MiBRFS Standard Tables & Maps: Genomics Questions 2020

Background & Methods

- **Background:** The Michigan Behavioral Risk Factor Survey (MiBRFS) is composed of annual, state-level telephone surveys of Michigan residents, aged 18 years and older. These annual, state-level surveys act as the only source of state-specific, population-based estimates of the prevalence of various behaviors, medical conditions, and preventive health care practices among Michigan adults.

- **Purpose:** The purpose of this brief is to present data obtained from the Cancer Genomics Module from the 2020 BRFS (please see page 3 for a list of questions). As part of the Michigan Department of Health and Human Service's Cancer Genomics Program's (MDHHS-CGP) CDC cooperative agreement, these questions serve to determine: (1) if family history is being collected and discussed by health care providers, especially among those with a family history of cancer and (2) to better understand genetic counseling and testing rates in Michigan, especially among those with a family history of cancer.

- **Data** that are collected include topics such as health status indicators, risk behavior indicators, clinical preventive practices, and chronic conditions, in addition to demographics. Survey modules undergoes yearly changes due to the ability to add state-specific questions to the survey. The collection of family history questions have never been asked previously to the 2020 BRFS but are important because this is the first step for those with a family history of cancer to be referred to genetic services.

- **Methods**: The MiBRFS collects data from both landline and cell phone respondents. The sample of landline telephone numbers is selected using a list-assisted, random-digit-dialed methodology with a disproportionate stratification based on phone bank density and whether the phone numbers are directory listed. The sample of cell phone numbers is randomly selected from dedicated cellular telephone banks sorted on the basis of area code and exchange. A weighting methodology known as iterative proportional fitting or raking is used to allow for the incorporation of cell phone data and to improve the accuracy of prevalence estimates based on MiBRFS data. Estimates based on this weighting methodology are weighted to adjust for the probabilities of selection and a raking adjustment factor that adjusted for the distribution of the Michigan adult population by telephone source (landline or cell phone), detailed race/ethnicity, education level, marital status, age by gender, gender by race/ethnicity, age by race/ethnicity, and renter/owner status.

2020 BRFS Genomics Module Questions

- **Collection of Family History**
  - Has a doctor or other health care provider ever asked you about your family history of cancer, including times when you were asked to fill out a form?
  - Did you ever have a discussion with your health care provider about this family history and talked about your personal risk of cancer?
- **Genetic Counseling and Testing**
  - Genetic counseling gives you information about how genetic conditions might affect you or your family. To your knowledge, did you or a family member receive genetic counseling for hereditary cancer?
  - Genetic tests are tests on blood, saliva, or other tissue to identify changes in genes that would result in genetic disorders, such as cancer. To your knowledge, did you or a family member have a genetic test for hereditary cancer?
- **Family History of Cancer**
  - Excluding yourself, have any of your family members been diagnosed with breast or ovarian cancer?
  - Excluding yourself, have any of your family members been diagnosed with colorectal or endometrial cancer?

Demographics: 2020

Characteristic	Weighted Frequency	Weighted Percent	95% Confidence Interval
Age of respondent			
18-29 years	1,608,173	20.7	(19.0-22.5)
30-39 years	1,210,199	15.6	(14.1-17.2)
40-49 years	1,109,605	14.3	(13.0-15.7)
50-59 years	1,274,705	16.4	(15.1-17.8)
60-69 years	1,329,113	17.1	(16.0-18.4)
70+ years	1,228,487	15.8	(14.8-16.9)
Race			
White, NH	5,787,506	75.0	(73.3-76.7)
Black, NH	984,994	12.8	(11.5-14.2)
Asian, NH	225,348	2.9	(2.3-3.8)
Multiracial, NH	99,825	1.3	(1.0-1.6)
Native American, NH	85,825	1.1	(0.7-1.7)
Hispanic	349,593	4.5	(3.7-5.5)
Arab, NH	181,529	2.4	(1.8-3.1)
Education			
<High School	761,019	9.7	(8.3-11.4)
High School Graduate	2,304,657	29.4	(27.7-31.1)
Some College	2,692,613	34.3	(32.6-36.1)
College Graduate	2,084,660	26.6	(25.2-28.0)
Income			
<$20,000	903,662	13.9	(12.5-15.5)
$20,000 – $34,999	1,245,211	19.2	(17.6-21.0)
$35,000 – $49,999	944,019	14.6	(13.2-16.0)
$50,000 – $ 74,999	1,042,346	16.1	(14.7-17.6)
≥$75,000	2,348,105	36.2	(34.3-38.2)
Insurance			
Yes	7,286,015	93.2	(91.9-94.2)
No	535,588	6.8	(5.8-8.1)

Demographics: 2020 Continued

Characteristic	Weighted Frequency	Weighted Percent	95% Confidence Interval
Gender			
Female	3,833,196	48.7	(46.9-50.6)
Male	4,033,338	51.3	(49.4-53.1)
Sexual orientation			
Heterosexual	6,948,072	92.7	(91.5-93.8)
Homosexual	125,538	1.7	(1.2-2.4)
Bisexual	324,458	4.3	(3.5-5.3)
Other	94,949	1.3	(0.9-1.8)
Prosperity regions			
Upper Peninsula	280,683	3.6	(3.3-4.0)
Northwest	251,721	3.2	(2.7-4.0)
Northeast	183,268	2.4	(2.0-2.8)
West Michigan	1,249,072	16.1	(15.2-17.1)
East Central Michigan	512,332	6.6	(5.9-7.4)
East Michigan	668,074	8.6	(7.9-9.4)
South Central	413,298	5.3	(4.8-6.0)
Southwest	564,848	7.3	(6.7-7.9)
Southeast Michigan	757,605	9.8	(9.1-10.5)
Detroit Metro	2,875,291	37.1	(35.8-38.4)

Characteristics of Cancer Diagnoses: 2020

Characteristic	Weighted Frequency	Weighted Percent	95% Confidence Interval
Ever told they have cancer			
Yes	979,325	12.5	(11.5-13.6)
No	6,850,315	87.5	(86.4-88.5)
Age at first cancer diagnosis			
<20 years	~	~	~
20-29 years	77,337	8.9	(6.1-12.9)
30-39 years	83,158	9.6	(6.9-13.3)
40-49 years	117,360	13.6	(10.8-17.0)
50-59 years	198,739	23.0	(19.5-26.9)
60-69 years	241,024	27.9	(24.0-32.1)
70-79 years	96,855	11.2	(8.9-14.0)
80+ years	29,106	3.4	(2.1-5.2)
Type of cancer			
Breast	115,110	13.3	(10.4-16.9)
Endometrial	33,088	3.8	(2.3-6.2)
Ovarian	~	~	~
Colon	20,118	2.3	(1.3-4.1)

~Data are suppressed when sample frequencies are less than 50 and/or a relative standard error is greater than 30%.

Family History of Cancer: 2020

Characteristic	Weighted Frequency	Weighted Percent	95% Confidence Interval
Relatives with breast or ovarian cancer[a]			
Breast cancer only	4,649,148	66.9	(65.0-68.7)
Ovarian cancer only	1,148,558	16.5	(15.1-18.0)
Both breast and ovarian cancer	563,193	8.1	(7.1-9.2)
Breast or ovarian cancer*	462,525	6.7	(5.7-7.7)
Neither	129,647	1.9	(1.4-2.6)
Relatives with colorectal or endometrial cancer[b]			
Colorectal cancer only	5,822,870	84.8	(83.4-86.1)
Endometrial cancer only	619,929	9.0	(8.1-10.1)
Both colorectal and endometrial cancer	118,704	1.7	(1.3-2.3)
Colorectal or Endometrial cancer*	26,194	0.4	(0.2-0.6)
Neither	275,878	4.0	(3.3-4.9)
Ever asked about family history?[c]			
Yes	6,117,229	87.3	(85.8-88.6)
No	890,240	12.7	(11.4-14.2)
Ever had a discussion about family history?[d]			
Yes	3,993,509	56.9	(54.9-58.8)
No	3,029,120	43.1	(41.2-45.1)

[a] Excluding yourself, have any of your family members been diagnosed with breast or ovarian cancer?
[b] Excluding yourself, have any of your family members been diagnosed with colorectal or endometrial cancer?
[c] Has a doctor or other health care provider ever asked you about your family history of cancer, including times when you were asked to fill out a form?
[d] Did you ever have a discussion with your health care provider about this family history and talked about your personal risk of cancer?
* It was discovered that due to a programming error, two categories shared the same value for two questions: (1) the knowledge of family cancer history involving breast/ovarian cancer and (2) colorectal/endometrial cancer. If the respondent had reported only one of these (either breast or ovarian cancer, or only colorectal or endometrial cancer), the same value was stored, regardless of whether it was breast or ovarian or colorectal or endometrial cancer. Upon discovery of the problem, all impacted cases were identified, and review of the interview recordings proceeded to recover the correct response. Unfortunately, due to converting a portion of the interviewing staff to remote calling because of COVID, not all cases have recordings. Cases for which recordings were not available were identified and respondents were called back to collect the missing data. Of the 1,191 cases identified to have at least one of the questions impacted, 802 (67.3%) were able to be corrected through listening to recordings or calling back the respondent. Responses were recorded into a new category for cases where the responses could not be corrected.

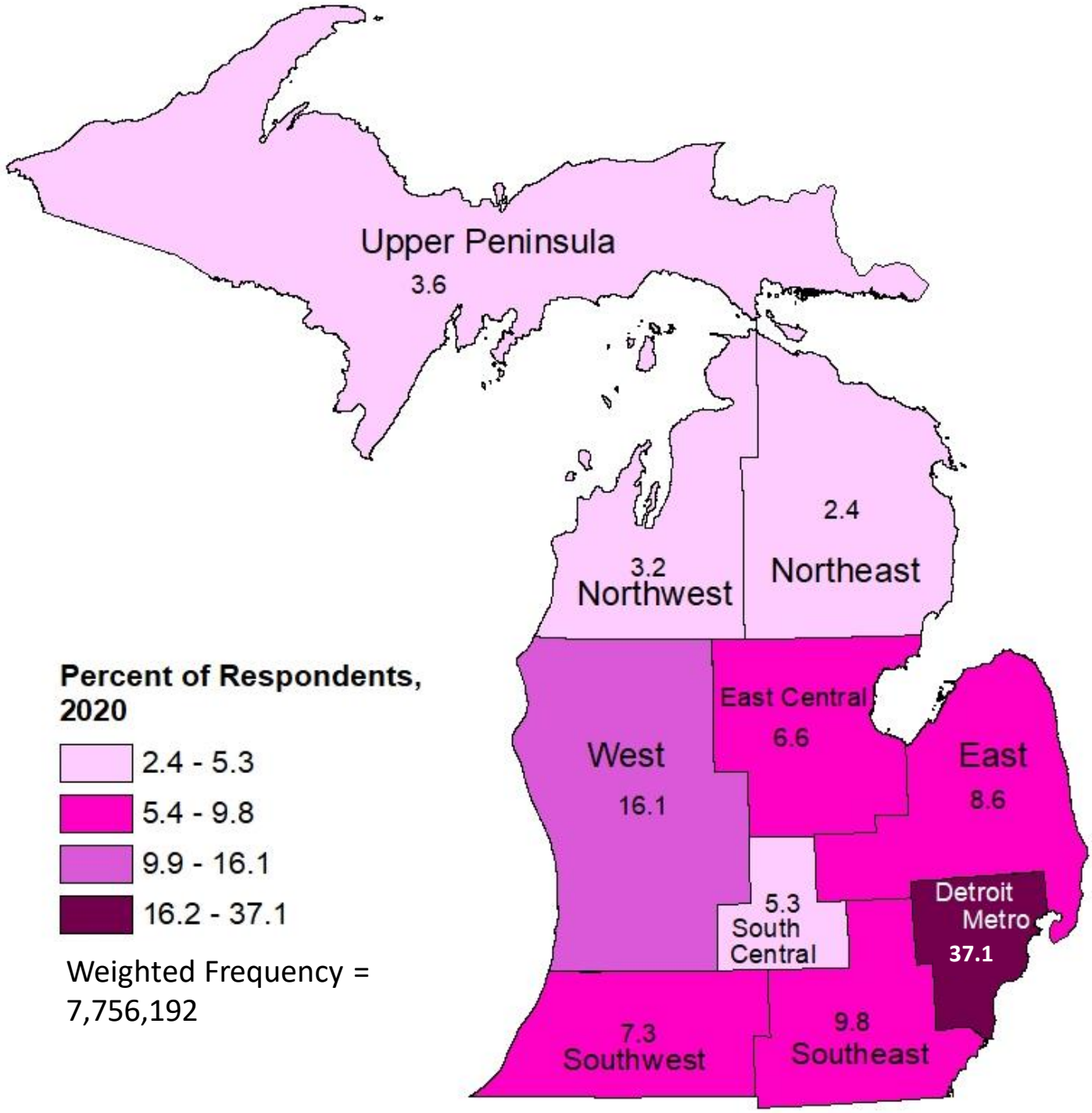
Genetic Counseling and Testing, 2020

Characteristic	Weighted Frequency	Weighted Percent	95% Confidence Interval
Genetic Counseling for Hereditary Cancer?[e]			
Yourself only	159,869	2.3	(1.9-2.9)
At least one family member	432,436	6.3	(5.4-7.4)
Yourself and at least one family member	226,324	3.3	(2.7-4.0)
No one	6,044,857	88.1	(86.7-89.3)
Genetic Testing for Hereditary Cancer[f]			
Yourself	152,104	2.2	(1.7-2.9)
At least one family member	504,289	7.4	(6.5-8.5)
Yourself and at least one family member	144,703	2.1	(1.6-2.8)
No one	5,980,618	88.2	(86.9-89.4)

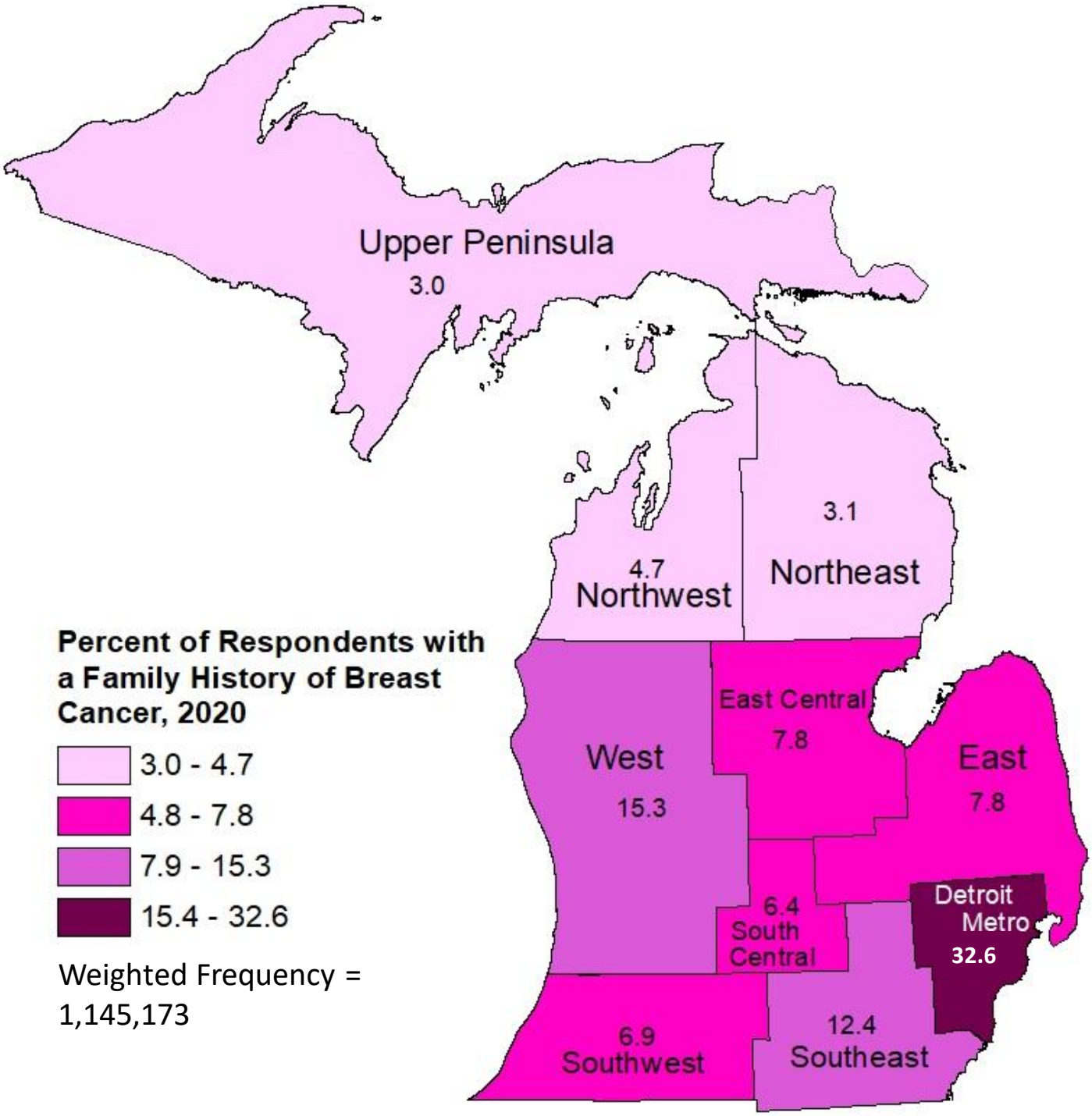
[e] Genetic counseling gives you information about how genetic conditions might affect you or your family. To your knowledge, did you or a family member receive genetic counseling for hereditary cancer?

[f] Genetic tests are tests on blood, saliva, or other tissue to identify changes in genes that would result in genetic disorders, such as cancer. To your knowledge, did you or a family member have a genetic test for hereditary cancer?

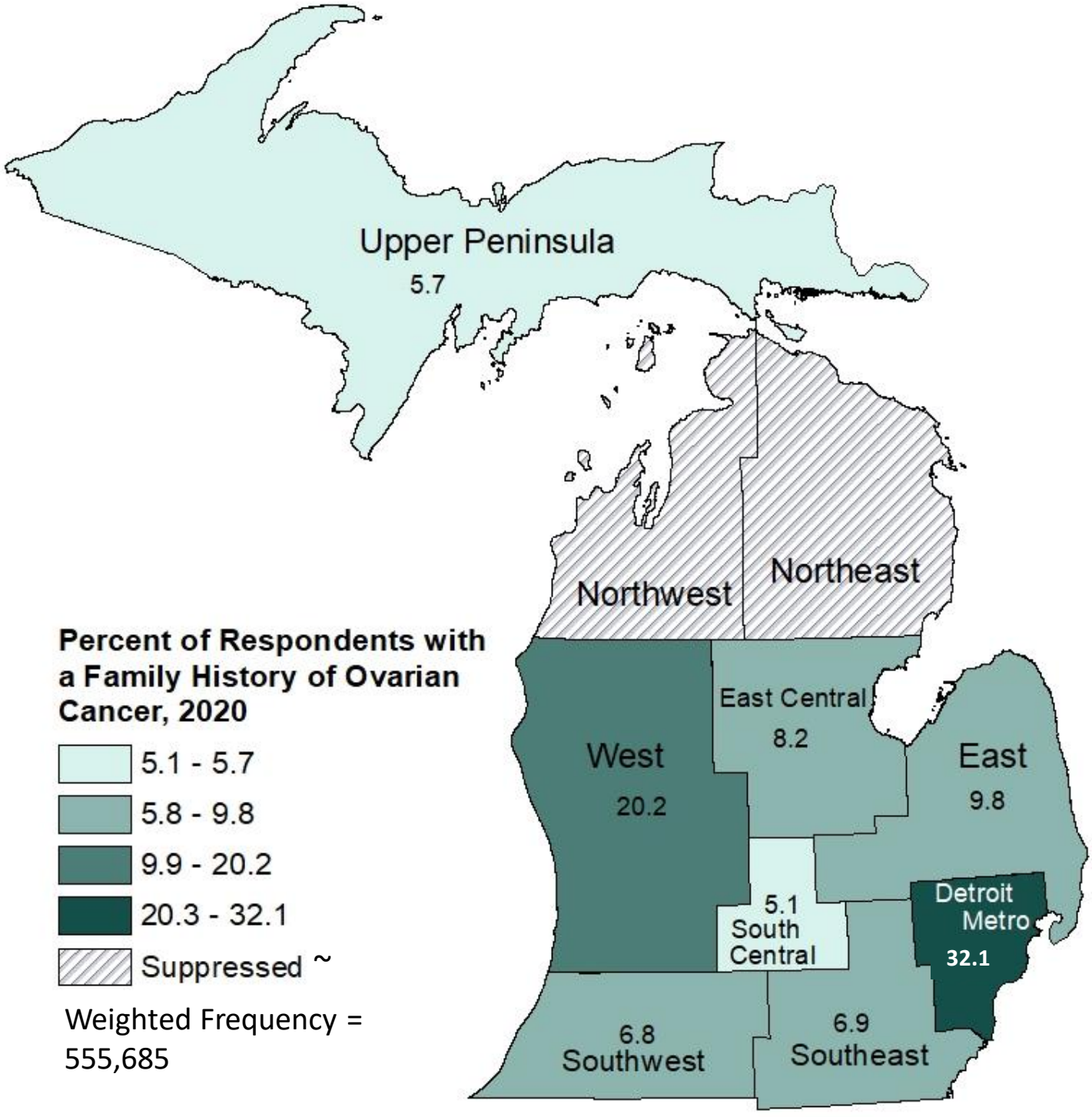
Respondents by Prosperity Region: 2020



Family History of Breast Cancer by Prosperity Region: 2020

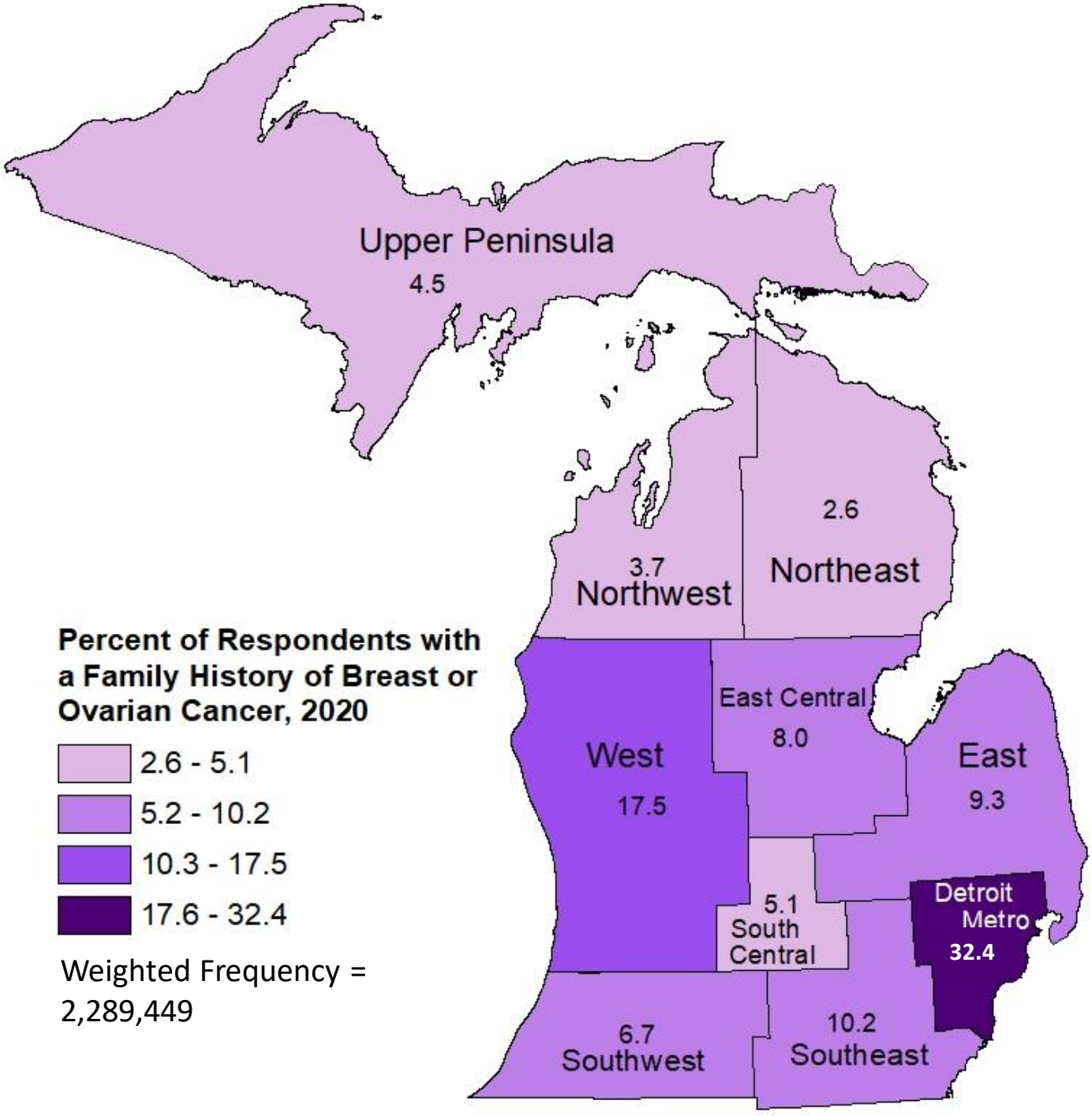


Family History of Ovarian Cancer by Prosperity Region: 2020

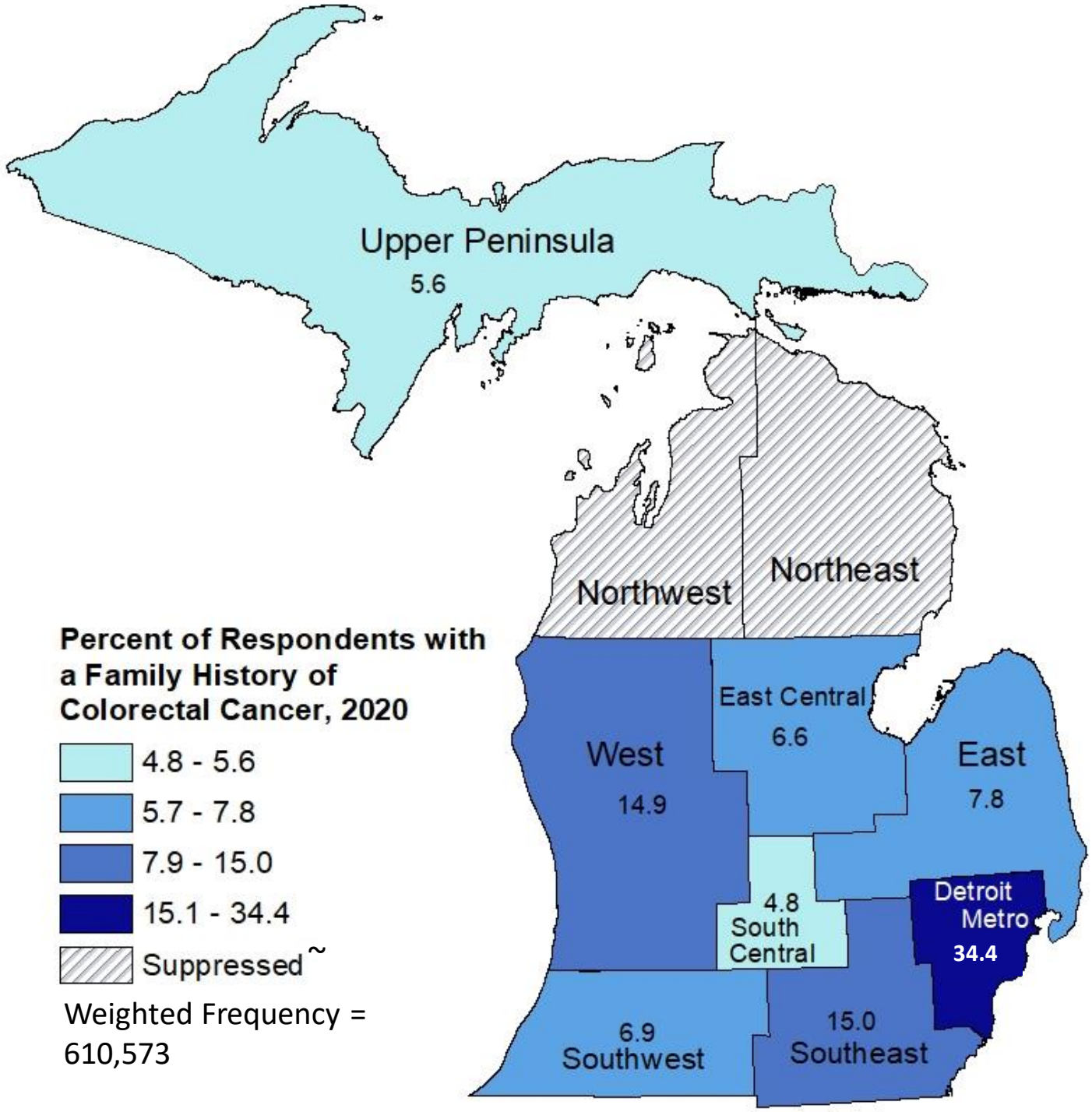


~Data are suppressed when sample frequencies are less than 50 and/or a relative standard error is greater than 30%.

Family History of Breast or Ovarian Cancer by Prosperity Region: 2020



Family History of Colorectal Cancer by Prosperity Region: 2020



Weighted Frequency = 610,573

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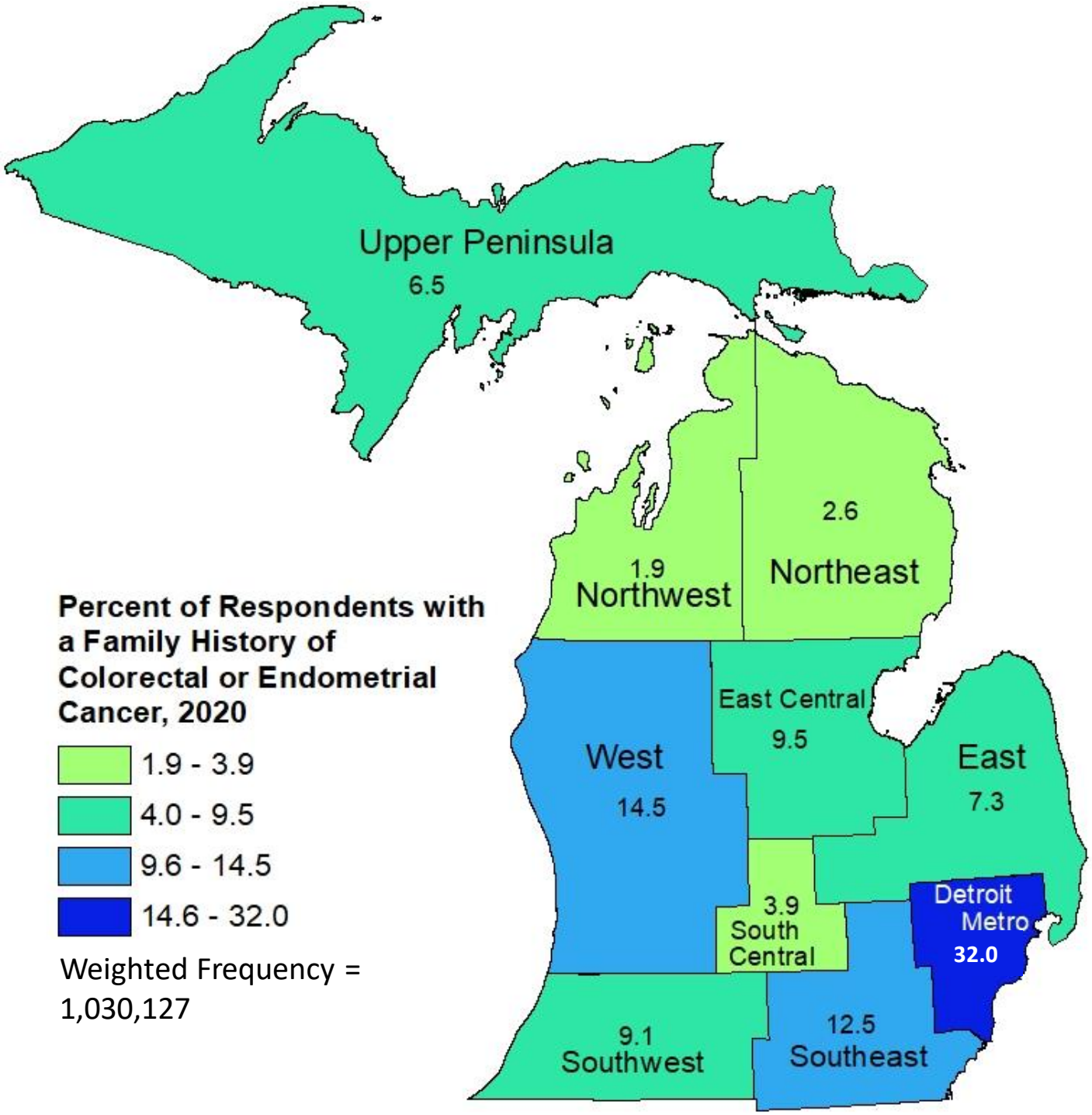
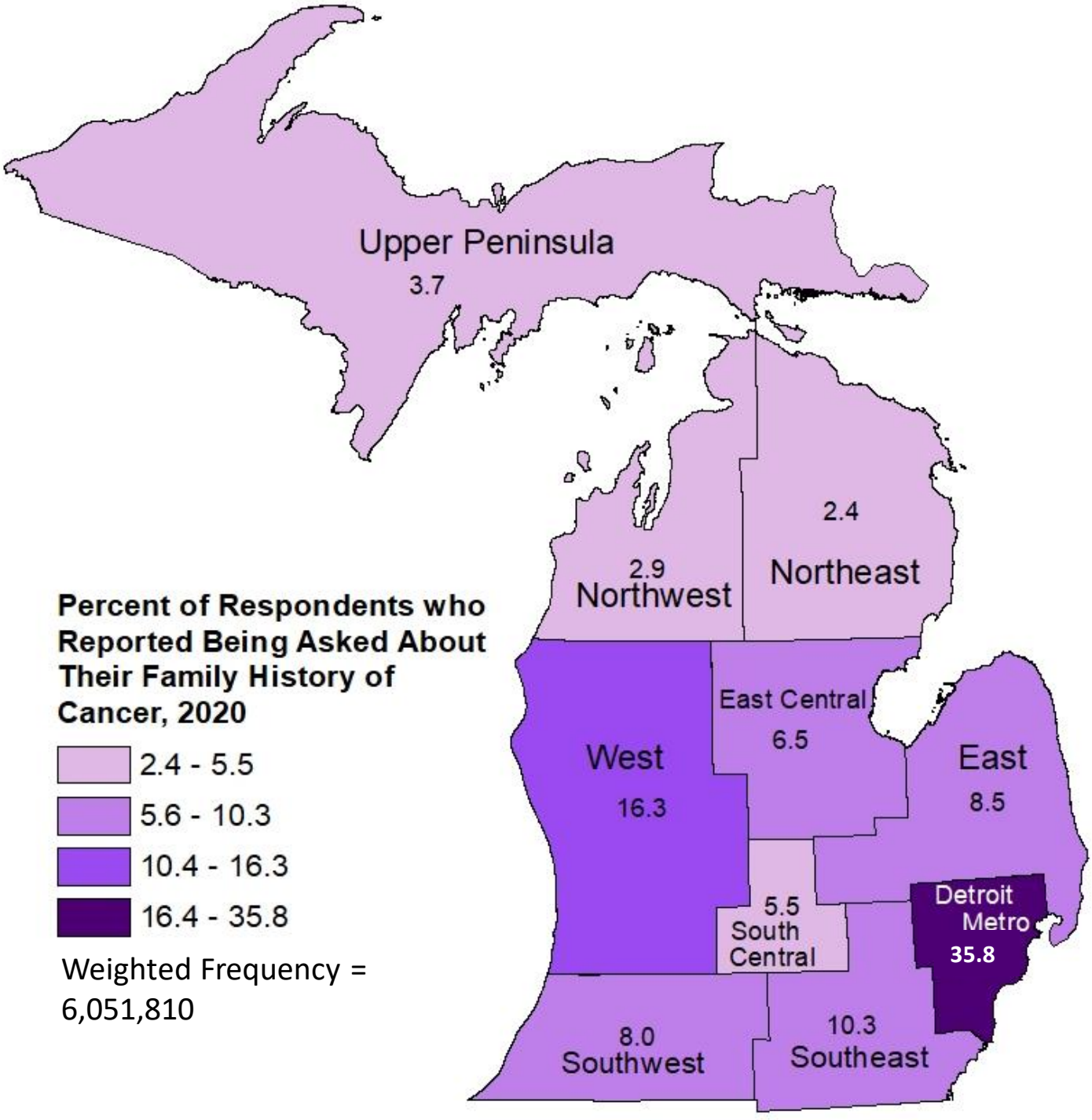
Family History of Colorectal or Endometrial Cancer by Prosperity Region: 2020

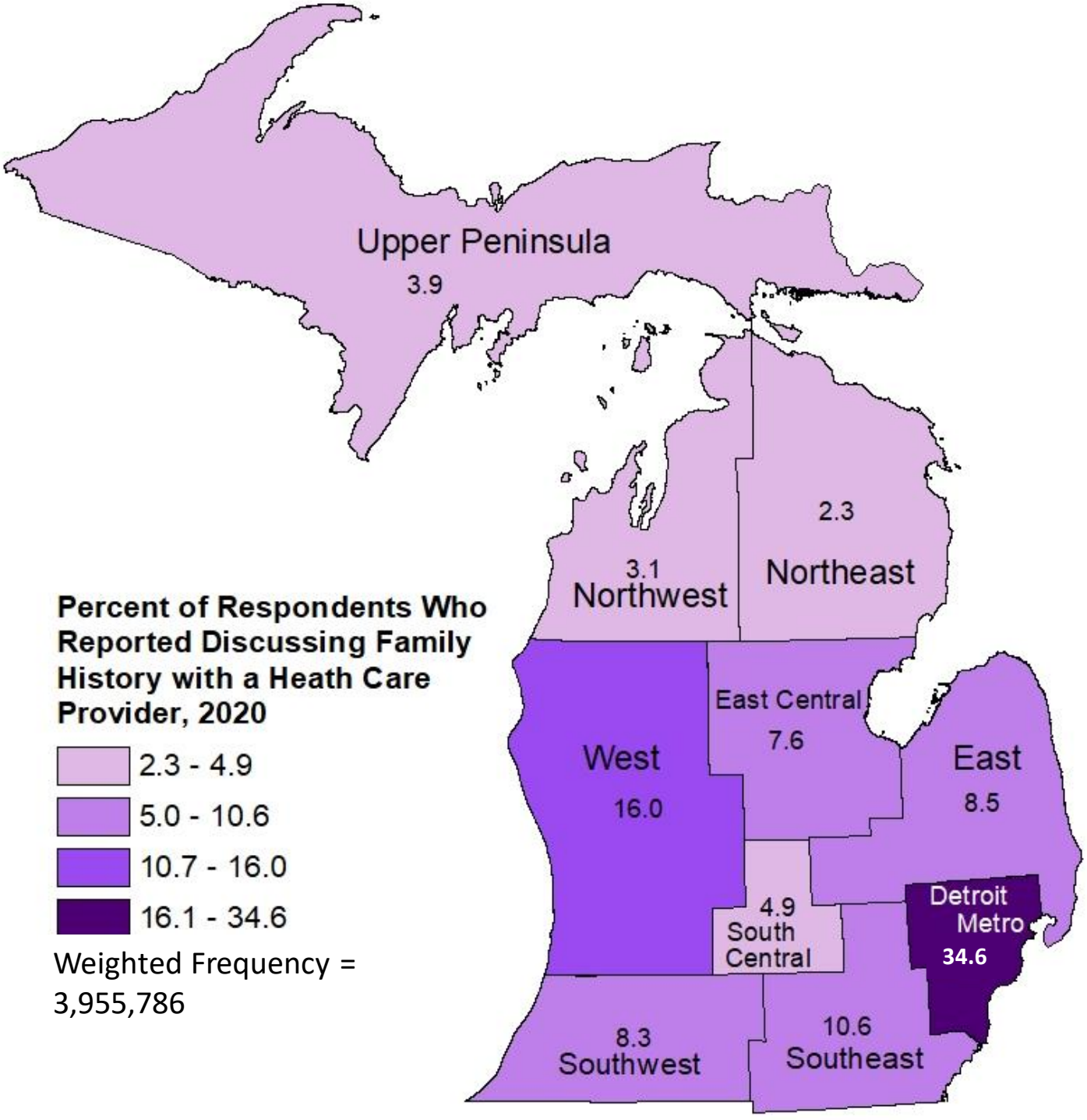


Asked About Family History by Prosperity Region: 2020



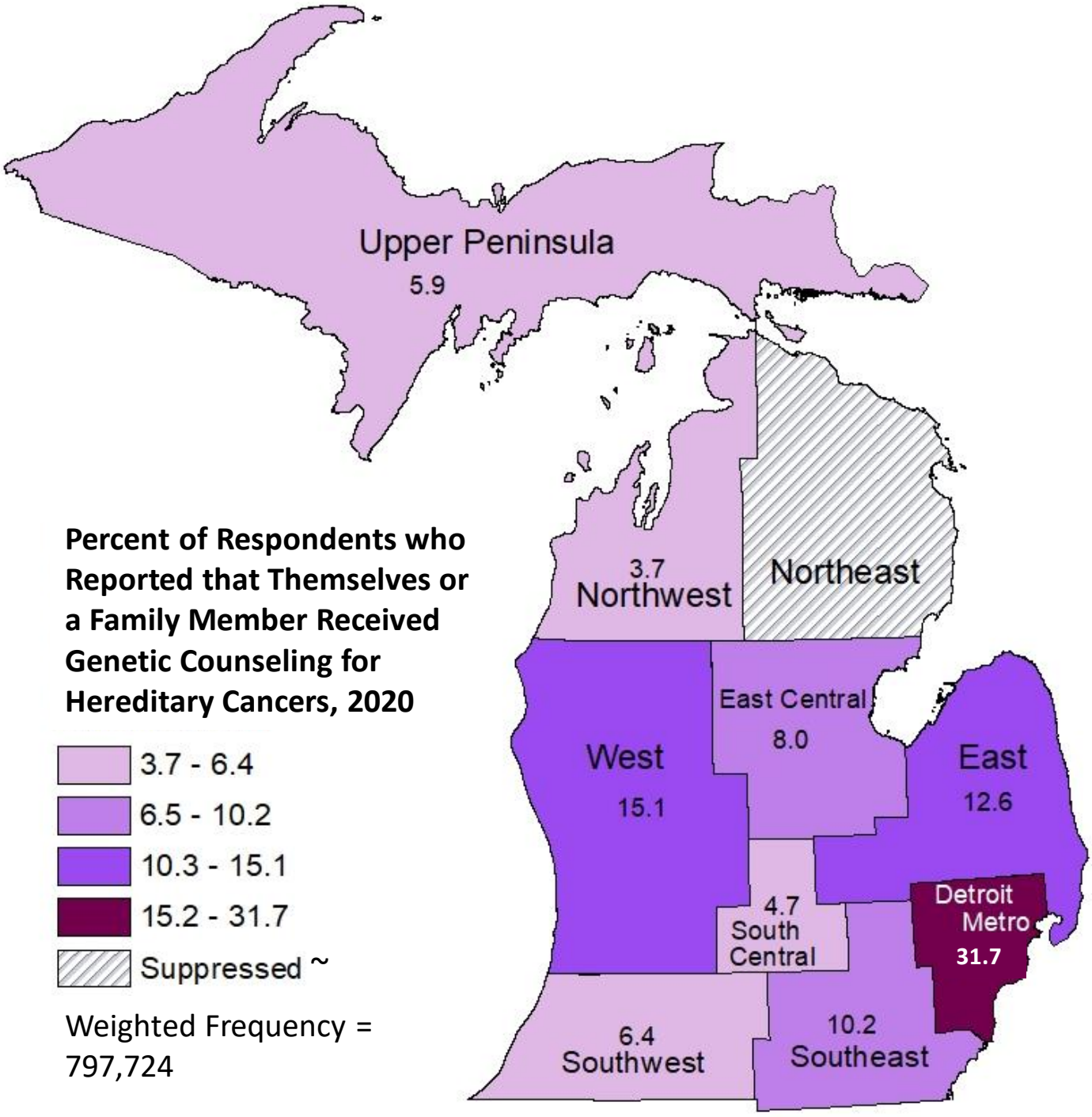
Weighted Frequency = 6,051,810

Discussed Family History with a Health Care Provider by Prosperity Region: 2020



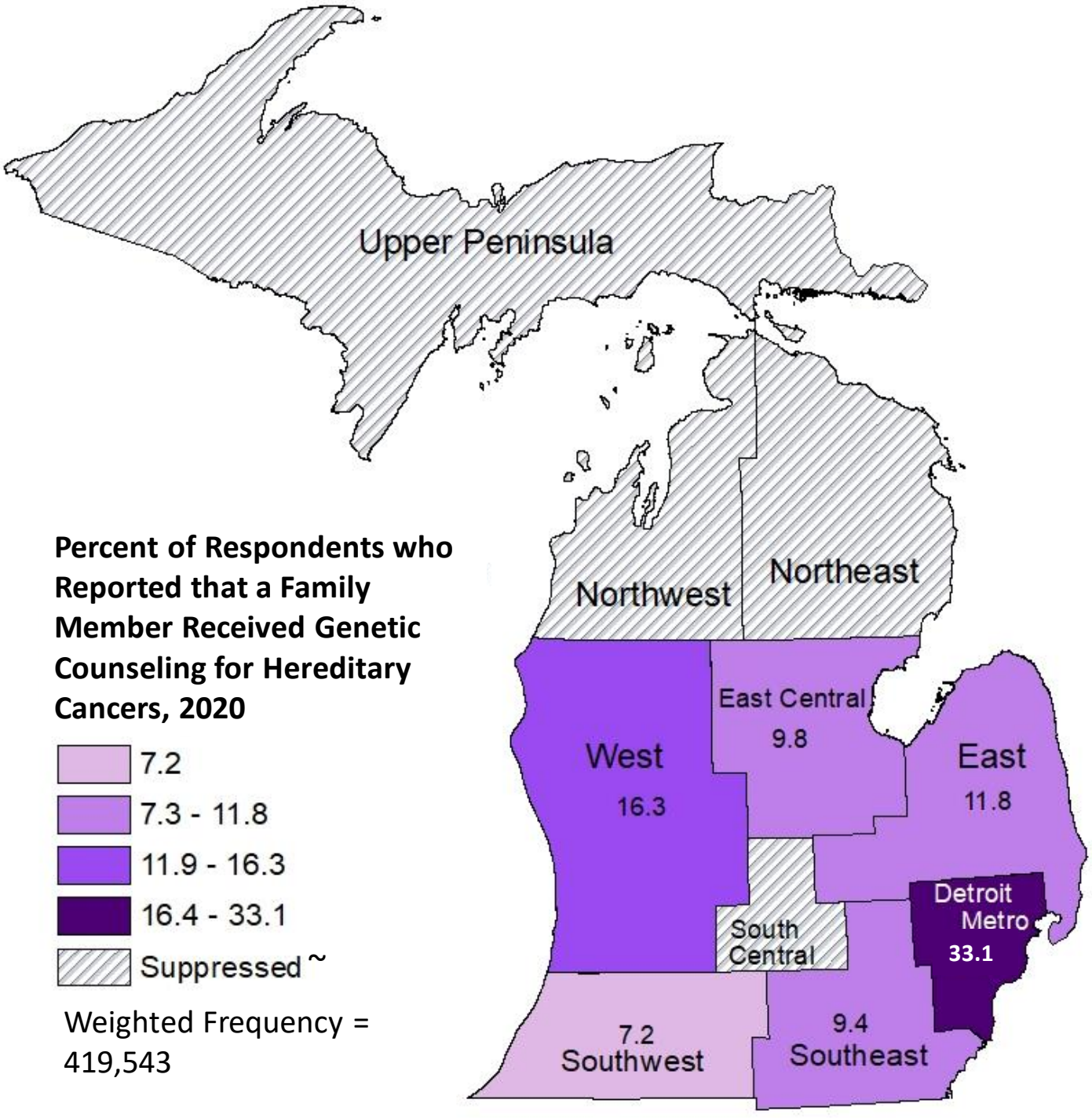
Weighted Frequency = 3,955,786

Genetic Counseling by Prosperity Region: 2020



~Data are suppressed when sample frequencies are less than 50 and/or a relative standard error is greater than 30%.

Genetic Counseling by Prosperity Region: Family Members, 2020



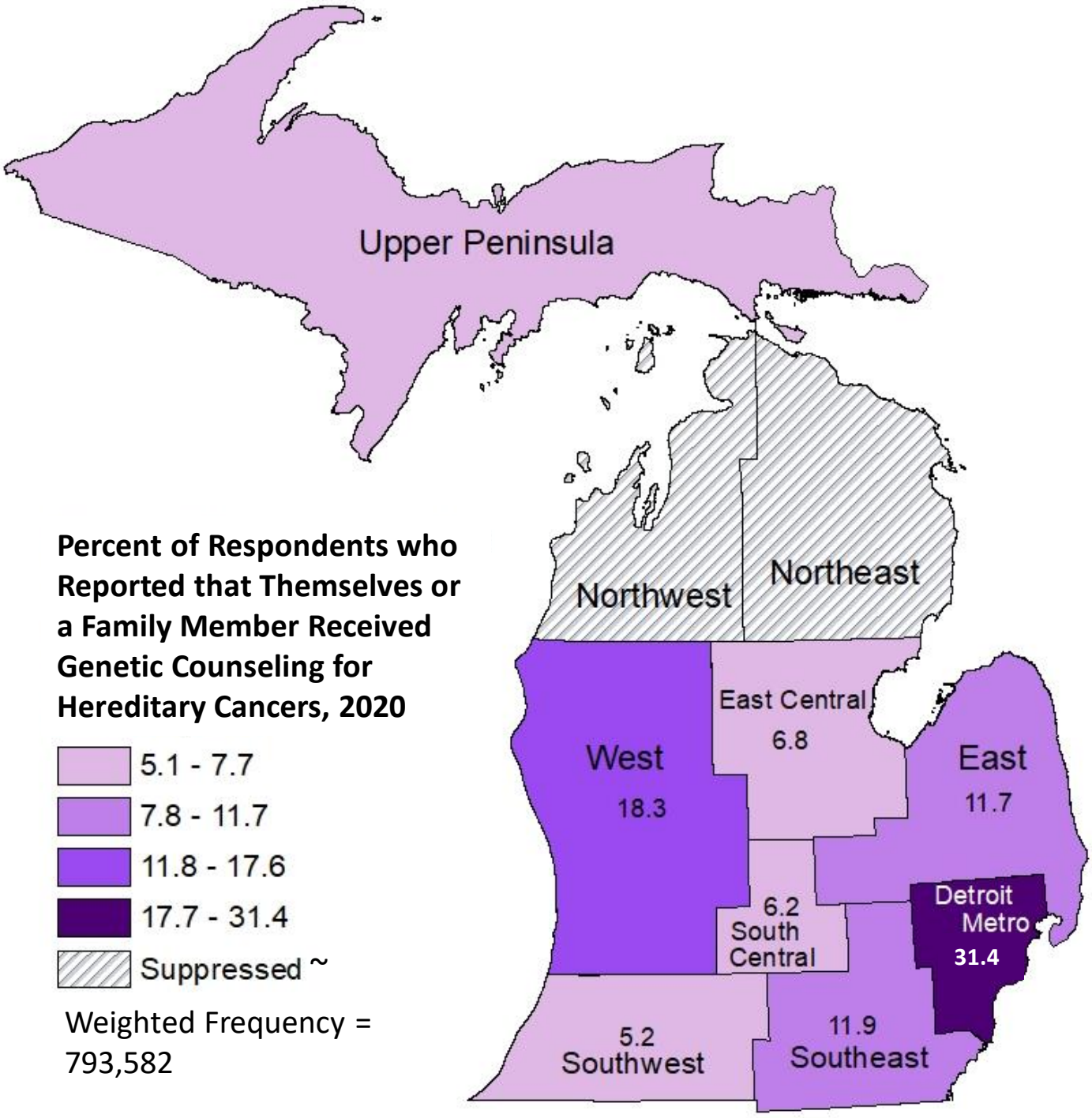
Percent of Respondents who Reported that a Family Member Received Genetic Counseling for Hereditary Cancers, 2020

- 7.2
- 7.3 - 11.8
- 11.9 - 16.3
- 16.4 - 33.1
- Suppressed ~

Weighted Frequency = 419,543

~Data are suppressed when sample frequencies are less than 50 and/or a relative standard error is greater than 30%.

Genetic Testing by Prosperity Region: 2020



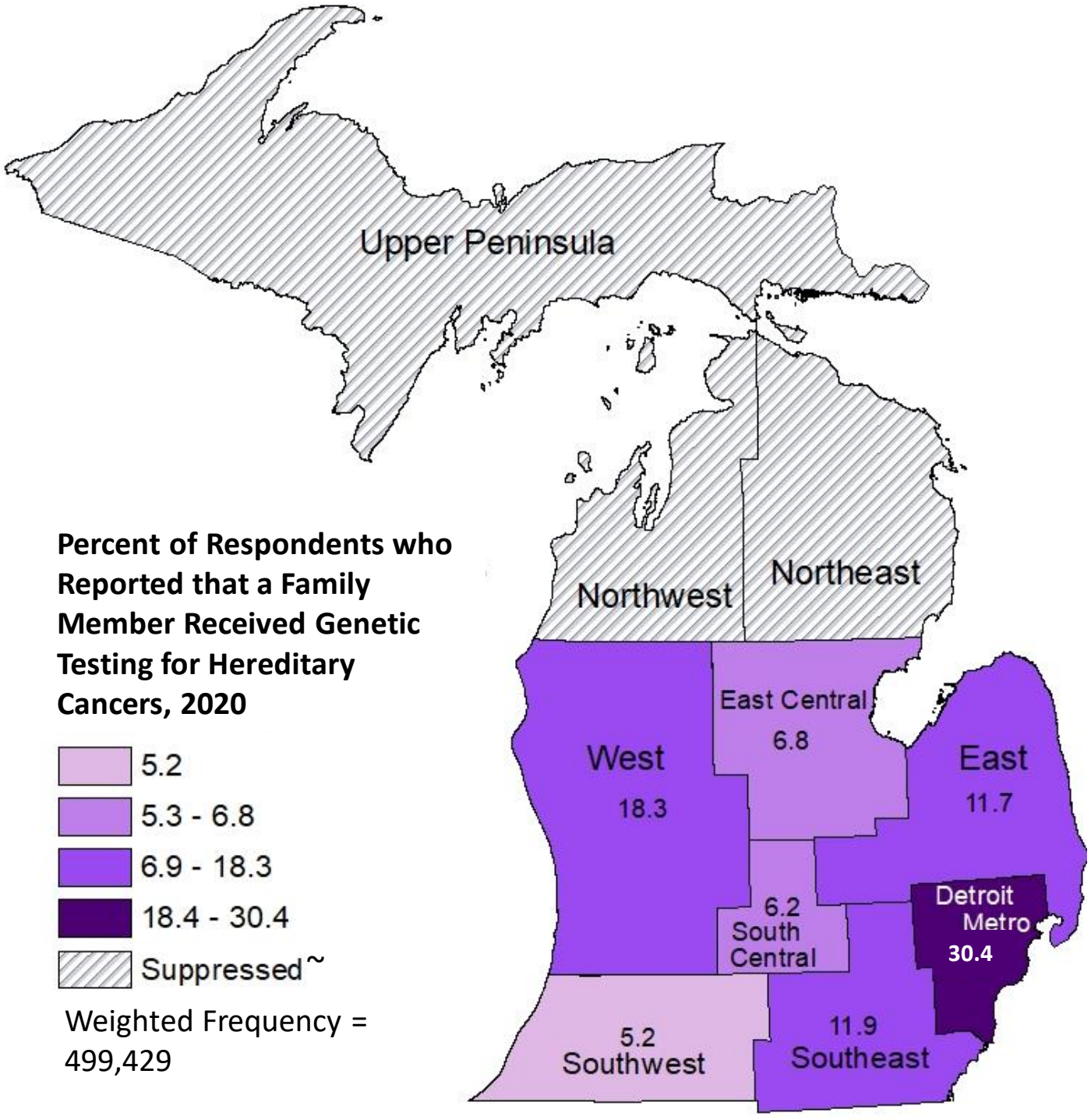
Percent of Respondents who Reported that Themselves or a Family Member Received Genetic Counseling for Hereditary Cancers, 2020

- 5.1 - 7.7
- 7.8 - 11.7
- 11.8 - 17.6
- 17.7 - 31.4
- Suppressed ~

Weighted Frequency = 793,582

~Data are suppressed when sample frequencies are less than 50 and/or a relative standard error is greater than 30%.

Genetic Testing by Prosperity Region: Family Member, 2020



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For More Information

Visit **Michigan.gov/HereditaryCancer** to learn more about hereditary cancers.
Visit **Michigan.gov/BRFS** for more information on the Michigan Behavioral Risk Factor Surveillance System
Cancer Genomics Hotline Phone #: 866 852 1247
Visit **Michigan.gov/CGE** to view more data on hereditary cancers
Email: genetics@michigan.gov

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