

Exploring Disparities in Colorectal Cancer: Civilian versus Inmate Access to Care

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Introduction

Timely diagnosis and treatment of colorectal cancer (CRC) is essential for overall survival, though prompt access to care remains a significant barrier for racially and socioeconomically disadvantaged groups in the U.S.. These factors compound challenges faced by incarcerated individuals, a particularly vulnerable patient population.

Through an intersectional approach, we aimed to objectively quantify access disparities between incarcerated and non-incarcerated patients with CRC.

Methods

Retrospective review was performed of patients with biopsy proven CRC, 1169 civilians and 136 inmates, treated at VCU between 2010 and 2023. Subjects were divided into 4 groups:

1. White race + Civilian status (n=649)
2. White race + Inmate status (n=55)
3. Black race + Civilian status (n=435)
4. Black race + Inmate status (n=75)

For each group, mean time to treatment (MTT; defined as time to first chemotherapy and/or radiation session, or time to surgery) following CRC diagnosis, setting of diagnosis, and disease stage at presentation were recorded. One-way ANOVA was used to determine differences in MTT, whereas univariate and multivariate analyses were used to compare setting of diagnosis and disease stage between groups.

Results

- Inmates received treatment following CRC diagnosis on average 21.57 days ($p < 0.001$) later than civilians. When groups were divided into patients with colon cancer alone versus rectal cancer alone, MTT was significantly longer for inmates with rectal cancer [Figures 1 and 2].

Figure 1. Comparison of Mean Time to Treatment in Colon Cancer Alone

		Incarcerated status	
		White race	Black race
Civilian status	White race MTT: 25.8 days	MTT: 40.4 days MD: 14.6 days p=0.69	MTT: 31.0 days MD: 5.2 days p=0.98
	Black race MTT: 29.7 days	MD: 10.7 days p=0.89	MD: 1.3 days p=0.99

Figure 2. Comparison of Mean Time to Treatment in Rectal Cancer Alone

		Incarcerated status	
		White race	Black race
Civilian status	White race MTT: 41.2 days	MTT: 109.2 days MD: 68.0 days p<0.001	MTT: 66.8 days MD: 25.6 days p=0.39
	Black race MTT: 46.3 days	MD: 62.9 days p<0.001	MD: 20.5 days p=0.68

- Black patients overall were more likely to be diagnosed with CRC in the ED or inpatient setting compared to White patients (OR= 2.12) [Table 1].

	Odds ratio	95% confidence interval	p-value
Sex			
Male	Reference		
Female	0.88	(0.66, 1.06)	0.15
Race			
White	Reference		
Black	2.12	(1.65, 2.70)	<0.001
Ethnicity			
Not Hispanic	Reference		
Hispanic	0.91	(0.43, 1.98)	0.48
Incarceration status			
Civilian	Reference		
Inmate	1.27	(0.87, 1.84)	0.25

Discussion

- Inmates experience a significant delay in treatment following CRC diagnosis compared with civilians. This is primarily attributed to delays in treating inmates with rectal cancer, potentially reflecting the complexities of follow-up care for patients with locally advanced disease managed with a “watch-and-wait” approach.
- Regardless of incarceration status, Black patients are more likely to be diagnosed with CRC in an acute setting.
- Absence of additional disparities in subgroup analysis, including disease stage at presentation, may be due to insufficient statistical power in the inmate population data.

Conclusion

Our findings objectively illustrate that racial inequities and incarceration produce negative impacts on timely treatment of CRC. Sound systemic efforts are critical to address delays in care, especially in correctional facilities, and optimize treatment outcomes for disadvantaged patient populations.

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