



MICHIGAN BRFS SURVEILLANCE BRIEF

A NEWSLETTER FROM THE CHRONIC DISEASE EPIDEMIOLOGY SECTION, MDHHS

Breast and Ovarian Cancer Risk Assessment in Michigan

Background. Since 2005, the United States Preventative Services Task Force (USPSTF)¹ has recommended that primary care providers refer women with a family history suggestive of hereditary breast and ovarian cancer (HBOC) for genetic counseling and consideration of genetic testing. The National Comprehensive Cancer Network (NCCN)² also provides clinical guidelines for appropriate breast and/or ovarian cancer risk assessment referrals based on personal and/or family history criteria. For individuals identified with HBOC, earlier and increased cancer screenings and preventive interventions can be considered to significantly reduce cancer risks.

Healthy People 2020 established an objective to increase the proportion of women with a family history of breast and/or ovarian cancer who receive genetic counseling³. Since 2011, the State of Michigan has utilized the Michigan Behavioral Risk Factor Survey (MiBRFS) to measure this objective. The Cancer Plan for Michigan, 2016-2020, includes this same objective in addition to increasing the percentage of Michigan residents with a personal history of breast or ovarian cancer that are offered appropriate genetic counseling⁴.

Methods. Questions related to breast and ovarian cancer personal and family history and genetic counseling were included within the 2015 MiBRFS. These data were used to analyze the prevalence of breast and ovarian cancer personal and family history among adult women in Michigan and assess the utilization of breast and ovarian cancer genetic counseling among these women.

Personal history of breast and ovarian cancer was established by asking whether or not the female respondent had ever been diagnosed with breast or ovarian cancer. The breast and ovarian cancer family history questions asked about diagnoses of breast and ovarian cancer among first and second degree relatives; an additional question determined the number of family members that were diagnosed with breast cancer at or before 50 years of age. These questions were then used to determine women at risk of breast and ovarian cancer based on selected criteria from the 2005 United States Preventive Services Task Force (USPSTF) Guidelines and the 2014 National Comprehensive Cancer Network (NCCN) Guidelines. Furthermore, genetic counseling was defined as the process of communication between a specially trained health professional and someone concerned about the risk of disease in his or her family.

Results. In 2015, an estimated 3.8% of Michigan adult women reported ever being diagnosed with breast and/or ovarian cancer (Table 1). When classified based on the 2014 NCCN guidelines, only 1.8% of Michigan adult women reported a significant personal history of breast and/or ovarian cancer.

Based on 2015 MiBRFS data, it was estimated that 39.5% of adult women reported having at least one first or second degree relative that had been diagnosed with breast cancer (Table 2). 48.9% of adult women reported having at least one family member that was diagnosed with breast cancer at or before 50 years of age. Furthermore, 13.6% of adult women reported having one or more family members that had been diagnosed with ovarian cancer at any age. When assessing family history of breast and ovarian cancer based on four of the 2005 USPSTF criteria (see Table 2), an estimated 13.6% of adult women in

Table 1. Personal History of Breast and Ovarian Cancer among Michigan Women 18 Years and Older, 2015 Michigan BRFSS

	%	95% CI
Ever Diagnosed with Breast and/or Ovarian Cancer	3.8	(2.9-4.9)
Significant Personal History of Breast and/or Ovarian Cancer*	1.8	(1.2-2.6)

* Based on the following criteria from the 2014 National Comprehensive Cancer Network Guidelines:

- Diagnosed with ovarian cancer at any age
- Diagnosed with breast and ovarian cancer at any age
- Diagnosed with breast cancer at any age and one or more close blood relatives with breast cancer at or before 50 years of age
- Diagnosed with breast cancer at any age and one or more close blood relatives with ovarian cancer at any age
- Diagnosed with breast cancer at any age and 2 or more close blood relatives with breast cancer at any age
- Diagnosed with breast cancer at or before 50 years of age

MiBRFSS News

- The 2015 MiBRFSS annual tables are currently available on the MiBRFSS website (www.michigan.gov/brfs).
- The 2015 MiBRFSS annual report should be released at some point in early 2017.
- Data collection for the 2017 MiBRFSS is set to begin in early January 2017.
- Did you miss an issue of *Michigan BRFSS Surveillance Brief*? Back issues are available on the MiBRFSS website.

Michigan reported a significant family history of breast and ovarian cancer. When determining family history based on two of the 2014 NCCN criteria, the prevalence of adult women with a significant family history of breast and ovarian cancer increased to 14.3% (Table 2).

In 2015, 5.1% (95% CI: 3.8-6.8) of adult women in Michigan reported ever receiving genetic counseling for breast and ovarian cancer (data not shown). 12.0% of adult women also reported having at least one family member that had genetic counseling for breast and ovarian cancer. The prevalence of genetic counseling increased among adult women with a significant personal history [17.1% (95% CI: 9.3-23.2)] and a significant family history [34.4% (95% CI: 22.2-49.1) per the 2014 NCCN-based criteria[‡] and 37.9% (95% CI: 30.1-46.3) per the 2005 USPSTF criteria* for breast and ovarian cancer.

Table 2. Family History of Breast and Ovarian Cancer among Michigan Women 18 Years and Older, 2015 Michigan BRFS

	%	95% CI
Relatives diagnosed with breast cancer (one or more)	39.5	(36.3-42.9)
Relatives diagnosed with breast cancer ≤ 50 years (one or more)	48.9	(43.3-54.5)
Relatives diagnosed with ovarian cancer (one or more)	13.6	(11.5-16.1)
Met USPSTF criteria*	13.6	(11.7-15.8)
Significant Family History of Breast and/or Ovarian Cancer[‡]	14.3	(12.2-16.7)

* Based on the following criteria from the 2005 United States Preventive Services Task Force Guidelines:

- ≥ 3 first or second degree relatives diagnosed with breast cancer at any age
- ≥ 2 first or second degree relatives diagnosed with ovarian cancer at any age
- ≥ 2 first or second degree relative diagnosed with breast cancer at any age, with one being diagnosed at or under the age of 50
- ≥ 1 first or second degree relative diagnosed with breast AND ovarian cancer at any age

[‡] Based on the following criteria from the 2014 National Comprehensive Cancer Network Guidelines:

- A close relative diagnosed with ovarian cancer at any age
- Two or more close relatives diagnosed with breast cancer at any age

Conclusions. Past and current MiBRFS data has shown that approximately 13.9% of adult Michigan women meet USPSTF criteria for cancer genetic counseling referral based on their family history of breast and/or ovarian cancer. Importantly, the percentage of Michigan women with a significant family history who have received cancer genetic counseling services for breast or ovarian cancer has shown a two-fold increase from 8.6-9.0% in 2011-2012 to 16.0% in 2015. In comparison, the 2014 NCCN-based criteria for family history doubled (14.3%) the percentage of women appropriate for genetic counseling, but reduced the percentage of women who received genetic counseling (10.4%). This demonstrates the importance of careful consideration of referral criteria and outcomes in surveillance activities.

The 2015 MiBRFS marks the first time that it has been determined that 1.8% of Michigan women have a significant personal history of breast and ovarian cancer per NCCN guidelines; and, that 34.4% of these women have received genetic counseling. Identification of HBOC in women with cancer is important for treatment and surgical decisions and to reduce risks for other primary cancers. Genetic testing in a family is most informative when testing is first performed on an individual with a significant personal history. For those found to have a known pathogenic mutation, cascade testing to their other family members can then be done.

MiBRFS data is invaluable in demonstrating that Michigan is achieving the HP2020 and state plan objectives for genetic counseling for breast and ovarian cancer. However, it also shows that the vast majority of women with a significant family and/or personal history of breast and/or ovarian cancer by self-report have not received cancer genetic services. The Michigan Department of Health and Human Services through a cooperative agreement with the Centers for Disease Control and Prevention will continue to work on these HP2020 and state plan objectives by promoting system changes to advance health benefits through the use of appropriate cancer genomics best practices for HBOC by utilizing core public health functions.

References

¹ U.S. Preventive Services Task Force: Genetic Risk Assessment and BRCA Mutation Testing for Breast and Ovarian Cancer Susceptibility: Recommendation Statement. *Ann Intern Med* 2005; 143(5):355-361.
² National Comprehensive Cancer Network. 2014. Breast and/or Ovarian Cancer Genetic Assessment (Version 1.2014). <https://www.nccn.org/>. (October, 2016).
³ Healthy People 2020, <https://www.healthypeople.gov/2020/topics-objectives/topic/genomics/objectives>.
⁴ Michigan Cancer Consortium. 2015. Cancer Plan for Michigan, 2016-2020. <http://www.michigancancer.org/PDFs/CancerPlan/Michigan'sComprehensiveCancerControlPlan2016-2020.pdf>. (November, 2016).

The Michigan Behavioral Risk Factor Surveillance System (MiBRFSS)
 The MiBRFSS comprises annual, statewide telephone surveys of Michigan adults aged 18 years and older and is part of the national BRFSS coordinated by the CDC. The annual Michigan Behavioral Risk Factor Surveys (MiBRFS) follow the CDC BRFSS protocol and use the standardized English core questionnaire that focuses on various health behaviors, medical conditions, and preventive health care practices related to the leading causes of mortality, morbidity, and disability. Landline and cell phone interviews are conducted across each calendar year. Data are weighted to adjust for the probabilities of selection and a raking weighting factor is used to adjust for the distribution of the Michigan adult population based on eight demographic variables. All analyses are performed using SAS-callable SUDAAN® to account for the complex sampling design.

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