



Cancer in Michigan 2020



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Introduction

Cancer is the second leading cause of death in Michigan, contributing to significant economic and societal costs. In 2020, an estimated 61,770 people in Michigan will be diagnosed with cancer and 21,000 are projected to die from cancer. To maximize impact on population health, interventions will continue to target breast, cervical, colorectal, and lung cancers due to the burden of and strategies available to address these cancers. Identifying and eliminating disparities within the cancer care continuum for all cancers is a priority for Michigan. This will be addressed through an emphasis on policy and system change.

Michigan Department of Health and Human Services (MDHHS) is the recognized public health agency for the state of Michigan and has a long history of implementing successful cancer control programs. These programs include the:

- Breast and Cervical Cancer Control Navigation Program
- Cancer Genomics Program
- Cancer Surveillance Program
- Cancer Survivorship Program
- Colorectal Cancer Control Program
- Comprehensive Cancer Control Program
- Lung Cancer Early Detection Program
- Well-Integrated Screening and Evaluation for Women Across the Nation Program (WISEWOMAN)

The partnership between these internal cancer programs, as well as external cancer programs, such as the Inter-Tribal Council of Michigan, makes it possible to address the cancer control continuum which includes prevention, detection, diagnosis, treatment, and survivorship.

The focus of Michigan's Cancer Programs is to enhance initiatives, capacity, and infrastructure in order to work towards the reduction of cancer morbidity, mortality, and related health disparities.

Uninsured patients and those from minority populations are much more likely to be diagnosed with cancer at a later stage when treatment is more extensive, debilitating, and costly. And, since cancer is more prevalent among older adults, priority populations continue to be older, marginalized minority populations.

Quality data is a critical component in evaluating the success made towards all parts of the cancer care continuum. Data from the Behavioral Risk Factor Survey (BRFS) and the Cancer Registry provide insight into current rates and disparities in all parts of the continuum. These data provide the basis for state and local strategic planning and evaluation.

This burden report presents the most recently available data at the time of publication. Due to the lengthy process for data collection and validation to ensure the data is of high quality, the data available for analysis lags a few years behind the current calendar year.

Glossary

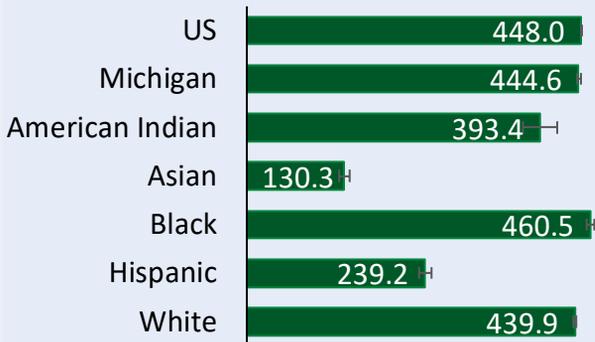
Age-Adjusted Rate	A statistical adjustment applied to crude rates to permit comparisons of populations with different age structures. The 2000 Standard US Million Population is commonly used in age-adjusted rates for cancer research in the US.
Cases	Total number of new incident cancer cases diagnosed in a given year or time period.
Distant Stage	Refers to cancer that has spread from the original (primary) tumor to distant organs or distant lymph nodes. Also known as distant metastasis.
Five-year Survival	The percentage of people in a study or treatment group who are alive five years after they were diagnosed with or treated for a disease, such as cancer. The disease may or may not have come back.
International Classification of Childhood Cancer (ICCC) Group	The classification of childhood cancer is based on tumor morphology and primary site with an emphasis on morphology rather than the emphasis on primary site for adults.
Incidence Rate	Rate of new cancer diagnoses in a given year or time period.
In Situ	In its original place. For example, in carcinoma in situ, abnormal cells are found only in the place where they first formed. They have not spread.
Localized Stage	An invasive malignant cancer confined entirely to the organ where the cancer began.
Mortality Rate	Rate of cancer deaths in a given year or time period.
Pediatric Cancer	A malignant cancer diagnosed in an individual under the age of 20.
Regional Stage	Refers to cancer that has grown beyond the original (primary) tumor to nearby lymph nodes or organs and tissues.
Site	Type of cancer grouped by topography and histology as defined by ICD-O-3 guidelines.
Survivor	A person is considered to be a survivor from the time of diagnosis until the end of life.
Unstaged	Cancer for which there is not enough information to indicate a stage.
Years of Potential Life Lost	Years of life lost (YLL) take into account the age at which deaths occur, giving greater weight to deaths at a younger age and lower weight to deaths at older age.

Michigan's Cancer Burden

58,360 New cases in Michigan estimated for 2020. ¹

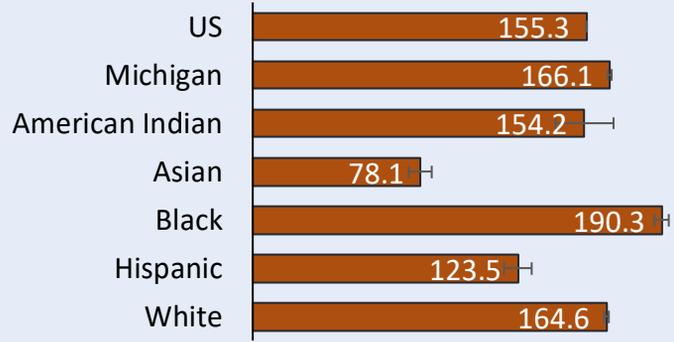
21,150 Deaths in Michigan estimated for 2020. ¹

Incidence per 100,000, 2013-2017 ²



Rate per 100,000, Age-Adjusted to 2000 US Population
Source: Michigan Cancer Surveillance Program, MDHHS

Mortality Rate per 100,000, 2014-2018 ³

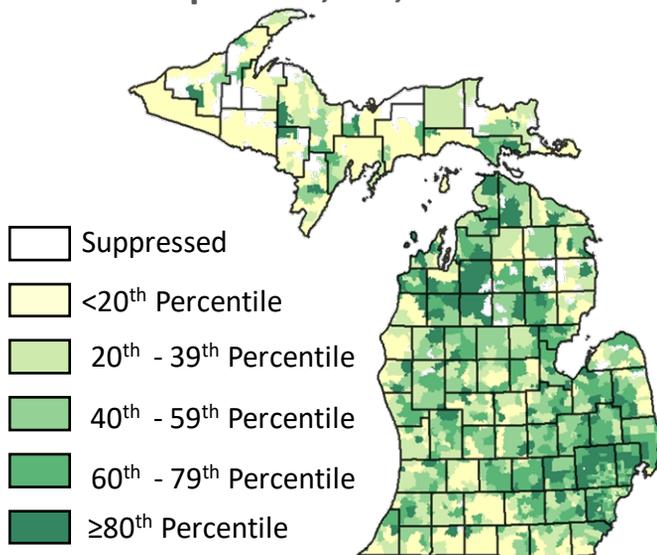


Rate per 100,000, Age-Adjusted to 2000 US Population
Source: Division for Vital Records and Health Statistics, MDHHS

Michigan has the **36th** highest incidence rate in the US.

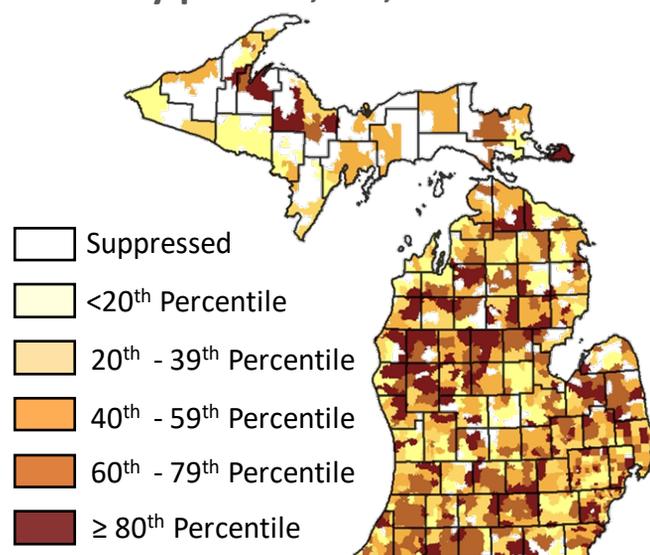
Michigan has the **15th** highest mortality rate in the US.

Incidence per 100,000, 2013-2017 ²



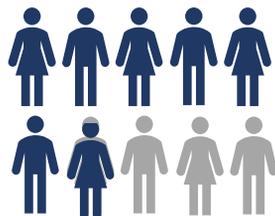
Source: Michigan Cancer Surveillance Program, MDHHS

Mortality per 100,000, 2014-2018 ³



Source: Division for Vital Records and Health Statistics, MDHHS

69%
Of Americans will survive five-years. ⁴



21% Of deaths in Michigan are due to cancer. ³
1,566 Years of potential life is lost due to cancer. ³

Trends by Gender

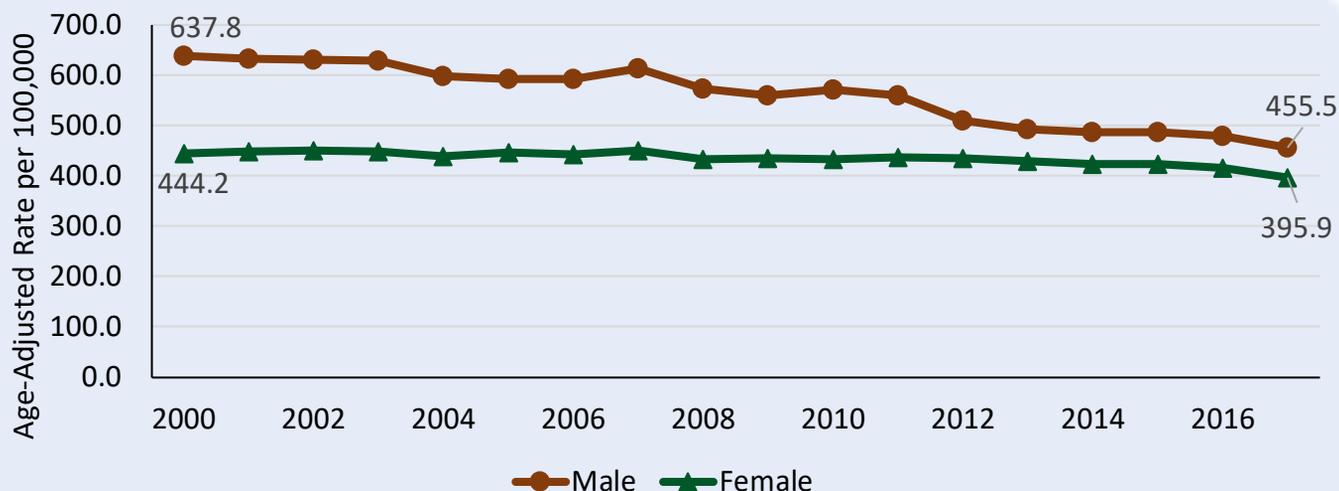
Incidence, 2000 - 2017

11%

Decrease in incidence rate among females over the past 18 Years. ²

29%

Decrease in incidence rate among males over the past 18 Years. ²



Source: Michigan Cancer Surveillance Program, MDHHS

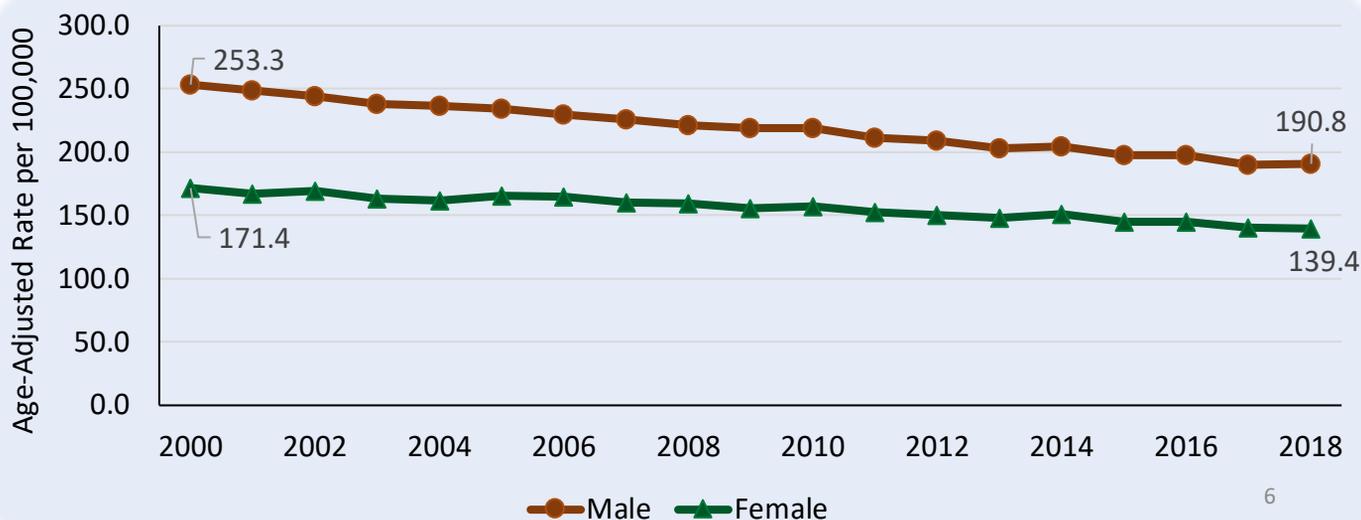
Mortality, 2000 - 2018

19%

Decrease in mortality rate among females over the past 19 Years. ³

25%

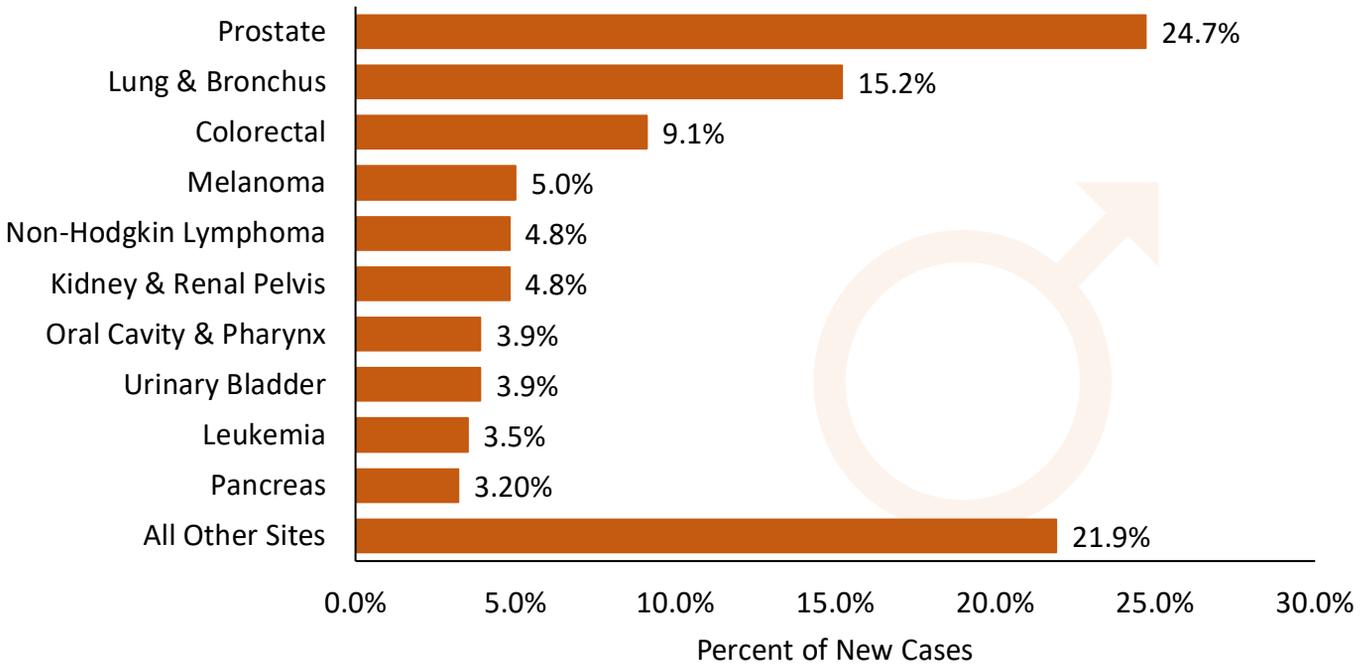
Decrease in mortality rate among males over the past 19 Years. ³



Source: Division for Vital Records and Health Statistics, MDHHS

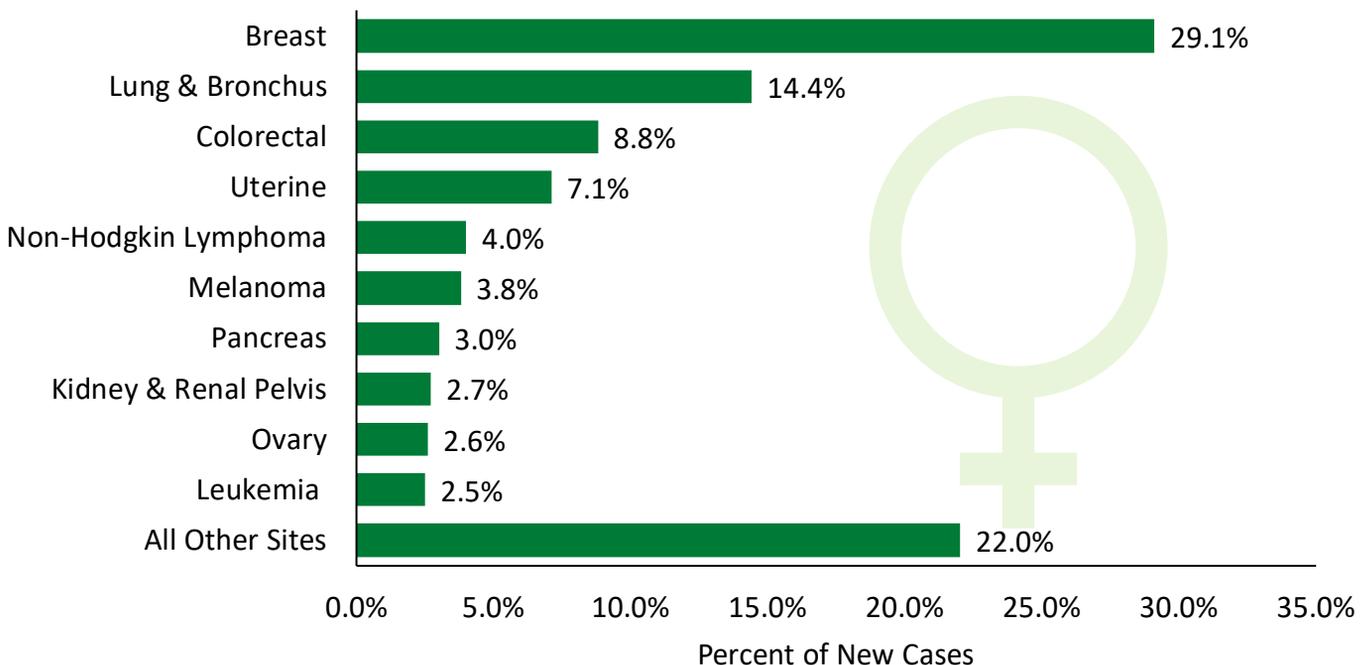
Percent of Cancer Cases by Site and Gender

Cancer Cases among Males, 2013-2017²



Source: Michigan Cancer Surveillance Program, MDHHS

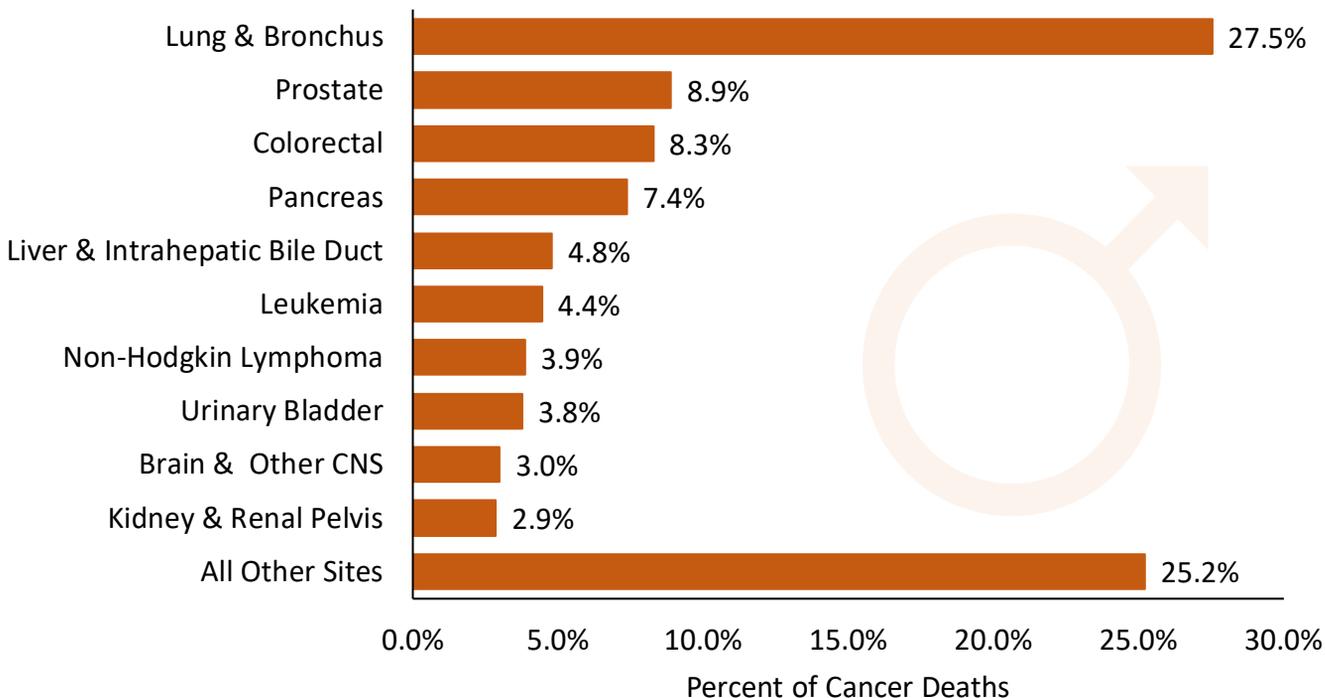
Cancer Cases among Females, 2013-2017²



Source: Michigan Cancer Surveillance Program, MDHHS

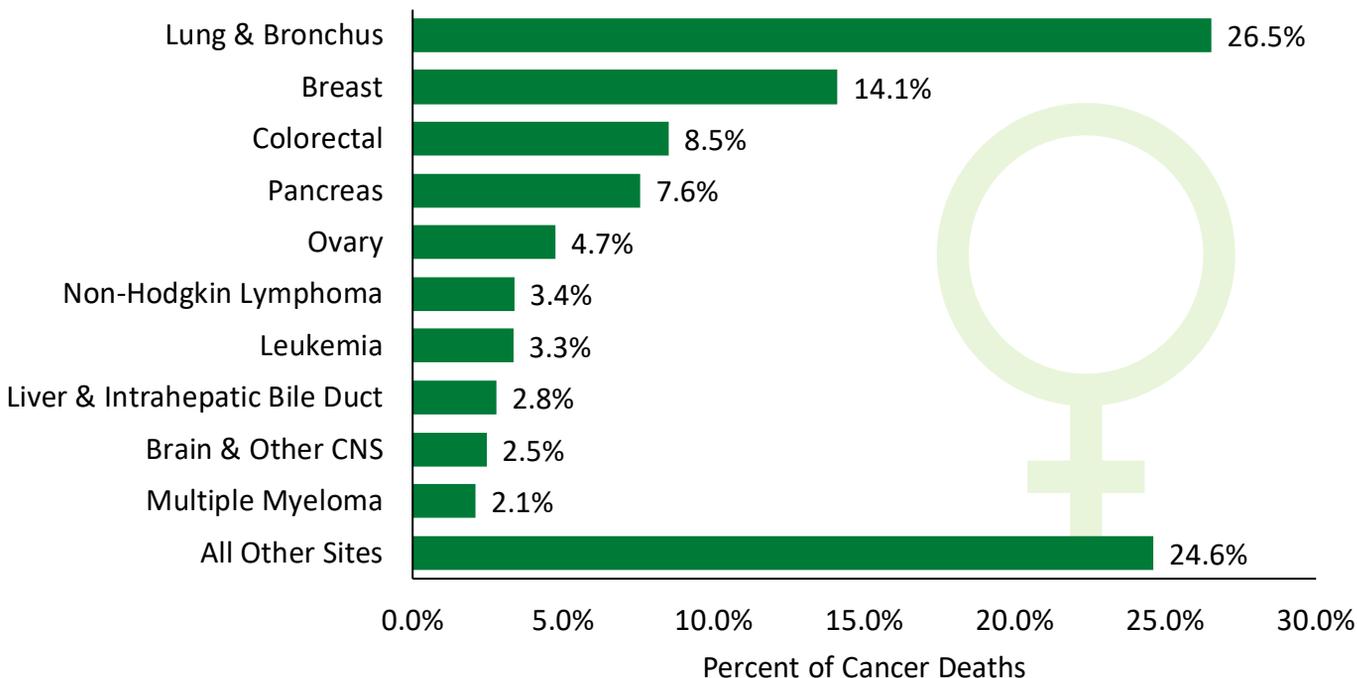
Percent of Cancer Deaths by Site and Gender

Cancer Deaths among Males, 2014-2018³



Source: Division for Vital Records and Health Statistics, MDHHS
CNS – Central Nervous System

Cancer Deaths among Females, 2014-2018³



Source: Division for Vital Records and Health Statistics, MDHHS
CNS – Central Nervous System

Trends by Race

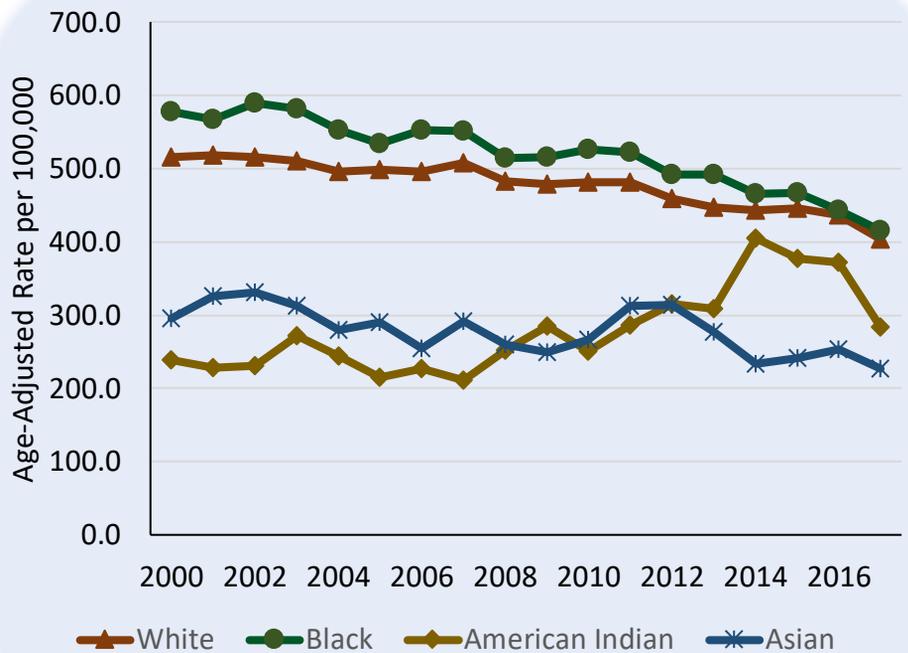
Incidence, 2000 – 2017²

18% Increase among American Indians. This may be due to improved data collection.

23% Decrease among Asian Michiganders.

27% Decrease among Black Michiganders.

20% Decrease among white Michiganders.



Source: Michigan Cancer Surveillance Program, MDHHS

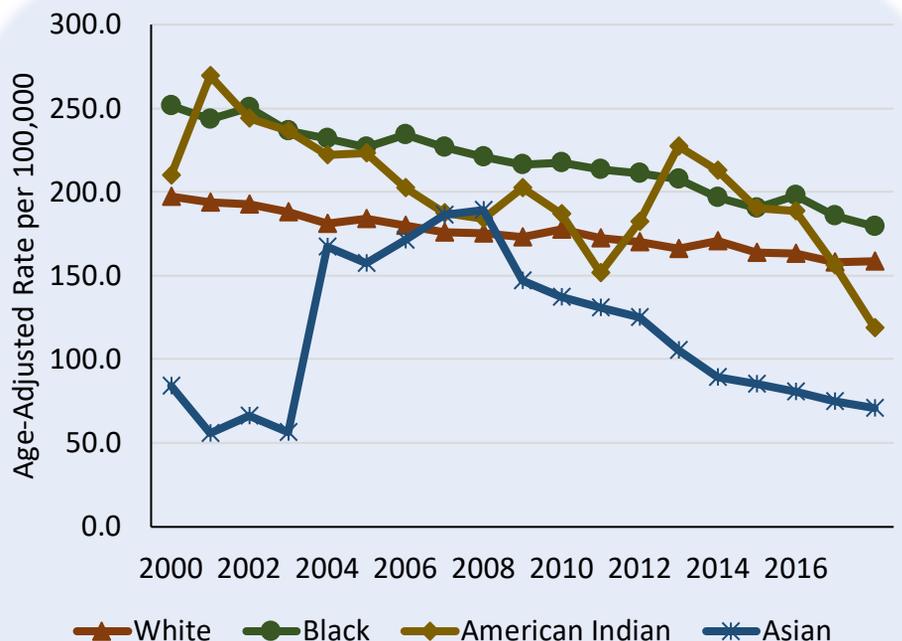
Mortality, 2000 – 2018³

44% Decrease among American Indians.

16% Decrease among Asian Michiganders.

28% Decrease among Black Michiganders.

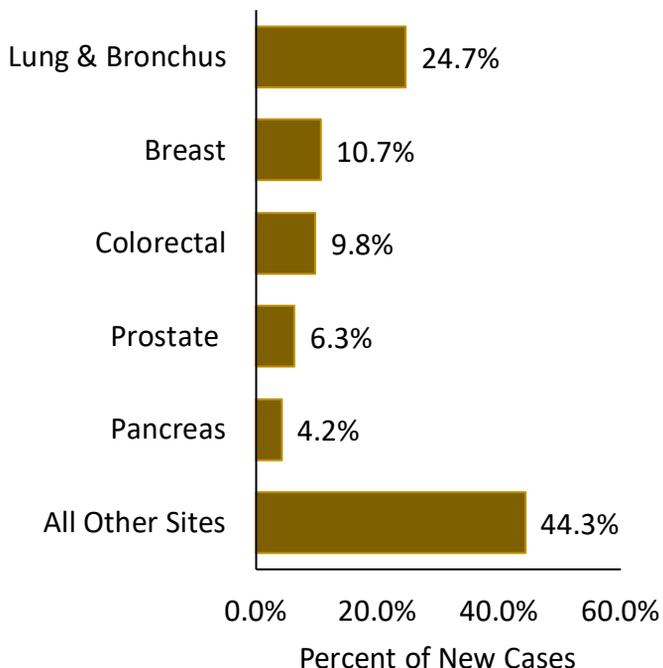
19% Decrease among white Michiganders.



Source: Division for Vital Records and Health Statistics, MDHHS

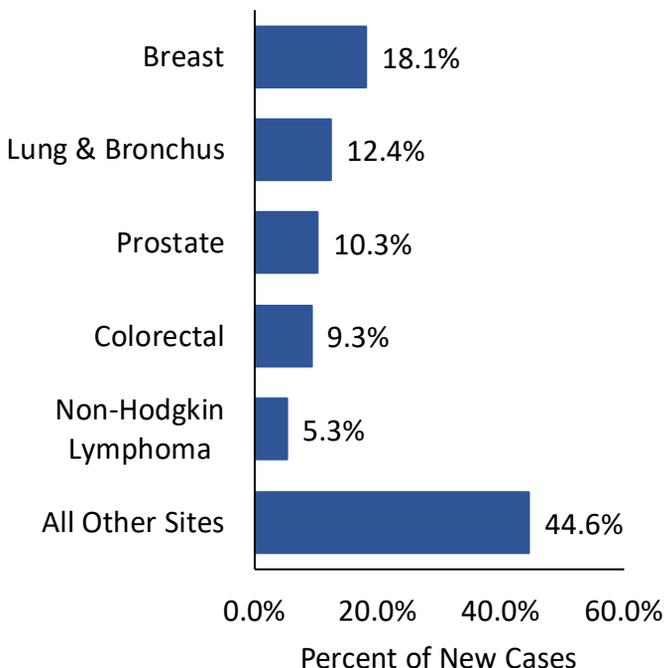
Percent of Cancer Cases by Site and Race ²

Cancer Cases among American Indians, 2013-2017



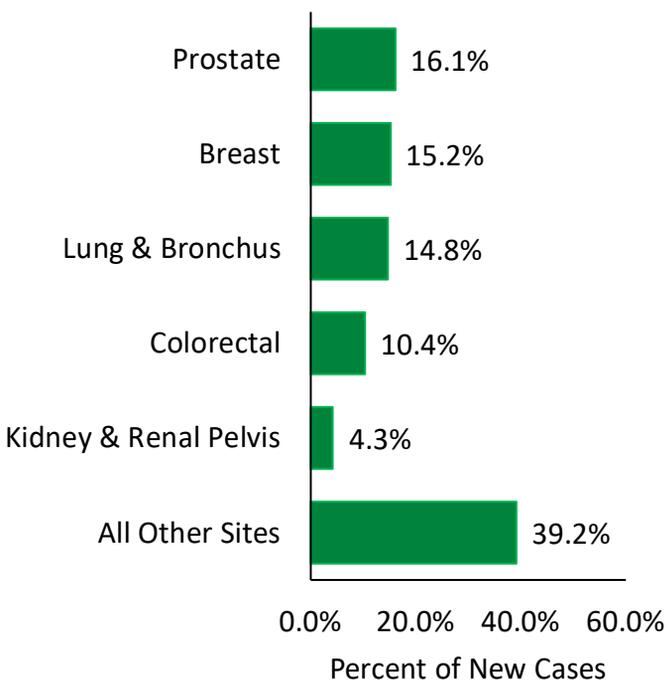
Source: Michigan Cancer Surveillance Program, MDHHS

Cancer Cases among Asians, 2013-2017



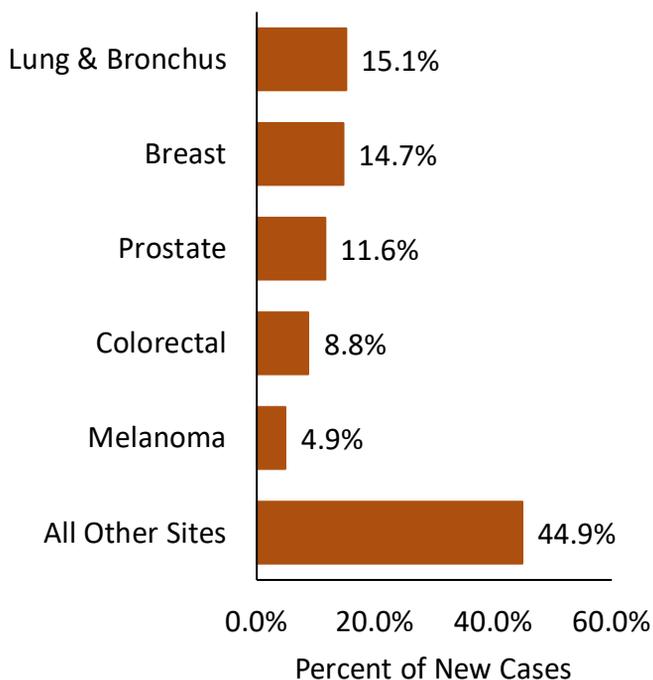
Source: Michigan Cancer Surveillance Program, MDHHS

Cancer Cases among Blacks, 2013-2017



Source: Michigan Cancer Surveillance Program, MDHHS

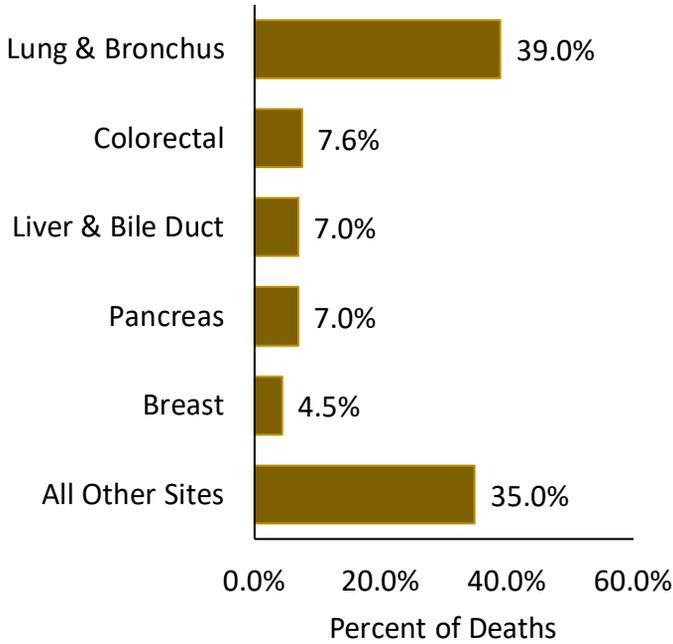
Cancer Cases among Whites, 2013-2017



Source: Michigan Cancer Surveillance Program, MDHHS 10

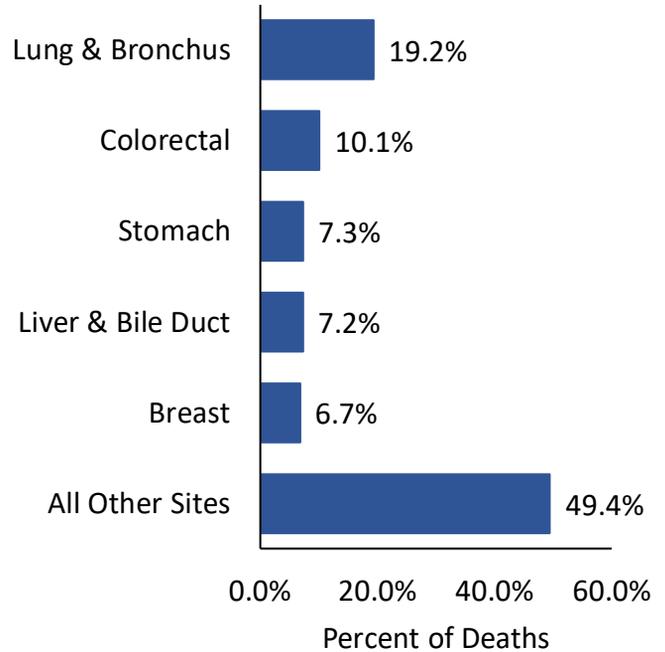
Percent of Cancer Deaths by Site and Race ³

Cancer Deaths among American Indians, 2014-2018



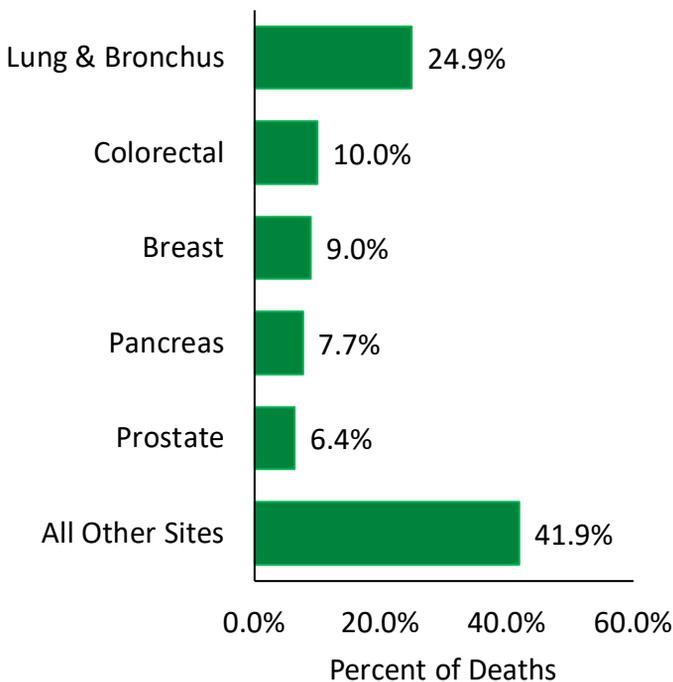
Source: Division for Vital Records and Health Statistics, MDHHS

Cancer Deaths among Asians, 2014-2018



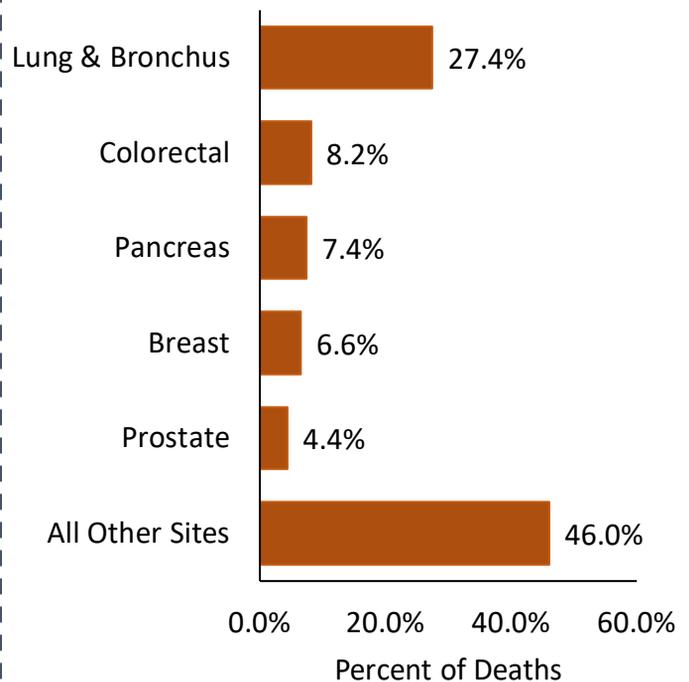
Source: Division for Vital Records and Health Statistics, MDHHS

Cancer Deaths among Blacks, 2014-2018



Source: Division for Vital Records and Health Statistics, MDHHS

Cancer Deaths among Whites, 2014-2018



Source: Division for Vital Records and Health Statistics, MDHHS 11

Cervical Cancer

#39

In the US for cervical cancer **incidence**.⁵

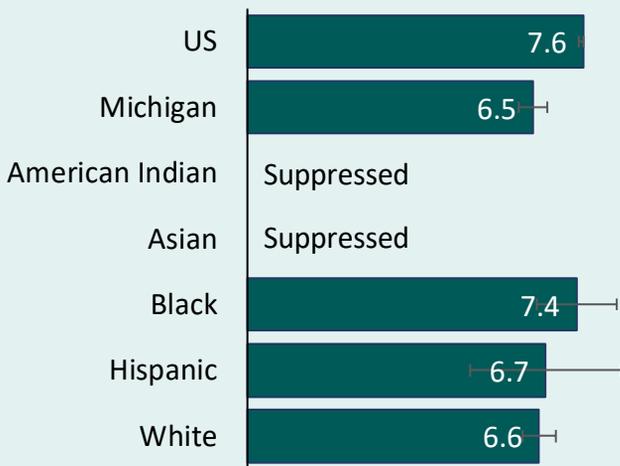
#30

In the US for cervical cancer **mortality**.⁵

360 New cases estimated in Michigan for 2020.¹

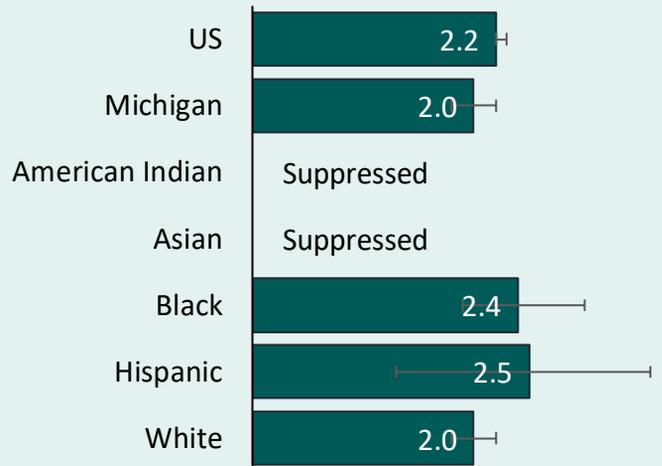
120 Deaths in Michigan estimated for 2020.¹

Incidence Rate, 2013-2017²



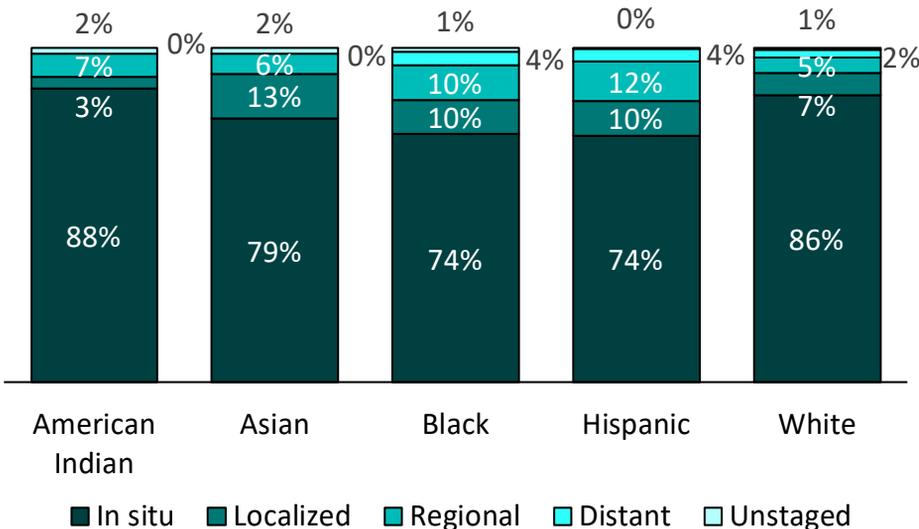
Rate per 100,000, Age-Adjusted to 2000 US Population
Source: Michigan Cancer Surveillance Program, MDHHS

Mortality Rate, 2014-2018³



Rate per 100,000, Age-Adjusted to 2000 US Population
Source: Division for Vital Records and Health Statistics, MDHHS

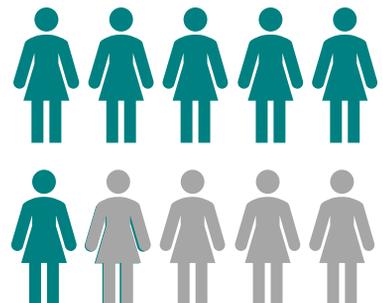
Stage at Diagnosis, 2013-2017²



Source: Michigan Cancer Surveillance Program, MDHHS

69%

Of women will survive five-years.⁴



Colorectal Cancer

#31

In the US for colorectal cancer **incidence**.⁵

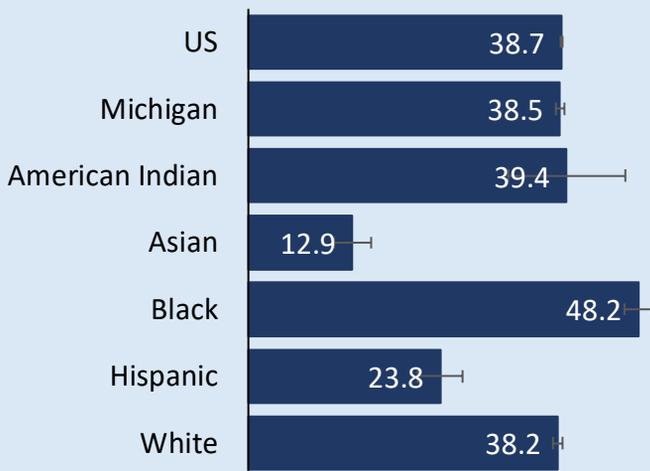
#27

In the US for colorectal cancer **mortality**.⁵

4,620 New cases estimated in Michigan for 2020.¹

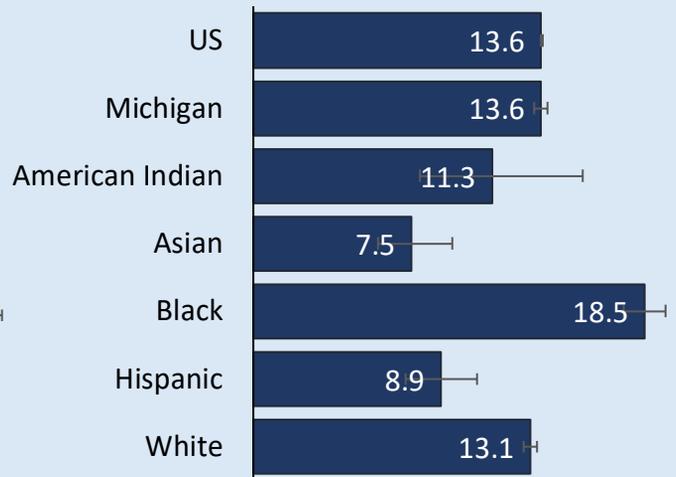
1,700 Deaths in Michigan estimated for 2020.¹

Incidence Rate, 2012-2016²



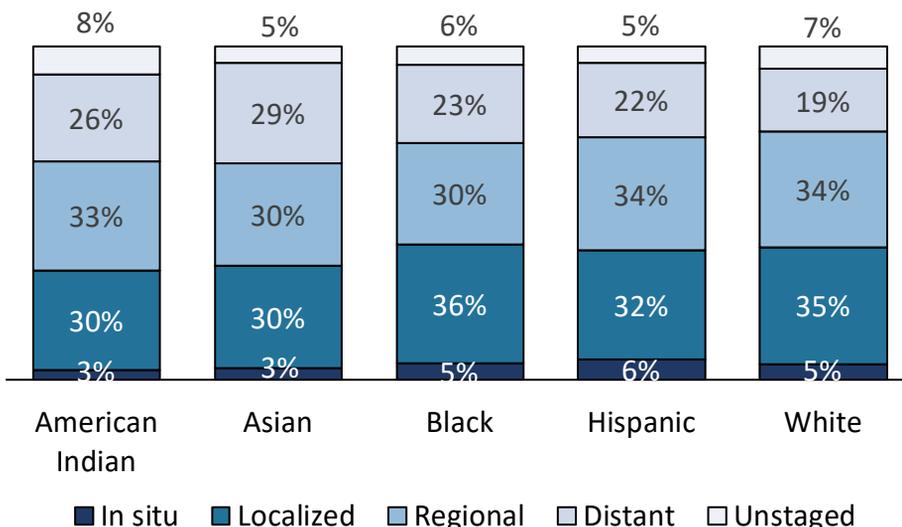
Rate per 100,000, Age-Adjusted to 2000 US Population
Source: Michigan Cancer Surveillance Program, MDHHS

Mortality Rate, 2014-2018³



Rate per 100,000, Age-Adjusted to 2000 US Population
Source: Division for Vital Records and Health Statistics, MDHHS

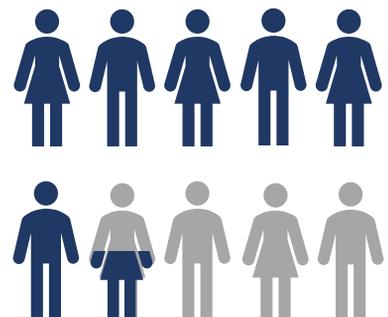
Stage at Diagnosis, 2013-2017²



Source: Michigan Cancer Surveillance Program, MDHHS

66%

Of Americans will survive five-years.⁴



Female Breast Cancer

#35

In the US for female breast cancer **incidence.** ⁵

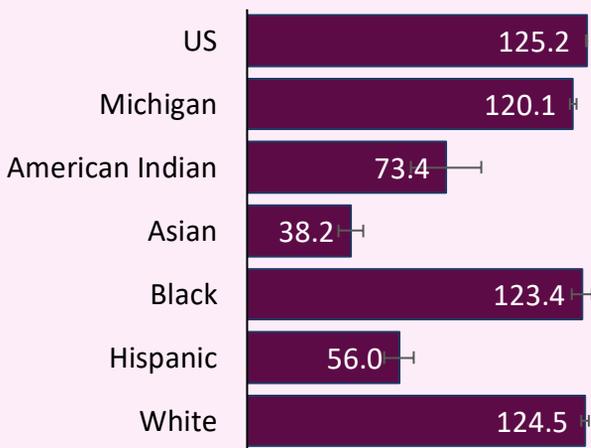
#21

In the US for female breast cancer **mortality.** ⁵

8,800 New cases estimated in Michigan for 2020. ¹

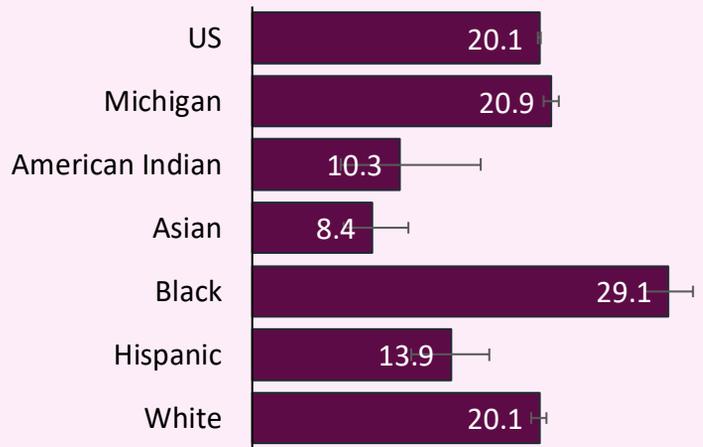
1,380 Deaths in Michigan estimated for 2020. ¹

Incidence Rate, 2013-2017 ²



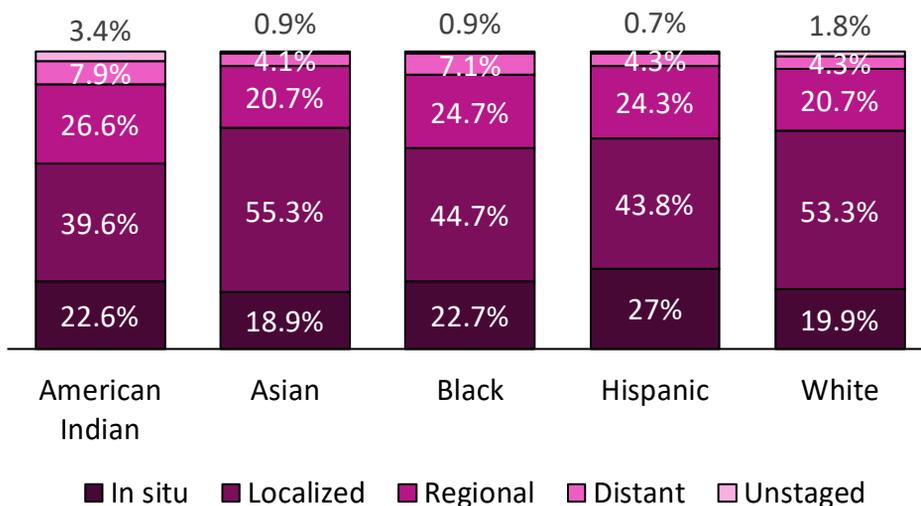
Rate per 100,000, Age-Adjusted to 2000 US Population
Source: Michigan Cancer Surveillance Program, MDHHS

Mortality Rate, 2014-2018 ³



Rate per 100,000, Age-Adjusted to 2000 US Population
Source: Division for Vital Records and Health Statistics, MDHHS

Stage at Diagnosis, 2013-2017 ²



Source: Michigan Cancer Surveillance Program, MDHHS

91%

Of Americans will survive five-years. ⁴



Lung and Bronchus Cancer

#20

In the US for lung and bronchus cancer **incidence.** ⁵

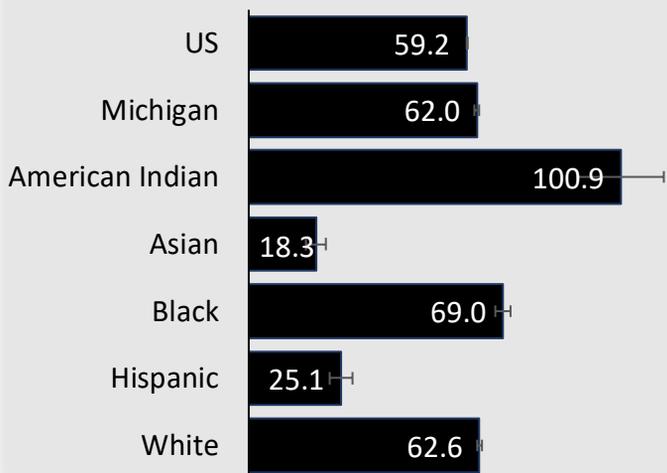
#15

In the US for lung and bronchus cancer **mortality.** ⁵

8,140 New cases estimated in Michigan for 2020. ¹

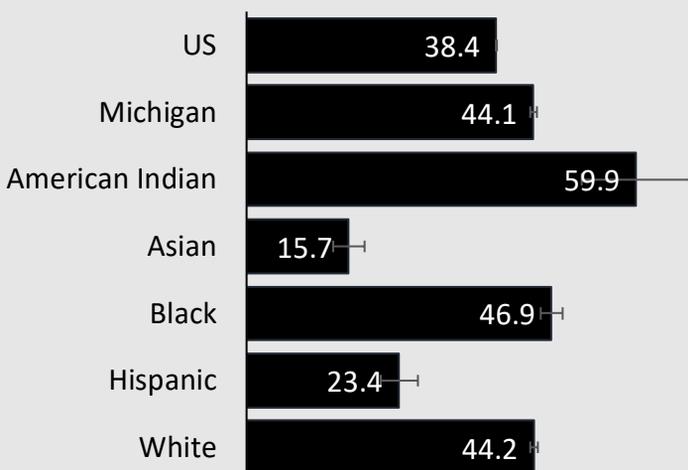
5,220 Deaths in Michigan estimated for 2020. ¹

Incidence Rate, 2013-2017 ²



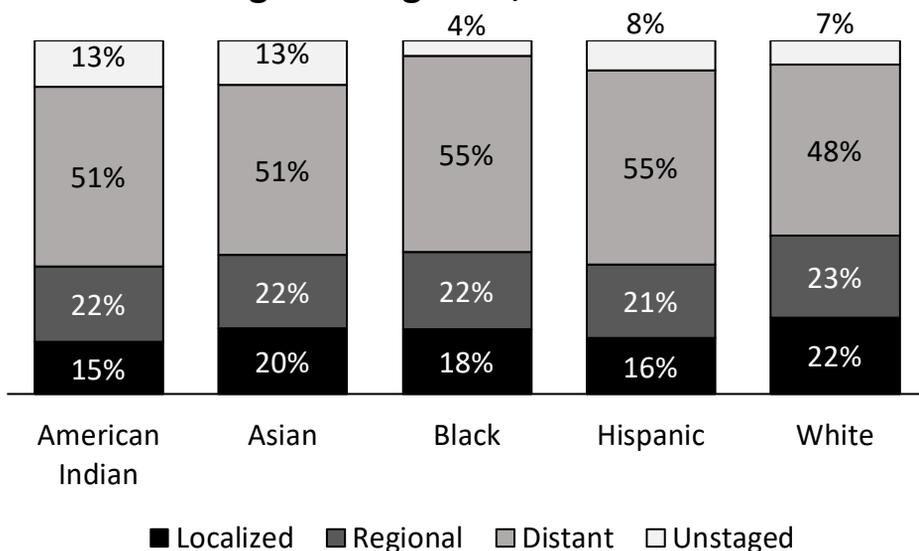
Rate per 100,000, Age-Adjusted to 2000 US Population
Source: Michigan Cancer Surveillance Program, MDHHS

Mortality Rate, 2017 ³



Rate per 100,000, Age-Adjusted to 2000 US Population
Source: Division for Vital Records and Health Statistics, MDHHS

Stage at Diagnosis, 2013-2017 ²

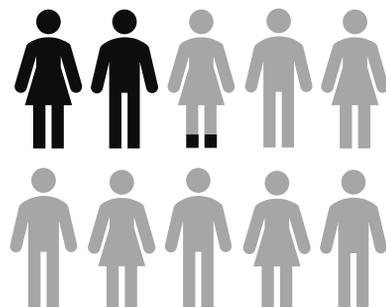


■ Localized ■ Regional ■ Distant □ Unstaged

Source: Michigan Cancer Surveillance Program, MDHHS

22%

Of Americans will survive five-years. ⁴



Pediatric Cancer

#25

In the US for cancer **incidence** among people diagnosed under the age of 20. ⁵

#14

In the US for cancer **mortality** among people diagnosed under the age of 20. ⁵

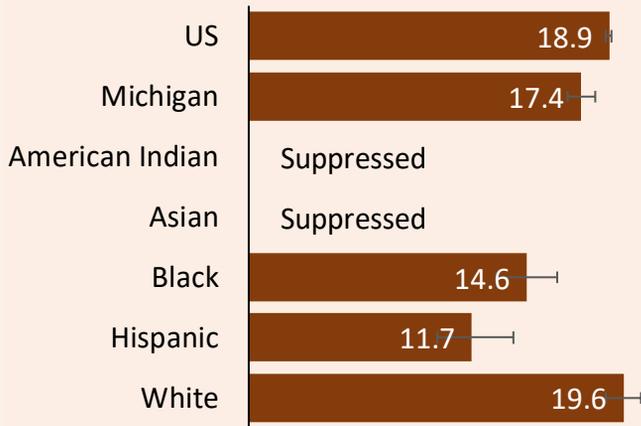
12%

Decrease in pediatric cancer cases since 2000. ²

26%

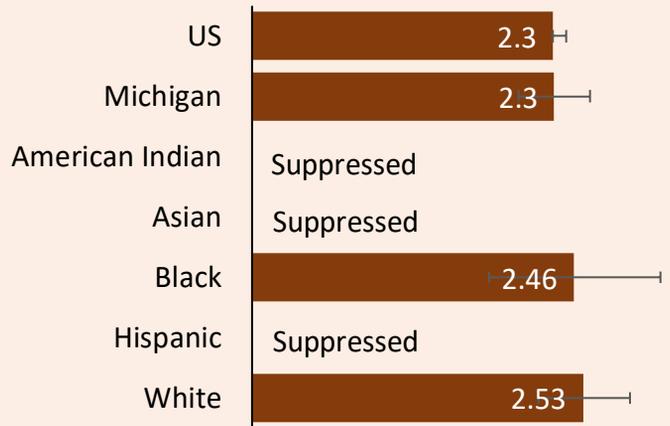
Decrease in pediatric cancer mortality since 2000. ³

Incidence Rate, 2013-2017 ²



Rate per 100,000, Age-Adjusted to 2000 US Population
Source: Michigan Cancer Surveillance Program, MDHHS

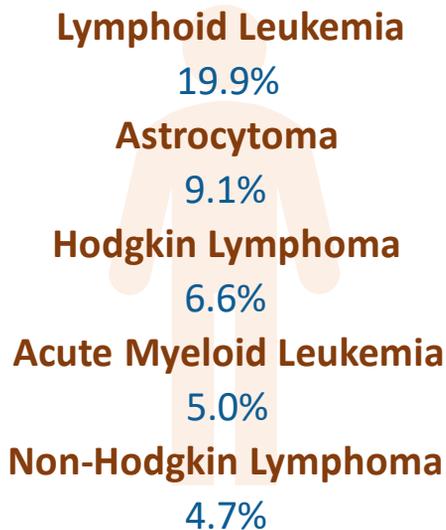
Mortality Rate, 2014-2018 ³



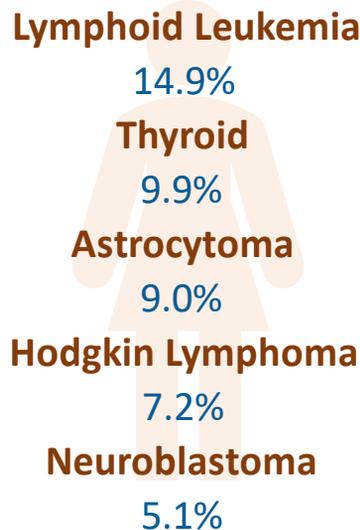
Rate per 100,000, Age-Adjusted to 2000 US Population
Source: Division for Vital Records and Health Statistics, MDHHS

Top 5 Cancer Sites as Average % per Year ²

Male

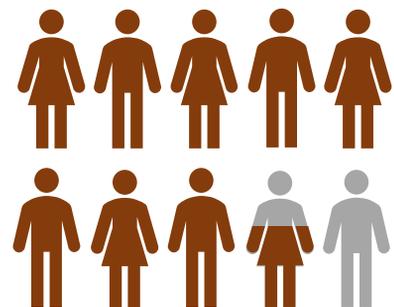


Female



85%

Of Americans under the age of 20 will survive five-years. ⁴



Prostate Cancer

#35

In the US for prostate cancer **incidence**.⁵

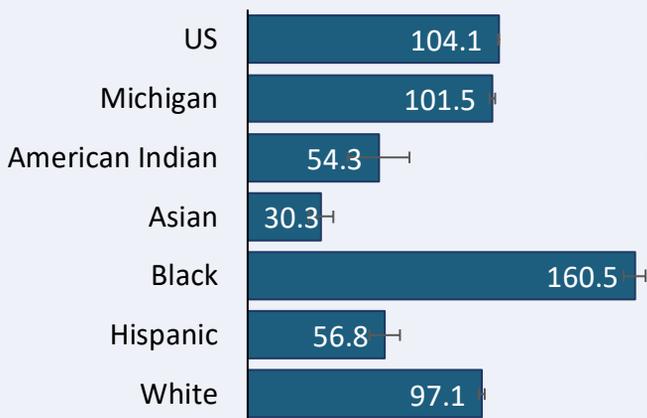
#34

In the US for prostate cancer **mortality**.⁵

6,820 New cases estimated in Michigan for 2020.¹

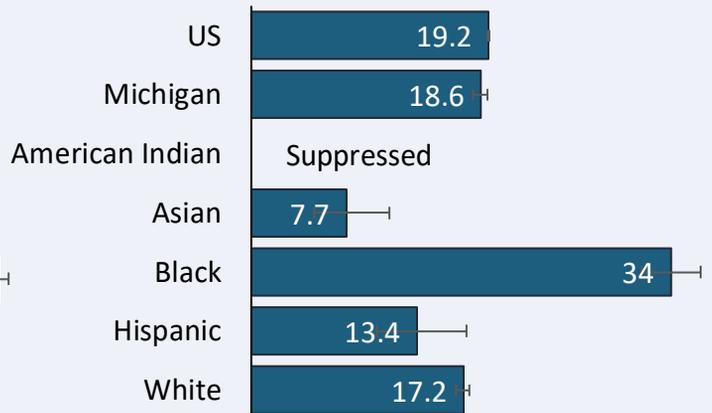
1,030 Deaths in Michigan estimated for 2020.¹

Incidence Rate, 2013-2017²



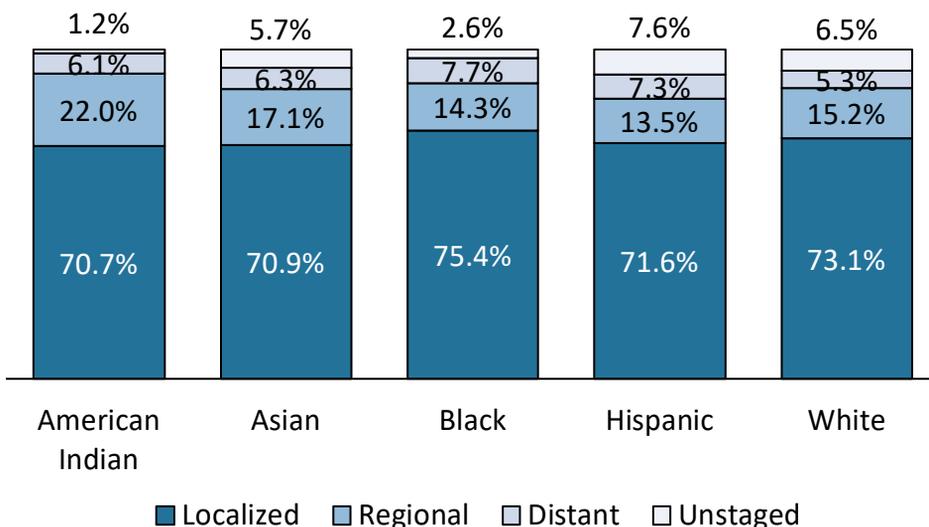
Rate per 100,000, Age-Adjusted to 2000 US Population
Source: Michigan Cancer Surveillance Program, MDHHS

Mortality Rate, 2014-2018³



Rate per 100,000, Age-Adjusted to 2000 US Population
Source: Division for Vital Records and Health Statistics, MDHHS

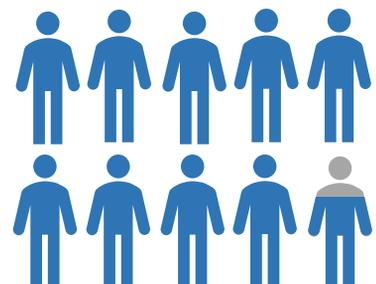
Stage at Diagnosis, 2013-2017²



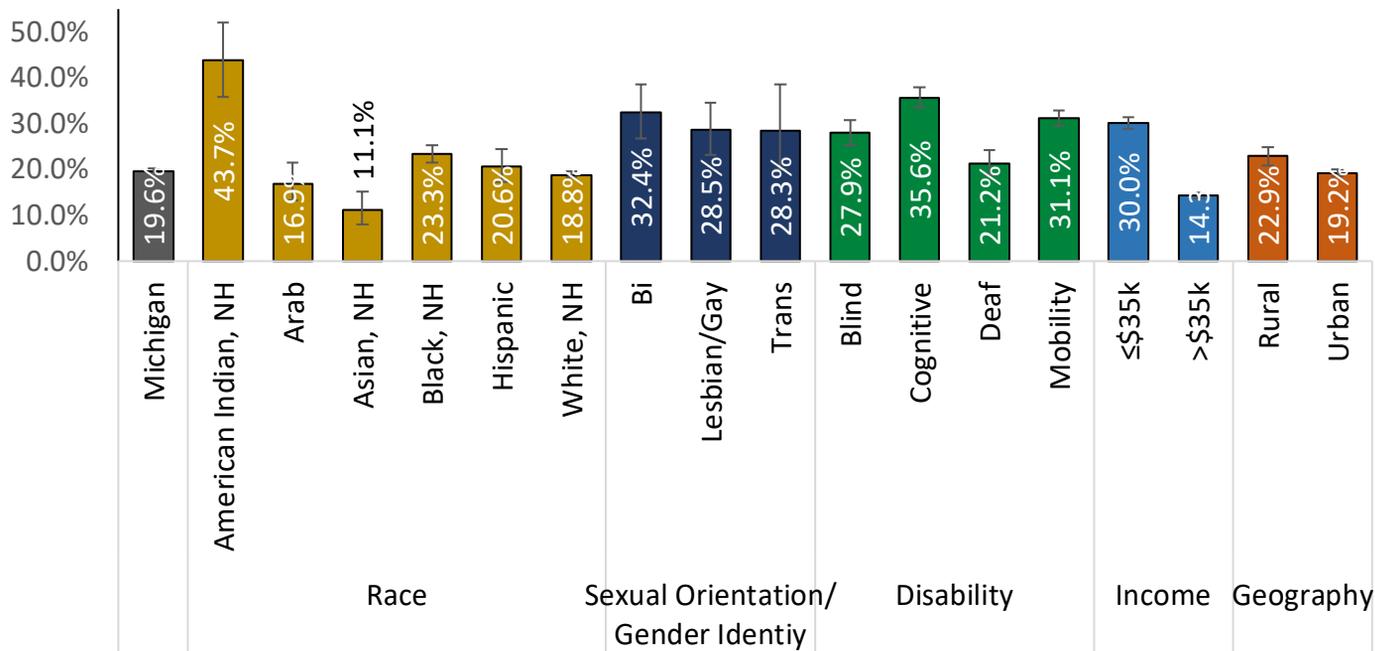
■ Localized ■ Regional ■ Distant ■ Unstaged
Source: Michigan Cancer Surveillance Program, MDHHS

98%

Of Americans will survive five-years.⁴



Percent of Current Cigarette Smokers ⁶

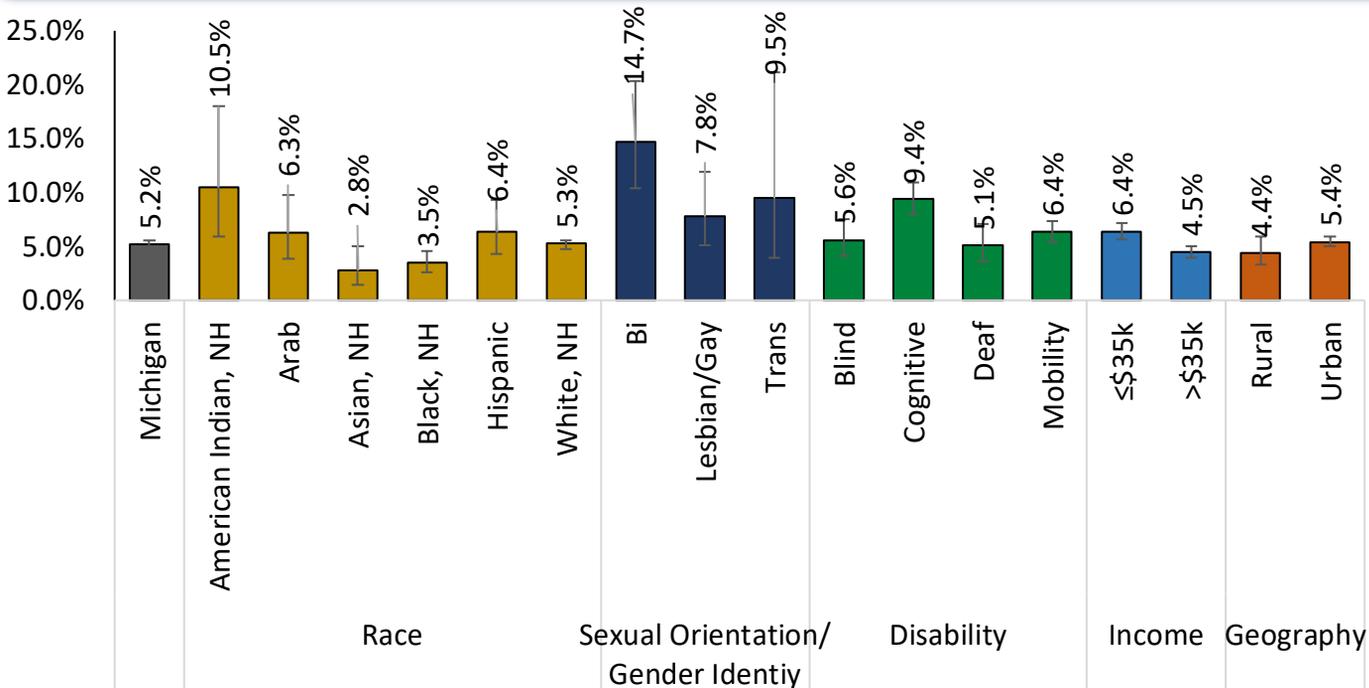


Among adults who reported that they had ever smoked at least 100 cigarettes in their life and currently smoke now.

NH: Non-Hispanic

Source: Michigan Behavioral Risk Factor Survey, 2016 - 2018

Percent of Current E-Cigarette Users ⁶

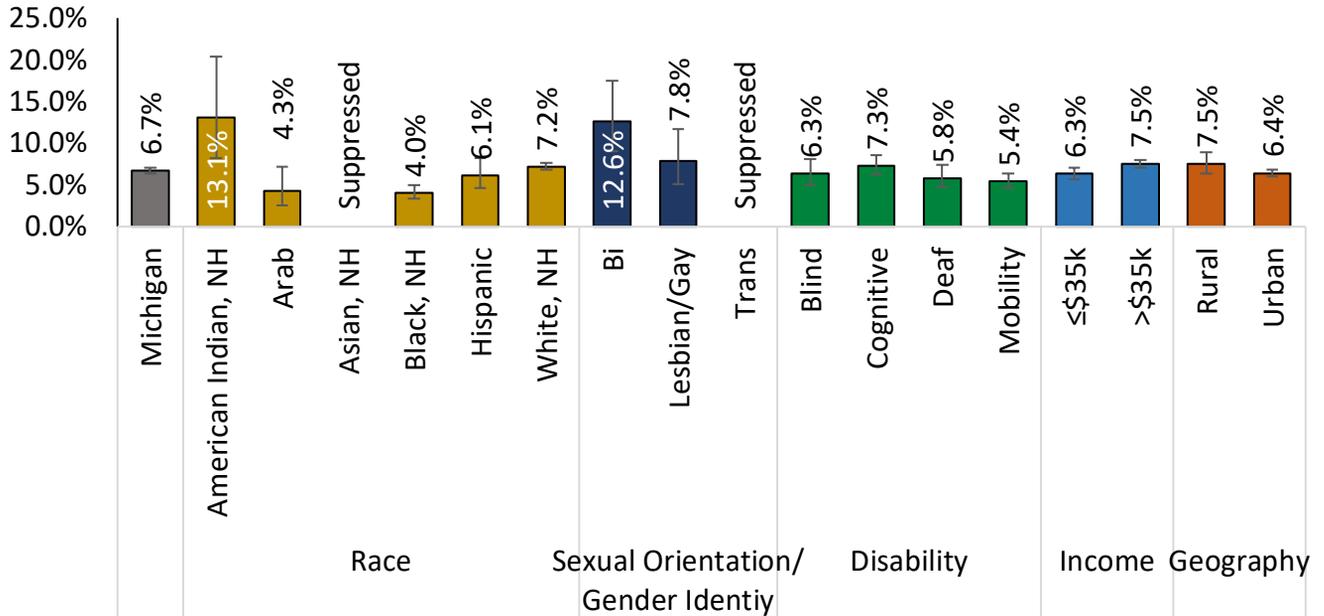


Among adults who reported that they currently use e-cigarettes or other electronic vaping products.

NH: Non-Hispanic

Source: Michigan Behavioral Risk Factor Survey, 2016 - 2018

Percent of Heavy Drinkers ⁶

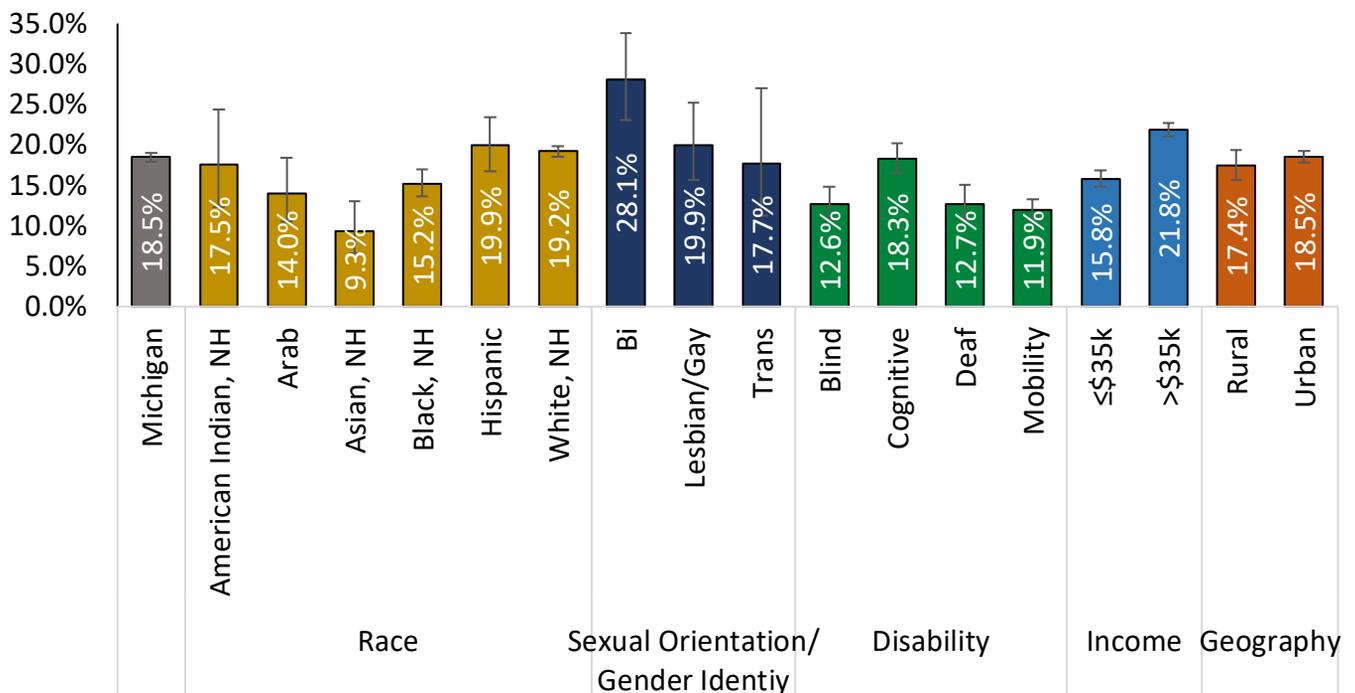


Among all adults, the proportion who reported consuming an average of more than two alcoholic drinks per day for men or more than one per day for women in the previous month.

NH: Non-Hispanic

Source: Michigan Behavioral Risk Factor Survey, 2016 - 2018

Percent of Binge Drinkers ⁶

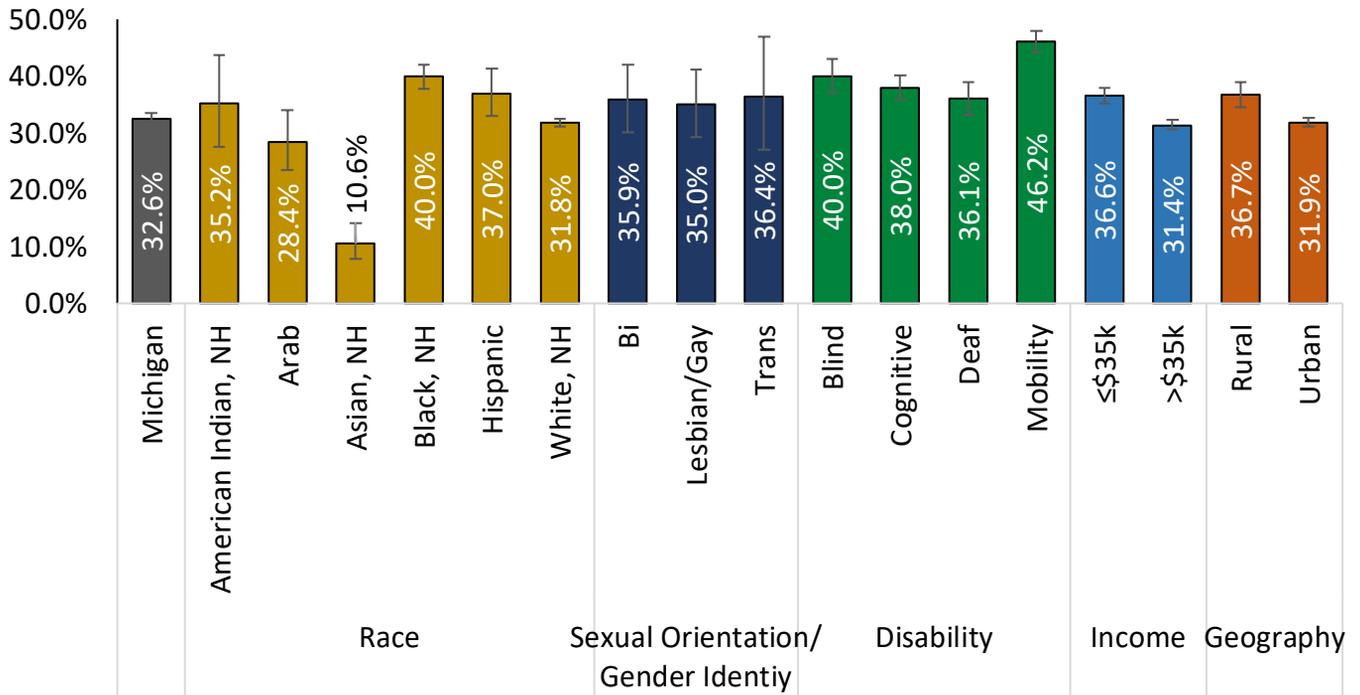


Among all adults, the proportion who reported consuming five or more drinks per occasion (for men) or 4 or more drinks per occasion (for women) at least once in the previous month.

NH: Non-Hispanic

Source: Michigan Behavioral Risk Factor Survey, 2016 - 2018

Percent who are Obese ⁶

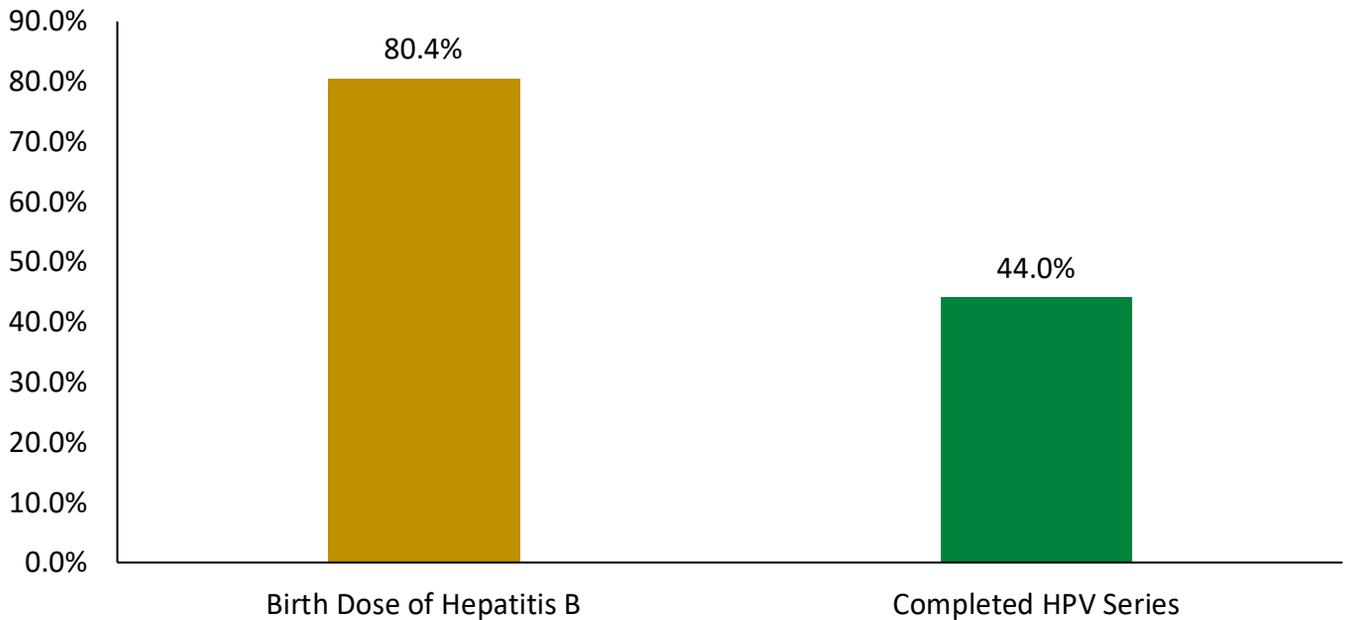


Among all adults, the proportion of respondents whose BMI was greater than or equal to 30.0.

NH: Non-Hispanic

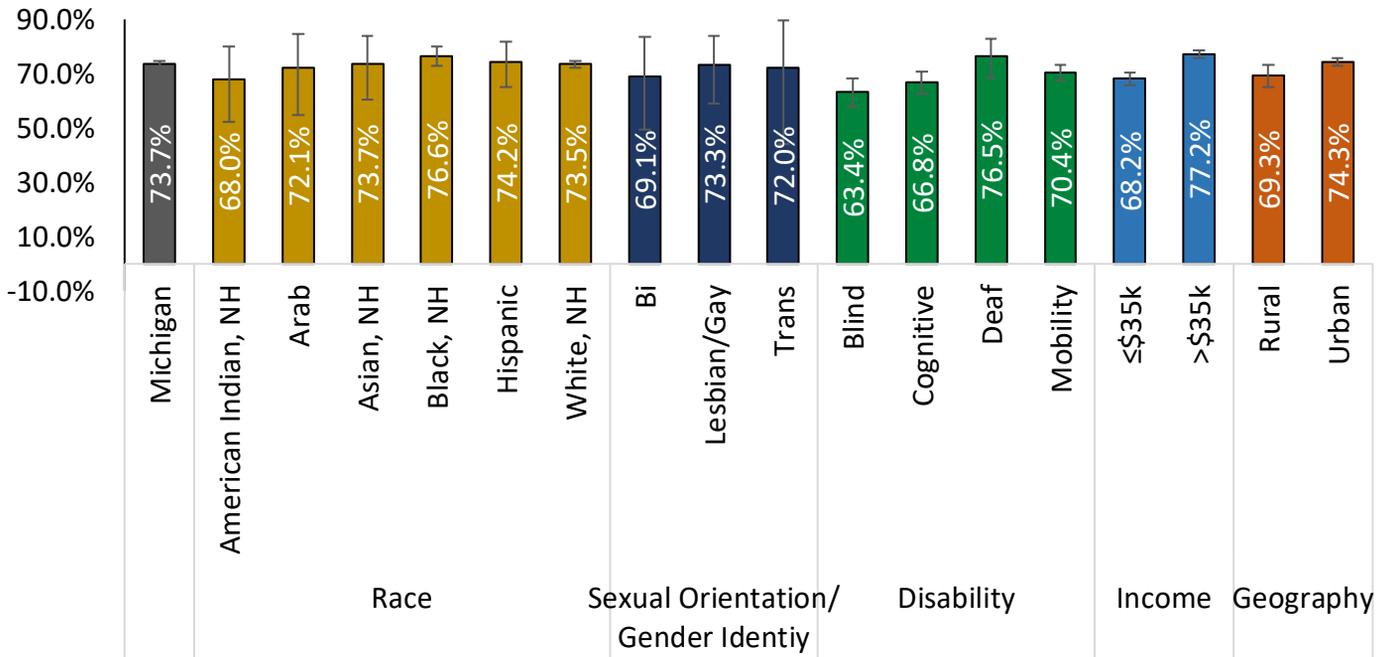
Source: Michigan Behavioral Risk Factor Survey, 2016 - 2018

Percent Vaccinated ⁷



Source: Michigan Care Improvement Registry, March 2020

Breast Cancer Screening ⁸

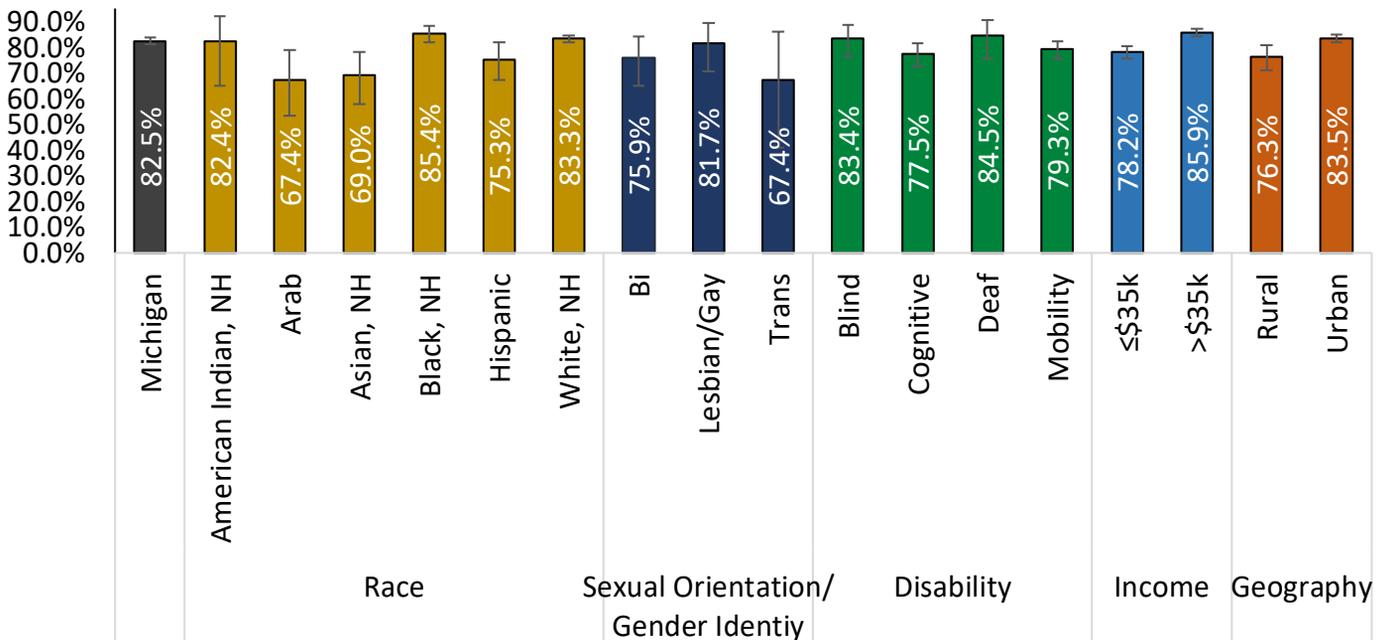


Among women aged 40 years and older, the proportion who reported having a mammogram in the past two years.

NH: Non-Hispanic

Source: Michigan Behavioral Risk Factor Survey, 2016 & 2018

Cervical Cancer Screening ⁸

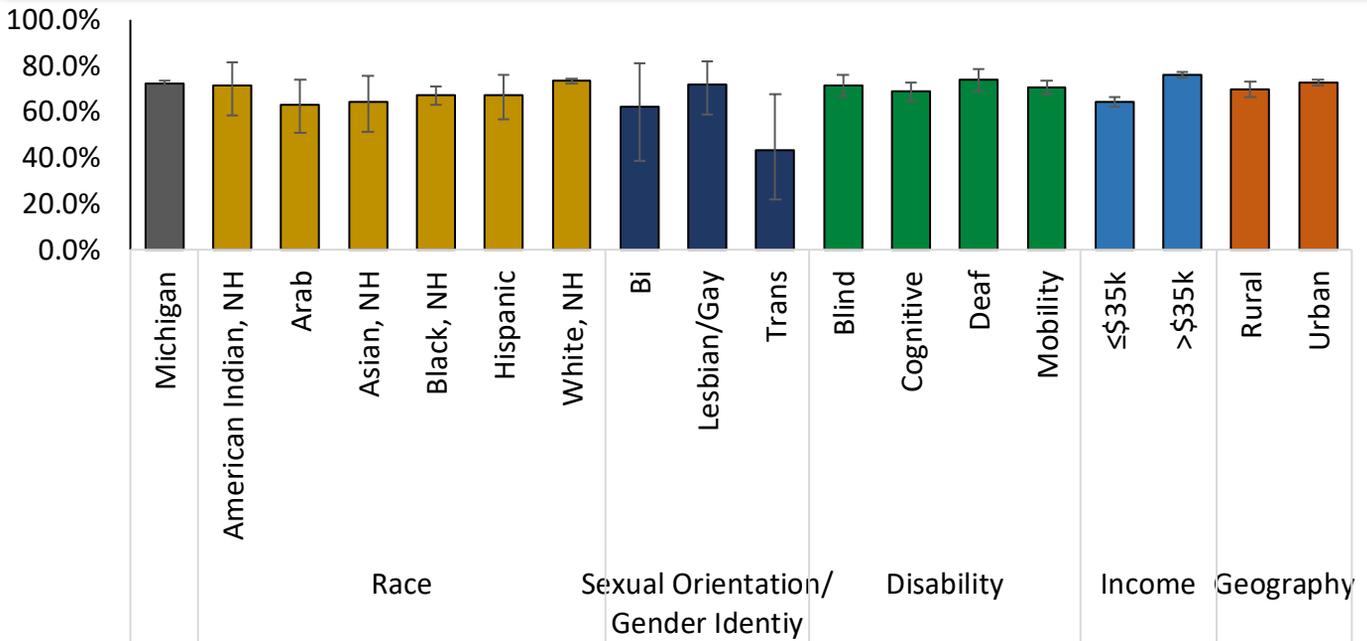


Among women aged 21 years and older, the proportion who reported having a Pap test within the previous three years.

NH: Non-Hispanic

Source: Michigan Behavioral Risk Factor Survey, 2016 & 2018

Colorectal Cancer Screening ⁸

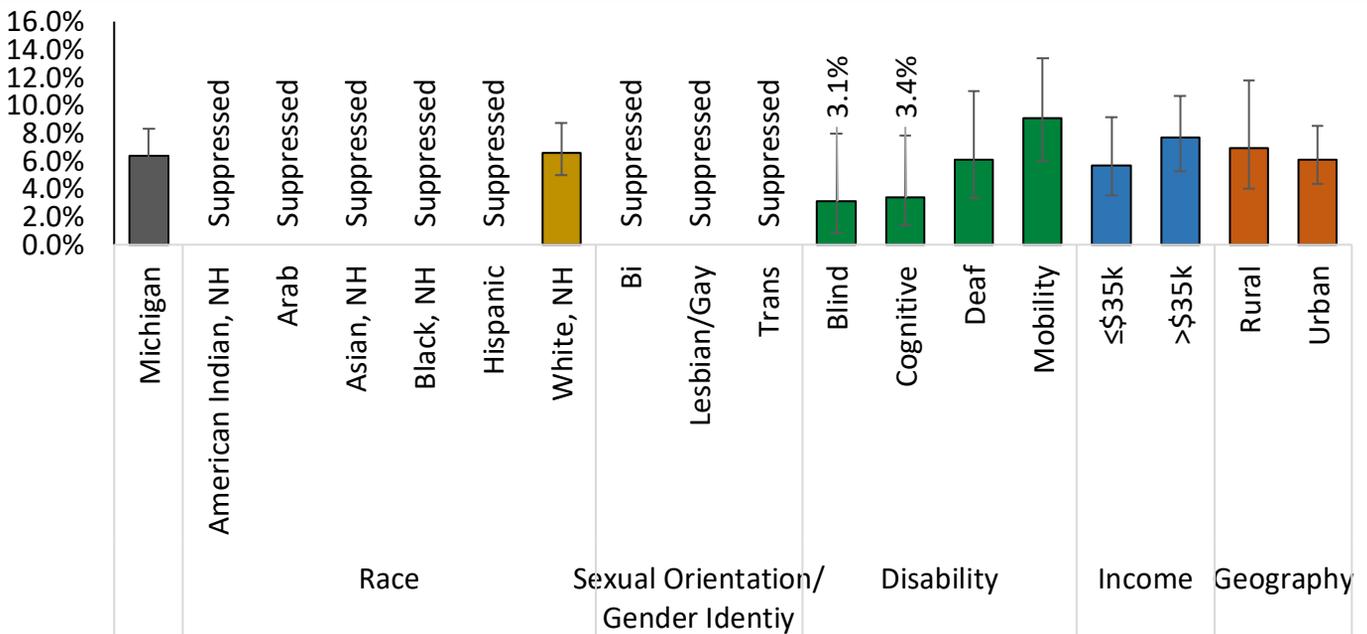


Among adults aged 50 years and older, the proportion who reported having either a fecal occult blood test within the past year, a sigmoidoscopy within the past five years, or a colonoscopy within the past ten years.

NH: Non-Hispanic

Source: Michigan Behavioral Risk Factor Survey, 2016 & 2018

Lung Cancer Screening ⁹



Among adults aged 55 and older who have a 30 pack-year smoking history and currently smoke or have quit in the past 15 years, the proportion who reported having a low-dose computed tomography in the past year.

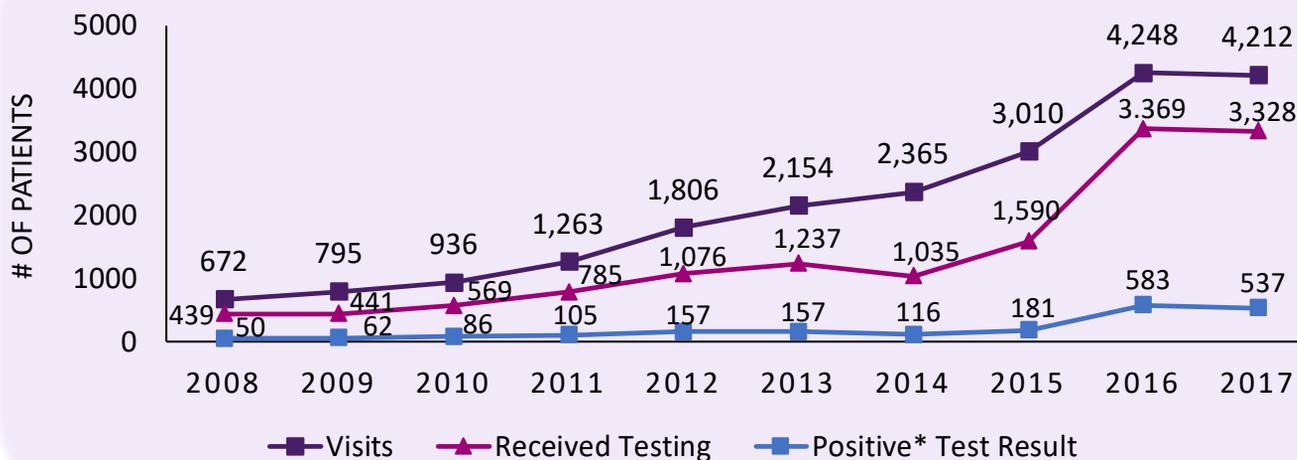
NH: Non-Hispanic

Source: Michigan Behavioral Risk Factor Survey, 2015-2017

Family History and Genetic Testing

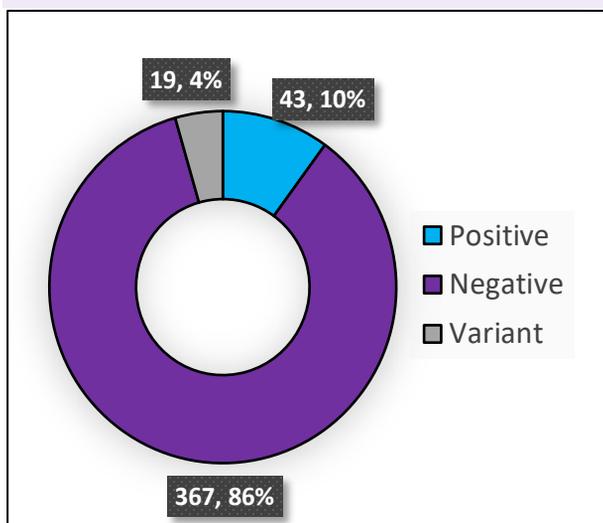
The following data were collected from the Michigan Department of Health and Human Services (MDHHS) Hereditary Cancer Network (HCN) between January 1, 2016, and December 31, 2017. Thirteen partner institutions currently contribute de-identified data on all BRCA gene-related and Lynch syndrome (LS)-related genetic counseling patient visits, which means this data may not be representative of all genetic counseling and testing among Michigan residents. A total of 11,678 records have been entered into the HCN database since 2015, with a total of 8,465 records for 2016-2017.

HCN: VISITS AND TESTING, 2008-2017 ¹⁰



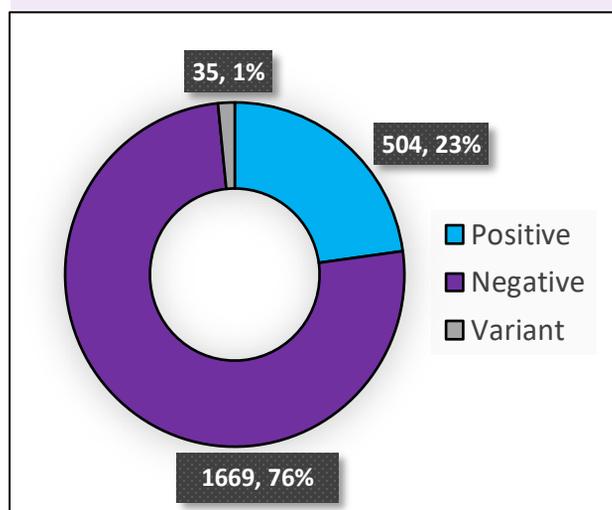
Source: Hereditary Cancer Network, Cancer Genomics Program

Genetic Testing Among Patients in the HCN with a Personal History of Cancer, 2016-2017 ¹⁰



Source: Hereditary Cancer Network, Cancer Genomics Program

Genetic Testing Among Patients in the HCN with a Family History of Cancer, 2016-2017 ¹⁰



Source: Hereditary Cancer Network, Cancer Genomics Program

* Positive test result indicates a person who had a pathogenic or likely pathogenic mutation associated with at least one gene.

Cancer Survivorship

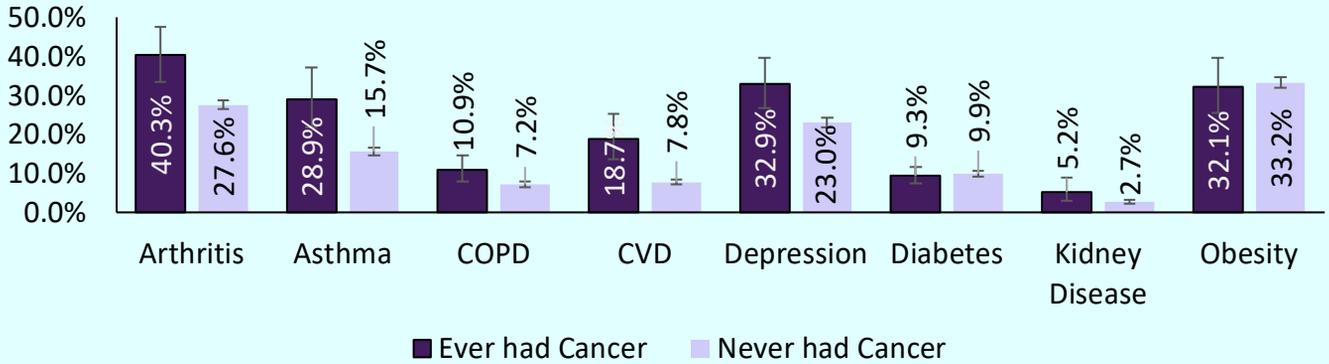
570,760

Estimated cancer survivors in Michigan as of 2019. ¹¹

12.8%

Of Michigan's population are cancer survivors. ¹²

Chronic Diseases by Cancer Status ¹²



Age-Adjusted to the 2000 US population
 Source: Behavioral Risk Factor Survey, 2018
 COPD – Chronic Obstructive Pulmonary Disease, CVD – Cardiovascular Disease



5.9% Of survivors who have participated in a clinical trial. ¹²



12.9% Of survivors who currently smoke. ¹²

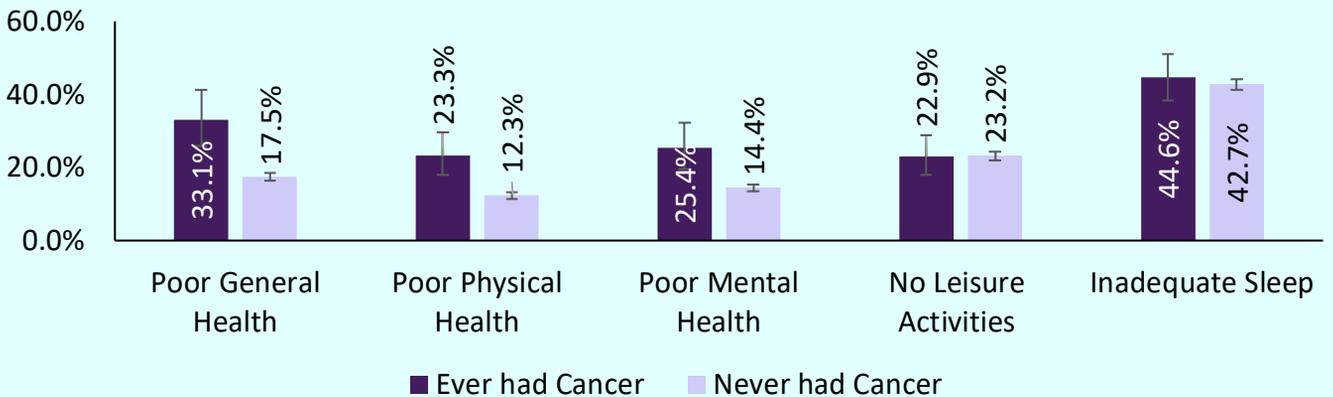


9.1% Of survivors report post-treatment pain. ¹²



75.6% Of survivors who smoke and were referred to a cessation program. ¹²

Quality of Life Indicators by Cancer Status



Age-Adjusted to the 2000 US population
 Source: Behavioral Risk Factor Survey, 2018

Data Request Process

Requests for cancer incidence and mortality are handled by the Michigan Cancer Surveillance Program (MCSP) within the Michigan Department of Health and Human Services Division for Vital Records and Health Statistics.

Censoring:

- Race is censored for Michigan's 70 rural counties .
 - ZIP code data cannot be released for populations < 5,000.
 - Age-adjusted rates are considered statistically unreliable if based on < 20 cases.
 - Counts are censored if fewer than six, to avoid inadvertent disclosure of patient-level information.
-

Submit requests to:

Cancer incidence, research requests and potential cluster concerns:

Georgia Spivak / SpivakG@michigan.gov /
517-335-8702

Environmental exposure concerns:

Carissa Hueter/ HueterC@michigan.gov/
517-284-1276

Logs are maintained internally documenting request information such as type of requester, sites of concern, and years of diagnosis.

Select statistics can be found on the web site:

Michigan.gov/healthstatistics

Tables and maps can be generated under the "Community" tab of Cancer Statistics, or independently under:

www.cancer-rates.info/mi

Resources

Michigan Cancer Programs

Michigan.gov/Cancer

Michigan Cancer Surveillance Program

Michigan.gov/MCSP

Michigan Cancer Genomics Program

Michigan.gov/HereditaryCancer

Michigan Cancer Epidemiology

Michigan.gov/ChronicEpi

Michigan Behavioral Risk Factor Surveillance System

Michigan.gov/BRFS

American Cancer Society: Cancer Statistics

<https://cancerstatisticscenter.cancer.org/#/>

NIH State Cancer Profiles

<https://statecancerprofiles.cancer.gov/index.html>

Surveillance, Epidemiology, and End Results Program (SEER)

<https://seer.cancer.gov/statistics/>

CDC US Cancer Statistics Visualization

<https://gis.cdc.gov/Cancer/USCS/DataViz.html>

Disability and Health Data System

<https://www.cdc.gov/ncbddd/disabilityandhealth/>

References

1. American Cancer Society. Cancer Statistics Center: Michigan at a Glance 2020. Retrieved at: <https://cancerstatisticscenter.cancer.org/#!/state/Michigan>.
2. Michigan Resident Cancer Incidence File. Updated with cases processed through May 2020. Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services.
3. Michigan Resident Death Files, Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services.
4. Surveillance, Epidemiology, and End Results (SEER) Program (www.seer.cancer.gov) SEER*Stat Database: Incidence - SEER 9 Regs Research Data, Nov 2019 Sub (1975-2017) , National Cancer Institute, DCCPS, Surveillance Research Program, Surveillance Systems Branch, released April 2020, based on the November 2019 submission.
5. State Cancer Profiles, National Cancer Institute. Retrieved at: <https://statecancerprofiles.cancer.gov/>.
6. Michigan Behavioral Risk Factor Survey 2016-2018. Division of Lifecourse Epidemiology, Michigan Department of Health & Human Services Retrieved at www.Michigan.gov/brfs.
7. Michigan Care Improvement Registry (MCIR) Prepared by the Michigan Department of Health and Human Services. March 2020 Retrieved at: https://www.michigan.gov/documents/mdhhs/State_Level_ReportCard_621826_7.pdf.
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9. Michigan Behavioral Risk Factor Survey 2015-2017. Division of Lifecourse Epidemiology and Genomics, Michigan Department of Health & Human Services Retrieved at www.Michigan.gov/brfs.
10. Hereditary Cancer Network, 2008-2017. Division of Lifecourse Epidemiology and Genomics, Michigan Department of Health & Human Services.
11. Cancer Treatment & Survivorship Facts and Figures 2019-2021. American Cancer Society. Retrieved at: <https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/cancer-treatment-and-survivorship-facts-and-figures/cancer-treatment-and-survivorship-facts-and-figures-2019-2021.pdf>.
12. Michigan Behavioral Risk Factor Survey 2018. Division of Lifecourse Epidemiology and Genomics, Michigan Department of Health & Human Services Retrieved at www.Michigan.gov/brfs.

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