

Select Hereditary Cancers and Cancer Genetic Services in Michigan by Race, 2014-2018



Overview

Background

Harmful mutations in the Breast Cancer, or *BRCA1* and *BRCA2* genes, substantially increase the risk of developing hereditary breast and ovarian cancers (HBOC) over the course of a lifetime. Additionally, a *BRCA1* or *BRCA2* mutation, the most common causes of HBOC, increases the risk for pancreatic and prostate cancers. Among women younger than 45, breast cancer incidence is higher among Black women than white women.¹

Variations in *MLH1*, *MSH2*, *MSH6*, *PMS2*, or *EPCAM* genes increase the risk of developing Lynch syndrome (LS). LS is an inherited disorder that increases the risk of colorectal, endometrial, ovarian and other cancers. Genetic counseling with a board certified and/or eligible genetics provider, followed by genetic testing as appropriate, are the recommended first steps for anyone with a personal history or strong family history of these cancers. Colorectal cancer also disproportionately affects the Black community, where the rates are the highest of any racial/ethnic group in the United States. Black Americans are about 20% more likely to get colorectal cancer and about 40% more likely to die from it than most other groups.²

Early identification of HBOC or LS can help reduce the impact of cancer and save the lives of family members who may also be at risk. Studies have found that Black women are less likely to receive a physician recommendation for genetic counseling compared to white women, and this difference remained after adjusting for mutation risk.³ It is important to analyze the racial differences among pursuing and receiving cancer genetic services for patients with cancers that may be associated with HBOC or LS and genetic counseling. Identifying populations that have a high need for genetic counseling and testing but are low in usage helps drive program planning decisions.

Population

The cancers outlined in this report have been identified as cancers most likely to have an underlying genetic predisposition due to hereditary breast or ovarian cancer (HBOC) and Lynch syndrome (LS). These cancers include breast, ovarian, colorectal, endometrial, prostate and pancreatic cancers.

Data Suppression Rules

Numbers are suppressed for cancer genetic service data when counts are less than six. Data suppression rules are noted in each figure in which it applies to.

Cancer Genetic Services

The number of people receiving genetic counseling in Michigan is from the BRCA Clinical Network and Hereditary Cancer Network (HCN) Databases. Twenty-one clinics have contributed information to this database.^a This database only contains information on people who present at a clinic participating in the HCN and therefore may not be representative of all genetic counseling performed in the state. Those who present at one of these clinics seeking HBOC or LS counseling are included for the years 2014-2018 (N=18,976; **White** = 16,168 & **Black** = 1,580).

Female Breast Cancer from the HCN, 2014-2018

41,016

White women in Michigan were diagnosed with breast cancer between 2014 and 2018.

6,258

Black women in Michigan were diagnosed with breast cancer between 2014 and 2018.

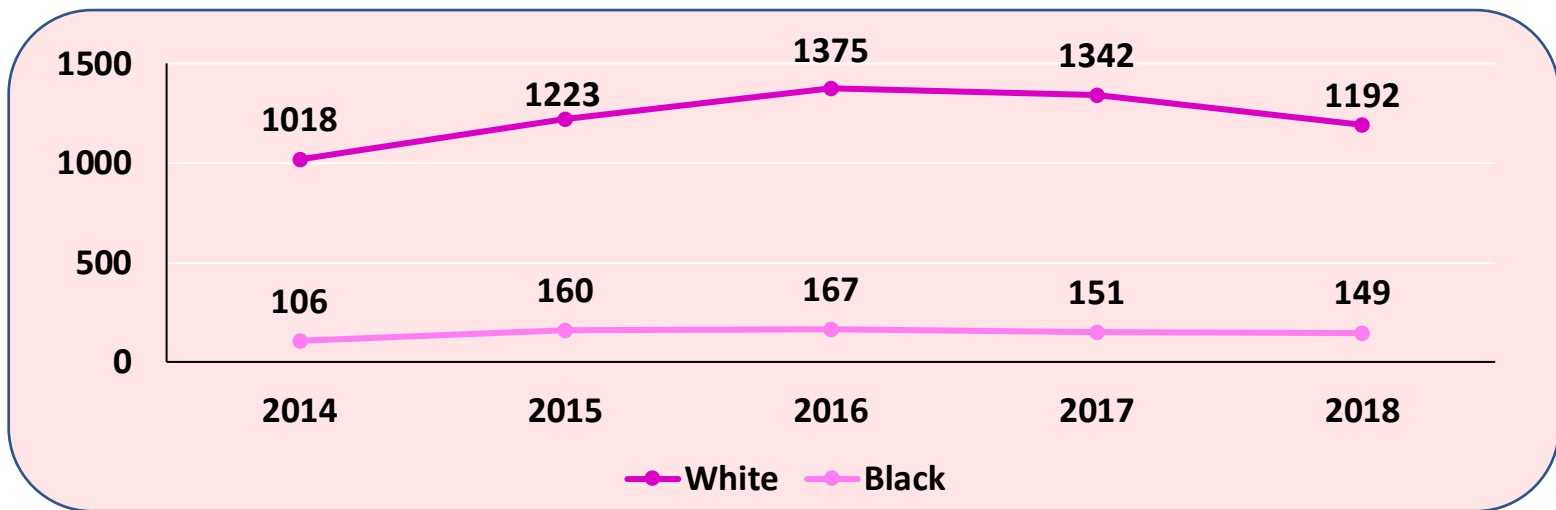
6,150

White women in Michigan with breast cancer received genetic counseling.

733

Black women in Michigan with breast cancer received genetic counseling.

Number of Women with Breast Cancer who Received Genetic Counseling from the HCN by Race, 2014-2018



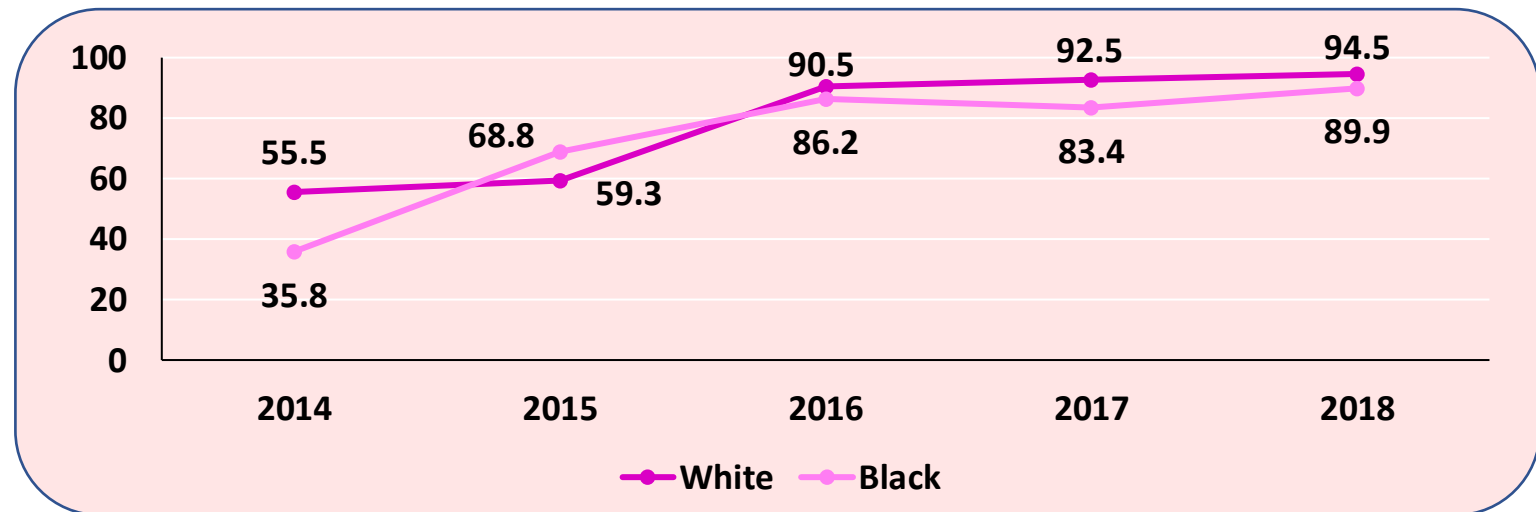
4,904

White women in Michigan with breast cancer received genetic counseling and testing.

552

Black women in Michigan with breast cancer received genetic counseling and testing.

Proportion of Women with Breast Cancer who had Genetic Counseling and Testing from the HCN by Race, 2014-2018



Young* Female Breast Cancer from the HCN, 2014-2018

6,523

Young white women in Michigan were diagnosed with breast cancer between 2014 and 2018.

1,169

Young Black women in Michigan were diagnosed with breast cancer between 2014 and 2018.

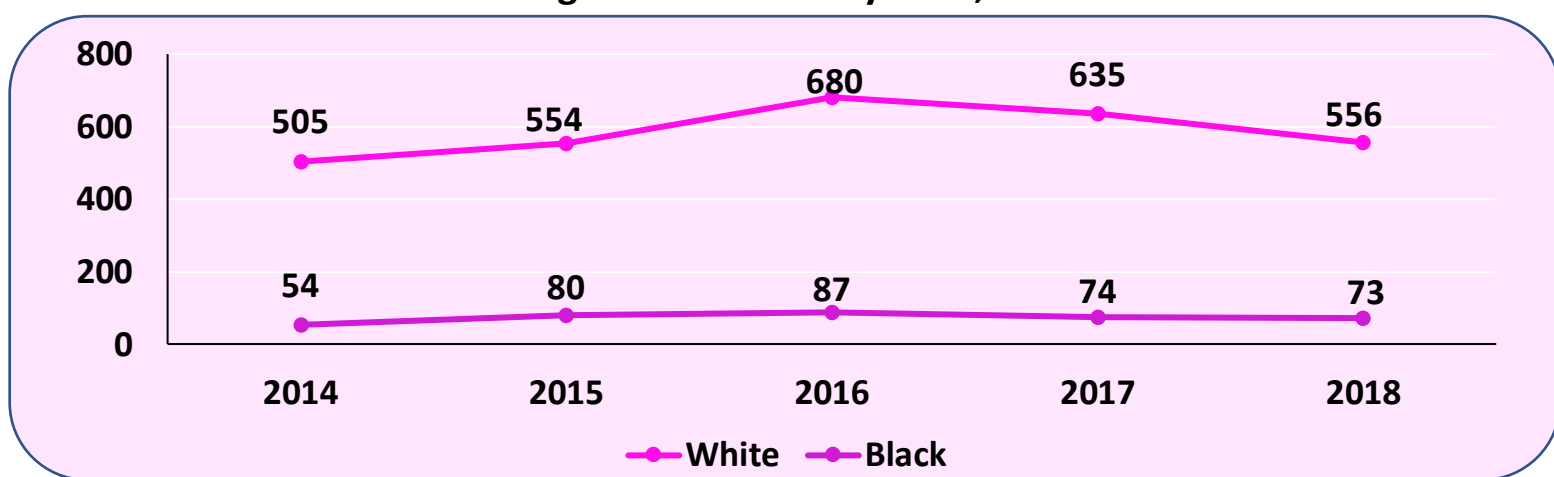
2,930

Young white women in Michigan with breast cancer received genetic counseling.

368

Young Black women in Michigan with breast cancer received genetic counseling.

Number of Young Women with Breast Cancer who Received Genetic Counseling from the HCN by Race, 2014-2018



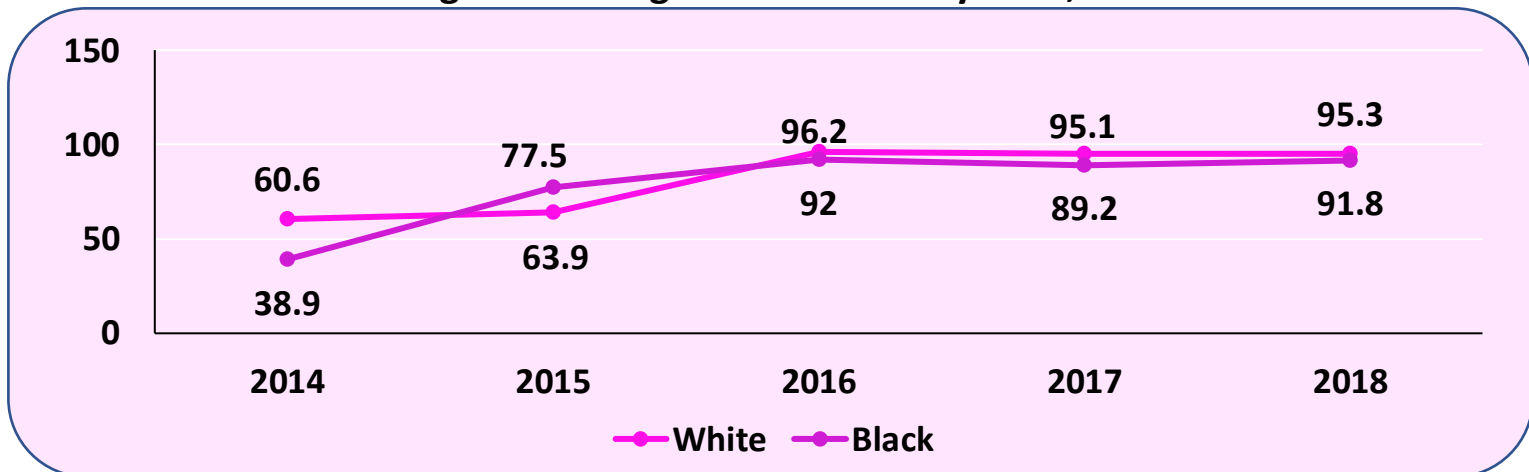
2,448

Young white women in Michigan with breast cancer received genetic counseling and testing.

296

Young Black women in Michigan with breast cancer received genetic counseling and testing.

Proportion of Young Women with Breast Cancer who had Genetic Counseling and Testing from the HCN by Race, 2014-2018



*Young = cancer cases diagnosed under the age of 50

Ovarian Cancer from the HCN, 2014-2018

2,853

White women in Michigan were diagnosed with ovarian cancer between 2014 and 2018.

336

Black women in Michigan were diagnosed with ovarian cancer between 2014 and 2018.

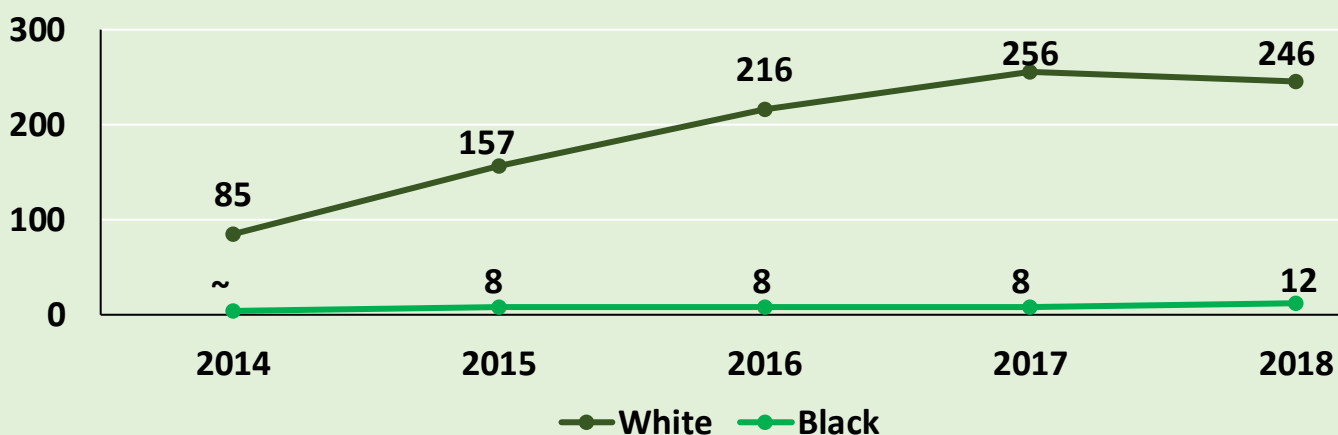
960

White women in Michigan with ovarian cancer received genetic counseling.

40

Black women in Michigan with ovarian cancer received genetic counseling.

Number of Women with Ovarian Cancer who Received Genetic Counseling from the HCN by Race, 2014-2018



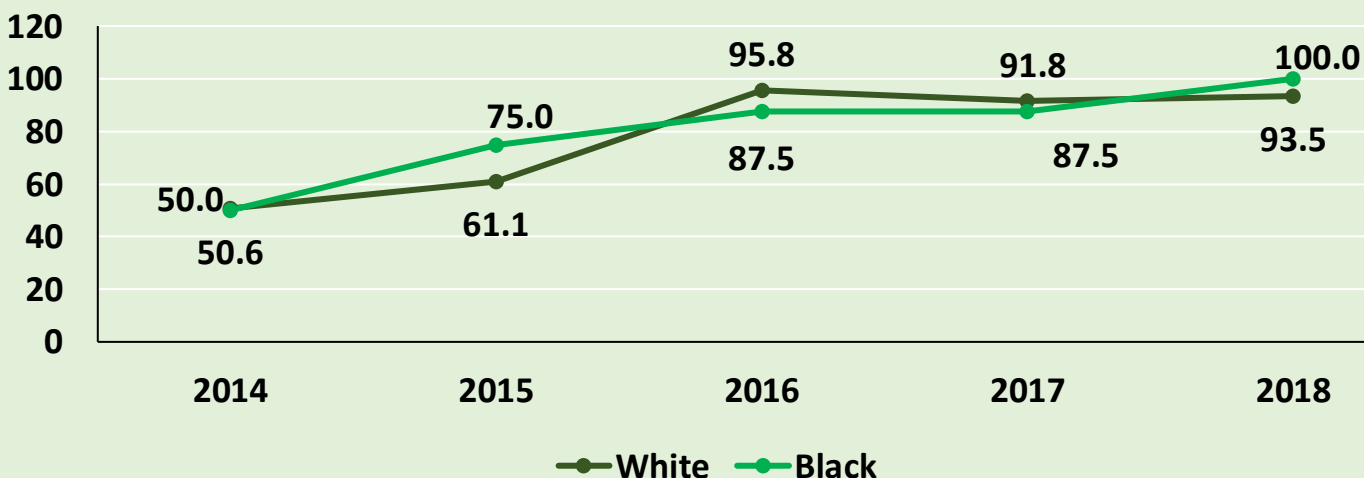
811

White women in Michigan with ovarian cancer received genetic counseling and testing.

34

Black women in Michigan with ovarian cancer received genetic counseling and testing.

Proportion of Women with Ovarian Cancer who had Genetic Counseling and Testing from the HCN by Race, 2014-2018



~Data are suppressed when count is less than 6

Colorectal Cancer from the HCN, 2014-2018

19,576

White persons in Michigan were diagnosed with colorectal cancer between 2014 and 2018.

3,308

Black persons in Michigan were diagnosed with colorectal cancer between 2014 and 2018.

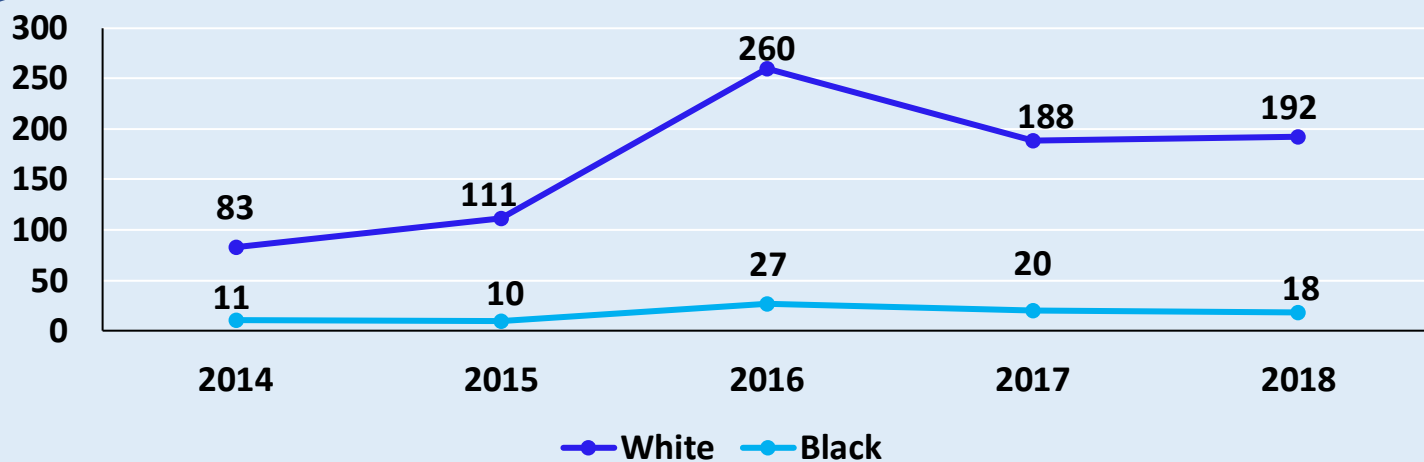
834

White persons with colorectal cancer in Michigan received genetic counseling.

86

Black persons with colorectal cancer in Michigan received genetic counseling.

Number of Persons with Colorectal Cancer who Received Genetic Counseling from the HCN by Race, 2014-2018



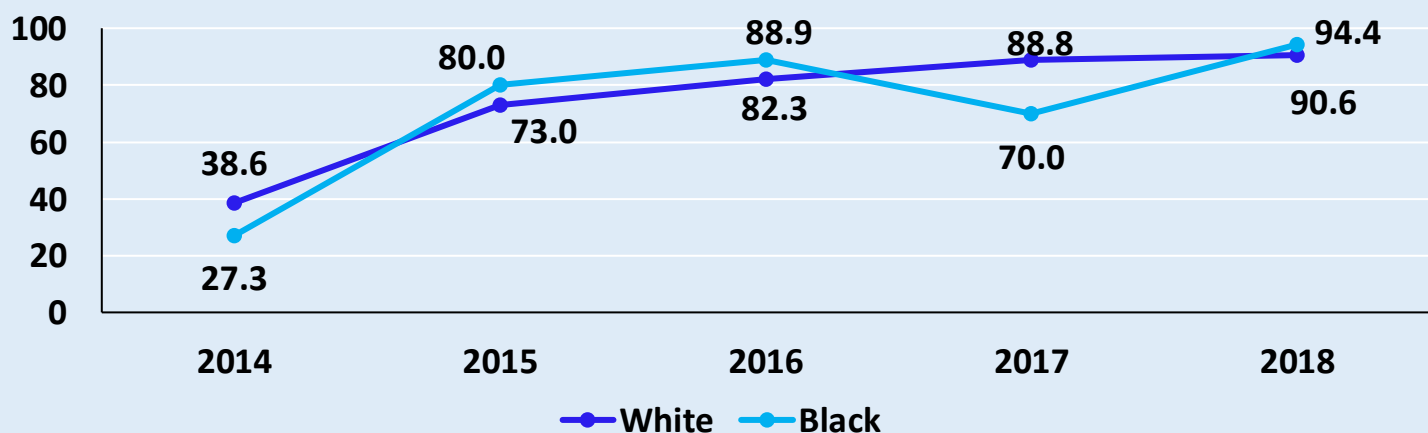
668

White persons in Michigan with colorectal cancer received genetic counseling and testing.

66

Black persons in Michigan with colorectal cancer received genetic counseling and testing.

Proportion of Persons with Colorectal Cancer who had Genetic Counseling and Testing from the HCN by Race, 2014-2018



Young* Colorectal Cancer from the HCN, 2014-2018

2,198

Young white persons in Michigan were diagnosed with colorectal cancer between 2014 and 2018.

548

Young Black persons in Michigan were diagnosed with colorectal cancer between 2014 and 2018.

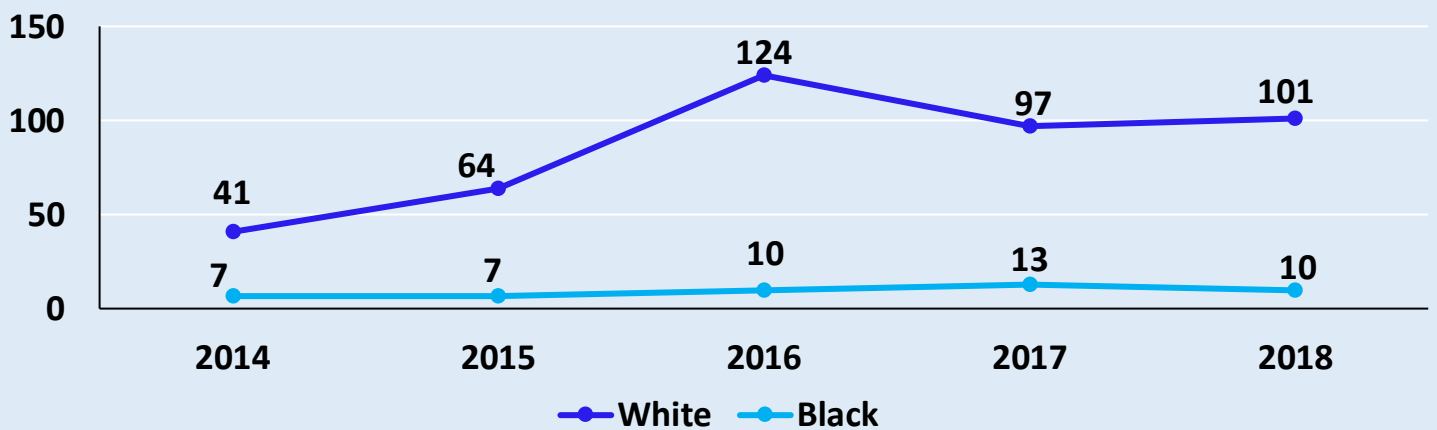
427

Young white persons with colorectal cancer in Michigan received genetic counseling.

47

Young Black persons with colorectal cancer in Michigan received genetic counseling.

Number of Young Persons with Colorectal Cancer who Received Genetic Counseling from the HCN by Race, 2014-2018



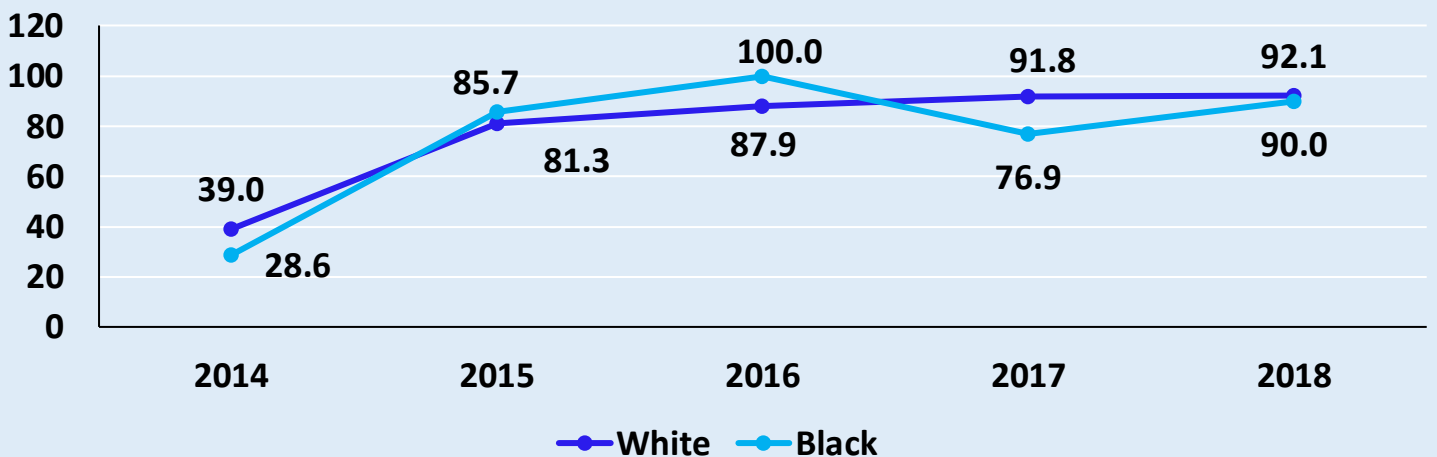
359

Young white persons in Michigan with colorectal cancer received genetic counseling and testing.

37

Young Black persons in Michigan with colorectal cancer received genetic counseling and testing.

Proportion of Young Persons with Colorectal Cancer who had Genetic Counseling and Testing from the HCN by Race, 2014-2018



*Young = cancer cases diagnosed under the age of 50

Prostate Cancer from the HCN, 2014-2018

26,863

White men in Michigan were diagnosed with prostate cancer between 2014 and 2018.

5,315

Black men in Michigan were diagnosed with prostate cancer between 2014 and 2018.

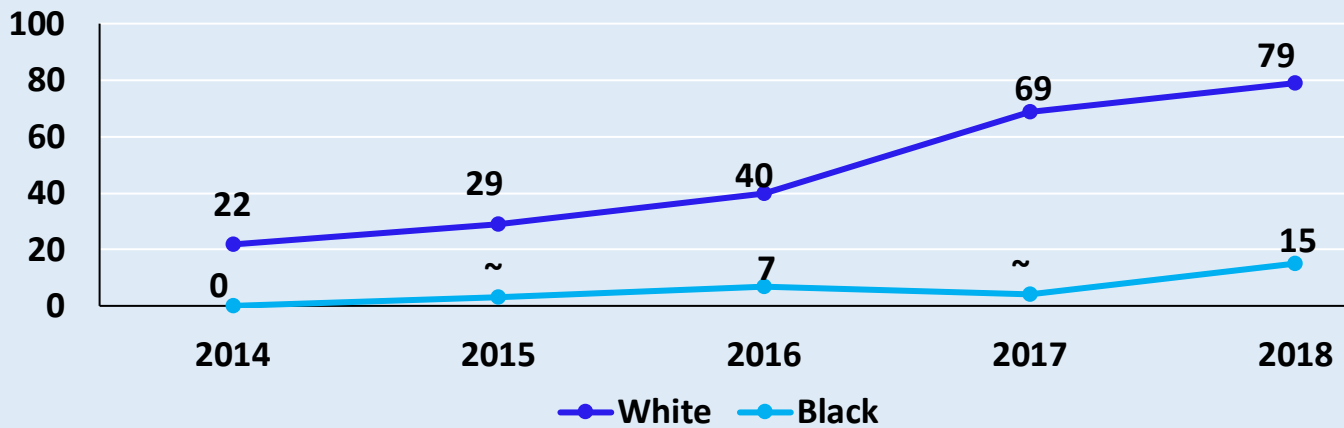
239

White men with prostate cancer in Michigan received genetic counseling.

29

Black men with prostate cancer in Michigan received genetic counseling.

Number of Men with Prostate Cancer who Received Genetic Counseling from the HCN by Race, 2014-2018



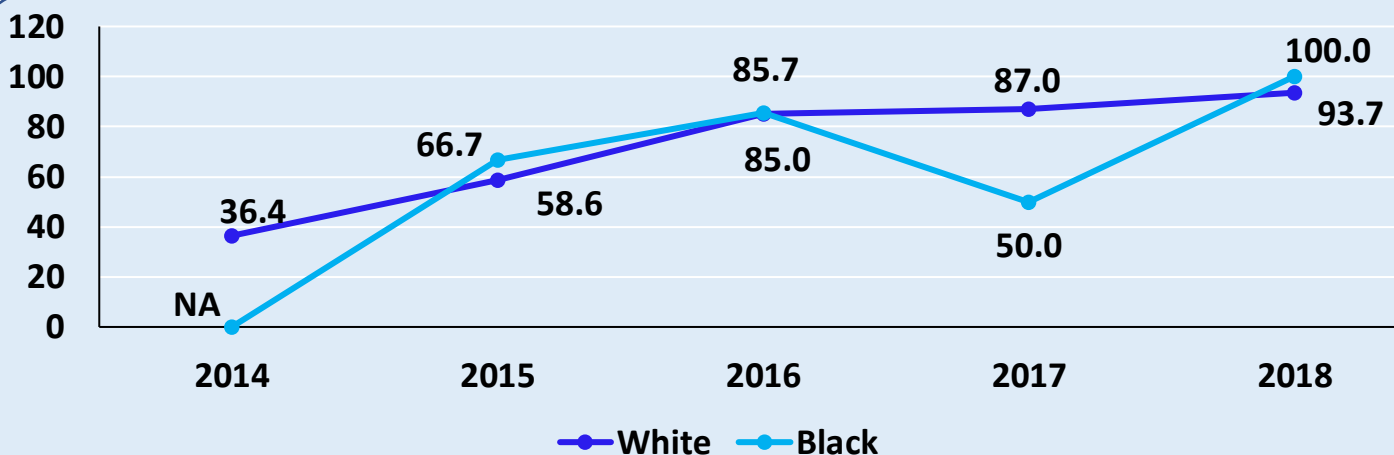
193

White men in Michigan with prostate cancer received genetic counseling and testing.

25

Black men in Michigan with prostate cancer received genetic counseling and testing.

Proportion of Men with Prostate Cancer who had Genetic Counseling and Testing from the HCN by Race, 2014-2018



~Data are suppressed when count is less than 6

NA: Not applicable; there were no patients seen in that year to receive testing

Prostate Cancer (Gleason Score $\geq 7^*$) from the HCN, 2014-2018

27,159

White men in Michigan were diagnosed with High Gleason Score (HGS) prostate cancer between 2014 and 2018.

5,141

Black men in Michigan were diagnosed with HGS prostate cancer between 2014 and 2018.

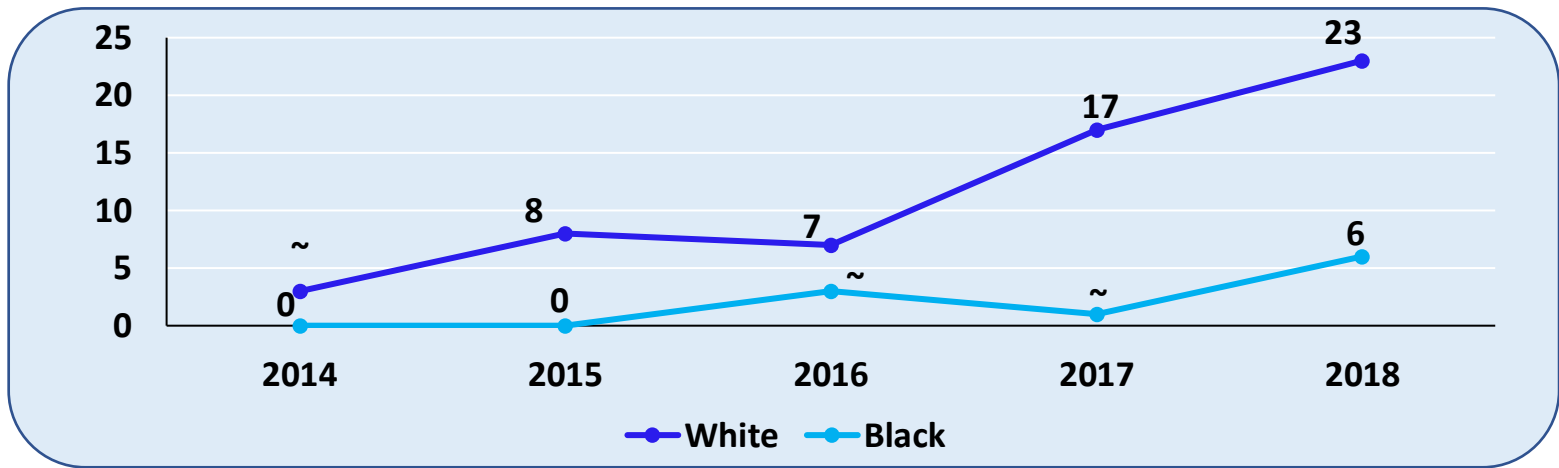
58

White men with HGS prostate cancer in Michigan received genetic counseling.

10

Black men with HGS prostate cancer in Michigan received genetic counseling.

Number of Men with HGS Prostate Cancer who Received Genetic Counseling from the HCN by Race, 2014-2018



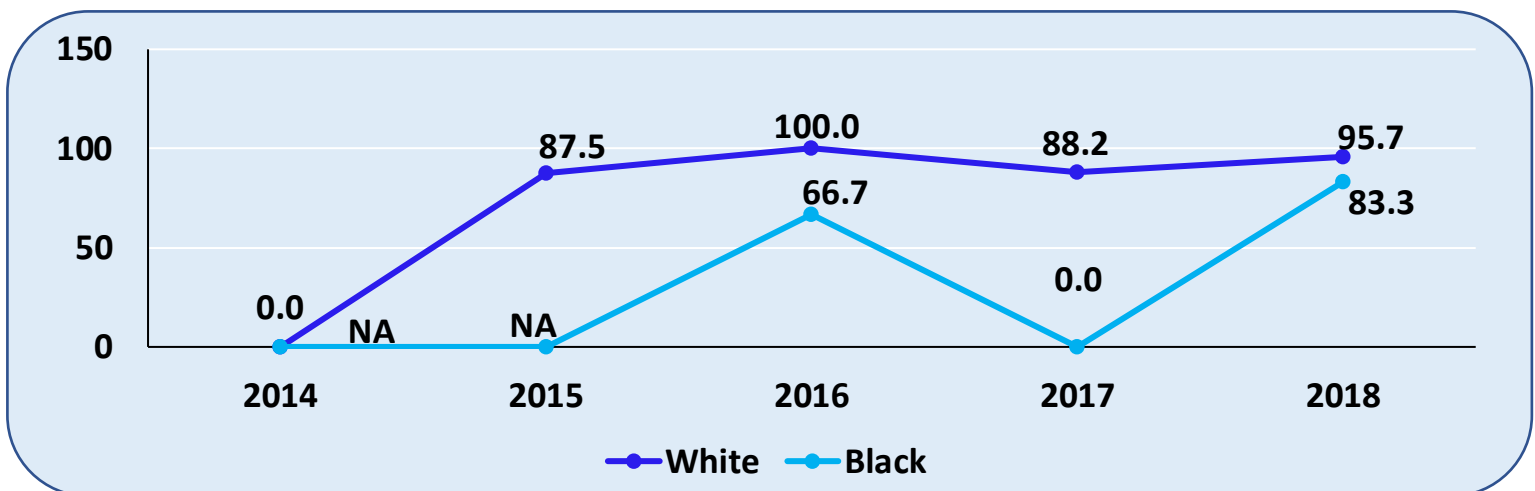
51

White men in Michigan with HGS prostate cancer received genetic counseling and testing.

8

Black men in Michigan with HGS prostate cancer received genetic counseling and testing.

Proportion of Men with HGS Prostate Cancer who had Genetic Counseling and Testing from the HCN by Race, 2014-2018



*A Gleason score of 7 or greater indicates a high Gleason score, or HGS

~Data are Suppressed when count is less than 6

NA: Not applicable; there were no patients seen in that year to receive testing

Pancreatic Cancer from the HCN, 2014-2018

7,291

White persons in Michigan were diagnosed with pancreatic cancer between 2014 and 2018.

1,254

Black persons in Michigan were diagnosed with pancreatic cancer between 2014 and 2018.

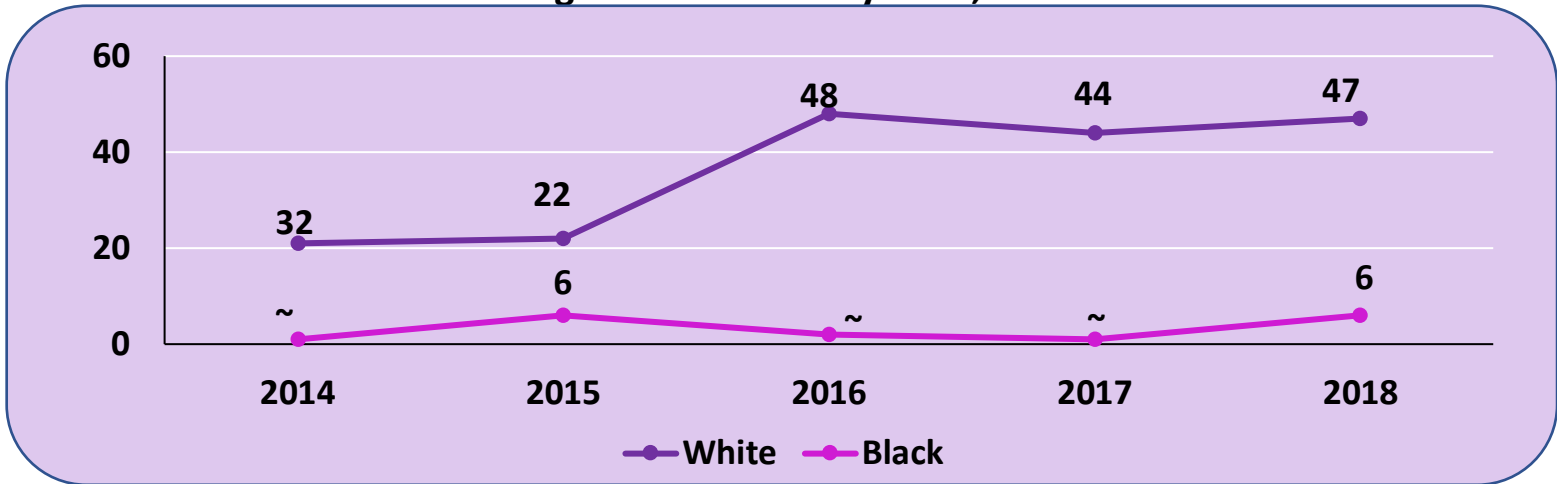
192

White persons with pancreatic cancer in Michigan received genetic counseling.

16

Black persons with pancreatic cancer in Michigan received genetic counseling.

Number of People with Pancreatic Cancer who Received Genetic Counseling from the HCN by Race, 2014-2018



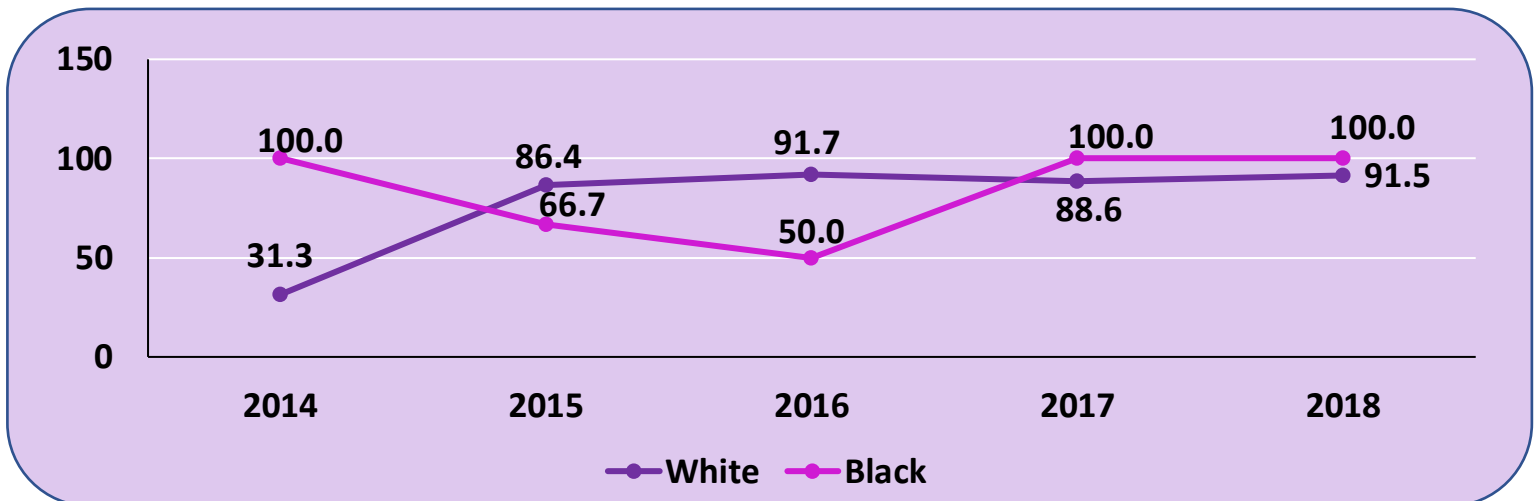
155

White persons in Michigan with pancreatic cancer received genetic counseling and testing.

13

Black persons in Michigan with pancreatic cancer received genetic counseling and testing.

Proportion of Persons with Pancreatic Cancer who had Genetic Counseling and Testing from the HCN by Race, 2014-2018



~Data are suppressed when count is less than 6

Endometrial Cancer from the HCN, 2014-2018

8,287

White women in Michigan were diagnosed with endometrial cancer between 2014 and 2018.

1,107

Black women in Michigan were diagnosed with endometrial cancer between 2014 and 2018.

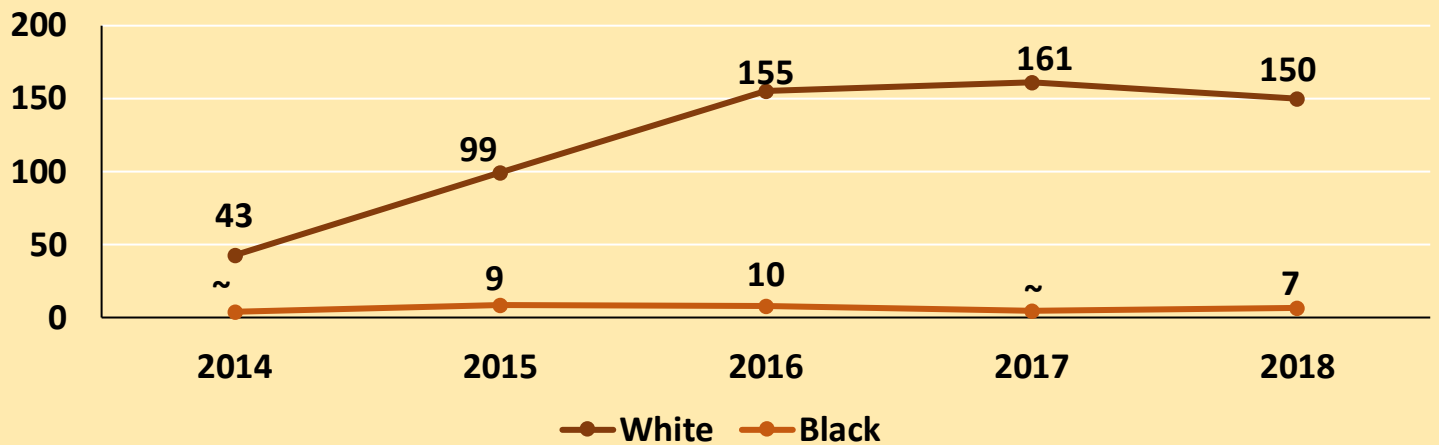
608

White women in Michigan with endometrial cancer received genetic counseling.

33

Black women in Michigan with endometrial cancer received genetic counseling.

Number of Women with Endometrial Cancer who Received Genetic Counseling from the HCN by Race, 2014-2018



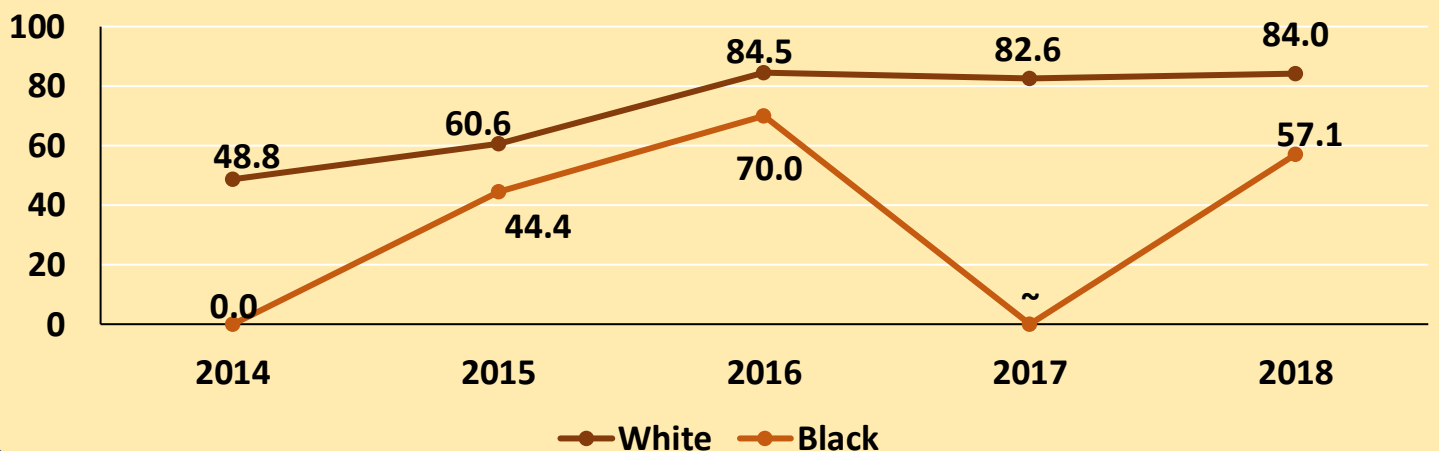
471

White women in Michigan with endometrial cancer received genetic counseling and testing.

18

Black women in Michigan with endometrial cancer received genetic counseling and testing.

Proportion of Women with Endometrial Cancer who had Genetic Counseling and Testing from the HCN by Race, 2014-2018



~Data are suppressed when count is less than 6

Young* Endometrial Cancer from the HCN, 2014-2018

769

Young white women in Michigan were diagnosed with endometrial cancer between 2014 and 2018.

109

Young Black women in Michigan were diagnosed with endometrial cancer between 2014 and 2018.

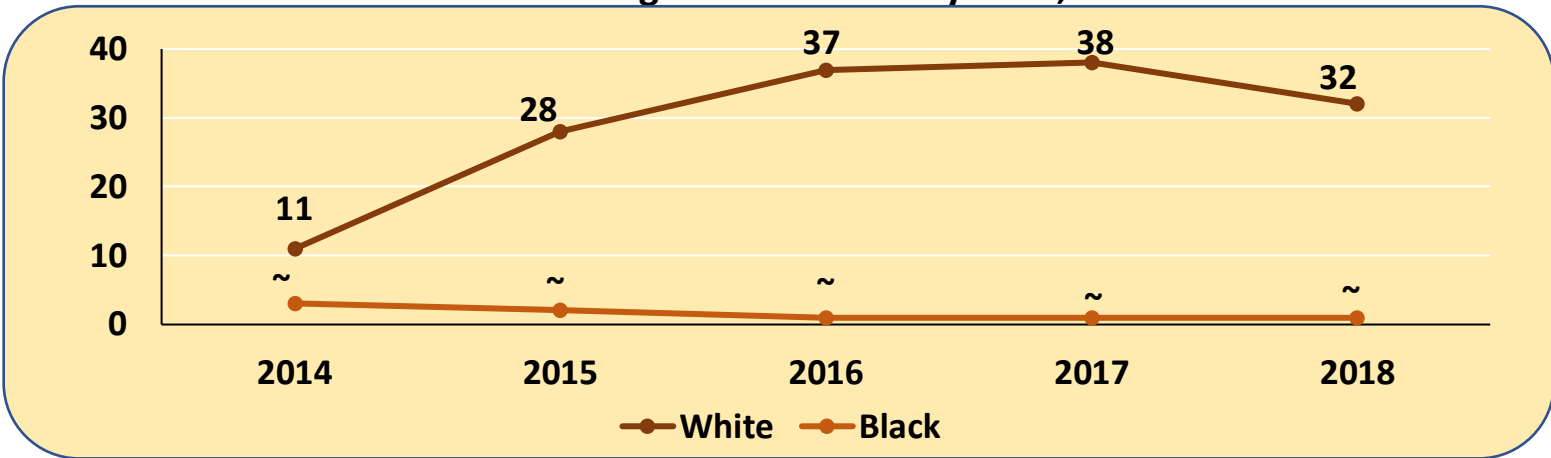
146

Young white women in Michigan with endometrial cancer received genetic counseling.

8

Young Black women in Michigan with endometrial cancer received genetic counseling.

Number of Young Women with Endometrial Cancer who Received Genetic Counseling from the HCN by Race, 2014-2018

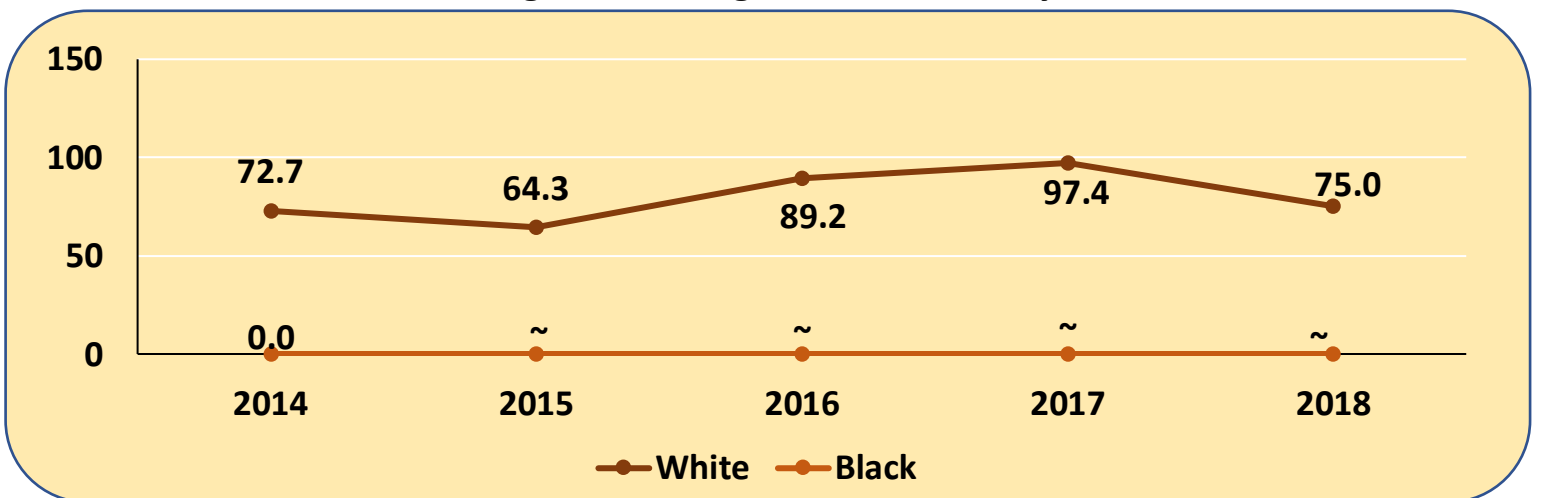


118

Young white women in Michigan with endometrial cancer received genetic counseling and testing.

Data are Suppressed

Proportion of Young Women with Endometrial Cancer who had Genetic Counseling and Testing from the HCN by Race, 2014-2018



~Data are suppressed when count is less than 6
 *Young = cancer cases diagnosed under the age of 50

Summary & Discussion

It is important to explore racial disparities in rates of cancer genetic testing in order to identify communities that may not be receiving the resources that they need.

Key Findings:

1. White women with breast cancer were statistically more likely to receive genetic testing compared to Black women with breast cancer (79.7% vs. 75.3%).
2. White women with endometrial cancer were statistically more likely to receive genetic testing compared to Black women with endometrial cancer (77.5% vs. 54.6%).
3. Young white women with endometrial cancer were statistically more likely to receive genetic testing compared to young Black women with endometrial cancer (80.1% vs. 55.0%).

Black women in Michigan diagnosed with endometrial cancer are not receiving genetic testing in the same capacity that white women in Michigan are. Since 2017, the NCCN guidelines for genetic testing has stated that all new endometrial cancer cases, especially those under the age of 50 at the time of diagnosis, or those with endometrial cancer who have a family history of colorectal and/or endometrial cancer should receive cancer genetic testing. More research should be conducted to determine why these individuals are not receiving these services.

This analysis does have limitations. Genetic counseling by someone who is not board certified, or by a clinic not part of the HCN, or by a home genetic test are not included, and therefore the results may not be generalizable to all genetic counseling performed throughout the state. This also means that the results found in this report may underrepresent the number of patients who are receiving genetic counseling and testing in Michigan.

The Michigan Department of Health and Human Services (MDHHS) Cancer Genomics Program (CGP) has several resources for those who believe they may be at risk for hereditary cancers:

- (1) Hereditary Cancer Toolkit: https://www.michigan.gov/mdhhs/0,5885,7-339-73971_4911_4916_47257_68337_94208_94214---,00.html
- (2) Risk assessment tool: <https://migrc.org/cancer-risk/>
- (3) Directory for genetic counselors in Michigan:
- (4) A free CME module: <https://learn.education.jax.org/browse/hpe/cme/courses/hcop>

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To Find More Information

Visit www.Michigan.gov/cge to view more data on hereditary cancers

Cancer Genomics Hotline Phone #: 866 852 1247

Visit www.Michigan.gov/hereditarycancer to learn more about hereditary cancers

Email: genetics@michigan.gov

References

1. Breast Cancer Prevention Partners [BCPP] (2021). African American Women and Breast Cancer. Retrieved April 2021 from: <https://www.bcpp.org/resource/african-american-women-and-breast-cancer/>
2. American Cancer Society [ACS] (2020). Colorectal Cancer Rates Higher in African Americans, Rising in Younger People. Retrieved April 2021 from: <https://www.cancer.org/latest-news/colorectal-cancer-rates-higher-in-african-americans-rising-in-younger-people.html>
3. Jones et al, Predictors of BRCA1/2 testing among Black women with breast cancer: Population-based study. Cancer Medicine 2017, 6(7):1787-1798.

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