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Army-Baylor University Graduate Program in Health and Business Administration

South Texas Veterans Health Care System Mobile Health Clinic Business Case Analysis

Presented to Mr. Jeff Milligan, Acting Director
Maj. Paul Brezinski

In fulfillment of the requirements for
the Graduate Management Project

By
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11 June 2009

Disclaimer

The views expressed in this Graduate Management Project are those of the author and do not reflect the official policy or position of the South Texas Veterans Health Care System, Baylor University, the Department of the Navy, the Department of the Army, the Department of the Air Force, the Department of Veteran's Affairs, the Department of Defense, or the U.S. Government.

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Abstract

This business case examines the likely costs and benefits of establishing a mobile primary care clinic to provide care to geographically underserved veterans in South Texas. The recommendation is to purchase a mobile health unit with no ancillary services and staffed by one physician's assistant (PA) and one nurse practitioner (NP). A total of four options were evaluated: (1) no ancillary with physician/registered nurse (RN) staffing, (2) no ancillary with PA/NP staffing, (3) radiology suite with physician/RN staffing, or (4) radiology suite with PA/NP staffing. Option 1 returned an expected net present value (NPV) of negative \$2,644.6K with a ROI of negative 79.8%. Option 2 returned an expected NPV of negative \$2,600.2K with a ROI of negative 79.5%. Option 3 returned an expected NPV of negative \$2,731.2K with a ROI of negative 67.7% and option 4 returned an expected NPV of negative \$2,686.8K with a ROI of negative 67.3%.

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Executive Summary

This business case examines the likely costs and benefits that follow from the pending establishment of a mobile primary care clinic to provide care to geographically underserved veterans in the Valley/Coastal Bend region of the South Texas Veterans Health Care System (STVHCS) enrollment area. The establishment of the mobile clinic requires several major actions including purchasing a mobile health clinic, hiring the associated staff, purchasing IT equipment to provide satellite connectivity to the home station, and contracting with local pharmacies to provide prescription service to patients seen in the mobile clinic. This analysis covers the estimated business consequences of these actions as they impact the STVHCS and the Veterans Health Administration (VHA) during the current and future fiscal years.

This case is designed to provide the Acting Director, STVHCS and the Executive Leadership with the necessary financial projections, contingency assessments, and risks associated with each of four options: (1) a mobile health unit with no ancillary services staffed by a physician and a RN, (2) a mobile health unit with no ancillary services staffed by a PA and a NP, (3) a mobile health unit with a radiology suite staffed by a physician and a RN, and (4) a mobile health unit with a radiology suite staffed by a PA and a NP. Since the establishment of a mobile health clinic has been directed by the Network Director, the option of not implementing a mobile clinic is not considered.

After projecting over a five-year period, option 1 returned an expected net present value (NPV) of negative \$2,644.6K with a ROI of negative 79.8%. Option 2 returned an expected NPV of negative \$2,600.2K with a ROI of negative 79.5%. Option 3 returned an expected NPV of negative \$2,731.2K with a ROI of negative 67.7% and option 4 returned an expected NPV of negative \$2,686.8K with a ROI of negative 67.3%.

The major assumptions underlying these expected results include but are not limited to the following: the mobile primary care clinic will be based out of the McAllen facility, only locations within 2 1/2 hours of McAllen will be considered as sites, usage patterns for the target market will be the same as for the system, primary focus will be on existing enrolled beneficiaries, clinic staff will travel to/from service area on a daily basis, the most likely case enrollment is 3,700 with a worst case enrollment of 3,367 and a best case enrollment of 4,033, and vehicle/equipment and salary cost range is 18% from worst to best case. A limitation on the results is the lack of a needs assessment of the market. Without this assessment, the assumption on usage patterns can not be verified. Based on financial results and projections, should a mobile clinic be purchased, a mobile health unit with no ancillary services with a clinical staff of one PA and one NP generates the least negative cash flows of the options presented.

A. Introduction

A.1. South Texas Veterans Health Care System Background

The South Texas Veterans Health Care System (STVHCS), located in San Antonio is part of the VA Heart of Texas Veterans Integrated Service Network (VISN 17). The STVHCS has over 3500 employees that serve veterans in 63 counties and has an operating budget for FY 09 in excess of \$591M. The STVHCS is comprised of four divisions referred to as the Audie L. Murphy Division, the Kerrville Division, the Valley/Coastal Bend Division, and the Satellite Clinic Division. Affiliated with the University of Texas Health Science Center at San Antonio, the system has an active ambulatory care program with VA-staffed satellite outpatient clinics and contract Community Based Clinics located throughout San Antonio and South Texas. The mission, vision, and values for the STVHCS can be found in Appendix A.

The STVHCS has an enrolled veteran population of approximately 116,000 beneficiaries. In FY 08, nearly 74,000 unique beneficiaries made a total of over 236,000 visits to a primary care clinic. Of the 116,000 enrolled beneficiaries, over 95,000 reside within 30 minutes of a VA outpatient clinic. Although this exceeds the access standard of 70% of enrollees within 30 minutes, only 14 counties within the system are currently meeting this standard. The data is skewed by the fact that nearly half of the enrolled population resides in Bexar County. Of the nearly 21,000 enrolled beneficiaries not within access standards, over one-fourth reside over 60 minutes from a VA owned or contracted outpatient facility.

Over the last two years, the STVHCS leadership has strived to create and maintain a culture of excellence. In FY 06, the STVHCS ranked 130th out of 139 VA medical centers in aggregate scores for access, quality, and satisfaction. Due to the leadership focus and implementation of the highly successful “Go for the Blue” campaign, the STVHCS finished FY

08 ranked 26th nationally in aggregate scores. Despite the huge improvements in access and quality that have driven the aggregate score higher, customer satisfaction at STVHCS remains low. Based on feedback from patient surveys, one of the many factors driving low satisfaction scores is the distance many veterans must travel to receive basic care. For the first three months of FY 09, only 78% of established patients indicated that they received their outpatient appointments at the time and location desired. Additionally, a study of the Valley/Coastal Bend market by Booz Allen Hamilton (2007) found that a majority of veterans using both VA and private sector care prefer VA care as long as it is available locally. A limitation of this study as it relates to this BCA is that it is focused on inpatient and specialty care, and does not address primary care needs in the market. It does, however, provide insight into veterans' preferences on where they receive care.

Divisions. The Audie L. Murphy Division (ALMD), also known as the Audie L. Murphy Memorial Veterans Hospital, is named after the nation's most decorated World War II veteran and is a 212 acute bed facility providing primary, secondary, tertiary, and quaternary health care in medicine, surgery, psychiatry, and rehabilitation medicine. It also supports a 90 bed Extended Care Therapy Center, a 30-bed Spinal Cord Injury Center, an eight-bed Bone Marrow Transplant Unit, a 66-bed off-site Residential Care Center, and a Geriatric Research, Education and Clinical Center. ALMD also leases 67,769 square feet of space off-campus. ALMD is a Level II Research Facility and is ranked as the ninth largest VHA research program with more than 450 projects that include aging, renal disease, diabetes, HIV/AIDs, and cancer treatment and therapy. The system has a National Institute of Health (NIH) funded General Clinical Research Center, a Geriatric Research, Education & Clinical Center (GRECC), a Veterans Evidence-Based Research Dissemination Implementation Center (VERDICT), and a HIV/AIDS Research Center.

The Kerrville Division (KD) is located 65 miles northwest of San Antonio in the town of Kerrville. The hospital has 25 acute beds and a 154 bed Transitional Care Center. The KD provides primary care, acute care, long-term care, geriatric evaluation and management, and palliative care to an estimated 16,000 veterans residing in the “Texas Hill Country.”

The Valley/Coastal Bend Division (V/CBD) includes primary care outpatient clinics located in Harlingen, McAllen, Corpus Christi, and Laredo. The new Harlingen facility opened in November 2007 and is a 34,660 square foot leased facility providing primary care, mental health, and contract services for inpatient care. Ongoing expansion in Harlingen includes a 120,000 square foot ambulatory surgery center scheduled to open in January 2011. Since no inpatient VA facility exists in the region, STVHCS began contracting in April 2009 with four local hospitals to provide inpatient services for veterans in the service area. Future planned growth in this region includes expansion of specialty care and contracts for inpatient care in McAllen, Corpus Christi, and Laredo. Although this expansion of services addresses the inpatient and specialty care needs in the region, it does not address the need for primary care expansion into rural areas. In FY11, the V/CBD will be designated as its own healthcare system, making it the fourth healthcare system in VISN 17. The system will be known as the Texas Valley Coastal Bend Health Care System (TVCBHCS).

The Satellite Clinic Division (SCD) handles over 300,000 outpatient visits annually. Services provided at the satellite clinics include primary care and some specialty services. The SCD includes both VA-staffed clinics and contract Community Based Outpatient Clinics (CBOC). When required, veterans receiving care through a SCD facility are referred to ALMD or KD for specialty care including medicine, surgery, neuropsychiatry, rehabilitation, spinal cord injury, and long-term care.

Geographical Location. The STVHCS serves one of the largest primary service areas in the nation, covering 63 counties throughout South Texas. The STVHCS is headquartered at the ALMD, located in San Antonio at the South Texas Medical Center complex next to University Hospital. The South Texas Medical Center is on the northwest side of San Antonio, between Interstate 10 and Loop 410. The KD is located in the town of Kerrville, 65 miles northwest of San Antonio. VA-staffed and contract outpatient clinics are located throughout South Texas. Figure 1 provides a map of the STVHCS service area with locations and types of facilities.

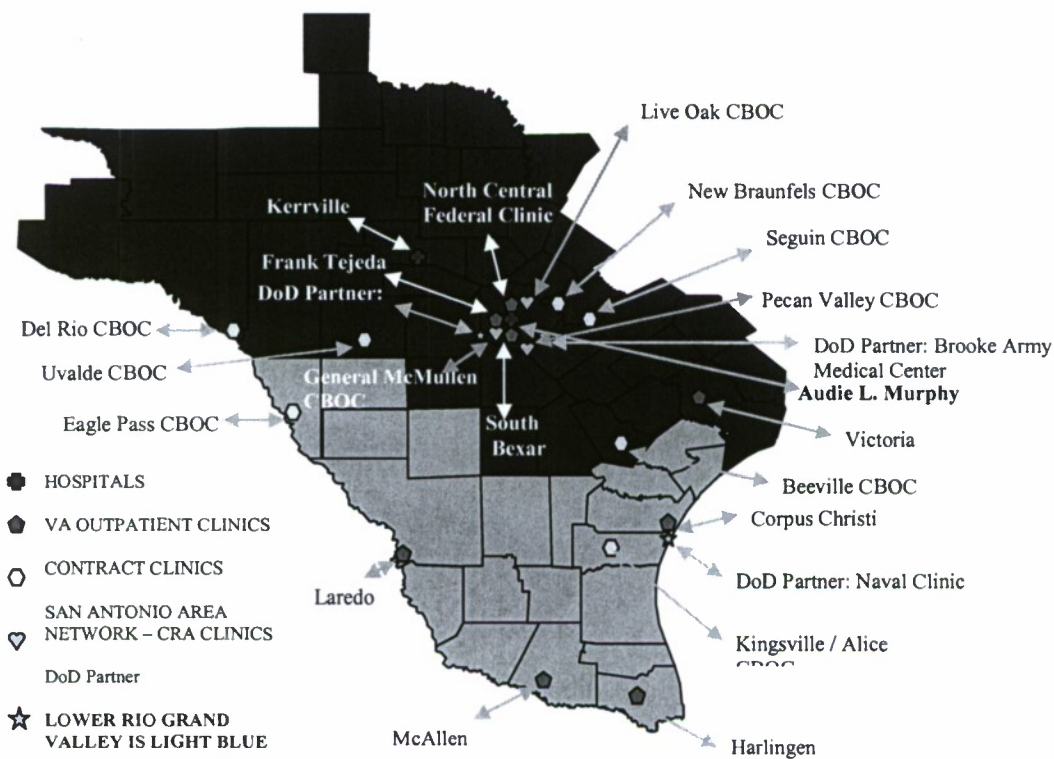


Figure 1. South Texas Veterans Health Care System Sites of Care

A.2. Subject of the Case

The subject of this business case analysis is to evaluate the likely costs and benefits of establishing a mobile primary care clinic for the STVHCS. The mobile clinic will provide local access to primary care services in areas currently outside of geographic access standards to

existing VA outpatient clinics. Due to the pending separation of the Valley/Coastal Bend area into its own healthcare system, this business case will address only the counties that will fall under the new system as it will have ownership of the mobile health unit following the transition. Specifically, the analysis will focus on the following counties located within 2 1/2 hours of the McAllen outpatient clinic: Brooks, Cameron, Hidalgo, Jim Hogg, Kenedy, Starr, Willacy, and Zapata.

A.3. Purpose of the Case

The purpose of this business case analysis is to provide the Acting Director, STVHCS with the necessary financial projections, financial metrics, and assessment of contingencies and risks to support a decision of which method of implementing a mobile primary care clinic to accept. The specific scenarios will address the potential type of services that the mobile clinic will provide as well as the staffing of the mobile clinic. This initiative has already been directed and funded by the VISN 17 Director, so this case will focus solely on determining the most cost effective way of implementing the program. To maintain continuity of care for veterans using the mobile clinic, any scenarios under consideration must include VA owned staffing and must have remote connectivity to the patient's electronic health record. This will enable the mobile clinic to meet the same standard of care received at the parent facility. Since the mobile clinic will be visiting a particular location approximately every two weeks, veterans requiring primary care at times the clinic is not in the area will have the option to make an appointment at the nearest fixed VA owned or contract facility or exercise other insurance options to receive local care.

A.4. Business Objectives

The primary business objective under consideration in this BCA is to improve geographic access to primary care and mental health services in rural and highly rural locations in the

Valley/Coastal Bend service area, which are defined as being more than 30 minutes or 60 minutes from a VA primary care facility respectively. A secondary business objective is to improve overall outpatient customer satisfaction and a tertiary business objective is to increase market penetration in rural areas.

B. Background and Literature Review

Assessment of the healthcare needs of rural populations starts with a definition of rural. This is no easy task. According to the U. S. Department of Agriculture (n.d.), the government offers no less than nine definitions of rural from three different sources: the Census Bureau, the Office of Management and Budget, and the Department of Agriculture. The definitions of rural cover a range of 75 to 99 percent of the land area and 48.8 million to 177 million people according to 2000 census figures. Even the most conservative estimate places over 17 percent of the population in a rural setting. Texas rural population indicators from the Department of Agriculture (n.d.) range from 13.9 to 48.8 percent depending on the definition used. According to FY 06 data from the VA Planning Systems Support Group (n.d.), approximately 33 percent of enrollees in the STVHCS service area reside in either rural or highly rural locations.

The lack of geographic access to care in South Texas is not limited to enrolled VA beneficiaries. According to the National Center for Health Statistics (2007) chartbook on health trends in the United States, many of the counties that would be served by the proposed mobile health clinic have fewer than three primary care providers per 10,000 persons with some counties having no primary care providers. To assess the health care needs of individuals living in rural and frontier regions, Stamm, Lambert, Piland, and Speck (2007) identified five key issues: (1) how to provide access to health care, (2) how to provide quality of health care, (3) how to meet

the scope of practice demands, (4) rural-specific characteristics of a specific region, and (5) how to offer quality of life for health care providers.

Previous studies of urban and rural populations have found significant differences in health risks for rural populations when compared to urban counterparts. The National Center for Health Statistics (2001) indicates that rural populations are older, have a higher prevalence of smoking and obesity, and are more limited in activity due to chronic health conditions. The study also found that rates of uninsured were not significantly different, but that physician and dentist availability is significantly lower in rural areas. One of the primary reasons for limited medical care availability in rural areas is economic uncertainty. According to Heady (2002), low population densities in rural areas lead to decreased patient volumes and diseconomies of scale when compared to urban and suburban settings. It is not as easy to be profitable and maintain profitability in a rural setting. Profitability is not the only factor preventing more physicians from practicing in rural areas. Rabinowitz and Paynter (2002) found that choice of specialty, location of clinical training, and lifestyle perceptions are also limiting factors in getting more physicians to practice in rural areas.

Despite the higher risks faced by rural populations, the effects of health care system access on health are highly debatable. McKinlay, McKinaly, and Beaglehole (1989) estimated that the health care system's impact on health outcomes is as low as 3.5 percent with factors such as social status, income, education, occupation, and place of residence as more significant determinants of health outcomes. Although this is a relatively old study, the findings have been supported by more recent studies. Rosenthal and Fox (2000) support this finding and also attribute differences in outcomes to an imbalance of volume, staff support, equipment, and choice. In contrast, Gamm, Hutchison, Dabney, and Dorsey (2003) identified access to quality

health services as the number one rural health priority among both providers and patients.

Despite the potentially low impact of the health system on outcomes, improving access continues to be championed by healthcare leaders. U. S. Assistant Surgeon General Susan Blumenthal (2002) called for efforts to increase access to healthcare to improve health for all Americans.

In order to address the need for improved access to primary care in rural markets, the American College of Physicians (1995) has recommended the following six changes:

1. Implementing universal health care coverage through a system that makes primary care equally affordable to rural populations.
2. Increasing the supply of primary care providers in rural areas by lessening specialty and geographic differentials in physician income.
3. Increasing the supply of primary care providers in rural areas by changing medical education to emphasize training enough rural physicians.
4. Decreasing professional isolation in rural areas through accessible continuing medical education and through telecommunications technology.
5. Identifying tertiary care needs at the community level and using state and federal funds to assist rural hospitals where access to care would be threatened by hospital closure.
6. Using innovative delivery systems that emphasize coordination and cooperation among providers, institutions, and communities.

Although these recommendations were made more than thirteen years ago, most have not been sufficiently addressed to date and are still issues in the current environment. Implementation of a mobile health clinic addresses the recommendation for a coordinated innovative delivery system.

Differences in health-related quality of life for rural and urban residents are not limited to just the general population. Research by Weeks et al. (2004) showed significantly lower health-

related quality of life scores among rural veterans as compared to urban and suburban veterans. The researchers also cautioned that policymakers should anticipate greater health care demands from rural populations. Some locations have attempted to address rural health care demands by instituting rural mobile health units. One such area is rural Virginia. During a three-year project at Old Dominion University funded by the Department of Health and Human Services (DHHS), Alexy and Elnitsky (1996) implemented a mobile health clinic in rural Virginia as an alternative model to providing healthcare. In reviewing the project, the authors noted that in addition to improved access, additional benefits can be realized by hospitals considering implementation of a mobile health unit. These benefits include enhanced visibility and image, increased referrals to the hospital, and increased utilization of ancillary services. The Waldron College of Health and Human Services at Radford University undertook a similar project in 2000 in the town of Galax, Virginia through a combination of government and private grants. As this program has continued to evolve, McDaniel and Strauss (2006) noted that increased volume in uninsured patients has had a great impact on the ability of the outreach program to become more financially self-sufficient as it moves from grant funding to university funding.

The state of Maryland, through the University of Maryland School of Nursing, also implemented a mobile health clinic program in 1994 with a goal to improve the health status of underserved Maryland families. The benefits of this program in terms of improving access for rural families and providing educational and research opportunities for students led the state to expand the program to include three additional mobile health units (Heller & Goldwater, 2004).

The Veterans Health Administration (VHA) has primarily attempted to address the healthcare needs of rural veterans by opening Community Based Outpatient Clinics (CBOCs), which are health care sites geographically separated from parent facilities. According to VHA

Handbook 1006.1 (2004), over 450 new CBOCs were activated between 1995 and 2004 and have been effective in improving access to health care services to geographically underserved veterans. Although CBOCs have been highly successful in improving geographic access to care, there are still significant rural populations that are underserved as most clinics are established at sites with at least 1,600 enrollees or 1,300 users within geographic access standards of a proposed site.

To address the need for better rural access to health care, many VHA facilities have explored the use of mobile health clinics with mixed results. In 2001, the Virginia General Assembly requested that the Virginia Department of Veterans Affairs (VDVA) study the need for a mobile medical facility. The VDVA findings, published as House Document 15 (2002), showed that a mobile medical facility would not be a cost-effective method to address the health care needs of rural Virginia veterans. Although the high cost of implementing mobile health services led the VDVA to decide against the mobile clinic option, the decision appears to be the exception and not the norm among VHA regions as the VA (2008) announced in an August press release new mobile health clinics would be activated in early 2009 as part of a pilot project through the Office of Rural Health to serve veterans in 24 counties across six states: Colorado, Nebraska, Wyoming, Maine, Washington, and West Virginia.

The VA has further addressed the need for geographic access to primary care through the use of rural outreach clinics in areas where the eligible veteran population is too small to establish a full-time CBOC. These outreach clinics are part of a VA network offering service on a part-time contract basis. Expansion of this program is ongoing, as the VA will open ten new outreach clinics during FY 09. While this option may be preferable in regions where there is only one or two communities needing access to VA care, regions such as South Texas require a

solution that can reach multiple communities separated by significant distances. Another barrier to implementing outreach clinics is provider willingness to participate given differences in their current practices and the standard of care required by the VA.

Implementation of a mobile health unit is expensive when compared to providing the same care at fixed facilities. Depending on the size and scope of services provided, vehicle costs can range from \$200K for a smaller, single exam room setting to \$1M or more for units providing comprehensive care. Many other factors must also be considered when implementing a mobile health clinic. To help administrators with the decision-making process, Moulavi et al. (1999) recommend assessing seven factors when considering implementing a mobile health unit. These factors recommended by Moulavi et al were used in the analysis for the STVHCS mobile health clinic and are listed below:

- Community Demographics
- Cost/Benefit Analysis
- Personnel
- Funding
- Vehicle Design and Manufacturers
- Electrical Systems
- Preventive Maintenance

Despite the potentially high cost of providing care in a mobile setting, VHA facilities from Togus, ME to Cheyenne, WY to Puget Sound, WA have implemented or are in the process of implementing mobile health clinics. The Togus, ME proposal (2008), calculated a cost per visit of \$548 for the first implementation year declining to \$347 by 2011. Although the cost per visit is higher than in a normal fixed facility, the highly rural population of central Maine does

not support establishment of either a fixed VA-staffed facility or a contract with a civilian facility and establishment of a mobile facility is the only method to improve geographic access in this region.

The STVHCS faces similar geographic access restraints, especially in the Valley/Coastal Bend region. Although CBOCs have been opened throughout the region, thousands of veterans still reside outside of geographic access standards. To address this problem, the VISN 17 director has provided funding for a mobile health clinic to service rural areas in the Valley/Coastal Bend region. This BCA will focus on determining the lowest cost method for implementing a mobile health clinic.

C. Methods and Assumptions

C.1. Scenarios and Data

Scenarios. The values for the costs and benefits were generated analyzing four individual scenarios. Scenario 1 involves purchasing a mobile health clinic with capability to provide primary care and mental health services to certain areas in South Texas not currently meeting geographic access standards. Staffing for the mobile clinic will consist of one Internal Medicine Physician, one Registered Nurse (RN), one social worker, and two medical technicians/drivers. Under this scenario, the mobile clinic will provide no ancillary services. For laboratory needs, blood draws will be done on-site and taken back to the parent facility at the end of the day for testing. Radiology services will be provided by the nearest fixed VA facility. Pharmacy needs will be provided through local contracts. The anticipated costs of this scenario are listed in Table 1.

Table 1

Abridged Cost Model for Scenario 1

Category	Item	Details	Cost
Vehicle/ Equipment	Purchase of mobile clinic and equipment	40 ft long	\$450,000 ^a
Vehicle/ Equipment	Recurring maintenance costs		\$22,000/yr ^a
Vehicle/ Equipment	GOV for Staff Use		\$9,000/yr ^b
Personnel	Internal Medicine Physician (GS-15)	1 FTE	\$161,514/yr ^c
Personnel	Registered Nurse (GS-11)	1 FTE	\$81,523/yr ^c
Personnel	Social Worker (GS-12)	1 FTE	\$97,714/yr ^c
Personnel	Medical Tech/Driver (GS-7)	2 FTE	\$110,166/yr ^c
IM/IT	Satellite Unit		\$91,000 ^b
IM/IT	Recurring Costs		\$1,800/yr ^b
Contracts	Pharmacy services	As needed	\$180,000/yr ^b

^aData provided by commercial vendor

^bData provided by contracting

^cBased on FY09 GS pay scale at step 5 with 27.52% benefits

For scenario 2, STVHCS will purchase the same type of vehicle as in scenario 1. The difference in this scenario is in the staffing model. Under this scenario, staffing will consist of one Nurse Practitioner (NP) and one Physician Assistant (PA) instead of a physician and a RN. All other factors are the same. The anticipated costs of this scenario are listed in Table 2.

Table 2

Abridged Cost Model for Scenario 2

Category	Item	Details	Cost
Vehicle/ Equipment	Purchase of mobile clinic and equipment	40 ft long	\$450,000 ^a
Vehicle/ Equipment	Recurring maintenance costs		\$22,000/yr ^a
Vehicle/ Equipment	GOV for Staff Use		\$9,000/yr ^b
Personnel	Physician Assistant (GS-13)	1 FTE	\$116,197/yr ^c
Personnel	Nurse Practitioner (GS-13)	1 FTE	\$116,197/yr ^c
Personnel	Social Worker (GS-12)	1 FTE	\$97,714/yr ^c
Personnel	Medical Tech/Driver (GS-7)	2 FTE	\$110,166/yr ^c
IM/IT	Satellite Unit		\$91,000 ^b
IM/IT	Recurring Costs		\$1,800/yr ^b
Contracts	Pharmacy services	As needed	\$180,000/yr ^b

^aData provided by commercial vendor

^bData provided by contracting

^cBased on FY09 GS pay scale at step 5 with 27.52% benefits

Under scenario 3, STVHCS will purchase a larger mobile health clinic with a built-in radiology suite. This scenario requires additional manpower requirements in order to staff the radiology suite but will provide higher patient satisfaction as patients will not have to travel to a fixed VA facility for their x-rays. Laboratory and pharmacy functions will be the same as the other scenarios. The anticipated costs of this scenario are listed in Table 3.

Table 3

Abridged Cost Model for Scenario 3

Category	Item	Details	Cost
Vehicle/ Equipment	Purchase of mobile clinic and equipment	45 ft long	\$700,000 ^a
Vehicle/ Equipment	Recurring maintenance costs		\$22,000/yr ^a
Vehicle/ Equipment	GOV for Staff Use		\$9,000/yr ^b
Personnel	Internal Medicine Physician (GS-15)	1 FTE	\$161,514/yr ^c
Personnel	Registered Nurse (GS-11)	1 FTE	\$81,523/yr ^c
Personnel	Social Worker (GS-12)	1 FTE	\$97,714/yr ^c
Personnel	Radiology Tech	1 FTE	\$67,383/yr ^c
Personnel	Medical Tech/Driver (GS-7)	2 FTE	\$110,166/yr ^c
IM/IT	Satellite Unit		\$91,000 ^b
IM/IT	Recurring Costs		\$1,800/yr ^b
Supplies	Radiology supply increases		\$41,738/yr ^d
Contracts	Pharmacy services	As needed	\$180,000/yr ^b

^aData provided by commercial vendor^bData provided by contracting^cBased on FY09 GS pay scale at step 5 with 27.52% benefits^dCalculated from visit/cost data from Table 6

For scenario 4, STVHCS will purchase the same type of vehicle and equipment as in scenario 3 along with the NP and PA staffing model from scenario 2. The anticipated costs of this scenario are listed in Table 4.

Table 4

Abridged Cost Model for Scenario 4

Category	Item	Details	Cost
Vehicle/ Equipment	Purchase of mobile clinic and equipment	45 ft long	\$700,000 ^a
Vehicle/ Equipment	Recurring maintenance costs		\$22,000/yr ^a
Vehicle/ Equipment	GOV for Staff Use		\$9,000/yr ^b
Personnel	Physician Assistant (GS-13)	1 FTE	\$116,197/yr ^c
Personnel	Nurse Practitioner (GS-13)	1 FTE	\$116,197/yr ^c
Personnel	Social Worker (GS-12)	1 FTE	\$97,714/yr ^c
Personnel	Radiology Tech	1 FTE	\$67,383/yr ^c
Personnel	Medical Tech/Driver (GS-7)	2 FTE	\$110,166/yr ^c
IM/IT	Satellite Unit		\$91,000 ^b
IM/IT	Recurring Costs		\$1,800/yr ^b
Supplies	Radiology supply increases		\$41,738/yr ^d
Contracts	Pharmacy services	As needed	\$180,000/yr ^b

^aData provided by commercial vendor^bData provided by contracting^cBased on FY09 GS pay scale at step 5 with 27.52% benefits^dCalculated from visit/cost data from Table 6

Data. Geographic enrollment data for VA beneficiaries is available from the VA Planning Systems Support Group (PSSG). The most recent data available at the time of this BCA is from the end of FY 06. The geographic enrollment data for the eight counties within 2 1/2 hours of the McAllen clinic indicates that as of the end of FY 06, 4,617 enrollees reside more

than 30 minutes from a fixed VA-owned or contract facility. The travel time bands for these counties are presented in Table 5.

Table 5

End of FY 06 Travel Time Bands by County

County	<u>Enrollee Travel Time Bands (Minutes)</u>					
	0-15	15-30	30-60	60-90	90-120	>120
Brooks	0	0	142	20	0	0
Cameron	1,841	1,546	2,486	7	1	6
Hidalgo	4,256	4,602	677	5	1	0
Jim Hogg	0	0	112	49	1	0
Kenedy	0	0	2	1	0	0
Starr	0	0	110	248	55	32
Willacy	0	0	233	141	0	0
Zapata	0	0	21	260	4	3

Note. Only includes counties within 2 1/2 hours of McAllen Outpatient Clinic

Based on this data, the mobile clinic working group has determined six primary locations the clinic will serve on a rotating basis: Rio Grande City (Starr County), Roma (Starr County), Zapata (Zapata County), Falfurrias (Brooks County), Hebbronville (Jim Hogg County/Duval County) and Port Isabel (Cameron County).

Projected veteran population for the period of analysis is presented in Table 6. If insufficient numbers of current enrollees choose to enroll for care at the mobile clinic to meet enrollment goals, enrollment will be opened to eligible veterans not currently enrolled to the VA.

Table 6

Projected Veteran Population by County

County	FY 09	FY 10	FY 11	FY 12	FY 13
Brooks	467	468	470	474	476
Cameron	18,074	18,059	18,082	18,090	18,069
Hidalgo	27,009	27,188	27,361	27,459	27,457
Jim Hogg	357	359	363	367	369
Kenedy	43	42	41	39	39
Starr	1,096	1,100	1,107	1,112	1,114
Willacy	983	979	980	985	989
Zapata	685	692	700	708	710

Note. Only includes counties within 2 1/2 hours of McAllen Outpatient Clinic

Current enrollment, workload, and cost data for VA facilities is available from the VHA Support Service Center's (VSSC) planning, workload, and resource management websites. The data integral to this BCA is listed in Table 7 and represents data for the entire health care system. This data can not be broken down by the travel time bands, as the lowest level of detail available is at the facility level. The assumption made in this BCA is that the usage patterns for the target locations will mirror the usage for the entire system. This assumption places a limitation on the accuracy of the financial projections in this analysis. Without a needs assessment of the target population's primary care needs, there is no way to verify the accuracy of the assumption that their usage patterns will mirror the market.

Table 7

Selected Enrollment, Workload, and Cost Data for STVHCS

	FY 08 Amounts
Primary Care Visits	236,127 ^a
X-Ray Visits	51,566 ^a
Enrollees	115,504 ^b
X-Ray Visits Per Enrollee	0.4464
X-Ray Cost Per Visit	\$90.72 ^c
X-Ray Supply Costs	\$1,303,177 ^d
X-Ray Supply Cost Per Visit	\$25.27
Beneficiary Travel Costs	\$4,865,839 ^e
Beneficiary Travel Costs Per Enrollee	\$42.12

^aFrom VSSC workload reports^bFrom the VSSC enrollment cube^cFrom the STVHCS Organizational Efficiency Dashboard^dFrom the VSSC Financial Management Profile^eData provided by the Chief, Fiscal Service*C.2. Scope of the Case*

Time. This business case analysis covers a period of five years, beginning 1 July 2009. This analysis will examine the cash flows, return on investment (ROI), and net present value (NPV) over a five year period starting with FY09. The analysis period ends on 30 September 2013.

Organizations. This business case analysis directly affects the South Texas Veterans Health Care System's Valley/Coastal Bend rural beneficiaries located in the following counties within 2 1/2 hours of McAllen: Brooks, Cameron, Hidalgo, Jim Hogg, Kenedy, Starr, Willacy, and Zapata. The surrounding civilian medical community is also affected because of the need to contract with local facilities for pharmacy services and also because of the potential to reduce fee-based services in these areas.

Technologies. Technologies that need to be considered in this BCA include satellite or wireless connectivity for access to the Veterans Health Information Systems and Technology Architecture (VistA) and the Computerized Patient Record System (CPRS) as well as the potential use of telehealth for consultation services.

C.3. Financial Metrics

The financial metrics used in this BCA include annual and cumulative discounted cash flows (DCF), return on investment (ROI), and net present value (NPV). Incremental values were used to develop cash flow estimates for the five-year fiscal period starting 1 October 2008.

Net Present Value (NPV). NPV is a profitability measure that uses the discounted cash flow technique. The discount rate used to determine NPV is based on the relative risk of the project. All scenarios addressed in this analysis were determined to be equal in risk, so the FY 09 Office of Management & Budget (OMB) discount rate of 1.60% was used in all scenarios.

Simple ROI. ROI is presented as a percentage. ROI values above 0% are considered as a net gain from the investment and values below 0% are considered as net loss from the investment.

C.4. Benefits

This BCA recognizes that no revenue increases will be realized by establishing a mobile primary care clinic. Cost savings from reduced beneficiary travel claims will be realized under all scenarios and the estimated savings have been incorporated into the financial calculations of this BCA. Additionally, potential cost savings through reduction in in-house radiology visits in scenarios 3 and 4 have also been incorporated into the financial analysis. Table 8 provides the financial benefits realized under each scenario.

Table 8

Financial Benefits by Scenario

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Reduced Beneficiary Travel Costs	X	X	X	X
Reduced In-House Radiology Visits			X	X

Potential enrollment increases may be realized as local care becomes available, but the initial focus of this initiative is to meet the needs of current enrollees outside of geographic access standards. Some reduction in fee-based care costs may be realized.

Soft Benefits are benefits in which a value cannot be assigned. This BCA has identified four soft benefits resulting from the establishment of a mobile primary care clinic:

1. Improved geographic access for counties in the Valley/Coastal Bend area not meeting current geographic access standards.
2. Improved overall customer satisfaction. Providing primary care in the community will make obtaining care more convenient to the affected beneficiary population.

Beneficiaries seen at the mobile clinic will have a shorter commute to receive care.

To realize the potential improvement in customer satisfaction, steps must be taken to limit the frustrations of patients expecting more care or access than the mobile clinic can provide. This will be further addressed in the Risks and Contingencies section.

3. Reduced appointment wait times. Providing care in a mobile clinic will reduce the number of patients visiting fixed facilities for primary care, which will free additional appointment slots.
4. Increased goodwill. Valley veterans have long been frustrated by the lack of VA healthcare services in this largely rural market. This program, along with other planned expansion of specialty care services in the region, should have a positive impact on the relationship between veterans' groups and the VA.
5. Emergency response capability. The mobile clinic can be used as part of a coordinated response with local agencies to augment health care services on-site at locations impacted by natural or man-made disasters.

The VHA has identified six domains of value addressed for any strategic planning initiatives: quality, access, satisfaction, maximize resources, employer of choice, and healthy communities. The soft benefits identified above address three of the six domains of value: access, satisfaction, and healthy communities.

C.5. Costs

The costs identified in this BCA can be grouped into several broad categories: vehicles and equipment, personnel, IM/IT, supplies, and contracts. Table 9 provides the costs applicable to each scenario.

Table 9

Financial Costs by Scenario

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Vehicles and Equipment	X	X	X	X
Personnel	X	X	X	X
IM/IT	X	X	X	X
Marginal Supply Costs			X	X
Contracts	X	X	X	X

C.6. Major Assumptions

The majority of the assumptions used in this BCA are provided by a working group at the STVHCS. This working group consists of individuals from the Director's Office, Chief of Staff, Nursing, Primary Care, Contracting, Quality, Medical Administration, Strategic Management, and Decision Support. The dynamic nature of the BCA tool allows for quick adjustments and reassessments should further information be received in the future. This BCA specifically assumes:

- Global Assumptions
 - Mobile primary care clinic will be based out of the McAllen facility
 - To ensure sufficient clinic availability, only locations within 2 1/2 hours of McAllen will be considered as sites
 - Mobile clinic will travel to a minimum of six sites in the Valley/Coastal Bend region on a rotating biweekly schedule

- Primary care use patterns for the impacted area match the use patterns for the entire system
- The standard of care for the mobile clinic will be the same as for a fixed primary care facility
- As long as appointments are available, most beneficiaries will choose to receive care at the mobile clinic
- Due to longer travel distances, travel costs per enrollee is 2.67% higher in the Valley/Coastal Bend region
- Potential sites will have available infrastructure to support the mobile clinic
- Primary focus will be on existing enrolled beneficiaries. If workload permits, additional enrollees may be pursued to reach the goal of 3,700 enrollees
- Supplies for the mobile clinic will be provided by existing facilities
- For scenarios one and two, radiology services will be provided by the closest fixed VA facility
- Hours of operation would be determined based on patient demand.
- Clinic staff will travel to/from service area on a daily basis; no need for overnight lodging
- The discount rate used is the FY 09 Office of Management & Budget (OMB) discount rate of 1.60%
- Scenario Analysis Assumptions
 - Most likely case probability for each variable is 0.50, worst case probability is 0.35, best case probability is 0.15

- Most likely case enrollment is 3,700, worst case enrollment is 3,367, and best case enrollment is 4,033
- Clinic capacity will be sufficient to meet the best case enrollment scenario
- Vehicle/equipment and salary cost range is 18% from worst to best case

D. Business Impacts

D.1. Overall Results

Each of the four scenarios was considered using a best case scenario (BCS), most-likely case scenario (MCS), and a worst case scenario (WCS) on each of two key variables, resulting in nine possible outcomes for each scenario. The variables chosen for each scenario were the variables providing the greatest impact on costs and benefits. For scenarios 1 and 2, the non-ancillary scenarios, the variables chosen were vehicle/equipment costs and personnel costs. For scenarios 3 and 4, the in-clinic Radiology scenarios, the variables chosen were enrollment rate and personnel costs. The enrollment rate was not used for scenarios 1 and 2 as it had little overall impact on cost fluctuations due to the fact that pharmacy costs and beneficiary travel savings mostly offset each other.

The four scenarios were first assessed based on the expected NPV for each scenario. NPV for scenario 1 ranged from a worst case of negative \$2.81M to a best case of negative \$2.40M with a n expected value of negative \$2.64M and a standard deviation of \$116K. Scenario 2 NPV ranged from a worst case of negative \$2.76M to a best case of negative \$2.36M. The expected NPV is negative \$2.60M with a standard deviation of \$113K.

For scenario 3, NPV shows a range of negative \$2.91M for worst case to negative \$2.46M for best case. The expected NPV for scenario 3 is negative \$2.73M with a standard deviation of \$131K. Scenario 4 NPV shows a range of negative \$2.86M for worst case to

\$2.42M for best case. The expected NPV is negative \$2.69M with a standard deviation of \$129K. Of the four scenarios, scenario 2 provides the highest expected NPV with the lowest standard deviation. See Appendices C through F for a breakdown of the financial outcomes from each scenario.

Each of the four scenarios was also analyzed based on ROI and DCF for the most likely, best, and worst case scenarios. For the MCS, scenario 4 yielded the highest ROI of negative 67.3% while scenario 1 yielded the lowest ROI at negative 79.8%. Scenario 2 provided the highest DCF at negative \$2.56M and scenario 3 provided the lowest DCF at negative \$2.69M. The WCS and BCS analyses yielded similar results, with scenario 4 yielding the highest ROI and scenario 2 providing the highest DCF across the board. Although the ROI is highest under scenario 4, this is not an indication that it is a better investment. The higher ROI is an indication that there are larger savings/revenues in this scenario, but the lower DCF indicates that the costs required to generate the savings are greater than the savings themselves. The ROI and DCF details are provided in Appendices G through I.

D.2. Benefits

The two financial benefits identified in this business case analysis are reduced beneficiary travel expenses and reduced fixed-facility radiology costs. The reduced beneficiary travel expenses are realized under all four scenarios and are calculated based on FY 08 beneficiary travel cost per enrollee increased by 2.67% to account for longer distances traveled by enrollees in the Valley/Coastal Bend region, resulting in an average travel expense per enrollee of \$43.24. The savings from reduced fixed-facility radiology visits were calculated based on the final FY 08 radiology cost per visit of \$90.72 and the FY 08 radiology utilization rate of 0.4464. This benefit is only applicable to scenarios 3 and 4. Benefits for the most likely case scenario for the two no

ancillary service options totaled approximately \$160K per year derived from beneficiary travel expense savings. Benefits for the most likely case scenario for the two radiology service options totaled approximately \$310K per year derived from beneficiary travel savings and reduction in fixed-facility radiology visits. Both totals were calculated using the most likely enrollment number of 3,700 beneficiaries.

D.3. Costs

The costs identified in this business case analysis include vehicle and equipment costs for the mobile unit, annual maintenance costs on the unit, a GOV for staff use, personnel salary and benefits, IM/IT costs for a satellite unit, annual maintenance costs on the IM/IT equipment, increased pharmacy costs from use of local pharmacies, and incremental radiological supply increases. All costs are associated with all scenarios with the exception of the incremental radiological supply costs, which are only applicable to scenarios 3 and 4.

Anticipated costs for the most likely case scenario for the no ancillary, physician/RN staffing option totaled \$666.5K for the first year and \$503.7K per year for years 2 through 5. The most likely case scenario for the no ancillary, PA/NP staffing option projects a total cost for the first year of \$663.8K and \$493.1K per year for years 2 through 5. Anticipated costs for the most likely case scenario for the radiology suite, physician/RN staffing model totaled \$906.3K for the first year and \$463K per year for years 2 through 5. The most likely case scenario for the final option, the radiology suite with the PA/NP staffing model projects a total cost for the first year of \$903.6K and \$452.4K per year for years 2 through 5.

E. Sensitivities, Risks, and Contingencies

E.1. Sensitivity Analysis

Sensitivity analysis is used to determine which variable has the greatest impact on predicted results for each scenario. This is necessary to determine which costs must be closely managed to avoid unexpected variances that could significantly impact expected results. For the two no ancillary options, the two variables that have the strongest influence on the outcome are the cost of the vehicle with equipment and the cost of personnel. For the two radiology options, the two most influential variables are number of enrollees and cost of personnel. In conducting the sensitivity analysis, all other costs are held constant. The change in expected results based on the changes of each variable in the scenario is then plotted on a graph to determine which variable has the greatest impact on expected results. The steeper sloping line, either positive or negative, indicates the variable with the greatest impact on predicted results. Figures 2-5 illustrate the results of the analysis.

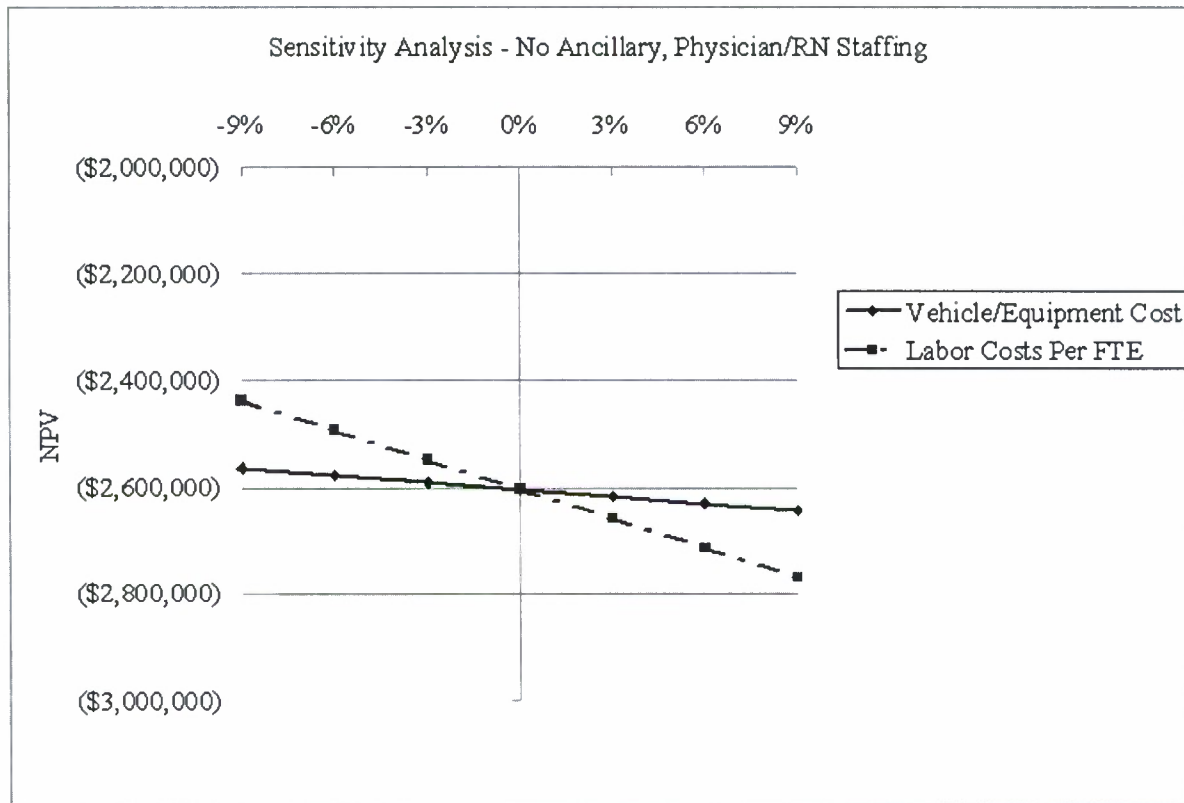


Figure 2. Sensitivity analysis for the no ancillary, physician/RN staffing model

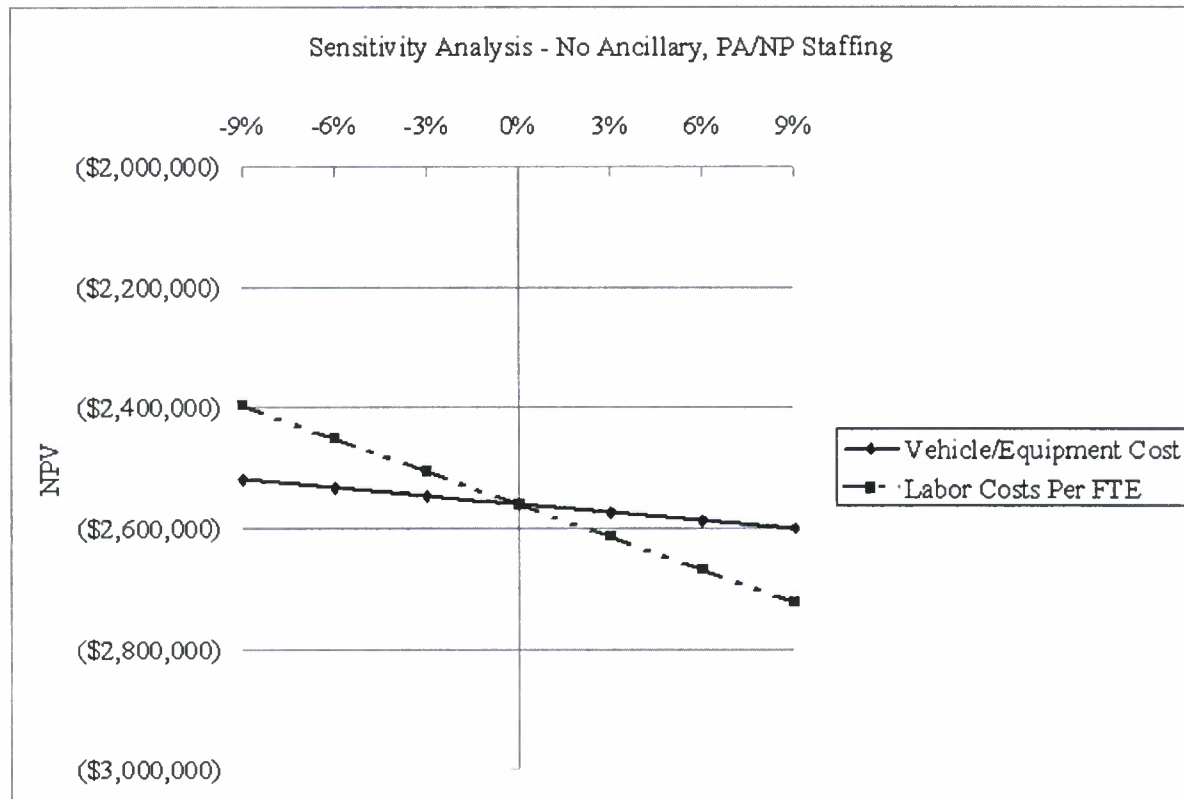


Figure 3. Sensitivity analysis for the no ancillary, PA/NP staffing model

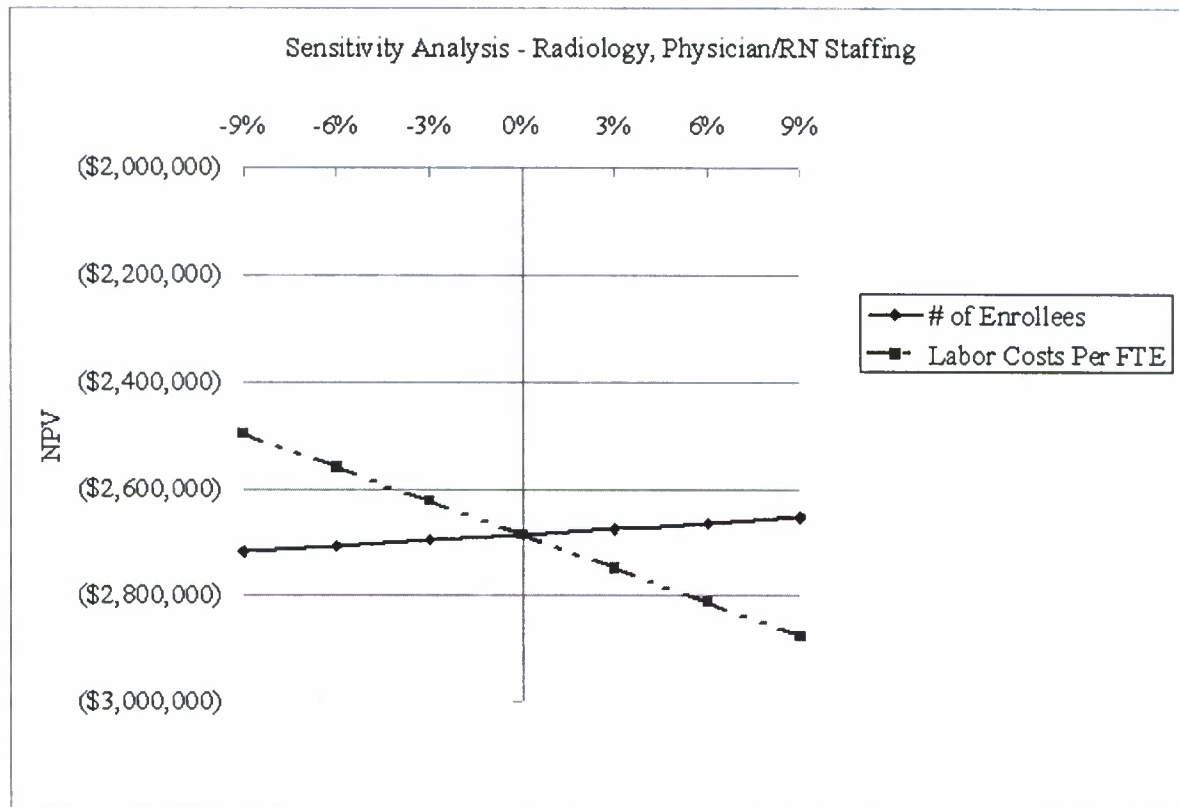


Figure 4. Sensitivity analysis for the radiology, physician/RN staffing model

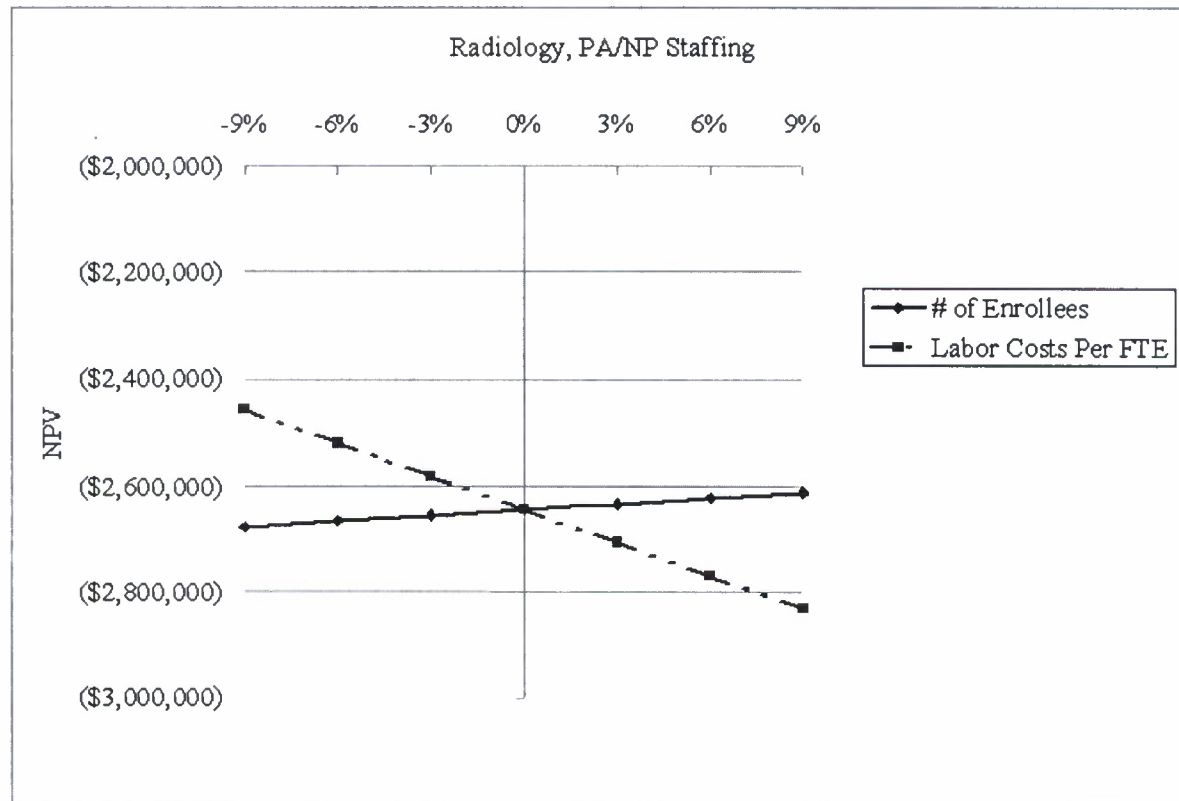


Figure 5. Sensitivity analysis for the radiology, PA/NP staffing model

The variable with the greatest sensitivity impact has the steeper sloped line. As indicated by the steeper sloped lines, all four scenarios are most sensitive to personnel costs. This indicates a need to control salary costs to the greatest extent possible. This can be achieved by ensuring the position descriptions are written to a level that is commensurate with the grade and step levels used in the financial projections.

E.2. Risks

Several risks will be taken into consideration during planning for the mobile health care clinic. Recruiting the staff for the mobile clinic may be difficult. The requirement for daily travel to rural sites may be a deterrent for potential applicants. Another risk is the willingness of enrollees actively receiving care in the VA to switch their treatment location. Although some enrollees must travel significant distances to reach their assigned facility, they may not be willing to use the mobile clinic as it will only be in their area on certain days and may require them to see an unfamiliar provider staff. A third risk is the strength of veterans groups throughout the STVHCS region. The region has numerous locations that are outside of geographic access standards and it is impossible for the mobile clinic to reach every location. Initially, locations will be prioritized based on the size of the underserved veteran population. As publicity for the mobile clinic grows, areas not being served could potentially push to get the mobile clinic to visit their area. A final risk concerns the fact customer satisfaction may actually decrease for those beneficiaries frustrated by the limited availability of the mobile clinic.

E.3. Contingencies

A contingency to deal with the hiring risk is to have VA personnel from the parent facility staff the mobile clinic when necessary. This will ensure the clinic stays operational during periods of staff turnover. For the risk of enrollee willingness to switch their site of care,

enrolling additional eligible veterans not currently enrolled to a VHA facility due to the distance they are required to travel will help ensure projected enrollment numbers are at least maintained if not exceeded. Periodic review and reassessment of the workload being generated at each location and potential re-prioritization of locations can help to mitigate the risk of veterans groups lobbying to get the mobile clinic to visit their areas. Additionally, the risk of decreased customer satisfaction can be mitigated by aggressive marketing of the mobile clinic's capabilities, limitations, and schedule to the local population. This will help ensure beneficiaries have the information necessary to make the decision of where to receive their health care.

F. Recommendations and Conclusions

The results of this business case analysis showed that the two no ancillary options are the most cost-averse methods for implementation of a rural mobile health clinic for the STVHCS. All four options returned significantly negative ROIs and cash flows. The two no ancillary options, however, provide the least negative discounted cash flows and NPVs when compared to the radiology options. The recommendation based on the financial outcomes, given the fact that the decision has been made to pursue a mobile clinic versus other options including network development, is to purchase a mobile health clinic equipped for no ancillary services to provide primary care and limited mental health care to the underserved veterans of South Texas. This option is the least costly method of implementing this program. A caveat to this recommendation is the fact that no population needs data is included in this analysis to indicate that the services provided will meet the needs of the intended beneficiary group. Customer satisfaction scores may take a hit with patients if the level of care provided is not sufficient to meet their needs.

In assessing the two staffing models for the mobile health clinic, the recommendation is to staff the clinic with one PA and one NP instead of with a physician and an RN. The PA/NP

staffing model is slightly more cost effective than the physician/RN model and provides greater flexibility in scheduling. Under the PA/NP model, if one of the providers is unavailable due to illness or absence, the second provider can still provide scheduled care, which will minimize the number of rescheduled or cancelled appointments. Under the physician/RN model, days where the provider is unavailable will result in all scheduled primary care appointments being cancelled or rescheduled. Additionally, with two providers to provide care on the mobile clinic, more appointments are available for scheduling each day the clinic is in the community. The reduced losses and greater scheduling flexibility under the PA/NP staffing model make it clearly the better option for staffing the mobile clinic.

After taking the cost and satisfaction issues into consideration, the final recommendation is to implement scenario 2, which is the option to purchase a mobile health unit with no ancillary services while implementing the PA/NP staffing model. While none of the options are cost-effective from a financial standpoint and given the VISN's direction to implement a mobile clinic, this option provides the lowest financial loss with the least amount of variability of costs. Although the mobile clinic will not be able to meet the needs of all V/CB enrollees residing outside of geographic access standards, it does allow for multiple areas to be served. It also provides significant soft benefits to include improved geographic access and emergency response capability and addresses three of the six domains of value: access, satisfaction, and healthy communities.

While not evaluated in this proposal due to VISN implementation directions, an alternative strategy to improve geographic access that should have been considered is to pursue establishment of part-time rural outreach clinics in areas such as Rio Grande City that have potential network providers within geographic access limits. These clinics could provide a

greater level of services than will be available at the mobile clinic. Five out of the six projected locations have at least two primary care providers in the local community. Including these providers in the VA network of care would potentially be a more cost-effective means of addressing access, satisfaction, and healthy communities.

G. Appendix A

Abbreviations

Abbreviation	Meaning
ALMD	Audie L. Murphy Division
CBOC	Community-Based Outpatient Clinic
CPRS	Computerized Patient Record System
GOV	Government-Owned Vehicle
GRECC	Geriatric Research, Education & Clinical Center
IM/IT	Information Management/Information Technology
KD	Kerrville Division
NIH	National Institute of Health
NP	Nurse Practitioner
NPV	Net Present Value
PA	Physician Assistant
PSSG	Planning Systems Support Group
RN	Registered Nurse
ROI	Return on Investment
SCD	Satellite Clinic Division
STVHCS	South Texas Veterans Health Care System
TVCBHCS	Texas Valley Coastal Bend Health Care System
V/CBD	Valley/Coastal Bend Division
VDVA	Virginia Department of Veterans Affairs
VERDICT	Veterans Evidence-Based Research Dissemination Implementation Center

VHA	Veterans Health Administration
VISN	Veterans Integrated Service Network
VistA	Veterans Health Information Systems and Technology Architecture
VSSC	VHA Support Service Center

H. Appendix B

STVHCS Mission, Vision, Values

Mission:

Honor America's veterans by providing exceptional health care that improves their health and well-being.

Vision:

To be a patient-centered integrated health care organization for veterans providing excellent health care, research, and education; an organization where people choose to work; an active community partner; and a back-up for National emergencies.

Values:

Trust - Trust means having a high degree of confidence in the honesty, integrity, reliability and sincere good intent of those with whom we work, of those whom we serve, and the system of which we are a part. Trust is the basis for the caregiver-patient relationship and is fundamental to all that we do in health care.

Respect - Respect means honoring and holding in high regard the dignity and worth of our patients and their families, our co-workers, and the system of which we are a part. It means relating to each other and providing services in a manner that demonstrates an understanding of, sensitivity to and concern for each person's individuality and importance.

Excellence - Excellence means being exceptionally good and of the highest quality. It means being the most competent and the finest in everything we do. It also means continually improving what we do.

Compassion - Compassion means demonstrating empathy and caring in all that we say and do in responding to our co-workers, our patients and their families, and all others with whom we interact.

Commitment - Commitment means meaningful engagement with coworkers, veterans, and families. It includes a promise to work hard to do all that we can in accordance with the highest principles and ethics governing the conduct of the health care professions and public service. It is a pledge to assume personal responsibility for our individual and collective actions.

I. Appendix C

Financial Outcomes for Scenario 1

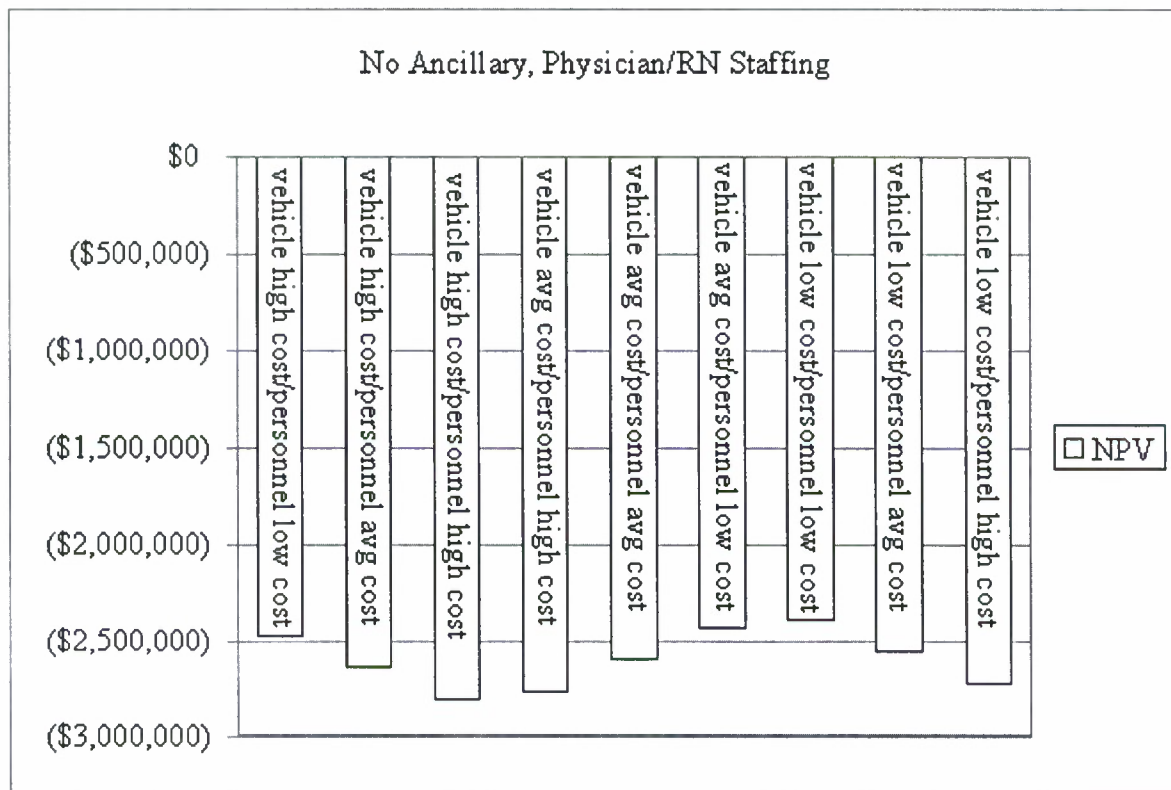


Figure 6. No ancillary, physician/RN staffing net present value

Table 10

Net Present Value, Expected Value and Standard Deviation for Scenario 1

	Probability	Scenario	NPV
	0.0525	vehicle high cost/personnel low cost	(\$2,477,576)
	0.175	vehicle high cost/personnel avg cost	(\$2,643,761)
WCS	0.1225	vehicle high cost/personnel high cost	(\$2,809,946)
	0.175	vehicle avg cost/personnel high cost	(\$2,769,446)
MCS	0.25	vehicle avg cost/personnel avg cost	(\$2,603,261)
	0.075	vehicle avg cost/personnel low cost	(\$2,437,076)

BCS	0.0225	vehicle low cost/personnel low cost	(\$2,396,576)
	0.075	vehicle low cost/personnel avg cost	(\$2,562,761)
	<u>0.0525</u>	<u>vehicle low cost/personnel high cost</u>	<u>(\$2,728,946)</u>
	Expected Value		(\$2,644,598)
	Standard Deviation		\$116,011

J. Appendix D

Financial Outcomes for Scenario 2

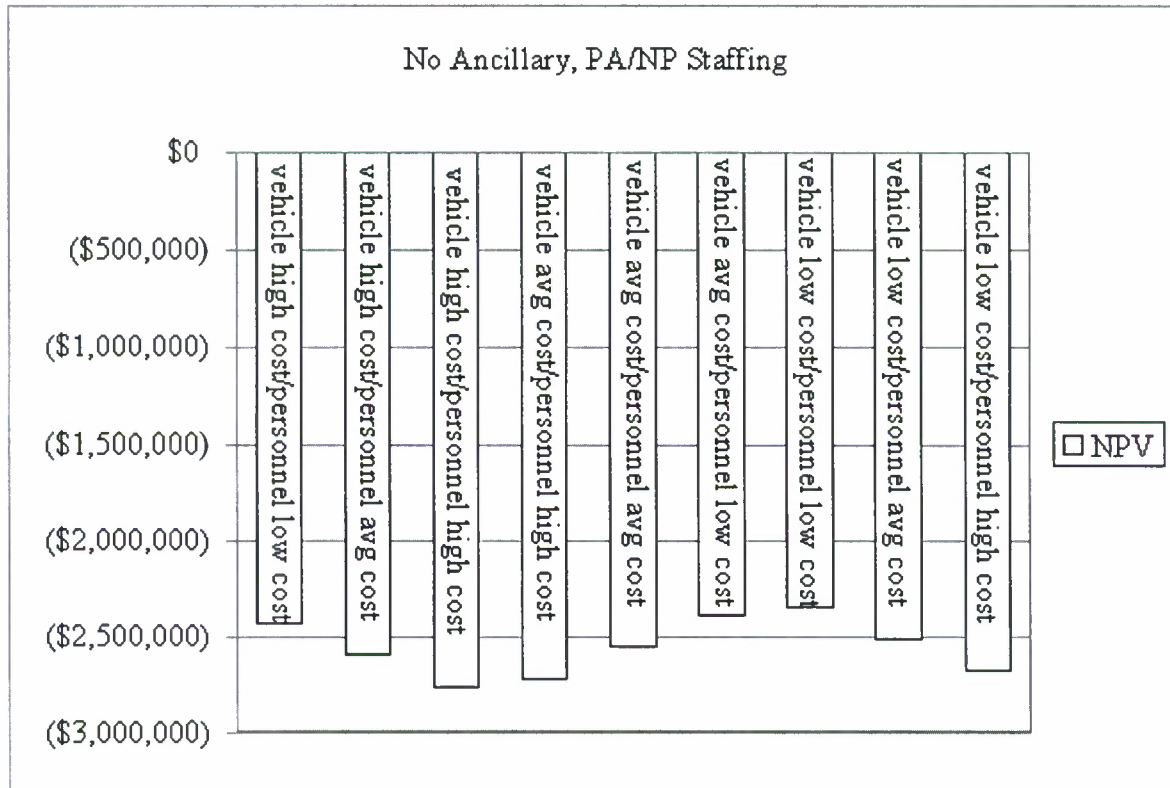


Figure 7. No ancillary, physician assistant/nurse practitioner staffing net present value

Table 11

Net Present Value, Expected Value and Standard Deviation for Scenario 2

	Probability	Scenario	NPV
	0.0525	vehicle high cost/personnel low cost	(\$2,437,916)
	0.175	vehicle high cost/personnel avg cost	(\$2,600,178)
WCS	0.1225	vehicle high cost/personnel high cost	(\$2,762,440)
	0.175	vehicle avg cost/personnel high cost	(\$2,721,940)
MCS	0.25	vehicle avg cost/personnel avg cost	(\$2,559,678)
	0.075	vehicle avg cost/personnel low cost	(\$2,397,416)

BCS	0.0225	vehicle low cost/personnel low cost	(\$2,356,916)
	0.075	vehicle low cost/personnel avg cost	(\$2,519,178)
	<u>0.0525</u>	<u>vehicle low cost/personnel high cost</u>	<u>(\$2,681,440)</u>
Expected Value			(\$2,600,231)
Standard Deviation			\$113,428

K. Appendix E

Financial Outcomes for Scenario 3

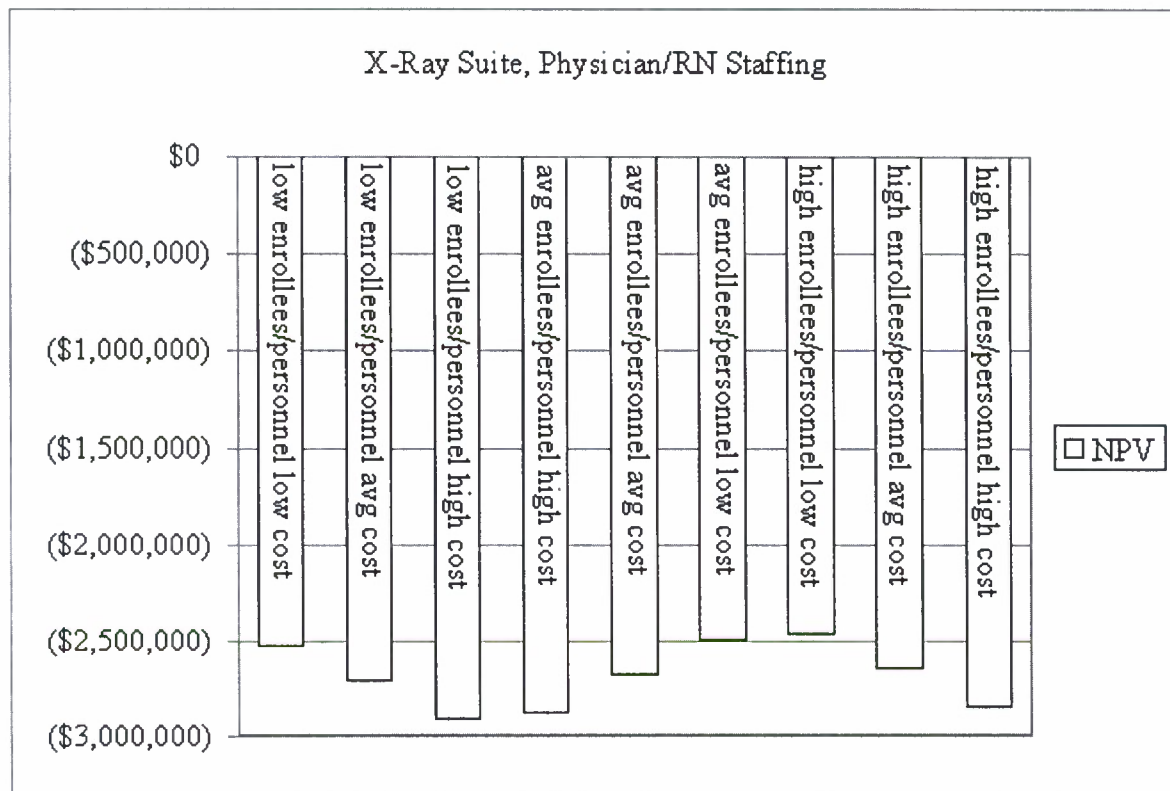


Figure 8. Radiology suite, physician/RN staffing net present value

Table 12

Net Present Value, Expected Value and Standard Deviation for Scenario 3

	Probability	Scenario	NPV
	0.0525	low enrollees/personnel low cost	(\$2,527,967)
	0.175	low enrollees/personnel avg cost	(\$2,718,986)
WCS	0.1225	low enrollees/personnel high cost	(\$2,910,004)
	0.175	avg enrollees/personnel high cost	(\$2,877,534)
MCS	0.25	avg enrollees/personnel avg cost	(\$2,686,516)
	0.075	avg enrollees/personnel low cost	(\$2,495,497)

BCS	0.0225	high enrollees/personnel low cost	(\$2,463,027)
	0.075	high enrollees/personnel avg cost	(\$2,654,046)
	<u>0.0525</u>	<u>high enrollees/personnel high cost</u>	<u>(\$2,845,064)</u>
Expected Value			(\$2,731,213)
Standard Deviation			\$131,413

L. Appendix F

Financial Outcomes for Scenario 4

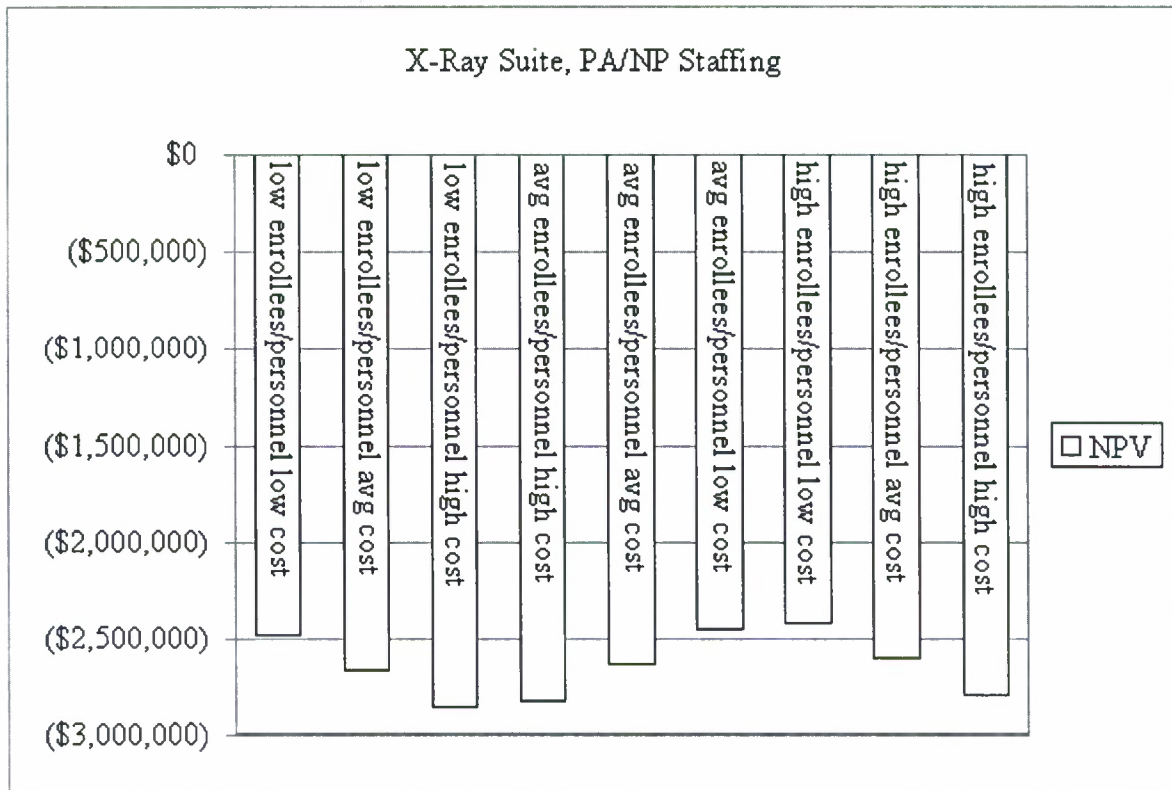


Figure 9. Radiology suite, physician assistant/nurse practitioner staffing net present value

Table 13

Net Present Value, Expected Value and Standard Deviation for Scenario 4

	Probability	Scenario	NPV
	0.0525	low enrollees/personnel low cost	(\$2,488,307)
	0.175	low enrollees/personnel avg cost	(\$2,675,403)
WCS	0.1225	low enrollees/personnel high cost	(\$2,862,499)
	0.175	avg enrollees/personnel high cost	(\$2,830,029)
MCS	0.25	avg enrollees/personnel avg cost	(\$2,642,933)
	0.075	avg enrollees/personnel low cost	(\$2,455,837)

BCS	0.0225	high enrollees/personnel low cost	(\$2,423,367)
	0.075	high enrollees/personnel avg cost	(\$2,610,463)
	<u>0.0525</u>	<u>high enrollees/personnel high cost</u>	<u>(\$2,797,559)</u>
Expected Value			(\$2,686,846)
Standard Deviation			\$128,792

M. Appendix G

ROI and Discounted Cash Flows for the Most Likely Case Scenario

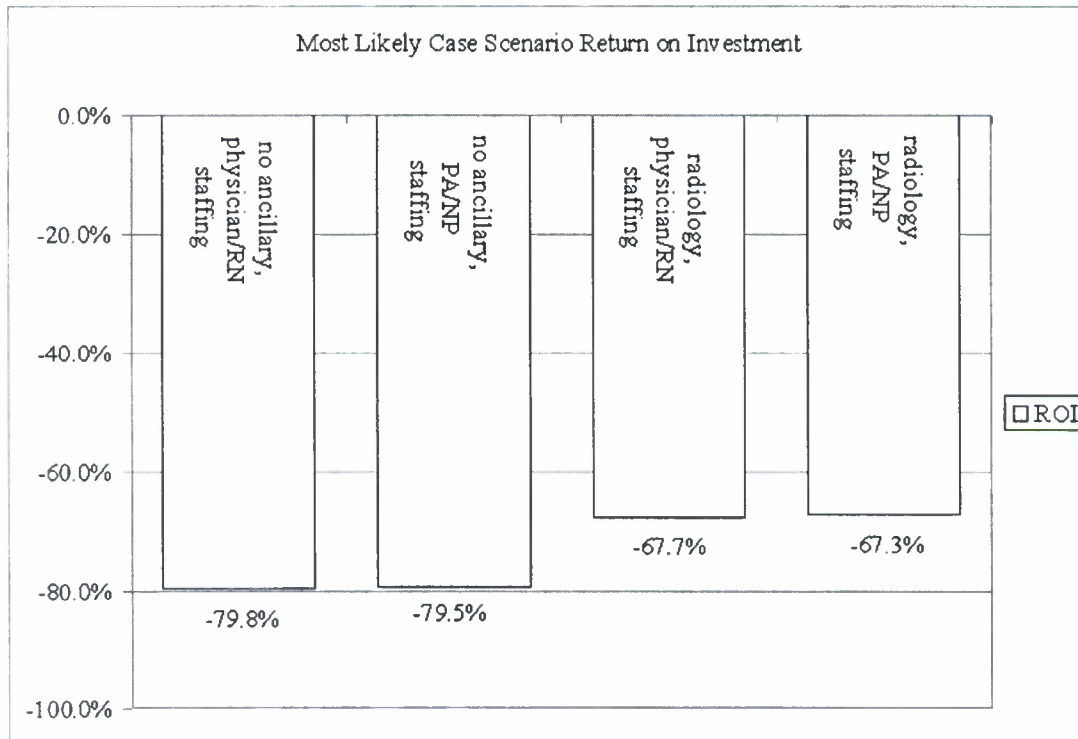


Figure 10. Most likely case scenario return on investment

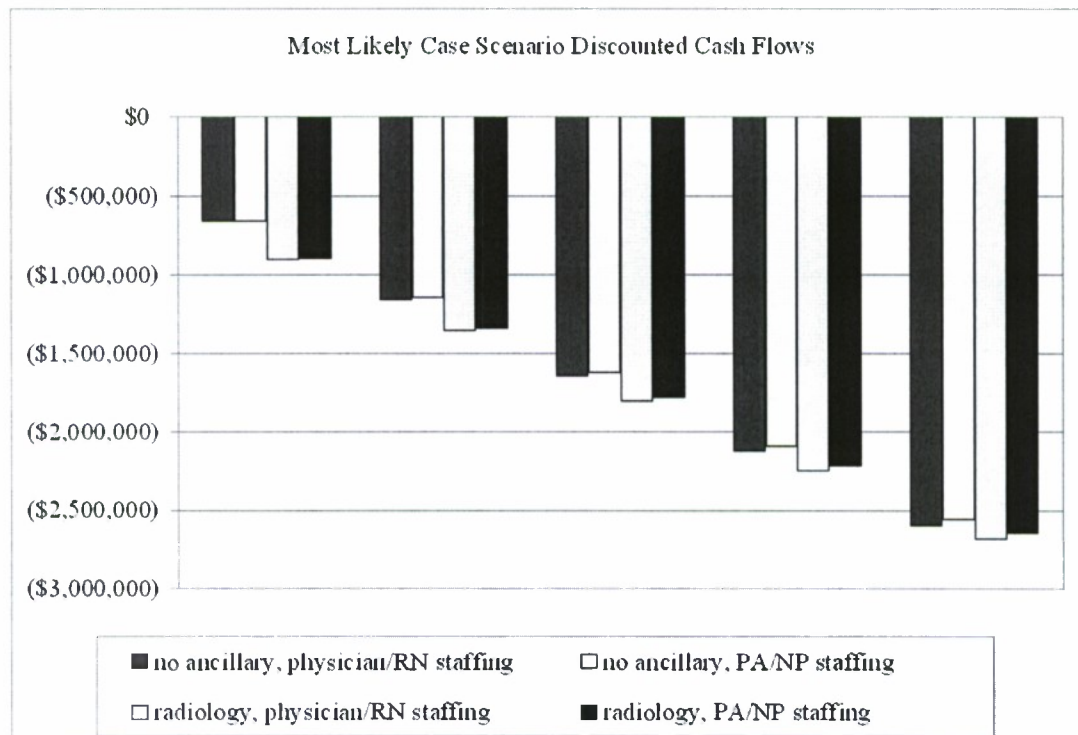


Figure 11. Most likely case scenario discounted cash flows

Table 14

Most Likely Case Scenario Discounted Cash Flows

	2009	2010	2011	2012	2013
no ancillary, physician/RN staffing	(\$666,479)	(\$1,162,264)	(\$1,650,241)	(\$2,130,533)	(\$2,603,261)
no ancillary, PA/NP staffing	(\$663,818)	(\$1,149,128)	(\$1,626,794)	(\$2,096,938)	(\$2,559,678)
radiology, physician/ RN staffing	(\$906,299)	(\$1,362,006)	(\$1,810,535)	(\$2,252,002)	(\$2,686,516)
radiology, PA/NP staffing	(\$903,639)	(\$1,348,869)	(\$1,787,089)	(\$2,218,407)	(\$2,642,933)

N. Appendix H

ROI and Discounted Cash Flows for the Worst Case Scenario

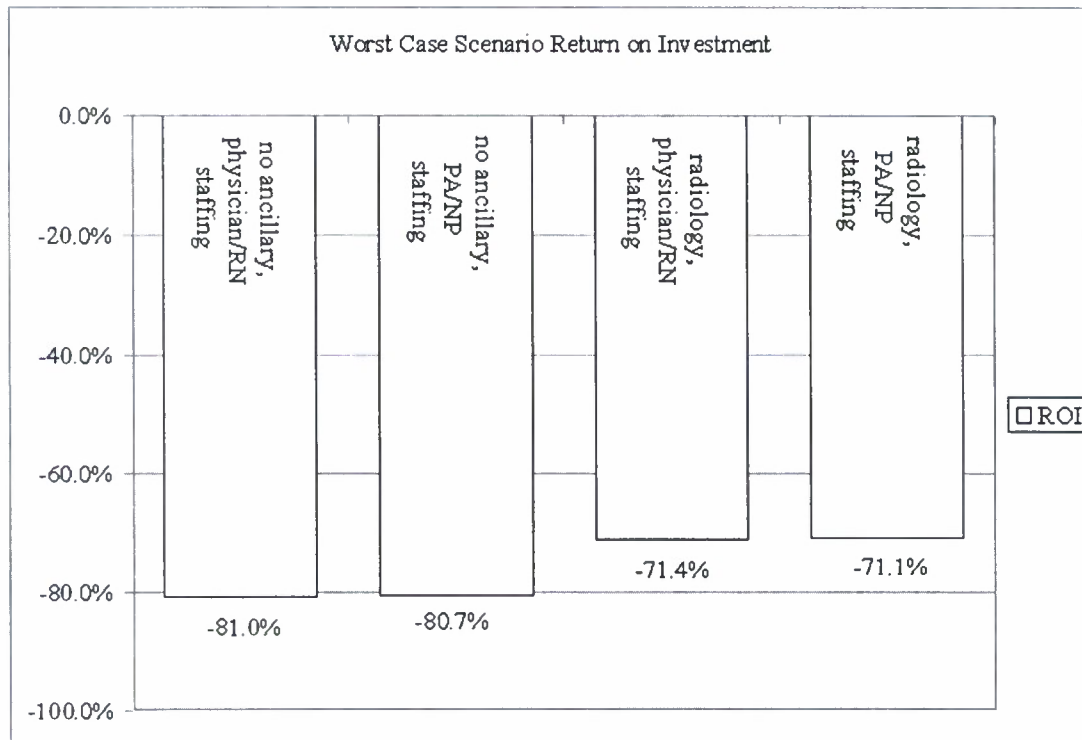


Figure 12. Worst case scenario return on investment

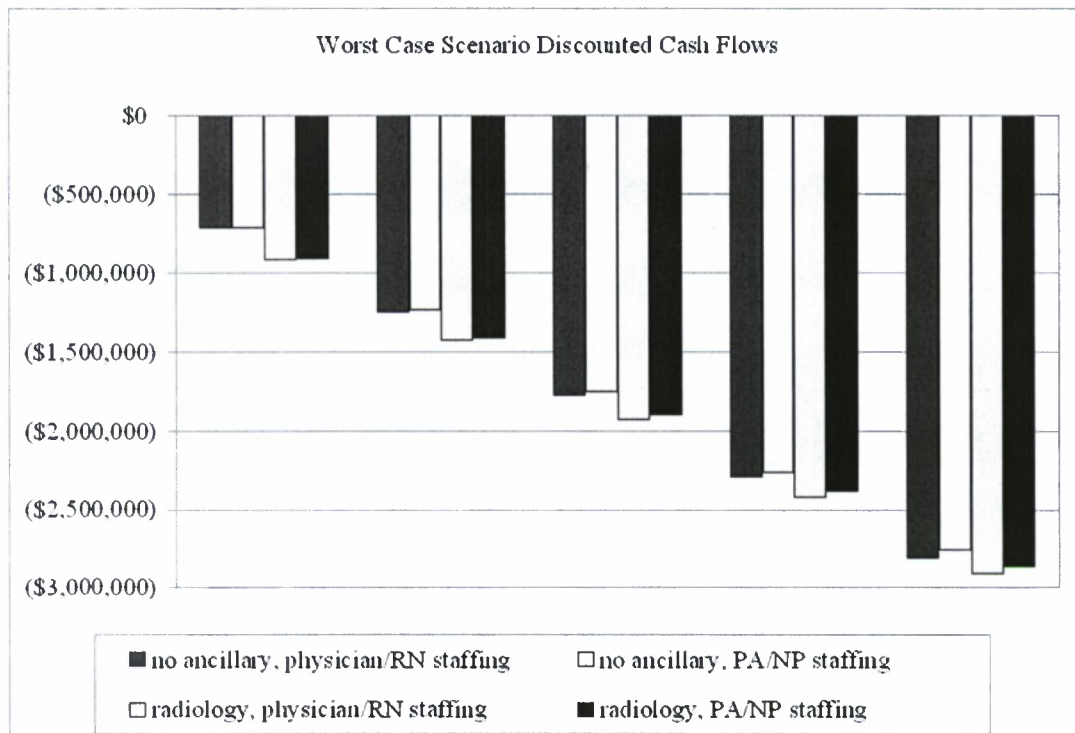


Figure 13. Worst case scenario discounted cash flows

Table 15

Worst Case Scenario Discounted Cash Flows

	2009	2010	2011	2012	2013
no ancillary, physician/RN staffing	(\$717,125)	(\$1,252,853)	(\$1,780,144)	(\$2,299,131)	(\$2,809,946)
no ancillary, PA/NP staffing	(\$714,225)	(\$1,238,534)	(\$1,754,587)	(\$2,262,513)	(\$2,762,440)
radiology, physician/ RN staffing	(\$919,943)	(\$1,429,366)	(\$1,930,767)	(\$2,424,272)	(\$2,910,004)
radiology, PA/NP staffing	(\$917,043)	(\$1,415,048)	(\$1,905,210)	(\$2,387,653)	(\$2,862,499)

O. Appendix I

ROI and Discounted Cash Flows for the Best Case Scenario

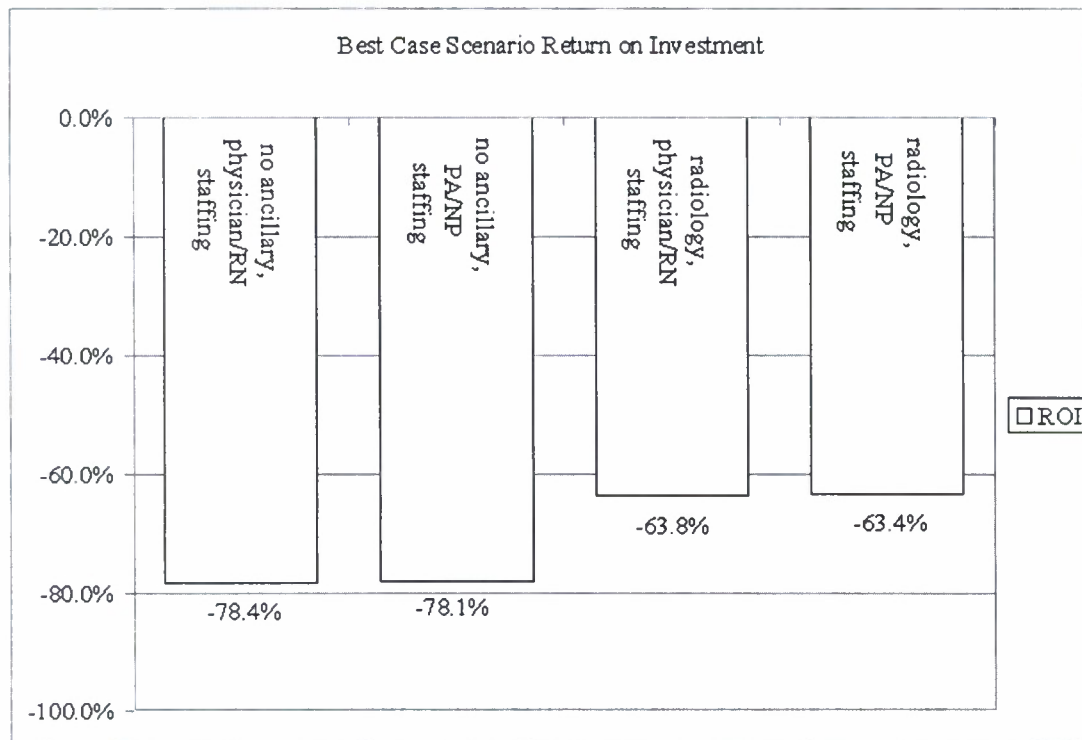


Figure 14. Best case scenario return on investment

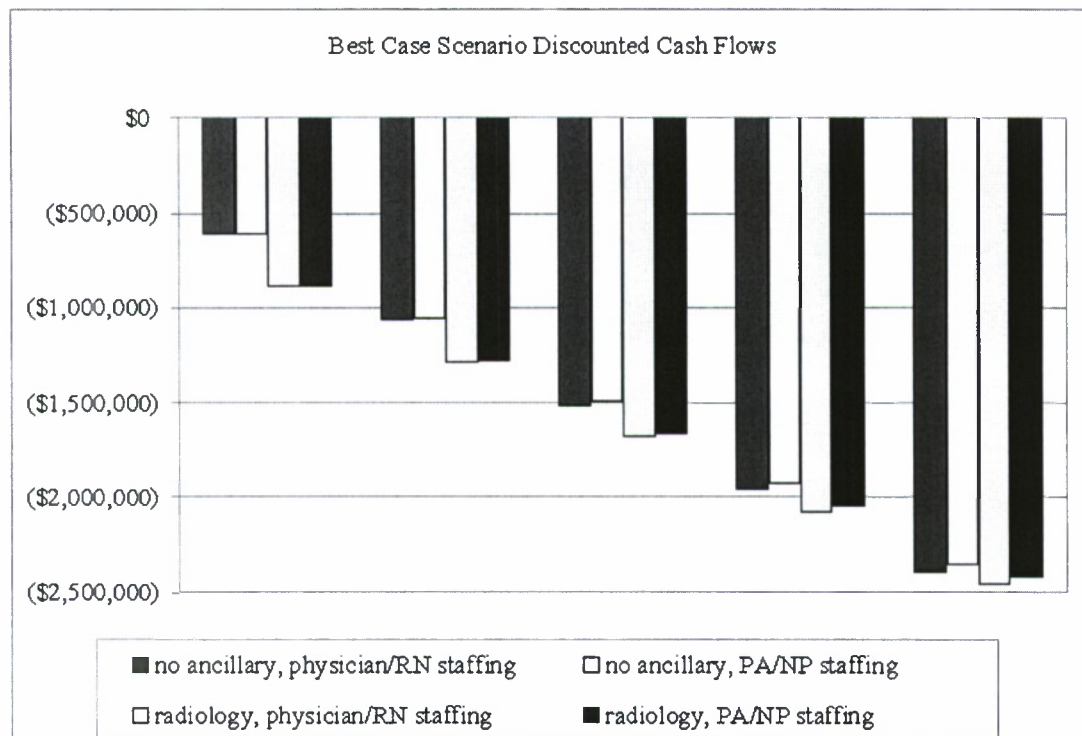


Figure 15. Best case scenario discounted cash flows

Table 16

Best Case Scenario Discounted Cash Flows

	2009	2010	2011	2012	2013
no ancillary, physician/RN staffing	(\$615,834)	(\$1,071,675)	(\$1,520,337)	(\$1,961,934)	(\$2,396,576)
no ancillary, PA/NP staffing	(\$613,412)	(\$1,059,721)	(\$1,499,001)	(\$1,931,363)	(\$2,356,916)
radiology, physician/ RN staffing	(\$892,655)	(\$1,294,645)	(\$1,690,304)	(\$2,079,732)	(\$2,463,027)
radiology, PA/NP staffing	(\$890,234)	(\$1,282,691)	(\$1,668,967)	(\$2,049,161)	(\$2,423,367)

P. Appendix J

BCA Tool – No Ancillary, Physician/RN Staffing – Most Likely Case

Business Case Analysis									
Mobile Health Clinic South Texas Veterans Health Care System		Projected Start Date: 1-Jul-09		First Patient Seen: 1-Jul-09		Submit Date: 24-Apr-09		Version 1	
Summary									
Select Analysis by Service Type		Total Project		Dollars in \$1,000s (\$000)					
Total Project		FY08	FY10	FY11	FY12	FY13			
ANNUAL BENEFITS									
Facility/MTF Savings/Revenue		\$0.0	\$0.0	\$0.0	\$0.0	\$0.0			
Purchased Care Savings		\$0.0	\$0.0	\$0.0	\$0.0	\$0.0			
Other Non-Specified Savings		\$400.0	\$160.0	\$160.0	\$160.0	\$160.0			
Cost Avoidance		\$0.0	\$0.0	\$0.0	\$0.0	\$0.0			
Total Benefit/Savings		\$400.0	\$160.0	\$160.0	\$160.0	\$160.0			
COST									
OPERATING EXPENSE ITEMS									
Personnel - GS & Contract		(\$112.7)	(\$400.9)	(\$400.9)	(\$400.9)	(\$400.9)			
Non-Capital Lease/Rental/Maintenance		\$0.0	\$0.0	\$0.0	\$0.0	\$0.0			
Supplies		\$0.0	\$0.0	\$0.0	\$0.0	\$0.0			
Other		(\$51.8)	(\$208.8)	(\$208.8)	(\$208.8)	(\$208.8)			
CAPITAL ASSETS PURCHASED									
Equipment (Lease & Purchase)		(\$542.0)	(\$4.0)	(\$4.0)	(\$4.0)	(\$4.0)			
Facilities		\$0.0	\$0.0	\$0.0	\$0.0	\$0.0			
Total Cost		(\$706.5)	(\$404.9)	(\$609.7)	(\$609.7)	(\$609.7)			
Net Yearly Cash Flow		(\$306.5)	(\$244.9)	(\$449.7)	(\$449.7)	(\$449.7)			
Net Cumulative Cash Flow		(\$306.5)	(\$551.4)	(\$1,001.1)	(\$1,450.8)	(\$1,899.5)			
Investment Requirements									
Other		\$706.5	\$663.7	\$663.7	\$663.7	\$663.7			
Net Investment		\$0.0	\$0.0	\$0.0	\$0.0	\$0.0			
Analysis									
Analysis Period Start Date:		1-Jul-09							
Other Funding End Date:		30-Jun-14							
Months of Funding Requested:		80							
Net Cash Flow:		(2,681.3)							
NPV Cash Flow Discounted at 10%:		(2,603.3)							
Total Funding Requested Less Facility Savings/Revenue:		3,361.3							
Total Amount of Projected Savings/Benefits:		680.0							
Simple ROI: (Net Benefit / Investment):		-79.8%							
Year Project reaches Self-Sustainability Status:		> 10 years							
Projected Payback Period in Years (Break-even):		9.0							
Projected Payback Date:		29-Jun-18							
Total Project - CASH FLOW SUMMARY									
Cash Inflows (outflows)		Year 1 Sep 2009	Year 2 Sep 2010	Year 3 Sep 2011	Year 4 Sep 2012	Year 5 Sep 2013			
Annual benefit impacts		40.0	160.0	160.0	160.0	160.0			
Annual expense item impacts		(194.5)	(689.7)	(689.7)	(689.7)	(689.7)			
Net operating inflow (outflow)		(154.5)	(499.7)	(499.7)	(499.7)	(499.7)			
Asset purchases		(542.0)	(4.0)	(4.0)	(4.0)	(4.0)			
Net CASH FLOW		(696.5)	(503.7)	(503.7)	(503.7)	(503.7)			
Cumulative Net Cash Flow		(696.5)	(1,170.2)	(1,673.9)	(2,177.6)	(2,681.3)			
Discounted Cash Flow- NPV at 10%		(686.5)	(496.8)	(488.0)	(480.3)	(472.7)			
Cumulative Discounted Case Flow		(686.5)	(1,162.3)	(1,650.2)	(2,130.5)	(2,603.3)			
Total Other Requirements									
Capital Asset		FY08	FY10	FY11	FY12	FY13			
		\$0.0	\$0.0	\$0.0	\$0.0	\$0.0			
G&M		\$104.5	\$663.7	\$663.7	\$663.7	\$663.7			
Total Investment		\$104.5	\$663.7	\$663.7	\$663.7	\$663.7			
Less Facility Savings/Revenue		\$0.0	\$0.0	\$0.0	\$0.0	\$0.0			
Adjusted Net Investment Req		\$104.5	\$663.7	\$663.7	\$663.7	\$663.7			

Q. Appendix K

BCA Tool – No Ancillary, PA/NP Staffing – Most Likely Case

Business Case Analysis									
Mobile Health Clinic South Texas Veterans Health Care System	Projected Start Date: 1-Jul-09	First Patient Seen: 1-Jul-09	Submit Date: 24-Apr-09	Version 1					
Summary									
Select Analysis by Service Type Total Project									
Dollars in \$1,000s (\$000)									
ANNUAL BENEFITS	FY08	FY10	FY11	FY12	FY13				
Facility/MTF Savings/Revenue	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0				
Purchased Care Savings	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0				
Other Non-Specified Savings	\$40.0	\$100.0	\$100.0	\$100.0	\$100.0				
Cost Avoidance	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0				
Total Benefit/Savings	\$40.0	\$100.0	\$100.0	\$100.0	\$100.0				
COST									
OPERATING EXPENSE ITEMS									
Personnel - GS & Contract	(\$110.1)	(\$440.3)	(\$440.3)	(\$440.3)	(\$440.3)				
Non-Capital Lease/Rental/Maintenance	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0				
Supplies	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0				
Other	(\$61.8)	(\$208.8)	(\$208.8)	(\$208.8)	(\$208.8)				
CAPITAL ASSETS PURCHASED									
Equipment (Lease & Purchase)	(\$642.0)	(\$4.0)	(\$4.0)	(\$4.0)	(\$4.0)				
Facilities	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0				
Total Cost	(\$703.8)	(\$653.1)	(\$653.1)	(\$653.1)	(\$653.1)				
Net Yearly Cash Flow	(\$663.8)	(\$403.1)	(\$403.1)	(\$403.1)	(\$403.1)				
Net Cumulative Cash Flow	(\$663.8)	(\$1,166.9)	(\$1,669.0)	(\$2,149.0)	(\$2,652.1)				
Investment Requirements									
Other	\$703.8	\$653.1	\$653.1	\$653.1	\$653.1				
Net Investment	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0				
Analysis Other Period Only									
Analysis Period Start Date:	1-Jul-09								
Other Funding End Date:	30-Jun-14								
Months of Funding Requested:	60								
Net Cash Flow:	(2,636.1)								
NPV Cash Flow Discounted at 10%	(2,659.7)								
Total Funding Requested Less Facility Savings/Revenue:	3,376.1								
Total Amount of Projected Savings/Benefits:	680.0								
Simple ROI: (Net Benefit / Investment)	-79.5%								
Year Project reaches Self-Sustainment Status	> 10 years								
Projected Payback Period in Years (Breakeven)	9.0								
Projected Payback Date	29-Jun-18								
Total Project - CASH FLOW SUMMARY									
Cash inflows (outflows)	Year 1 Sep 2009	Year 2 Sep 2010	Year 3 Sep 2011	Year 4 Sep 2012	Year 5 Sep 2013				
Annual benefit impacts	40.0	100.0	100.0	100.0	100.0				
Annual expense item impacts	(101.8)	(640.1)	(640.1)	(640.1)	(640.1)				
Net operating inflow (outflow)	(121.8)	(490.1)	(490.1)	(490.1)	(490.1)				
Asset purchase	(642.0)	(4.0)	(4.0)	(4.0)	(4.0)				
Net CASH FLOW	(663.8)	(493.1)	(493.1)	(493.1)	(493.1)				
Cumulative Net Cash Flow	(663.8)	(1,166.9)	(1,669.0)	(2,149.0)	(2,652.1)				
Discounted Cash Flow- NPV at 1.6%	(663.8)	(465.3)	(477.7)	(470.1)	(452.7)				
Cumulative Discounted Cash Flow	(663.8)	(1,149.1)	(1,626.8)	(2,096.9)	(2,559.7)				

R. Appendix L

BCA Tool – Radiology Suite, Physician/RN Staffing – Most Likely Case

Business Case Analysis																																																																																																																																													
Mobile Health Clinic South Texas Veterans Health Care System		Projected Start Date: 1-Jul-09		First Patient Seen: 1-Jul-09		Submit Date: 24-Apr-09		Version 1																																																																																																																																					
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<table border="1"> <thead> <tr> <th></th> <th>FY09</th> <th>FY10</th> <th>FY11</th> <th>FY12</th> <th>FY13</th> </tr> </thead> <tbody> <tr> <td>ANNUAL BENEFITS</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Facility/MTF Savings/Revenue</td> <td>\$37.5</td> <td>\$149.8</td> <td>\$149.8</td> <td>\$149.8</td> <td>\$149.8</td> </tr> <tr> <td>Purchased Care Savings</td> <td>\$0.0</td> <td>\$0.0</td> <td>\$0.0</td> <td>\$0.0</td> <td>\$0.0</td> </tr> <tr> <td>Other Non-Specified Savings</td> <td>\$40.0</td> <td>\$100.0</td> <td>\$100.0</td> <td>\$100.0</td> <td>\$100.0</td> </tr> <tr> <td>Cost Avoidance</td> <td>\$0.0</td> <td>\$0.0</td> <td>\$0.0</td> <td>\$0.0</td> <td>\$0.0</td> </tr> <tr> <td>Total Benefit/Savings</td> <td>\$77.5</td> <td>\$309.8</td> <td>\$309.8</td> <td>\$309.8</td> <td>\$309.8</td> </tr> <tr> <td>COST</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>OPERATING EXPENSE ITEMS</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Personnel - GS & Contract</td> <td>(\$129.6)</td> <td>(\$518.3)</td> <td>(\$518.3)</td> <td>(\$518.3)</td> <td>(\$518.3)</td> </tr> <tr> <td>Non-Capital Lease/Rental/Maintenance</td> <td>\$0.0</td> <td>\$0.0</td> <td>\$0.0</td> <td>\$0.0</td> <td>\$0.0</td> </tr> <tr> <td>Supplies</td> <td>(\$10.4)</td> <td>(\$41.7)</td> <td>(\$41.7)</td> <td>(\$41.7)</td> <td>(\$41.7)</td> </tr> <tr> <td>Other</td> <td>(\$51.8)</td> <td>(\$208.8)</td> <td>(\$208.8)</td> <td>(\$208.8)</td> <td>(\$208.8)</td> </tr> <tr> <td>CAPITAL ASSETS PURCHASED</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Equipment (Lease & Purchase)</td> <td>(\$792.0)</td> <td>(\$4.0)</td> <td>(\$4.0)</td> <td>(\$4.0)</td> <td>(\$4.0)</td> </tr> <tr> <td>Facilities</td> <td>\$0.0</td> <td>\$0.0</td> <td>\$0.0</td> <td>\$0.0</td> <td>\$0.0</td> </tr> <tr> <td>Total Cost</td> <td>(\$983.8)</td> <td>(\$772.8)</td> <td>(\$772.8)</td> <td>(\$772.8)</td> <td>(\$772.8)</td> </tr> <tr> <td>Net Yearly Cash Flow</td> <td>(\$906.3)</td> <td>(\$463.0)</td> <td>(\$463.0)</td> <td>(\$463.0)</td> <td>(\$463.0)</td> </tr> <tr> <td>Net Cumulative Cash Flow</td> <td>(\$906.3)</td> <td>(\$1,369.3)</td> <td>(\$1,832.4)</td> <td>(\$2,295.4)</td> <td>(\$2,758.5)</td> </tr> <tr> <td>Investment Requirements</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Other</td> <td>\$683.8</td> <td>\$772.8</td> <td>\$772.8</td> <td>\$772.8</td> <td>\$772.8</td> </tr> <tr> <td>Net Investment</td> <td>\$0.0</td> <td>\$0.0</td> <td>\$0.0</td> <td>\$0.0</td> <td>\$0.0</td> </tr> </tbody> </table>											FY09	FY10	FY11	FY12	FY13	ANNUAL BENEFITS						Facility/MTF Savings/Revenue	\$37.5	\$149.8	\$149.8	\$149.8	\$149.8	Purchased Care Savings	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	Other Non-Specified Savings	\$40.0	\$100.0	\$100.0	\$100.0	\$100.0	Cost Avoidance	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	Total Benefit/Savings	\$77.5	\$309.8	\$309.8	\$309.8	\$309.8	COST						OPERATING EXPENSE ITEMS						Personnel - GS & Contract	(\$129.6)	(\$518.3)	(\$518.3)	(\$518.3)	(\$518.3)	Non-Capital Lease/Rental/Maintenance	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	Supplies	(\$10.4)	(\$41.7)	(\$41.7)	(\$41.7)	(\$41.7)	Other	(\$51.8)	(\$208.8)	(\$208.8)	(\$208.8)	(\$208.8)	CAPITAL ASSETS PURCHASED						Equipment (Lease & Purchase)	(\$792.0)	(\$4.0)	(\$4.0)	(\$4.0)	(\$4.0)	Facilities	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	Total Cost	(\$983.8)	(\$772.8)	(\$772.8)	(\$772.8)	(\$772.8)	Net Yearly Cash Flow	(\$906.3)	(\$463.0)	(\$463.0)	(\$463.0)	(\$463.0)	Net Cumulative Cash Flow	(\$906.3)	(\$1,369.3)	(\$1,832.4)	(\$2,295.4)	(\$2,758.5)	Investment Requirements						Other	\$683.8	\$772.8	\$772.8	\$772.8	\$772.8	Net Investment	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
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Personnel - GS & Contract	(\$129.6)	(\$518.3)	(\$518.3)	(\$518.3)	(\$518.3)																																																																																																																																								
Non-Capital Lease/Rental/Maintenance	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0																																																																																																																																								
Supplies	(\$10.4)	(\$41.7)	(\$41.7)	(\$41.7)	(\$41.7)																																																																																																																																								
Other	(\$51.8)	(\$208.8)	(\$208.8)	(\$208.8)	(\$208.8)																																																																																																																																								
CAPITAL ASSETS PURCHASED																																																																																																																																													
Equipment (Lease & Purchase)	(\$792.0)	(\$4.0)	(\$4.0)	(\$4.0)	(\$4.0)																																																																																																																																								
Facilities	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0																																																																																																																																								
Total Cost	(\$983.8)	(\$772.8)	(\$772.8)	(\$772.8)	(\$772.8)																																																																																																																																								
Net Yearly Cash Flow	(\$906.3)	(\$463.0)	(\$463.0)	(\$463.0)	(\$463.0)																																																																																																																																								
Net Cumulative Cash Flow	(\$906.3)	(\$1,369.3)	(\$1,832.4)	(\$2,295.4)	(\$2,758.5)																																																																																																																																								
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Other	\$683.8	\$772.8	\$772.8	\$772.8	\$772.8																																																																																																																																								
Net Investment	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0																																																																																																																																								
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Analysis Period Start Date: 1-Jul-09 Other Funding End Date: 30-Jun-14 Months of Funding Requested: 60 Net Cash Flow: (2,758.5) NPV Cash Flow Discounted at 1.6%: (2,686.7) Total Funding Requested Less Facility Savings/Revenue: 1,316.6 Total Amount of Projected Savings/Benefits: 1,316.6 Simple ROI: (Net Benefit / Investment): -67.7% Year Project reaches Self-Sustainment Status: > 10 years Projected Payback Period in Years (Break-even): 9.0 Projected Payback Date: 29-Jun-18																																																																																																																																													
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<table border="1"> <thead> <tr> <th></th> <th>Year 1 Sep 2009</th> <th>Year 2 Sep 2010</th> <th>Year 3 Sep 2011</th> <th>Year 4 Sep 2012</th> <th>Year 5 Sep 2013</th> </tr> </thead> <tbody> <tr> <td>Annual benefit impacts</td> <td>77.5</td> <td>309.8</td> <td>309.8</td> <td>309.8</td> <td>309.8</td> </tr> <tr> <td>Annual expense item impacts</td> <td>(101.6)</td> <td>(768.8)</td> <td>(768.8)</td> <td>(768.8)</td> <td>(768.8)</td> </tr> <tr> <td>Net operating inflow (outflow)</td> <td>(114.3)</td> <td>(459.0)</td> <td>(459.0)</td> <td>(459.0)</td> <td>(459.0)</td> </tr> <tr> <td>Asset purchase</td> <td>(792.0)</td> <td>(4.0)</td> <td>(4.0)</td> <td>(4.0)</td> <td>(4.0)</td> </tr> <tr> <td>Net CASH FLOW</td> <td>(906.3)</td> <td>(463.0)</td> <td>(463.0)</td> <td>(463.0)</td> <td>(463.0)</td> </tr> <tr> <td>Cumulative Net Cash Flow</td> <td>(906.3)</td> <td>(1,369.3)</td> <td>(1,832.4)</td> <td>(2,295.4)</td> <td>(2,758.5)</td> </tr> <tr> <td>Discounted Cash Flow- NPV at 1.6%</td> <td>(906.3)</td> <td>(455.7)</td> <td>(448.6)</td> <td>(441.5)</td> <td>(434.6)</td> </tr> <tr> <td>Cumulative Discounted Cash Flow</td> <td>(906.3)</td> <td>(1,362.0)</td> <td>(1,810.6)</td> <td>(2,252.1)</td> <td>(2,686.7)</td> </tr> </tbody> </table>											Year 1 Sep 2009	Year 2 Sep 2010	Year 3 Sep 2011	Year 4 Sep 2012	Year 5 Sep 2013	Annual benefit impacts	77.5	309.8	309.8	309.8	309.8	Annual expense item impacts	(101.6)	(768.8)	(768.8)	(768.8)	(768.8)	Net operating inflow (outflow)	(114.3)	(459.0)	(459.0)	(459.0)	(459.0)	Asset purchase	(792.0)	(4.0)	(4.0)	(4.0)	(4.0)	Net CASH FLOW	(906.3)	(463.0)	(463.0)	(463.0)	(463.0)	Cumulative Net Cash Flow	(906.3)	(1,369.3)	(1,832.4)	(2,295.4)	(2,758.5)	Discounted Cash Flow- NPV at 1.6%	(906.3)	(455.7)	(448.6)	(441.5)	(434.6)	Cumulative Discounted Cash Flow	(906.3)	(1,362.0)	(1,810.6)	(2,252.1)	(2,686.7)																																																																														
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Total Other Requirements FY09 FY10 FY11 FY12 Total																																																																																																																																													
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S. Appendix M

BCA Tool – Radiology Suite, PA/NP Staffing – Most Likely Case

Mobile Health Clinic
South Texas Veterans Health Care System

Business Case Analysis

Projected Start Date: 1-Jul-09
First Patient Seen: 1-Jul-09
Submit Date: 24-Apr-09
Version 1

Select Analysis by Service Type

Total Project

ANNUAL BENEFITS

FY09FY10FY11FY12FY13

Facility/MTF Savings/Revenue\$37.5\$149.8\$149.8\$149.8\$149.8

Purchased Care Savings\$0.0\$0.0\$0.0\$0.0\$0.0

Other Non-Specified Savings\$40.0\$160.0\$160.0\$160.0\$160.0

Cost Avoidance\$0.0\$0.0\$0.0\$0.0\$0.0

Total Benefit/Savings\$77.5\$309.8\$309.8\$309.8\$309.8

COST

OPERATING EXPENSE ITEMS

Personnel - GS & Contract(\$126.9)(\$507.7)(\$507.7)(\$507.7)(\$507.7)

Non-Capital Lease/Rental/Maintenance\$0.0\$0.0\$0.0\$0.0\$0.0

Supplies(\$10.4)(\$41.7)(\$41.7)(\$41.7)(\$41.7)

Other(\$51.8)(\$208.8)(\$208.8)(\$208.8)(\$208.8)

CAPITAL ASSETS PURCHASED

Equipment (Lease & Purchase)(\$792.0)(\$4.0)(\$4.0)(\$4.0)(\$4.0)

Facilities\$0.0\$0.0\$0.0\$0.0\$0.0

Total Cost(\$881.1)(\$762.2)(\$762.2)(\$762.2)(\$762.2)

Net Yearly Cash Flow(\$803.6)(\$462.4)(\$462.4)(\$462.4)(\$462.4)

Net Cumulative Cash Flow(\$803.6)(\$1,366.0)(\$1,808.4)(\$2,260.8)(\$2,713.2)

Investment Requirements

Other\$681.1\$762.2\$762.2\$762.2\$762.2

Net Investment\$0.0\$0.0\$0.0\$0.0\$0.0

Analysis

Other Period Only

Analysis Period Start Date: 1-Jul-09

Other Funding End Date: 30-Jun-14

Months of Funding Requested: 60

Net Cash Flow: (2,713.2)

NPV Cash Flow Discounted at 16%: (2,043.1)

Total Funding Requested Less Facility Savings/Revenue: 3,393.2

Total Amount of Projected Savings/Benefits: 1,316.8

Simple ROI: (Net Benefit / Investment) -47.3%

Year Project reaches Self-Sustainability Status > 10 years

Projected Payback Period in Years (Break-even) 9.0

Projected Payback Date 29-Jun-18

Total Project - CASH FLOW SUMMARY

Cash inflows (outflows)

Year 1Year 2Year 3Year 4Year 5

Sep 2009Sep 2010Sep 2011Sep 2012Sep 2013

Annual benefit impacts77.5309.8309.8309.8309.8

Annual expense item impacts(189.1)(758.2)(758.2)(758.2)(758.2)

Net operating inflow (outflow)(111.6)(448.4)(448.4)(448.4)(448.4)

Asset purchase(792.0)(4.0)(4.0)(4.0)(4.0)

Net CASH FLOW(903.6)(452.4)(452.4)(452.4)(452.4)

Cumulative Net Cash Flow(903.6)(1,366.0)(1,808.4)(2,260.8)(2,713.2)

Discounted Cash Flow- NPV at 16%(903.6)(445.3)(438.3)(431.4)(424.6)

Cumulative Discounted Cash Flow(903.6)(1,346.9)(1,787.2)(2,218.6)(2,643.1)

Total Other Requirements

FY09FY10FY11FY12FY13

Capital Asset\$792.0\$4.0\$4.0\$4.0\$4.0

O&M\$189.1\$758.2\$758.2\$758.2\$758.2

Total Investment\$981.1\$762.2\$762.2\$762.2\$762.2

Less Facility Savings/Revenue\$37.5\$149.8\$149.8\$149.8\$149.8

Adjusted Net Investment Req\$943.6\$612.4\$612.4\$612.4\$612.4

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