



# HHS Public Access

Author manuscript

*Cancer Causes Control*. Author manuscript; available in PMC 2021 February 19.

Published in final edited form as:

*Cancer Causes Control*. 2020 May ; 31(5): 473–489. doi:10.1007/s10552-020-01286-0.

## The eligibility and reach of the national breast and cervical cancer early detection program after implementation of the affordable care act

Florence Tangka<sup>1</sup>, Kristy Kenny<sup>1</sup>, Jacqueline Miller<sup>1</sup>, David H. Howard<sup>2</sup>

<sup>1</sup>Division of Cancer Prevention and Control, Winship Cancer Center, Emory University, Atlanta, GA 30030, USA

<sup>2</sup>Department of Health Policy and Management, Winship Cancer Center, Emory University, 1518 Clifton Road NE, Atlanta, GA 30030, USA

### Abstract

**Introduction**—The uninsured rate declined following passage of the Affordable Care Act in 2010. It is unclear how this decrease affected the size of the population eligible for existing safety net programs. We evaluated trends in the number of women eligible for breast and cervical cancer screening and diagnostic services under the National Breast and Cervical Cancer Early Detection Program (NBCCEDP) and the reach of the program.

**Methods**—Using the Census Bureau’s Small Area Health Insurance Estimates data, we calculated the number of women who met the NBCCEDP eligibility criteria based on age, income, and insurance status. We used these data in conjunction with program to estimate the proportion of eligible women served by the NBCCEDP.

**Results**—The number of women eligible for breast cancer screening and diagnostic services under the program declined from 5.4 (90% CI 5.2–5.6) to 2.8 (90% CI 2.6–3.0) million from 2011 to 2017. The number of women eligible for cervical cancer screening and diagnostic services declined from 10.3 (90% CI 10.0–10.6) to 5.3 (90% CI 5.1–5.6) million. The share of eligible women served by the program was 15.0% (90% CI 14.8–15.1%) for breast services in 2016–2017 and 6.8% (90% CI 6.7–6.8%) for cervical services in 2015–2017.

**Conclusion**—Insurance coverage expansions may have contributed to a decrease in the number of program-eligible women. There are many more women eligible for the program than are served.

### Keywords

Breast neoplasms; Early detection of cancer; Mammograph; Papanicolaou test; Medically uninsured; National breast and cervical cancer early detection program

---

David H. Howard, david.howard@emory.edu.

The findings and conclusions in this manuscript are those of the authors and do not represent the official position of the Centers for Disease Control and Prevention.

## Introduction

The Patient Protection and Affordable Care Act (ACA) [1] was signed into law in 2010. Although the ACA was projected to expand coverage to over 30 million individuals [2], many existing safety-net programs remained in place. One of these programs is the National Breast and Cervical Cancer Early Detection Program (NBCCEDP). Congress created the NBCCEDP in 1990 to provide breast and cervical cancer screening and diagnostic services to low-income, uninsured, and underinsured women [3]. These services include clinical breast examinations, mammograms, Papanicolaou tests, human papillomavirus tests, diagnostic testing (e.g., diagnostic mammograms, ultrasounds, biopsies, colposcopies), and referrals to treatment [3].

Under the NBCCEDP, the Centers for Disease Control and Prevention (CDC) funds 70 programs, including programs in all 50 states, the District of Columbia, 6 US territories, and 13 American Indian or Alaska Native tribes and organizations. These programs cover screening and diagnostic services for enrolled women and support data collection, quality assurance and improvement, partnership development, professional education, public education, outreach, and evaluation. If pre-malignant lesion or invasive cancer is diagnosed through the program, treatment under the Breast and Cervical Cancer Prevention and Treatment Act of 2000 [4] is available for Medicaid-eligible women through state Medicaid programs.

NBCCEDP provides cervical cancer services to women between the ages of 21 and 64 years and breast cancer services to women between the ages of 40–64 years who are uninsured or underinsured and whose family income is at or below 250% of the federal poverty level [3]. Women over the age of 64 who are covered by Medicare Part A but not enrolled in Medicare Part B may receive services through the NBCCEDP [3]. Before July 2012, cervical cancer services were provided to women between the ages of 18 and 64, consistent with US Preventive Services Task Force screening recommendations [5] at that time.

Federally funded programs are allowed some flexibility to modify their age- and income-based eligibility criteria. For example, the age of eligibility for cervical cancer screening is older than 21 years in about one-half of the funded state programs. In addition, in some programs, symptomatic or high-risk women under age 40 may receive breast cancer services and women younger than age 21 may receive cervical cancer services. Maximum income thresholds range from 185 to 250% of the federal poverty level. As of July 2016, 37 state programs set income eligibility criteria at 250% of the federal poverty level and 14 set income eligibility criteria at lower income levels (i.e., 12 at 200% of the federal poverty level, one at 225% of the federal poverty level, and one at 185% of the federal poverty level) [6].

Under the ACA [1], individuals with household incomes from 100 to 400% of the federal poverty level are eligible for premium tax credits to purchase private insurance on the Health Insurance Marketplace [7]. Following passage, states have the option to expand Medicaid coverage to all individuals below 138% of the federal poverty level [8]. Most states that expanded Medicaid did so in 2014. As of 1 June 2015, 32 states and the District of

Columbia have expanded Medicaid [9]. Under the ACA, qualified health plans must cover preventive services for women such as breast and cervical cancer screening without co-payments or co-insurance when provided by an in-network provider [10].

As such, the ACA's health insurance coverage expansions may have affected the number of women who are eligible for the NBCCEDP. The purpose of this paper is to describe trends in the number of women eligible for the NBCCEDP since the passage of the ACA and compare trends between states that did and did not expand Medicaid. An additional objective of the paper is to assess the reach of the NBCCEDP. Understanding changes in eligibility and the reach of the program are necessary to assess the NBCCEDP's future role in providing access to breast and cervical cancer screening.

## Methods

We determined the number and proportion of women eligible for the NBCCEDP using the US Census Bureau's Small Area Health Insurance Estimates data for 2011 through 2017 [11]. These data report the number of individuals with and without health insurance coverage by state and county. Within geographic units, the data are reported by age group, sex, and income group. Race-specific data are available at the state level only. The data are model-based estimates that combine survey estimates of health insurance coverage from the American Community Survey with related auxiliary information including administrative records and decennial census data, allowing the Census Bureau to create more accurate single-year estimates than are available from the survey estimates alone. Small Area Health Insurance Estimates data are the only source of single-year health insurance coverage estimates available for all US counties. Methodological details for Small Area Health Insurance Estimates are available in Bauder et al. [11] Related information about Small Area Health Insurance Estimates and the American Community Survey source data is available in Dalzell et al. [12]

The NBCCEDP makes grants to 6 US territories and 13 American Indian tribes. However, we do not report eligibility results separately for these groups. The Small Area Health Insurance Estimates data do not report population totals for US territories, and residents of Indian reservations are included in state population totals.

Using the state-level Small Area Health Insurance Estimates data, we calculated the number of women who met the NBCCEDP eligibility criteria based on age, income, and insurance status. We applied the age ranges for the CDC target populations [13] of 40–64 years for breast cancer services and 21–64 years for cervical cancer services to calculate eligibility. We counted women as eligible only if they were uninsured, met CDC's age criteria, and lived in households with incomes that fell at or below 250% of the federal poverty level.

The Small Area Health Insurance Estimates data report population counts for income and age ranges (for example, the number of women with incomes less than 200% of the federal poverty level) [11]. CDC or state income thresholds do not always perfectly align with the income and age ranges in the Small Area Health Insurance Estimates data. For example, women are eligible for cervical cancer screening services in Oklahoma if they live in

households with incomes below 185% of the poverty level. To estimate the number of women eligible when NBCCEDP thresholds and Small Area Health Insurance Estimates ranges do not align, we assumed individuals were evenly distributed within groups (for example, 92.5% [= 185 ÷ 200] of women in households with incomes from 0 to 200% of the poverty level live in households with incomes below 185% of the poverty level). These approximations are more accurate the more uniformly people are spread within the given group. This approach results in some loss of precision relative to the published Small Area Health Insurance Estimates data.

We report results separately for states that did and did not expand Medicaid. We identified expansion states based on a list maintained by the Kaiser Family Foundation [9]. We classified states, such as Wisconsin, that expanded Medicaid under waivers but stopped short of a full expansion to cover individuals with incomes less than 138% of the poverty level as non-expansion states.

We calculated the number and proportion of women eligible in each state separately. We also calculated the proportion of women eligible by race. Consistent with the standard errors reported in Small Area Health Insurance Estimates data [11] and Census Bureau convention, we present 90% confidence intervals for our estimates. Our analyses were restricted to states because population-level data by income and insurance status are not available for tribes and US territories.

Women who have had a hysterectomy are generally not counted as eligible for cervical cancer screening. We estimated the share of women ages 21–64 who have received a hysterectomy previously by averaging the shares of women reporting a prior hysterectomy in the 2014 and 2018 Behavioral Risk Factor Surveillance System surveys: 13.8%. We multiplied estimates of the share and number of women eligible for cervical cancer screening by 86.2% to account for the hysterectomy rate.

We characterized the shares of women served by the NBCCEDP by dividing state and national counts of the number of women served from the CDC by the shares of women eligible. We used Monte Carlo simulation to calculate 90% confidence intervals for the shares of women served. For breast cancer, we characterized the share of women served for the period 2016 to 2017 (some women undergo breast cancer screening biennially). For cervical cancer, we characterized the share of women served for the period 2015 to 2017 (some women undergo cervical cancer screening triennially).

## Results

The number of women eligible for breast cancer services declined by 48%, from 5.4 (90% CI 5.2–5.6) million to 2.8 (95% CI 2.6–3.0) million, from 2011 to 2017 (Table 1). The proportion of women between the ages of 40 and 64 who were eligible declined from 10.2% (90% CI 9.8–10.6%) to 5.3% (90% CI 5.0–5.6%) over the same period (Table 1, Fig. 1). The difference is 4.9% points (90% CI 4.4–5.4).

The number of women eligible for cervical cancer services declined by 49%, from 10.3 million (90% CI 10.0–10.6) million to 5.3 (90% CI 5.1–6.6) million between 2011 and 2017

(Table 2). The proportion of women between the ages of 21 and 64 who were eligible declined from 11.1% (90% CI 10.8–11.4%) to 5.7% (90% CI 5.4–5.9%) (Table 2, Fig. 1). The difference is 5.4% points (90% CI 5.0–5.8).

The proportion of women eligible for breast cancer services declined from 8.8% (90% CI 8.5–9.21%) to 3.6% (90% CI 3.4–3.9%) (– 5.2% points [90% CI 4.8–5.6], or a 59.1% decline [90% CI 56.3–61.9%] relative decline) in Medicaid expansion states and from 12.1% (90% CI 11.6–12.6%) to 7.5% (90% CI 7.1–7.9%) (– 4.5% points [90% CI 4.0–5.2], or a 38.0% [90% CI 33.6–42.2%] relative decline) in non-expansion states. The difference in the absolute decline between expansion and non-expansion states is 0.6 (90% CI – 0.1 to 1.3). The difference in the relative declines is 21.0% points (90% CI 14.2–26.0).

The proportion of women eligible for cervical cancer services declined from 9.6% (90% CI 9.3–9.9%) to 3.9% (90% CI 3.7–4.1%) (– 5.7% points [90% CI 5.3–6.1], or a 59.4% decline [90% CI 57.0–61.8%] relative decline) in Medicaid expansion states and from 13.2% (90% CI 12.8–13.6%) to 8.1% (90% CI 7.8–8.4%) (– 5.1% points [90% CI 4.6–5.6], or a 38.6% decline [90% CI 35.6–41.6%] relative decline) in non-expansion states. The difference is 0.6% points (90% CI – 0.2 to 1.2). The difference in the relative declines is 20.7% points (90% CI 17.0–24.5).

The proportion of women eligible for breast cancer services varied across states in 2011 (Fig. 2). The mean was 9.6% and the standard deviation across states was 3.4%. Proportions ranged from 2.4% in Massachusetts to 15.8% in New Mexico. By 2017, both the mean and variation had decreased. The mean was 4.9% and the standard deviation was 2.3%. The proportion of women eligible ranged between 1.4% in Massachusetts and 10.8% in Mississippi.

State-specific estimates of the proportion of women eligible for cervical cancer screening displayed similar patterns. The mean and standard deviation were 10.4% and 3.6% in 2011 and 5.3% and 2.4% in 2017. The number of women eligible in each state are presented in Appendix Tables 3 and 4.

The proportion of women eligible for program services and trends in the proportion eligible vary by race/ethnicity. The proportion of white women eligible for breast cancer services declined from 7.2% (90% CI 6.8–7.7%) to 3.4% (90% CI 3.1–3.7%) from 2011 to 2017. The proportion of black women eligible declined from 13.3% (90% CI 12.2–14.4%) to 6.3% (90% CI 5.5–7.2%), and the proportion of Hispanic women eligible declined from 23.0% (90% CI 21.8–24.3%) to 13.1% (90% CI 12.1–14.1%) (Fig. 1).

The proportion of white women eligible for cervical cancer services declined from 7.5% (90% CI 7.1–7.8%) to 3.5% (90% CI 3.2–3.7%) from 2011 to 2017. The proportion of black women eligible declined from 13.9% (90% CI 13.0–14.8%) to 6.8% (90% CI 6.1–7.4%) and the proportion of Hispanic women eligible declined from 23.8% (90% CI 22.9–24.7%) to 12.9% (90% CI 12.2–13.6%) (Fig. 1). Appendix Tables 5, 6, 7, 8, 9, 10 report detailed trends for each group.

Figure 3 shows the shares of eligible women served by the NBCCEDP, by state. “Served” refers to women who are screened or receive post-screening diagnostic services. The top row of markers show the share of women served for breast cancer in 2016 to 2017, with states sorted in ascending order; in the USA overall, the share of eligible women served was 15.0% (90% CI 14.8–15.1%). The bottom row of markers show the share of women served for cervical cancer in 2015 to 2017, with states sorted in ascending order; in the USA overall, the share of eligible women served was 6.8% (90% CI 6.7–6.8%).

## Discussion

There was a large decline in the number of women who met the eligibility requirements of the NBCCEDP between 2011 and 2017. The steepest declines in the proportion of women eligible occurred beginning in 2014, when the major insurance coverage expansions under the ACA took effect. For example, the share of women eligible for breast cancer services was between 10% and 10.2% in 2011–2013 and declined to 7.8% in 2014 and 5.9% in 2015. Declines in the proportion of women eligible were larger in relative terms in the states that expanded Medicaid. There was also a decline in the share of women who were eligible in non-expansion states. There are several potential explanations for why eligibility rates declined. NBCCEDP-eligible women with household incomes between 100 and 400% of the federal poverty level were eligible for premium tax credits to purchase private insurance on the Health Insurance Marketplace [7]. The ACA required individuals without insurance coverage to pay a penalty to the Internal Revenue Service. Finally, the unemployment rate was declining over the study time period [14], which may have led to more women obtaining employer-based coverage or choosing to purchase coverage individually.

Women may lose eligibility for the NBCCEDP because their incomes increase beyond eligibility thresholds or because they gain coverage. While these are, on net, positive developments, some may still lack coverage for screening or have coverage but face high out-of-pocket costs for diagnostic services and treatment.

Despite the decline in the proportion of women eligible for the NBCCEDP, we find, consistent with previous work [15], that there are still over 2.8 million women eligible for breast cancer services and 5.3 million eligible for cervical cancer services under the NBCCEDP. In 2012, the program served 10.6% of eligible women for breast cancer screening [16] and 6.5% of those eligible for cervical cancer screening [17]. In 2017, the program served 15.0% of eligible women for breast cancer screening and 6.8% of those eligible for cervical cancer screening.

We applied the September 2016 age and income eligibility criteria to all years to aid in the interpretation of trends. Eligibility criteria among states have changed over time, and the actual number of women eligible in a given year may differ slightly from the totals we report. In addition, the CDC minimum age for cervical cancer screening changed from 18 to 21 in mid-2012 per the US Preventive Services Task Force screening recommendations. Therefore, our approach may understate the number of women eligible from 2010 to 2012. Our estimates of the number of women eligible for breast cancer screening do not account for women who have had mastectomies. Thus, we may overstate the number of women

eligible by a small amount. Grouping women who are underinsured with women who were insured would lead us to understate the number of eligible women.

Women who lack coverage for breast and cervical cancer screening are less likely to undergo it [18]. Coverage expansions and reductions in cost sharing that occurred as a result of the Affordable Care Act reduced disparities in screening and early detection [19–21]. However, the figures presented in this paper indicate that there remain many low-income women who, apart from the NBCCEDP, lack coverage for screening.

## Acknowledgments

Funding support for David H. Howard was provided by the Centers for Disease Control and Prevention (CDC) (Intergovernmental Personal Act, Assignment Agreement Number 16IPA1604432).

## Appendix

See Tables 3, 4, 5, 6, 7, 8, 9, 10.

**Table 3**

The number of women eligible for breast cancer services through the National Breast and Cervical Cancer Early Detection Program, by state

State	Medicaid expansion <sup>a</sup>	Eligible <sup>b</sup> (thousands; 90% CI)						
		2011	2012	2013	2014	2015	2016	2017
Alabama	No	100 (95–104)	97 (92–101)	92 (88–97)	84 (80–88)	67 (63–72)	62 (58–66)	64 (60–68)
Alaska	No	14 (13–15)	14 (13–15)	13 (12–14)	11 (11–12)	9 (8–10)	8 (7–9)	7 (6–8)
Arizona	Yes	119 (114–125)	131 (125–136)	136 (130–141)	102 (97–108)	80 (75–85)	74 (69–78)	75 (71–80)
Arkansas	Yes	69 (65–72)	69 (66–73)	67 (64–71)	42 (40–45)	30 (28–33)	25 (23–28)	27 (24–29)
California	Yes	683 (667–699)	712 (697–727)	670 (654–686)	488 (475–502)	315 (303–326)	270 (259–281)	250 (240–261)
Colorado	Yes	80 (76–84)	80 (76–84)	78 (74–82)	53 (50–57)	40 (37–43)	37 (34–40)	36 (33–39)
Connecticut	Yes	35 (32–37)	37 (34–39)	37 (34–40)	22 (21–24)	20 (18–21)	16 (14–18)	16 (15–18)
Delaware	Yes	10 (9–11)	10 (9–11)	10 (9–11)	8 (7–9)	6 (5–7)	5 (4–6)	5 (4–5)
Florida	No	458 (445–471)	466 (454–478)	461 (448–473)	383 (372–395)	307 (296–318)	291 (280–302)	290 (279–302)
Georgia	No	216 (208–224)	211 (204–219)	219 (210–227)	178 (171–185)	157 (150–164)	143 (136–150)	142 (135–149)
Hawaii	Yes	11 (10–13)	11 (10–13)	11 (10–12)	7 (6–8)	6 (5–6)	5 (4–6)	5 (4–6)
Idaho	No	27 (25–30)	28 (27–30)	27 (25–29)	21 (19–22)	19 (17–21)	17 (15–18)	16 (14–18)

State	Medicaid expansion <sup>a</sup>	Eligible <sup>b</sup> (thousands; 90% CI)						
		2011	2012	2013	2014	2015	2016	2017
Illinois	Yes	215 (208–223)	217 (210–223)	210 (203–217)	149 (143–155)	101 (96–106)	89 (84–94)	97 (91–102)
Indiana	No	100 (95–105)	98 (93–102)	98 (93–103)	80 (76–85)	57 (53–60)	44 (41–48)	42 (39–45)
Iowa	Yes	31 (29–34)	30 (28–32)	27 (25–29)	20 (18–21)	14 (13–16)	12 (10–13)	13 (12–15)
Kansas	No	41 (39–44)	41 (39–44)	42 (39–44)	33 (31–35)	28 (26–30)	27 (25–29)	27 (25–29)
Kentucky	Yes	92 (88–97)	89 (85–94)	92 (88–97)	43 (40–46)	27 (24–29)	25 (23–27)	25 (23–27)
Louisiana	No	118 (113–123)	116 (111–121)	111 (106–116)	94 (89–98)	74 (69–78)	62 (58–66)	44 (41–48)
Maine	No	22 (20–24)	19 (18–21)	21 (19–23)	19 (17–21)	14 (12–15)	13 (12–15)	14 (12–15)
Maryland	Yes	63 (59–67)	64 (61–68)	61 (58–65)	44 (41–47)	32 (30–35)	29 (27–32)	29 (26–31)
Massachusetts	Yes	28 (26–31)	26 (24–28)	25 (23–27)	21 (19–23)	16 (14–18)	15 (13–16)	16 (14–18)
Michigan	Yes	159 (153–165)	161 (155–167)	147 (141–153)	105 (101–110)	65 (61–69)	56 (52–59)	51 (47–54)
Minnesota	Yes	43 (40–45)	39 (36–41)	40 (38–43)	28 (26–30)	19 (17–20)	17 (16–19)	19 (17–21)
Mississippi	No	77 (73–81)	76 (72–80)	79 (75–83)	65 (61–69)	53 (49–57)	51 (47–55)	52 (48–56)
Missouri	No	95 (91–100)	96 (91–100)	92 (87–96)	72 (68–76)	63 (59–67)	56 (53–60)	55 (51–58)
Montana	No	24 (23–26)	24 (22–25)	22 (20–23)	19 (18–21)	14 (13–16)	9 (8–10)	9 (8–10)
Nebraska	No	21 (20–23)	21 (19–22)	22 (21–24)	18 (17–19)	14 (12–15)	14 (13–15)	13 (12–14)
Nevada	Yes	61 (58–64)	67 (64–71)	66 (63–70)	50 (47–53)	38 (36–41)	38 (36–41)	35 (32–38)
New Hampshire	Yes	19 (17–20)	19 (17–21)	17 (16–19)	14 (13–15)	8 (7–9)	8 (7–10)	8 (6–9)
New Jersey	Yes	133 (128–139)	129 (124–135)	140 (134–145)	109 (104–114)	81 (76–85)	69 (64–73)	70 (66–74)
New Mexico	Yes	55 (52–58)	52 (49–55)	52 (49–55)	42 (39–44)	28 (26–31)	25 (23–27)	22 (20–24)
New York	Yes	239 (230–247)	235 (227–244)	230 (221–238)	179 (171–186)	137 (131–144)	114 (108–120)	105 (99–111)
North Carolina	No	216 (208–224)	221 (214–228)	216 (208–223)	178 (171–185)	148 (142–155)	136 (129–142)	142 (136–149)
North Dakota	Yes	5 (5–6)	6 (5–6)	5 (5–6)	3 (3–4)	3 (2–3)	2 (2–2)	3 (2–3)
Ohio	Yes	171 (164–178)	165 (158–171)	158 (152–165)	100 (95–106)	63 (58–67)	53 (49–57)	55 (51–59)



State	Medicaid expansion <sup>a</sup>	Eligible <sup>b</sup> (thousands; 90% CI)						
		2011	2012	2013	2014	2015	2016	2017
Oklahoma	No	70 (67–73)	72 (69–75)	67 (64–69)	59 (56–62)	52 (49–54)	50 (48–53)	50 (47–52)
Oregon	Yes	74 (70–78)	75 (71–79)	76 (71–80)	44 (41–47)	30 (28–33)	26 (24–28)	29 (26–31)
Pennsylvania	Yes	161 (155–167)	161 (155–167)	155 (148–161)	124 (119–130)	82 (78–87)	67 (63–71)	60 (56–64)
Rhode Island	Yes	14 (13–15)	14 (13–15)	15 (13–16)	8 (7–9)	6 (5–6)	4 (4–5)	5 (4–6)
South Carolina	No	101 (96–106)	100 (95–104)	94 (89–99)	82 (78–87)	65 (61–70)	57 (53–61)	60 (56–65)
South Dakota	No	9 (8–10)	9 (8–10)	9 (8–10)	7 (6–8)	6 (5–7)	6 (5–6)	6 (6–7)
Tennessee	No	142 (136–148)	137 (131–143)	133 (127–139)	114 (108–119)	92 (87–98)	80 (75–85)	83 (78–88)
Texas	No	599 (585–613)	602 (589–615)	589 (575–603)	520 (507–533)	461 (448–473)	437 (425–450)	451 (438–465)
Utah	No	36 (33–38)	36 (33–38)	35 (32–37)	31 (29–33)	27 (25–29)	24 (22–26)	22 (20–24)
Vermont	Yes	5 (4–5)	5 (4–5)	5 (4–6)	4 (3–4)	2 (2–3)	2 (2–3)	3 (2–3)
Virginia	No	104 (99–109)	105 (100–110)	102 (97–107)	90 (85–95)	69 (65–73)	68 (64–73)	65 (60–69)
Washington	Yes	106 (101–111)	103 (99–108)	105 (101–110)	64 (60–68)	41 (38–43)	38 (35–41)	41 (37–44)
Washington DC	Yes	4 (4–5)	4 (3–4)	4 (4–5)	3 (3–4)	2 (2–2)	2 (1–2)	2 (2–2)
West Virginia	Yes	46 (43–49)	43 (40–46)	42 (39–45)	23 (20–25)	13 (11–15)	12 (11–14)	14 (12–15)
Wisconsin	No	57 (54–60)	61 (58–64)	62 (59–65)	46 (43–48)	31 (29–33)	27 (25–29)	27 (25–29)
Wyoming	No	9 (8–10)	9 (8–10)	8 (7–9)	7 (6–8)	6 (5–7)	6 (5–6)	6 (5–7)
United States		5,390 (5,172–5,608)	5,413 (5,209–5,618)	5,293 (5,080–5,507)	4,113 (3,928–4,298)	3,136 (2,968–3,305)	2,826 (2,666–2,986)	2,801 (2,640–2,962)

<sup>a</sup>As of 1/1/2015. Medicaid expansion was effective 1 January 2014 in most states that expanded. Three states, Michigan (4/1/2014), New Hampshire (8/15/2014), Pennsylvania (1/1/2015), expanded between 1 January 2014 and 1 January 2015

<sup>b</sup>Age and income requirements as of 8 September 2016. Assumes eligibility based on state-specific income criteria and CDC's age criteria for breast cancer services (ages 40–64)

**Table 4**

The number of women eligible for cervical cancer services through the National Breast and Cervical Cancer Early Detection Program, by state State

State	Medicaid expansion <sup>a</sup>	Eligible <sup>b</sup> (thousands; 90% CI)						
		2011	2012	2013	2014	2015	2016	2017
Alabama	No	193 (186–200)	187 (180–193)	184 (177–191)	164 (157–170)	133(127–139)	117(112–123)	115 (110–121)

State	Medicaid expansion <sup>a</sup>	Eligible <sup>b</sup> (thousands; 90% CI)						
		2011	2012	2013	2014	2015	2016	2017
Alaska	No	26 (25–28)	26 (25–27)	25 (24–26)	23 (22–24)	18 (17–20)	16 (15–17)	14 (13–15)
Arizona	Yes	234 (226–242)	249 (241–256)	252 (244–260)	196(189–203)	154 (148–161)	138(132–144)	137(131–144)
Arkansas	Yes	140 (135–145)	136(131–141)	130 (125–135)	86 (82–91)	65 (61–69)	55 (52–59)	51 (48–54)
California	Yes	1,320 (1,298–1,343)	1,333 (1,312–1,354)	1,270 (1,248–1,291)	922 (904–940)	597(581–613)	501 (486–515)	455 (441–469)
Colorado	Yes	160 (154–166)	159 (153–165)	154 (148–160)	108(103–113)	82 (78–87)	77 (72–81)	74 (70–79)
Connecticut	Yes	60 (57–64)	63 (59–66)	64 (60–67)	43 (40–46)	38 (35–40)	31 (28–33)	30 (28–33)
Delaware	Yes	19 (17–20)	18 (17–20)	18 (17–20)	15 (13–16)	12 (10–13)	10 (9–11)	9 (8–11)
Florida	No	795(778–812)	793 (778–809)	774 (757–790)	661 (646–676)	531 (517–545)	500 (485–514)	497(483–511)
Georgia	No	425(414–436)	415 (404–425)	419 (408–430)	355 (345–366)	314 (304–324)	282 (273–292)	283 (273–293)
Hawaii	Yes	20 (18–22)	19 (17–21)	20 (18–21)	14 (12–15)	11 (10–12)	9 (8–10)	9 (8–10)
Idaho	No	54 (51–57)	56 (53–59)	54 (51–57)	45 (42–48)	37 (34–39)	34(32–37)	34(31–36)
Illinois	Yes	388 (378–398)	382 (373–392)	371 (361–381)	275 (267–283)	195(188–203)	167 (160–174)	178 (171–185)
Indiana	No	197(190–203)	199 (192–205)	193 (186–200)	162(155–168)	117 (111–122)	91 (86–96)	89 (84–94)
Iowa	Yes	63 (60–67)	61 (58–64)	56 (53–59)	40 (38–43)	30 (28–32)	24 (22–26)	27 (25–30)
Kansas	No	88 (85–92)	88 (84–92)	87 (83–91)	69 (66–73)	58 (55–61)	56 (53–60)	54 (51–57)
Kentucky	Yes	175 (168–181)	168 (162–174)	172 (165–178)	87 (83–92)	53 (50–57)	46 (43–50)	48 (44–51)
Louisiana	No	222 (215–229)	216(209–223)	209 (202–216)	182(175–188)	144 (138–151)	117 (111–122)	84 (80–89)
Maine	No	32 (30–34)	29 (27–31)	33 (31–35)	30 (28–32)	23 (21–25)	22 (20–24)	22 (20–24)
Maryland	Yes	119 (114–125)	120 (115–125)	114 (109–119)	88 (84–92)	68 (64–71)	63 (59–67)	60 (57–64)
Massachusetts	Yes	52 (48–55)	45 (42–48)	46 (42–49)	37 (35–40)	31 (28–33)	26 (24–29)	29 (27–32)
Michigan	Yes	282 (274–290)	279 (272–287)	265 (257–273)	195(188–201)	123 (117–128)	104 (99–109)	94 (90–99)

State	Medicaid expansion <sup>a</sup>	Eligible <sup>b</sup> (thousands; 90% CI)						
		2011	2012	2013	2014	2015	2016	2017
Minnesota	Yes	88 (84–92)	80 (77–84)	84 (80–88)	59 (56–62)	42 (39–44)	37 (35–40)	38 (36–41)
Mississippi	No	147 (142–153)	143 (137–148)	144 (139–150)	119 (114–124)	101 (96–106)	95 (90–100)	95 (90–100)
Missouri	No	184 (178–191)	180 (174–186)	173 (166–179)	150 (144–155)	125 (119–130)	110 (104–115)	109 (103–114)
Montana	No	43 (41–46)	44 (41–46)	39 (36–41)	34 (32–36)	27 (25–28)	17 (16–19)	16 (15–18)
Nebraska	No	45 (43–47)	44 (42–47)	44 (42–47)	38 (36–40)	30 (28–32)	30 (28–32)	28 (27–30)
Nevada	Yes	122 (117–127)	130 (125–134)	127 (122–132)	94 (89–98)	78 (74–82)	71 (67–75)	67 (63–71)
New Hampshire	Yes	32 (30–34)	31 (28–33)	30 (28–32)	24 (22–26)	15 (13–16)	14 (12–15)	13 (12–14)
New Jersey	Yes	232 (225–239)	230 (223–237)	244 (237–252)	199 (192–206)	147 (141–153)	133 (127–139)	131 (125–137)
New Mexico	Yes	105 (100–109)	98 (94–103)	99 (95–103)	75 (72–79)	54 (51–57)	44 (40–47)	41 (38–44)
New York	Yes	462 (450–474)	443 (432–455)	424 (412–436)	347 (336–357)	266 (256–275)	220 (212–229)	196 (188–204)
North Carolina	No	407 (396–417)	414 (404–424)	405 (395–416)	338 (328–347)	283 (274–292)	260 (251–268)	261 (252–270)
North Dakota	Yes	12 (11–13)	12 (11–13)	12 (11–13)	8 (7–9)	7 (6–8)	6 (5–7)	7 (6–8)
Ohio	Yes	284 (275–293)	276 (268–285)	263 (254–272)	176 (169–183)	122 (116–128)	102 (97–108)	106 (100–111)
Oklahoma	No	142 (138–147)	139 (135–143)	133 (129–137)	117 (113–121)	103 (99–107)	99 (95–102)	100 (96–104)
Oregon	Yes	149 (143–155)	141 (136–147)	139 (133–144)	86 (82–91)	59 (55–63)	51 (48–55)	56 (52–59)
Pennsylvania	Yes	287 (279–296)	281 (273–289)	278 (270–287)	234 (226–241)	155 (149–162)	131 (125–136)	117 (112–123)
Rhode Island	Yes	25 (23–27)	25 (23–27)	27 (25–29)	16 (15–18)	11 (10–13)	9 (7–10)	9 (8–11)
South Carolina	No	179 (172–186)	181 (175–187)	172 (165–178)	151 (145–157)	118 (112–124)	102 (97–107)	109 (103–114)
South Dakota	No	20 (18–22)	19 (18–21)	19 (18–20)	15 (14–17)	14 (13–16)	13 (11–14)	13 (12–14)
Tennessee	No	242 (234–250)	230 (223–238)	227 (219–234)	196 (189–203)	163 (156–170)	139 (133–145)	142 (136–149)
Texas	No	1,273 (1,252–1,294)	1,265 (1,246–1,284)	1,229 (1,209–1,249)	1,080 (1,061–1,099)	975 (957–993)	937 (919–956)	938 (919–957)

State	Medicaid expansion <sup>a</sup>	Eligible <sup>b</sup> (thousands; 90% CI)						
		2011	2012	2013	2014	2015	2016	2017
Utah	No	89 (85–93)	86 (83–90)	84 (80–88)	76 (72–80)	65 (61–68)	52 (49–55)	53 (49–56)
Vermont	Yes	8 (7–9)	8 (7–9)	9 (8–10)	6 (5–7)	4 (4–5)	4 (4–5)	5 (4–6)
Virginia	No	196 (189–203)	195 (189–202)	193 (185–200)	167 (161–174)	136 (129–142)	126 (120–132)	121 (115–126)
Washington	Yes	223 (215–230)	214 (207–221)	218 (210–225)	133 (127–139)	91 (86–96)	81 (76–85)	83 (78–88)
Washington DC	Yes	9 (8–11)	8 (7–9)	9 (8–10)	7 (6–8)	5 (4–5)	4 (4–5)	4 (4–5)
West Virginia	Yes	79 (75–82)	76 (72–80)	73 (69–77)	38 (35–41)	23 (21–25)	20 (18–22)	24 (21–26)
Wisconsin	No	108 (103–112)	110 (106–114)	111 (106–115)	88 (84–92)	63 (60–66)	55 (52–59)	56 (53–60)
Wyoming	No	18 (17–19)	19 (17–20)	17 (15–18)	15 (13–16)	12 (11–14)	12 (10–13)	12 (11–13)
United States		10,275 (9,969–10,580)	10,166 (9,879–10,453)	9,932 (9,632–10,232)	7,882 (7,619–8,145)	6,127 (5,889–6,365)	5,460 (5,235–5,685)	5,347 (5,121–5,572)

<sup>a</sup>As of 1/1/2015. Medicaid expansion was effective 1 January 2014 in most states that expanded. Three states, Michigan (4/1/2014), New Hampshire (8/15/2014), Pennsylvania (1/1/2015), expanded between 1 January 2014 and 1 January 2015

<sup>b</sup>Age and income requirements as of 8 September 2016. Assumes eligibility based on state-specific income criteria and CDC's age criteria for cervical cancer services (ages 21 to 64).

**Table 5**

Eligibility for breast cancer services through the National Breast and Cervical Cancer Early Detection Program among women ages 40 to 64, by year. Non-Hispanic white

Year	Number of women <sup>a</sup> (thousands)	Number of eligible women <sup>c</sup> (thousands; 90% CI)	Percent of women who are eligible (90% CI)
All states			
2011	36,253	2,612 (2,450–2,774)	7.2 (6.8–7.7)
2012	35,894	2,577 (2,426–2,727)	7.2 (6.8–7.6)
2013	35,608	2,490 (2,334–2,646)	7.0 (6.6–7.4)
2014	35,245	1,831 (1,702–1,961)	5.2 (4.8–5.6)
2015	34,906	1,320 (1,206–1,434)	3.8 (3.5–4.1)
2016	34,501	1,164 (1,058–1,271)	3.4 (3.1–3.7)
2017	34,089	1,153 (1,045–1,261)	3.4 (3.1–3.7)
States that expanded Medicaid <sup>b</sup>			
2011	21,226	1,315 (1,232–1,399)	6.2 (5.8–6.6)
2012	20,977	1,298 (1,220–1,376)	6.2 (5.8–6.6)
2013	20,763	1,251 (1,170–1,331)	6.0 (5.6–6.4)
2014	20,497	809 (746–871)	3.9 (3.6–4.2)
2015	20,239	504 (453–554)	2.5 (2.2–2.7)

Year	Number of women <sup>a</sup> (thousands)	Number of eligible women <sup>c</sup> (thousands; 90% CI)	Percent of women who are eligible (90% CI)
2016	19,930	422 (377–468)	2.1 (1.9–2.3)
2017	19,636	429 (382–476)	2.2 (1.9–2.4)
States that did not expand Medicaid <sup>b</sup>			
2011	15,027	1,296 (1,218–1,375)	8.6 (8.1–9.2)
2012	14,917	1,279 (1,207–1,351)	8.6 (8.1–9.1)
2013	14,846	1,239 (1,164–1,314)	8.3 (7.8–8.9)
2014	14,749	1,023 (956–1,090)	6.9 (6.5–7.4)
2015	14,667	816 (753–880)	5.6 (5.1–6.0)
2016	14,571	742 (681–803)	5.1 (4.7–5.5)
2017	14,453	724 (664–785)	5.0 (4.6–5.4)

<sup>a</sup>Women between the ages of 40 and 64. Population totals are presented without confidence intervals in the Small Area Health Insurance Estimates data

<sup>b</sup>As of 1/1/2015. Medicaid expansion was effective 1 January 2014 in most states that expanded. Three states, Michigan (4/1/2014), New Hampshire (8/15/2014), Pennsylvania (1/1/2015), expanded between 1 January 2014 and 1 January 2015

<sup>c</sup>Age and income requirements as of 8 September 2016. Assumes eligibility based on state-specific income criteria and CDC's age criteria for breast cancer services (ages 40 to 64)

**Table 6**

Eligibility for breast cancer services through the National Breast and Cervical Cancer Early Detection Program among women ages 40 to 64, by year. Non-Hispanic black

Year	Number of women <sup>a</sup> (thousands)	Number of eligible women <sup>c</sup> (thousands; 90% CI)	Percent of women who are eligible (90% CI)
All states			
2011	6,427	872 (799–946)	13.6 (12.4–14.7)
2012	6,470	859 (789–929)	13.3 (12.2–14.4)
2013	6,549	840 (766–913)	12.8 (11.7–13.9)
2014	6,607	646 (582–709)	9.8 (8.8–10.7)
2015	6,644	490 (432–547)	7.4 (6.5–8.2)
2016	6,633	439 (383–494)	6.6 (5.8–7.4)
2017	6,675	423 (369–478)	6.3 (5.5–7.2)
States that expanded Medicaid <sup>b</sup>			
2011	2,968	318 (287–350)	10.7 (9.7–11.8)
2012	2,975	312 (281–342)	10.5 (9.5–11.5)
2013	2,997	293 (262–323)	9.8 (8.7–10.8)
2014	3,011	204 (179–229)	6.8 (5.9–7.6)
2015	3,015	134 (114–155)	4.4 (3.8–5.1)
2016	2,991	121 (101–141)	4.0 (3.4–4.7)
2017	2,997	108 (89–126)	3.6 (3.0–4.2)
States that did not expand Medicaid <sup>b</sup>			
2011	3,459	554 (512–596)	16.0 (14.8–17.2)

Year	Number of women <sup>a</sup> (thousands)	Number of eligible women <sup>c</sup> (thousands; 90% CI)	Percent of women who are eligible (90% CI)
2012	3,495	547 (507–587)	15.7 (14.5–16.8)
2013	3,553	547 (505–590)	15.4 (14.2–16.6)
2014	3,595	442 (403–480)	12.3 (11.2–13.4)
2015	3,630	356 (319–393)	9.8 (8.8–10.8)
2016	3,642	318 (282–353)	8.7 (7.8–9.7)
2017	3,678	316 (280–351)	8.6 (7.6–9.6)

<sup>a</sup>Women between the ages of 40 and 64. Population totals are presented without confidence intervals in the Small Area Health Insurance Estimates data

<sup>b</sup>As of 1/1/2015. Medicaid expansion was effective 1 January 2014 in most states that expanded. Three states, Michigan (4/1/2014), New Hampshire (8/15/2014), Pennsylvania (1/1/2015), expanded between 1 January 2014 and 1 January 2015

<sup>c</sup>Age and income requirements as of 8 September 2016. Assumes eligibility based on state-specific income criteria and CDC's age criteria for breast cancer services (ages 40 to 64)

**Table 7**

Eligibility for breast cancer services through the National Breast and Cervical Cancer Early Detection Program among women ages 40 to 64, by year. Hispanic

Year	Number of women <sup>a</sup> (thousands)	Number of eligible women <sup>c</sup> (thousands; 90% CI)	Percent of women who are eligible (90% CI)
All states			
2011	6,393	1,473 (1,394–1,551)	23.0 (21.8–24.3)
2012	6,596	1,533 (1,457–1,608)	23.2 (22.1–24.4)
2013	6,798	1,546 (1,464–1,628)	22.7 (21.5–23.9)
2014	7,124	1,326 (1,248–1,405)	18.6 (17.5–19.7)
2015	7,362	1,096 (1,019–1,174)	14.9 (13.8–15.9)
2016	7,545	1,022 (946–1,099)	13.6 (12.5–14.6)
2017	7,826	1,025 (947–1,103)	13.1 (12.1–14.1)
States that expanded Medicaid <sup>b</sup>			
2011	3,954	816 (769–863)	20.6 (19.4–21.8)
2012	4,067	853 (808–898)	21.0 (19.9–22.1)
2013	4,178	862 (813–910)	20.6 (19.5–21.8)
2014	4,364	699 (653–744)	16.0 (15.0–17.1)
2015	4,489	536 (493–580)	11.9 (11.0–12.9)
2016	4,578	480 (438–522)	10.5 (9.6–11.4)
2017	4,718	468 (425–510)	9.9 (9.0–10.8)
States that did not expand Medicaid <sup>b</sup>			
2011	2,438	657 (625–689)	26.9 (25.6–28.3)
2012	2,529	680 (649–710)	26.9 (25.7–28.1)
2013	2,621	684 (651–718)	26.1 (24.9–27.4)
2014	2,760	628 (594–661)	22.7 (21.5–23.9)
2015	2,873	560 (526–594)	19.5 (18.3–20.7)

Year	Number of women <sup>a</sup> (thousands)	Number of eligible women <sup>c</sup> (thousands; 90% CI)	Percent of women who are eligible (90% CI)
2016	2,968	542 (508–577)	18.3 (17.1–19.4)
2017	3,108	557 (522–593)	17.9 (16.8–19.1)

<sup>a</sup>Women between the ages of 40 and 64. Population totals are presented without confidence intervals in the Small Area Health Insurance Estimates data

<sup>b</sup>As of 1/1/2015. Medicaid expansion was effective 1 January 2014 in most states that expanded. Three states, Michigan (4/1/2014), New Hampshire (8/15/2014), Pennsylvania (1/1/2015), expanded between 1 January 2014 and 1 January 2015

<sup>c</sup>Age and income requirements as of 8 September 2016. Assumes eligibility based on state-specific income criteria and CDC's age criteria for breast cancer services (ages 40 to 64)

**Table 8**

Eligibility for cervical cancer services through the National Breast and Cervical Cancer Early Detection Program among women ages 21 to 64, by year. Non-Hispanic white

Year	Number of women <sup>a</sup> (thousands)	Number of eligible women <sup>c</sup> (thousands; 90% CI)	Percent of women who are eligible (90% CI)
All states			
2011	58,940	4,399 (4,187–4,612)	7.5 (7.1–7.8)
2012	58,572	4,310 (4,112–4,508)	7.4 (7.0–7.7)
2013	58,382	4,181 (3,975–4,386)	7.2 (6.8–7.5)
2014	58,048	3,147 (2,974–3,319)	5.4 (5.1–5.7)
2015	57,750	2,294 (2,144–2,443)	4.0 (3.7–4.2)
2016	57,346	2,007 (1,867–2,146)	3.5 (3.3–3.7)
2017	56,911	1,985 (1,845–2,125)	3.5 (3.2–3.7)
States that expanded Medicaid <sup>b</sup>			
2011	34,191	2,194 (2,086–2,302)	6.4 (6.1–6.7)
2012	33,927	2,139 (2,037–2,240)	6.3 (6.0–6.6)
2013	33,766	2,077 (1,972–2,182)	6.2 (5.8–6.5)
2014	33,502	1,381 (1,298–1,463)	4.1 (3.9–4.4)
2015	33,244	879 (812–945)	2.6 (2.4–2.8)
2016	32,911	737 (676–797)	2.2 (2.1–2.4)
2017	32,589	738 (676–799)	2.3 (2.1–2.5)
States that did not expand Medicaid <sup>b</sup>			
2011	24,749	2,205 (2,101–2,310)	8.9 (8.5–9.3)
2012	24,645	2,172 (2,075–2,268)	8.8 (8.4–9.2)
2013	24,615	2,104 (2,004–2,205)	8.5 (8.1–9.0)
2014	24,547	1,766 (1,676–1,856)	7.2 (6.8–7.6)
2015	24,506	1,415 (1,332–1,498)	5.8 (5.4–6.1)
2016	24,435	1,270 (1,191–1,349)	5.2 (4.9–5.5)
2017	24,322	1,248 (1,169–1,326)	5.1 (4.8–5.5)

<sup>a</sup>Women between the ages of 21 and 64. Population totals are presented without confidence intervals in the Small Area Health Insurance Estimates data

<sup>b</sup> As of 1/1/2015. Medicaid expansion was effective 1 January 2014 in most states that expanded. Three states, Michigan (4/1/2014), New Hampshire (8/15/2014), Pennsylvania (1/1/2015), expanded between 1 January 2014 and 1 January 2015

<sup>c</sup> Age and income requirements as of 8 September 2016. Assumes eligibility based on state-specific income criteria and CDC's age criteria for cervical cancer services (ages 21 to 64)

**Table 9**

Eligibility for cervical cancer services through the National Breast and Cervical Cancer Early Detection Program among women ages 21 to 64, by year. Non-Hispanic black.

Year	Number of women <sup>a</sup> (thousands)	Number of eligible women <sup>c</sup> (thousands; 90% CI)	Percent of women who are eligible (90% CI)
All states			
2011	11,943	1,661 (1,555–1,766)	13.9 (13.0–14.8)
2012	12,044	1,628 (1,527–1,729)	13.5 (12.7–14.4)
2013	12,222	1,617 (1,509–1,724)	13.2 (12.3–14.1)
2014	12,346	1,275 (1,181–1,368)	10.3 (9.6–11.1)
2015	12,432	1,007 (922–1,092)	8.1 (7.4–8.8)
2016	12,420	868 (787–948)	7.0 (6.3–7.6)
2017	12,514	849 (768–929)	6.8 (6.1–7.4)
States that expanded Medicaid <sup>b</sup>			
2011	5,426	581 (536–627)	10.7 (9.9–11.5)
2012	5,454	563 (520–607)	10.3 (9.5–11.1)
2013	5,516	557 (511–602)	10.1 (9.3–10.9)
2014	5,558	392 (355–429)	7.1 (6.4–7.7)
2015	5,576	276 (244–307)	4.9 (4.4–5.5)
2016	5,543	236 (207–266)	4.3 (3.7–4.8)
2017	5,569	218 (190–247)	3.9 (3.4–4.4)
States that did not expand Medicaid <sup>b</sup>			
2011	6,517	1,079 (1,019–1,140)	16.6 (15.6–17.5)
2012	6,590	1,065 (1,007–1,122)	16.2 (15.3–17.0)
2013	6,706	1,060 (998–1,122)	15.8 (14.9–16.7)
2014	6,788	883 (826–939)	13.0 (12.2–13.8)
2015	6,855	731 (678–785)	10.7 (9.9–11.4)
2016	6,877	631 (580–683)	9.2 (8.4–9.9)
2017	6,945	630 (579–682)	9.1 (8.3–9.8)

<sup>a</sup> Women between the ages of 21 and 64. Population totals are presented without confidence intervals in the Small Area Health Insurance Estimates data

<sup>b</sup> As of 1/1/2015. Medicaid expansion was effective 1 January 2014 in most states that expanded. Three states, Michigan (4/1/2014), New Hampshire (8/15/2014), Pennsylvania (1/1/2015), expanded between 1 January 2014 and 1 January 2015

<sup>c</sup> Age and income requirements as of 8 September 2016. Assumes eligibility based on state-specific income criteria and CDC's age criteria for cervical cancer services (ages 21 to 64)



**Table 10**

Eligibility for cervical cancer services through the National Breast and Cervical Cancer Early Detection Program among women ages 21 to 64, by year. Hispanic

Year	Number of women <sup>a</sup> (thousands)	Number of eligible women <sup>c</sup> (thousands; 90% CI)	Percent of women who are eligible (90% CI)
All states			
2011	14,343	3,417 (3,286–3,547)	23.8 (22.9–24.7)
2012	14,647	3,428 (3,303–3,552)	23.4 (22.6–24.3)
2013	14,955	3,385 (3,253–3,517)	22.6 (21.8–23.5)
2014	15,448	2,880 (2,755–3,005)	18.6 (17.8–19.5)
2015	15,813	2,383 (2,263–2,502)	15.1 (14.3–15.8)
2016	16,079	2,202 (2,084–2,319)	13.7 (13.0–14.4)
2017	16,502	2,130 (2,013–2,247)	12.9 (12.2–13.6)
States that expanded Medicaid <sup>b</sup>			
2011	8,886	1,865 (1,789–1,941)	21.0 (20.1–21.8)
2012	9,057	1,876 (1,803–1,948)	20.7 (19.9–21.5)
2013	9,235	1,855 (1,777–1,933)	20.1 (19.2–20.9)
2014	9,517	1,488 (1,416–1,559)	15.6 (14.9–16.4)
2015	9,708	1,138 (1,072–1,205)	11.7 (11.0–12.4)
2016	9,832	997 (933–1,061)	10.1 (9.5–10.8)
2017	10,041	943 (880–1,006)	9.4 (8.8–10.0)
States that did not expand Medicaid <sup>b</sup>			
2011	5,458	1,552 (1,498–1,606)	28.4 (27.4–29.4)
2012	5,590	1,552 (1,501–1,603)	27.8 (26.9–28.7)
2013	5,721	1,530 (1,476–1,584)	26.7 (25.8–27.7)
2014	5,931	1,392 (1,339–1,445)	23.5 (22.6–24.4)
2015	6,106	1,245 (1,192–1,297)	20.4 (19.5–21.3)
2016	6,247	1,205 (1,152–1,258)	19.3 (18.4–20.1)
2017	6,461	1,187 (1,133–1,240)	18.4 (17.5–19.2)

<sup>a</sup>Women between the ages of 21 and 64. Population totals are presented without confidence intervals in the Small Area Health Insurance Estimates data

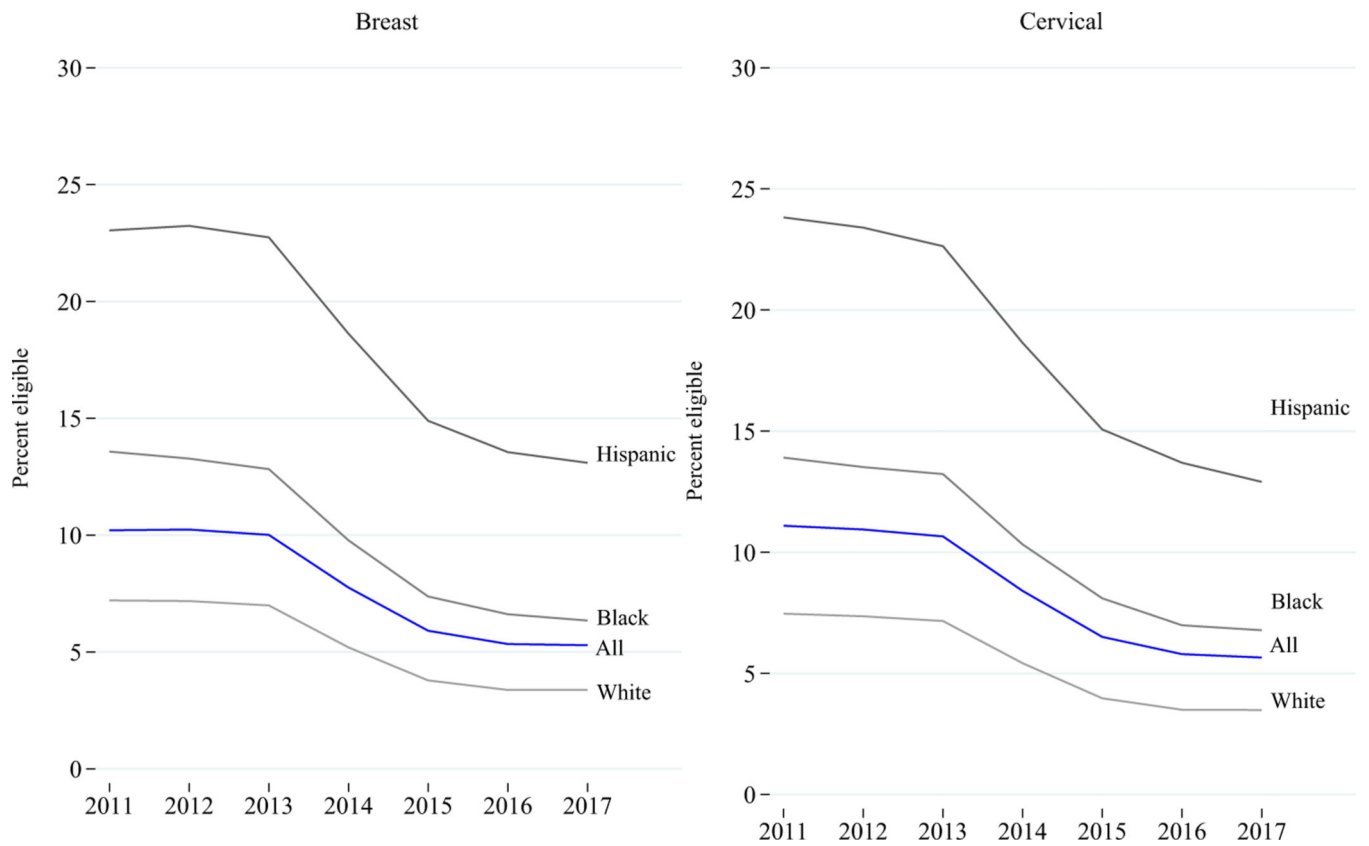
<sup>b</sup>As of 1/1/2015. Medicaid expansion was effective 1 January 2014 in most states that expanded. Three states, Michigan (4/1/2014), New Hampshire (8/15/2014), Pennsylvania (1/1/2015), expanded between 1 January 2014 and 1 January 2015

<sup>c</sup>Age and income requirements as of 8 September 2016. Assumes eligibility based on state-specific income criteria and CDC's age criteria for cervical cancer services (ages 21 to 64)

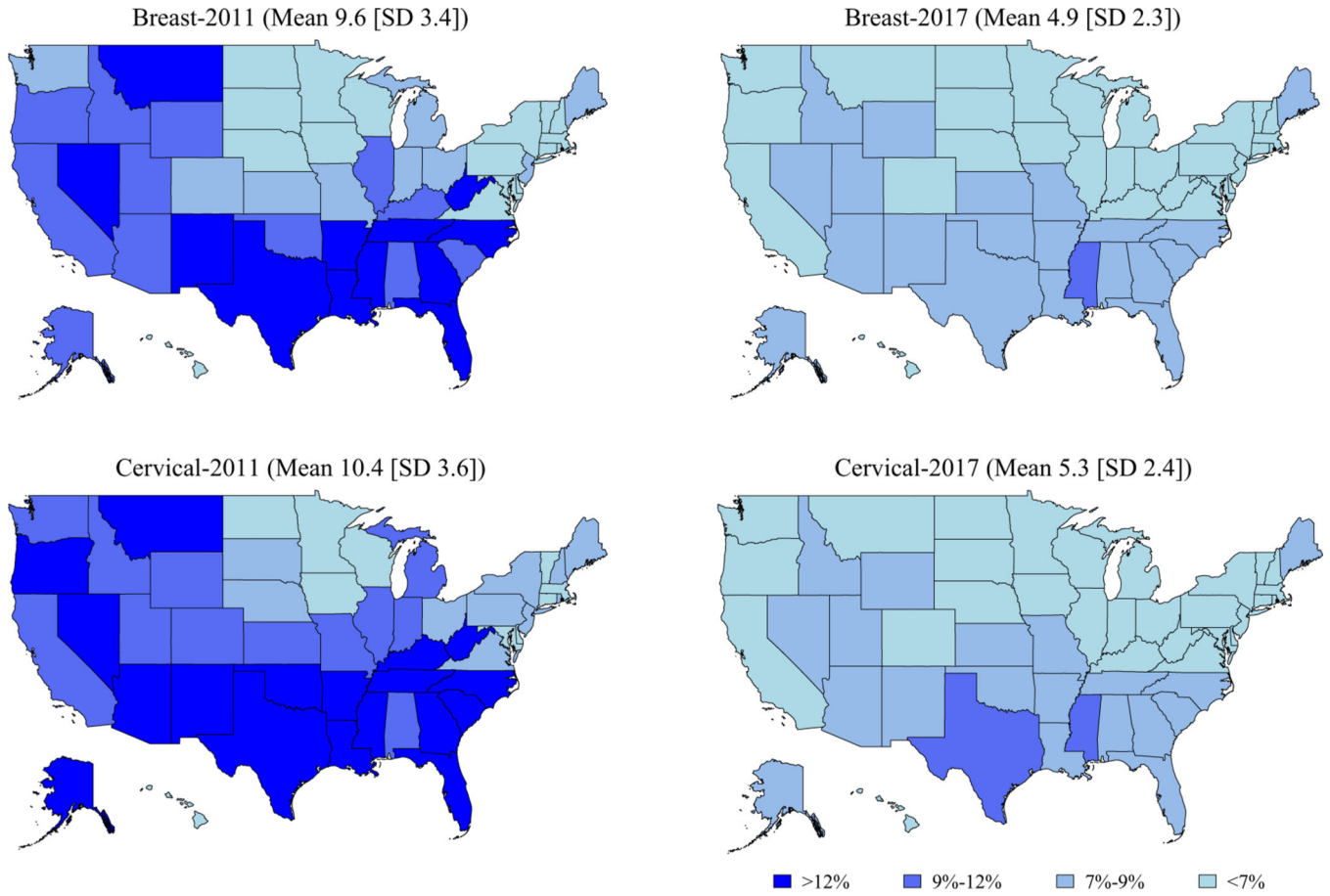
## References

1. Patient Protection and Affordable Care Act, 42 U.S.C. § 18001 (2010)
2. Congressional Budget Office. Statement of Douglas W. Elmendorf. Director CBO's Analysis of the Major Health Care Legislation Enacted in March 2010 before the Subcommittee on Health Committee on Energy and Commerce U.S. House of Representatives 3 30, 2011

3. Centers for Disease Control and Prevention. National Breast and Cervical Cancer Early Detection Program (NBCCEDP). About the program. <https://www.cdc.gov/cancer/nbccedp/about.htm>. Updated March 16, 2018 Accessed 15 May 2019
4. Breast and Cervical Cancer Prevention and Treatment Act (BCCPTA). (Public Law 106–354)
5. U.S. Preventive Services Task Force (2012) Screening for cervical cancer: U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med* 156:880–891 [PubMed: 22711081]
6. Annual Survey of the National Breast and Cervical Cancer Early Detection Program (NBCCEDP) Grantees' Program Implementation. Data collected for Program Year 5 (July 1, 2016 through June 30, 2017). OMB No. 0920–1046.
7. Patient Protection and Affordable Care Act, 42 U.S.C. § 18001, Sec. 1401 (2010)
8. MACPAC. Medicaid expansion to the new adult group. <https://www.macpac.gov/subtopic/medicaid-expansion/>. Accessed 15 May 2019
9. Kaiser Family Foundation. Status of State Action on the Medicaid Expansion Decision. <https://www.kff.org/health-reform/state-indicator/state-activity-around-expanding-medicaid-under-the-affordable-care-act/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D#note-1>. Updated July 3, 2018 Accessed 10 Jan 2019
10. Preventive health services. Healthcare.gov. Accessed 23 Mar 2019
11. Bauder M, Leury D, Szelepka S (2018) Small area estimation of health insurance coverage in 2010–2016 Small area methods branch, social, economic, and housing statistics division, U.S. Census Bureau
12. Dalzell L, Tangka F, Powers D, O'Hara B, Holmes W, Joseph K, Royalty J (2015) Data sources for identifying low-income, uninsured populations: application to public health—National Breast and Cervical Cancer Early Detection Program. *Cancer Causes Control* 26:699–709 [PubMed: 25916228]
13. Centers for Disease Control and Prevention (2017) DP17–1701 National Breast and Cervical Cancer Early Detection Program Program Manual. Cancer Prevention and Control Programs for State, Territorial, and Tribal Organizations
14. Bureau of Labor Statistics (2019) Labor Force Statistics from the Current Population Survey. Series Id: LNS11000000. <https://www.bls.gov/cps/cpsatabs.htm>
15. Ku L, Bysshe T, Steinmetz E, Bruen BK (2016) Health reform, Medicaid expansions, and women's cancer screening. *Womens Health Issues* 26:256–261 [PubMed: 26926159]
16. Howard DH, Tangka FK, Royalty J, Dalzell LP, Miller J, O'Hara B, Joseph K, Kenney K, Guy G, Hall IJ (2015) Breast cancer screening of underserved women in the USA: results from the National Breast and Cervical Cancer Early Detection Program, 1998–2012. *Cancer Causes Control* 26:657–668 [PubMed: 25779379]
17. Tangka FK, Howard DH, Royalty J, Dalzell LP, Miller J, O'Hara BJ, Sabatino SA, Joseph K, Kenney K, Guy GP Jr, Hall IJ (2015) Cervical cancer screening of underserved women in the United States: results from the National Breast and Cervical Cancer Early Detection Program, 1997–2012. *Cancer Causes Control* 26:671–686 [PubMed: 25783455]
18. Baron RC, Rimer BK, Coates RJ et al. (2008) Client-directed interventions to increase community access to breast, cervical, and colorectal cancer screening: a systematic review. *Am J Prev Med* 35:56–66
19. Sabik LM, Adunlin G (2017) The ACA and Cancer Screening and Diagnosis. *Cancer J* 23(3):151–162. 10.1097/PPO.0000000000000261 [PubMed: 28537960]
20. Cooper GS, Kou TD, Dor A, Koroukian SM, Schluchter MD (2017) Cancer preventive services, socioeconomic status, and the Affordable Care Act. *Cancer* 123:1585–1589 [PubMed: 28067955]
21. Han X, Yabroff KR, Ward E, Brawley OW, Jemal A (2018) Comparison of insurance status and diagnosis stage among patients with newly diagnosed cancer before vs after implementation of the patient Protection and affordable care act. *JAMA Oncol* 4:1713–1720 [PubMed: 30422152]



**Fig. 1.** Trends in the percent of women eligible for breast and cervical cancer services under the National Breast and Cervical Cancer Early Detection Program, by race  
We counted women as eligible if they were uninsured, had incomes below state-specific income thresholds, and were between ages 40-64 (breast cancer) and 21-64 (cervical cancer).



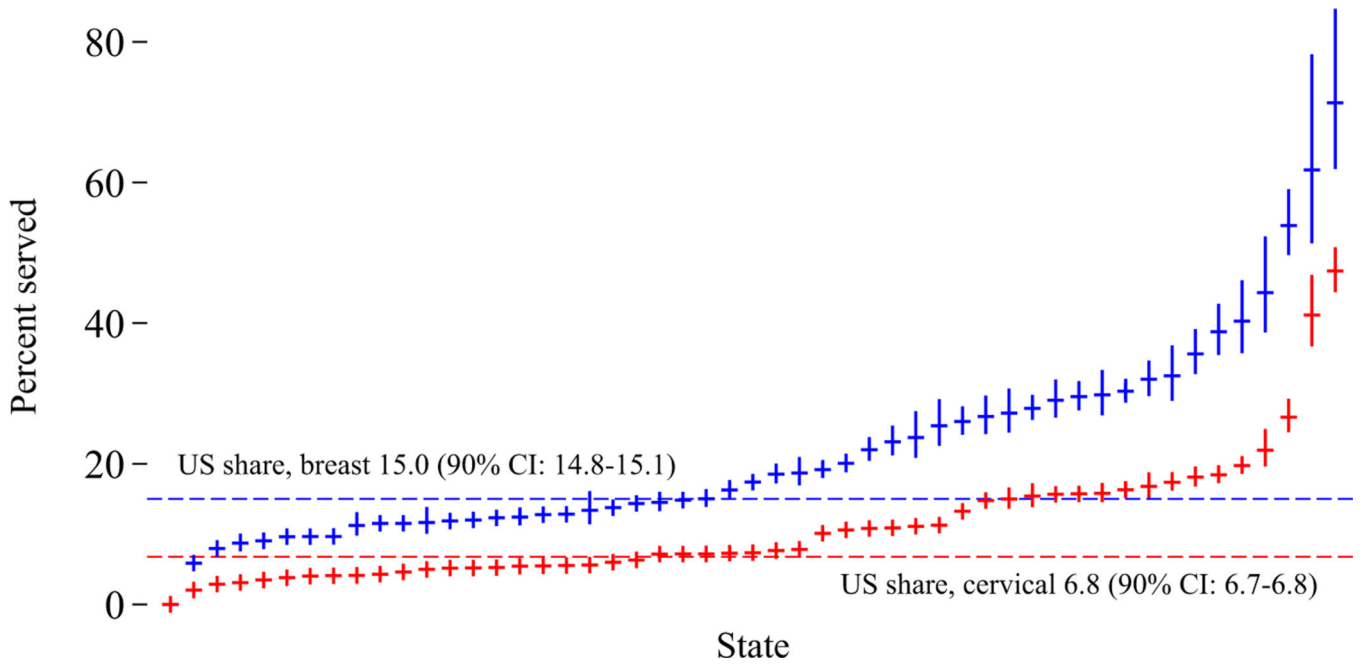
**Fig. 2.** Percent of women eligible for breast and cervical cancer services through the National Breast and Cervical Cancer Early Detection Program  
We counted women as eligible if they were uninsured, had incomes below state-specific income thresholds, and were between ages 40-64 (breast cancer) and 21-64 (cervical cancer). The mean refers to the average across states, not the rate at the population level.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript



**Fig. 3.** Shares of women served by the National Breast and Cervical Cancer Early Detection Program for breast cancer screening and diagnosis, 2016–2017, and cervical cancer screening and diagnosis, 2015–2017. The vertical lines represent 90% confidence intervals. States are sorted independently by the share of women served for breast and cervical cancer. We excluded Massachusetts since the program reports serving zero women.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Eligibility for breast cancer services through the National Breast and Cervical Cancer Early Detection Program among women ages 40 to 64, by year

**Table 1**

Year	Number of women <sup>a</sup> (thousands)	Number of eligible women <sup>c</sup> (thousands; 90% CI)	Percent of women who are eligible (90% CI)
All states			
2011	52,819	5,390 (5,172–5,608)	10.2 (9.8–10.6)
2012	52,870	5,413 (5,209–5,618)	10.2 (9.9–10.6)
2013	52,878	5,293 (5,080–5,507)	10.0 (9.6–10.4)
2014	53,025	4,113 (3,928–4,298)	7.8 (7.4–8.1)
2015	53,091	3,136 (2,968–3,305)	5.9 (5.6–6.2)
2016	52,933	2,826 (2,666–2,986)	5.3 (5.0–5.6)
2017	52,962	2,801 (2,640–2,962)	5.3 (5.0–5.6)
States that expanded Medicaid <sup>b</sup>			
2011	30,899	2,733 (2,619–2,847)	8.8 (8.5–9.2)
2012	30,885	2,754 (2,646–2,862)	8.9 (8.6–9.3)
2013	30,805	2,682 (2,570–2,794)	8.7 (8.3–9.1)
2014	30,828	1,902 (1,810–1,995)	6.2 (5.9–6.5)
2015	30,785	1,305 (1,226–1,384)	4.2 (4.0–4.5)
2016	30,584	1,137 (1,063–1,211)	3.7 (3.5–4.0)
2017	30,515	1,113 (1,038–1,188)	3.6 (3.4–3.9)
States that did not expand Medicaid <sup>b</sup>			
2011	21,920	2,657 (2,553–2,761)	12.1 (11.6–12.6)
2012	21,985	2,659 (2,563–2,756)	12.1 (11.7–12.5)
2013	22,073	2,611 (2,510–2,713)	11.8 (11.4–12.3)
2014	22,197	2,211 (2,118–2,304)	10.0 (9.5–10.4)
2015	22,306	1,832 (1,743–1,920)	8.2 (7.8–8.6)
2016	22,349	1,689 (1,603–1,775)	7.6 (7.2–7.9)
2017	22,447	1,688 (1,601–1,774)	7.5 (7.1–7.9)

<sup>a</sup>Women between the ages of 40 and 64. Population totals are presented without confidence intervals in the Small Area Health Insurance Estimates data

<sup>b</sup>As of 1/1/2015. Medicaid expansion was effective 1 January 2014 in most states that expanded. Three states, Michigan (4/1/2014), New Hampshire (8/15/2014), Pennsylvania (1/1/2015), expanded between 1 January 2014 and 1 January 2015

c. Age and income requirements as of 8 September 2016. Assumes eligibility based on state-specific income criteria and CDC's age criteria for breast cancer services (ages 40–64)

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Eligibility for cervical cancer services through the National Breast and Cervical Cancer Early Detection Program among women ages 21 to 64, by year

**Table 2**

Year	Number of women <sup>a</sup> (thousands)	Number of eligible women <sup>c</sup> (thousands; 90% CI)	Percent of women who are eligible (90% CI)
All states			
2011	92,615	10,275 (9,969–10,580)	11.1 (10.8–11.4)
2012	92,927	10,166 (9,879–10,453)	10.9 (10.6–11.2)
2013	93,226	9,932 (9,632–10,232)	10.7 (10.3–11.0)
2014	93,781	7,882 (7,619–8,145)	8.4 (8.1–8.7)
2015	94,194	6,127 (5,889–6,365)	6.5 (6.3–6.8)
2016	94,225	5,460 (5,235–5,685)	5.8 (5.6–6.0)
2017	94,563	5,347 (5,121–5,572)	5.7 (5.4–5.9)
States that expanded Medicaid <sup>b</sup>			
2011	53,850	5,148 (4,989–5,308)	9.6 (9.3–9.9)
2012	53,973	5,087 (4,937–5,238)	9.4 (9.1–9.7)
2013	54,040	4,967 (4,810–5,124)	9.2 (8.9–9.5)
2014	54,283	3,607 (3,476–3,739)	6.6 (6.4–6.9)
2015	54,403	2,537 (2,424–2,651)	4.7 (4.5–4.9)
2016	54,272	2,179 (2,074–2,285)	4.0 (3.8–4.2)
2017	54,356	2,100 (1,994–2,205)	3.9 (3.7–4.1)
States that did not expand Medicaid <sup>b</sup>			
2011	38,765	5,127 (4,980–5,273)	13.2 (12.8–13.6)
2012	38,953	5,079 (4,942–5,215)	13.0 (12.7–13.4)
2013	39,186	4,965 (4,822–5,108)	12.7 (12.3–13.0)
2014	39,498	4,274 (4,143–4,406)	10.8 (10.5–11.2)
2015	39,791	3,590 (3,465–3,714)	9.0 (8.7–9.3)
2016	39,953	3,281 (3,162–3,400)	8.2 (7.9–8.5)
2017	40,207	3,247 (3,127–3,367)	8.1 (7.8–8.4)

<sup>a</sup>Women between the ages of 21 and 64. Population totals are presented without confidence intervals in the Small Area Health Insurance Estimates data

<sup>b</sup>As of 1/1/2015. Medicaid expansion was effective 1 January 2014 in most states that expanded. Three states, Michigan (4/1/2014), New Hampshire (8/15/2014), Pennsylvania (1/1/2015), expanded between 1 January, 2014 and 1 January 2015



c, Age and income requirements as of 8 September 2016. Assumes eligibility based on state-specific income criteria and CDC's age criteria for cervical cancer services (ages 21 to 64)

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript