

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

State of Michigan

**Michigan Behavioral Risk Factor Surveillance System
(Michigan BRFSS)**

2015-2017

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

Table of Contents

Introduction	3
Map of Emergency Preparedness Regions	4
Health Status Tables	
Table 1: General Health Status	5
Table 2: Health Status on at Least 14 Days in the Past Month	6
Table 3: Mean Number of Days of Poor Physical Health, Poor Mental Health, and Activity Limitations.....	7
Table 4: Disability	8
Table 5: Weight Status	9
Table 6: Health Care Coverage Among Adults 18-64 Years Old	10
Table 7: Health Care Access	11
Risk Behaviors Tables	
Table 8: No Leisure Time Physical Activity	12
Table 9: Aerobic Physical Activity and Muscle Strengthening	13
Table 10: Adequate Physical Activity	14
Table 11: Cigarette Smoking	15
Table 12: Current Smokers Who Attempted to Quit.....	16
Table 13: E-Cig Use	17
Table 14: Hookah Use.....	18
Table 15: Alcohol Consumption.....	19
Table 16: Mean Number of Binge Drinking Occassions During the Past Month Among Binge Drinkers	20
Table 17: Seatbelt Use	21
Table 18: Hypertension Awareness and Medication Use	22
Clinical Preventative Practices	
Table 19: Cholesterol Screening and Awareness	23
Table 20: No Routine Checkup in Past Year.....	24
Table 21: Colorectal Cancer Screening (Blood Stool Test) Among Adults 50 Years and Older.....	25
Table 22: Colorectal Cancer Screening (Sigmoidoscopy/Colonoscopy) Among Adults 50 Years and Older	26
Table 23: Appropriate Colorectal Cancer Screening Among Adults 50 Years and Older.....	27
Table 24: Immunizations Among Adults Aged 65 Years and Older	28
Table 25: HIV Testing Among Adults Aged 18 - 64 Years	29
Chronic Conditions	
Table 26: Asthma Among Adults	30
Table 27: Asthma Among Children.....	31
Table 28: Chronic Obstructive Pulmonary Disease (COPD).....	32
Table 29: Arthritis.....	33
Table 30: Cardiovascular Disease.....	34
Table 31: Cancer	35
Table 32: Diabetes	36
Table 33: Kidney Disease.....	37
Table 34: Depression	38

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 BRFSS 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 2015-2017 Michigan BRFSS were combined. The total sample sizes by year were: 10,889 in 2017, 12,024 in 2016, and 8,935 in 2015. Not all questions were included annually in the survey. The table subtitles indicate which years were used for that particular analysis.

For the 2015 through 2017 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 2015-2017 Michigan BRFSS 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.

In 2019, Michigan BRFSS data from 2015-2017 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. Methodology changes also took place in 2017 for Fruit and Vegetable Consumption; therefore, these variables were excluded from multi-year analysis.

If you have any questions regarding any of the estimates within the following tables, please contact Allison Murad at Murada@michigan.gov.

*2015-2017 Michigan BRFSS Estimates by Emergency Preparedness Region
September 2019*

Local Health Jurisdictions, Emergency Preparedness Regions and Michigan Counties



Table 1: Health Status by EP Region Michigan BRFSS, 2015-2017 Combined		
	General Health, Fair or Poor^a	
	%	95% Confidence Interval
Michigan Total	18.1	(17.5-18.6)
EP Region		
Region 1	16.6	(15.1-18.1)
Region 2N	16.4	(15.3-17.7)
Region 2S	20.7	(19.4-22.0)
Region 3	20.4	(18.9-22.1)
Region 5	18.4	(16.7-20.2)
Region 6	16.2	(14.9-17.6)
Region 7	19.7	(17.5-22.1)
Region 8	19.4	(16.6-22.5)
^a Among all adults, the proportion who reported that their health, in general, was either fair or poor. (N = 31,792)		

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 2: Health Status on at Least 14 Days in the Past Month by EP Region Michigan BRFSS, 2015-2017 Combined						
	Poor Physical Health^a		Poor Mental Health^b		Activity Limitation^c	
	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval
Michigan Total	9.3	(8.9-9.7)	8.5	(8.1-8.9)	9.8	(9.4-10.3)
EP Region						
Region 1	9.8	(8.7-11.2)	8.8	(7.6-10.1)	9.4	(8.3-10.6)
Region 2N	8.6	(7.7-9.5)	7.4	(6.6-8.3)	9.4	(8.4-10.4)
Region 2S	9.8	(8.9-10.8)	10.5	(9.5-11.6)	11.0	(10.0-12.1)
Region 3	10.0	(8.9-11.3)	8.6	(7.5-9.9)	11.2	(10.0-12.6)
Region 5	9.4	(8.1-10.8)	9.1	(7.8-10.6)	9.6	(8.3-11.1)
Region 6	8.9	(7.9-10.0)	7.6	(6.6-8.7)	8.7	(7.7-9.8)
Region 7	9.8	(8.3-11.7)	7.5	(6.1-9.2)	10.2	(8.6-12.0)
Region 8	10.1	(8.0-12.8)	7.8	(5.7-10.5)	10.9	(8.8-13.4)
^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. (N = 31,394) ^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. (N = 31,461) ^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. (N = 31,565)						

Table 3: Mean Number of Days of Poor Physical Health, Poor Mental Health, and Activity Limitations by EP Region
Michigan BRFSS, 2015-2017 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	4.4	(4.3-4.5)	4.1	(4.0-4.2)	3.0	(2.9-3.1)
EP Region						
Region 1	4.5	(4.1-4.8)	4.1	(3.8-4.4)	2.9	(2.6-3.2)
Region 2N	4.1	(3.9-4.4)	3.7	(3.5-4.0)	2.8	(2.6-3.1)
Region 2S	4.6	(4.3-4.9)	4.8	(4.5-5.1)	3.4	(3.1-3.7)
Region 3	4.8	(4.5-5.2)	4.3	(3.9-4.6)	3.3	(3.0-3.6)
Region 5	4.5	(4.1-4.9)	4.2	(3.8-4.6)	3.0	(2.6-3.3)
Region 6	4.1	(3.8-4.4)	3.8	(3.5-4.1)	2.7	(2.5-3.0)
Region 7	4.9	(4.3-5.4)	3.8	(3.3-4.3)	3.0	(2.6-3.4)
Region 8	4.9	(4.2-5.6)	3.9	(3.3-4.6)	3.1	(2.6-3.7)

^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. (N = 31,394)

^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. (N = 31,461)

^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. (N = 31,565)

Table 4: Disability by EP Region Michigan BRFSS, 2015-2017 Combined						
	Total Disability^a		Any Activity Limitation^b		Used Special Equipment^c	
	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval
Michigan Total	26.3	(25.6-26.9)	23.7	(23.1-24.3)	10.5	(10.1-11.0)
EP Region						
Region 1	24.2	(22.5-25.9)	21.4	(19.8-23.1)	9.6	(8.5-10.8)
Region 2N	24.3	(23.0-25.7)	21.9	(20.6-23.2)	9.3	(8.5-10.2)
Region 2S	28.5	(27.1-30.0)	25.3	(24.0-26.8)	12.9	(11.9-13.9)
Region 3	29.1	(27.3-31.0)	27.0	(25.2-28.8)	11.8	(10.6-13.1)
Region 5	27.3	(25.3-29.4)	25.0	(23.1-27.1)	10.4	(9.2-11.9)
Region 6	24.5	(23.0-26.0)	22.1	(20.7-23.6)	9.5	(8.5-10.5)
Region 7	28.6	(26.1-31.2)	26.3	(23.9-28.9)	10.2	(8.7-11.9)
Region 8	27.6	(24.5-31.1)	25.4	(22.3-28.7)	10.2	(8.2-12.6)

^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. (N = 30,531)

^b Among all adults, the proportion who reported being limited in any activities because of physical, mental, or emotional problems. (N = 30,553)

^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. (N = 30,622)

Table 5: Weight Status by EP Region
Michigan BRFSS, 2015-2017 Combined

	Obese ^a		Overweight ^b		Healthy Weight ^c		Underweight ^d	
	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval
Michigan Total	32.0	(31.3-32.7)	35.0	(34.3-35.7)	31.3	(30.6-31.9)	1.7	(1.6-2.0)
EP Region								
Region 1	33.8	(31.8-35.7)	33.8	(31.8-35.8)	31.1	(29.1-33.1)	1.4	(0.9-2.0)
Region 2N	28.4	(27.0-30.0)	37.3	(35.8-39.0)	32.4	(30.9-33.9)	1.8	(1.4-2.4)
Region 2S	33.3	(31.8-34.9)	34.0	(32.5-35.6)	30.7	(29.2-32.3)	2.0	(1.5-2.5)
Region 3	35.8	(33.9-37.8)	34.8	(32.8-36.8)	27.9	(26.0-29.8)	1.5	(1.1-2.1)
Region 5	33.7	(31.5-36.0)	33.8	(31.5-36.1)	30.7	(28.5-33.0)	1.8	(1.2-2.7)
Region 6	30.9	(29.2-32.7)	34.4	(32.6-36.2)	33.2	(31.3-35.1)	1.5	(1.1-2.0)
Region 7	33.6	(30.9-36.3)	37.0	(34.3-39.8)	28.4	(25.9-31.0)	1.1	(0.6-1.9)
Region 8	33.3	(29.6-37.3)	34.5	(30.8-38.3)	30.0	(26.5-33.8)	2.2	(1.2-3.8)

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. (N = 29,588)

^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.

Table 6: Health Care Coverage Among Adults 18-64 Years Old by EP Region Michigan BRFSS, 2015-2017 Combined		
	No Health Care Coverage^a (Among 18 - 64 year olds)	
	%	95% Confidence Interval
Michigan Total	10.5	(10.0-11.1)
EP Region		
Region 1	9.8	(8.4-11.5)
Region 2N	8.4	(7.3-9.7)
Region 2S	11.6	(10.3-13.0)
Region 3	11.5	(9.9-13.3)
Region 5	11.2	(9.3-13.3)
Region 6	10.8	(9.3-12.5)
Region 7	11.9	(9.7-14.5)
Region 8	8.6	(6.3-11.7)
^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. (N = 20,832)		

Table 7: Health Care Access by EP Region Michigan BRFSS, 2015-2017 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	(14.3-15.4)	12.3	(11.8-12.8)
EP Region				
Region 1	15.0	(13.5-16.7)	11.4	(10.1-12.8)
Region 2N	12.4	(11.3-13.6)	11.5	(10.4-12.6)
Region 2S	15.4	(14.1-16.7)	15.1	(13.9-16.4)
Region 3	14.8	(13.3-16.5)	11.3	(10.0-12.7)
Region 5	18.2	(16.3-20.3)	11.7	(10.3-13.3)
Region 6	12.1	(10.9-13.5)	12.1	(10.9-13.5)
Region 7	14.6	(12.6-16.9)	12.0	(10.2-14.1)
Region 8	12.6	(10.3-15.4)	9.2	(7.3-11.6)
^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. (N = 31,668)				
^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. (N = 31,777)				

Table 8: No Leisure Time Physical Activity by EP Region Michigan BRFSS, 2015-2017 Combined		
	No Leisure Time Physical Activity^a	
	%	95% Confidence Interval
Michigan Total	25.5	(24.9-26.2)
EP Region		
Region 1	25.5	(23.7-27.4)
Region 2N	23.7	(22.3-25.1)
Region 2S	27.7	(26.2-29.2)
Region 3	28.1	(26.3-30.0)
Region 5	26.1	(24.1-28.3)
Region 6	23.8	(22.2-25.4)
Region 7	24.8	(22.4-27.4)
Region 8	25.7	(22.2-29.6)

^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. (N = 30,697)

	Adequate Aerobic Physical Activity (≥ 150 minutes / week)^a		Adequate Muscle Strengthening (≥ 2 days / week)^b	
	%	95% Confidence Interval	%	95% Confidence Interval
Michigan Total	50.8	(49.8-51.7)	29.7	(28.8-30.5)
EP Region				
Region 1	50.2	(47.5-52.8)	29.5	(27.1-32.0)
Region 2N	51.6	(49.5-53.7)	31.6	(29.7-33.6)
Region 2S	48.9	(46.8-51.0)	30.7	(28.7-32.7)
Region 3	50.5	(47.8-53.2)	25.8	(23.6-28.2)
Region 5	50.6	(47.5-53.6)	28.0	(25.3-30.9)
Region 6	51.1	(48.7-53.5)	28.6	(26.5-30.9)
Region 7	55.7	(52.0-59.3)	28.2	(25.0-31.6)
Region 8	56.4	(50.9-61.8)	27.3	(22.9-32.2)

^a Among all adults, the proportion who reported that they do either moderate physical activities for at least 150 minutes per week, vigorous physical activities for at least 75 minutes per week, or an equivalent combination of moderate and vigorous physical activities. (N = 18,074)

^b Among all adults, the proportion who reported that they do muscle strengthening activities on two or more days per week. (N = 18,411)

Table 10: Adequate Physical Activity by EP Region Michigan BRFSS, 2015 and 2017 Combined		
	Adequate Physical Activity^a	
	%	95% Confidence Interval
Michigan Total	19.3	(18.6-20.1)
EP Region		
Region 1	19.3	(17.3-21.4)
Region 2N	21.0	(19.4-22.8)
Region 2S	19.3	(17.6-21.0)
Region 3	17.0	(15.1-19.1)
Region 5	18.9	(16.6-21.5)
Region 6	17.9	(16.1-19.9)
Region 7	20.2	(17.4-23.4)
Region 8	20.8	(16.7-25.6)
^a Among all adults, the proportion who reported that they do either moderate physical activities for at least 150 minutes per week, vigorous physical activities for at least 75 minutes per week, or an equivalent combination of moderate and vigorous physical activities and also participate in muscle strengthening activities on two or more days per week. (N = 17,886)		

Table 11: Cigarette Smoking by EP Region
Michigan BRFSS, 2015-2017 Combined

	Current Smoking ^a		Former Smoking ^b		Never Smoked	
	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval
Michigan Total	20.2	(19.6-20.8)	26.3	(25.7-26.9)	53.5	(52.8-54.3)
EP Region						
Region 1	19.6	(17.9-21.4)	27.3	(25.5-29.0)	53.1	(51.1-55.2)
Region 2N	18.9	(17.6-20.3)	27.0	(25.6-28.4)	54.1	(52.5-55.7)
Region 2S	22.6	(21.2-24.1)	23.6	(22.3-24.9)	53.8	(52.2-55.4)
Region 3	22.1	(20.3-23.9)	28.4	(26.7-30.2)	49.5	(47.5-51.5)
Region 5	20.4	(18.4-22.5)	27.1	(25.1-29.1)	52.5	(50.2-54.9)
Region 6	18.3	(16.9-19.9)	26.5	(25.0-28.1)	55.2	(53.3-57.0)
Region 7	20.2	(18.0-22.6)	30.8	(18.0-22.6)	49.0	(46.2-51.8)
Region 8	20.7	(17.8-23.9)	30.3	(27.0-33.8)	49.0	(45.1-52.9)

^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. (N = 30,819)

^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. (N = 30,819)

Table 12: Current Smokers Who Attempted to Quit by EP Region Michigan BRFSS, 2015-2017 Combined		
	Tried to Quit Smoking One Day or Longer in Past Year^a	
	%	95% Confidence Interval
Michigan Total	60.5	(58.8-62.2)
EP Region		
Region 1	60.3	(55.3-65.1)
Region 2N	62.2	(58.2-66.1)
Region 2S	64.7	(61.0-68.2)
Region 3	59.3	(54.7-63.8)
Region 5	55.2	(49.5-60.8)
Region 6	58.3	(53.6-62.8)
Region 7	54.4	(48.1-60.7)
Region 8	58.3	(50.0-66.1)

^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. (N = 5,080)

Table 13: E-Cigarette Use Michigan BRFSS, 2016-2017 Combined		
	Current E-Cigarette Use^a	
	%	95% Confidence Interval
Michigan Total	4.9	(4.5-5.4)
EP Region		
Region 1	5.5	(4.4-6.7)
Region 2N	5.1	(4.2-6.3)
Region 2S	4.2	(3.5-5.1)
Region 3	4.9	(4.0-6.1)
Region 5	5.8	(4.4-7.6)
Region 6	5.3	(4.3-6.6)
Region 7	3.6	(2.6-5.2)
Region 8	4.3	(2.7-6.8)

^a Among all adults, the proportion who reported that they currently use e-cigarettes or other electronic vaping products, either every day or on some days. (N = 22,149)

Table 14: Current Hookah Use by EP Region Michigan BRFSS, 2015-2017 Combined		
	Current Hookah Use^a	
	%	95% Confidence Interval
Michigan Total	3.8	(3.4-4.2)
EP Region		
Region 1	3.1	(2.2-4.4)
Region 2N	3.9	(3.1-4.9)
Region 2S	4.9	(3.9-6.0)
Region 3	3.4	(2.4-4.7)
Region 5	3.1	(2.1-4.4)
Region 6	3.6	(2.8-4.6)
Region 7	2.5	(1.5-3.9)
Region 8	2.7	(1.5-4.7)

^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. (N = 19,263)

Table 15: Alcohol Consumption by EP Region
Michigan BRFSS, 2015-2017 Combined

	Any Alcohol in Past Month ^a		Heavy Drinking ^b		Binge Drinking ^c	
	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval
Michigan Total	57.3	(56.6-58.1)	6.7	(6.4-7.1)	18.6	(18.0-19.2)
EP Region						
Region 1	57.3	(55.3-59.4)	7.1	(6.1-8.3)	19.4	(17.8-21.2)
Region 2N	61.7	(60.1-63.3)	6.8	(6.0-7.7)	19.0	(17.7-20.4)
Region 2S	57.1	(55.5-58.7)	5.8	(5.1-6.6)	18.3	(17.0-19.6)
Region 3	52.1	(50.1-54.2)	5.7	(4.9-6.7)	17.8	(16.2-19.5)
Region 5	54.2	(51.8-56.5)	6.4	(5.3-7.7)	17.1	(15.3-19.0)
Region 6	58.2	(56.3-60.1)	7.5	(6.6-8.5)	18.8	(17.3-20.3)
Region 7	55.5	(52.7-58.3)	9.6	(8.0-11.4)	17.9	(15.8-20.2)
Region 8	52.9	(49.0-56.8)	6.6	(4.9-8.8)	17.0	(14.4-20.0)

^a Among all adults, the proportion who reported consuming at least one drink of any alcoholic beverage in the previous month. (N = 30,588)

^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. (N = 30,336)

^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. (N = 30,345)

Table 16: Mean Number of Binge Drinking Occasions during the Past Month among Binge Drinkers by EP Region Michigan BRFSS, 2015-2017 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	(3.6-4.6)
Region 2N	4.4	(3.8-5.0)
Region 2S	4.8	(4.0-5.6)
Region 3	4.8	(4.1-5.5)
Region 5	4.0	(3.3-4.7)
Region 6	4.8	(4.2-5.4)
Region 7	5.5	(4.4-6.6)
Region 8	5.8	(4.0-7.5)

^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. (N = 4,655)

Table 17: Seatbelt Use by EP Region Michigan BRFSS, 2015-2017 Combined		
	Always Uses a Seatbelt^a	
	%	95% Confidence Interval
Michigan Total	89.6	(89.1-90.1)
EP Region		
Region 1	89.9	(88.4-91.2)
Region 2N	91.4	(90.3-92.4)
Region 2S	90.1	(89.0-91.1)
Region 3	88.8	(87.3-90.1)
Region 5	89.1	(87.4-90.7)
Region 6	88.2	(86.8-89.4)
Region 7	89.4	(87.5-91.1)
Region 8	87.4	(84.4-89.8)
^a Among all adults, the proportion who reported always using a seatbelt when driving or riding in a car. (N = 30,029)		

Table 18: Hypertension Awareness and Medication Use by EP Region Michigan BRFSS, 2015 and 2017 Combined				
	Ever Told HBP^a		Taking BP Medication^b	
	%	95% Confidence Interval	%	95% Confidence Interval
Michigan Total	33.9	(33.1-34.7)	77.5	(76.2-78.7)
EP Region				
Region 1	34.9	(32.6-37.3)	75.8	(71.6-79.5)
Region 2N	32.5	(30.7-34.3)	78.4	(75.4-81.1)
Region 2S	36.4	(34.6-38.3)	76.6	(73.6-79.4)
Region 3	36.8	(34.5-39.2)	77.4	(73.8-80.5)
Region 5	34.3	(31.7-36.9)	80.9	(77.1-84.2)
Region 6	31.0	(29.1-33.1)	78.6	(75.2-81.6)
Region 7	36.7	(33.4-40.2)	76.9	(71.6-81.4)
Region 8	34.8	(30.3-39.5)	83.6	(77.2-88.4)

^a Among all adults, the proportion who reported that they were ever told by a doctor that they had high blood pressure (HBP). Women who had HBP only during pregnancy and adults who were borderline hypertensive were considered to not have been diagnosed. (N = 19,766)

^b Among adults who were ever told that they had HBP, the proportion that reported they were currently taking blood pressure (BP) medicines for their HBP. (N = 7,905)

Table 19: Cholesterol Screening and Awareness by EP Region
Michigan BRFSS, 2015 and 2017 Combined

	Cholesterol Ever Checked ^a		Checked Within Past Five Years ^b		Ever Told High Cholesterol ^c	
	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval
Michigan Total	88.2	(87.6-88.9)	84.2	(83.4-84.9)	36.5	(35.7-37.4)
EP Region						
Region 1	87.4	(85.2-89.3)	83.0	(80.6-85.2)	37.0	(34.5-39.5)
Region 2N	91.5	(90.0-92.7)	86.9	(85.3-88.4)	37.0	(35.1-39.0)
Region 2S	88.2	(86.7-89.6)	85.3	(83.6-86.8)	36.1	(34.2-38.1)
Region 3	88.7	(86.7-90.4)	84.4	(82.3-86.4)	38.2	(35.6-40.9)
Region 5	87.1	(84.7-89.2)	82.3	(79.6-84.7)	37.1	(34.3-40.0)
Region 6	87.7	(85.6-89.5)	83.3	(81.1-85.3)	33.5	(31.3-35.7)
Region 7	87.6	(84.6-90.0)	83.9	(80.8-86.6)	44.4	(40.7-48.1)
Region 8	85.5	(80.4-89.4)	81.4	(76.2-85.7)	39.4	(34.4-44.6)

^a Among all adults, the proportion who reported ever having had their blood cholesterol checked. (N = 19,057)
^b Among all adults, the proportion who reported that they have had their blood cholesterol checked within the past five years. (N = 18,938)
^c Among adults who ever had their blood cholesterol checked, the proportion who reported that a doctor, nurse, or other health professional had told them that their cholesterol was high. (N = 17,490)

Table 20: No Routine Checkup in Past Year by EP Region Michigan BRFSS, 2015-2017 Combined		
	Had No Routine Checkup in Past Year^a	
	%	95% Confidence Interval
Michigan Total	27.1	(26.5-27.8)
EP Region		
Region 1	27.0	(25.2-28.9)
Region 2N	27.5	(26.1-29.1)
Region 2S	24.9	(23.5-26.4)
Region 3	26.6	(24.7-28.4)
Region 5	29.1	(27.0-31.4)
Region 6	26.8	(25.1-28.6)
Region 7	28.1	(25.6-30.8)
Region 8	27.9	(24.5-31.5)

^a Among all adults, the proportion who reported that they did not have a routine checkup in the past year. (N = 31,503)

Table 21: Colorectal Cancer Screening Among Adults Aged 50 Years and Older by EP Region Michigan BRFSS, 2015-2017 Combined		
	Appropriate Colorectal Cancer Screening^a	
	%	95% Confidence Interval
Michigan Total	71.4	(70.6-72.2)
EP Region		
Region 1	74.6	(72.3-76.8)
Region 2N	70.7	(68.7-72.6)
Region 2S	70.3	(68.3-72.2)
Region 3	70.9	(68.6-73.1)
Region 5	70.1	(67.3-72.8)
Region 6	73.7	(71.6-75.7)
Region 7	70.3	(66.9-73.4)
Region 8	71.2	(66.7-75.3)
^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. (N = 18,196)		

**Table 22: Immunizations among Adults Aged 65 Years and Older
by EP Region
Michigan BRFSS, 2015-2017 Combined**

	Had Flu Vaccine in Past Year ^a		Ever Had Pneumonia Vaccine ^b	
	%	95% Confidence Interval	%	95% Confidence Interval
Michigan Total	58.0	(56.8-59.2)	73.5	(72.3-74.6)
EP Region				
Region 1	56.7	(53.2-60.1)	76.7	(73.7-79.6)
Region 2N	58.0	(55.3-60.7)	73.8	(71.2-76.2)
Region 2S	58.5	(55.6-61.4)	68.9	(66.0-71.6)
Region 3	54.8	(51.5-58.1)	71.4	(68.3-74.2)
Region 5	60.8	(56.8-64.6)	77.7	(74.1-80.9)
Region 6	56.7	(53.6-59.8)	76.8	(74.0-79.3)
Region 7	61.9	(57.1-66.5)	75.3	(70.6-79.5)
Region 8	60.4	(54.1-66.4)	67.9	(61.5-73.7)

^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. (N = 10,070)

^b Among adults aged 65 years and older, the proportion who reported that they ever had a pneumococcal vaccine. (N = 9,842)

Table 23: HIV Testing among Adults Aged 18 - 64 Years by EP Region Michigan BRFSS, 2015-2017 Combined		
	Ever Had an HIV Test^a	
	%	95% Confidence Interval
Michigan Total	42.8	(41.9-43.7)
EP Region		
Region 1	41.0	(38.5-43.5)
Region 2N	43.8	(41.8-45.8)
Region 2S	50.5	(48.6-52.5)
Region 3	36.9	(34.5-39.4)
Region 5	42.0	(39.1-45.0)
Region 6	38.7	(36.5-41.0)
Region 7	37.8	(34.4-41.3)
Region 8	36.0	(31.5-40.8)

^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. (N = 18,853)

Table 24: Asthma among Adults by EP Region Michigan BRFSS, 2015-2017 Combined				
	Lifetime Asthma Prevalence^a		Current Asthma Prevalence^b	
	%	95% Confidence Interval	%	95% Confidence Interval
Michigan Total	16.0	(15.5-16.6)	10.7	(10.2-11.1)
EP Region				
Region 1	17.2	(15.7-18.8)	11.2	(10.0-12.6)
Region 2N	14.9	(13.8-16.1)	9.7	(8.8-10.6)
Region 2S	17.7	(16.5-19.0)	11.6	(10.6-12.7)
Region 3	15.9	(14.5-17.5)	11.8	(10.6-13.3)
Region 5	16.4	(14.7-18.3)	10.5	(9.1-12.1)
Region 6	14.9	(13.6-16.3)	10.0	(8.9-11.2)
Region 7	13.4	(11.7-15.3)	9.9	(8.4-11.5)
Region 8	16.4	(13.6-19.6)	11.5	(9.1-14.3)
^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. (N = 31,721) ^b Among all adults, the proportion who reported that they still had asthma. (N = 31,559)				

Table 25: Asthma among Children by EP Region Michigan BRFSS, 2015-2017 Combined				
	Lifetime Asthma Prevalence^a		Current Asthma Prevalence^b	
	%	95% Confidence Interval	%	95% Confidence Interval
Michigan Total	12.0	(11.1-12.9)	8.5	(7.7-9.3)
EP Region				
Region 1	12.6	(10.3-15.3)	8.5	(6.7-10.6)
Region 2N	12.2	(10.3-14.4)	8.4	(6.8-10.4)
Region 2S	16.2	(14.1-18.6)	12.0	(10.2-14.2)
Region 3	9.8	(7.9-12.1)	7.2	(5.6-9.4)
Region 5	8.7	(6.4-11.7)	6.4	(4.5-9.2)
Region 6	10.9	(8.8-13.4)	7.6	(5.8-9.9)
Region 7	8.2	(5.6-11.9)	4.7	(2.9-7.6)
Region 8	10.2	(6.3-16.0)	5.6	(3.0-10.1)
^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. (N = 7,023) ^b Estimated proportion of Michigan children aged 0-17 years who still have asthma, using proxy information from the adult respondent. (N = 6,996)				

Table 26: Chronic Obstructive Pulmonary Disease (COPD) by EP Region Michigan BRFSS, 2015-2017 Combined		
	Ever Told COPD, Emphysema or Chronic Bronchitis^a	
	%	95% Confidence Interval
Michigan Total	8.5	(8.1-8.8)
EP Region		
Region 1	8.1	(7.1-9.2)
Region 2N	7.5	(6.7-8.3)
Region 2S	9.5	(8.6-10.4)
Region 3	11.1	(9.9-12.4)
Region 5	8.2	(7.0-9.4)
Region 6	7.3	(6.4-8.2)
Region 7	9.1	(7.7-10.7)
Region 8	8.4	(6.7-10.5)

^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. (N = 31,688)

Table 27: Arthritis by EP Region Michigan BRFSS, 2015-2017 Combined		
	Ever Told Arthritis^a	
	%	95% Confidence Interval
Michigan Total	30.8	(30.2-31.4)
EP Region		
Region 1	31.6	(29.8-33.4)
Region 2N	29.8	(28.5-31.2)
Region 2S	30.4	(29.0-31.8)
Region 3	35.0	(33.2-36.9)
Region 5	31.6	(29.6-33.6)
Region 6	29.7	(28.2-31.3)
Region 7	36.7	(34.1-39.4)
Region 8	34.6	(31.2-38.1)

^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. (N = 31,676)

Table 28: Cardiovascular Disease by EP Region
Michigan BRFSS, 2015-2017 Combined

	Ever Told Heart Attack ^a		Had Told Angina or Coronary Heart Disease ^b		Ever Told Stroke ^c		Ever Told Any Cardiovascular Disease ^d	
	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval
Michigan Total	5.0	(4.7-5.3)	5.0	(4.7-5.3)	3.5	(3.3-3.8)	90.2	(89.8-90.5)
EP Region								
Region 1	5.1	(4.4-5.9)	4.8	(4.1-5.6)	3.4	(2.8-4.1)	90.1	(89.0-91.1)
Region 2N	4.4	(3.8-5.0)	4.8	(4.2-5.5)	3.2	(2.7-3.8)	90.9	(90.0-91.7)
Region 2S	5.0	(4.4-5.6)	5.0	(4.4-5.6)	4.5	(4.0-5.2)	89.5	(88.5-90.3)
Region 3	6.5	(5.7-7.5)	6.3	(5.5-7.2)	3.4	(2.8-4.2)	88.6	(87.4-89.7)
Region 5	5.6	(4.7-6.8)	5.2	(4.4-6.1)	3.4	(2.7-4.3)	89.8	(88.4-91.0)
Region 6	4.2	(3.6-4.9)	4.0	(3.5-4.7)	3.0	(2.5-3.6)	91.7	(90.7-92.5)
Region 7	7.1	(5.8-8.7)	6.7	(5.4-8.2)	3.7	(2.9-4.9)	87.4	(85.4-89.1)
Region 8	5.7	(4.3-7.6)	6.5	(4.9-8.5)	4.1	(2.9-5.7)	88.5	(86.1-90.6)

Among all adults, the proportion who had ever been told by a doctor that...

^a they had a heart attack or myocardial infarction (N = 31,702);

^b they had angina or coronary heart disease (N = 31,588);

^c they had a stroke (N = 31,763);

^d they had a heart attack, coronary heart disease or a stroke (N = 31,564).

Table 29: Cancer by EP Region
Michigan BRFSS, 2015-2017 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	6.0	(5.7-6.2)	7.9	(7.6-8.2)	12.4	(12.0-12.8)
EP Region						
Region 1	6.5	(5.7-7.4)	7.5	(6.7-8.5)	12.6	(11.5-13.7)
Region 2N	6.3	(5.7-7.0)	8.0	(7.3-8.8)	12.5	(11.6-13.4)
Region 2S	4.6	(4.1-5.2)	7.4	(6.7-8.1)	11.1	(10.3-12.0)
Region 3	5.8	(5.1-6.6)	8.8	(7.9-9.9)	13.2	(12.1-14.4)
Region 5	6.6	(5.8-7.6)	8.3	(7.3-9.4)	13.3	(12.0-14.7)
Region 6	6.3	(5.6-7.0)	7.8	(7.0-8.7)	12.7	(11.7-13.8)
Region 7	7.7	(6.5-9.2)	9.1	(7.6-10.8)	15.3	(13.6-17.3)
Region 8	5.9	(4.5-7.6)	9.3	(7.5-11.4)	14.2	(11.9-16.7)

^a Among all adults, the proportion who reported ever being told by a doctor that they had skin cancer (N = 31,778).

^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 (N = 31,780).

^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 (N = 31,735).

Table 30: Diabetes by EP Region Michigan BRFSS, 2015-2017 Combined		
	Ever Told Diabetes^a	
	%	95% Confidence Interval
Michigan Total	11.0	(10.6-11.4)
EP Region		
Region 1	10.8	(9.7-12.0)
Region 2N	10.0	(9.2-11.0)
Region 2S	11.6	(10.7-12.6)
Region 3	12.7	(11.5-14.0)
Region 5	11.9	(10.6-13.3)
Region 6	10.3	(9.3-11.4)
Region 7	12.0	(10.3-13.9)
Region 8	12.9	(10.6-15.5)
^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. (N = 31,800)		

Table 31: Kidney Disease by EP Region Michigan BRFSS, 2015-2017 Combined		
	Ever Told Kidney Disease^a	
	%	95% Confidence Interval
Michigan Total	3.6	(3.4-3.9)
EP Region		
Region 1	2.9	(2.3-3.5)
Region 2N	3.3	(2.9-3.9)
Region 2S	4.1	(3.6-4.7)
Region 3	4.1	(3.4-5.0)
Region 5	3.9	(3.2-4.7)
Region 6	3.2	(2.7-3.8)
Region 7	5.1	(3.9-6.6)
Region 8	4.6	(3.4-6.2)

^a Among all adults, the proportion who reported ever being told by a doctor that they had kidney disease. (N = 31,742)

Table 32: Depression by EP Region Michigan BRFSS, 2015-2017 Combined		
	Ever Told Depression^a	
	%	95% Confidence Interval
Michigan Total	21.7	(21.2-22.3)
EP Region		
Region 1	22.2	(20.5-23.9)
Region 2N	19.1	(17.8-20.4)
Region 2S	22.5	(21.2-23.9)
Region 3	21.8	(20.2-23.6)
Region 5	24.5	(22.5-26.5)
Region 6	23.8	(22.3-25.4)
Region 7	22.4	(20.2-24.8)
Region 8	23.2	(20.1-26.6)

^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. (N = 31,698)