Prevalence of Out-Of-Pocket Payments for Mammography Screening Among Recently Screened Women

Susan A. Sabatino, MD, MPH,¹ Trevor D. Thompson, BS,¹ Jacqueline W. Miller, MD,¹ Nancy Breen, PhD,² Mary C. White, ScD,¹ Erica Breslau, PhD,³ and Meredith L. Shoemaker, MPH¹

Abstract

Background: Because cost may be a barrier to receiving mammography screening, cost sharing for “in-network” screening mammograms was eliminated in many insurance plans with implementation of the Affordable Care Act. We examined prevalence of out-of-pocket payments for screening mammography after elimination in many plans.

Materials and Methods: Using 2015 National Health Interview Survey data, we examined whether women aged 50–74 years who had screening mammography within the previous year ($n=3,278$) reported paying any cost for mammograms. Logistic regression models stratified by age (50–64 and 65–74 years) examined out-of-pocket payment by demographics and insurance (ages 50–64 years: private, Medicaid, other, and uninsured; ages 65–74 years: private $\pm$ Medicare, Medicare+Medicaid, Medicare Advantage, Medicare only, and other).

Results: Of women aged 50–64 years, 23.5% reported payment, including 39.1% of uninsured women. Compared with that of privately insured women, payment was less likely for women with Medicaid (adjusted OR 0.17 [95% CI 0.07–0.41]) or other insurance (0.49 [0.25–0.96]) and more likely for uninsured women (1.99 [0.99–4.02]) ($p<0.001$ across groups). For women aged 65–74 years, 11.9% reported payment, including 22.5% of Medicare-only beneficiaries. Compared with private $\pm$ Medicare beneficiaries, payment was less likely for Medicare+Medicaid beneficiaries (adjusted OR 0.21 [95% CI 0.06–0.73]) and more likely for Medicare-only beneficiaries (1.83 [1.01–3.32]) ($p=0.005$ across groups).

Conclusions: Although most women reported no payment for their most recent screening mammogram in 2015, some payment was reported by >20% of women aged 50–64 years or aged 65–74 years with Medicare only, and by almost 40% of uninsured women aged 50–64 years. Efforts are needed to understand why many women in some groups report paying out of pocket for mammograms and whether this impacts screening use.

Keywords: mammography, cancer screening, cost sharing, out-of-pocket payment, insurance

Introduction

MAMMOGRAPHY SCREENING IS EFFECTIVE in reducing mortality from breast cancer and is recommended every 2 years for women at average risk for breast cancer aged 50–74 years.¹ However, many women are not up-to-date with screening.² Several barriers to receiving screening have been identified, including out-of-pocket costs,^{3–6} and reducing out-of-pocket costs is a recommended approach to increase mammography use.³

Out-of-pocket costs can include cost sharing, wherein patients pay a share of costs for healthcare covered by insurance.

Some authors have concluded that cost sharing has no negative effect on mammography⁷ or other cancer screening use.⁸ However, others have suggested that it may negatively influence use of recommended care, including mammography, other cancer screenings, and preventive services.^{6,9–14} Even relatively small copayments have been associated with lower mammography use in some groups.⁶ Cost sharing may also contribute to differences in mammography use among racial/ethnic groups,¹⁵ and may have a stronger negative effect among residents of lower income areas.⁶ Eliminating cost sharing has been associated with increased screening use,^{16–18} or slower declines in use.¹⁹ From 2001 to 2006, copayments for cancer screening and

¹Division of Cancer Prevention and Control, Centers for Disease Control and Prevention, Atlanta, Georgia.

²National Institute on Minority Health and Health Disparities, Bethesda, Maryland.

³Division of Cancer Control and Population Sciences, National Cancer Institute, Rockville, Maryland.

other services within commercial insurance plans increased²⁰ and cost sharing became more frequent in some plans.⁶

The Affordable Care Act (ACA) of 2010 eliminated cost-sharing barriers for certain recommended preventive services obtained in-network in many insurance plans.²¹ Since its implementation, the number of people with health insurance coverage has increased,²² and changes in private health plans, Medicare, and the expansion of Medicaid have increased coverage, without cost sharing, of recommended preventive services, which may include services rated as “A” (strongly recommended) or “B” (recommended) by the U.S. Preventive Services Task Force (USPSTF) such as mammography screening.^{4,23–27}

Before 2010, screening mammography use had remained stable and below national targets over several years.^{28–30} The uninsured and women with low income experienced well-documented and persistent disparities in mammography screening use.^{30–32} Reducing cost barriers for such groups of women may have the potential to increase screening use and reduce disparities in screening uptake. Although more women currently have access to health insurance and reduced cost barriers to screening, some women could still encounter cost sharing. For example, some women remain uninsured,²² and others may be covered by grandfathered private health plans that were not required to eliminate cost sharing for preventive services.^{23,24,33,34} Others may obtain services out of network or through traditional Medicaid coverage and, therefore, may be subject to cost-sharing requirements.²⁷

The purpose of this analysis was to examine the prevalence of out-of-pocket payments for mammography screening in 2015 and whether prevalence varied across groups. Of interest is the extent to which these short-term findings suggest cost barriers to screening still exist, and whether some groups are more likely to report having them.

Materials and Methods

We used data from the 2015 National Health Interview Survey (NHIS). NHIS is an annual cross-sectional household survey of a nationally representative sample of the civilian noninstitutionalized U.S. population.³⁵ NHIS is administered by the Centers for Disease Control and Prevention’s National Center for Health Statistics (NCHS) through in-person interviews. Information is gathered from households and families. Sample adults and sample children are randomly selected to provide detailed information about health, health services utilization, and health behaviors. The final response rate for the sample adult component was 55.2%. More information is available at (www.cdc.gov/nchs/nhis/index.htm).

We included women aged 50–74 years who reported that their most recent mammogram was within the prior year (unweighted $n=3,728$, weighted $n=26,399,204$). We restricted our sample to women with mammograms within the prior year to minimize changes in insurance coverage between the time of survey and time of mammography. We excluded 239 women who reported that their most recent mammogram was performed for reasons other than “part of a routine examination” (screening) because elimination of cost sharing as part of ACA applies to screening services.²³ We also excluded women with a personal history of breast cancer ($n=165$) or those who did not provide information about out-of-pocket payments for mammography ($n=46$).

The dependent variable for this analysis was whether women reported having out-of-pocket payments for mammography. This was based on responses to the following question asked of women who had ever had a mammogram regarding their most recent mammogram: “How much did you pay out of pocket for this mammogram—was it none, part, or all of the cost?” Covariates in the analysis included age, race, ethnicity, education, income as a percentage of the federal poverty threshold (%FPL), birthplace, and insurance type using insurance categories defined by NCHS.³⁵ For women aged 50–64 years, categories included private, Medicaid (including other state-sponsored health plans), other coverage, or uninsured. For women aged 65–74 years, categories included private with or without Medicare, Medicare with Medicaid (or other state-sponsored plan) supplementation, Medicare Advantage, Medicare only (excluding Medicare Advantage), other coverage, or uninsured.

We stratified analyses by age group (50–64 years and 65–74 years) because Medicare insurance coverage starts at age 65 years. We examined the frequency of reporting having out-of-pocket payments for mammograms, using the three original response categories (none, part, and all of cost). In a separate analysis, we combined women who reported paying *part* or *all* of cost to create a “paid any cost” category. We examined whether reporting out-of-pocket payments differed across covariate groups using Wald F tests. We created multivariable logistic regression models to test independent associations between covariates and reporting having paid any cost for mammography. Separate models were created for women aged 50–64 years and 65–74 years. In each model, covariates included race, ethnicity, education, income, birthplace, and insurance. Missing income data were imputed by NCHS using multiple imputation (www.cdc.gov/nchs/nhis/nhis_2015_data_release.htm). We weighted all statistics and used SUDAAN version 11.0.1 (Research Triangle Institute, Research Triangle Park, NC) and SAS version 9.3 (SAS Institute, Inc., Cary, NC) to account for the complex survey design. Estimates with relative standard errors >30%–50% are noted in tables and those >50% are suppressed.

Results

Characteristics of the study population are displayed in Table 1. Most women were aged 50–64 years, white, non-Hispanic, born in the United States and had greater than a high school education, and income >250%FPL. Most women aged 50–64 years were privately insured. Private ± Medicare and Medicare Advantage were the most common types of insurance among women aged 65–74 years. Few women in either age group were uninsured (<3.0%).

Table 2 shows that 23.5% of women aged 50–64 years reported cost sharing for mammography within the prior year; 20.5% (95% CI 18.1–23.2) paid part of the cost and 3.0% (95% CI 2.2–4.1) paid all of the cost (data not shown). By income, women with income ≤138%FPL had the lowest proportion reporting any payment (14.5%) and those with an income of >250%–400%FPL had the highest (29.5%). By insurance type, uninsured and privately insured women had the highest proportions reporting any payment (39.1% and 25.6%, respectively). A large majority of privately insured women who reported payments paid only part of the cost (23.0% [95% CI 20.2–26.1]), whereas for uninsured women,

TABLE 1. CHARACTERISTICS OF WOMEN AGED 50–74 YEARS WHO REPORTED HAVING RECEIVED A SCREENING MAMMOGRAM WITHIN THE PRIOR YEAR, BY AGE GROUP, 2015 NATIONAL HEALTH INTERVIEW SURVEY

	Age 50–64 years		Age 65–74 years	
	n	Weighted % (95% CI)	n	Weighted % (95% CI)
Total	2,066		1,212	
Age				
50–59	1,379	70.5 (67.9–72.9)	0	0.0
60–64	687	29.5 (27.1–32.1)	0	0.0
65–69	0	0.0	704	59.1 (55.7–62.4)
70–74	0	0.0	508	40.9 (37.6–44.3)
Race				
White	1,580	79.9 (77.4–82.1)	966	83.3 (80.4–85.9)
Black	349	14.3 (12.4–16.5)	191	11.5 (9.5–13.8)
Other	124	5.8 (4.7–7.3)	53	5.2 (3.6–7.5)
Ethnicity				
Hispanic	262	11.4 (9.8–13.3)	148	9.0 (7.3–11.0)
Non-Hispanic	1,804	88.6 (86.7–90.2)	1,064	91.0 (89.0–92.7)
Birthplace				
United States	1,737	83.4 (81.2–85.5)	1,026	85.9 (83.1–88.4)
Other	329	16.6 (14.5–18.8)	186	14.1 (11.6–16.9)
Education				
≤High school graduate	685	31.1 (28.4–33.9)	473	38.7 (35.0–42.6)
Some college/associate	682	32.8 (30.1–35.6)	373	29.8 (26.4–33.6)
Bachelor's degree	407	21.4 (19.1–23.9)	178	16.2 (13.5–19.4)
>Bachelor's degree	286	14.8 (12.5–17.3)	183	15.2 (12.8–18.0)
Income (%FPL)				
≤138%	394	13.6 (11.8–15.7)	244	16.2 (13.6–19.2)
>138%–250%	319	14.1 (12.1–16.4)	260	19.6 (16.5–23.1)
>250%–400%	376	16.7 (14.6–19.1)	275	22.5 (19.5–25.9)
>400%	978	55.6 (52.6–58.6)	433	41.7 (37.6–46.0)
Insurance				
Age 50–64 years				
Private	1,586	82.1 (79.8–84.1)		
Medicaid ^a	258	9.6 (8.0–11.4)		
Other coverage	134	5.5 (4.5–6.8)		
Uninsured	82	2.9 (2.2–3.8)		
Age 65–74 years				
Private ± Medicare			545	44.7 (41.0–48.5)
Medicare+Medicaid ^a			120	6.9 (5.4–8.7)
Medicare Advantage			306	30.3 (26.4–34.5)
Medicare only			163	12.6 (10.3–15.4)
Other coverage			74	5.4 (3.9–7.4)
Uninsured			2	^b

^aIncludes other state-sponsored plans.^bEstimate suppressed because relative standard error >50%.

FPL, percentage of the federal poverty threshold.

only about half of those reporting payments paid part of the cost (20.4% [95% CI 10.9–34.8]) (data not shown). Of note, estimates for uninsured women are based on small numbers.

For women aged 65–74 years, Table 3 shows that 11.9% of women reported paying for mammography within the prior year: 9.6% (95% CI 7.6–12.2) reported paying part of the cost and 2.3% (95% CI 1.4–3.8) reported paying all of the cost (data not shown). There was a small but significant difference in reporting payments by age group when examined across three payment levels ($p=0.025$), with women aged 65–69 years more likely to report paying all cost than women aged 70–74 years (3.4% [95% CI 1.9–6.0] vs. 0.7% [95% CI 0.4–1.2], respectively), although few women in either age group

reported paying all cost. This difference by age was not significant for the combined cost variable (13.5% vs. 9.7%). Similar proportions of any cost sharing were reported by black and white women. For insurance, 22.5% of Medicare-only beneficiaries reported paying any out-of-pocket cost, which is at least 10 percentage points more than the proportion reported by women in other insurance groups in this age group.

In multivariate analyses, only insurance was significantly associated with paying any cost for mammography, and it was significant in both age-specific models (Table 4). Among women aged 50–64 years, those with Medicaid (adjusted odds ratio [aOR] 0.17 [95% CI 0.07–0.41]) and those with

TABLE 2. PREVALENCE OF REPORTING HAVING PAID OUT OF POCKET FOR MAMMOGRAPHY AMONG WOMEN AGED 50–64 YEARS WHO RECEIVED A SCREENING MAMMOGRAM WITHIN THE PRIOR YEAR, 2015
NATIONAL HEALTH INTERVIEW SURVEY

	Age 50–64 years				
	Paid no cost		Paid any cost		
	n	Weighted % (95% CI)	n	Weighted % (95% CI)	p
Total	1,605	76.5 (73.6–79.1)	461	23.5 (20.9–26.4)	
Age (years)					
50–59	1,068	76.3 (72.8–79.4)	311	23.7 (20.6–27.2)	0.808
60–64	537	76.9 (72.2–81.0)	150	23.1 (19.0–27.8)	
Race					
White	1,210	76.4 (73.1–79.4)	370	23.6 (20.6–26.9)	0.814
Black	287	77.9 (71.5–83.2)	62	22.1 (16.8–28.5)	
Other	98	73.9 (60.9–83.8)	26	26.1 (16.2–39.1)	
Ethnicity					
Hispanic	211	75.8 (67.0–82.8)	51	24.2 (17.2–33.0)	0.859
Non-Hispanic	1,394	76.5 (73.5–79.3)	410	23.5 (20.7–26.5)	
Born in United States					
Yes	1,347	76.6 (73.5–79.3)	390	23.4 (20.7–26.5)	0.859
No	258	75.9 (68.7–82.0)	71	24.1 (18.0–31.3)	
Education					
High school	542	76.8 (71.9–81.1)	143	23.2 (18.9–28.1)	0.789
Some college ^a	527	76.0 (71.2–80.2)	155	24.0 (19.8–28.8)	
Bachelor’s degree	306	74.7 (68.2–80.3)	101	25.3 (19.7–31.8)	
>Bachelor’s degree	224	78.9 (71.8–84.6)	62	21.1 (15.4–28.2)	
Income (%FPL)					
≤138%	335	85.5 (80.2–89.6)	59	14.5 (10.4–19.8)	0.001
>138%–250%	258	79.8 (73.2–85.1)	61	20.2 (14.9–26.8)	
>250%–400%	271	70.5 (64.0–76.2)	105	29.5 (23.8–36.0)	
>400%	742	75.2 (71.0–78.9)	236	24.8 (21.1–29.0)	
Insurance					
Private	1,189	74.4 (71.1–77.5)	397	25.6 (22.5–28.9)	<0.001
Medicaid ^b	245	95.0 (90.1–97.5)	13	5.0 (2.5–9.9) ^c	
Other coverage	114	86.3 (77.3–92.1)	20	13.7 (7.9–22.7)	
Uninsured	55	60.9 (44.2–75.4)	27	39.1 (24.6–55.8)	

^aIncludes associate degree.

^bIncludes other state-sponsored plans.

^cRelative standard error >30% and should be interpreted with caution.

other insurance (aOR 0.49 [95% CI 0.25–0.96]) were less likely than those with private insurance to report paying out of pocket. Uninsured women were more likely to report having out-of-pocket payments than privately insured women (aOR 1.99 [95% CI 0.99–4.02]), a finding of borderline significance ($p=0.055$). Among women aged 65–74 years, compared with women with private±Medicare, Medicare+Medicaid beneficiaries were less likely (aOR 0.21 [95% CI 0.06–0.73]) and Medicare-only beneficiaries were more likely (aOR 1.83 [95% CI 1.01–3.32]) to report any payment. Other sociodemographic factors were not significantly associated with reporting any payment.

Discussion

In 2015, 77% of women aged 50–64 years and 88% of women aged 65–74 years who reported having a screening mammogram within the prior year reported having no out-of-pocket payment for their mammograms. However, paying at least some of the cost was reported by >20% of women aged

50–64 years and women aged 65–74 years with Medicare only, and by almost 40% of younger uninsured women. In both age groups, those with Medicaid coverage or Medicaid supplementation of Medicare were less likely to report paying out of pocket than privately insured women. Among older women, those with Medicare coverage only were more likely to report out-of-pocket payments. These findings indicate that in 2015, many women in some groups, both insured and uninsured, reported being subject to out-of-pocket payments for screening mammography.

The fact that most women reported having no out-of-pocket payments for mammograms is not surprising. In a study using the 2000 NHIS, no cost sharing was reported by 67% of women aged 50–64 years and 85% of women aged 66 years or older who had received a mammogram in the prior 2 years.³⁶ Estimates from our 2015 analysis are somewhat higher, especially among women aged <65 years. Recent increases in insurance coverage³⁷ and recently implemented insurance reforms that help reduce cost barriers to certain recommended preventive services among many

TABLE 3. PREVALENCE OF REPORTING HAVING PAID OUT OF POCKET FOR MAMMOGRAPHY AMONG WOMEN AGED 65–74 YEARS WHO RECEIVED A SCREENING MAMMOGRAM WITHIN THE PRIOR YEAR, 2015
NATIONAL HEALTH INTERVIEW SURVEY

	Age 65–74 years				
	Paid no cost		Paid any cost		
	n	Weighted % (95% CI)	n	Weighted % (95% CI)	p
Total	1,060	88.1 (85.3–90.4)	152	11.9 (9.6–14.7)	
Age (years)					
65–69	603	86.5 (82.4–89.8)	101	13.5 (10.2–17.6)	0.166
70–74	457	90.3 (86.0–93.4)	51	9.7 (6.6–14.0)	
Race					
White	844	87.8 (84.7–90.4)	122	12.2 (9.6–15.3)	0.012
Black	162	85.4 (77.4–90.9)	29	14.6 (9.1–22.6)	
Other	52	97.6 (84.4–99.7)		a	
Ethnicity					
Hispanic	130	84.4 (74.1–91.0)	18	15.6 (9.0–25.9)	0.366
Non-Hispanic	930	88.4 (85.5–90.9)	134	11.6 (9.1–14.5)	
Born in United States					
Yes	898	88.3 (85.2–90.7)	128	11.7 (9.3–14.8)	0.661
No	162	86.8 (79.3–91.8)	24	13.2 (8.2–20.7)	
Education					
≤High school	414	86.9 (82.1–90.6)	59	13.1 (9.4–17.9)	0.280
Some college ^b	328	89.6 (84.2–93.3)	45	10.4 (6.7–15.8)	
Bachelor’s degree	154	85.1 (76.0–91.2)	24	14.9 (8.8–24.0)	
>Bachelor’s degree	160	91.6 (86.2–95.0)	23	8.4 (5.0–13.8)	
Income (%FPL)					
≤138%	220	90.1 (83.8–94.1)	23	9.9 (5.9–16.2)	0.697
>138%–250%	223	89.0 (83.5–92.9)	37	11.0 (7.1–16.5)	
>250%–400%	238	85.1 (77.4–90.5)	37	14.9 (9.5–22.6)	
>400%	379	88.4 (83.7–91.9)	54	11.6 (8.1–16.3)	
Insurance ^c					
Private ± Medicare	474	87.9 (83.5–91.3)	71	12.1 (8.7–16.5)	<0.001
Medicare+Medicaid ^d	116	96.9 (91.0–99.0)		a	
Medicare Advantage	271	90.0 (84.6–93.7)	35	10.0 (6.3–15.4)	
Medicare only	127	77.5 (68.3–84.7)	36	22.5 (15.3–31.7)	
Other coverage	69	92.9 (80.1–97.7)		a	

^aEstimate suppressed because relative standard error >50%.

^bIncludes associate degree.

^cUninsured women aged 65–74 years ($n=2$) excluded from insurance.

^dIncludes other state-sponsored plans.

with insurance coverage may have contributed to this change. As of August 2012, the percentage of screening mammography visits by privately insured women that were associated with out-of-pocket costs had declined compared with that during 2002–2010.³⁸

Many women in some insurance groups reported out-of-pocket payments for screening. More than one-quarter of privately insured women aged 50–64 years reported having paid out of pocket. This is consistent with findings that 29% of screening mammography visits between January 2011 and August 2012 by privately insured women had associated out-of-pocket costs.³⁸ Our more recent findings indicate that among those aged 50–64 years, 25.6% of privately insured women reported having out-of-pocket payments as of 2015. Grandfathered health plans exempted from insurance reforms may have contributed to the percentage of out-of-pocket payments for mammography among privately insured

women. In 2014, an estimated 26% of workers with employer-sponsored coverage were in grandfathered plans.³⁹ However, some grandfathered plans may already cover preventive services without cost sharing, even if not required to do so.⁴⁰ Moreover, the number of such plans has decreased over time.³⁹

Our study goes beyond an earlier study³⁸ to include more recent data and women without private insurance. In our analysis, among women aged 65–74 years, >20% of women covered only by Medicare reported having paid at least part of the cost of mammography, which is similar to findings from the 2000 NHIS for Medicare-only beneficiaries aged ≥66 years (24%).³⁶ Women with Medicare only were more likely than those with private supplements or Medicare Advantage to report paying out of pocket. Supplementary coverage reduces beneficiary out-of-pocket costs, and Medicare Advantage enrollees have historically had lower cost sharing

TABLE 4. ADJUSTED ASSOCIATIONS OF SOCIODEMOGRAPHIC FACTORS WITH REPORTING HAVING PAID ANY OUT-OF-POCKET COSTS FOR MAMMOGRAPHY AMONG WOMEN WHO RECEIVED A SCREENING MAMMOGRAM WITHIN THE PRIOR YEAR, BY AGE GROUP, 2015 NATIONAL HEALTH INTERVIEW SURVEY

	<i>Reported paying any cost for most recent mammogram</i>			
	<i>Age 50–64 years</i>		<i>Age 65–74 years</i>	
	<i>aOR (95% CI)</i>	<i>p</i>	<i>aOR (95% CI)</i>	<i>p</i>
Race				
White	1.0	0.797	1.0	0.160
Black	1.04 (0.68–1.60)		1.36 (0.73–2.55)	
Other	1.26 (0.63–2.53)		0.19 (0.03–1.32)	
Ethnicity				
Hispanic	1.18 (0.67–2.08)	0.570	1.33 (0.48–3.67)	0.577
Non-Hispanic	1.0		1.0	
Born in United States				
Yes	1.0	0.991	1.0	0.780
No	1.00 (0.59–1.71)		1.14 (0.46–2.79)	
Education				
≤High school graduate	1.08 (0.74–1.57)	0.521	1.31 (0.70–2.45)	0.324
Some college/associate	1.0		1.0	
Bachelor's degree	0.96 (0.65–1.41)		1.42 (0.65–3.10)	
>Bachelor's degree	0.75 (0.48–1.15)		0.73 (0.33–1.59)	
Income (%FPL)				
≤138%	0.73 (0.40–1.32)	0.213	0.88 (0.43–1.82)	0.524
>138%–250%	0.76 (0.49–1.17)		0.74 (0.39–1.39)	
>250%–400%	1.21 (0.83–1.76)		1.23 (0.61–2.50)	
>400%	1.0		1.0	
Insurance				
Age 50–64 years				
Private	1.0	<0.001	NA	
Medicaid ^a	0.17 (0.07–0.41)			
Other coverage	0.49 (0.25–0.96)			
Uninsured	1.99 (0.99–4.02)			
Age 65–74 years ^b				
Private ± Medicare	NA		1.0	0.005
Medicare+Medicaid			0.21 (0.06–0.73)	
Medicare Advantage			0.80 (0.44–1.45)	
Medicare only			1.83 (1.01–3.32)	
Other coverage			0.56 (0.15–2.04)	

^aIncludes other state-sponsored plans.

^bUninsured women ($n=2$) excluded.

than fee-for-service Medicare beneficiaries.^{15,41} Why a considerable percentage of women with Medicare only reported having out-of-pocket payments is uncertain, given that cost sharing was eliminated for most USPSTF-recommended screenings covered by Medicare, including mammography, in 2011.²⁵ This finding, based on relatively few women, is unlikely attributable to women with only Medicare Part A coverage because only seven women in our sample had Part A coverage only. Including only women with Part B coverage (covers mammograms) yielded a similar result (23.1%). This finding also held true, although slightly attenuated, when restricting the older age group to women aged 66–74 years (18.8%).

Before 2011, women with Medicare coverage only were less likely to have had a recent mammogram than women covered by Medicare Advantage or having private supplementation.^{16,42} Thus, it will be important to explore reasons why some Medicare-only beneficiaries reported cost sharing

in 2015, and whether reductions in cost sharing for this group may help close screening gaps in the future. Early evidence of the impact of eliminating cost sharing within Medicare on mammography use is mixed^{42–45}; however, women with only Medicare coverage have continued to have lower mammography use than these other groups within Medicare.¹⁶

Not surprisingly, having paid out of pocket for screening mammograms was reported most often by uninsured women aged 50–64 years. Most uninsured women, however, reported not having paid for their most recent mammogram. This may be due in part to programs such as the National Breast and Cervical Cancer Early Detection Program (NBCCEDP) that provides free or low-cost mammograms to low-income, uninsured, and underinsured women (www.cdc.gov/cancer/nbccedp/screenings.htm). However, the NBCCEDP is able to reach only a small fraction of uninsured women who meet program eligibility requirements.⁴⁶ Almost 40% of uninsured women reported out-of-pocket payments for screening.

Furthermore, their payments may be higher. Evidence from 2008 indicates that uninsured women paid more out of pocket for mammograms (\$60) than insured women (\$31).⁴⁷ Previous evidence also indicates that lack of insurance is strongly correlated with not being up-to-date with recommended cancer screenings.^{31,32,48,49} Although fewer women were uninsured in 2015–2016 than in 2010,^{37,50,51} cost remains a barrier to screening for women without coverage. In 2015, only 35.3% of uninsured women aged 50–74 years reported having a mammogram within the prior 2 years compared with 76.7% of privately insured women.² The low proportion of uninsured women in our sample of screened women (<3%) compared with all similarly aged female respondents in 2015 (7% of women aged 50–64 years) may reflect lower screening utilization among those uninsured.

Women with Medicaid coverage had the lowest proportions reporting out-of-pocket payments for screening. Many state Medicaid programs require no cost sharing for mammography. The Kaiser Commission on Medicaid and the Uninsured surveyed state Medicaid programs regarding their coverage of preventive services as of January 1, 2013.⁵² Of 39 responding states and the District of Columbia, 32 covered mammography screening without cost sharing. Subsequent policies to further promote coverage of recommended preventive services without cost sharing within Medicaid^{23,24} also may have contributed to the low prevalence of reported out-of-pocket payments for Medicaid beneficiaries.

Our findings need to be interpreted in light of several limitations. First, we focused on women who had received screening mammography in the prior year. Because women who face out-of-pocket payments are less likely to get screened, they are less likely to be included in our sample. Our findings estimate the percentage of women who reported having out-of-pocket payments for screening mammography among those who reported having a recent mammogram. Examining cost-sharing requirements among women not receiving screening is an important area for future work. Second, insurance information was obtained at the time of the 2015 survey interview and could differ from insurance at the time of mammography. To minimize changes in insurance coverage between these two time points, we restricted our sample to women with mammograms within the prior year. Furthermore, information was self-reported and, therefore, some misclassification may have occurred. For example, misclassification of the purpose for the mammogram may be possible because reasons for tests were self-reported and not confirmed by medical record review. If some women actually received diagnostic rather than screening mammograms, findings may overestimate the prevalence of cost sharing for screening, because diagnostic mammograms may be subject to cost sharing. Finally, the sample adult response rate in NHIS was 55%, although weights include adjustment for nonresponse.

We were unable to examine the impact of changes in cost sharing on screening mammography use because we focused on women who had been screened. This will be an important focus of future research. Some earlier studies suggest that eliminating cost sharing has been associated with increased screening use,^{16–18} or slower declines in use.¹⁹ A previous systematic review for The Community Guide found that reducing out-of-pocket costs was effective in increasing mammography use,⁵³ and the Task Force for Community Preventive Services recommends reducing out-of-pocket

costs as a strategy to increase use of breast cancer screening.³ Moving forward, it will be important to monitor the prevalence of cost sharing to determine the extent to which it may continue to be a barrier to mammography use. For women who continue to face cost barriers, some may benefit from programs and initiatives designed to provide mammograms at reduced or no cost, such as the NBCCEDP.⁴⁶ For planners and decision-makers, information about evidence-based interventions that include approaches to reduce out-of-pocket costs, including whether such interventions may be suited to the needs of local communities and populations, can be found at Research Tested Intervention Programs (<https://rtips.cancer.gov/rtips>).

Conclusions

In summary, among women who reported receiving a screening mammogram in the prior year, more than three-quarters of those aged 50–64 years and almost 90% of women aged 65–74 years reported no out-of-pocket payment for their most recent mammogram. Still, >20% of women aged 50–64 years or aged 65–74 years with Medicare only reported paying at least some cost, including almost 40% of uninsured women aged 50–64 years. Prevalent out-of-pocket payments among uninsured women, together with their underrepresentation in this sample of screened women, may indicate an ongoing need for programs and interventions designed to reduce or eliminate cost barriers for this group. Continued efforts are needed to monitor cost sharing and to assess the impact of changes in cost sharing on screening use and disparities.

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Address correspondence to:
Susan A. Sabatino, MD, MPH
Division of Cancer Prevention and Control
Centers for Disease Control and Prevention
4770 Buford Highway F-76
Atlanta, GA 30341

E-mail: ssabatino@cdc.gov