



HEALTH AFFAIRS

THE ASSISTANT SECRETARY OF DEFENSE

1200 DEFENSE PENTAGON
WASHINGTON, DC 20301-1200

MAR - 3 2009

The Honorable Carl Levin
Chairman, Committee on Armed Services
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

The enclosed report responds to Section 712 of the National Defense Authorization Act for Fiscal Year 2007 that directs the Secretary of Defense to do a study on chiropractic health care services and to submit a report of its findings by March 31, 2008. Due to the complexity of this issue, an interim report was submitted in March of this year.

The study revealed that a comprehensive implementation of chiropractic services and benefits as outlined in the provision would not be feasible given the budgetary requirements and the findings relative to medical readiness. In the absence of chiropractic care, various comparative treatment options are available to active duty Service members, their families, and other beneficiaries of the Military Health System.

Thank you for your continued support of the Military Health System.

Sincerely,

A handwritten signature in black ink, appearing to read "S. Ward Casscells", with a long horizontal flourish extending to the right.

S. Ward Casscells, MD

Enclosure:
As stated

cc:
The Honorable John McCain
Ranking Member



THE ASSISTANT SECRETARY OF DEFENSE

1200 DEFENSE PENTAGON
WASHINGTON, DC 20301-1200

HEALTH AFFAIRS

MAR - 3 2009

The Honorable John P. Murtha
Chairman, Subcommittee on Defense
Committee on Appropriations
U.S. House of Representative
Washington, DC 20515

Dear Mr. Chairman:

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Sincerely,

A handwritten signature in black ink, appearing to read "V/R, Ward", written over a horizontal line.

S. Ward Casscells, MD

Enclosure:
As stated

cc:
The Honorable C.W. Bill Young
Ranking Member



HEALTH AFFAIRS

THE ASSISTANT SECRETARY OF DEFENSE

1200 DEFENSE PENTAGON
WASHINGTON, DC 20301-1200

MAR - 3 2009

The Honorable Ben Nelson
Chairman, Subcommittee on Personnel
Committee on Armed Services
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

The enclosed report responds to Section 712 of the National Defense Authorization Act for Fiscal Year 2007. Congress directed the Secretary of Defense to do a study on chiropractic health care services and to submit a report of its findings by March 31, 2008. Due to the complexity of this issue, an interim report was submitted in March of this year.

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S. Ward Casscells, MD

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cc:
The Honorable Lindsey O. Graham
Ranking Member



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MAR - 3 2009

The Honorable Ike Skelton
Chairman, Committee on Armed Services
U.S. House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

The enclosed report responds to Section 712 of the National Defense Authorization Act for Fiscal Year 2007. Congress directed the Secretary of Defense to do a study on chiropractic health care services and to submit a report of its findings by March 31, 2008. Due to the complexity of this issue, an interim report was submitted in March of this year.

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Sincerely,

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S. Ward Casscells, MD

Enclosure:
As stated

cc:
The Honorable John M. McHugh
Ranking Member



THE ASSISTANT SECRETARY OF DEFENSE

1 200 DEFENSE PENTAGON
WASHINGTON, DC 20301-1200

HEALTH AFFAIRS

MAR - 3 2009

The Honorable Susan Davis
Chairwoman, Subcommittee on Military Personnel
Committee on Armed Services
U.S. House of Representatives
Washington, DC 20515

Dear Madam Chairwoman:

The enclosed report responds to Section 712 of the National Defense Authorization Act for Fiscal Year 2007. Congress directed the Secretary of Defense to do a study on chiropractic health care services and to submit a report of its findings by March 31, 2008.

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S. Ward Casscells, MD

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As stated

cc:
The Honorable Joe Wilson
Ranking Member



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HEALTH AFFAIRS

MAR - 3 2009

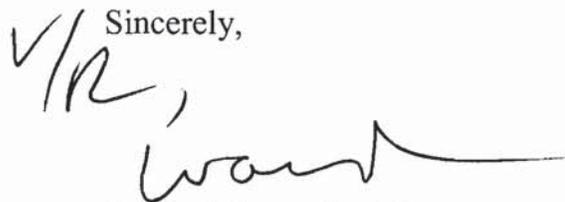
The Honorable Daniel K. Inouye
Chairman, Committee on Appropriations
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

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Sincerely,

S. Ward Casscells, MD

Enclosure:
As stated

cc:
The Honorable Thad Cochran
Ranking Member



HEALTH AFFAIRS

THE ASSISTANT SECRETARY OF DEFENSE

1200 DEFENSE PENTAGON
WASHINGTON, DC 20301-1200

MAR - 3 2009

The Honorable David R. Obey
Chairman, Committee on Appropriations
U.S. House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

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Thank you for your continued support of the Military Health System.

Sincerely,

Respectfully,
Ward

S. Ward Casscells, MD

Enclosure:
As stated

cc:
The Honorable Jerry Lewis
Ranking Member

Report to Congress



Study Relating to Chiropractic Services and Benefits

Section 712

National Defense Authorization Act for FY07

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Study Relating to Chiropractic Services and Benefits

Introduction

Section 712 of the National Defense Authorization Act for Fiscal Year 2007 (NDAA 07) directed the Secretary of Defense to conduct a study on chiropractic health care services and to submit a report on the study. This study examined the following matters with respect to chiropractic health services and benefits:

- 1) An assessment of the health care benefits of providing certain chiropractic services and benefits.
- 2) The cost of providing such services and benefits.
- 3) An estimate of the potential cost savings of providing such services and benefits in lieu of other medical services.
- 4) The identification of existing and planned health care infrastructure, including personnel, equipment, and facilities that would be required in order to accommodate the provision of chiropractic health care services.
- 5) The effects of providing chiropractic health care services and benefits on medical readiness for active duty Service members (ADSMs), and whether there is an acceleration in their return to duty following an injury or other malady that can be appropriately treated with chiropractic.
- 6) The projected costs of providing chiropractic health care services on a space-available basis in the military treatment facilities (MTF) currently providing chiropractic care under Section 702 of the Floyd D. Spence NDAA for Fiscal Year 2001 (Public Law 106–398; 10 United States Code 1092 note).
- 7) The feasibility of providing such benefits and services.

For purposes of this study, the direct care system was considered to be comprised of 131 MTFs as identified in Department of Defense (DoD) information systems by a “parent” Defense Medical Information System (DMIS) Identifier (ID) code. Parent MTFs can be compared to regional health systems in local civilian communities; both may have subordinate facilities that are at separate locations with unique physical addresses. Branch health clinics are subordinate to parent MTFs and are identified by a “child” DMIS ID code. Parent MTFs have military command structures that can be considered comparable to the local corporate headquarters of a regional health system.

It was uncertain how many of the 4.6 million TRICARE beneficiaries who reside within the parent MTF catchment areas would be referred for care in the MTFs. Because

of this uncertainty, chiropractic utilization and costs were projected using two scenarios: a) low use scenario—only 2.4 million eligible beneficiaries with MTF primary care managers (PCM) have access, and b) high use scenario—all 4.6 million eligible beneficiaries in catchment areas would have access.

A critical assumption of the study was that future MTF utilization would mirror the current PCM referral system and current utilization adjusted for age and gender. A large share of the additional visits and costs would be attributable to military retirees and their dependents. Compared to the predominantly young male ADSM population, older beneficiaries and females use more chiropractic services.

Assessment of the Health Care Benefits of Chiropractic

The Department contracted for an independent literature review to assess the health care benefits of providing chiropractic services and benefits. The use of chiropractic spinal manipulation therapy for nonspecific low back pain and nonspecific neck pain was examined. The purpose of the literature review was not to determine if spinal manipulation therapy is better than no treatment but to determine if chiropractic spinal manipulative therapy provides greater benefit than or additional benefit beyond that offered by exercise, other physical therapy regimens, or other treatment modalities.

The available evidence comparing changes in pain intensity after spinal manipulation therapy to changes in pain intensity after various comparison therapies was inconclusive and did not indicate whether spinal manipulation therapy provided greater pain relief than the comparison therapy in patients with chronic nonspecific low back pain.

A recent clinical practice guideline prepared by the American Pain Society and the American College of Physicians, along with its supporting systematic review, found good evidence of a moderate benefit for spinal manipulation in chronic nonspecific low back pain patients when compared to placebo, sham manipulation, or treatments known to be ineffective.

For acute nonspecific low back pain patients, this same report found fair evidence of a small to moderate benefit for spinal manipulation compared to placebo, sham manipulation, or treatments known to be ineffective. Based on this evidence, the review recommends that clinicians should consider the addition of spinal manipulation (as well as other nonpharmacologic therapies with proven benefit) for acute and chronic low back pain for patients who do not improve with self-care options.

The American College of Occupational and Environmental Medicine released a guideline on low back pain complaints. Based on limited research-based evidence (at least one adequate scientific study of patients with low back pain), spinal manipulation was recommended for low back pain during the first month of symptoms without

radiculopathy. Though chiropractors may provide manipulation for adults with low back pain, spinal manipulation should not be done if pre-manipulative testing peripheralizes symptoms.

The University of Michigan Health System released a guideline on acute back pain. In this report, spinal manipulation was considered for symptomatic relief but was not specifically recommended. Conclusions were based on prospective randomized clinical trials, when possible. In the absence of randomized controlled trials, observational studies were considered. If none was available, expert opinion was used.

The Academy of Chiropractic Education released guidelines on manual medicine for musculoskeletal injuries. The guidelines recommend spinal manipulation to normalize joint mobility and nerve function in addition to pain reduction, with frequent compensatory changes in other areas of spinal function. However, the type of supporting evidence was not specifically stated.

The Canadian Chiropractic Association, Guidelines Development Committee (GDC) released a 2005 chiropractic clinical practice guideline regarding evidence-based treatment of adult neck pain not due to whiplash. The GDC recommended spinal manipulation therapy for patients with acute or chronic neck pain, whether the origin of pain is known or unknown, to improve pain and some range of motion. They also recommended a concerted effort to mesh chiropractic into that of other health disciplines to maximize patients' gains from their chiropractic treatment (recovery from pain, impairment, and disability, reduced costs, increased patient safety, increased satisfaction among patients and health care payers).

Despite some evidence for superiority of spinal manipulation therapy over no treatment or placebo treatment, the reports found no evidence for clear benefits in comparison to other commonly used treatments for nonspecific low back pain or nonspecific neck pain. Spinal manipulation therapy for low back pain can, though rarely, be associated with significant complications which may require surgical interventions. A variety of complications have been reported to occur after spinal manipulation therapy treatment, including radiculopathy, Cauda Equina Syndrome (CES), myelopathic quadriparesis, paraparesis, pathological fractures, palsy of the long thoracic nerve, paralysis of the diaphragm, and exacerbation of lumbar disease. The incidence of CES caused by spinal manipulation therapy is estimated to be fewer than one per one million patient visits. Serious adverse effects have been reported following spinal manipulation therapy for nonspecific neck pain, but appear to occur only rarely. However, mild and transient adverse events after spinal manipulation therapy for nonspecific neck pain occur frequently, and about half of all patients experience mild and transient adverse events after spinal manipulation therapy for low back pain. These symptoms typically arise and disappear shortly after treatment.

Cost Projections for Expansion of Chiropractic Access

There are about 9.2 million TRICARE eligible beneficiaries, 5.5 million in MTF areas and 3.7 million outside MTF areas (Table 1). Of the 5.5 million TRICARE-eligible beneficiaries living within the 131 MTF geographic areas, 4.6 million have not been offered chiropractic access while 0.9 million ADSMs are located inside one of the 49 MTF areas that offer chiropractic to ADSMs only.

Table 1—Distribution of TRICARE Eligibles by Current Access to MTF Chiropractic

	Millions	Total	ADSM ^a	ADD/TRS ^b	Retired ^c
Non-enrollees & network enrollees	2.2 ^d	2,164,724	0	452,626	1,712,098
MTF enrollees	2.4	2,423,745	444,439	1,269,713	709,593
MTF area without chiropractic	4.6	4,588,469	444,439	1,722,339	2,421,691
MTF area with chiropractic	0.9	922,852 ^d	922,852	0	0
All eligibles inside MTF areas	5.5	5,511,321	1,367,291	1,722,339	2,421,691
All eligibles outside MTF areas	3.7	3,659,340	344,345	757,331	2,557,664
Total TRICARE-eligible Beneficiaries	9.2	9,170,661	1,711,636	2,479,670	4,979,355

a. ADSM – active duty service members

b. ADD/TRS – active duty dependents (family members), plus members of the Selected Reserves in TRICARE Reserve Select along with their covered family members

c. Retired – retired service members and their eligible family members

d. These beneficiaries would receive all chiropractic in MTFs in the high MTF use scenario as described below. These beneficiaries would receive all chiropractic in the private sector in the low MTF use scenario.

e. 893,931 ADSMs had chiropractic access at 42 MTFs in Fiscal Year (FY) 2006. 28,921 ADSMs gained access as 7 MTFs were added in FY 2006 and 2007.

Elaborate models were used to estimate expected utilization. The portion of the cost projections that would be attributable to the 131 MTFs of the direct care system was determined separately from a portion of the cost projections attributable to the purchased care system. It was assumed that all 3.7 million TRICARE eligible beneficiaries living outside an MTF area would have their chiropractic needs met in the civilian purchased care sector. Chiropractic would be available in all 131 MTFs in the direct care system with the balance of chiropractic not provided at MTFs to be provided in the purchased care system.

Consequently, chiropractic utilization and costs were projected using the following two scenarios. The extent to which chiropractic would be offered at the MTFs based on beneficiary enrollment status was uncertain. If all Military Health System (MHS) MTFs offered chiropractic, between 2.4 and 4.6 million TRICARE-eligible beneficiaries would have access to these services (compared with about 0.9 million ADSM-eligible beneficiaries today). The variable between the two scenarios is the 2.2 million non-ADSM TRICARE-eligible beneficiaries living within MTF areas who are not assigned to an MTF PCM; they would receive all chiropractic care from MTFs in the higher

MTF/lower purchased care use scenario and all chiropractic care from purchased care in the lower MTF/higher purchased care use scenario.

- Higher MTF/lower purchased care use scenario—MTF chiropractic access for all 4.6 million TRICARE beneficiaries without access now and who live within the 131 MTF areas (i.e., all MTF area demand would be satisfied within the direct care system). This includes TRICARE Standard/Extra users, as well as TRICARE Prime enrollees assigned to civilian TRICARE Network PCMs.
- Lower MTF/higher purchased care use scenario—Chiropractic access only for the 2.4 million TRICARE Prime enrollees without access who are assigned to MTF PCMs (roughly half the number in the Higher Use Scenario). This includes all 0.4 million ADSMs in the 82 MTF areas without chiropractic currently, as well as all 2.0 million non-ADSMs enrolled to MTF PCMs.

The direct care portion of future costs was projected from historical utilization by ADSMs at the 42 chiropractic MTF sites that provided chiropractic throughout Fiscal Year (FY) 2006 adjusted by a number of utilization factors. For instance, it was observed that women tend to use more services than men and older people tend to use more services than younger people. The purchased care portion of future costs was projected from commercial utilization patterns further adjusted for gender, age, TRICARE cost-sharing arrangements, and commercial chiropractic benefit restrictions. It was estimated that the total allowed charge in the purchased care system would be approximately \$54.27 per visit and that amount was further reduced for cost sharing.

Additional costs and utilization were projected for three different populations consistent with Section 712. These costs were over and above costs (presently approximately \$16.3 million per year) for the 0.9 million ADSMs who have access at the 49 MTFs currently providing chiropractic.

First, Table 2 shows the additional costs and utilization if chiropractic were to be offered only to the remainder of the ADSMs who currently do not have access to chiropractic. Since all ADSMs who live in the 82 MTF areas not providing chiropractic access currently would get their chiropractic at MTFs, there would be no difference in utilization and costs between the two scenarios when only ADSMs are added to the benefit. The purchased care costs would be derived from ADSMs who live outside the 131 MTF areas. The total cost if the remainder of the ADSMs were added would be \$28.5 million annually.

**Table 2–ADSM–
Additional Annual Chiropractic Utilization and Costs**

Utilization Scenarios	MTF Direct Care	Civilian Purchased Care	Total Chiropractic
Added Chiropractic Visit/Year (in 000)			
higher MTF/lower purchased care	186	250	437
lower MTF/higher purchased care	186	250	437
Added Chiropractic Cost Per Year (\$ in Millions)			
higher MTF/lower purchased care	\$14.9	\$13.6	\$28.5
lower MTF/higher purchased care	\$14.9	\$13.6	\$28.5

Second, Table 3 shows the cumulative costs and utilization if chiropractic were to be offered to active duty family members as well as to all those covered under TRICARE Reserve Select (TRS) in addition to those shown in Table 2. The total cost would be \$88.3 million annually for higher MTF/lower purchased care and \$86.3 million annually for the lower MTF/higher purchased care scenario.

**Table 3–ADSM; and Active Duty Family/TRS–
Additional Annual Chiropractic Utilization and Costs**

	MTF Direct Care	Civilian Purchased Care	Total Care
Added Chiropractic Visit/Year (in 000)			
higher MTF/lower purchased care	734	577	1,311
lower MTF/higher purchased care	596	760	1,356
Added Chiropractic Cost Per Year (\$ in Millions)			
higher MTF/lower purchased care	\$58.2	\$30.1	\$88.3
lower MTF/higher purchased care	\$47.1	\$39.2	\$86.3

Finally, Table 4 shows the cumulative costs and utilization if chiropractic were to be offered to retirees and their families in addition to those shown in Table 3. The result of this approach would be that all MHS beneficiaries would have access to chiropractic. Additional cost to the Defense Health Program (DHP) would be over \$303 million or more than \$267 million per year, depending on the scenario.

**Table 4—ADSM; Active Duty Family/TRS; Retirees and Family—
Additional Annual Chiropractic Utilization and Costs**

	MTF Direct Care	Civilian Purchased Care	Total Care
Added Chiropractic Visit per Year			
higher MTF/lower purchased care	2,312	2,488	4,801
lower MTF/higher purchased care	1,099	3,899	4,997
Added Chiropractic Cost Per Year (\$ in Millions)			
higher MTF/lower purchased care	\$188.2	\$115.5	\$303.7
lower MTF/higher purchased care	\$88.3	\$179.5	\$267.8

If chiropractic were to be made available to all MHS beneficiaries under the MTF higher/lower purchased care use scenario, MTFs would deliver an additional 2.3 million chiropractic visits each year with increased direct care costs of almost \$190 million annually (compared to about \$16 million today). Nearly 2.5 million additional visits would be purchased at a cost of \$115 million annually, with the vast majority of these visits and costs being incurred by retirees and their families. Overall, there would be an additional 4.8 million (at present approximately 210,000 visits annually at MTFs offering care to ADSMs) chiropractic visits per year at a total increased cost to the DHP in excess of \$300 million. These utilization levels and costs are significantly greater than existing levels because access to chiropractic at MTFs is currently offered to fewer than 1 million ADSMs and would expand to more than 9 million beneficiaries. Additionally, utilization per beneficiary would be higher because this population is older and has a greater share of women—two factors that are associated with higher chiropractic use.

If chiropractic were to be made available to all MHS beneficiaries under the MTF lower/higher purchased care use scenario, MTFs would deliver an additional 1.1 million MTF chiropractic visits each year with increased direct care costs of \$90 million annually (compared to about \$16 million today). Nearly 4 million additional visits would be purchased annually at a cost of \$180 million, with the vast majority of these visits and costs being incurred by retirees and their dependents. Overall, there would be an additional 5 million chiropractic visits per year at a total increased cost to the Defense Health Program in excess of \$267 million per year. Under this scenario, estimated visits are greater than under the MTF higher/lower purchased care use scenario because visits are shifted to the purchased care sector where there may be fewer visit limitations versus the direct care system. However, costs are lower when visits are shifted to the purchased care sector because quite often direct care unit costs are higher due to the fact that many occur in the hospital outpatient and clinic setting versus the chiropractor's office in the purchased care sector.

However, some of the 3.3 million TRICARE eligible beneficiaries with MTF PCMs (excluded from these 2 scenarios) might also seek and eventually receive care in the purchased care system. As a result, under the higher purchased care use scenario, it was estimated that the additional purchased care costs that would be incurred if 25 percent of eligible beneficiaries with MTF PCMs received their care downtown would increase by about 20 percent from \$180 million to \$216 million annually.

Therefore, if a comprehensive (direct care system and purchased care system) chiropractic benefit were to be implemented for all MHS beneficiary categories, the total annual cost range would be approximately \$265–\$300 million.

Potential Cost of Chiropractic in Lieu of Other Medical Services

The potential cost of providing chiropractic was compared with other medical services. The question was addressed to gauge the cost of providing musculoskeletal care to individual ADSMs if chiropractic were to be made available—were costs reduced, increased, or did they stay the same.

Traditionally, ADSMs have received care for musculoskeletal conditions from a host of providers including physical and occupational therapists (PT/OT), musculoskeletal specialists (orthopedic surgeons, rheumatologists, neurologists, or podiatrists), and others.

In examining the treatment costs of ADSMs at 42 MTFs providing chiropractic care, it was found that the estimated adjusted cost of PT/OT care by itself in isolation was \$492 per patient.¹ In comparison, the adjusted cost of treating the same person with physician specialty care in isolation was \$690 per patient or \$198 (40.2 percent) more, which was a significant increase ($p < .01$). The cost of treating the same person with chiropractic in isolation was the highest of all three treatment approaches at \$691 per patient or \$199 (40.4 percent) more, which was again a significant increase ($p < .01$) from treating a person with PT/OT. This was, however, an insignificant difference for a patient receiving physician specialty care.

The \$199 (40.4 percent) difference in adjusted costs between chiropractic only and PT/OT care only appears to be largely explained by differences in health care utilization. On an adjusted basis, if a patient received chiropractic only, they would be expected to have 84 percent more visits than if they saw a PT/OT only (5.9 visits versus 3.2 visits). However, patients with chiropractic only spent less on prescription drugs compared to PT/OT only users. Our finding that chiropractic was about the same cost as physician

¹ Some 89 independent variables were used to estimate treatment costs for the 54,328 patients who received musculoskeletal care at 42 MTFs during FY 06 including types of care (e.g., no chiropractic versus chiropractic), patient characteristics (age, gender, PCM referral diagnosis, civilian sector musculoskeletal care, and Service branch designation), and variables relevant to the patient's MTF (MTF Service designation, extent of MTF mobilization, clinic versus hospital, etc.)

specialty care also reflected differences in utilization and visit costs. Higher physician specialty care visit costs were completely offset by a greater number of chiropractic visits.

In an MTF setting, patients are referred to chiropractors by their PCMs. Whether adding chiropractic to multidisciplinary treatment plans reduces or increases direct care costs per ADSM patient was addressed. The results indicated that the addition of MTF-provided chiropractic did not act as a substitute for non-chiropractic care. The addition of chiropractic increased the cost of treating the same person by about 30 to 90 percent (Table 5). For example, if a person were treated for a musculoskeletal condition using a combination of PT/OT, physician specialist care, and returned to their PCM for additional care, total direct care costs were estimated at \$3,098 on an adjusted basis. If the same person also had chiropractic, treatment costs would be an additional \$1,393 (or 45 percent more for total costs of \$4,491). These cost differences were explained by the fact that making chiropractic available increases the total number of care visits by 4 to 10 visits per patient.

Table 5 – Added Cost of Chiropractic

Treatment Approach	Plan without Chiropractic	Plan with Chiropractic	Increase in Costs
PT/OT only	\$492	\$911	85%
Musculoskeletal physician only	\$690	\$1,154	67%
PT/OT	\$1,220	\$2,320	90%
Physician & other	\$1,491	\$2,649	78%
PT/OT & physician	\$1,256	\$1,616	29%
All 3 in combination	\$3,098	\$4,491	45%
<i>Weighted Total</i>	\$1,417	\$2,374	68%

a. "Other Care" includes return trips to PCMs or other specialists such as anesthesiologists for pain management, psychologists, or psychiatrists.

In lieu of chiropractic, various comparative treatment options are available to ADSMs. The MHS usage of the PCM referral model is necessary to limit the growing costs of health care within the MHS and ensure that ADSMs receive the most appropriate care for musculoskeletal injuries. Therefore, the addition of chiropractic to the PCM model would increase the number of visits per episode of care and, as a result, the cost of care for musculoskeletal injuries would be significantly increased.

MTF Infrastructure for Chiropractic

Based on the MTF chiropractic use scenarios above, chiropractic staffing scenarios (models) were developed to determine the space and equipment requirements necessary to deliver chiropractic in each facility. In each scenario, which included 1 to 15 providers, the requirements were synthesized into a Program for Design (PFD) listing that details required space and equipment. The PFDs enabled the development of a set of measurable factors to determine detailed cost estimates that included new construction

and renovation of existing facilities to accommodate the addition of chiropractic throughout the MHS.

The cost estimates were applied to the identified 131 MTFs. These cost estimates for each MTF, for each provider scenario, for each usage scenario, and construction level are outlined in this section.

Utilizing the list of 131 MTFs, cost was estimated using both high and low chiropractic use scenarios for each MTF. A range of anticipated usage was determined, from high use to low use, which was then translated into an anticipated number of providers for each usage scenario based on the assumption that MTF chiropractors could provide 4,200 separate patient encounters annually.

A cost estimate for each MTF and each provider scenario (high and low use) was prepared, which covered three different construction levels: New Construction, Level II Renovation, and Level I Renovation. Depending on the level of preferred construction/renovation, as well as the anticipated level of usage (high and low use scenarios), the cost to implement additional chiropractic across the 131 identified MTFs ranges from more than \$95 million to over \$170 million for a low use scenario across the various MTFs and from \$212 million to almost \$450 million for the high use scenario for each MTF.

Service Member Medical Readiness and Return to Duty

Administrative data and patient records were examined for the effect of chiropractic on medical readiness and acceleration of return to duty among ADSMs following an injury or condition that has been treated with chiropractic. Medical readiness was defined as an ADSM's functional capacity to carry out fully the mission requirements of his/her military occupation as assessed by the health care provider with respect to his/her physical or psychological health. Clinical health care providers can affect the medical readiness of ADSMs by helping to promote and maintain health, or prevent illness and injury.

A retrospective comparison was conducted of discrete episodes of care delivered by chiropractic and non-chiropractic specialists during the previous FY. The resulting study groups included: (1) patients treated only by chiropractors (Chiro); (2) patients treated only by non-chiropractic specialists (Non-Chiro); and (3) patients treated by both types of specialists (Both).

An examination was performed to determine the episode of care length differences among each subgroup for ADSMs who had documented duty limitations. The last documented visit in the episode of care was determined to be the termination of the episode of care. The length of the episode of care for musculoskeletal injury or other malady treatable by chiropractic specialists differed significantly ($p < 0.05$) across all

three study groups. The Both group had the longest episodes of care (mean of 205.7 days) followed by the Chiro group (148.4 days). The Non-Chiro group had the shortest episodes of care (84.6 days). Similarly, all three groups differed significantly ($p < 0.001$) with regard to the average number of visits per episode of care: Both group (15.7 visits), Chiro group (10.1 visits), and Non-Chiro group (7.2 visits).

The episode of care was 33.7 days longer for patients with back pain when treated by chiropractic care specialists, than for those treated by non-chiropractic care specialists. These differences remained in the adjusted analyses that controlled for prescription medication use, chronicity, pain scores, duty limitations, and demographic variables via a propensity score variable that accounts for inherent differences in the specialty care groups. This would delay an ADSM's return to duty, rather than accelerate it.

It was found that while the average number of visits for an episode of care would be greater for patients treated by chiropractic specialists in comparison with those treated by non-chiropractic specialists, the rate of duty limitations would be the same.

Space Available for Non-ADSMs at MTFs Currently Providing Chiropractic

Section 702 of the NDAA for Fiscal Year 2001 established the military's Chiropractic Health Care Program. The program is currently available to ADSMs (including activated National Guard and Reserve members) at designated MTFs throughout the United States. ADSMs and National Guard or Reserve members obtain chiropractic at designated MTFs only and must receive a referral from their PCM. Active duty family members, retirees and their family members, and survivors are not eligible for chiropractic under this program. They may seek chiropractic in the civilian care sector at their own expense.

During FY 2006, there were a total of 42 designated MTFs that provided chiropractic for the entire year: 17 Army MTFs, 11 Navy MTFs, and 14 Air Force MTFs. By the end of FY 2007, 7 additional designated MTFs (2 Navy MTFs and 5 Air Force MTFs) were providing chiropractic. Today, these 49 MTFs (19 Air Force MTFs, 17 Army MTFs, and 13 Navy MTFs) provide chiropractic to 0.9 million eligible Service members who reside within the areas of these MTFs.

This study examined the provision of chiropractic to non-ADSMs on a "space available" basis at MTFs currently providing chiropractic.

An average full time equivalent (FTE) chiropractor was assumed to be able to accommodate up to a maximum average of 4,200 patient encounters each year. If existing MTF FTE chiropractic capacity were used at maximum efficiency, it was projected that an additional 33,000 visits annually would be available to all beneficiary categories within the MHS. These additional visits would account for approximately 1.4 percent of the projected annual demand response (2.3 million visits) of all beneficiaries

for chiropractic if this were to be implemented as a benefit. The additional 33,000 visits annually were estimated to cost \$2.7 million compared to \$188.2 million for 2.3 million visits (projected demand) annually.

Summary

This study examined the following with respect to chiropractic health services and benefits.

- 1) an assessment of health care benefits of providing such services and benefits

A literature review was conducted and found no clear evidence for chiropractic in comparison to other commonly used treatments for nonspecific low back pain or nonspecific neck pain.

- 2) the cost of providing such services and benefits

If a comprehensive (direct care system and purchased care system) chiropractic benefit were to be implemented for all MHS beneficiary categories, the total annual cost range would be approximately \$265–\$300 million for an additional 5.0 million chiropractic visits per year.

- 3) an estimate of the potential cost savings of providing such services and benefits in lieu of other medical services

The addition of chiropractic to the PCM model was estimated to increase the number of visits per episode of care and, as a result, the cost of care for musculoskeletal injuries would increase significantly (by approximately 30–90 percent depending upon the musculoskeletal treatment approach used).

- 4) the identification of existing and planned health care infrastructure, including personnel, equipment, and facilities to accommodate the provision of chiropractic health care services

If MTFs were to make chiropractic universally available, more infrastructure, personnel, equipment, and facilities would be required at costs that could range from more than \$95 million to over \$170 million for a low MTF use/high purchased care use scenario across the various MTFs and from \$212 million to almost \$450 million for the high MTF use/low purchased care use scenario. The addition of new facilities and renovation of old ones would significantly increase MTF operating costs, thus adding to the annual aggregate total of MHS expenditures.

5) the effects of providing chiropractic health care services and benefits on medical readiness for ADSMs, and if there is an acceleration in their return to duty following an injury or other malady that can be appropriately treated with chiropractic

When an ADSM is treated for musculoskeletal injury or other malady treatable by chiropractic specialists, the Both group had the longest episodes of care (mean of 205.7 days) followed by the Chiro group (148.4 days). The Non-Chiro group had the shortest episodes of care (84.6 days). Consequently, chiropractic care would delay an ADSM's return to duty, rather than accelerate it.

6) the projected costs of providing chiropractic health care services on a space available basis in the MTF currently providing chiropractic care under section 702 of the NDAA for Fiscal Year 2001 (Public Law 106-398; 10 U.S.C. 1092 note)

If existing MTF FTE chiropractic capacity were used at maximum efficiency, it was projected that an additional 33,000 visits annually would be available to all beneficiary categories within the MHS. These additional visits would account for approximately 1.4 percent of the projected annual demand response (2.3 million visits) of all beneficiaries for chiropractic if this were to be implemented as a benefit. The additional 33,000 visits annually were estimated to cost \$2.7 million compared to \$188.2 million for 2.3 million visits (total projected demand) annually.

Conclusion and Feasibility of Providing Chiropractic

A comprehensive implementation of chiropractic services and benefits as outlined in the provision would not be feasible given the budgetary requirements and the findings relative to medical readiness. In the absence of chiropractic, various comparative treatment options are available to ADSMs, their families, and other beneficiaries of the MHS.