



# Department of Veterans Affairs Office of Inspector General

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## Healthcare Inspection

# Abdominal Aortic Aneurysm Management in VA Medical Facilities

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## Executive Summary

The VA Office of Inspector General, Office of Healthcare Inspections completed an evaluation to determine whether VHA medical facilities had implemented abdominal aortic aneurysm (AAA) screening policies and protocols and whether clinicians were managing diagnosed AAAs in accordance with the United States Preventative Service Task Force (USPSTF) recommended guidelines. We conducted this evaluation in conjunction with 33 Combined Assessment Program (CAP) reviews of VHA medical facilities completed from January 1–September 30, 2007.

The aorta carries oxygen-rich blood from the heart to the organs and other body parts. When the aorta becomes weak and bulges, an aneurysm is formed. Aneurysms are a health risk because they can rupture and cause fatal internal bleeding. It is estimated that more than 200,000 people are diagnosed with AAAs annually, and 15,000 die of ruptured AAAs each year in the United States alone. To decrease mortality, the USPSTF recommended AAA screening for men aged 65–75 who had ever smoked.

Despite concerns expressed by VHA and facility-level managers that there may be insufficient resources (radiology and surgery) to meet the potential demand for AAA screening, we found that some of the 33 facilities had implemented protocols and initiated actions to secure additional equipment, staff, and contractual resources needed to screen patients for AAAs. We noted that two facilities were conducting concurrent and retrospective reviews of abdominal imaging studies that were completed for other reasons. In those cases where studies included the aorta, radiologists could comment on the presence or absence of an aneurysm. This finding suggests that if providers consider the need for AAA screening when ordering abdominal imaging studies for other reasons, and expand the scope of those studies to ensure inclusion of the aorta, the need for additional imaging resources could be mitigated.

We also reviewed the medical records of 250 patients diagnosed with AAA made since February 1, 2003, and found that patients were consistently managed appropriately.

We recommended that the Under Secretary for Health:

- Advise clinicians to consider patients' risk factors for AAA when ordering abdominal imaging studies, and when appropriate expand the scope of studies to include the aorta.
- Develop a plan, within the context of available resources, to implement AAA screening for male smokers 65–75 years old.

The Under Secretary for Health concurred with our findings and submitted acceptable action plans.

## Introduction

### Purpose

The VA Office of Inspector General (OIG), Office of Healthcare Inspections completed an evaluation to determine whether Veterans Health Administration (VHA) medical facilities had implemented abdominal aortic aneurysm (AAA)<sup>1</sup> screening policies and protocols and whether clinicians were managing diagnosed AAAs in accordance with the United States Preventative Service Task Force (USPSTF) recommended guidelines as adopted by VHA's Technology Assessment Program (VA TAP) within the Office of Patient Care Services (PCS).

### Background

The aorta is the largest artery in the body; it carries oxygen-rich blood from the heart to the organs and other body parts. When the aorta becomes weak and expands or bulges, a AAA is formed. Aneurysms are a health risk because they can rupture and cause fatal internal bleeding. It is estimated that more than 200,000 people are diagnosed with AAAs annually, and 15,000 die of ruptured AAAs each year in the United States alone.<sup>2</sup> Because most people do not experience any symptoms, AAAs are usually discovered through physical examination or by ultrasound,<sup>3</sup> computed tomography (CT), or magnetic resonance imaging (MRI). In general, AAAs that are 5.5 centimeters (cm) in diameter or greater are considered for surgical repair. AAAs less than 5.5 cm are assessed for changes through periodic imaging studies.

USPSTF. The USPSTF conducts rigorous, impartial assessments of the scientific evidence for the effectiveness of a broad range of clinical preventive services, including screening, counseling, and preventive medications.<sup>4</sup> The mission of the USPSTF is to evaluate the benefits of individual services, make recommendations about which preventive services should be incorporated routinely into primary medical care and for which populations, and identify a research agenda for clinical preventive care.

The USPSTF reviewed four randomized controlled trials (RCTs) of screening for AAA. In one study conducted in the United States, 100,000 men aged 65–75 who ever smoked were screened with ultrasound, and men with AAAs greater than 5.5 cm were referred for possible surgical repair. That study showed a 42 percent reduction in AAA-related

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<sup>1</sup> An aneurysm is a localized widening (dilatation) of an artery, vein, or the heart. At the area of an aneurysm, there is typically a bulge and the wall is weakened and may rupture. The acronym for an abdominal aortic aneurysm is AAA and is commonly called “a triple A” in health care settings.

<sup>2</sup> *A Silent Killer: Abdominal Aortic Aneurysm*. October 15, 2004. Robert Wood Johnson University Hospital <http://www.rwjuh.edu/news/silentkiller.html>.

<sup>3</sup> Diagnostic imaging technique used to visualize muscles and internal organs, their size, structures, and possible pathologies.

<sup>4</sup> *About USPSTF*. U.S. Preventive Services Task Force. November 2007. Agency for Healthcare Research and Quality, Rockville, MD. <http://www.ahrq.gov/clinic/uspstfab.htm>.

mortality. Because of the low prevalence of large AAAs in women and male non-smokers, the number of AAA-related deaths that can be prevented by screening this population is small.

USPSTF found “good evidence” that screening for AAA and surgical repair of large AAAs in men aged 65–75 who have ever smoked (referred to as “male smokers” in this report) results in decreased AAA mortality.<sup>5</sup> In February 2005, the USPSTF recommended that male smokers receive a one-time screening by ultrasound for AAA.

VA TAP. This group is part of VHA’s Patient Care Services and is comprised of internationally recognized experts in health care information management and in health care technology assessment. VA TAP’s role is to carry out systematic reviews of the medical literature to identify best practices in health care, to improve health care through evidence-based decision making, and to provide impartial, peer-reviewed, evidence-based reports to support better resource management in VHA.<sup>6</sup>

VA TAP agrees that AAAs, with their high propensity to rupture and associated mortality, are a significant health problem in the United States. In September 2005, the VA TAP adopted the USPSTF recommendation for AAA screening in male smokers.

VHA Information Letter IL 10-2007-011. On August 27, 2007, the Under Secretary for Health distributed Information Letter IL 10-2007-011, *Abdominal Aortic Aneurysm Screening*. The purpose of the letter was to inform VA facilities of VA National Center for Health Promotion and Disease Prevention recommendations for AAA screening, but did not mandate screening as a policy. Currently, VHA has no directive requiring AAA screening.

Other Insurers and Organizations Adopting AAA Screening. During the course of this review, several insurers, including Aetna, Blue Cross and Blue Shield of North Carolina, and the Centers for Medicare and Medicaid Services, adopted the USPSTF recommendation for one-time screening by ultrasound for male smokers. In addition, VHA’s Office of Quality and Performance adopted the USPSTF recommendation for AAA screening as one of its clinical practice guidelines.

## Scope and Methodology

We conducted this evaluation in conjunction with Combined Assessment Program (CAP) reviews of VHA medical facilities completed from January 1–September 30, 2007. The 33 facilities that we visited represented a mix of facility size, affiliation, geographic

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<sup>5</sup> Recommendation Statement; *Screening for Abdominal Aortic Aneurysm*, February 2005, Agency for Healthcare Research and Quality of the U.S. Department of Health and Human Services. <http://www.ahrq.gov/clinic/uspstf05/aaascr/aaars.htm>.

<sup>6</sup> United States Department of Veterans Affairs, VHA Technology Assessment Program (VA TAP), Program Information, May 2007. <http://www.va.gov/vatap/program.htm>.

location, and Veterans Integrated Service Networks (VISNs). In addition to evaluating whether facilities had implemented AAA policies and protocols, we interviewed facility leaders to determine their perceptions about barriers that would hinder implementation of AAA screening.

We also evaluated whether clinicians appropriately managed AAAs after diagnosis. We selected a sample population of men who:

- Had at least one outpatient visit in fiscal year (FY) 2006.
- Were identified as smokers on medical record problem lists.
- Were 65–75 years old as of February 1, 2005 (when the USPSTF recommendation was published).
- Had a AAA diagnosis (ICD-9 code 441.4) after February 1, 2003.<sup>7</sup>

While we informed facility managers of our AAA findings during CAPs, we did not include these findings in our CAP reports. The current report includes analysis of data collected from all of the CAPs and provides VHA with a broader perspective on facility-level AAA activities.

We conducted the inspection in accordance with *Quality Standards for Inspections* published by the President’s Council on Integrity and Efficiency.

## Inspection Results

This review focused on the implementation of AAA policies and protocols and the management of AAA after diagnosis.

### Facility-Level Screening Activities

VHA officials expressed concern that should AAA screening become mandatory, some VA medical facilities may lack the resources (equipment and personnel) to adequately respond to the increased demand for imaging studies. In fact, senior managers at 19 of 33 facilities (57 percent) told us that they had concerns regarding implementing AAA screening due to staffing, budgetary, equipment, and/or space constraints.

Despite these concerns, we found that 15 of 33 facilities reviewed (45 percent) had taken one or more of the following actions and 4 other facilities were planning similar actions:

- (a) Implemented clinical reminders<sup>8</sup> for AAA screening.

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<sup>7</sup> We selected this date to allow enough time to elapse so that appropriate follow-up treatment and surveillance actions could occur.

<sup>8</sup> Clinical reminders are electronic alerts that remind providers to perform specified healthcare maintenance activities, such as annual screenings or follow-up tests.

- (b) Implemented screening policies and protocols for AAA.
- (c) Contracted for community radiology services and included AAA screening in the contract for services.
- (d) Purchased additional imaging equipment.
- (e) Increased staffing to meet demand.
- (f) Increased training funds to support ultrasound technicians' certifications.
- (g) Completed concurrent and/or retrospective reviews of ultrasounds or other imaging studies that had been completed for another reason. If the images included the aorta, then clinicians could retrospectively evaluate for AAA.

We found item (g) above to be a compelling activity that could increase VHA's ability to screen for AAA while minimizing the need for additional resources. Even though imaging studies may not have been completed for the purpose of AAA screening, patients nonetheless received a study that could have been used for AAA screening. This finding suggests that providers should consider the need for AAA screening when ordering abdominal imaging studies for other reasons, and expand the scope of those studies to ensure adequate imaging of the aorta.

AAA Diagnosis and Follow-Up

To determine whether patients with diagnosed AAA received appropriate follow-up care according to USPSTF guidelines, we reviewed the medical records of 250 patients with a diagnosis of AAA made since February 1, 2003.

**Patients with AAA Excluded From Follow-Up Review**

<b>Reasons for Exclusion</b>	<b>Patients Excluded</b>	<b>Patients Remaining</b>
		250
AAA size unknown or not documented (follow-up requirements unknown)	19	231
Patient received care in the private sector (VA follow-up not required)	48	183
AAA <3cm (follow-up not required)	20	163
Patient not a surgical candidate (follow-up not required)	7	156
Patient already had AAA repair (follow-up not required)	30	126
Too soon for follow-up (semi-annual or annual US not due yet)	16	110
Patient refused follow-up	1	109

After excluding patients for whom screening was not possible or necessary (see Table), we found 109 patients who should have received follow-up care for AAA. Ninety-one of 94 patients with 3–4.5 cm aneurysms (97 percent) received appropriate annual or semi-

annual imaging follow-up. Each of the 15 patients diagnosed with aneurysms larger than 4.5 cm were appropriately referred to vascular surgery specialists for evaluation.

## Conclusions

Despite concerns expressed by VHA and facility-level managers that there may be insufficient resources to meet the potential demand for AAA screening, we found that some facilities have implemented protocols and initiated actions to secure additional equipment, staff, and contractual resources needed to screen patients for AAAs. We noted that two facilities were conducting concurrent and retrospective reviews of abdominal imaging studies that were completed for other reasons; in cases where studies included the aorta, radiologists could comment on the presence or absence of an aneurysm. This finding suggests that if providers consider the need for AAA screening when ordering abdominal imaging studies for other reasons and expand the scope of those studies to ensure inclusion of the aorta, the need for additional imaging resources could be mitigated.

Patients diagnosed with AAA were consistently managed appropriately.

## Recommendations

**Recommendation 1.** We recommended that the Under Secretary for Health advise clinicians to consider patients' risk factors for AAA when ordering abdominal imaging studies, and when appropriate expand the scope of studies to include the aorta.

**Recommendation 2.** We recommended that the Under Secretary for Health develop a plan, within the context of available resources, to implement AAA screening for male smokers 65–75 years old.

## Comments

The Under Secretary for Health concurred with the findings and recommendations in this report and submitted acceptable improvement plans to implement the recommendations. (See Appendix A, pages 7–10, for full text of these comments. We will follow up on all corrective actions until the plan has been fully implemented.

*(original signed by:)*

JOHN D. DAIGH, JR., M.D.  
Assistant Inspector General for  
Healthcare Inspections



## Under Secretary for Health Comments

**Department of  
Veterans Affairs**

**Memorandum**

**Date:** December 10, 2008

**From:** Under Secretary for Health (10)

**Subject:** OIG Draft Report: **Abdominal Aortic Aneurysm Screening and Management in VA Medical Centers** (Project Number 2007-00348-HI-0207)

**To:** Assistant Inspector General for Health Care (54)

1. I have reviewed the draft report and concur with the report findings and recommendations. The Veterans Health Administration (VHA) has recognized the importance of screening our veteran population at risk for Abdominal Aortic Aneurysm (AAA). On August 27, 2007, I issued VHA Information Letter IL 10-2007-011 to reinforce the need to screen all eligible veterans at risk for AAA, and to offer an example of a clinical reminder screen for adoption by local facilities for improved screening and compliance.

2. In addition, the Offices of the Deputy Under Secretary for Health for Operations and Management and Patient Care Services have been working diligently to implement the guidelines set forth by the United States Preventive Services Task Force for a one time screening by ultrasound (or other acceptable abdominal imaging study) for male smokers between the ages of 65-75. As early as January 2007, the Chief Consultant for Diagnostic Services began the education process by briefing Veterans Integrated Service Network Chief Medical Officers on those recommendations, and by outlining strategies to implement the guidelines and minimize the backlog.

3. We believe that this combination of efforts has been a significant factor in continued improvement in VHA's overall screening percentages among eligible veterans, but we recognize that more work

will need to be done to ensure that every veteran who needs screening for AAA receives it. The attached action plan outlines implementation of the report recommendations towards that effort.

*(original signed by:)*

Michael J. Kussman, MD, MS, MACP

OIG Draft Report, *Healthcare Inspection - Abdominal Aortic Aneurysm Management in VA Medical Facilities*

Project No.: 2007-00348-HI-0207

Date of Report: November 10, 2008

Recommendations/ Actions	Status	Completion Date
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**Recommendation 1. We recommended that the Under Secretary for Health advise clinicians to consider patients' risk factors for AAA when ordering abdominal imaging studies, and when appropriate, expand the scope of studies to include the aorta.**

Concur

The Under Secretary for Health (USH) fully supports the screening of veterans for Abdominal Aortic Aneurysm (AAA) by ultrasound (US) who meet the established risk factors, and will continue ongoing efforts to educate Veterans Health Administration (VHA) clinicians through clinical calls and staff meetings concerning those risks, and re-educate them on VHA Information Letter IL 10-2007-011 on Abdominal Aortic Aneurysm (AAA) Screening. Additionally, the National Center for Health Promotion and Disease Prevention (NCP) expects to release a patient brochure and provider fact sheet about screening for AAA (already developed, pilot tested, and under final revisions), and will develop a clinical preventive guidance statement about screening for AAA.

Patient Care Services (PCS) and the Chief Consultant for Primary Care (PC) will convene a task group by January 31, 2009, that will be asked to develop a national clinical reminder for AAA screening for use by every VHA facility. The Chief Consultant for Diagnostic Services (DS) and PC will continue to participate in Chief Medical Officer (CMO) and Veterans Integrated Service Network (VISN) calls outlining AAA screening guidelines and best practices for working through backlogs of veterans, and to ensure that when ordering diagnostic imaging of the abdomen for any reason, that providers consider the risk factors of those patients and request a review of the aorta as part of the study if one is warranted. Additionally, the National Director for Radiology Services will work to educate facility radiologists that when any such studies are ordered, that they remember to consider the risk factors of the patients undergoing diagnostic testing, and to include a review

of the aorta, and to document a note into the patient's medical record indicating that the review was done, regardless of the original purpose of the study.

In process

March 31, 2009

**Recommendation 2. We recommended that the Under Secretary for Health develop a plan, within the context of available resources, to implement AAA screening for male smokers 65 – 75 years old.**

Concur

The Deputy Under Secretary for Health for Operations and Management (DUSHOM), in collaboration with PCS, will issue a memorandum to the field, directing facilities to develop their own individual plans to reduce clinical backlog of unscreened patients based on their assessed workload and available resources, as each facility faces unique challenges, such as equipment and or space constraints, and in their ability to hire ultrasound technicians or contract for community radiology services based on local market conditions.

In process

March 31, 2009

## OIG Contact and Staff Acknowledgments

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