ABSTRACT

Background: We evaluated the potential impact of state Medicaid expansion decisions on screening for breast, cervical, and colorectal cancers.

Methods: We estimated the number of men and women aged 18-64 years eligible for Medicaid expansion (income below 138% of the federal poverty level) in 50 states and the District of Columbia using 2011 American Community Survey Public Use Microdata. We ranked states by proportion of the population without recent cancer screening based on the 2012 Behavioral Risk Factor Surveillance Survey. States were dichotomized into high or low proportion without recent screening. We then compared the proportions of the newly eligible Medicaid population without recent screening by state expansion decision.

Results: Among the nearly 951,230 newly eligible women in Medicaid expansion states, 31.2% resided in states with the highest proportion without recent breast cancer screening, which was similar to the 38.5% of the approximately 945,534 newly Medicaid-eligible women residing in non-expanding states. However, the pattern was different for cervical cancer: 32.1% of women reside in states expanding Medicaid with a high proportion without recent cervical cancer screening in contrast to 62.7% of women residing in non-expanding states. Similarly, 43.3% of men and women reside in states expanding Medicaid with a high proportion without recent colorectal cancer screening in contrast to 71.5% in non-expanding states.

Conclusions: States expanding Medicaid have an opportunity to improve access to cancer screening and diagnostic services, especially for cervical and colorectal cancers. The challenge remains providing timely and effective cancer services to low-income, uninsured populations in states that have not expanded Medicaid.

Key words: Affordable Care Act, Medicaid, cancer screening

Background

A key provision of the Patient Protection and Affordable Care Act (ACA) mandated Medicaid eligibility to rise to 138% of the federal poverty level (FPL) in January 2014.[1, 2] In addition to raising the FPL threshold in many states, expansion of Medicaid would extend benefits to primarily childless, low-income adults and parents who did not previously qualify.[3] Medicaid insurance provides access to many preventive health services, including cancer screening. However, a decision by the U.S. Supreme Court in June 2012 gave states the option of not expanding Medicaid. With the implementation of the ACA in 2014,[4, 5] 27 states plus the District of Columbia are implementing Medicaid expansion.

Lack of health insurance is one of the strongest predictors of underutilization of cancer screening, and is associated with lower receipt of mammography, Pap testing, fecal occult blood testing (FOBT), and colorectal endoscopy compared to insured populations.[6-9] Medicaid expansion offers cancer screening services to a population that may have previously deferred screening due to financial barriers.

We evaluated the potential impact of Medicaid expansion on breast, cervical, and colorectal cancer screening participation. We selected these three cancer sites because they are recommended for screening by the U.S. Preventive Services Task Force (USPSTF),[10-12] and therefore covered as preventive services under the ACA. Designed to inform the ongoing discussion in states about Medicaid expansion, our analysis provides a baseline for further studies on the impact of the ACA on the use of cancer screening preventive services and potential improvements in population health.

Materials and Methods

To assess the potential impact of Medicaid expansion, we: 1) estimated the newly Medicaid-eligible population recommended for cancer screening tests by age and state; and 2) described ecologic data of recent cancer screening participation for breast, cervical, and colorectal cancers by state; and 3) summarized the proportion of the Medicaid-eligible population living in states with high vs. low prevalence of screening participation for each organ site, stratified by whether the state was expanding Medicaid. We describe the publicly available data resources below to conduct this descriptive ecologic study.

Newly Medicaid-eligible population

Population estimates of men and women newly eligible for Medicaid and aged 18-64 years with incomes up to 138% FPL for all 50 states and the District of Columbia were calculated by the Office of the Assistant Secretary for Planning and Evaluation of the U. S. Department of Health and Human Services derived from the 2011 American Community Survey Public Use Microdata sample.[13] Population estimates were restricted to those for whom cancer screening is recommended based on the most recent USPSTF guidelines: breast cancer screening for women aged 50-64 years;[11] cervical cancer screening for women aged 21-64 years;[10] and colorectal cancer screening for men and women aged 50-64 years.[12] While recommended for cancer screening, we did not include individuals ≥65 years of age because most are covered by Medicare. All 50 states plus the District of Columbia were grouped by Medicaid expansion status based on states' reporting to the Centers for Medicaid and Medicare Services, as of August 28, 2014.[5]

Cancer screening rates

We used state population-level measures of cancer screening from the 2012 Behavioral Risk Factor Surveillance Survey (BRFSS), conducted by the Centers for Disease Control and Prevention.[14] As the world's largest ongoing telephone survey, BRFSS randomly selects

individuals in households for interviews and weights the responses to represent the U.S. population.[15] Respondents' self-reported receipt of cancer screening is based on: 1) a mammogram within the past two years for breast cancer screening;[16] 2) a Pap test within the past three years for cervical cancer screening;[17] and 3) an FOBT within one year, flexible sigmoidoscopy within five years, or colonoscopy within 10 years for colorectal cancer screening. For each state, we calculated the proportion of respondents who did not report recent screening as defined above for breast, cervical, and colorectal cancer. For each organ site, all states and the District of Columbia were ranked by the proportion of the state without recent screening, and then dichotomized at the median ranking into low and high categories to describe differences in the populations. Range values for the proportion of the population without cancer screening for low and high categories were: 1) breast cancer: 12.9%-23.4% (low) and 23.6%-34.6% (high); 2) cervical cancer: 17.8-22.1% (low) and 22.7%-31.5% (high); and colorectal: 23.7-34.1% (low) and 34.6-44.3% (high).

Analysis

We summed the estimated number of men and women newly eligible for Medicaid by state expansion status and categorization as a state with a high or low proportion without recent cancer screening.[18] We did not conduct statistical testing as the data are ecologic and used for descriptive analysis rather than hypothesis testing.

Results

Breast cancer

Across the United States, an estimated 1.9 million women aged 50-64 years were eligible for Medicaid expansion, and 50% lived in states where Medicaid was expanded. In 2012, states'

proportions of women without recent breast cancer screening were 12.9%-34.6%, with a national average of 23.0%.[16] Among the nearly 951,230 newly eligible women in Medicaid expansion states, 31.2% resided in states with the highest proportion without recent breast cancer screening, similar to the 38.5% of the approximately 945,534 newly Medicaid-eligible women residing in non-expanding states (Figure 1).

Cervical Cancer

More than 8.0 million women aged 21-64 years were estimated to be eligible for Medicaid expansion, with 48% of women living in states where Medicaid was expanded. In 2012, states' proportions of women without recent cervical cancer screening ranged from 17.8%-31.5%, with a national average of 22.0%.[17] Among the nearly 3.9 million newly eligible women residing in Medicaid expansion states, 36.1% resided in states with the highest proportion without recent cervical cancer screening; in contrast, for the more than 4.2 million women newly eligible for Medicaid residing in non-expanding states, 60.7% resided in states with the highest proportion without recent cervical cancer screening (Figure 2).

Colorectal Cancer

Approximately 3.7 million men and women aged 50-64 years were estimated to be eligible for Medicaid expansion, with 50% living in states where Medicaid was expanded. In 2012, states' proportions of men and women without recent colorectal cancer screening ranged from 23.7-44.3%, with a national average of 34.9%. Among the nearly 1.9 million newly eligible men and women residing in Medicaid expansion states, 40.8% resided in states with the highest proportion without recent colorectal cancer screening; in contrast, for the more than more than 1.8 million men and women newly eligible for Medicaid residing in non-expanding states 75.7% resided in states with the highest proportion without recent colorectal cancer screening (Figure 3).

DISCUSSION

Our results indicate that, in general, states that expanded Medicaid had lower proportions of the population without recent breast, cervical, and colorectal cancer screening. However, among states not expanding Medicaid, higher proportions of women and men who would qualify reside in states with higher population rates without recent screening, in particular for cervical and colorectal cancers. The cancer disparities in cancer screening will likely widen in coming years among states that have and have not expanded Medicaid.

Analyzing the effect of changes in health coverage is complex and full analysis will include factors such as enrollment rates and future state decisions about Medicaid expansion. Nonetheless, from our results, we expect that Medicaid expansion decisions will directly affect overall population health, specifically, that a state's decision to not expand eligibility will adversely affect the health of its population. Screening for breast, cervical, and colorectal cancers effectively reduces cancer mortality[19-21] and is cost-effective. [22-24] While Medicaid expansion alleviates the cost barriers to cancer screening and the evaluation and treatment of any abnormal results, it does not directly address other potential barriers such as inadequate screening capacity, location of services, or language. States that expanded Medicaid have a remarkable opportunity to increase access to cancer screening services. A burden to Medicaid expansion is the impact on the state budget for expansion when the current FPL is well-below 138%. The Kaiser Family Foundation analysis suggests that overall states costs for Medicaid expansion would be modest compared to current Medicaid spending and relative to increases in federal funds.[25]

The Oregon Medicaid experiment offers a glimpse into cancer screening use in a population with new access to public healthcare.[26] In 2008, Oregon expanded Medicaid access, but had insufficient funding to cover all eligible individuals, primarily low-income uninsured adults. Therefore, Oregon held a lottery among eligible candidates. In evaluating the natural experiment of those who gained Medicaid insurance compared to those who did not, Baicker et al[26] found significant increases in breast (29.7% increase in proportion screened) and cervical cancer screening (14.4% increase in proportion screened), but no significant increases in colorectal cancer screening with either FOBT (p=0.82) or colonoscopy (p=0.33). This finding suggests that Medicaid expanding states will see larger changes in women's health preventive services for breast and cervical cancer screening compared with colorectal cancer screening.

A comparison of Arkansas (expanded Medicaid) and Oklahoma (did not expand Medicaid) could illustrate the potential for improvement in cancer screening. Both states have similarly sized Medicaid-eligible populations and are in the category with the highest proportion of the population without cancer screening for all three cancer sites. Following Arkansas compared to Oklahoma could determine if overall cancer screening improves. Medicaid expansion in Arkansas offers not only preventive services including cancer screening, but also the follow-up care needed for diagnosis and treatment of any cancers detected. In contrast, uninsured, poor residents of Oklahoma will likely remain uninsured; they do not qualify for federal subsidies to purchase health insurance through the exchange within their state.[27]

There are some limitations to our ecologic assessment of cancer screening use prior to the ACA and Medicaid expansion in 2014. First, we estimated the population newly-eligible for Medicaid

based on 138% of FPL, but we were not unable to directly evaluate the proportion needing cancer screening. The newly-eligible Medicaid population might have received cancer screening through national programs, such as the National Breast and Cervical Cancer Early Detection Program by the Centers for Disease Control and Prevention,[28] which is offered to low-income, uninsured women. In 2012, the program screened 340,505 women for breast cancer and 273,533 women for cervical cancer nationally. Nonetheless, lack of insurance is negatively associated with cancer screening. According to the 2012 BRFSS data, only 36.1% of men and women lacking health insurance are up to date with colorectal cancer screening compared to 67.5% in the insured population,[29] with differences for breast[30] and cervical cancer screening.[31] Finally, our descriptive evaluation provides only population-level assessments, and more robust analyses could evaluate other potential confounders

A daunting challenge is to provide timely and effective cancer services to low-income, uninsured people in states that did not expand Medicaid. The continued funding of safety net institutions for low-income and uninsured Americans will be necessary to fill the gap in cancer services serving these communities.

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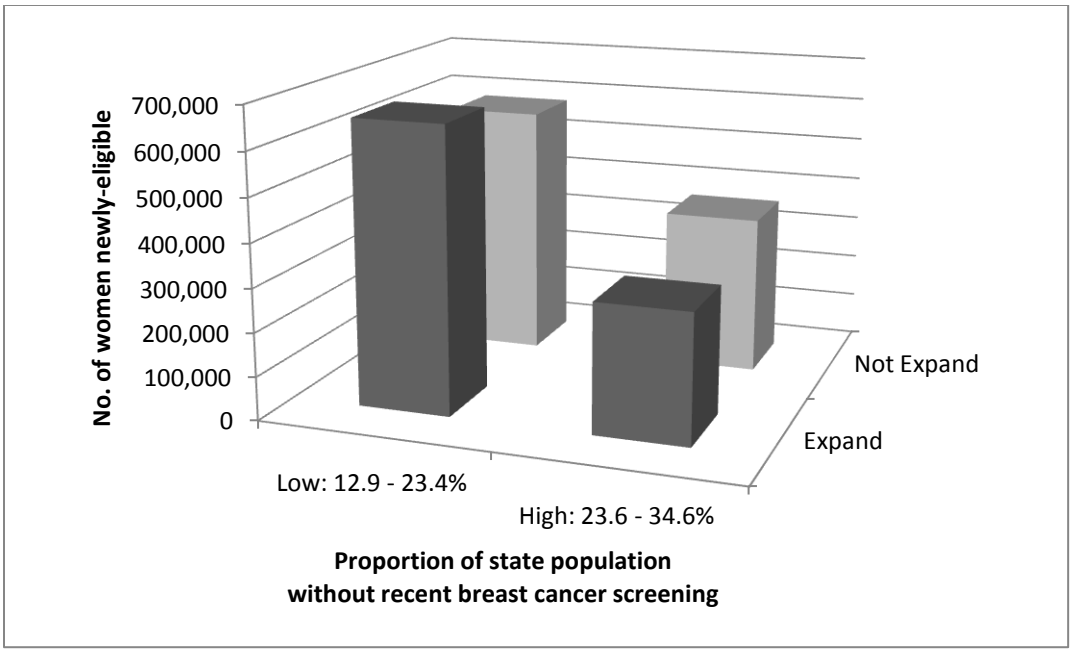
FIGURE 1. By states' decision to expand Medicaid, the estimated number of women aged 50-64 years who are newly-eligible for Medicaid in 2014 grouped by low and high proportions without recent breast cancer screening.

FIGURE 2. By states' decision to expand Medicaid, the estimated number of women aged 21-64 years who are newly-eligible for Medicaid in 2014 grouped by low and high proportions without recent cervical cancer screening.

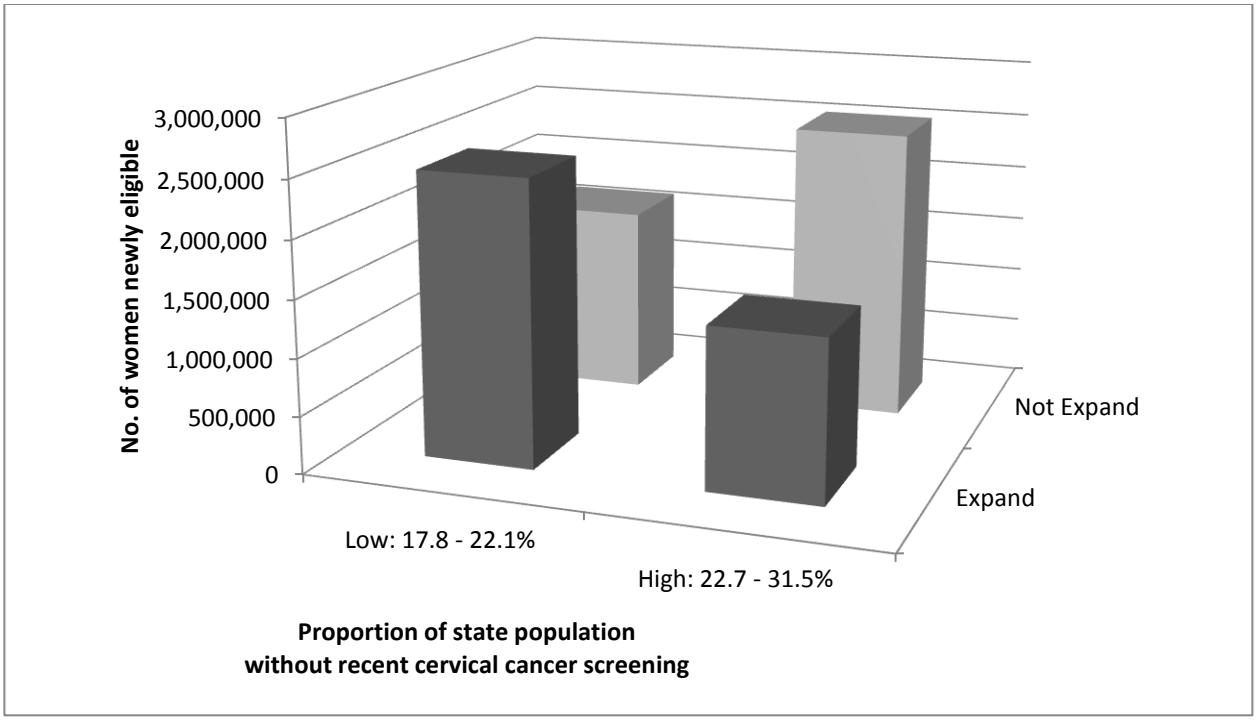
FIGURE 3. By states' decision to expand Medicaid, the estimated number of men and women aged 50-64 years who are newly-eligible for Medicaid in 2014 grouped by low and high proportions without recent colorectal cancer screening.

Figure 1



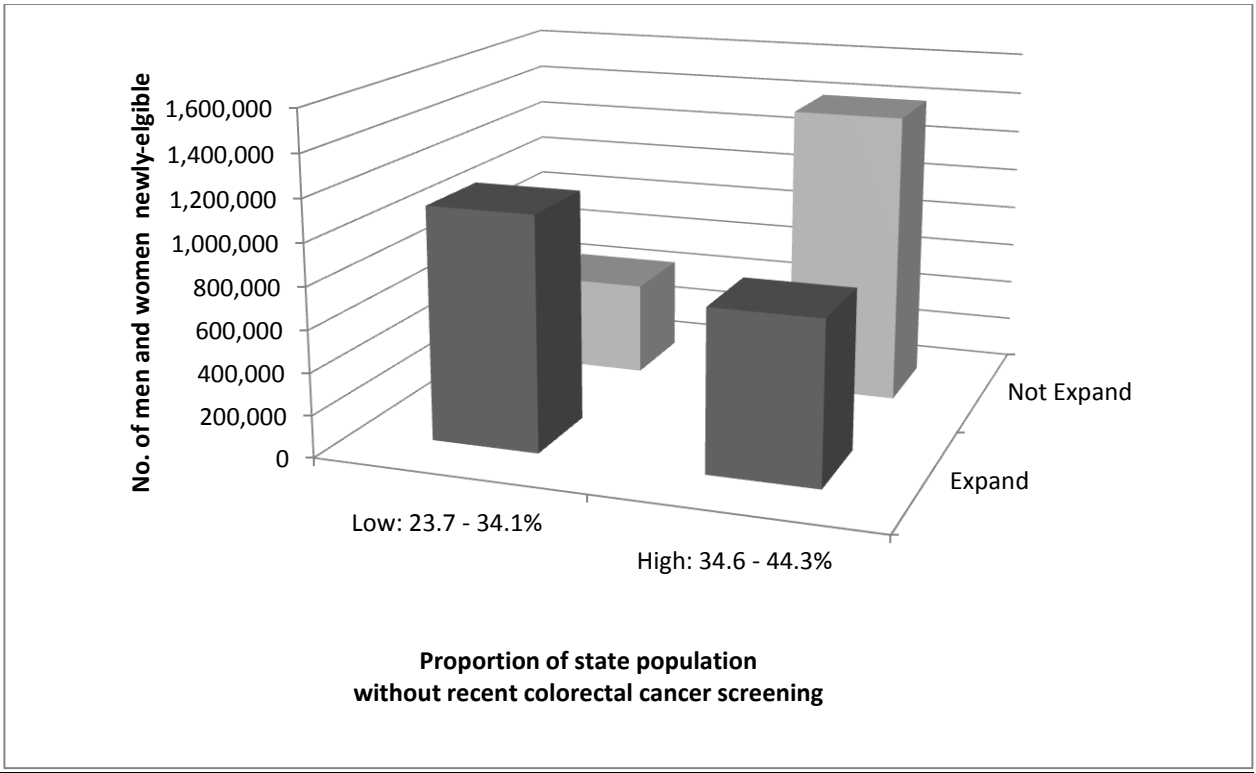
	Expand	Not Expand
Low: 12.9-23.4%	653,928 (68.7%)	581,509 (61.5%)
High: 23.6-34.6%	297,302 (31.2%)	364,025 (38.5%)
Total	951,230	945,534

Figure 2



	Expand	Not Expand
Low: 17.8-22.1%	2,487,079 (63.9%)	1,651,477 (39.3%)
High: 22.7-31.5%	1,403,401 (36.1%)	2,549,242 (60.7%)
Total	3,890,480	4,200,719

Figure 3



	Expand	Not Expand
Low: 23.7-34.1%	1,114,516 (59.2%)	449, 817 (24.3%)
High: 34.6-44.3%	769,495 (40.8%)	1,401,098 (75.7%)
Total	1,884,011	1,850,915