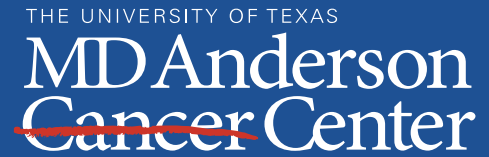




5-Year Survival of Colorectal Cancer by Race, Gender, Stage, and Site

Taylor Curry; Kristin Primm, Ph.D., MPH; Shine Chang, Ph.D.

MD Anderson Cancer Center – Houston, TX
Department of Epidemiology, The University of Texas MD Anderson Cancer Center, Houston, TX



Background

- Colorectal cancer is the unchecked division of abnormal cells in the colon or rectum.
- Localized Stage refers to cancer that has grown into the wall of the colon or rectum but not into the surrounding tissues.
- Regional Stage refers to the invasion of cancer cells into surrounding tissue or lymph nodes.
- Distant Cancer is when the growth has spread to other parts of the body not originally infected (i.e. Liver, Lung).
- Recent literature has shown an increasing trend in Colorectal Cancer (CRC) survival across all minority groups due to initiatives like improving patient awareness of screening resources and improving accessibility through subsidized screening programs in medically underserved communities.
- This increasing trend has not eliminated the disparities in survival experienced by ethnic minority groups (i.e., American Indian/Alaskan Native [AIAN], Non-Hispanic [NH] Black, Hispanic [HIS], and Asian/Pacific Islander [API]).

Methods

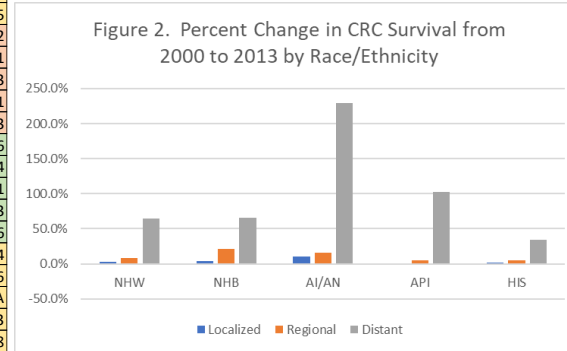
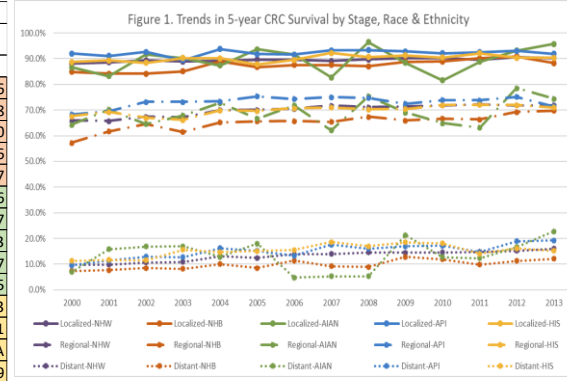
- Data Source:** Surveillance, Epidemiology, and End Results (SEER) Program (www.seer.cancer.gov) SEER*Stat Database: Incidence - SEER Research Data, 18 Registries, Nov 2020 Sub (2000-2018)
- Study Population:** The study population included patients (age ≥ 20 years) with a primary diagnoses of CRC from 2000 to 2014. We excluded in situ cases, patients with unknown/missing race/ethnicity, missing/unknown staging information, cases reported through death certificate or autopsy report only, records with no survival time, those with missing or unknown cause of death, and cases with missing diagnoses dates.
- Statistical Analysis:** Five-year cause specific survival rates for CRC were calculated using SEER*stat version 8.3.9. We examined temporal trends in 5-year survival rates by race/ethnicity (White, Black, American Indian, Asian/PI, and Hispanic), sex, stage at diagnosis (localized, regional, distant), and CRC subsite (Table 1). Trends in 5-yr survival rates were characterized in terms of percent change in rates from the year 2000 to 2014.

Table 1. Regions within Colorectal Cancer Subsites

Proximal Colon	Distal Colon	Rectum
<ul style="list-style-type: none"> Cecum Ascending Colon Hepatic Flexure Transverse Colon 	<ul style="list-style-type: none"> Splenic Flexure Descending Colon Sigmoid 	<ul style="list-style-type: none"> Rectosigmoid Junction Rectum

Results

Table 2: CRC by Race, Gender, Site, and Stage		5-Year Survival									
PC: Percent Change		Proximal Colon			Distal Colon			Rectum			
Stage	Race/Ethnicity	2000	2013	PC	2000	2013	PC	2000	2013	PC	
Males	Localized	NH White	87.5%	89.6%	2.4	89.7%	93.7%	4.5	87.9%	89.3%	1.6
		NH Black	86.4%	89.5%	3.6	86.3%	85.1%	-1.4	83.1%	85.4%	2.8
		NH American Indian	71.4%	87.5%	22.5	75.0%	100.0%	33.3	100.0%	100.0%	0.0
		NH Asian/PI	91.1%	91.9%	0.9	92.1%	93.7%	1.7	87.3%	91.3%	4.6
		Hispanic	84.4%	87.3%	3.4	95.8%	89.4%	-6.7	86.2%	89.4%	3.7
		NH White	64.4%	70.7%	9.8	72.2%	74.4%	3.0	63.4%	73.3%	15.6
	Regional	NH Black	64.2%	69.2%	7.8	60.8%	75.7%	24.5	48.1%	66.7%	38.7
		NH American Indian	83.3%	82.9%	-0.5	66.7%	70.0%	4.9	40.0%	81.3%	103.3
		NH Asian/PI	71.1%	62.9%	-11.5	71.5%	71.4%	-0.1	65.2%	72.8%	11.7
		Hispanic	75.5%	67.9%	-10.1	76.9%	76.4%	-0.7	54.3%	75.2%	38.5
		NH White	6.8%	10.1%	48.5	10.4%	17.8%	71.2	7.7%	16.5%	114.3
		Distant	NH Black	6.5%	12.8%	96.9	4.5%	11.8%	162.2	8.2%	16.9%
NH American Indian	0.0%		0.0%	0.0	0.0%	33.8%	N/A	0.0%	25.0%	N/A	
NH Asian/PI	5.7%		10.3%	80.7	15.2%	16.6%	9.2	8.2%	15.0%	82.9	
Hispanic	11.4%		12.6%	10.5	10.5%	14.3%	36.2	13.5%	19.1%	41.5	
NH White	87.9%		89.4%	1.7	91.2%	92.6%	1.5	84.9%	87.6%	3.2	
NH Black	84.7%		86.0%	1.5	83.7%	89.2%	6.6	86.3%	92.4%	7.1	
Females	Localized	NH American Indian	100.0%	93.3%	-6.7	100.0%	100.0%	0.0	75.0%	100.0%	33.3
		NH Asian/PI	96.9%	91.9%	-5.2	93.2%	91.0%	-2.4	94.8%	91.9%	-3.1
		Hispanic	82.4%	92.1%	11.8	92.7%	94.4%	1.8	88.0%	90.0%	2.3
		NH White	66.5%	67.6%	1.7	68.7%	70.6%	2.8	62.0%	75.4%	21.6
		NH Black	57.6%	68.3%	18.6	57.0%	73.6%	29.1	48.3%	65.4%	35.4
		NH American Indian	75.8%	68.4%	-9.8	50.0%	57.1%	14.2	55.6%	85.7%	54.1
	Regional	NH Asian/PI	70.6%	69.7%	-1.3	66.9%	78.2%	16.9	65.9%	72.7%	10.3
		Hispanic	70.3%	66.7%	-5.1	67.0%	71.9%	7.3	65.3%	70.9%	8.6
		NH White	10.2%	10.7%	4.9	12.1%	23.8%	96.7	11.7%	19.7%	68.4
		NH Black	7.0%	8.3%	18.6	12.7%	10.6%	-16.5	7.0%	17.4%	148.6
		NH American Indian	0.0%	11.1%	N/A	50.0%	42.9%	-14.2	0.0%	18.2%	N/A
		NH Asian/PI	6.1%	12.8%	109.8	5.1%	33.9%	564.7	12.6%	27.5%	118.3
Distant	Hispanic	6.9%	5.7%	-17.4	14.0%	18.6%	32.9	4.8%	18.9%	293.8	



Discussion

- The greatest increase in survival rates for all races was seen in distant stage, however this stage shows the greatest disparities.
- Routinely, it is found that NHB have the lowest survival while API have the highest.
- While NHB continue to have the lowest survival rate in all stages, they have a greater or equal PC in distant and regional stage compared to their NHW counterpart.
- When looking at localized and regional stage API have the highest initial survival rate, however, are found to have the lowest PC in these stages. In distant stage API have a lower starting survival rate than NHW but in with the second highest survival rate, behind HIS.
- Across all stages HIS and NHW have an equal survival rate in 2000 and 2013.
- AIAN show a large variation in survival rates but have the largest PC in both localized and distant stage. Notably, when looking at 2013, AIAN has the highest survival in all stages.
- The same trends can be seen for females when looking at different races, however the magnitude of the disparities is less.
- Table 2 helps to show the disparity between Race, Gender, Stage, and Site. This can be examined even further when survival is also divided into site.

Conclusion

- Research has shown existing interventions effectively improve overall survival but fail to moderate CRC survival disparities between racial minorities and their NH white counterparts. To effectively combat disparities, we must first identify where and how they exist in each community.
- Analyzing this data addresses a fundamental gap in CRC survival research, improving our ability to create tailored interventions specific to these communities.
- As we have seen NHB still have the lowest survival rate of any minority, while AIAN data is unstable due to lack of collection.
- By improving the specificity of data regarding CRC survival amongst minorities future interventions can address both overall survival and population specific disparities.

Responsible Conduct of Research

- This project was approved and overseen by the University of Texas MD Anderson Cancer Center.
- This research studied and analyzed the health disparities in CRC.
- While the study does provide accurate numbers, the data used for AIAN populations were unstable due to a low sample size. This could have led to possibly skewed results for survival rate or percent change.

Acknowledgements

This research is supported by the Cancer Prevention Research Training Program (CP RTP) at The University of Texas MD Anderson Cancer Center and the Cancer Prevention and Research Institute of Texas (CP RIT) Postdoctoral Fellowship in Cancer Prevention (RP 170259, Drs. Shine Chang and Sanjay Shete, Principal Investigators). Taylor Curry was supported by an educational grant from the National Cancer Institute (R25CA056452, Dr. Shine Chang, Principal Investigator). For further information, please contact Taylor Curry at Tcurry@MDAnderson.org

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