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Expansion coverage and preferential utilization of cancer surgery among racial and ethnic minorities and low-income groups

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ABSTRACT

Background: The Affordable Care Act Medicaid expansion demonstrated inconsistent effects on cancer surgery utilization rates among racial and ethnic minorities and low-income Americans. This quasi-experimental study examines whether Medicaid expansion differentially increased the utilization of surgical cancer care for low-income groups and racial minorities in states that expanded their Medicaid programs.
Methods: A cohort of more than 81,000 patients 18 to 64 years of age who underwent cancer surgery were examined in Medicaid expansion versus nonexpansion states. This evaluation utilized merged data from the State Inpatient Database, American Hospital Association, and the Area Resource File for the years 2012 to 2015. Poisson interrupted time series analysis were performed to examine the impact of Medicaid expansion on the utilization of cancer surgery for the uninsured overall, low-income persons, and racial minorities, adjusting for age, sex, Elixhauser comorbidity score, population-level characteristics, and provider-level characteristics.
Results: For persons from low-income ZIP codes, Medicaid expansion was associated with an immediate 24% increase in utilization ($P = .002$) relative to no significant change in nonexpansion states. No significant trends, however, were observed after the Affordable Care Act expansion for racial and ethnic minorities in expansion versus nonexpansion states.
Conclusion: Medicaid expansion was associated with greater utilization of cancer surgery by low-income Americans but provided no preferential effects for racial minorities in expansion states. Beyond the availability of coverage, these findings highlight the need for additional investigation to uncover other factors that contribute to race-ethnic disparities in surgical cancer care.

Introduction

The Affordable Care Act (ACA) has provided an estimated 20 million Americans with insurance coverage, largely attributable to the expansion of Medicaid eligibility.[1,2] Although evaluations have shown that the ACA Medicaid expansion is associated with increased access to cancer surgery, they have yielded inconsistent effects among racial minorities.[3–6] Within the realm of surgical cancer care, it remains unknown how ACA Medicaid expansion has affected minorities and low-income populations. As a result, Medicaid expansion remains an area of debate because of uncertainties related to access to quality of care, improvement in healthcare outcomes, and cost.

Cancer surgery is complex because of its integration with other intense therapies, high costs, and centralized delivery. After the pre-ACA Medicaid expansions in New York (2001) and Massachusetts (2006), Medicaid beneficiaries experienced greater access to and utilization of surgical cancer care.[3,7] These issues are further complicated among racial and ethnic minorities and low-income populations, who have experienced disparities in access to care and cancer surgery outcomes within the field of surgical

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oncology.[8–10] Furthermore, these populations are known to have multifaceted medical problems and live in challenging social conditions, both of which serve as barriers to the receipt of guideline-recommended care. Despite these findings, the ACA Medicaid expansion's impact on utilization rates of inpatient surgical cancer care among racial subgroups and the poor while accounting for relevant hospital-level, provider-level, and county-level factors remains unevaluated.

Considering the limited evidence to date, generating empirical results on the impact of the ACA's Medicaid expansion on access to surgical cancer care among racial and ethnic minorities and low-income persons is important for evaluating the impact of this policy. Using a quasi-experimental design, we investigated whether Medicaid expansion increased the utilization of surgical cancer care for low-income groups and racial minorities within Medicaid-expansion states.

Methods

Data sources

The cohort for this study consisted of 81,628 patients who underwent cancer surgery. Their information was derived from the State Inpatient Database (SID) provided by the Health Care Utilization Project (HCUP), merged with hospital-level information from the American Hospital Association Yearly Survey, and with the Area Resource Health File county-level data. Both hospital and regional factors were used to control for alternate sources of variation. Four states were included in our analysis, two states that adopted Medicaid expansion—Maryland and Kentucky—and two nonexpansion states—Florida and North Carolina. Medicaid expansion was put into effect on January 1, 2014, and our evaluation examined data from both pre-ACA periods (Quarter [Q]1 2012–Q4 2013) and post-ACA periods (Q1 2014–Q3 2015). Because of spurious trends in procedure volumes and utilization correlating to the change from International Classification of Diseases (ICD) 9 to ICD10 in October 2015, data from the final quarter of 2015 were omitted from the analysis.[11] We focused our analysis on nonelderly adults (aged 18–64) to target the age demographics most likely to be affected by the ACA's Medicaid expansion.

Our state selection is based on three criteria:

- Adequate cohort size and power,
- Comparable demographic composition between expansion and nonexpansion states, and
- Regional proximity between states to control for geographic variability.

Kentucky, the most populous southern expansion state in the United States, was matched to North Carolina, a neighboring non-expansion state with a large and heterogeneous population. Maryland, an East Coast expansion state with significant urban and racially diverse patient populations, balanced Kentucky's rural and predominantly white population. Florida was selected because of its location as a nonexpansion state in the South on the East Coast with a significantly diverse makeup.

Procedure type

Patients who received colorectal (ICD9: 45.7–45.8, 17.3, 48.4–48.6), esophagogastric (ICD9: 42.40–42.42, 43.5–43.7, 43.9), hepatobiliary (ICD9: 50.3–50.4), pancreatic (ICD9: 52.5–52.7), lung (ICD9: 32.3–32.5), and urologic (ICD9: 55.4–55.5, 57.7) cancer surgeries were eligible for inclusion in the analysis. Because the SID only captures inpatient information, cancers that are routinely treated in an outpatient surgery setting, such as breast cancer resections, were excluded from the study.

Independent variables

Quarter of discharge and year of admission were included to represent the time of the surgery. Patients were divided by admission dates before and after ACA Medicaid expansion.

Our analysis also encompassed payer type, including Medicaid, and uninsured. The uninsured population included both self-pay and no-charge groups as listed in the SID. Our study was limited to nonelderly adults (18–64 years of age) and excluded both Medicare beneficiaries and patients enrolled in "other" insurance programs in SID, such as non-Medicaid federal insurance programs.

Outcome variables

Consistent with our published research, "access to care" in this study is defined in accordance with the National Healthcare Quality Report as health insurance coverage and successful receipt of care.[7,12] Utilization is related to access—with greater access, the overall number of procedures is expected to increase. Therefore, the total number of procedures was used as the outcome of interest, measuring change in utilization of surgical cancer care compared across racial and income strata. Utilization counts were tabulated within income and race groups in each quarter-year time, with Medicaid expansion states grouped together and nonexpansion states grouped together. The rationale behind measuring the impact of ACA's Medicaid expansion on within-strata utilization of cancer surgeries was to examine the relationship between expansion of healthcare coverage available to vulnerable populations with increased utilization of healthcare relative to trends in these populations in nonexpansion states.[3,12] This examination will elucidate whether disparate or preferential changes in utilization of cancer surgeries in low-income populations and racial minorities coincided with Medicaid expansion.

Statistical methods

The methodology utilized was similar to the ACA Medicaid-expansion evaluations done by the MedStar-Georgetown Surgical Outcomes Research Center (published elsewhere).[13,14]

Poisson interrupted time series (ITS) analysis was used to evaluate the change in utilization associated with ACA Medicaid expansion. ITS models are well suited to evaluate unblinded, unrandomized, policy interventions like the ACA Medicaid expansion, by framing it in a quasi-experimental analysis. By selecting control states in geographic proximity to the intervention states, secular trends that affect utilization are captured by main effects, and differences between the intervention states and the control states—unrelated to the expansion—are controlled for with interactions, thereby isolating the expansion effect in higher-order interactions. Patients were tabulated by quarter and year of discharge, ACA Medicaid-expansion status, and either race or ethnicity, insurance, or income, calculating the per-quarter utilization by strata. For the purposes of the insurance interaction model, Medicaid and uninsured patients were considered part of the same strata because utilization rates within these strata are strongly linked to the underlying changes in the Medicaid and uninsured population as a result of expansion.

To adjust for patient-level and county-level covariates in the Poisson ITS, means were estimated at each time point within state, race, income, and insurance strata. Each model included a three-level interaction between linear time, an ACA Medicaid-expansion indicator, and either race, income, or insurance

indicators. Income was defined as the quartile of median income for the ZIP codes by state and by year as provided by Health Care Utilization Project's SID. The break point was set at Q1 2014, when ACA was put into effect. A post-2014 indicator was used to detect an immediate level change in utilization (change in intercept) and a linear spline was used to estimate a change in the marginal quarterly growth or decay in utilization (change in slope). Interactions with ACA Medicaid expansion and the race, income, and insurance indicators were used to test whether disparities in resection utilization improved as a result of the expansion, with the R package *multcomp* (The R Project for Statistical Computing) being used to estimate combined effects with confidence intervals for all the interactions. In addition, because privately insured patients are not directly impacted by Medicaid expansion, as a sensitivity analysis, privately insured patients were excluded from the sample. By doing this, the expansion's effect on racial and income utilization disparities estimated in an ITS model can be confirmed within the Medicaid and uninsured populations.

Data manipulation was done in SAS 9.4 (SAS Institute, Cary, NC),[15] and data analysis was done in R 3.4[16] using the ggplot2[17]; multcomp[18]; RColorBrewer[17]; segmented[19,20]; R2wd[21]; and Zoo[22] packages.

Results

Descriptive statistics in ACA Medicaid expansion versus nonexpansion states

As detailed in Table I, most patients receiving surgery were privately insured at the time of operation in both expansion and nonexpansion states (76.9% and 75.4%, respectively). Expansion states had higher proportions of Medicaid beneficiaries (18% to 14.5%) and lower proportions of uninsured patients relative to nonexpansion states (5.1% to 10.1%, $P < .001$). Expansion states also tended to have patients with higher morbidity scores (mean Elixhauser score 1.88 versus 1.70, $P < .001$) versus nonexpansion states. Expansion states also had more providers per population relative to the patients' ZIP code of residence (0.96 per 1,000 versus 0.89 per 1,000, $P < .001$).

Insurance coverage in expansion versus nonexpansion states overall, by race and income

As presented in Table II, overall, Medicaid enrollees as a percentage of cancer surgery recipients in ACA-expansion states nearly doubled from 13.2% in 2012 to 24.1% in 2015, and enrollees in nonexpansion states decreased from 14.9% to 13.4% ($P < .001$).

Of note, the distribution of cancer surgery utilization by race-ethnicity showed a minimal but statistically significant effect. For example, the proportions of white patients undergoing cancer surgeries decreased from 74.6% to 73.2%, and the proportion for black and Hispanic patients grew from 14% to 14.3% and 8.2% to 9.3%, respectively, $P = .033$). In expansion states, the proportion of racial minorities showed no substantial trend from 2012 to 2014. In nonexpansion states, the Hispanic proportion steadily increased each year from 10.7% to 12.1% ($P = .019$), and the proportion of black patients held level at around 14%.

Regarding income strata, the proportion of cancer surgery was uniformly distributed, with around 25% of cancer surgeries coming from each income quartile. Within expansion states, there was a minor and insignificant trend in which the proportion of patients from lower-income areas among cancer surgery recipients increased from 25.4% to 26.2%, and the proportion from high income areas decreased from 25.9% to 24.4% ($P = .808$).

Utilization of cancer surgery by insurance type

The impact of Medicaid expansion on cancer surgery utilization is presented in Fig 1, with the combined effects estimates for incidence level and marginal change. Before ACA enactment, only the privately insured population in Medicaid expansion states saw a significant decreasing trend (incidence rate ratio [IRR] 0.985, 95% CI

Table I
Descriptive statistics by ACA Medicaid expansion versus nonexpansion status, 2012 to Q3 2015 ($n = 81,628$)

Variable	Total	Nonexpansion states n = 58,514	Expansion states n = 23,114	*P* value
Age mean, y (SD)	51.14 (10.34)	51.15 (10.35)	51.13 (10.32)	.774
Female n (%) (missing = 90)				.361
N	41,846 (51.3)	30,043 (51.4)	11,803 (51.1)	
Y	39,692 (48.7)	28,381 (48.6)	11,311 (48.9)	
Race n (%) (missing = 875)				< .001
White	59,541 (73.7)	4,1677 (71.8)	17,864 (78.6)	
Black	11,539 (14.3)	8,011 (13.8)	3,528 (15.5)	
Hispanic	7,154 (8.9)	6,600 (11.4)	554 (2.4)	
Asian	852 (1.1)	511 (0.9)	341 (1.5)	
Native American	259 (0.3)	191 (0.3)	68 (0.3)	
Other	1,408 (1.7)	1,041 (1.8)	367 (1.6)	
Insurance type n (%)				< .001
Medicaid	12,641 (15.5)	8,491 (14.5)	4,150 (18)	
Private	61,910 (75.8)	44,125 (75.4)	17,785 (76.9)	
Uninsured	7,077 (8.7)	5,898 (10.1)	1,179 (5.1)	
Length of stay, days, mean (SD)	12.8 (18.4)	14.95 (20.79)	7.34 (7.7)	< .001
Elixhauser score mean (SD)	1.75 (1.6)	1.70 (1.58)	1.88 (1.62)	< .001
Number of procedures mean (SD)	3.51 (2.98)	3.5 (2.97)	3.55 (3.01)	.044
Procedure n (%)				< .001
Colorectal	53,517 (65.6)	38,922 (66.5)	14,595 (63.1)	
Esophagogastric	3,083 (3.8)	2,216 (3.8)	867 (3.8)	
Urologic	14,118 (17.3)	10,038 (17.2)	4,080 (17.7)	
Hepatobiliary	4,403 (5.4)	2,838 (4.9)	1,565 (6.8)	
Lung	6,507 (8)	4,500 (7.7)	2,007 (8.7)	
Census population mean (SD) (missing = 86)	733,285.88 (624,513.55)	831,749.85 (690,865.46)	484,356.75 (287,921.72)	< .001
% white in county mean (SD) (missing = 86)	68.53 (15.51)	70.25 (10.82)	64.18 (22.94)	< .001
PCP/1,000 mean (SD) (missing = 86)	0.91 (0.28)	0.89 (0.29)	0.96 (0.27)	< .001

SD, standard deviation.

Table II
Distributions of insurance within expansion versus nonexpansion states by year

Variable	Total	2012	2013	2014	2014	*P* value
Insurance n (%)						
Overall		n = 22,420	n = 21,316	n = 21,793	n = 16,099	< .001
Medicaid	12,641 (15.5)	3,237 (14.4)	3,196 (15)	3,553 (16.3)	2,655 (16.5)	
Private	61,910 (75.8)	16,895 (75.4)	15,900 (74.6)	16,657 (76.4)	12,458 (77.4)	
Uninsured	7,077 (8.7)	2,288 (10.2)	2,220 (10.4)	1,583 (7.3)	986 (6.1)	
ACA expansion states		n = 6,396	n = 5,895	n = 6,222	n = 4,601	< .001
Medicaid	4,150 (18)	847 (13.2)	781 (13.2)	1,412 (22.7)	1,110 (24.1)	
Private	17,785 (76.9)	5,016 (78.4)	4,650 (78.9)	4,684 (75.3)	3,435 (74.7)	
Uninsured	1,179 (5.1)	533 (8.3)	464 (7.9)	126 (2)	56 (1.2)	
Nonexpansion states		n = 16024	n = 15421	n = 15571	n = 11498	< .001
Medicaid	8,491 (14.5)	2,390 (14.9)	2,415 (15.7)	2,141 (13.7)	1,545 (13.4)	
Private	44,125 (75.4)	11,879 (74.1)	11,250 (73)	11,973 (76.9)	9,023 (78.5)	
Uninsured	5,898 (10.1)	1,755 (11)	1,756 (11.4)	1,457 (9.4)	930 (8.1)	
Race n (%)						
Overall		n = 22,420	n = 21,316	n = 21,793	n = 16,099	.033
White	59,541 (73.7)	16,627 (74.6)	15,475 (73.4)	15,738 (73.5)	11,701 (73.2)	
Black	11,539 (14.3)	3,116 (14)	3,065 (14.5)	3,078 (14.4)	2,280 (14.3)	
Hispanic	7,154 (8.9)	1,832 (8.2)	1,906 (9)	1,929 (9)	1,487 (9.3)	
ACA expansion states		n = 6,396	n = 5,895	n = 6,222	n = 4,601	.001
White	17,864 (78.6)	5,030 (78.7)	4,516 (78)	4,701 (78.9)	3,617 (78.9)	
Black	3,528 (15.5)	977 (15.3)	919 (15.9)	930 (15.6)	702 (15.3)	
Hispanic	554 (2.4)	129 (2)	175 (3)	140 (2.3)	110 (2.4)	
Nonexpansion states		n = 16,024	n = 15,421	n = 15,571	n = 11,498	.019
White	41,677 (71.8)	11,597 (73)	10,959 (71.7)	11,037 (71.5)	8,084 (70.9)	
Black	8,011 (13.8)	2,139 (13.5)	2,146 (14)	2,148 (13.9)	1,578 (13.8)	
Hispanic	6,600 (11.4)	1,703 (10.7)	1,731 (11.3)	1,789 (11.6)	1,377 (12.1)	
Income n (%)						
Overall		n = 22,420	n = 21,316	n = 21,793	n = 16,099	.010
1st quartile (lowest)	19,594 (24.5)	5,288 (24.1)	5,125 (24.7)	5,202 (24.3)	3,979 (25.2)	
4th quartile (highest)	20,413 (25.6)	5,622 (25.6)	5,455 (26.3)	5,387 (25.2)	3,949 (25)	
ACA expansion states		n = 6,396	n = 5895	n = 6,222	n = 4,601	.808
1st quartile (lowest)	5,854 (25.7)	1,595 (25.4)	1,482 (25.5)	1,589 (25.9)	1,188 (26.2)	
4th quartile (lowest)	5,767 (25.3)	1,626 (25.9)	1,498 (25.8)	1,533 (25)	1,110 (24.4)	
Nonexpansion states		n = 16,024	n = 15,421	n = 15,571	n = 11,498	.004
1st quartile (lowest)	13,740 (24.1)	3,693 (23.6)	3,643 (24.4)	3,613 (23.7)	2,791 (24.8)	
4th quartile (lowest)	14,646 (25.6)	3,996 (25.5)	3,957 (26.5)	3,854 (25.3)	2,839 (25.3)	

0.976–0.995). Medicaid and uninsured patients in expansion states had stable utilization trends before 2014, and all patients in nonexpansion states had a flat utilization trend before 2014. After 2014, in expansion states, the Medicaid insured and uninsured populations experienced an immediate increase in utilization of approximately 10.8% (IRR 1.108, 95% CI 0.981–1.252), and the Medicaid and uninsured populations in nonexpansion states saw an 9.5% decrease in utilization (IRR 0.905, 95% CI 0.842–0.973). In addition, the utilization rate for cancer surgery in nonprivately insured populations incrementally fell in nonexpansion states by approximately 2.4% per quarter (IRR 0.976, 95% CI 0.962–0.990). In expansion states, utilization remained stable (IRR 1.006, 95% CI 0.986–1.027 [$P = .08$]).

Sensitivity analysis, after excluding privately insured patients, confirms that in expansion states, the Medicaid and uninsured patient population increased utilization substantially at 2014 by 20% relative to nonexpansion states (IRR 1.201, 95% CI 1.027–1.405). Although the population of Medicaid and uninsured patients increased, utilization of surgical cancer care did not significantly change relative to nonexpansion states (IRR 1.015, 95% CI 0.971–1.060).

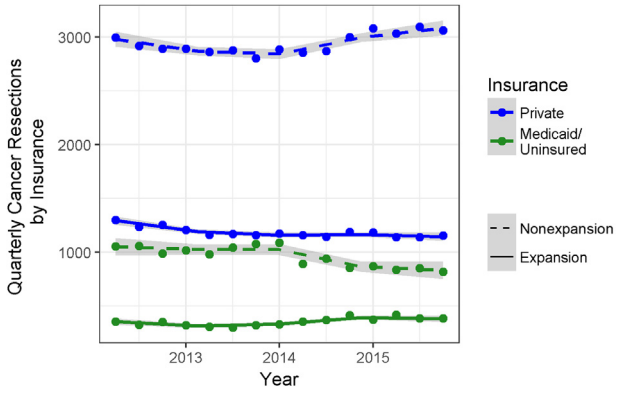

Fig 1. Cancer surgery utilization by insurance type in expansion versus nonexpansion states.

Utilization of cancer surgery by income

As shown in Fig 2, there was a significant change in utilization level for low-income patients in expansion states compared with the higher-income population. The low-income population had a utilization increase of 24% (95%CI 1.079–1.429) relative to low-income persons in nonexpansion states, whereas the highest-income populations in ACA-expansion states increased only by 3.1%. Furthermore, there was no marginal change in utilization by income group associated with ACA Medicaid expansion. In expansion states, utilization of cancer surgery among patients from the lowest-income areas was decreasing by 2.2% compared with the quarter before expansion (IRR 0.978, 95% CI 0.960–0.955). After expansion, this population saw no further decline in utilization (IRR 0.994, 95%CI 0.974–1.014). Meanwhile in nonexpansion states, utilization in the population from low-income areas was stable before 2014 (IRR 1.003, 0.992–1.014) and increased after 2014 (IRR 1.014, 95% CI 1.001–1.027).

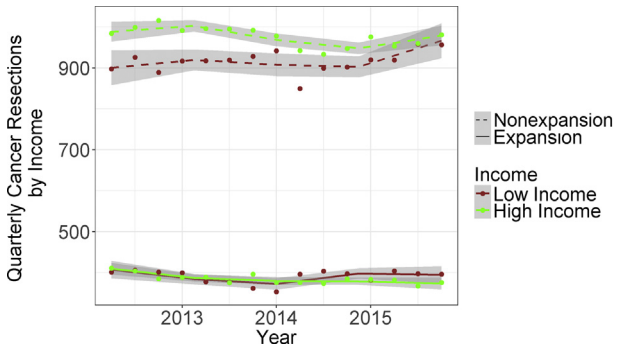

Fig 2. Cancer surgery utilization by income in expansion versus nonexpansion states.

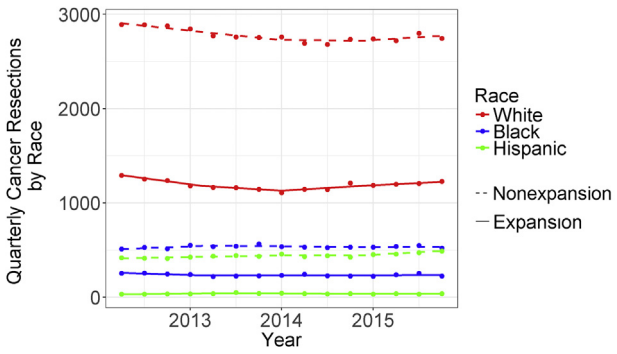

Fig 3. Cancer surgery utilization by race in expansion versus nonexpansion states.

When running the sensitivity model with only Medicaid and uninsured patients, relative to nonexpansion states, all patients in expansion states saw a statistically significant increase in utilization (IRR 1.306, $P = .003$). Although patients from higher-income areas in expansion states experienced a steady nonsignificant increase (IRR 0.913, $P = .573$). Furthermore, in expansion states, patients from higher-income areas experienced a steady but statistically insignificant increase in utilization compared with patients from lower-income areas (IRR 1.062, $P = .087$).

Cancer surgery utilization by race

As presented in Fig 3, there was no statistically significant effect of ACA's Medicaid expansion on racial disparities in cancer surgery utilization. In expansion states, although utilization among the white population was much higher than that of the black population, the rate of change was the same before (IRR 0.982 for white, 0.987 for black, $P = .294$) and after Medicaid expansion (IRR 1.014 for white, 1.005 for black, $P = .684$. There was also no statistically significant change in the intercept for any racial strata in expansion states. In nonexpansion states, white persons saw a small decrease in utilization before 2014 (IRR 0.99, 95% CI 0.940–0.996). After 2014 the white and black population increased utilization at statistically similar rates. Meanwhile, the Hispanic population saw a consistent 1.5%–2% growth in utilization in nonexpansion states during the study period. Our sensitivity analysis indicated that there were no statistically significant changes in racial disparities in utilization within Medicaid and uninsured patients as a result of the expansion.

Discussion

In this quasi-experimental investigation, Medicaid-expansion states experienced a dramatic reduction in uninsured rates for surgical cancer care relative to nonexpansion states. Within the context of these increased insurance rates in expansion states, individuals from low-income areas benefited from increased utilization of cancer surgery to a greater degree than those in nonexpansion states. Conversely, across both expansion and nonexpansion states, there was no preferential increase in the utilization of surgical cancer care among racial and ethnic minorities.

The results of this evaluation demonstrated that the ACA Medicaid expansion was associated with an increased Medicaid enrollment and a decreased uninsured rate among patients receiving surgical cancer care. After Medicaid expansion, the share of Medicaid and uninsured patients receiving surgical cancer care in expansion states increased by 11% compared with a 9% decrease in nonexpansion states ($P < .01$). Pre-ACA expansion studies in Oregon, Massachusetts, and New York align with these findings, showing that Medicaid expansion is associated with a 15% increase in Medicaid enrollment.[23] This broadened Medicaid enrollment has yielded benefits in access to preventive care. In the 2 years after ACA expansion, healthcare use and access to preventive care have markedly increased for low-income adults.[24–28] In the context of cancer surgery, the pre-ACA expansion in Massachusetts led to a 44% greater utilization of surgical cancer care for patients with colorectal cancer.[29] Similarly, New York's 2001 expansion led to a 4.7%–7.2% increase in access to subspecialty surgical care, including a 6.2% increase in access to surgical cancer care.[7,30,31] This study's findings reinforce results of the ACA Medicaid expansion and provide objective evidence that Medicaid expansion is associated with greater utilization of surgical cancer care among Medicaid beneficiaries in expansion versus nonexpansion states.[6]

Correspondingly, among low-income populations there was a 24% increase in the utilization of surgical cancer care in Medicaid expansion versus nonexpansion states; however, sensitivity analysis of Medicaid and uninsured groups found that, although utilization increased for both low and high, there was no statistical difference between these two groups. As a policy designed to improve insurance coverage among individuals with incomes up to 138% of the federal poverty level, the ACA was successful in improving access to surgical cancer care in the intended beneficiaries. These findings mirror the results of other ACA studies, which have near-universally found that low-income groups in Medicaid-expansion states experience decreased uninsured rates and increased insurance coverage relative to pre-expansion years and nonexpansion states. These results suggest that these increased insured rates correlate with increased utilization of surgical cancer care for low-income groups in expansion versus nonexpansion states.

In line with pre-ACA Medicaid-expansion studies that found no preferential reductions in disparities of health insurance coverage for black and Hispanic populations, the results of this investigation showed no significant benefits in utilization of cancer surgery for black or Hispanic groups relative to white patients in Medicaid-expansion versus nonexpansion states.[4,7] Evaluations into the uninsured status of various groups and stage of presentation have found that being nonwhite was a predictor for being uninsured versus having private non-Medicaid insurance coverage.[32] Uninsured status is a known predictor for later stage of diagnosis and is associated with poorer outcomes. Accordingly, it would be expected for these nonwhite groups to benefit from ACA Medicaid expansion. In a study of the year after expansion in 40 states, Medicaid expansion was associated with a reduction in existing disparities of uninsured rates among racial minorities.[33] Within the context of earlier studies that have found that nonwhites benefit in insurance coverage, these findings—that increased insurance coverage did not correlate to increase cancer surgery

utilization—lead to two potential explanations. First, longer periods of time may be needed to allow for systemic increases in access to screening and tertiary care after expanded insurance coverage. Second, there are factors beyond uninsured rates that may contribute to disparities in surgical cancer care utilization for blacks and Hispanics. These factors likely include patient-level factors, such as health literacy; provider-level factors like referral patterns; and societal-level factors, such as regional access to care. Collectively, these results underscore the need for future studies to investigate the impact of other determinants of surgical disparities among racial and ethnic minorities.

The current study has several limitations. Utilization of surgical cancer care was used as a proxy for access. Using the SID as the primary source of patient information, the cohort was limited to inpatient encounters. Patients were only identified if they were admitted for their cancer surgery. As a result, capturing all patients eligible for resection could be biased. To eliminate that bias, this study restricted the cohort only to those who had surgery. Another limitation is the use of the ZIP code, a highly variable measure in terms of geographic size and population, as a measure of high and low income. Despite these limitations, this study is one of the first multistate evaluations examining how ACA Medicaid expansion affected cancer surgery utilization among low-income groups and racial and ethnic minorities.

The findings of this evaluation show that, although low-income groups benefited from Medicaid expansion, this ACA policy provided no preferential increase in the utilization of surgical cancer care for black and Hispanic groups. ACA Medicaid expansion is a policy designed primarily to reduce uninsured rates, and thereby increase access to care for Americans. However, this evaluation underscores the inability of Medicaid expansion to address disparities in access to surgical cancer care among nonwhite racial groups and the need for innovative research to identify and address the individual, social, systemic, and societal factors driving these lingering disparities for vulnerable groups.

In conclusion, this multistate quasi-experimental study shows that low-income populations in Medicaid-expansion states experienced a significant increase in the utilization of inpatient cancer surgery. Of note, disparities persisted among racial and ethnic minorities in expansion states, highlighting the need for innovative policies to close these gaps. Additional research is needed to determine whether improved access to surgical cancer care for low-income Americans provides benefits in outcomes for these and other vulnerable groups.

Conflict of interest

The authors have indicated that they have no conflict of interest regarding the content of this article.

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