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# Mobile Mammography: Providing Screening to Women Without Access to Centralized Services

## Introduction

Breast cancer is responsible for most cancer-related deaths among women aged 15-54 years. In fact, 48% of new breast cancer cases and 56% of all breast cancer deaths occur in women aged 65 and older, and breast cancer will develop in one of eight American women during her lifetime.<sup>1</sup> The risk of future breast cancer is greatest for women who have had breast cancer previously, have a family history of breast cancer, or are older than 50 years. Seventy-five percent of women in whom breast cancer develops have no risk factors.<sup>2</sup>

At present, the best defense against breast cancer is early detection. Nonetheless, patients underutilize early detection procedures such as mammography; many women do not routinely obtain a mammogram. Lack of access to locations doing screening is one reason for this underutilization of mammography services. To research the possibility that access to screening is an issue affecting mammography, a pilot study was conducted in December 1997 using a mobile mammography van at three medical office locations which did not have mammography centers.

## Method

Women in the pilot study met six inclusion criteria: 1) age 50 years or older; 2) not enrolled in the Medicare Senior Advantage program (which provides transportation); 3) normal results of clinical breast examination; 4) difficulty securing transportation to existing mammography centers; 5) mammogram not obtained in past 12 months; and 6) most of their primary medical care received at one of the pilot sites.

A roster of members who met criteria one, two, five, and six was generated for each of three medical offices in the region. Primary care providers reviewed the roster and excluded members with prior mastectomy or competing clinical priorities. Members who met the criteria were sent a letter advising them to schedule a mammogram; patients who still did not call to schedule an appointment received an outreach call emphasizing the importance of clinical breast examination and mammography. Women who were contacted by the call center were offered clinic appointments.

All members arriving at their clinical breast examination appointment were given the opportunity to schedule a mammogram at one of the current mammography centers. A roster was produced with the names of women who needed transportation. In late November, women who needed transportation were contacted, and appointments were scheduled for these women to have mammography at pilot sites during the first week of December.

A mobile mammography unit visited the pilot clinics and provided mammography services. Mammography films were processed at the end of the day at a distant facility. A survey was given to the women for completion on the day they had their mammography.

## Results

On December 2nd through December 5th, the mobile mammography van was available to provide screening mammography to members in the target population. Screening appointments began at 8:30 am, and

the last one was scheduled at 2:40 pm. Eighteen appointment time slots were available at each site—a total of 72 appointments available among the three centers during the four days. In all, appointments were scheduled for 63 women; of these, 62 had a mammogram, and one did not keep the appointment. Among the 62 women who were tested, two were found by mammography to have an early stage of breast cancer.

*Lack of access to locations doing screening is one reason for this underutilization of mammography services.*

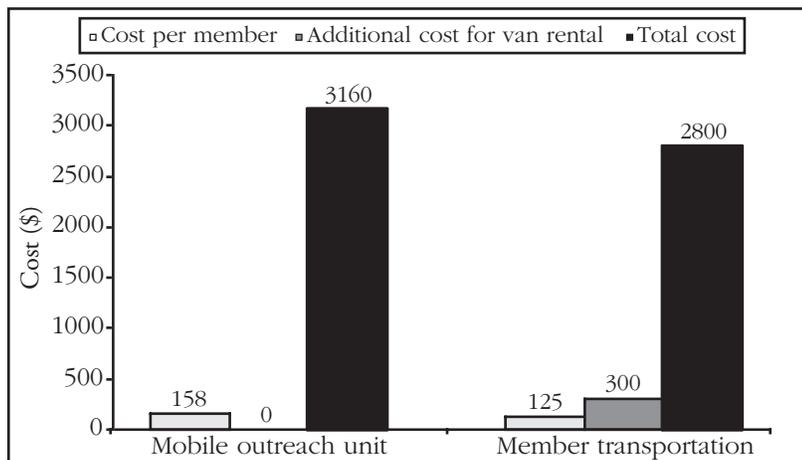


Figure 1. Cost comparison for providing mobile outreach unit vs member transportation to mammography-equipped medical center (N = 20)

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Member check-in and film transfer for processing proceeded smoothly. However, one major problem affected film quality: at the end of the day, when films were processed, some incomplete views of the breast were noted. These incomplete views rendered the films inadequate for interpretation. As a result, 40 (65%) of the 62 women were notified that the views were incomplete and that additional views were needed. The radiology staff scheduled members for repeat examination at a regional medical center that had a mammography machine and that was located nearest to the member's home. New Saturday appointment slots were added to make access as convenient as possible, and all 40 women completed this examination.

A survey was administered to women at completion of the original visit. Of the 62 women, 55 completed and returned the survey. Responses are shown in Table 1.

### Discussion

This pilot study showed that a subgroup of health plan members have difficulty obtaining a screening mammogram because they prefer to have a mammogram at their regular medical center and because they lack transportation to go elsewhere if their regular medical center does not offer mammography services. Mammography in this group of women yielded a higher detection rate for breast cancer than in our general population (Table 2). This result justifies use of a targeted intervention to address barriers to screening.

When results of their clinical breast examination were normal, all 62 women stated that they did not have transportation to regularly go to a medical office with mammography services to obtain routine screening mammography. Nonetheless, transportation was found by all 40 of the women who were called back in. Presumably, after being called back, these women became concerned about the possibility of an abnormality. Thus, when patients perceive the situation to be critical, transportation may no longer be a barrier to screening.

Figure 1 compares the cost of providing member transportation to medical offices that offer mammography services and the cost of providing mobile mammography units at medical offices without equipment.

In conclusion, providing member transportation to medical centers with mammography equipment appears to cost less per member than providing a mobile mammography unit. The possibility of routinely providing transportation for members in need should therefore be explored. ❖

### References

- Centers for Disease Control and Prevention. National Breast and Cervical Cancer Early Detection Program. At A Glance, 1999.
- US Preventive Services Task Force. Guide to Clinical Preventive Services. 2<sup>nd</sup> ed. Baltimore: Williams and Wilkins, 1996.

**Table 1. Survey responses of study population**

	Excellent	Very Good	Yes	No	Weekdays	Evenings	Saturdays
I would rate my experience with the mobile mammography service ...	70%	28%					
I found the service provided by the staff ...	77%	20%					
If convenient transportation had been available to me, I would have preferred to go to the radiology suite at existing centers ...			11%	80%			
If future times were available for this service, I would prefer these ...					62%	22%	10%

**Table 2. Comparison of the breast cancer incidence rate of the mobile mammography outreach versus regional medical center mammography**

	Mobile Outreach Unit	Regional Medical Center
No. of new cases	2	80
No. of women who had mammograms	62 <sup>a</sup>	6473 <sup>b</sup>
Incidence	3.2%	1.2%

<sup>a</sup> Women aged 50 years and older from the Cascade, Panola, and TownPark Medical Centers who were screened by mobile mammography unit.  
<sup>b</sup> Women aged 52-69 years who were continuously enrolled in the Health Plan for at least two years.