



Published in final edited form as:

*Cancer Causes Control*. 2013 May ; 24(5): 1057–1059. doi:10.1007/s10552-013-0180-6.

## Changes in Access to Screening Mammography, 2008–2011

Elena B. Elkin, PhD, J. Paige Nobles, MA, Laura C. Pinheiro, MPH, Coral L. Atoria, MPH, and Deborah Schrag, MD, MPH

Health Outcomes Research Group, Department of Epidemiology and Biostatistics (EBE, JPN, LCP, CLA), Memorial Sloan-Kettering Cancer Center, New York, NY. Department of Adult Oncology (DS), Dana-Farber Cancer Institute, Boston, MA

### Abstract

Screening mammography is a cornerstone of preventive health care for adult women in the US. As rates of screening mammography have declined and plateaued in the past decade, access to services remains a concern. In 2011 we repeated a survey of mammography facilities initially surveyed in 2008 in six states. The availability of digital mammography increased and appointment wait times generally improved between the two survey periods, but more facilities required payment upfront. Provisions of the federal health care reform law that eliminate cost-sharing for selected preventive health services may improve access to screening mammography and prevent further declines in the rate of breast cancer screening.

### Keywords

breast cancer; screening; mammography; access to care

## INTRODUCTION

Mammography is the only recommended screening modality for women at average risk of breast cancer. Although the US Preventive Services Task Force (USPSTF) recently recommended against routine screening mammograms for women in their 40s,(1) screening mammography is endorsed by numerous groups as a beneficial preventive service for women age 40 and older.(2)

After increasing for more than two decades, screening mammography rates declined between 2000 and 2005.(3, 4) In 2010 the Behavioral Risk Factor Surveillance System (BRFSS) survey found that just over 75% of women age 40 and older reported having a mammogram in the past two years, a rate similar to that found in the 2005 survey.(5, 6)

Access to breast cancer screening has been a particular concern in the US since the passage of the Mammography Quality Standards Act (MQSA) which established national quality standards for mammography and required facility certification by the US Food and Drug Administration (FDA).(7) In 2008 we surveyed all certified mammography facilities in six states regarding appointment wait times and other characteristics. We found that facilities in counties with lower mammography capacity reported longer times until the next available screening mammogram appointment.(8) Here we report results of the same survey repeated in 2011.

## METHODS

From FDA mammography facility certification records and the FDA's searchable online database of facilities, we identified mammography facilities in California, Connecticut, Georgia, Iowa, New Mexico and New York that were legally certified to operate as of

February 1, 2011, and all facilities were contacted between March and July, 2011. The survey was administered by telephone using a simulated-patient format. One interviewer (JPN), trained in telephone survey methods and in simulated patient interviews, asked about time until the next available screening mammogram appointment, availability of evening and weekend appointments, availability of digital mammography and insurance copayment requirements. The interviewer made at least three attempts to contact each facility. Open-ended responses were recorded using standardized response categories. County-level mammography capacity (machines per 10,000 women) was estimated based on information from the FDA and the US Census. All analyses were performed in SAS version 9.2 (SAS Institute, Cary, NC). The study was deemed exempt from informed consent requirements by the Institutional Review Board at Memorial Sloan-Kettering Cancer Center.

## RESULTS

Of 1,841 certified mammography facilities in the six states in 2011, 1,749 (95%) were successfully contacted by telephone and participated in the survey. Rates of survey participation in 2011 varied from 93% of facilities in California to 98% in Iowa and New Mexico, and were similar to or greater than participation rates in the 2008 survey. The total number of facilities declined from 2008 in all states except for California and Georgia. In 2011, 65% of facilities reported appointment wait time of less than one week for screening mammography, an increase from 55% in 2008 ( $p < 0.0001$  by  $X^2$  test, Table). The proportion of facilities with digital mammography increased from 54% in 2008 to 78% in 2011 ( $p < 0.0001$ ) and the proportion of facilities offering evening or weekend appointments increased from 35% to 40% ( $p < 0.01$ ). Of concern, however, was a substantial change in the proportion of facilities requiring payment upfront, increasing from 1% in 2008 to 29% in 2011 ( $p < 0.0001$ ). In 2011, a one-unit increase in mammography capacity was associated with 18% lower odds of a facility reporting a wait time  $> 1$  month for the next available appointment (compared with wait time  $< 1$  week and 1–4 weeks), similar to the estimate of 21% lower odds found in 2008.

## DISCUSSION

Screening mammography is a cornerstone of preventive health care for adult women in the US. Our recent facility survey suggests that some aspects of mammography access may, in fact, have improved. Notably, appointment wait times declined between 2008 and 2011, and the availability of digital mammography and evening or weekend appointments increased. However, our results also raise concerns about financial access barriers, with the proportion of facilities requiring insurance copayment at the time of service increasing from 1% in 2008 to almost 30% in 2011. Although this study did not include all states in the US, the six states whose facilities we surveyed are heterogeneous in size, population density, geographic location and population characteristics. Thus our findings likely represent the experience of a wide cross section of facilities and health care markets.

Requirements for upfront copayment may be a deterrent. Cost sharing has been shown to deter the use of preventive health services, including screening mammography. In a study of more than 350,000 women in Medicare managed care plans, rates of biennial screening mammography were about 8 percentage points lower in cost-sharing plans than in plans with full coverage, controlling for beneficiary and plan characteristics.<sup>(9)</sup> Of particular concern, the effect of cost sharing was magnified among women living in lower-income areas.

Specific causes of the increase we observed in mammography facilities requiring upfront copayment are not obvious. In fact, by the time of our recent facility survey, several states had considered or passed legislation prohibiting or reducing cost-sharing for screening

mammography.(10–12) At the same time, however, financial challenges facing radiology practices may have increased concomitant with a decrease in the growth of medical imaging due to excess resource capacity, declining reimbursements and greater scrutiny of imaging utilization by payers.(13)

The federal Patient Protection and Affordable Care Act now prohibits cost-sharing for screening mammography and other selected preventive services nationwide.(14) This is a welcome change, given our finding of increased upfront copayment requirements at mammography facilities and the prior evidence that cost sharing impedes utilization of screening mammography.(9) Hopefully this provision of the Affordable Care Act will remove a financial access barrier to breast cancer screening, at least for women with health insurance.

## References

1. U.S. Preventive Services Task Force. Screening for Breast Cancer: U.S Preventive Services Task Force. Recommendation Statement. *Annals of Internal Medicine*. 2009; 151(10):716–726. [PubMed: 19920272]
2. Warner E. Clinical practice. Breast-cancer screening. *N Engl J Med*. 2011; 365(11):1025–32. [PubMed: 21916640]
3. Use of mammograms among women aged  $\geq 40$  years--United States, 2000–2005. *MMWR Morb Mortal Wkly Rep*. 2007; 56(3):49–51. [PubMed: 17251897]
4. Breen N, AKC, Meissner HI, Taplin SH, Tangka FK, Tiro JA, et al. Reported drop in mammography: is this cause for concern? *Cancer*. 2007; 109(12):2405–9. [PubMed: 17503429]
5. Miller JW, King JB, Joseph DA, Richardson LC. Breast cancer screening among adult women--Behavioral Risk Factor Surveillance System, United States, 2010. *MMWR Morbidity and Mortality Weekly Report*. 2012; 61 (Suppl):46–50. [PubMed: 22695463]
6. Kim J, Jang SN. Socioeconomic disparities in breast cancer screening among US women: trends from 2000 to 2005. *J Prev Med Public Health*. 2008; 41(3):186–94. [PubMed: 18515996]
7. Mammography Quality Standards Act (1992) and Reauthorizations (1998, 2004). In: 1992.
8. Elkin EB, Snow JG, Leoce NM, Atoria CL, Schrag D. Mammography capacity and appointment wait times: barriers to breast cancer screening. *Cancer Causes Control*. 2012; 23(1):45–50. [PubMed: 22037904]
9. Trivedi AN, Rakowski W, Ayanian JZ. Effect of cost sharing on screening mammography in Medicare health plans. *N Engl J Med*. 2008; 358(4):375–83. [PubMed: 18216358]
10. Mammography Patient Cost Containment. Vermont Senate Bill. 2008. p. 340
11. Illinois Public Act 95–1045; 2009.
12. Bitler, MP.; Carpenter, CS. NBER Working Paper No w16669. 2011. Insurance Mandates and Mammography.
13. Lee DW, Levy F. The sharp slowdown in growth of medical imaging: an early analysis suggests combination of policies was the cause. *Health Aff (Millwood)*. 2012; 31(8):1876–84. [PubMed: 22842655]
14. Patient Protection and Affordable Care Act. US Public Law 111–148. 2010.

Table 1

Table Change in facility survey responses, 2008 to 2011

	2008		2011		$\chi^2$ P
	N	%	N	%	
Total facilities	1,882		1,841		
Facilities in survey	1,614		1,749		
Participation		86%		95%	
Next available appointment					
Less than 1 week	888	55%	1,132	65%	<0.0001
1–4 weeks	549	34%	515	39%	
1–2 months	126	8%	85	5%	
3 months or longer	51	3%	17	1%	
Evening or weekend appointments					
Yes	558	35%	691	40%	<0.01
No	1,053	65%	1,057	60%	
Digital mammography					
Yes or in process	875	54%	1,366	78%	<0.0001
No	737	46%	379	22%	
Payment required at visit*					
Yes	20	1%	499	29%	<0.0001
No	1,590	99%	1,229	70%	

\* Insurance copayment required at time of visit for patient with health insurance.