Cancer Burden Across Florida

How do the places people live impact their cancer outcomes?

An Analysis by the Florida Cancer Data System

ABSTRACT

To explore whether the places people live have an impact on their cancer outcomes, the Florida Cancer Data System (FCDS) looked at the relationship between the poverty level and cancer outcomes in a particular area.

In total, we analyzed over 300,000 cases across Florida. This analysis focused on cases diagnosed between 2015 and 2019, and was limited to five screenable cancers: breast, prostate, cervical, lung and colorectal. Cases were assigned to one of four poverty areas. For this analysis, FCDS focused on cases in the highest and lowest poverty areas. FCDS compared incidence rates and the proportion of cases diagnosed at a late stage to better understand how cancer outcomes are impacted by both poverty and other factors like sex, race, and rurality.

INTRODUCTION

Where you live, and the resources you have access to, can have a big effect on your health. For example, people who live in neighborhoods with grocery stores that carry fresh produce are more likely to have good nutrition, which in turn lowers their risk for health conditions like heart disease, diabetes or even cancer. In fact, an individual's chances of getting cancer have a lot to do with their exposure to both environmental risk factors (like pollution) and behavioral risk factors (like smoking).

Environmental and behavioral risk factors are often distributed unevenly among income groups, putting people living in poorer areas at increased risk. In other words, the poverty levels in a given area can be a good indicator of increased exposure to multiple risk factors. This analysis looks at the relationship between poverty and cancer outcomes in a given area to better understand how the places people live impact their cancer burden.

METHODS

For this analysis we looked at areas called **census tracts**, which are small geographic areas of around 5,000 people defined by the Census Bureau. Each census tract was assigned a status based on how many households reported incomes below the Federal Poverty Level (FPL), which in 2019 was $25,750 for a family of four. FCDS focused on the census tracts with the **highest** and **lowest** levels of poverty:

High Poverty Area
over 20% of households in these areas live below the FPL

Low Poverty Area
less than 5% of households in these areas live below the FPL

Here's how it worked: Louis lives in a **high poverty area.** He may or may not make less than the FPL, but many of the people in his neighborhood do. Louis develops lung cancer, and because he lives in an area where over 20% of households live below the FPL, his case is assigned to the **high poverty group.**

Esther, who lives in an area where less than 5% of households live below the FPL, also develops lung cancer. Regardless of Esther's personal income, her case is assigned to the **low poverty group** based on where she lives.

FINDINGS

In this write-up we highlight some of our most significant findings, including the way diagnosis rates and the proportion of late-stage diagnoses change across poverty areas. However, we also compiled our results into an [interactive data dashboard](#) so that you can get a better understanding of the relationship between area-level poverty and cancer burden across Florida.

Diagnosis Rates

How do cancer rates change across poverty areas?

⬆ Women in high poverty areas are 114% more likely to be diagnosed with cervical cancer.

⬆ People in high poverty areas are 36% more likely to be diagnosed with lung cancer.

⬆ People in high poverty areas are 29% more likely to be diagnosed with colorectal cancer.

⬇ Men in high poverty areas are 5% less likely to be diagnosed with prostate cancer.

⬇ Women in high poverty areas are 16% less likely to be diagnosed with breast cancer.

Why are people in high poverty areas *less likely* to be diagnosed with breast and prostate cancer?

It's important to keep in mind that *getting cancer* is not the same thing as *getting diagnose*d with cancer. An individual has a greater chance of *getting cancer* if they are exposed to more risk factors and a greater chance of *getting diagnosed* with cancer the more they get screened.
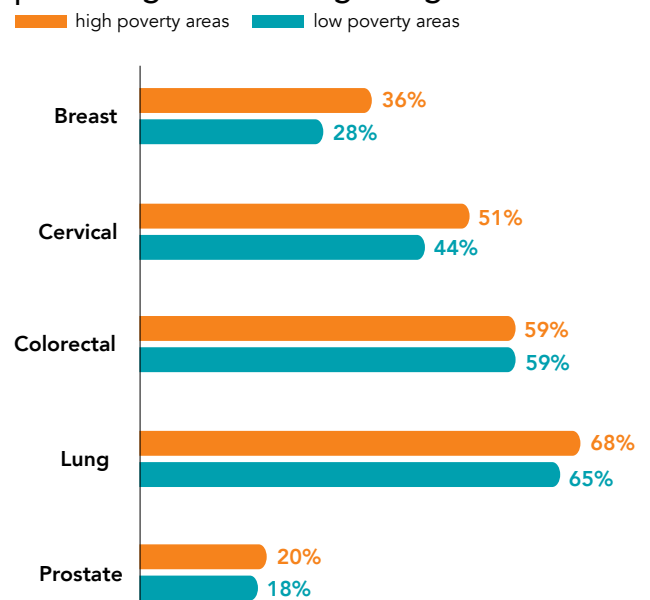
Screening rates tend to be higher in low poverty populations because of greater access to resources like income and healthcare. This may lead to lower rates of colorectal and cervical cancers, since they can be prevented with some screening methods by catching pre-cancerous tissues before they become malignant. However, for cancers like breast and prostate, screening is rarely preventative. So, the more an individual gets screened for colorectal or cervical cancer, the more likely they are to prevent a cancer diagnosis, whereas the more an individual gets screened for breast and prostate cancer the more likely they are to be diagnosed with cancer.

Late-stage Diagnosis

How does the percentage of people diagnosed at a late-stage change across poverty area?

• People in **high poverty areas** are more likely to be diagnosed with breast and cervical cancer at a late stage.

• People in **low poverty areas** are about as likely to be diagnosed with colorectal, lung, and prostate cancer at a late stage.

percentage of late-stage diagnoses

▬ high poverty areas ▬ low poverty areas

Cancer	high poverty areas	low poverty areas
Breast	36%	28%
Cervical	51%	44%
Colorectal	59%	59%
Lung	68%	65%
Prostate	20%	18%

Late stage diagnoses often require more invasive and more expensive treatments, and typically result in lower survival rates. This means that the sooner an individual is diagnosed, the easier it is for them to receive treatment. Because screening rates tend to be better in **low poverty areas,** one could assume that the proportion of cases caught at a late stage would be lower in

Other Factors

Where you live isn't the only factor that impacts cancer risk.

Other factors, like race and sex, also contribute to the differences we see in cancer rates. For example, living in a **high poverty areas** is associated with higher colorectal cancer rates for both men and women. However, rates are high for men in general, which leads to rates for colorectal cancer in women in **high poverty areas** that are roughly equivalent to rates for men in **low poverty areas.** This leads us to believe that both sex and poverty area have an impact on colorectal cancer rates.

rates of colorectal cancer by sex

Legend: ■ high poverty areas ■ low poverty areas

female: 28%, 34%
male: 33%, 46%
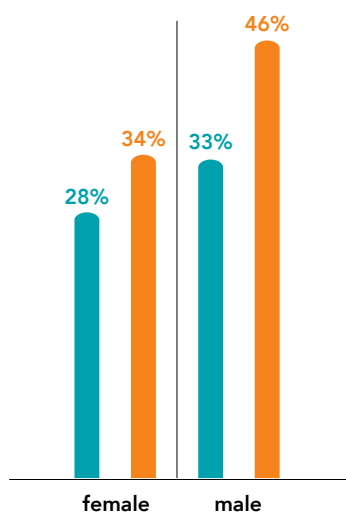
Interested in learning more? Our interactive data dashboard offers a comprehensive look at the way sex, race, and rurality impact cancer risk across poverty areas in Florida.

LIMITATIONS

This analysis is just the first step in understanding how an area's poverty level can impact cancer rates. It is important to remember that there are many factors that influence cancer risk, diagnosis, prognosis, and care. Exploring one aspect, like area-level poverty, can help us understand what other factors that might be worth further analysis.

Living in a high poverty area alone does not cause cancer, but the poverty levels of a given area can be a contributing factor when ic comes to an individual's risk of getting cancer. The economic, social, or other nonmedical conditions that influence health outcomes are often referred to as the social determinants of health (SDoH).

NEXT STEPS

While we don't understand everything about the way your neighborhood affects your cancer outcomes, this analysis indicates that where you live matters.

Easy access to healthcare is important, but so is access to things like fresh produce, parks, sidewalks, and bike lanes. The more we know about the ways your environment shapes your cancer outcomes, the better able we are to implement targeted and effective interventions – because every Florida resident deserves to live in a place where they can be healthy.

FURTHER RESOURCES

CDC: Social Determinants of Health
NCI: Spatial Context of Cancer
FCDS: Statistics and Dashboards

COMMUNICATIONS PACKAGE

In an effort to make the data from this analysis as accessible as possible, the Florida Cancer Data System has put together a freely available communications package. Part of that communications package is this write-up, but we've also included a set of infographics to share across social media platforms, which can be found here (link not live yet).

ATTRIBUTIONS AND DATA SOURCES

FCDS is **Florida Statewide Cancer Registry**. In 1978, the Florida Department of Health contracted with the Sylvester Comprehensive Cancer Center (SCCC) at the University of Miami School of Medicine to design and implement the registry. FCDS has been collecting incidence data since 1981. We acknowledge the Florida Department of Health, and the Centers for Disease Control and Prevention for its support of the FCDS under cooperative agreement 1NU58DP007161

Populations - Total U.S. (2006-2020), Census Tract Estimates by Race/Origin Controlling to Vintage 2020 <2010 Tract Geographies>, National Cancer Institute, DCCPS, Surveillance Research Program, released January 2023. Source: Woods & Poole Economics, Inc. Washington, D.C. Copyright 2022.

Census Tract Poverty Indicator - The poverty categories were generated using the North American Association of Central Cancer Registry data item #145. More details can be found here.