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The Impact of SDoH by Race, Age, and Gender on Cancer Screenings pre and post Covid

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This Issues

- There are gaps in cancer screening rates across all cancer types
- Employers are concerned that the COVID Pandemic delayed screenings and therefore delayed timely diagnoses, contributing to worse outcomes and higher costs
- Social Determinants of Health present non-medical risks that contribute to differences in screening rates, incidences and outcomes among different races and ethnicities
- Tennessee is a state the generally has lower screening rates, higher incidences and apparent disparities for screening rates, incidences and outcomes among different socio-economic groups

Tennessee Lung Cancer Statistics from American Lung Association

- The rate of new lung cancer cases is 73 (per 100,000) and significantly higher than the national rate of 57. Tennessee ranks 48th among all states, placing it in the below average tier.

- The percent of people alive five years after being diagnosed with lung cancer (the survival rate) in Tennessee is 22%, which is significantly lower than the national rate of 25%. It ranks 37th among the 46 states with survival data, placing it in the below average tier.

- 25% of cases are caught at an early stage, which is not significantly different than the national rate of 26%. It ranks 31st among the 49 states with data on diagnosis at an early stage, placing it in the average tier.

https://www.lung.org/research/state-of-lung-cancer/states/tennessee

According to a Kaiser Family Foundation report on Cancer Disparities …

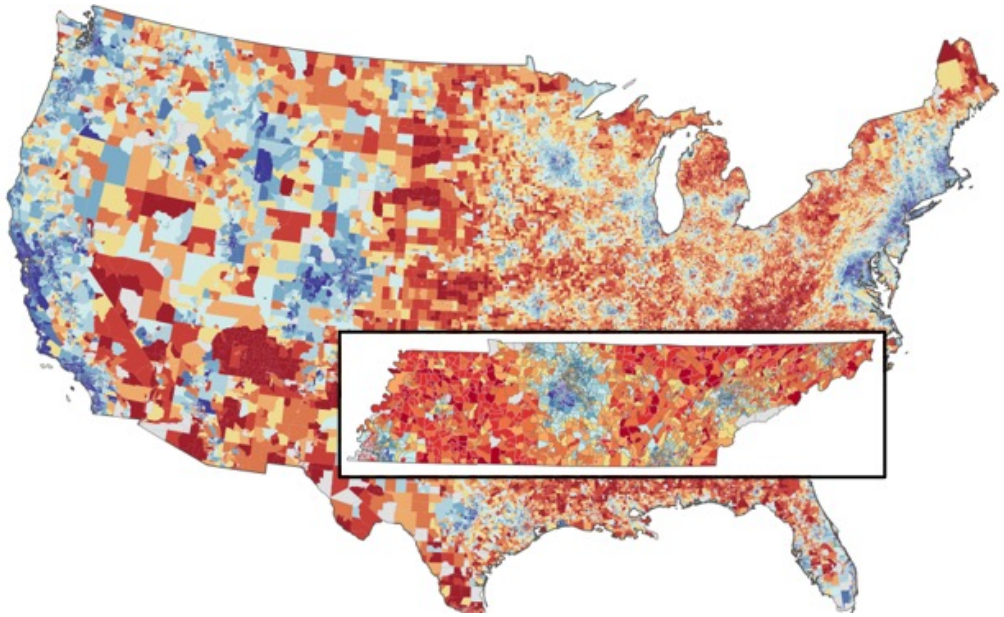
- Incidence of cancer is going down for all ethnicities and races, however, blacks continue to have higher incidence for prostate, colorectal, and new breast cancer diagnoses.

- Cancer mortality is going down for all ethnicities and races, however, blacks continue to have higher mortality for cancer, including for prostate, colorectal, and breast cancer diagnoses.

- In general, blacks have lower rates of screening (although there are some screenings where they out-perform whites). Regardless, blacks tend to have a higher stage of cancer at diagnosis.

https://www.kff.org/racial-equity-and-health-policy/issue-brief/racial-disparities-in-cancer-outcomes-screening-and-treatment/

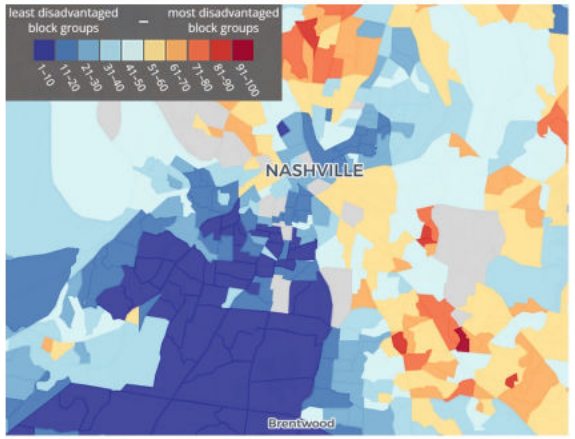
Tennessee has some of the most disadvantaged neighborhoods in the country.



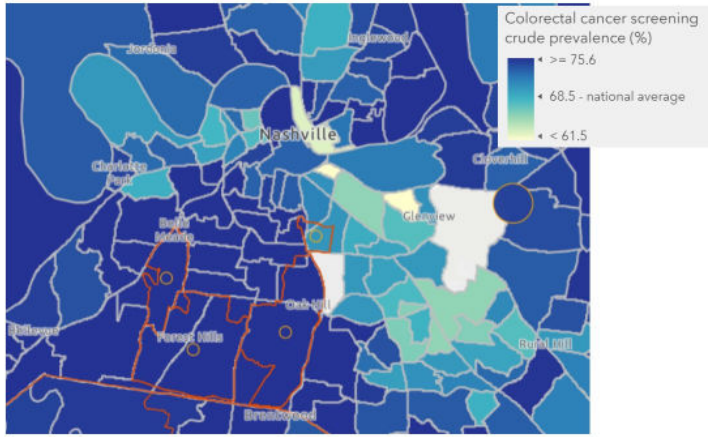
Source: the Area Deprivation Index; National map 2020 with Tennessee inset.

The Area Deprivation Index ranks neighborhoods on the basis of socioeconomic disadvantage in the areas of income, education, employment, and housing quality. ***Note: the areas shaded red represent counties with higher disadvantage than those with shaded blue.***

There is a visible correlation between the ADI Nashville (toward "most disadvantaged") and the "crude prevalence" of colorectal cancer screening on the CDC Places interactive map. This suggests a correlation between higher disadvantage and lower screening compliance.



ADI focus on Nashville



CDC Places: Colorectal Cancer Screening

Overview of Study

The study looked at Metro Nashville Public Schools (MNPS) pre and post cancers screening rates (breast, colorectal, prostate and lung) for the following breakdowns: Gender, Age Bands, Race (Subscriber), Job class, and PCP affiliation. The analysis was conducted by Benegration. Benegration defined the pre covid timeframe ending Dec 2019 (beginning with appropriate screening measure continuous enrollment periods). They defined the post covid timeframe as ending Dec 2022 (beginning with appropriate screening measure continuous enrollment periods). Benegration developed HEDIS-like measures for cancer screening rates. Benegration applied modifications reasonable to an employer population for the prostate screening measure (they adjusted the age range to be 50-64 in order to catch the active population). Even though MNPS conducts an HRA Questionnaire that captures information on smoking history, the number of members qualifying for the lung cancer screening were so low as to limit their usefulness for comparison. As a result, the lung cancer rates are available but intended for insight into data collection rather than screening opportunity.

Metro Nashville Public Schools

- Award winning program under the leadership of David Hines
- State-of-the-art Analytics with Benegration (10 years plus data reservoir)
- Employee and Family Health Centers staffed and managed by Vanderbilt Health
  - 5 onsite clinics, plus access to Vanderbilt facilities for certain events
- Focused cancer screening programs
  - Colorectal – non-invasive Cologuard
  - Glammogram – breast cancer screening
- Approximately 18,000 covered lives

GENDER

All		Subscribers		Dependents	
Gender	% of Pop	Gender	% of Pop	Gender	% of Pop
F	63%	F	79%	F	36%
M	37%	M	21%	M	64%
Total	100%	Total	100%	Total	100%

AGE

All		Subscribers		Dependents	
Age Bands	% of Pop	Age Bands	% of Pop	Age Bands	% of Pop
18-25	18%	18-25	4%	18-25	40%
26-35	25%	26-35	31%	26-35	16%
36-45	22%	36-45	25%	36-45	17%
46-55	20%	46-55	23%	46-55	16%
56-64	15%	56-64	17%	56-64	11%
Total	100%	Total	100%	Total	100%

RACE

Subscribers ONLY	
Race Desc	% of Pop
Black	24%
Other	9%
White	67%
Total	100%

SUMMARY: Comparison to Innovu Cohort and NCQA HEDIS Benchmarks

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Breast Cancer Screening Rates

	Pre Covid	Post Covid
	October 2017 - December 2019	October 2020 - December 2022
MNPS/Benegration	78%	83%
Innovu	71%	68%
	2019	2021*
NCQA HEDIS	72%	70%

Colorectal Cancer Screening Rates

	Pre Covid	Post Covid
	January 2018 - December 2019	January 2020 - December 2022
MNPS/Benegration	76%	75%
Innovu	~	~
	2019	2021*
NCQA HEDIS	62%	61%

The available benchmarks used for this study did not include any information on race, and included limited information on ages. Therefore, the benchmarks are used for comparing the total populations only.

MNPS screening rates in both the pre and post timeframes were higher (better)

SUMMARY: Comparison MNPS to itself Pre vs Post

Screening	Pre Covid	Post Covid
	various	various
Breast Cancer	78%	83%
Colorectal	76%	75%
Prostate	49%	52%

Breast and prostate cancer screenings ticked up slightly (for the better) in the post covid window, and colorectal cancer screenings ticked slightly down

SUMMARY: Comparison PCP Status

Screening	Pre Covid	Post Covid
	various	various
Breast Cancer	78%	83%
MNPS PCP	83%	88%
Other PCP	83%	86%
No PCP	49%	60%
Colorectal	76%	75%
MNPS PCP	78%	80%
Other PCP	80%	78%
No PCP	54%	55%
Prostate	49%	52%
MNPS PCP	41%	46%
Other PCP	60%	62%
No PCP	20%	20%

Having a PCP appears to be a factor that correlates to higher screening rates.

Prostate screening rate measure was adjusted to include active employees aged 50-64. Results cannot be compared with HEDIS

SUMMARY: Comparison by SDoH Risk – Subscriber Race

Screening	Pre Covid	Post Covid
	various	various
Breast Cancer	78%	83%
Black	81%	89%
Other	59%	78%
White	80%	82%
Colorectal	76%	75%
Black	83%	83%
Other	72%	68%
White	77%	76%
Prostate	49%	52%
Black	54%	61%
Other	50%	51%
White	47%	50%

MNPS results show that in all cases the Black population had higher screening rates than the white and other populations

Prostate screening rate measure was adjusted to include active employees aged 50-64. Results cannot be compared with HEDIS

Lessons Learned

- **HEDIS like measures are difficult to program but are necessary if you want to identify the appropriate populations for screening.**
- **Some HEDIS measures, like PSA screening, do not correlate with employers populations because they measure retiree aged populations. Employers can tweak the measures to making them more meaningful but only to study trend.**
- **HEDIS measures for cancer screening by race are not readily available.**
- **Lung Cancer screening rates remain difficult to analyze (using HEDIS). Lung Cancer measures require information not available in claims, and employers that can get the information often rely on self reported data.**
- **Per Benegration, counterintuitively, the programs (like Cologuard and ”glammogram” events) introduce patients to the clinics, not vice versa.**
- **The lack of information on stage at diagnosis in claims data limits the kind of meaningful analysis employers can do. Employers should work with TPA’s to receive staging information to augment claims.**
- **There is further analysis to be done.**
  - For example, analyzing age of patients with first cancer diagnosis to understand if they would have been eligible for screening.