



## The Internet Journal of Allied Health Sciences and Practice

A Peer Reviewed Publication of the College of Health Care Sciences at Nova Southeastern University

*Dedicated to allied health professional practice and education*

<http://ijahsp.nova.edu> Vol. 11 No. 2 ISSN 1540-580X

---

# Screening Services: An Underused Link in the Continuum of Care? A Commentary and Cases

---

Nathalie I. Garbani, EdD, RVT

Manager of Clinical Quality and Training, Life Line Screening, Independence, Ohio

United States

---

**CITATION:** Garbani N. Screening Services: An Underused Link in the Continuum of Care? *The Internet Journal of Allied Health Sciences and Practice*. April 2013. Volume 11 Number 2.

---

### ABSTRACT

Ultrasound screening for cardio-vascular diseases (as these will be the main focus of this commentary), particularly for carotid artery diseases and abdominal aortic aneurysms, has proven to be safe, accurate for early detection of diseases in an asymptomatic population, and valuable in improving the outcomes of the disease management. However, despite the successful implementation of some screening programs, at least at the level of the legislation, such as the SAAAVE act, the U.S. health care system cannot and does not at this point provide widespread screening services for cardio-vascular diseases. Pay-for-service screening programs are filling this gap and have done so efficiently, in some cases for 20 years. However, the work and ensuing data provided by pay-for-service screening programs cannot be fully effective if there are disruptions in, or in some cases, disregard for the follow-up care of the screened population. It appears that the acceptance of results provided by pay-for-service screening programs as an important first step in the continuum of care remains a debated matter for health care providers even in today's health care system.

### INTRODUCTION

For several decades, media campaigns via various available and evolving formats from roadside billboards to the Worldwide Web have been aimed at informing the public at large about health risks and possible measures to prevent diseases. According to a review by Wakefield et al, the true effects of such campaigns have been difficult to measure, have not been studied systematically, or have not necessarily been integrated or followed as initially intended.<sup>1</sup> What may have been overlooked in the previously mentioned review is a potential shift in how individuals seek information on their own health and/or risks for diseases. Unfortunately, statistics on the public's use of free or pay-for-service screening programs, particularly for cardiovascular diseases, are lacking. However, anecdotally (based on the author's experience), voluntary community-based screenings, and again particularly for cardiovascular diseases, offered through or sponsored by hospitals, universities, or private programs are always well attended. What remains to be addressed is the perceived disconnect between screenings and follow-ups or interventions, particularly the acceptance by physicians of the information provided to individuals at these screenings.

"The manner in which a patient seeks care is only one aspect of the disease process. It is incumbent on the physician to evaluate all available information."<sup>2</sup> The goal of this commentary is therefore to call attention to the often missed or underused role screening services should have in the continuum of care for the population of the United States in the current state of the health care system. This discussion should not be construed as a promotion of any particular screening service or company. Its intent is to carefully address the existing gap and overlooked potential of services that could be integrated in the US health care system to fulfill the need of the population and reflect advancements in technology and medicine. Shouldn't screening services for cardio-vascular diseases be part of today's best practice?

## DEFINING THE NEED FOR SCREENING PROGRAMS

It is generally accepted that the purpose of screening is to classify asymptomatic people with respect to their likelihood of having a particular disease. The goal is then to improve the outcome of such disease through the process of early detection and therefore early intervention. A disease amenable to screening is by and large defined as one which is a) serious enough in terms of morbidity, mortality and costs; b) proven to benefit from early treatment or intervention; and, c) highly prevalent as a pre-clinical condition among the population targeted for the screening. Many conditions could potentially respond to the criteria mentioned. However, some conditions still cannot be detected with the technology or methods available. Henceforth, it is also generally put forth that the test available to screen for the disease should be 1) relatively inexpensive (including all costs such as personnel, equipment, maintenance, and disposable); 2) somewhat easy and safe to administer to a large number of people; 3) relatively free of pain, and 4) offer valid, reliable, and reproducible results. Finally, the cost of the screening itself and that of the follow-up care, as well as the prevalence established through the Positive Predictive Value or PPV, are the last considerations to be reviewed in establishing the feasibility of a screening program.<sup>3</sup>

The question that really remains is what is the true meaning of feasibility in regard to screening for carotid artery diseases and aortic aneurysms in the context of today's health care system? Are we talking about reliable technology for detection? Are we referring to reliable, safe, and effective treatment? Or are we worried about the cost of it all in a disintegrated system?

In the United States, the most prominent voice for recommendations on prevention services and therefore implementation of screening programs is the U.S. Preventive Services Task Force (USPSTF). The USPSTF is composed of independent primary care practitioners whose role is to review evidence from clinical research on preventive services and publish recommendations.<sup>4</sup> The work of the USPSTF is supported in statements published by the Agency for Healthcare Research and Quality (AHRQ).<sup>5</sup> AHRQ is a federal agency of the U.S. Department of Health and Human Services whose mission is "to improve the quality, safety, efficiency, and effectiveness of health care for all Americans."<sup>6</sup> Although the goal of this commentary is not to critique the role and mission of either the USPSTF or AHRQ, it is worth noting that overall the recommendations of the USPSTF, particularly regarding screenings for cardio-vascular diseases and therefore that of AHRQ, have been very conservative. In general, recommendations against population-based screening, assumed to be on asymptomatic individuals, are based on arguments such as 1) harms would exceed benefits; 2) ultrasound or other imaging methods are prone to false positives; 3) high risk populations are difficult to identify; 4) and in the case of stroke, only a small proportion of these are actually due to carotid artery stenosis. As potential federally sponsored programs, it is difficult to put aside that such views could be largely driven by cost. As taxpayers, it would not take much to convince Americans that these programs would trigger either increased taxes or a cut in other services proven to be effective and therefore would not be feasible. However, let's consider the following words: "In economically derived models of health care decisions, such as cost-effectiveness models, one of the key assumptions is that time in the present is more valuable than time in the future and, hence, future benefit is 'discounted.' But the weight given to something that happens now as opposed to the future is a highly individual function, and models based on the average will not be meaningful to many patients."<sup>7</sup> Are there any options for individuals concerned about their health and future?

## ILLUSTRATIVE CASES

At this point, it may be useful to illustrate the potential impact of the disinclination to fully accept the results of screening services and therefore initiate the proper follow-up based on the data, with 2 cases based on real-life stories.

Case #1: Mr. X is a 65-year-old male, recently retired, without significant medical history or risk factors. He decides to register for a screening event offered in their neighborhood. On the day of the screening, Mr. X is made aware of abnormal findings on his carotid ultrasound and is encouraged to follow-up with his physician as soon as possible.

- In scenario 1, Mr. X makes an appointment with his physician who reviews the findings and decides to send Mr. X for a full diagnostic exam. The findings are confirmed and Mr. X follows-up with a vascular surgeon who recommends a carotid endarterectomy. The surgery is uneventful.
- In scenario 2, Mr. X also makes an appointment with his physician who also reviews the findings but decides that at this point, because of lack of neurological symptoms, risk factors, and family history of stroke, Mr. X is not in any immediate danger and that these results are probably not very reliable. Mr. X faithfully accepts his physician's assessment but suffers a massive stroke 3 weeks later.

Case #2: Mrs. Y is a 70-year-old female. She has no significant/known medical history. She recalls that her brother died suddenly at 60 years of age of what was diagnosed as a heart attack. On the recommendation of a friend, Mrs. Y decides one day to register for a screening to check her carotid arteries and abdominal aorta. Two weeks later, Mrs. Y receives the results of

her tests, which describe, among other things, a focal aortic dilatation of 3.5 cm, below the level of her renal arteries.

- In scenario 1, Mrs. Y makes an appointment with her physician who refers her to a Diagnostic Imaging Center where the results are confirmed. She follows-up with a vascular surgeon who recommends she has another exam in 1 year. On follow-up the aneurysm now measures 4.5 cm, and the surgeon recommends an elective repair with an endograft. Mrs. Y recovers well and undergoes yearly exams.
- In scenario 2, Mrs. Y makes an appointment with her physician, who reassures her that because the aneurysm is small she does not need to worry. Mrs. Y never follows-up on the aneurysm and her physician never mentions it again. 2 years later, she is found unconscious and rushed to the emergency room where she is diagnosed with a ruptured aneurysm. She dies in the operating room a few hours later.

These stories are intentionally simplified and reported to be poignantly dramatic. However, and in all fairness, it would not be surprising that as healthcare providers we could recall such or some version of such cases. Aren't these cases enough to demonstrate that pay-for service screening programs could be integrated as a first step in the continuum of care? These did not impact the cost of health care in the short term, as they were initiated and paid for by individuals. Although worth discussing but beyond the scope of this commentary, these probably would decrease cost of healthcare in the long run, (i.e. would probably save time and resources) as elective treatment is usually more efficient, less traumatic or risky, and less costly. To remain on track, let's review the alternatives.

### A STEP IN THE RIGHT DIRECTION?

This following discussion will focus solely on screening of the abdominal aorta for the detection of aneurysms, because as of today, the "consensus" is still that a government sponsored program for screening for carotid diseases to prevent stroke is not feasible as the potential harms outweigh the benefits.

In 2005, the SAAAVE (Screening Abdominal Aorta Aneurysm Very Efficiently) act was passed as an amendment of the DRA (Deficit Reduction Act). By January 1, 2007, this Act entitled Medicare recipients for a screening exam of their abdominal aorta by ultrasound to be paid by their Medicare carrier. The caveats were many and no less than the test was only offered 1) as part of the "Welcome to Medicare Physical Exam" (to be done within 6 months of first enrollment to Medicare); 2) to men with history of smoking and/or family history of aortic aneurysms; and 3) only to women with proof of family history of aortic aneurysms. There were no "grand-fathering" provisions for Medicare recipients who became eligible for Medicare prior to January 1, 2007 and had already received/completed their "Welcome to Medicare Physical Exam." The limitations continued and as of June 2010, Medicare recipients were required to obtain a referral for the exam and pay out-of-pocket a 20% co-payment for the service. Finally, despite the efforts of the Society for Vascular Surgery to bring awareness of the existing benefit of the SAAAVE act, very little was actually done by Medicare carriers to educate recipients and medical professionals. Hence by the end of 2007, it was estimated that only about 10,000 at-risk Medicare recipients actually received the service.<sup>8</sup> Was this enough to qualify as best-practice? How many lives could have been saved? How can we show that evidence-based medicine was really followed?

It is very difficult to actually estimate the prevalence, and even less the incidence, of abdominal aortic aneurysms in the at-risk population and the general population. Population-based studies are nearly impossible to conduct, and our knowledge of nearly everything needed to educate and advocate practice and regulations relies on estimates and projections. Added to the difficulty of conducting population-based epidemiologic studies is the potential of changes in risk factors influencing a disease process, as well as some bias introduced by advances in detection. Is something more prevalent because we can detect it or was it always prevalent to that level but we had no way of knowing?<sup>9</sup>

To retain some objectivity, remove biases, but give some perspective of the issue, the potential estimate of prevalence of undetected (but not the cause of death) as well as undetected and ruptured (hence the cause of death) of abdominal aortic aneurysm (AAA) was done for 2007 using the following:

- Records of prevalence of undetected and ruptured AAA from an autopsy study performed at the Massachusetts General Hospital in 1977<sup>10</sup>
- Data from the National Center for Health Statistics<sup>11</sup>

The retrospective study of autopsy records at MGH reviewed 24,000 records extending over a 23-year period (1952-1975). The prevalence of undetected AAA was recorded at 1.97% in total for both genders (1.43% in males, 0.54% in females). The prevalence of undetected and ruptured AAA, hence the cause of death, was found to be 0.49% of all records (24.9% of all AAA).

The number of Medicare enrollees, with age as a qualifier for enrollment, was 37 million in 2007 (44% males, 56% females). Based on the prevalence records from the MGH study, this could mean that close to 730,000 individuals have an undetected AAA and that more than 180,000 of these could potentially rupture and result in death or serious morbidity. Under the SAAAVE act, only 0.27% of the Medicare enrollees were screened in 2007. Data on the incidence of undetected AAAs through these screenings are not known.

## CONCLUSION

Julie M. Fenster, in her book titled *Mavericks, Miracles and Medicine*, wrote:

"Whenever something is described in medicine as 'being ahead of its time,' that phrase refers to one of two things. It is either a faint apology for a good idea ignored long ago, or a high praise for one gratefully accepted in the present. There is only one difference between the two -- a maverick, someone smart enough to see another reality in medicine and crazy enough to hold onto it while the rest catch up."<sup>12</sup>

Isn't it time that health care providers become the "maverick" of true prevention and at least accept the power of screening results patients seek on their own through pay-for-service programs? These may save a life and/or reduce the cost of care in the long run.

## REFERENCES

1. Wakefield MA, Loken B, Hornick RC. Use of mass media campaigns to change health behaviour. *Lancet*. 2010;376(9748):1261-71. [PMID 20933263]
2. Steele SR, Martin MJ, Mullenix PS, Azarow KS, Andersen CA. The significance of incidental thyroid abnormalities identified during carotid duplex ultrasonography. *Arch Surg*. 2005;140(10):981-5. [PMID 16230549]
3. Hennekens CH, Buring JE. *Epidemiology in medicine*. Boston/Toronto: Little, Brown and Company, 1987.
4. <http://www.uspreventiveservicestaskforce.org/>. Accessed November 10, 2012.
5. <http://www.ahrq.gov/>. Accessed November 10, 2012.
6. <http://www.ahrq.gov/about/atag glance.htm>. Accessed November 10, 2012.
7. Bogardus ST Jr, Holmboe E, Jekel JF. Perils, pitfalls, and possibilities in talking about medical risk. *JAMA*. 1999;281(11):1037-41. [PMID 10086441]
8. VascularWeb- SAAAVE Act Background- June 2010. <http://www.vascularweb.org/healthpolicyandgovernmentrelations/Pages/saaave-act-background.aspx>. Accessed November 10, 2012.
9. Marshall KG. Prevention. How much harm? How much benefit? 3. Physical, psychological and social harm. *Canadian Medical Association Journal*. 1996;155(2):169-76. [PMID 8800074]
10. Darling RC, Messina CR, Brewster DC, Ottinger LW. Autopsy study of unoperated abdominal aortic aneurysms. The case for early resection. *Circulation*. 1977; 56(3suppl): II 161-4. [PMID 884821]
11. Health, United States, 2010, with a special feature on death and dying. Report from the National Center for Health Statistics. <http://www.cdc.gov/nchs/data/hs/hs10.pdf>. Accessed November 10, 2012.
12. Fenster JM. *Mavericks, miracles, and medicine*. New York, NY: Carroll & Graf Publishers, 2003.