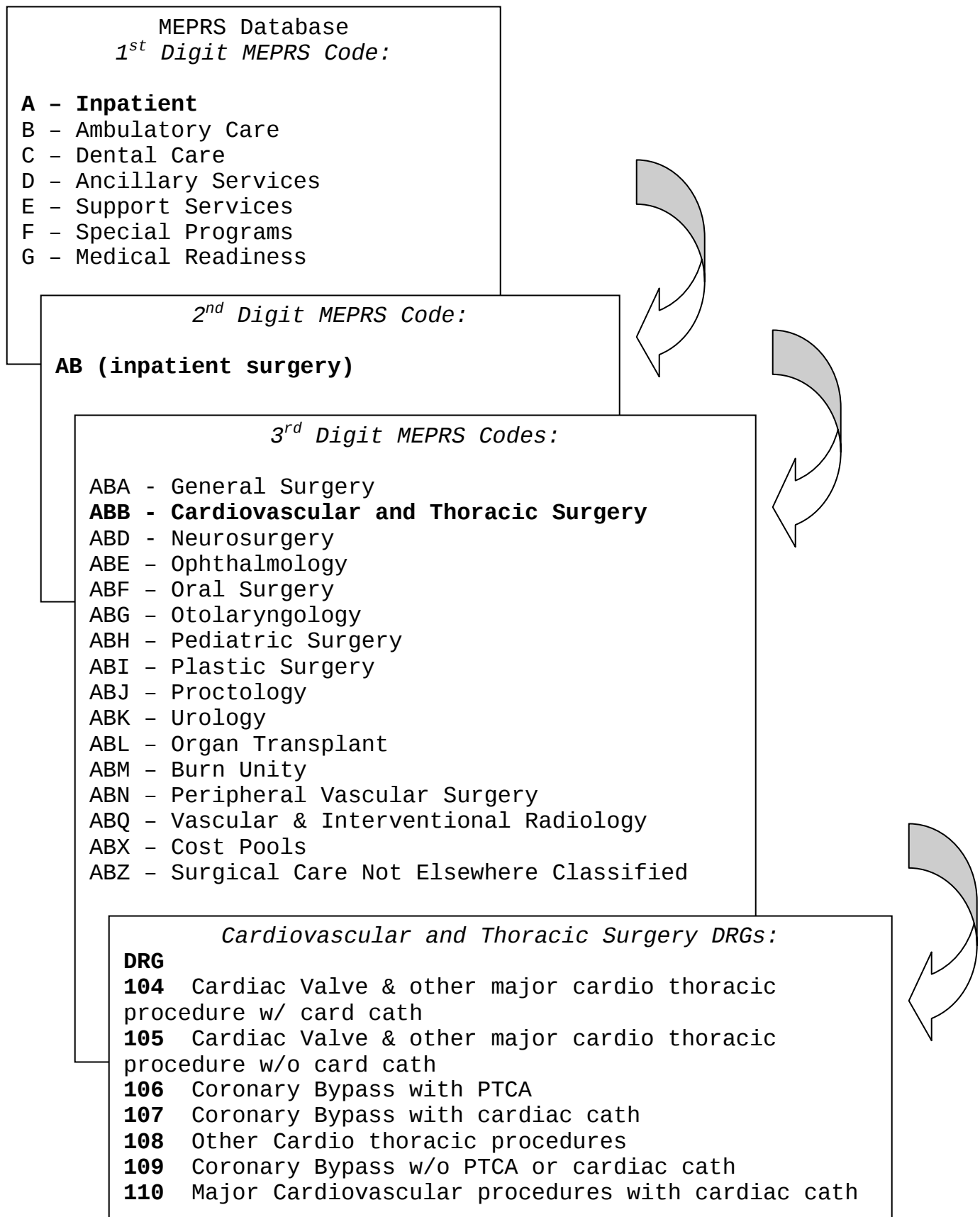
BAMC, WHMC, and University Health Science Center (UHSC) make up the three Trauma level I care facilities within San Antonio and the surrounding 22 counties. Trauma level I capacity at BAMC, WHMC, and UHSC are currently at maximum levels. If any one of these facilities closed, the fragile balance of Trauma level I care would be toppled. The other two facilities would not be unable to absorb the additional demand, resulting in reduced access and quality of health care.

Conclusion

Utilizing only direct costs for Cardiovascular and Thoracic Surgery, great opportunities to save Federal funds appear for BAMC, WHMC and the STVHCS because T-NEX is very conducive to joint Federal collaborations. Before moving into a resource sharing agreement, the impact of military personnel costs, possible BRAC impacts *and* restrictions for WHMC, and the results of the new resource sharing agreement with the Temple VA will have to be determined. With the DoD and the VA having multi-billion dollar budgets, there is no shortage of opportunities for future studies in DoD/VA resource sharing. These opportunities will need to be identified and critically analyzed

before being presented as potential solutions for reducing costs, improving quality, and increasing access for DoD/VA beneficiaries.

Appendix A: Research Flow Diagram by MEPRS and DRG codes



Appendix B: FY 02 Inpatient Surgery

Cardiovascular and Thoracic Surgery		
FY 02 Data Type	In-House WHMC ABB	In-House BAMC ABB
Total Dispositions	337.00	225.00
Personnel Direct \$	\$121,290	\$232,653
Total Expenses	\$5,727,277	\$8,414,986
Cost Per Disposition	\$16,995	\$37,400

Urology		
FY 02 Data Type	In-House WHMC ABK	In-House BAMC ABK
Total Dispositions	472.00	242.00
Personnel Direct \$	\$262,903	\$60,744
Total Expenses	\$4,318,783	\$2,451,278
Cost Per Disposition	\$9,150	\$10,129

Neurosurgery		
FY 02 Data Type	In-House WHMC ABD	In-House BAMC ABD
Total Dispositions	123.00	279.00
Personnel Direct \$	\$21,383	\$99,507
Total Expenses	\$2,110,469	\$4,313,422
Cost Per Disposition	\$17,158	\$15,460

Ophthalmology		
FY 02 Data Type	In-House WHMC ABE	In-House BAMC ABE
Total Dispositions	25.00	15.00
Personnel Direct \$	\$4,258	\$4,948
Total Expenses	\$221,497	\$119,965
Cost Per Disposition	\$8,860	\$7,998

Oral Surgery		
FY 02 Data Type	In-House WHMC ABF	In-House BAMC ABF
Total Dispositions	45.00	61.00
Personnel Direct \$	\$353,614	\$124,914
Total Expenses	\$1,405,984	\$992,612
Cost Per Disposition	\$31,244	\$16,272

Plastic Surgery		
FY 02 Data Type	In-House WHMC ABB	In-House BAMC ABB
Total Dispositions	39.00	20.00
Personnel Direct \$	\$16,919	\$14,770
Total Expenses	\$493,573	\$381,691
Cost Per Disposition	\$12,656	\$19,085

Peripheral Vascular Surgery		
FY 02 Data Type	In-House WHMC ABN	In-House BAMC ABN
Total Dispositions	159.00	169.00
Personnel Direct \$	\$29,038	\$41,052
Total Expenses	\$2,356,542	\$2,690,747
Cost Per Disposition	\$14,821	\$15,922

Otolaryngology		
FY 02 Data Type	In-House WHMC ABG	In-House BAMC ABG
Total Dispositions	104.00	122.00
Personnel Direct \$	\$29,336	\$27,386
Total Expenses	\$1,364,947	\$1,380,556
Cost Per Disposition	\$13,124	\$11,316

Appendix C: FY 03 Inpatient Surgery

Cardiovascular and Thoracic Surgery		
FY 03 Data Type	In-House WHMC ABB	In-House BAMC ABB
Total Dispositions	155.00	286.00
Personnel Direct \$	\$57,291	\$153,502
Total Expenses	\$3,411,138	\$7,237,024
Cost Per Disposition	\$22,007	\$25,304

Urology		
FY 03 Data Type	In-House WHMC ABK	In-House BAMC ABK
Total Dispositions	472.00	248.00
Personnel Direct \$	\$194,217	\$174,556
Total Expenses	\$5,128,060	\$2,229,774
Cost Per Disposition	\$10,865	\$8,991

Neurosurgery		
FY 03 Data Type	In-House WHMC ABD	In-House BAMC ABD
Total Dispositions	203.00	294.00
Personnel Direct \$	\$32,375	\$126,326
Total Expenses	\$2,886,646	\$5,612,174
Cost Per Disposition	\$14,220	\$19,089

Oral Surgery		
FY 03 Data Type	In-House WHMC ABF	In-House BAMC ABF
Total Dispositions	59.00	153.00
Personnel Direct \$	\$357,969	\$100,169
Total Expenses	\$2,385,942	\$1,075,131
Cost Per Disposition	\$40,440	\$7,027

Ophthalmology		
FY 03 Data Type	In-House WHMC ABE	In-House BAMC ABE
Total Dispositions	22.00	24.00
Personnel Direct \$	\$6,136	\$6,643
Total Expenses	\$321,889	\$98,038
Cost Per Disposition	\$14,631	\$4,085

Plastic Surgery		
FY 03 Data Type	In-House WHMC ABI	In-House BAMC ABI
Total Dispositions	51.00	81.00
Personnel Direct \$	\$15,627	\$54,762
Total Expenses	\$762,383	\$931,161
Cost Per Disposition	\$14,949	\$11,496

Peripheral Vascular Surgery		
FY 03 Data Type	In-House WHMC ABN	In-House BAMC ABN
Total Dispositions	147.00	187.00
Personnel Direct \$	\$47,518	\$48,029
Total Expenses	\$2,248,791	\$2,394,830
Cost Per Disposition	\$15,298	\$12,807

Otolaryngology		
FY 03 Data Type	In-House WHMC ABG	In-House BAMC ABG
Total Dispositions	94.00	119.00
Personnel Direct \$	\$16,933	\$51,755
Total Expenses	\$1,293,918	\$1,587,547
Cost Per Disposition	\$13,765	\$13,341

Appendix D: Potential Savings Based on FY02

VA center of excellence w/ BAMC & WHMC referring patients					
DRG	Cardiac Valve & Other MAJ Cardiothoracic Proc w/ Card Cath	VA FY02	BAMC FY02	WHMC FY02	Total FY02
104	Total Dispositions	12	9	14	35
	Average Price Per Disposition	\$45,413	\$80,299	\$52,294	\$178,006
	Total Cost	\$544,956	\$722,690	\$732,112	\$1,999,758
	Average Price Per Day	\$2,583	\$3,458	\$3,698	\$9,738
	Total RWP		82.75	114.26	197.02
	Total Bed Days	211	209	198	618

Potential Savings via DoD/VA Sharing			
VA Savings	BAMC Savings	WHMC Savings	Federal Savings
\$0	\$313,973	\$96,330	\$410,303

WHMC center of excellence w/ BAMC & VA referring patients					
DRG	Cardiac Valve & Oth Maj Cardiothoracic Proc w/o Card Cath	VA FY02	BAMC FY02	WHMC FY02	Total FY02
105	Total Dispositions	40	24	32	96
	Average Price Per Disposition	\$38,176	\$58,339	\$34,072	\$130,587
	Total Cost	\$1,527,036	\$1,400,143	\$1,090,301	\$4,017,479
	Average Price Per Day	\$8,827	\$4,023	\$4,379	\$17,229
	Total RWP		154.06	188.44	342.50
	Total Bed Days	173	348	249	770

Potential Savings via DoD/VA Sharing			
VA Savings	BAMC Savings	WHMC Savings	Federal Savings
\$164,160	\$582,417	\$0	\$746,578

Status Quo					
DRG	Coronary Bypass w PTCA	VA FY02	BAMC FY02	WHMC FY02	Total FY02
106	Total Dispositions	0	1	2	3
	Average Price Per Disposition		\$73,623	\$42,868	\$116,491
	Total Cost		\$73,623	\$85,736	\$159,359
	Average Price Per Day		\$4,331	\$4,763	\$9,094
	Total RWP		7.91	15.82	23.72
	Total Bed Days	0	17	18	35

Potential Savings via DoD/VA Sharing			
VA Savings	BAMC Savings	WHMC Savings	Federal Savings
\$0	\$30,755	\$0	\$30,755

Appendix D: Potential Savings Based on FY02

VA center of excellence w/ BAMC & WHMC referring patients					
DRG	Coronary Bypass w Cardiac Cath	VA FY02	BAMC FY02	WHMC FY02	Total FY02
107	Total Dispositions	25	10	40	75
	Average Price Per Disposition	\$31,704	\$51,002	\$37,079	\$119,785
	Total Cost	\$792,595	\$510,023	\$1,483,161	\$2,785,779
	Average Price Per Day	\$10,429	\$4,113	\$3,394	\$17,936
	Total RWP		54.78	217.34	272.12
	Total Bed Days	76	124	437	637

Potential Savings via DoD/VA Sharing			
VA Savings	BAMC Savings	WHMC Savings	Federal Savings
\$0	\$192,985	\$215,010	\$407,995

WHMC center of excellence w/ BAMC & VA referring patients					
DRG	Other Cardiothoracic Procedures	VA FY02	BAMC FY02	WHMC FY02	Total FY02
108	Total Dispositions	11	7	13	31
	Average Price Per Disposition	\$30,208	\$41,910	\$28,836	\$100,954
	Total Cost	\$332,292	\$293,368	\$374,865	\$1,000,525
	Average Price Per Day	\$8,307	\$3,451	\$4,868	\$16,627
	Total RWP		29.83	55.61	85.44
	Total Bed Days	40	85	77	202

Potential Savings via DoD/VA Sharing			
VA Savings	BAMC Savings	WHMC Savings	Federal Savings
\$15,099	\$91,518	\$0	\$106,617

WHMC center of excellence w/ BAMC & VA referring patients					
DRG	Coronary Bypass w/o PTCA or Cardiac Cath	VA FY02	BAMC FY02	WHMC FY02	Total FY02
109	Total Dispositions	102	36	47	185
	Average Price Per Disposition	\$27,108	\$40,295	\$22,918	\$90,321
	Total Cost	\$2,765,001	\$1,450,626	\$1,077,167	\$5,292,794
	Average Price Per Day	\$10,676	\$3,582	\$4,049	\$18,307
	Total RWP		151.80	184.12	335.92
	Total Bed Days	259	405	266	930

Potential Savings via DoD/VA Sharing			
VA Savings	BAMC Savings	WHMC Savings	Federal Savings
\$427,320	\$625,563	\$0	\$1,052,883

Appendix D: Potential Savings Based on FY02

VA center of excellence w/ BAMC & WHMC referring patients					
DRG	Major Cardiovascular Procedures w Cardiac Cath	VA FY02	BAMC FY02	WHMC FY02	Total FY02
110	Total Dispositions	30	22	31	83
	Average Price Per Disposition	\$7,138	\$32,853	\$29,091	\$69,082
	Total Cost	\$214,145	\$722,769	\$901,821	\$1,838,735
	Average Price Per Day	\$1,660	\$3,458	\$4,722	\$9,840
	Total RWP		94.84	132.51	227.34
	Total Bed Days	129	209	191	529

Potential Savings via DoD/VA Sharing			
VA Savings	BAMC Savings	WHMC Savings	Federal Savings
\$0	\$565,729	\$680,538	\$1,246,267

	FY02 Totals	VA FY02	BAMC FY02	WHMC FY02	Total FY02
	Total Dispositions	220	109	179	508
	Average Price Per Disposition	\$28,073	\$47,461	\$32,096	\$805,226
	Total Cost	\$6,176,025	\$5,173,242	\$5,745,162	\$17,094,429
	Average Price Per Day	\$6,955	\$3,703	\$4,001	\$98,771
	Total RWP	0	575.97	908.09	1484.06
	Total Bed Days	888	1,397	1,436	3,721

Total Potential Savings via DoD/VA Sharing			
VA Savings	BAMC Savings	WHMC Savings	Federal Savings
220	109	179	
\$606,579	\$2,402,940	\$991,877	\$4,001,397

Appendix E: Potential Savings Based on FY03

VA center of excellence w/ BAMC & WHMC referring patients					
DRG	Cardiac Valve & Other MAJ Cardio thoracic Proc w/ Card Cath	VA FY03	BAMC FY03	WHMC FY03	Total FY03
104	Total Dispositions	4	4	5	13
	Average Price Per Disposition	\$50,883	\$92,226	\$51,973	\$195,081
	Total Cost	\$203,531	\$368,902	\$259,863	\$832,295
	Average Price Per Day	\$6,784	\$3,883	\$3,879	\$14,546
	Total RWP		37.73	34.29	72.03
	Total Bed Days	30	95	67	192

Potential Savings via DoD/VA Sharing			
VA Savings	BAMC Savings	WHMC Savings	Federal Savings
\$0	\$165,372	\$5,450	\$170,821

WHMC center of excellence w/ BAMC & VA referring patients					
DRG	Cardiac Valve & Other Maj Cardio thoracic Proc w/o Card Cath	VA FY03	BAMC FY03	WHMC FY03	Total FY03
105	Total Dispositions	51	11	22	84
	Average Price Per Disposition	\$45,664	\$58,393	\$34,736	\$138,793
	Total Cost	\$2,328,874	\$642,327	\$764,190	\$3,735,391
	Average Price Per Day	\$10,214	\$3,568	\$4,660	\$18,443
	Total RWP		59.05	118.55	177.60
	Total Bed Days	228	180	164	572

Potential Savings via DoD/VA Sharing			
VA Savings	BAMC Savings	WHMC Savings	Federal Savings
\$557,344	\$260,232	\$0	\$817,576

Status Quo					
DRG	Coronary Bypass w PTCA	VA FY03	BAMC FY03	WHMC FY03	Total FY03
106	Total Dispositions	0	2	5	7
	Average Price Per Disposition		\$59,558	\$57,829	\$117,387
	Total Cost		\$119,117	\$289,144	\$408,261
	Average Price Per Day		\$7,445	\$4,819	\$12,264
	Total RWP		14.14	35.43	49.56
	Total Bed Days	0	16	60	76

Potential Savings via DoD/VA Sharing			
VA Savings	BAMC Savings	WHMC Savings	Federal Savings
\$0	\$3,459	\$0	\$3,459

Appendix E: Potential Savings Based on FY03

VA center of excellence w/ BAMC & WHMC referring patients					
DRG	Coronary Bypass w Cardiac Cath	VA FY03	BAMC FY03	WHMC FY03	Total FY03
107	Total Dispositions	23	30	29	82
	Average Price Per Disposition	\$32,502	\$55,683	\$42,900	\$131,085
	Total Cost	\$747,540	\$1,670,483	\$1,244,113	\$3,662,137
	Average Price Per Day	\$9,116	\$3,814	\$3,524	\$16,455
	Total RWP		158.89	156.14	315.03
	Total Bed Days	82	438	353	873

Potential Savings via DoD/VA Sharing			
VA Savings	BAMC Savings	WHMC Savings	Federal Savings
\$0	\$695,431	\$301,563	\$996,994

VA center of excellence w/ BAMC & WHMC referring patients					
DRG	Other Cardio thoracic Procedures	VA FY03	BAMC FY03	WHMC FY03	Total FY03
108	Total Dispositions	12	2	7	21
	Average Price Per Disposition	\$22,709	\$31,698	\$28,473	\$82,880
	Total Cost	\$272,512	\$63,395	\$199,308	\$535,215
	Average Price Per Day	\$9,733	\$21,132	\$10,490	\$41,354
	Total RWP		7.91	27.73	35.64
	Total Bed Days	28	3	19	50

Potential Savings via DoD/VA Sharing			
VA Savings	BAMC Savings	WHMC Savings	Federal Savings
\$0	\$17,977	\$40,342	\$58,319

VA center of excellence w/ BAMC & WHMC referring patients					
DRG	Coronary Bypass w/o PTCA or Cardiac Cath	VA FY03	BAMC FY03	WHMC FY03	Total FY03
109	Total Dispositions	112	35	16	163
	Average Price Per Disposition	\$28,280	\$40,886	\$28,383	\$97,549
	Total Cost	\$3,167,415	\$1,431,008	\$454,127	\$5,052,550
	Average Price Per Day	\$9,128	\$4,100	\$4,587	\$17,815
	Total RWP		140.90	63.19	204.09
	Total Bed Days	347	349	99	795

Potential Savings via DoD/VA Sharing			
VA Savings	BAMC Savings	WHMC Savings	Federal Savings
\$0	\$441,191	\$1,639	\$442,830

Appendix E: Potential Savings Based on FY03

VA center of excellence w/ BAMC & WHMC referring patients					
DRG	Major Cardiovascular Procedures w Cardiac Cath	VA FY03	BAMC FY03	WHMC FY03	Total FY03
110	Total Dispositions	34	33	24	91
	Average Price Per Disposition	\$6,958	\$34,008	\$28,468	\$69,433
	Total Cost	\$236,570	\$1,122,261	\$683,222	\$2,042,053
	Average Price Per Day	\$1,479	\$3,980	\$4,270	\$9,728
	Total RWP		137.90	99.68	237.58
	Total Bed Days	160	282	160	602

Potential Savings via DoD/VA Sharing			
VA Savings	BAMC Savings	WHMC Savings	Federal Savings
\$0	\$892,649	\$516,231	\$1,408,880

	FY03 Totals	VA FY03	BAMC FY03	WHMC FY03	Total FY03
Totals	Total Dispositions	236	117	108	461
	Average Price Per Disposition	\$29,476	\$46,303	\$36,055	\$832,209
	Total Cost	6956441.82	\$5,417,493	\$3,893,966	\$16,267,901
	Average Price Per Day	\$7,950	\$3,975	\$4,223	\$130,605
	Total RWP	0	556.52	535.01	1091.53
	Total Bed Days	875	1,363	922	3,160

Total Potential Savings via DoD/VA Sharing			
VA Savings	BAMC Savings	WHMC Savings	Federal Savings
\$557,344	\$2,476,310	\$865,225	\$3,898,879

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