Changes in Colorectal Cancer Incidence Associated With Medicaid Expansion: An Analysis of the National Cancer Database

Rishabh Khatri MD[1], Frank Friedenberg MD MS[2]

[1]Temple University Hospital, Department of Medicine, Lewis Katz School of Medicine at Temple University, Philadelphia, PA
[2]Temple University Hospital, Department of Medicine, Section of Gastroenterology, Lewis Katz School of Medicine at Temple University, Philadelphia, PA

BACKGROUND

- Colorectal Cancers (CRCs) are the second most common cause of cancer deaths in the United States
- The Affordable Care Act (ACA), enacted in 2010, increased insurance coverage for states that expanded Medicaid, but its impact across the United States on CRC detection remains unclear

AIMS

- To investigate the changes in the frequency of and characteristics of colon cancer incidence before and after Medicaid expansion

METHODS

- The National Cancer Database (NCDB) is a hospital-based cancer registry that captures approximately 75% of diagnosed cancers in the U.S. and Puerto Rico
- We compared all adult cases of CRC in the NCDB using ICD-codes from pre-Medicaid expansion in 2006-2009 to the period after full state participation in 2015-2018
- Information on patient demographics (age, sex, race, insurance status, educational attainment, residential location, Charlson-Deyo Comorbidity Score (CDCS), staging at diagnosis) were queried
- United States census data from 2010 and 2020 were used to standardize CRC incidence per 100,000
- Chi-square and t-test analysis were performed using SPSS v.28

RESULTS

Table 1:

Factors		Pre-Expansion (2006-2009) n=266,109	Post-Expansion (2015-2018) n=303,550	p-value
Age (SD) y	-	67.13 (12.7)	65.55 (12.4)	p<0.001
Sex	Male	134,445 (50.5)	159,973 (52.7)	p<0.001
	Female	131,664 (49.5)	143,577 (47.3)	
Race	NWH	211,311 (79.4)	226,924 (74.8)	p<0.001
	NHB	30,526 (11.5)	37,611 (12.4)	
	Hispanic	12,799 (4.8)	21,018 (6.9)	
	Other	11,473 (4.3)	17,997 (5.9)	
Income	Less than $40,227	49,766 (19.6)	49,676 (19.1)	p<0.001
	$40,227 - $50,353	57,193 (22.5)	57,874 (22.3)	
	$50,354 - $63,332	59,329 (23.5)	60,291 (23.2)	
	$63,333 or more	87,568 (34.5)	92,041 (35.4)	
Percent Without High School Degree	17.6% or more	54,980 (21.6)	58,975 (22.6)	p<0.001
	10.9% - 17.5%	67,951 (26.7)	69,392 (26.6)	
	6.3% - 10.8%	71,875 (28.3)	71,563 (27.5)	
	Less than 6.3%	59,561 (23.4)	60,463 (23.2)	
Insurance	Private	103,997 (39.1)	119,317 (39.3)	p<0.001
	Medicaid	11,495 (4.3)	24,050 (8.0)	
	Medicare	141,713 (53.3)	150,794 (49.7)	
	Non-Insured	8,904 (3.3)	9,389 (3.0)	
Residence Location	Metropolitan	218,379 (84.6)	251,012 (84.6)	p<0.001
	Urban	34,764 (13.5)	40,309 (13.6)	
	Rural	5,062 (2.0)	5,248 (1.8)	
Treatment Facility	Community Cancer Program	25,022 (9.4)	26,467 (8.7)	p<0.001
	Comprehensive Community Cancer Program	114,751 (43.1)	123,506 (40.7)	
	Academic Program	69,335 (26.1)	91,285 (30.1)	
	Integrated Network Cancer Program	57,001 (21.4)	62,292 (20.5)	
Charlson-Deyo Score	0	186,579 (70.1)	217,758 (71.7)	p<0.001
	1	56,325 (21.2)	52,888 (17.4)	
	2	16,160 (6.1)	17,727 (5.8)	
	>3	7,045 (2.6)	15,177 (5.0)	
Stage at Diagnosis	0	18,376 (6.9)	14,210 (4.7)	p<0.001
	I	60,846 (22.9)	64,322 (22.2)	
	II	66,828 (25.1)	72,303 (23.8)	
	III	68,524 (25.8)	83,346 (27.5)	
	IV	51,535 (19.4)	69,369 (21.9)	

RESULTS

- The total incidence of CRC was 569,659 patients for the two study periods [Table 1]
- With the ACA, the proportion of uninsured dropped from only 3.3% to 3.0%
- There were 86.4 cases per 100,000 diagnosed pre-Medicaid expansion and 92.5 cases per 100,000 post-Medicaid expansion
- Patients diagnosed after expansion were younger 65.6±12.4 y vs 67.1±12.7 y
- In the post-Medicaid expansion period, there was an increase in the incidence of CRC in males (52.7% vs 50.5%), Non-Hispanic Black (12.4% vs 11.5%) and Hispanic patients (6.9% vs 4.8%), patients with lower educational attainment (22.6% vs 21.6%), and patients with greater comorbidities via CDCS (5.0% vs 2.9%)
- Though there were statistically significant differences in income and residential location, these findings were not clinically significant

CONCLUSIONS

- Medicaid expansion was associated with an increase in the incidence of CRC diagnosis despite a very modest drop in the proportion uninsured
- The age of diagnosis decreased post-Medicaid expansion. There was also an increase in the proportion of males, minorities, patients with lower educational attainment, and those with a greater number of comorbid conditions
- CRC was not found at an earlier stage of diagnosis despite an increase in the access to medical care
- These findings highlight the impact of expanding health insurance coverage for all