MiBRFS Standard Tables –
Colorectal Cancer Genomics Questions 2018

Background & Methods

Background: Variations in MLH1, MSH2, MSH6, PMS2, or EPCAM genes increase the risk of developing Lynch syndrome (LS).[1] LS is an inherited disorder that increases the risk of colorectal, endometrial, ovarian, stomach, liver, kidney, brain, and certain types of skin cancers. These individuals are also more likely to be diagnosed with cancer at a younger age.[1] 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. Early identification of LS can help reduce the impact of cancer and save the lives of family members who may also be at risk.

Purpose: 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. These questions were asked among both men and women in 2018 in Michigan to determine if respondents have a personal or family history of cancers related to LS and if they were aware of genetic testing for colorectal cancer.

Data that is collected include topics such as health status indicators, risk behavior indicators, clinical preventive practices, and chronic conditions, in addition to demographics. Survey modules undergo yearly changes due to the ability to add state-specific questions to the survey.

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 by 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.

Demographics, 2018

Characteristic	Weighted Frequency	Weighted Percent	95% Confidence Interval
Age of respondent			
18-29 years	1,582,949	20.5	18.7-22.5
30-39 years	1,266,672	16.4	14.7-18.3
40-49 years	1,108,380	14.4	12.9-15.9
50-59 years	1,324,773	17.2	15.7-18.8
60-69 years	1,277,058	16.5	15.2-18.0
70+ years	1,157,428	15.0	13.1-16.3
Race/Ethnicity			
White, NH	5,832,493	76.6	74.6-78.4
Black, NH	1,008,904	13.2	11.7-14.6
Asian, NH	172,917	2.3	1.6-3.1
Multiracial, NH	102,014	1.3	1.0-1.7
Native American, NH	65,004	0.9	0.5-1.3
Hispanic	316,799	4.2	3.2-5.4
Arab, NH	120,845	1.6	1.1-2.2
Education			
<High School	791,599	10.1	8.5-12.0
High School Graduate	2,290,922	29.3	27.3-31.3
Some College	2,721,467	34.8	32.7-36.8
College Graduate	1,993,904	25.5	23.9-27.1
Income			
<$20,000	917,979	14.7	13.0-16.5
$20,000 – $34,999	1,210,468	19.3	17.5-21.3
$35,000 – $49,999	870,424	13.9	12.3-15.6
$50,000 – $ 74,999	1,022,973	16.3	14.7-18.1
≥$75,000	2,241,570	35.8	33.6-38.1
Insurance			
Yes	7,185,160	92.4	91.1-93.6
No	587,319	7.6	6.4-8.9

Demographics, 2018 Continued

Characteristic	Weighted Frequency	Weighted Percent	95% Confidence Interval
Gender			
Female	3,811,473	51.3	49.2-53.5
Male	4,018,697	48.7	46.5-50.8
Sexual Orientation			
Heterosexual	7,004,172	95.7	94.7-96.5
Homosexual	100,227	1.4	1.0-2.0
Bisexual	159,631	2.2	1.6-3.0
Transgender	~	~	~
Other	50,591	0.7	0.4-1.3
Prosperity Regions			
Upper Peninsula	270,674	3.5	3.1-4.0
Northwest	256,653	3.3	2.9-3.8
Northeast	226,521	2.9	2.5-3.5
West Michigan	1,238,681	16.1	15.1-17.1
East Central Michigan	492,948	6.4	5.6-7.4
East Michigan	704,448	9.2	8.4-10.0
South Central	339,849	4.4	3.9-5.1
Southwest	594,416	7.7	7.0-8.6
Southeast Michigan	740,590	9.6	8.8-10.5
Detroit Metro	2,820,718	36.7	35.3-38.2

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

Characteristics of Cancer Diagnoses, 2018

Characteristic	Weighted Frequency	Weighted Percent	95% Confidence Interval
Ever told they have cancer*			
Yes	949,359	12.1	11.0-13.4
No	6,867,511	87.9	86.6-89.0
Age at first cancer diagnosis**			
<50 years	255,702	30.3	25.5-35.5
50+ years	589,275	69.7	64.5-74.5
Blood stool test for colorectal cancer[a]			
Yes	1,197,397	32.9	30.4-35.5
No	2,445,931	67.1	64.5-69.6
Sigmoidal colonoscopy for colorectal cancer[b]			
Yes	2,860,660	77.6	75.1-79.9
No	824,447	22.4	20.1-24.9
Appropriate FOBT*** or endoscopy[c]			
Yes	2,661,132	74.4	71.8-76.8
No	917,393	25.6	23.2-28.2

*Was the respondent ever told that they had cancer?

**Of the respondents who reported being told they had cancer, what was the age of diagnosis?

[a] A blood stool test is a test that may use a special kit at home to determine whether the stool contains blood. Have you ever had this test using a home kit?

[b] Sigmoidoscopy and colonoscopy are exams in which a tube is inserted in the rectum to view the colon for signs of cancer or other health problems. Have you ever had either of these exams?

[c] How long has it been since you had your last sigmoidoscopy or colonoscopy?

***FOBT = fecal occult blood test

Family History of Cancer, 2018

Characteristic	Weighted Frequency	Weighted Percent	95% Confidence Interval
Immediate family member with colorectal cancer[d]			
Close relatives	627,957	9.0	7.8-10.2
No family members	6,383,948	91.0	89.8-92.2

[d] Have you or any of your parents, brothers, sisters, or children ever been diagnosed with colorectal cancer by a doctor, nurse, or other health professional?

Genetic Counseling and Testing, 2018

Characteristic	Weighted Frequency	Weighted Percent	95% Confidence Interval
Likelihood of getting colorectal cancer genetic counseling[e]			
Very Likely	172,037	29.1	23.2-35.8
Somewhat Likely	176,924	29.9	23.7-37.0
Not Likely	242,013	41.0	34.2-48.0
Heard of genetic testing for colorectal cancer[f]			
Yes	122,755	20.1	15.4-25.8
No	487,946	79.9	74.2-84.6

[e] How likely would you be to have a genetic test to determine if the colorectal cancer in your family was inherited?
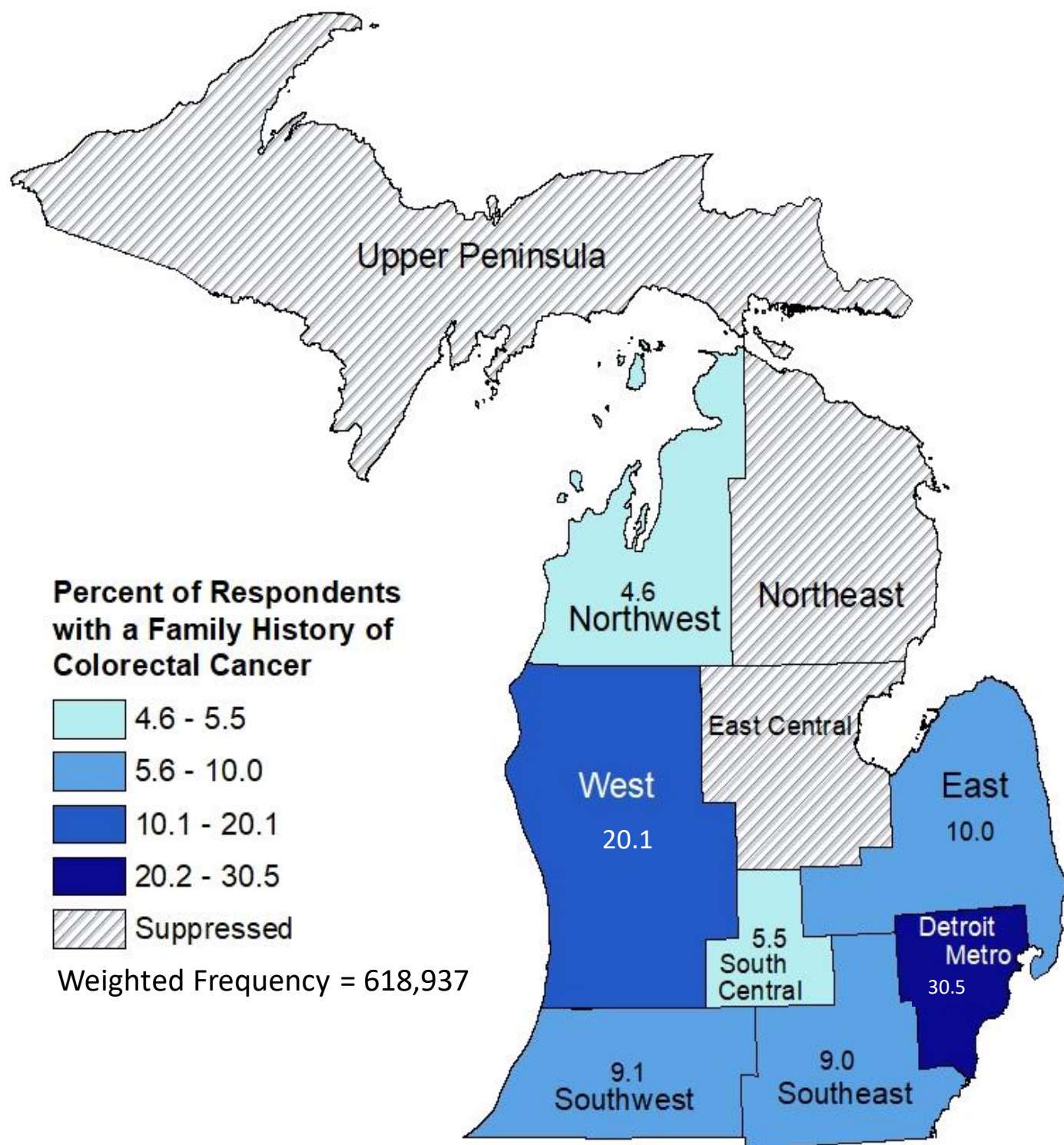[f] Have you heard of a genetic test that would determine if the colorectal cancer in your family was inherited?

Respondents by Prosperity Region, 2018

Upper Peninsula
3.5

2.9
Northeast

3.3
Northwest

East Central
6.4

West
16.1

East
9.2

Percent of Respondents

2.9 - 14.2

14.3 - 25.4

25.5 - 36.7

Weighted Frequency =
7,685,498

4.4
South
Central

Detroit
Metro
36.7

7.7
Southwest

9.6
Southeast
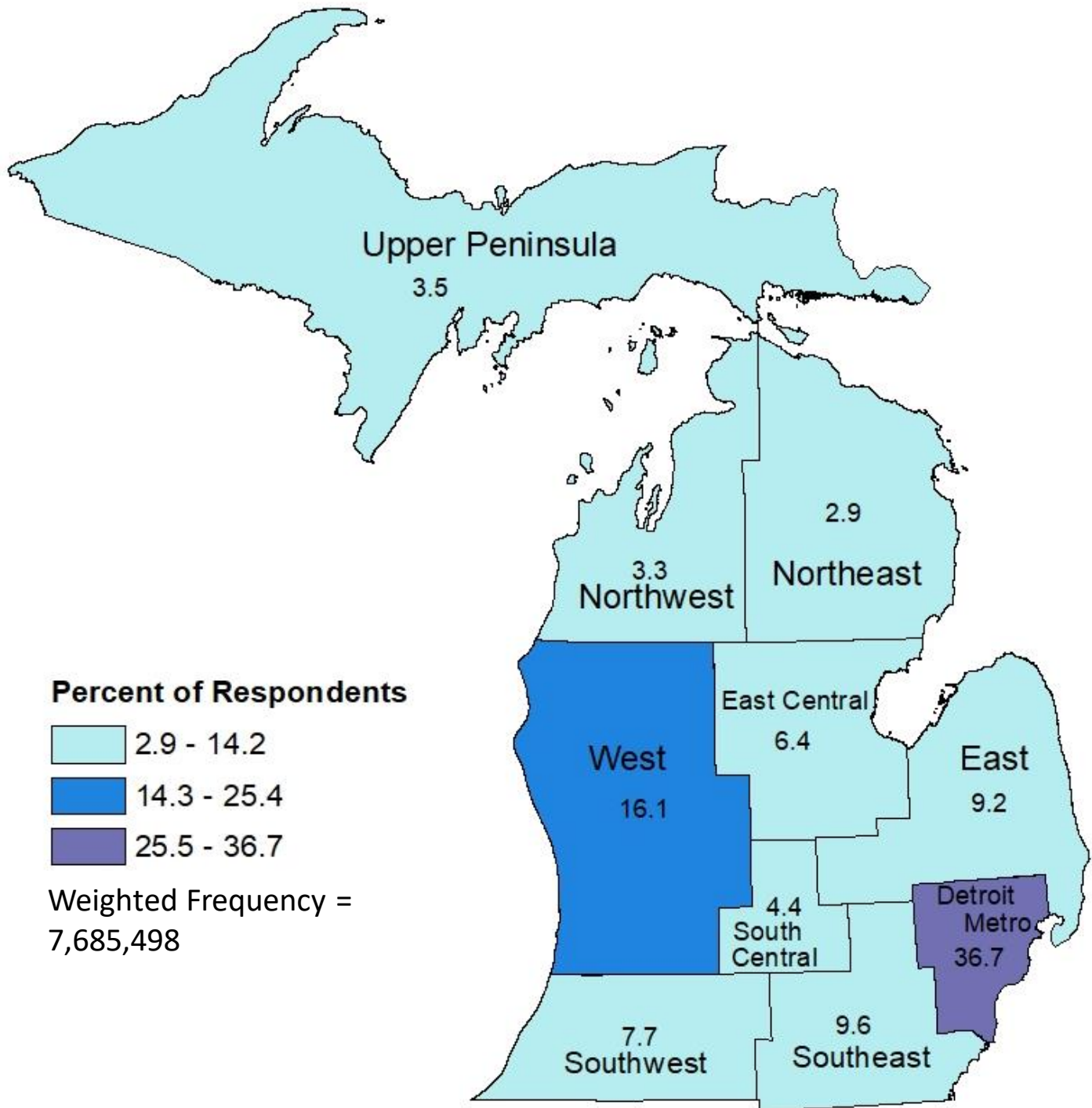
Family History of Colorectal Cancer by Prosperity Region, 2018

Upper Peninsula

Northwest 4.6

Northeast

East Central

West 20.1

East 10.0

Percent of Respondents with a Family History of Colorectal Cancer

- 4.6 - 5.5
- 5.6 - 10.0
- 10.1 - 20.1
- 20.2 - 30.5
- Suppressed

Weighted Frequency = 618,937

South Central 5.5

Detroit Metro 30.5

Southwest 9.1

Southeast 9.0

For More Information

Suggested Citation:
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MDHHS
Michigan Department of Health & Human Services

References:
1. Center for Disease Control and Prevention (CDC) 2020. Hereditary Colorectal (Colon) Cancer: Lynch Syndrome. Retrieved April 2021 from: https://www.cdc.gov/genomics/disease/colorectal_cancer/lynch.htm