Social Vulnerability and Receipt of Guideline-Concordant Care Among Patients With Colorectal Cancer

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Background

- The clustering of colorectal cancer risk has been reported in areas with high social disadvantage, such as states and counties with high poverty rates or low education attainment levels.
- Adherence to evidence-based cancer treatment guidelines has been associated with improved survival in patients with cancer and provides a metric that can be used to compare the quality of cancer care.

Research Objective

To evaluate the association of county level social vulnerability with receipt of guideline concordant care (GCC) and mortality for patients with colorectal cancer.

Methods

Patients 18-79 years with stage I-III colon cancer or stage II-III rectal cancer between 2018 and 2020 were evaluated from the National Program of Cancer Registries. Data were merged with the 2020 Centers for Disease Control and Prevention (CDC) Social Vulnerability Index (SVI) at the county level.

Primary outcome: Receipt of GCC
- Colon: adequate lymphadenectomy; chemotherapy for stage III
- Rectal: chemotherapy and/or radiation for stage II-III

Secondary outcome: 3-year cancer specific survival, stratified by high and low SVI

Multivariable logistic regression models evaluated the association of SVI with GCC

Cox proportional hazards regression models evaluated the association of SVI with 3-year cancer specific survival

Risk-adjusted restricted cubic splines modeled the relationship between continuous SVI and adjusted probability of receiving guideline-concordant care stratified by Commission on Cancer (CoC) hospital accreditation status

Results

Table 1. Patient, tumor and hospital characteristics for patients with colorectal cancer stratified by SVI group

	Low SVI	High SVI	p-value
Total n (%)	31147 (24.9)	30870 (24.7)	
SVI Score, median (IQR)	22.3 (14.4-29.2)	88.6 (83.6-92.1)	<0.001
Race and ethnicity, n (%)			<0.001
NH White	27396 (88.0)	16259 (52.7)	
Insurance status, n (%)			<0.001
Uninsured	559 (1.8)	1651 (5.4)	
Private	13248 (42.5)	11354 (36.8)	
Hospital accreditation, n (%)			<0.001
Non-CoC-Accredited	7406 (23.8)	8394 (27.2)	
CoC-Accredited	23741 (76.2)	22476 (72.8)	

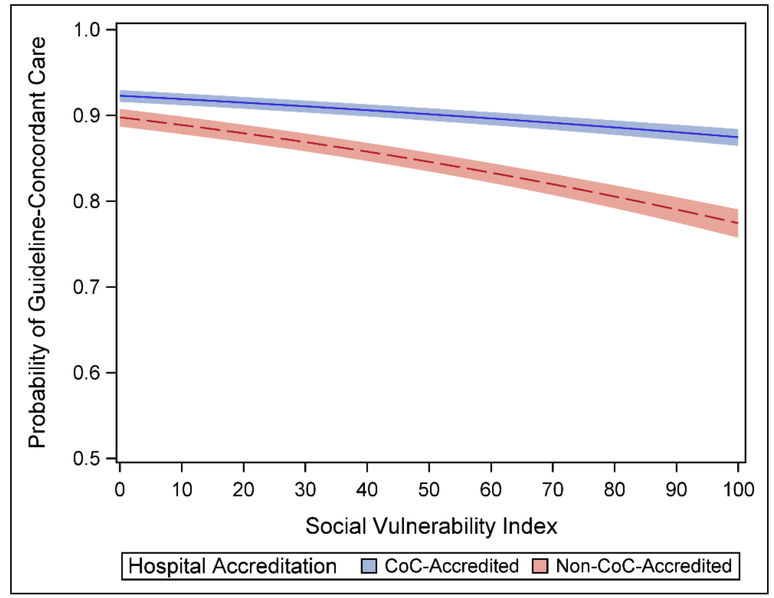
Table 2. Multivariable adjusted odds ratio for receipt of GCC

	Receipt of GCC, OR (95% CI)	p-value
Social Vulnerability Index		
Low	1.21 (1.16 – 1.27)	<0.001
Average	Ref.	
High	0.79 (0.76 – 0.83)	<0.001

Table 3. Adjusted 3-year cancer-specific survival hazard ratios for colorectal patients diagnosed in 2018 eligible for GCC

	Low SVI, HR (95% CI)	High SVI, HR (95% CI)
Guideline Concordant Care		
No	Ref.	Ref.
Yes	0.46 (0.39 – 0.55)	0.56 (0.51 – 0.61)
Race and ethnicity		
NH White	Ref.	Ref.
NH Black	1.20 (0.86 – 1.68)	1.15 (1.04 – 1.27)
Insurance status		
Medicaid	Ref.	Ref.
Private	0.53 (0.38 – 0.74)	0.58 (0.49 – 0.68)
Hospital Accreditation		
Non-CoC-Accredited	Ref.	Ref.
CoC-Accredited	1.02 (0.86 – 1.21)	0.91 (0.83 – 0.98)

Figure 1. Association between SVI and risk-adjusted probability of receiving guideline-concordant care stratified by CoC accreditation status



Conclusions

- Receipt of evidence-based GCC was lower for patients from highly vulnerable communities.
- As SVI increased, treatment at CoC-accredited hospitals, compared to non-CoC-accredited hospitals, was associated with increased likelihood of receiving GCC and decreased mortality risk.
- These findings may reflect CoC requirements for adherence to treatment guidelines, community engagement, and addressing barriers to care.

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