Estimates for Selected Risk Factors and Health Indicators by Emergency Preparedness Region

State of Michigan

Michigan Behavioral Risk Factor Surveillance System (Michigan BRFSS)

2016-2018

Lifecourse Epidemiology and Genomics Division
Bureau of Epidemiology and Population Health
Michigan Department of Health and Human Services

Prepared by: Yan Tian and Allison Murad
December 2020

Table of Contents

Introduction

The Michigan Behavioral Risk Factor Survey (MiBRFS) is an annual, statewide telephone survey of Michigan adults aged 18 years and older that is conducted through a collaborative effort among the Population Health Surveillance Branch (PHSB) of the Centers for Disease Control and Prevention (CDC), the Michigan State University Institute for Public Policy and Social Research (IPPSR), and the Michigan Department of Health and Human Services. Michigan BRFS data contribute to the national [Behavioral Risk Factor Surveillance System](#) that is managed by the PHSB at the CDC.

For this report, data from the 2016-2018 Michigan BRFS were combined. The total sample sizes by year were: 12,024 in 2016, 10,889 in 2017, and 10,322 in 2018. Not all questions were included annually in the survey. The table subtitles indicate which years were used for that particular analysis.

For the 2016 through 2018 Michigan Behavioral Risk Factor Surveys, the sample of land line telephone numbers that were utilized for data collection was selected using a list-assisted, random-digit-dialed methodology with a disproportionate stratification based on phone bank density, and whether or not the phone numbers were directory listed. The sample of cell phone numbers used within each survey year was randomly selected from dedicated cellular telephone banks sorted on the basis of area code and exchange within the State of Michigan.

Iterative proportional fitting or raking was the weighting methodology used to make the 2016-2018 Michigan BRFS data representative of the current Michigan adult population. Estimates based on this methodology were weighted to adjust for the probabilities of selection and a raking adjustment factor that adjusted for the distribution of Michigan adults by telephone source (land line vs. cell phone), detailed race/ethnicity, education level, marital status, age by gender, gender by race/ethnicity, age by race/ethnicity, and renter/owner status. No additional weighting factors were computed at the regional level, thus the weights used might not always provide accurate regional estimates, particularly when regional demographic distributions vary greatly from that of the state.

Michigan BRFS data from 2016-2018 were analyzed by Michigan Emergency Preparedness (EP) region. A map identifying each of Michigan's eight emergency preparedness regions is included on the following page. Population-based prevalence estimates and asymmetric confidence intervals were calculated for indicators of health status, health risk behaviors, clinical preventive practices, and chronic conditions among the adult population in Michigan. All analyses were performed in SAS-Callable SUDAAN®, a statistical computing that is designed for complex sample surveys.

In an effort to provide the most reliable information possible, prevalence estimates are suppressed if they are based on a denominator of less than 50 respondents or have a relative standard error of greater than 30%.

Due to the BRFSS methodology changes that took place in 2011, the estimates provided within the following tables should not be compared to Michigan BRFSS estimates from years prior to 2011.

If you have any questions regarding any of the estimates within the following tables, please contact Yan Tian at TianY@michigan.gov.

Local Health Jurisdictions, Emergency Preparedness Regions and Michigan Counties
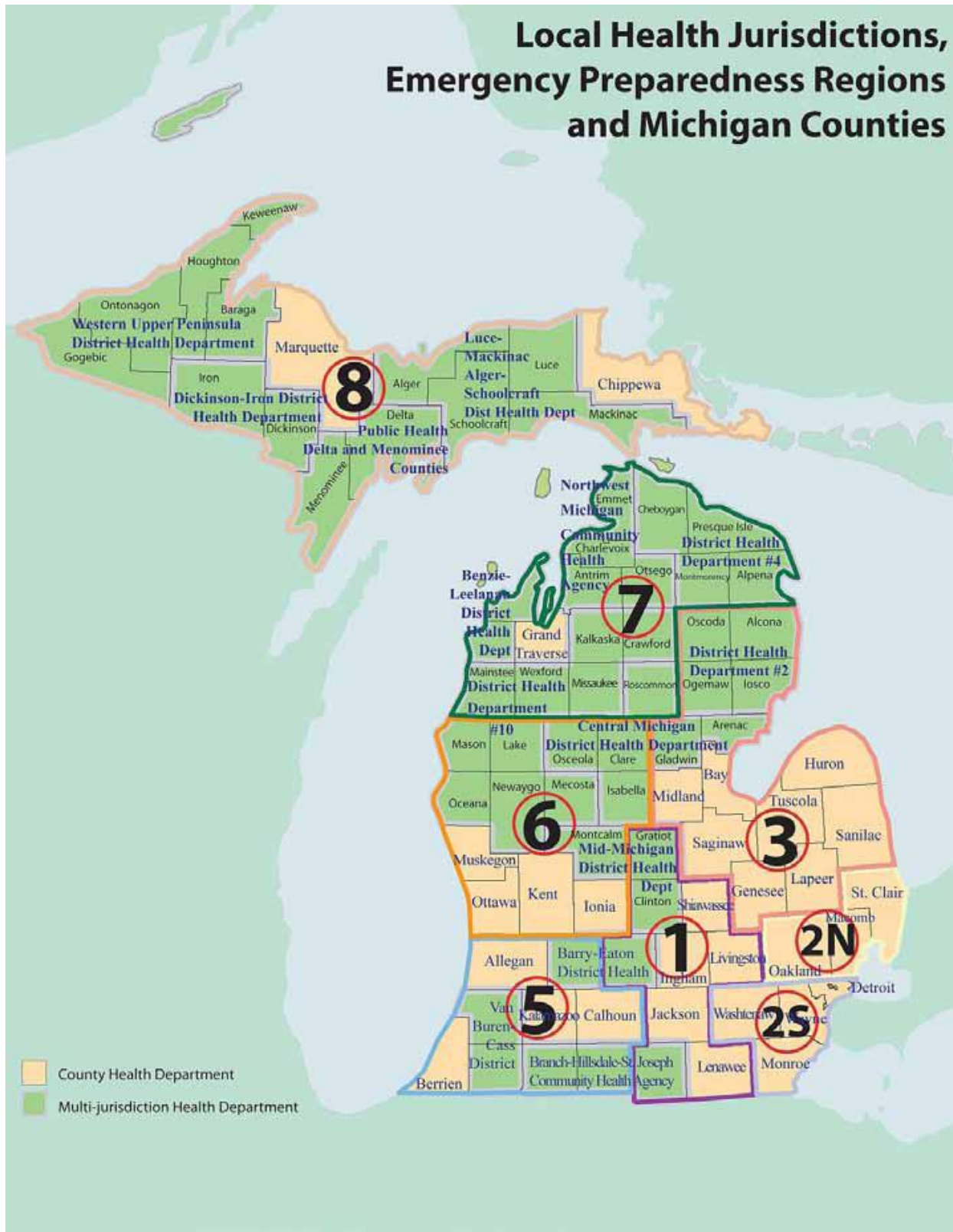
Table 1: Health Status by EP Region Michigan BRFSS, 2016-2018 Combined		
	General Health, Fair or Poor[a]	
	%	95% Confidence Interval
Michigan Total	**18.6**	**(18.1-19.1)**
EP Region		
Region 1	16.1	(14.7-17.5)
Region 2N	16.5	(15.3-17.7)
Region 2S	21.4	(20.1-22.7)
Region 3	21.4	(19.8-23.1)
Region 5	18.9	(17.1-20.8)
Region 6	17.7	(16.3-19.1)
Region 7	18.8	(16.8-21.0)
Region 8	20.9	(17.9-24.2)

[a] Among all adults, the proportion who reported that their health, in general, was either fair or poor.

Table 2: Health Status on at Least 14 Days in the Past Month by EP Region Michigan BRFSS, 2016-2018 Combined						
	Poor Physical Health[a]		Poor Mental Health[b]		Activity Limitation[c]	
	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval
Michigan Total	**9.7**	**(9.3-10.2)**	**9.3**	**(8.9-9.8)**	**10.4**	**(9.9-10.8)**
EP Region						
Region 1	8.7	(7.7-9.8)	9.0	(7.9-10.1)	9.4	(8.3-10.5)
Region 2N	9.3	(8.4-10.3)	8.3	(7.4-9.3)	9.9	(8.9-10.9)
Region 2S	10.4	(9.5-11.4)	10.7	(9.7-11.8)	11.5	(10.5-12.5)
Region 3	9.9	(8.8-11.1)	9.5	(8.3-10.9)	11.0	(9.8-12.3)
Region 5	10.4	(9.0-12.0)	10.5	(9.1-12.2)	10.6	(9.2-12.2)
Region 6	9.7	(8.7-10.9)	9.0	(8.0-10.1)	9.3	(8.3-10.5)
Region 7	10.0	(8.5-11.7)	8.0	(6.7-9.6)	10.4	(8.9-12.2)
Region 8	12.0	(9.6-14.9)	8.6	(6.5-11.2)	14.5	(11.7-17.7)

[a] Among all adults, the proportion who reported 14 or more days of poor physical health, which includes physical illness and injury, during the past 30 days.
[b] Among all adults, the proportion who reported 14 or more days of poor mental health, which includes stress, depression, and problems with emotions, during the past 30 days.
[c] Among all adults, the proportion who reported 14 or more days in the past 30 days in which either poor physical health or poor mental health kept respondents from doing their usual activities, such as self-care, work, and recreation.

Due to significant BRFSS methodology changes that took place in 2011, the estimates within these tables should not be compared to Michigan BRFSS estimates from prior to 2011.

Table 3: Mean Number of Days of Poor Physical Health, Poor Mental Health, and Activity Limitations by EP Region Michigan BRFSS, 2016-2018 Combined						
	Poor Physical Health[a]		Poor Mental Health[b]		Activity Limitation[c]	
	Mean # of days	95% Confidence Interval	Mean # of days	95% Confidence Interval	Mean # of days	95% Confidence Interval
Michigan Total	**4.5**	**(4.4-4.7)**	**4.4**	**(4.2-4.5)**	**3.1**	**(3.0-3.3)**
EP Region						
Region 1	4.2	(3.9-4.5)	4.1	(3.8-4.4)	2.9	(2.6-3.2)
Region 2N	4.3	(4.0-4.6)	4.0	(3.8-4.3)	3.0	(2.8-3.2)
Region 2S	4.8	(4.5-5.1)	4.9	(4.6-5.2)	3.5	(3.2-3.8)
Region 3	4.9	(4.5-5.3)	4.6	(4.2-4.9)	3.3	(2.9-3.6)
Region 5	4.7	(4.2-5.1)	4.6	(4.2-5.0)	3.2	(2.8-3.6)
Region 6	4.4	(4.1-4.7)	4.2	(3.8-4.5)	2.9	(2.6-3.2)
Region 7	4.8	(4.3-5.3)	3.9	(3.5-4.4)	3.1	(2.7-3.5)
Region 8	5.4	(4.7-6.2)	4.1	(3.5-4.8)	4.0	(3.3-4.6)

[a] Among all adults, the mean number of days during the past 30 days in which physical health, including illness and injury, was not good.
[b] Among all adults, the mean number of days during the past 30 days in which mental health, including stress, depression, and problems with emotions, was not good.
[c] Among all adults, the mean number of days during the past 30 days in which poor physical health or poor mental health kept respondent from doing their usual activities, such as self-care, work, and recreation.

Due to significant BRFSS methodology changes that took place in 2011, the estimates within these tables should not be compared to Michigan BRFSS estimates from prior to 2011.

	Total Disability[a]		Any Activity Limitation[b]		Used Special Equipment[c]	
Table 4: Disability by EP Region — **Michigan BRFSS, 2016-2018 Combined**						
	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval
Michigan Total	**27.1**	**(26.5-27.8)**	**24.4**	**(23.8-25.0)**	**11.3**	**(10.9-11.7)**
EP Region						
Region 1	24.2	(22.6-25.8)	21.5	(20.1-23.1)	9.3	(8.3-10.4)
Region 2N	25.2	(23.9-26.6)	22.5	(21.2-23.9)	10.6	(9.7-11.6)
Region 2S	29.1	(27.7-30.5)	25.4	(24.1-26.8)	13.9	(12.9-15.0)
Region 3	29.8	(28.0-31.7)	27.3	(25.5-29.1)	11.9	(10.7-13.3)
Region 5	29.2	(27.1-31.4)	26.4	(24.4-28.5)	11.5	(10.1-13.1)
Region 6	25.0	(23.5-26.5)	23.1	(21.7-24.6)	9.7	(8.7-10.7)
Region 7	28.1	(25.8-30.6)	25.7	(23.4-28.1)	10.2	(8.7-11.9)
Region 8	31.7	(28.2-35.5)	29.3	(25.8-33.0)	13.2	(10.8-16.0)

[a] Among all adults, the proportion who reported being limited in any activities because of physical, mental, or emotional problems, or reported that they required use of special equipment (such as a cane, a wheelchair, a special bed, or a special telephone) due to a health problem.
[b] Among all adults, the proportion who reported being limited in any activities because of physical, mental, or emotional problems.
[c] Among all adults, the proportion who reported that they required use of special equipment (such as a can, a wheelchair, a special bed, or a special telephone) due to a health problem.

Due to significant BRFSS methodology changes that took place in 2011, the estimates within these tables should not be compared to Michigan BRFSS estimates from prior to 2011.

Table 5: Weight Status by EP Region Michigan BRFSS, 2016-2018 Combined								
	Obese[a]		Overweight[b]		Healthy Weight[c]		Underweight[d]	
	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval
Michigan Total	**32.6**	**(31.9-33.3)**	**34.8**	**(34.1-35.5)**	**30.8**	**(30.1-31.5)**	**1.8**	**(1.6-2.0)**
EP Region								
Region 1	33.4	(31.5-35.2)	34.5	(32.7-36.4)	30.8	(28.9-32.7)	1.3	(1.0-1.9)
Region 2N	28.0	(26.6-29.5)	37.3	(35.7-38.9)	32.8	(31.3-34.4)	1.8	(1.4-2.4)
Region 2S	34.3	(32.8-35.8)	33.6	(32.1-35.1)	30.1	(28.7-31.6)	2.0	(1.6-2.5)
Region 3	37.1	(35.1-39.0)	33.5	(31.7-35.5)	27.7	(25.9-29.6)	1.7	(1.2-2.4)
Region 5	34.5	(32.2-36.9)	33.8	(31.6-36.2)	29.8	(27.6-32.1)	1.9	(1.3-2.8)
Region 6	32.8	(31.1-34.5)	34.4	(32.6-36.1)	31.4	(29.6-33.2)	1.5	(1.1-2.1)
Region 7	33.3	(30.7-35.9)	35.8	(33.3-38.5)	29.1	(26.6-31.6)	1.8	(1.2-2.8)
Region 8	35.9	(32.1-39.9)	34.9	(31.1-38.8)	26.8	(23.4-30.5)	2.5	(1.4-4.2)

Note: BMI, body mass index, is defined as weight (in kilograms) divided by height (in meters) squared [weight in kg/(height in meters)^2]. Weight and height were self-reported. Pregnant women were excluded.
[a] Among all adults, the proportion of respondents whose BMI was greater than or equal to 30.0.
[b] Among all adults, the proportion of respondents whose BMI was greater than or equal to 25.0, but less than 30.0.
[c] Among all adults, the proportion of respondents whose BMI was greater than or equal to 18.5, but less than 25.0.
[d] Among all adults, the proportion of respondents whose BMI was less than 18.5.

Due to significant BRFSS methodology changes that took place in 2011, the estimates within these tables should not be compared to Michigan BRFSS estimates from prior to 2011.

Table 6: Health Care Coverage Among Adults 18-64 Years Old by EP Region		
Michigan BRFSS, 2016-2018 Combined		
	No Health Care Coverage[a] (Among 18 - 64 year olds)	
	%	**95% Confidence Interval**
Michigan Total	**9.6**	**(9.0-10.1)**
EP Region		
Region 1	9.2	(7.8-10.7)
Region 2N	7.0	(6.0-8.2)
Region 2S	10.1	(9.0-11.4)
Region 3	10.3	(8.9-12.0)
Region 5	10.9	(9.1-13.0)
Region 6	9.7	(8.4-11.2)
Region 7	10.4	(8.5-12.6)
Region 8	10.6	(7.7-14.3)

[a] Among adults aged 18-64 years, the proportion who reported having no health care coverage, including health insurance, prepaid plans such as HMOs, or government plans, such as Medicare or Indian Health Services.

Due to significant BRFSS methodology changes that took place in 2011, the estimates within these tables should not be compared to Michigan BRFSS estimates from prior to 2011.

Table 7: Health Care Access by EP Region Michigan BRFSS, 2016-2018 Combined				
	No Personal Health Care Provider[a]		No Health Care Access During Past 12 Months Due to Cost[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Michigan Total	**14.9**	**(14.4-15.5)**	**12.0**	**(11.5-12.5)**
EP Region				
Region 1	14.7	(13.2-16.2)	10.8	(9.6-12.1)
Region 2N	12.9	(11.8-14.2)	11.8	(10.7-12.9)
Region 2S	15.6	(14.4-16.8)	14.5	(13.3-15.7)
Region 3	14.2	(12.8-15.9)	11.2	(9.9-12.5)
Region 5	17.7	(15.7-19.7)	11.7	(10.2-13.4)
Region 6	11.9	(10.6-13.3)	10.8	(9.7-12.0)
Region 7	14.3	(12.4-16.3)	11.9	(10.3-13.7)
Region 8	13.5	(11.0-16.6)	11.5	(9.1-14.3)

[a] Among all adults, the proportion who reported that they did not have anyone that they thought of as their personal doctor or health care provider.
[b] Among all adults, the proportion who reported that in the past 12 months, they could not see a doctor when they needed to due to the cost.

Due to significant BRFSS methodology changes that took place in 2011, the estimates within these tables should not be compared to Michigan BRFSS estimates from prior to 2011.

Table 8: No Leisure Time Physical Activity by EP Region **Michigan BRFSS, 2016-2018 Combined**		
	No Leisure Time Physical Activity[a]	
	%	**95% Confidence Interval**
Michigan Total	**24.9**	**(24.3-25.6)**
EP Region		
Region 1	24.1	(22.5-25.8)
Region 2N	23.0	(21.7-24.4)
Region 2S	27.2	(25.8-28.6)
Region 3	27.6	(25.9-29.4)
Region 5	25.2	(23.2-27.3)
Region 6	23.5	(22.0-25.1)
Region 7	25.5	(23.1-27.9)
Region 8	24.9	(21.8-28.4)

[a] Among all adults, the proportion who reported not participating in any leisure time physical activities or exercises such as running, calisthenics, golf, gardening, or walking during the past month.

Due to significant BRFSS methodology changes that took place in 2011, the estimates within these tables should not be compared to Michigan BRFSS estimates from prior to 2011.

Table 9: Cigarette Smoking by EP Region						
Michigan BRFSS, 2016-2018 Combined						
	Current Smoking[a]		**Former Smoking[b]**		**Never Smoked**	
	%	**95% Confidence Interval**	**%**	**95% Confidence Interval**	**%**	**95% Confidence Interval**
Michigan Total	**19.6**	**(19.0-20.2)**	**26.3**	**(25.7-26.9)**	**54.1**	**(53.4-54.8)**
EP Region						
Region 1	18.9	(17.3-20.5)	28.0	(26.4-29.7)	53.1	(51.2-55.0)
Region 2N	18.6	(17.3-20.0)	26.8	(25.4-28.2)	54.6	(53.0-56.2)
Region 2S	20.5	(19.2-21.8)	23.4	(22.1-24.7)	56.2	(54.6-57.7)
Region 3	21.5	(19.8-23.3)	28.6	(26.9-30.3)	49.9	(47.9-51.9)
Region 5	20.1	(18.2-22.2)	26.2	(24.3-28.3)	53.6	(51.2-56.0)
Region 6	18.5	(17.1-20.1)	27.8	(26.2-29.4)	53.7	(51.9-55.5)
Region 7	22.4	(20.2-24.8)	30.6	(28.2-33.1)	47.0	(44.3-49.7)
Region 8	21.0	(17.9-24.4)	30.6	(27.2-34.3)	48.4	(44.5-52.4)

[a] Among all adults, the proportion who reported that they had ever smoked at least 100 cigarettes (5 packs) in their life and that they smoke cigarettes now, either every day or on some days.
[b] Among all adults, the proportion who reported that they had ever smoked at least 100 cigarettes (5 packs) in their life, but they do not smoke cigarettes now.

Due to significant BRFSS methodology changes that took place in 2011, the estimates within these tables should not be compared to Michigan BRFSS estimates from prior to 2011.

Table 10: Current Smokers Who Attempted to Quit by EP Region Michigan BRFSS, 2016-2018 Combined		
	Tried to Quit Smoking One Day or Longer in Past Year[a]	
	%	95% Confidence Interval
Michigan Total	**59.2**	**(57.5-60.8)**
EP Region		
Region 1	57.9	(53.1-62.6)
Region 2N	62.6	(58.6-66.4)
Region 2S	63.2	(59.5-66.7)
Region 3	56.9	(52.2-61.5)
Region 5	53.0	(47.4-58.5)
Region 6	56.6	(52.1-61.1)
Region 7	53.3	(47.4-59.1)
Region 8	63.1	(54.6-70.9)

[a] Among current smokers, the proportion who reported that during the past 12 months, they had tried to quit smoking for one day or longer.

Table 11: Current Hookah Use by EP Region Michigan BRFSS, 2016-2018 Combined		
	Current Hookah Use[a]	
	%	95% Confidence Interval
Michigan Total	**3.3**	**(3.0-3.7)**
EP Region		
Region 1	3.1	(2.3-4.3)
Region 2N	4.3	(3.4-5.3)
Region 2S	4.1	(3.3-5.1)
Region 3	2.2	(1.6-3.0)
Region 5	2.2	(1.5-3.3)
Region 6	2.9	(2.2-3.8)
Region 7	1.8	(1.1-3.1)
Region 8	--[b]	--[b]

[a] Among all adults, the proportion who reported smoking tobacco using a hookah, narghile, or water pipe on one or more days during the previous thirty day.
[b] Suppressed due to a denominator < 50 and/or a relative standard error > 30%.

Due to significant BRFSS methodology changes that took place in 2011, the estimates within these tables should not be compared to Michigan BRFSS estimates from prior to 2011.

Table 12: Alcohol Consumption by EP Region Michigan BRFSS, 2016-2018 Combined						
	Any Alcohol in Past Month[a]		Heavy Drinking[b]		Binge Drinking[c]	
	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval
Michigan Total	**56.9**	**(56.2-57.6)**	**6.7**	**(6.3-7.0)**	**18.5**	**(17.9-19.0)**
EP Region						
Region 1	57.7	(55.7-59.6)	7.0	(6.1-8.1)	18.9	(17.3-20.5)
Region 2N	61.2	(59.6-62.8)	6.5	(5.8-7.4)	19.3	(18.0-20.7)
Region 2S	55.9	(54.3-57.5)	5.8	(5.1-6.7)	17.8	(16.6-19.1)
Region 3	53.6	(51.6-55.6)	6.5	(5.6-7.6)	18.6	(17.0-20.3)
Region 5	53.0	(50.5-55.4)	6.5	(5.4-7.8)	16.4	(14.7-18.3)
Region 6	57.6	(55.7-59.4)	7.1	(6.3-8.1)	18.9	(17.4-20.4)
Region 7	54.9	(52.2-57.6)	8.7	(7.3-10.3)	17.3	(15.3-19.5)
Region 8	55.7	(51.7-59.6)	8.2	(6.2-10.8)	18.7	(15.6-22.3)

[a] Among all adults, the proportion who reported consuming at least one drink of any alcoholic beverage in the previous month.
[b] 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.
[c] 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.

Due to significant BRFSS methodology changes that took place in 2011, the estimates within these tables should not be compared to Michigan BRFSS estimates from prior to 2011.

Table 13: Mean Number of Binge Drinking Occasions during the Past Month among Binge Drinkers by EP Region Michigan BRFSS, 2016-2018 Combined		
	Number of Binge Drinking Occasions[a]	
	Mean	**95% Confidence Interval**
Michigan Total	**4.6**	**(4.4-4.9)**
EP Region		
Region 1	4.1	(3.6-4.7)
Region 2N	4.4	(3.9-4.9)
Region 2S	4.5	(4.0-5.1)
Region 3	5.1	(4.4-5.9)
Region 5	4.2	(3.6-4.9)
Region 6	4.7	(4.2-5.3)
Region 7	6.1	(4.9-7.3)
Region 8	5.9	(4.3-7.5)

[a] Among adults who binge drank in the past month, the mean number of times during which five or more alcoholic beverages (for men) or four or more (for women) were consumed during the past month.

Table 14: Seatbelt Use by EP Region
Michigan BRFSS, 2016-2018 Combined

	Always Uses a Seatbelt[a]	
	%	95% Confidence Interval
Michigan Total	**89.1**	**(88.6-89.6)**
EP Region		
Region 1	89.1	(87.7-90.4)
Region 2N	91.4	(90.4-92.4)
Region 2S	89.3	(88.2-90.3)
Region 3	87.7	(86.3-89.0)
Region 5	88.7	(86.9-90.3)
Region 6	88.4	(87.0-89.6)
Region 7	88.4	(86.5-90.1)
Region 8	86.0	(82.5-88.8)

[a] Among all adults, the proportion who reported always using a seatbelt when driving or riding in a car.

Due to significant BRFSS methodology changes that took place in 2011, the estimates within these tables should not be compared to Michigan BRFSS estimates from prior to 2011.

Table 15: No Routine Checkup in Past Year by EP Region Michigan BRFSS, 2016-2018 Combined		
	Had No Routine Checkup in Past Year[a]	
	%	**95% Confidence Interval**
Michigan Total	**24.6**	**(24.0-25.3)**
EP Region		
Region 1	24.6	(22.9-26.4)
Region 2N	25.5	(24.1-27.0)
Region 2S	22.6	(21.3-23.9)
Region 3	24.2	(22.4-26.0)
Region 5	25.4	(23.3-27.6)
Region 6	23.8	(22.3-25.5)
Region 7	24.3	(22.0-26.7)
Region 8	27.5	(24.0-31.2)

[a] Among all adults, the proportion who reported that they did not have a routine checkup in the past year.

Due to significant BRFSS methodology changes that took place in 2011, the estimates within these tables should not be compared to Michigan BRFSS estimates from prior to 2011.

Table 16: Breast Cancer Screening Among Women Aged 40 Years and Older by EP Region Michigan BRFSS, 2016 and 2018 Combined		
	Had Mammogram in Past Two Years[a]	
	%	95% Confidence Interval
Michigan Total	**74.0**	**(72.4-75.5)**
EP Region		
Region 1	75.1	(70.5-79.1)
Region 2N	74.8	(71.3-78.0)
Region 2S	72.9	(68.8-76.6)
Region 3	73.8	(69.4-77.8)
Region 5	72.5	(67.0-77.4)
Region 6	75.5	(71.3-79.2)
Region 7	72.8	(66.5-78.3)
Region 8	72.8	(65.1-79.4)

[a] Among women aged 50 years and older, the proportion who reported having a mammogram in the past two years.

Due to significant BRFSS methodology changes that took place in 2011, the estimates within these tables should not be compared to Michigan BRFSS estimates from prior to 2011.

Table 17: Cervical Cancer Screening Among Women Aged 18 Years and Older by EP Region **Michigan BRFSS, 2016 and 2018 Combined**		
	Had Appropriately Timed Pap Test[a]	
	%	**95% Confidence Interval**
Michigan Total	**72.5**	**(70.7-74.3)**
EP Region		
Region 1	71.9	(66.6-76.6)
Region 2N	74.1	(70.1-77.8)
Region 2S	72.8	(68.6-76.5)
Region 3	76.8	(71.9-81.1)
Region 5	71.3	(65.0-76.9)
Region 6	72.3	(67.3-76.7)
Region 7	72.3	(65.3-78.3)
Region 8	65.2	(56.4-73.1)

[a] Among women aged 18 years and older, the proportion who reported having a Pap test within the previous three years.

Due to significant BRFSS methodology changes that took place in 2011, the estimates within these tables should not be compared to Michigan BRFSS estimates from prior to 2011.

Table 18: Prostate Cancer Screening Among Men Aged 50 Years and Older by EP Region Michigan BRFSS, 2016 and 2018 Combined	Had PSA Test in Past Year[a]	
	%	**95% Confidence Interval**
Michigan Total	**41.1**	**(38.9-43.2)**
EP Region		
Region 1	34.8	(29.2-40.7)
Region 2N	46.1	(41.1-51.2)
Region 2S	38.6	(33.8-43.7)
Region 3	40.0	(34.7-45.6)
Region 5	37.9	(30.6-45.7)
Region 6	41.1	(35.7-46.7)
Region 7	47.6	(39.3-55.9)
Region 8	36.0	(27.8-45.0)

[a] Among men aged 50 years and older, the proportion who reported having has a Prostate-Specific Antigen (PSA) test in the past year.

Table 19: Colorectal Cancer Screening Among Adults Aged 50 Years and Older by EP Region Michigan BRFSS, 2016-2018 Combined		
	Appropriate Colorectal Cancer Screening[a]	
	%	95% Confidence Interval
Michigan Total	**71.6**	**(70.6-72.6)**
EP Region		
Region 1	73.3	(70.6-75.8)
Region 2N	71.6	(69.3-73.9)
Region 2S	70.1	(67.6-72.5)
Region 3	70.6	(67.9-73.2)
Region 5	69.6	(66.0-73.0)
Region 6	76.2	(73.7-78.5)
Region 7	70.6	(66.7-74.1)
Region 8	71.0	(65.6-75.9)

[a] 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.

Table 20: Oral Health by EP Region **Michigan BRFSS, 2016 and 2018 Combined**				
	No Dental Visit in Past Year[a]		**6+ Teeth Missing[b]**	
	%	**95% Confidence Interval**	**%**	**95% Confidence Interval**
Michigan Total	**29.9**	**(28.8-31.0)**	**16.0**	**(15.2-16.8)**
EP Region				
Region 1	27.3	(24.4-30.3)	14.8	(12.8-17.1)
Region 2N	24.9	(22.6-27.3)	13.7	(12.1-15.5)
Region 2S	32.0	(29.5-34.6)	17.2	(15.3-19.1)
Region 3	35.0	(32.0-38.1)	18.1	(15.9-20.6)
Region 5	31.3	(27.7-35.1)	18.9	(16.1-22.0)
Region 6	27.9	(25.3-30.7)	15.4	(13.4-17.5)
Region 7	33.2	(29.0-37.6)	21.2	(17.9-24.9)
Region 8	30.5	(25.8-35.6)	19.0	(15.5-23.0)

[a] Among all adults, the proportion who reported that they had not visited a dentist or dental clinic for any reason within the previous year.
[b] Among all adults, the proportion who reported that they were missing 6+ teeth due to tooth decay or gum disease. This excludes teeth lost for other reasons, such as injury or orthodontics.

Due to significant BRFSS methodology changes that took place in 2011, the estimates within these tables should not be compared to Michigan BRFSS estimates from prior to 2011.

Table 21: Immunizations among Adults Aged 65 Years and Older by EP Region Michigan BRFSS, 2016-2018 Combined				
	Had Flu Vaccine in Past Year[a]		Ever Had Pneumonia Vaccine[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Michigan Total	**56.0**	**(54.8-57.2)**	**73.9**	**(72.8-75.0)**
EP Region				
Region 1	55.6	(52.4-58.7)	76.8	(73.9-79.4)
Region 2N	56.4	(53.6-59.2)	74.8	(72.2-77.2)
Region 2S	57.2	(54.3-60.1)	70.9	(68.0-73.6)
Region 3	54.7	(51.2-58.0)	68.9	(65.7-72.0)
Region 5	56.1	(52.0-60.0)	76.2	(72.5-79.5)
Region 6	54.2	(51.1-57.3)	77.9	(75.2-80.4)
Region 7	58.7	(54.3-62.9)	76.3	(72.2-80.0)
Region 8	54.6	(48.1-61.0)	68.4	(61.9-74.2)

[a] Among adults aged 65 years and older, the proportion who reported that they had a flu vaccine, either by an injection in the arm or sprayed in the nose during the past 12 months.
[b] Among adults aged 65 years and older, the proportion who reported that they ever had a pneumococcal vaccine.

Due to significant BRFSS methodology changes that took place in 2011, the estimates within these tables should not be compared to Michigan BRFSS estimates from prior to 2011.

Table 22: HIV Testing among Adults Aged 18 - 64 Years by EP Region Michigan BRFSS, 2016-2018 Combined		
	Ever Had an HIV Test[a]	
	%	95% Confidence Interval
Michigan Total	**44.4**	**(43.5-45.2)**
EP Region		
Region 1	41.9	(39.6-44.3)
Region 2N	45.6	(43.7-47.6)
Region 2S	52.6	(50.7-54.5)
Region 3	40.3	(37.9-42.8)
Region 5	43.3	(40.4-46.4)
Region 6	40.4	(38.2-42.6)
Region 7	39.7	(36.3-43.2)
Region 8	36.8	(32.2-41.7)

[a] Among adults aged 18 - 64 years, the proportion who reported that they ever had been tested for HIV, apart from tests that were part of a blood donation. Don't know was considered a valid response to this question.

Table 23: Asthma among Adults by EP Region				
Michigan BRFSS, 2016-2018 Combined				
	Lifetime Asthma Prevalence[a]		Current Asthma Prevalence[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Michigan Total	**16.1**	**(15.6-16.6)**	**11.0**	**(10.6-11.5)**
EP Region				
Region 1	16.5	(15.1-18.0)	11.2	(10.0-12.5)
Region 2N	15.5	(14.4-16.7)	10.0	(9.1-11.0)
Region 2S	18.1	(16.9-19.3)	12.4	(11.4-13.5)
Region 3	16.4	(14.9-18.0)	12.2	(10.8-13.6)
Region 5	16.0	(14.3-17.8)	10.5	(9.1-12.0)
Region 6	13.7	(12.5-14.9)	9.4	(8.4-10.5)
Region 7	14.9	(13.0-16.9)	11.0	(9.4-12.8)
Region 8	17.1	(14.0-20.7)	13.5	(10.6-17.1)

[a] Among all adults, the proportion who reported that they were ever told by a doctor, nurse, or other health care professional that they had asthma.
[b] Among all adults, the proportion who reported that they still had asthma.

Due to significant BRFSS methodology changes that took place in 2011, the estimates within these tables should not be compared to Michigan BRFSS estimates from prior to 2011.

Table 24: Asthma among Children by EP Region				
Michigan BRFSS, 2016-2018 Combined				
	Lifetime Asthma Prevalence[a]		Current Asthma Prevalence[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Michigan Total	**12.3**	**(11.4-13.2)**	**8.7**	**(8.0-9.6)**
EP Region				
Region 1	12.7	(10.4-15.5)	9.1	(7.2-11.5)
Region 2N	10.9	(9.2-12.9)	8.0	(6.5-9.9)
Region 2S	16.9	(14.7-19.3)	12.8	(10.9-15.1)
Region 3	10.9	(8.8-13.5)	7.5	(5.8-9.6)
Region 5	10.5	(7.7-14.0)	7.7	(5.4-11.0)
Region 6	9.8	(8.0-12.1)	6.6	(5.1-8.5)
Region 7	11.3	(8.1-15.6)	6.2	(4.0-9.4)
Region 8	10.5	(6.4-16.7)	--[c]	--[c]

[a] Estimated proportion of Michigan children aged 0-17 years who were ever told by a doctor, nurse or other health professional that they had asthma, using proxy information from the adult respondent.
[b] Estimated proportion of Michigan children aged 0-17 years who still have asthma, using proxy information from the adult respondent.
[c] Suppressed due to a denominator < 50 and/or a relative standard error > 30%.

Due to significant BRFSS methodology changes that took place in 2011, the estimates within these tables should not be compared to Michigan BRFSS estimates from prior to 2011.

Table 25: Chronic Obstructive Pulmonary Disease (COPD) by EP Region Michigan BRFSS, 2016-2018 Combined		
	Ever Told COPD, Emphysema or Chronic Bronchitis[a]	
	%	95% Confidence Interval
Michigan Total	**8.8**	**(8.4-9.2)**
EP Region		
Region 1	8.5	(7.5-9.6)
Region 2N	7.8	(7.0-8.7)
Region 2S	9.5	(8.6-10.4)
Region 3	11.0	(9.9-12.2)
Region 5	9.6	(8.3-11.1)
Region 6	7.3	(6.4-8.2)
Region 7	10.7	(9.2-12.4)
Region 8	9.1	(7.3-11.3)
[a] Among all adults, the proportion who reported ever being told by a doctor that they had chronic obstructive pulmonary disease (COPD), emphysema or chronic bronchitis.		

Table 26: Arthritis by EP Region Michigan BRFSS, 2016-2018 Combined		
	Ever Told Arthritis[a]	
	%	**95% Confidence Interval**
Michigan Total	**31.5**	**(30.9-32.1)**
EP Region		
Region 1	31.7	(30.0-33.5)
Region 2N	30.5	(29.1-31.9)
Region 2S	31.3	(29.9-32.7)
Region 3	35.9	(34.0-37.7)
Region 5	32.1	(30.1-34.3)
Region 6	30.2	(28.7-31.8)
Region 7	37.8	(35.3-40.3)
Region 8	36.5	(32.9-40.2)

[a] Among all adults, the proportion who reported ever being told by a doctor that they had some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia.

	Ever Told Heart Attack[a]		Had Told Angina or Coronary Heart Disease[b]		Ever Told Stroke[c]		Ever Told Any Cardiovascular Disease[d]	
Table 27: Cardiovascular Disease by EP Region								
Michigan BRFSS, 2016-2018 Combined								
	%	**95% Confidence Interval**	**%**	**95% Confidence Interval**	**%**	**95% Confidence Interval**	**%**	**95% Confidence Interval**
Michigan Total	**5.2**	**(4.9-5.5)**	**5.1**	**(4.8-5.4)**	**3.5**	**(3.3-3.8)**	**10.0**	**(9.7-10.4)**
EP Region								
Region 1	5.2	(4.5-5.9)	5.1	(4.4-5.9)	3.4	(2.8-4.1)	9.9	(9.0-11.0)
Region 2N	4.8	(4.2-5.6)	5.0	(4.4-5.7)	3.4	(2.9-4.0)	9.7	(8.9-10.6)
Region 2S	5.3	(4.7-6.0)	4.8	(4.3-5.5)	4.4	(3.8-5.1)	10.4	(9.6-11.4)
Region 3	6.9	(6.0-7.9)	7.0	(6.1-8.0)	3.6	(2.9-4.4)	12.1	(10.9-13.4)
Region 5	5.2	(4.2-6.3)	4.9	(4.1-5.8)	3.2	(2.5-4.1)	9.7	(8.5-11.1)
Region 6	4.4	(3.8-5.2)	4.2	(3.6-4.9)	3.0	(2.5-3.6)	8.6	(7.7-9.6)
Region 7	6.6	(5.5-7.9)	6.3	(5.3-7.5)	3.4	(2.6-4.2)	11.8	(10.4-13.5)
Region 8	6.6	(5.0-8.6)	6.7	(5.1-8.8)	4.0	(2.9-5.5)	12.6	(10.4-15.3)

Among all adults, the proportion who had ever been told by a doctor that…
[a] they had a heart attack or myocardial infarction;
[b] they had angina or coronary heart disease;
[c] they had a stroke;
[d] they had a heart attack, coronary heart disease or a stroke.

Due to significant BRFSS methodology changes that took place in 2011, the estimates within these tables should not be compared to Michigan BRFSS estimates from prior to 2011.

Table 28: Cancer by EP Region **Michigan BRFSS, 2016-2018 Combined**						
	Ever Told Skin Cancer[a]		**Ever Told Any Other Types of Cancer**[b]		**Ever Told Cancer**[c]	
	%	**95% Confidence Interval**	**%**	**95% Confidence Interval**	**%**	**95% Confidence Interval**
Michigan Total	**6.1**	**(5.8-6.3)**	**8.1**	**(7.8-8.5)**	**12.8**	**(12.4-13.2)**
EP Region						
Region 1	6.6	(5.8-7.4)	7.7	(6.9-8.7)	12.8	(11.7-13.9)
Region 2N	6.5	(5.8-7.2)	8.3	(7.6-9.1)	12.9	(12.0-13.9)
Region 2S	4.9	(4.4-5.5)	7.8	(7.1-8.6)	11.8	(10.9-12.7)
Region 3	6.2	(5.4-7.0)	8.8	(7.8-9.8)	13.5	(12.3-14.7)
Region 5	5.7	(4.9-6.6)	8.2	(7.1-9.3)	12.5	(11.3-13.9)
Region 6	6.7	(6.0-7.5)	7.8	(7.1-8.7)	13.1	(12.1-14.1)
Region 7	7.8	(6.5-9.3)	10.6	(9.1-12.4)	16.9	(15.1-19.0)
Region 8	6.6	(5.1-8.5)	9.6	(7.7-12.0)	15.2	(12.7-17.9)

[a] Among all adults, the proportion who reported ever being told by a doctor that they had skin cancer.
[b] Among all adults, the proportion who reported ever being told by a doctor that they had a form of cancer other than skin cancer.
[c] Among all adults, the proportion who reported ever being told by a doctor that they had skin cancer or any other type of cancer.

Due to significant BRFSS methodology changes that took place in 2011, the estimates within these tables should not be compared to Michigan BRFSS estimates from prior to 2011.

Table 29: Diabetes by EP Region Michigan BRFSS, 2016-2018 Combined		
	Ever Told Diabetes[a]	
	%	**95% Confidence Interval**
Michigan Total	**11.3**	**(10.9-11.7)**
EP Region		
Region 1	10.4	(9.4-11.5)
Region 2N	10.6	(9.7-11.5)
Region 2S	12.0	(11.0-12.9)
Region 3	12.8	(11.6-14.1)
Region 5	12.9	(11.4-14.5)
Region 6	10.9	(9.9-12.0)
Region 7	11.9	(10.3-13.6)
Region 8	12.2	(10.1-14.8)

[a] Among all adults, the proportion who reported that they were ever told by a doctor that they had diabetes. Adults told they have prediabetes and women who had diabetes only during pregnancy were classified as not having been diagnosed.

Table 30: Kidney Disease by EP Region Michigan BRFSS, 2016-2018 Combined		
	Ever Told Kidney Disease[a]	
	%	95% Confidence Interval
Michigan Total	**3.6**	**(3.4-3.9)**
EP Region		
Region 1	2.8	(2.3-3.3)
Region 2N	3.3	(2.8-3.8)
Region 2S	4.2	(3.7-4.9)
Region 3	4.1	(3.4-5.0)
Region 5	4.1	(3.2-5.1)
Region 6	3.4	(2.9-4.0)
Region 7	4.1	(3.2-5.2)
Region 8	4.9	(3.6-6.5)

[a] Among all adults, the proportion who reported ever being told by a doctor that they had kidney disease.

Due to significant BRFSS methodology changes that took place in 2011, the estimates within these tables should not be compared to Michigan BRFSS estimates from prior to 2011.

Table 31: Depression by EP Region Michigan BRFSS, 2016-2018 Combined		
	Ever Told Depression[a]	
	%	95% Confidence Interval
Michigan Total	**22.9**	**(22.3-23.5)**
EP Region		
Region 1	23.2	(21.7-24.9)
Region 2N	20.2	(18.9-21.5)
Region 2S	23.4	(22.1-24.8)
Region 3	22.9	(21.2-24.7)
Region 5	25.7	(23.7-27.9)
Region 6	24.8	(23.3-26.4)
Region 7	24.9	(22.6-27.3)
Region 8	24.3	(21.1-27.7)

[a] Among all adults, the proportion who reported ever being told by a doctor that they had a depressive disorder including depression, major depression, dysthymia, or minor depression.

Due to significant BRFSS methodology changes that took place in 2011, the estimates within these tables should not be compared to Michigan BRFSS estimates from prior to 2011.