VA Office of Inspector General

OFFICE OF AUDITS AND EVALUATIONS

Veterans Health Administration

Review of Allegation of Underutilized MRI Scanner in Waco, Texas

June 23, 2016
15-01887-282

ACRONYMS

COE	Center of Excellence
CTVHCS	Central Texas Veterans Health Care System
OIG	Office of Inspector General
MRI	Magnetic Resonance Imaging
VA	Department of Veterans Affairs
VHA	Veteran's Health Administration

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Highlights: Review of Allegation of VHA's Underutilized MRI Scanner in Waco, Texas

Why We Did This Review

The Office of Inspector General received a Hotline allegation that a mobile Magnetic Resonance Imaging (MRI) scanner was underutilized, and represents a waste of taxpayers' funds. The Veterans Health Administration (VHA) purchased the scanner in 2007 for $2.9 million for the Center of Excellence (COE) for Research on Returning War Veterans, Waco, TX. According to the allegation, maintenance on the machine costs over $200,000 annually.

What We Found

We substantiated the allegation the MRI scanner was underutilized, representing a waste of taxpayers' funds. VHA paid approximately $2.9 million for the MRI scanner and annual maintenance costs of approximately $200,000. We determined the MRI scanner was not used for approximately 64 of 81 months from July 2008 through March 2015. This occurred because:

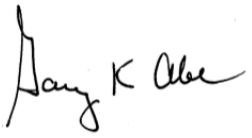
- COE leadership did not anticipate the extent to which environmental conditions affected MRI scanner images.
- The scanner required evaluation, software upgrades and repairs to accomplish the type of research being conducted.
- COE did not have staff qualified to operate the scanner or approved research projects.

COE demonstrated poor stewardship of the approximately $2.9 million purchase cost of the MRI scanner and approximately $1.1 million in maintenance costs during the 64 months it was not used.

The COE began using the scanner again in April 2015, and we confirmed the COE was still using the scanner as of February 2016. Since the issues that delayed the COE from using the MRI scanner were resolved, we did not make any recommendations.

Agency Comments

The Under Secretary for Health concurred with our conclusions concerning the MRI machine. The Under Secretary's response also indicated top researchers have joined VA and relocated to Waco to do research using the device. The Under Secretary's response also noted the MRI was upgraded and that the new leadership has revitalized the program and put the Center on a productive pathway.



GARY K. ABE
Acting Assistant Inspector General
for Audits and Evaluations

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RESULTS AND RECOMMENDATIONS

Finding VHA Wasted Taxpayers' Funds by Underutilizing a Mobile MRI Scanner

The Office of Inspector General (OIG) received a Hotline allegation that a mobile Magnetic Resonance Imaging (MRI) scanner was underutilized. According to the allegation, maintenance on the machine costs over $200,000 annually and represents a waste of taxpayers' funds. The Center of Excellence (COE) Director stated the Veteran's Health Administration (VHA) purchased the scanner in 2007 for the COE for Research on Returning War Veterans, Waco, TX. According to the COE Web site, the COE's use of the scanner is to conduct research studies "to investigate neural correlates[*] and anatomical factors contributing to the development and maintenance of" illnesses related to veterans' traumatic brain injuries.

What We Did

We conducted site visits and interviews at the COE and Central Texas Veterans Health Care System (CTVHCS), Temple, TX. We also interviewed officials from the scanner manufacturer. In addition, we reviewed the scanner's purchase and maintenance contracts, service records, and summary report related to the MRI scanner.

What We Found

We substantiated the allegation the MRI scanner was underutilized. We determined COE did not use the scanner for 64 months of an 81-month period from July 2008 through March 2015. A COE official stated he used the scanner to conduct research from January 2010 through May 2011. Another COE official confirmed the COE began using the MRI scanner in April 2015. However, as of April 2015, the COE Director disclosed there had never been any research studies published that required the use of the scanner. As a result, we concluded the approximately $2.9 million purchase cost for the MRI scanner and the approximately $1.1 million in maintenance costs during the period of nonuse represented a waste of taxpayers' funds.

[*] "Neural correlates" is defined as "brain activity that corresponds with and is necessary to produce a particular experience," according to the Neuroscientifically Challenged Web site, http://www.neuroscientificallychallenged.com/glossary/neural-correlate/.

The following table summarizes utilization timespans for the VHA-purchased.

Table. Use of MRI Scanner by Dates of Utilization

From	Through	Reasons Not Used	Number of Months Utilized	Number of Months Not Utilized	Number of Months Total
July 2008	December 2009	Environmental Conditions Caused Imaging Problems	0	18	18
January 2010	May 2011	N/A	17	0	17
June 2011	December 2011	Scanner Evaluation		7	7
January 2012	December 2012	Upgrades and Repairs Needed		12	12
January 2013	January 2014	Software Upgrades Not Obtained		13	13
February 2014	March 2015	Lack of Qualified Staff and Approved Projects		14	14
Total Use and Nonuse			**17**	**64**	**81**

Source: OIG Analysis of MRI Scanner Usage

Why This Occurred

According to COE and CTVHCS staff, the scanner was not used for 64 of 81 months for the following reasons:

- Environmental conditions caused scanner imaging problems.
- The scanner required evaluation, software upgrades, and repairs to accomplish the type of research being conducted.
- COE did not have staff qualified to operate the scanner or approved research projects.

Environmental Conditions Caused Imaging Problems

A COE staff member stated the COE did not use the MRI scanner from July 2008 through December 2009 (18 months) because unanticipated environmental conditions affected the quality of the images produced by the scanner. Specifically, the COE staff member stated the scanner was not used during this period because vibrations from construction at the VA medical facilities where the scanner was used affected the quality of the images

produced by the scanner. According to another COE staff member, COE leadership did not take into account the sensitivity and complexity of a mobile MRI scanner, which was a new venture for VHA. The staff member further stated mobile MRI scanners are much more susceptible to environmental conditions, such as vibrations caused by construction and traffic that can affect image quality.

Figure 1 shows the exterior of the semi-trailer used to transport the mobile MRI scanner. The scanner is installed inside the semi-trailer.

Figure 1. Mobile MRI Scanner Unit at the Olin E. Teague Veterans' Medical Center, Temple, TX

Source: Provided by an MRI Technician at the Center of Excellence, Waco, TX; May 29, 2015

Figure 2 shows the scanner inside the trailer.

Figure 2. MRI Scanner Inside the Mobile Trailer

Source: Provided by an MRI Technician at the Center of Excellence, Waco, TX; May 29, 2015

MRI Scanner Evaluation, Upgrades, and Repairs Needed

A COE official stated he used the MRI scanner for a research study from January 2010 through May 2011 (17 months). COE and CTVHCS staff stated they did not use the scanner from approximately June 2011 through January 2014 (32 months) because the scanner and trailer were evaluated and required upgrades and repairs to conduct COE's intended research. A COE official stated the scanner manufacturer subsequently performed repairs and upgrades at no cost to VA from approximately January through December 2012 at the manufacturer's location. However, according to the COE official, when the manufacturer returned the MRI scanner to the COE in December 2012, the manufacturer had not installed all the requested software upgrades because some of the requested upgrades were not included in the purchase or maintenance contracts. According to a COE staff member, COE did not use the MRI scanner from approximately January 2013 through January 2014.

Lack of Qualified Staff and Approved Research Project Delays

The COE Director at the time of our review stated that after he started in February 2014 he determined the previously requested MRI scanner upgrades were not needed to perform the different type of research being planned. According to the director, although the scanner was available, it was not used from approximately February 2014 through March 2015 (14 months) due to a lack of qualified staff and approved research projects. Obtaining approval for a research project normally takes about a year according to the director.

What Resulted

Based on the results of our discussions with the COE Director and review of MRI documents, we determined VHA paid approximately $2.9 million and annual maintenance of approximately $200,000 for the MRI scanner that was not used for approximately 64 of 81 months from July 2008 through March 2015. COE demonstrated poor stewardship of approximately $2.9 million paid for the scanner and about $1.1 million in maintenance costs during the 64 months.

We did not make any recommendations because the issues that delayed use of the MRI scanner in the past were resolved. The MRI scanner is operational and qualified staff and approved research projects are in place. COE started to use the MRI scanner in April 2015, and we confirmed that the MRI was being used for research as of February 2016.

Management Comments and OIG Response

In response to our draft report, the Under Secretary for Health concurred with our conclusions concerning the MRI scanner. The response also indicated top researchers from Washington University in Saint Louis and Georgetown University have joined VA and relocated to Waco to do research using the device. The Under Secretary's response noted the MRI was upgraded and that the new leadership has revitalized the program and put the COE on a productive pathway.

Appendix A Scope and Methodology

We conducted our review from April through June 2015. We assessed the merits of the allegation regarding the underutilized MRI scanner at the COE in Waco TX.

Methodology

We interviewed COE and VHA officials to gain their perspective and an understanding of the allegation. We reviewed the MRI purchase and maintenance contracts, service records, and summary report related to the MRI. COE personnel provided us with a guided tour of the trailer that houses the MRI scanner.

Fraud Detection

In order to obtain reasonable assurance of detecting fraud that may have occurred within the context of our review, we considered risk factors such as the nature of the operation, valid sources of evidence, detection of fraud, violations and abuse, and the OIG Hotline complaint. We interviewed COE and CTVHCS management to determine their awareness of fraud or situations where fraud could occur. We also contacted an OIG Office of Investigations staff member to determine if any criminal investigations concerning the underutilization of medical equipment were initiated during our review period.

Data Reliability

We did not use computer-processed data to support the review objectives and conclusion.

Government Standards

We performed this review in accordance with the Council of the Inspectors General on Integrity and Efficiency's *Quality Standards for Inspection and Evaluation*.

Appendix B Management Comments

Department of Veterans Affairs

Memorandum

Date: May 20, 2016

From: Under Secretary for Health (10)

Subj: OIG Draft Report of Allegation of Underutilized MRI Scanner in Waco, Texas -Project Number 2015-01887-R9-0093 (VAIQ Number 7694505)

To: Assistant Inspector General for Audits and Evaluations (52)

1. Thank you for the opportunity to review and comment on the OIG Report on the Allegation of Underutilized Magnetic Resonance Imaging (MRI) Scanner in Waco, Texas.

2. We support the findings of the Inspector General, and agree that the Center of Excellence (CoE) MRI has been underutilized in the past. This research grade MRI used cutting edge technology at the time it was constructed, and lessons learned from this device have informed later generations of mobile imaging technology, including the ones used by Department of Defense in the Afghanistan conflict. However, the experimental nature of this device has also made it less reliable than a traditional building mounted MRI, and the cumulative downtime has been excessive.

3. We are proud that our efforts have been successful in turning this program around in a relatively short period of time. The CoE MRI of 2016 has upgraded software, hardware, a new stabilization system and an improved chiller system which has dramatically improved the quality of its scans. Top researchers from Washington University in Saint Louis and Georgetown University have been attracted to join VA and relocated to Waco to do research using this device, and research is now underway using the CoE MRI.

4. In response to numerous external review findings, VA has initiated a redesign of the entire VA supply chain. One of the elements of the redesign is related to how VA manages non-expendable assets to include high tech medical equipment such as MRIs as the subject of this OIG audit. The initiative, referred to as Life Cycle Management of Non-Expendable Assets, will establish a national integrated approach to the planning, procurement, installation, training, maintenance, replacement and disposition of all VA non-expendable assets. It is anticipated this effort, once executed, will save money, decrease procurement action lead time, improve outcomes and increase employee satisfaction.

5. Although this device has had a troubled history, I view this overall as a success story, in that new leadership has revitalized this program and put the Center on a productive pathway. The lack of recommendations in the enclosed report reflects an extensive improvement from previous reviews.

6. If you have any additional questions, please contact Karen Rasmussen, MD., Director, Management Review Service (10E1D) by email at VHA10E1DMRSAction@va.gov.

(original signed by:)

DAVID J. SHULKIN, M.D.

Appendix C OIG Contact and Staff Acknowledgments

Contact	For more information about this report, please contact the Office of Inspector General at (202) 461-4720.
Acknowledgments	Timothy J. Crowe, Director Debra Cato Craig Ward

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