

Michigan Health Equity Data Tables and Related Technical Documents

State of Michigan

Michigan Health Equity Data Project 2016 Update

Health Disparities Reduction and Minority Health Section
Office of Health Policy
and
Lifecourse Epidemiology and Genomics Division
Bureau of Epidemiology and Population Health

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TABLE OF CONTENTS

Introduction	3
Table 1: African Americans Compared to Whites as the Reference Group, Michigan.....	6
Table 2: American Indians/Alaska Natives Compared to Whites as the Reference Group, Michigan.....	7
Table 3: Arabs Compared to Whites as the Reference Group, Michigan.....	8
Table 4: Asians/Pacific Islanders Compared to Whites as the Reference Group, Michigan.....	9
Table 5: Hispanics/Latinos Compared to Whites as the Reference Group, Michigan.....	10
Table 6: Index of Disparity (ID), Overall Population, Michigan.....	11
Table 7: Summary Table: Change in Health Inequity Over Time, by Race/Ethnicity and Overall Population, Michigan, 2003-2014.....	12
Michigan Health Equity Data Technical Notes.....	13

INTRODUCTION

Michigan Health Equity Data Project

Health Equity is “the absence of systematic disparities in health and its determinants between groups of people at different levels of underlying social advantage (i.e., wealth, power, and/or social prestige)” (*Michigan Health Equity Roadmap*). Monitoring health equity requires standardized, complete, and consistent data collection over time. The Michigan Health Equity Data Project was first released in 2011. The current update to the Michigan Health Equity Data Tables present consistent and standardized group-level data for five racial/ethnic minority populations across two time periods (2003-2009 and 2011-2014). By gathering comparable data for each racial/ethnic population and combining all indicators in one place, these Health Equity Data Tables allow us to routinely monitor health equity in Michigan and evaluate progress over time. The Health Equity Data Tables present summary data at the population level so that disparities between specific populations can be monitored.

The focus of the Michigan Health Equity Project is **equity**; these tables present information about how populations compare to one another and if they become closer to (more equitable) or further from (less equitable) each other over time. They do not focus on health status changes over time for each population. It is important to look at information for each population, as well as equity. In some cases, equity in the overall population increased even when the health status declined. When interpreting these tables, take note of what is changing to move populations closer to or further from each other.

Health Indicators

Each table contains the same set of indicators, and data for each population were gathered from the same sources or sources that we considered comparable (e.g. Stand-alone Behavior Risk Factor Surveys). The indicators include health outcomes (e.g., diseases and deaths), health-related behaviors, and social, economic, and environmental determinants of individual and community health. Monitoring social determinants together with health outcomes is optimal for evaluating success in achieving sustainable health equity for racial and ethnic minority populations in Michigan.

Indicators were selected based on careful review of indicators for health outcomes and social determinants of health. One key justification for the selection of indicators was the availability of routinely reported measures for racial and ethnic populations in Michigan.

Health Equity Measures

In addition to presenting estimates for two time periods for each indicator, the equity tables incorporate four measures for monitoring racial and ethnic health equity in Michigan.

- 1) **Pairwise Disparity (rate difference and rate ratio):** Compares the minority population to the White (reference) population for each indicator. To fully understand differences

between two groups and how they compare to other indicators, pairwise comparisons should be made on both absolute (e.g. rate difference) and relative (e.g. rate ratio) scales.

- 2) **Change in Pairwise Disparity Over Time:** Measures whether the minority population rate has gotten closer to or farther from the White population rate from one time period to another. This measure helps depict whether the gap in the health status between the minority population and the White population is growing or shrinking over time.
- 3) **Index of Disparity:** Measures the level of disparity in the overall Michigan population for each indicator. Unlike the pairwise disparities that only include two populations, this indicator takes into account all subpopulations and overall Michigan population.
- 4) **Change in Population Disparity Over Time:** Measures whether the overall population disparity has increased or decreased from one time period to another. This measure helps depict whether the gap in the health status between all of the subpopulations and the overall Michigan population is growing or shrinking over time.

These four measures provide a way to monitor health disparities in a single time period and changes over time. There are limitations and considerations to take into account when interpreting the data. A list of considerations and the full methods are described in the Michigan Health Equity Epidemiology Brief (2011): Methods for Measuring and Monitoring Health Disparities in Michigan. The brief is available at the end of the 2011 Health Equity Full Report, found at www.michigan.gov/minorityhealth. Despite the considerations, these data provide a way to measure and monitor health disparities. With this information, public health interventions can be designed to reduce health disparities in Michigan and target populations with the greatest need.

Choice of a Reference Group

Equity describes the gaps between two different groups. When measuring equity, a reference group must be chosen in order to measure how far is the minority group of interest from the reference group. For all pairwise comparisons, the White population served as the reference group. This choice was made because, in Michigan, it is the only population large enough to provide a stable comparison over time.

Intended Uses

The Michigan Health Equity Data Tools presented here are intended to serve as resources for those interested in improving health equity in Michigan. The data presented in the equity tables can be used to prepare fact sheets, write grant proposals, and educate communities, policy makers, and health professionals. Additionally, it is hoped that these data will promote discussion among communities and organizations, and serve as tools to inform policies that support health equity improvements. With the methods and technical notes provided here, these tables can be replicated by groups to monitor health equity in their subject or geographic areas of interest.

If you have any questions about how these data can be used, please feel free to contact the Michigan Department of Health and Human Services, Health Disparities Reduction and Minority Health Section (colormehealthy@michigan.gov or 517-335-8959).

Health Equity Data Table 1. African Americans compared to Whites as the reference group, Michigan

Indicators ^a	Time 1 (Baseline)					Time 2 (Most Recent Data)						Change Over Time		
	Year/s	African American Rate	White Rate	Rate Difference	Rate Ratio	Year/s	African American Rate	White Rate	Rate Difference	Rate Ratio	Rank: Relative to Reference in Time 2 (Best to Worst) ^b	% Change in Rate Ratio	Inequity Status ^c	Rank: Improvement over Time (Best to Worst) ^d
Social Determinants														
Median annual household income, \$	2005-07	\$31,545	\$51,794	\$20,249	1.6	2011-13	\$28,339	\$51,705	\$23,366	1.8	15	11.1%	↑	18
Children below poverty, %	2005-07	42.5%	12.1%	30.4%	3.5	2011-13	50.1%	17.3%	32.8%	2.9	21	-17.6%	↓	3
Unemployment rate, %	2007	14.4%	6.1%	8.3%	2.4	2014	15.9%	5.8%	10.1%	2.7	19	16.1%	↑	20
High school dropout rate, %	2007	28.3%	10.8%	17.5%	2.6	2014	17.1%	7.3%	9.8%	2.3	17	-10.7%	↓	4
Persons not registered to vote, %	2008	22.8%	22.4%	0.4%	1.0	2012	30.7%	20.4%	10.3%	1.5	9	47.9%	↑	22
Households with no vehicle available, %	2005-07	17.5%	4.8%	12.7%	3.6	2011-13	20.8%	5.8%	15.0%	3.6	22	-1.6%	↔	6
Children live in community not usually safe, %	2003	31.1%	8.3%	22.8%	3.7	2011-12	35.2%	6.5%	28.7%	5.4	23	44.5%	↑	21
Juvenile crime rate, per 1,000 population	2008	34.1	14.1	20.0	2.4	2014	21.6	8.1	13.5	2.7	19	10.3%	↑	17
Health Status, Behaviors, Healthcare														
Self-reported fair/poor health, %	NA	NA	NA	NA	NA	2012-14	25.1%	14.5%	10.6%	1.7	13	NA	◆	NA
Adult obesity prevalence, %	NA	NA	NA	NA	NA	2012-14	36.9%	29.8%	7.1%	1.2	5	NA	◆	NA
Adult tobacco use - current smoker, %	NA	NA	NA	NA	NA	2012-14	24.8%	22.7%	2.1%	1.1	4	NA	◆	NA
High school student obesity prevalence, %	2005-07	20.3%	10.5%	9.8%	1.9	2011-13	15.7%	11.5%	4.2%	1.4	7	-29.6%	↓	2
High school student - current smoker, %	2005-07	7.1%	19.3%	-12.2%	0.4	2011-13	4.6%	14.7%	-10.1%	0.3	1	-14.9%	↑	19
Children (19-25 mo) not immunized - 431331 series, %	2007	32.9%	23.5%	9.4%	1.4	2014	29.8%	20.3%	9.5%	1.5	9	4.9%	↔	6
No health insurance coverage, %	2009	15.7%	10.9%	4.8%	1.4	2014	11.4%	7.4%	4.0%	1.5	9	7.0%	↑	15
Morbidity and Mortality														
Heart disease mortality rate, per 100,000	2005-07	325.0	219.7	105.3	1.5	2011-13	280.0	191.3	88.7	1.5	9	-1.1%	↔	6
Stroke mortality rate, per 100,000	2005-07	60.0	43.6	16.4	1.4	2011-13	50.0	35.8	14.2	1.4	7	1.5%	↔	6
Diabetes mortality rate per 100,000	2005-07	39.9	24.9	15.0	1.6	2011-13	36.3	21.8	14.5	1.7	13	3.9%	↔	6
All-cancer mortality rate, per 100,000	2005-07	231.3	186.1	45.2	1.2	2011-13	211.5	171.8	39.7	1.2	5	-0.9%	↔	6
Chronic lower resp. disease mortality rate, per 100,000	2005-07	30.2	45.1	-14.9	0.7	2011-13	32.5	48.2	-15.7	0.7	2	0.7%	↔	6
Gonorrhea incidence, per 100,000	2007	554.0	19.8	534.2	28.0	2014	398.5	20.8	377.6	19.1	25	-31.6%	↓	1
HIV prevalence, per 100,000	2007	549.0	61.0	488.0	9.0	2014	686.0	72.0	614.0	9.5	24	5.9%	↑	14
Preterm Births, %	2005-07	15.3	7.8	7.5	2.0	2011-13	16.9	9.0	7.9	1.9	16	-4.4%	↔	6
Infant mortality rate, per 1,000 live births	2005-07	17.3	6.0	11.3	2.9	2011-13	13.8	5.2	8.6	2.6	18	-9.2%	↓	5
Unintentional injury mortality rate, per 100,000	2005-07	35.8	34.9	0.9	1.0	2011-13	36.6	38.5	-1.9	1.0	3	-7.3%	↑	16

↑: Increase (worsening) in inequity. ↓: Decrease (improvement) in inequity. ↔: No Change. NA or ◆: Data Not Available.

a: Complete definitions and references for all indicators and ranking systems are listed in the Michigan Health Equity Dataset Technical Notes, which can be found online at www.michigan.gov/minorityhealth. Most indicators are limited to African Americans with non-Hispanic ancestry but there are some exceptions. Due to MIBRFS methodology changes that took place in 2011, estimates in Time 1 are not available for comparison.

b: Indicator rank in order of health outcome relative to reference in Time 2, with best (1) being the indicator with the most positive health outcome relative to the reference group. Rate ratios were used to determine these rankings with estimates to nearest tenth decimal place.

c: The inequity status measure is the percent change in the rate between the index minority population and the reference population for the noted time periods. The inequity status does not take into account changes in health status over time. Upward arrows indicate a relative increase in the inequity; downward arrows indicate a relative decrease in the inequity; horizontal arrows indicate no change in the equity gap. A change of less than 5% in either direction was considered no change.

d: Indicator rank in order of improvement in disparity over time, with best (1) being the indicator with the largest improvement in health status relative to the reference group between Time 1 and Time 2. Percent change in rate ratios were used to determine these rankings to nearest tenth decimal place. Rate ratios that were less than 5% in either direction were considered the same and ranked together next. Rate ratios that had an inequity status that were improving were considered as a negative number (better) in ranking. Similarly, rate ratios that had an inequity status that were worsening were considered as a positive number (worse) in ranking.

Suggested citation: Michigan Health Equity Data Reference Tables. Lansing, MI: Michigan Department of Health and Human Services Health Disparities Reduction and Minority Health Section and Lifecourse Epidemiology and Genomics Division; 2016.

For more information email colormehealthy@michigan.gov.

Health Equity Data Table 2. American Indians/Alaska Natives compared to Whites as the reference group, Michigan

Indicators ^a	Time 1 (Baseline)					Time 2 (Most Recent Data)						Change Over Time		
	Year/s	AI/AN Rate	White Rate	Rate Difference	Rate Ratio	Year/s	AI/AN Rate	White Rate	Rate Difference	Rate Ratio	Rank: Relative to Reference in Time 2 (Best to Worst) ^b	% Change in Rate Ratio	Inequity Status ^c	Rank: Improvement over Time (Best to Worst) ^d
Social Determinants														
Median annual household income, \$	2005-07	\$36,895	\$51,794	\$14,899	1.4	2011-13	\$37,314	\$51,705	\$14,391	1.4	9	-1.3%	↔	7
Children below poverty, %	2005-07	21.5%	12.1%	9.4%	1.8	2011-13	27.1%	17.3%	9.8%	1.6	13	-11.8%	↓	5
Unemployment rate, %	2007	NA	6.1%	NA	NA	2014	NA	5.8%	NA	NA	NA	NA	♦	NA
High school dropout rate, %	2007	19.0%	10.8%	8.2%	1.8	2014	14.3%	7.3%	7.0%	2.0	16	11.2%	↑	14
Persons not registered to vote, %	2008	NA	22.4%	NA	NA	2012	NA	20.4%	NA	NA	NA	NA	♦	NA
Households with no vehicle available, %	2005-07	10.0%	4.8%	5.2%	2.1	2011-13	12.2%	5.8%	6.4%	2.1	17	1.0%	↔	7
Children live in community not usually safe, %	2003	NA	8.3%	NA	NA	2011-12	NA	6.5%	NA	NA	NA	NA	♦	NA
Juvenile crime rate, per 1,000 population	2008	8.2	14.1	-5.9	0.6	2014	6.8	8.1	-1.3	0.8	1	44.4%	↓	1
Health Status, Behaviors, Healthcare														
Self-reported fair/poor health, %	NA	NA	NA	NA	NA	2012-14	23.4%	14.5%	8.9%	1.6	13	NA	♦	NA
Adult obesity prevalence, %	NA	NA	NA	NA	NA	2012-14	32.7%	29.8%	2.9%	1.1	4	NA	♦	NA
Adult tobacco use - current smoker, %	NA	NA	NA	NA	NA	2012-14	48.5%	22.7%	25.8%	2.1	17	NA	♦	NA
High school student obesity prevalence, %	2005-07	14.7%	10.5%	4.3%	1.4	2011-13	NA	11.5%	NA	NA	NA	NA	♦	NA
High school student - current smoker, %	2005-07	36.8%	19.3%	17.4%	1.9	2011-13	NA	14.7%	NA	NA	NA	NA	♦	NA
Children (19-25 mo) not immunized - 431331 series, %	2007	24.5%	23.5%	1.1%	1.0	2014	23.0%	20.3%	2.7%	1.1	4	8.6%	↑	13
No health insurance coverage, %	2009	NA	10.9%	NA	NA	2014	NA	7.4%	NA	NA	NA	NA	♦	NA
Morbidity and Mortality														
Heart disease mortality rate, per 100,000	2005-07	275.1	219.7	55.4	1.3	2011-13	224.6	191.3	33.3	1.2	7	-6.2%	↓	6
Stroke mortality rate, per 100,000	2005-07	57.8	43.6	14.2	1.3	2011-13	30.0	35.8	-5.8	0.8	1	-36.8%	↓	2
Diabetes mortality rate, per 100,000	2005-07	61.0	24.9	36.1	2.4	2011-13	52.8	21.8	31	2.4	19	-1.1%	↔	7
All-cancer mortality rate, per 100,000	2005-07	211.6	186.1	25.5	1.1	2011-13	188.4	171.8	16.6	1.1	4	-3.6%	↔	7
Chronic lower resp. disease mortality rate, per 100,000	2005-07	71.4	45.1	26.3	1.6	2011-13	72.7	48.2	24.5	1.5	11	-4.7%	↔	7
Gonorrhea incidence, per 100,000	2007	33.2	19.8	13.4	1.7	2014	33.8	20.8	13.0	1.6	13	-3.2%	↔	7
HIV prevalence, per 100,000	2007	85.0	61.0	24.0	1.4	2014	66.0	72.0	-6.0	0.9	3	-34.2%	↓	3
Preterm Births, %	2005-07	8.7	7.8	0.9	1.1	2011-13	12.2	9.0	3.2	1.3	8	20.7%	↑	15
Infant mortality rate, per 1,000 live births	2005-07	9.7	6.0	3.7	1.6	2011-13	7.5	5.2	2.2	1.4	9	-12.4%	↓	4
Unintentional injury mortality rate, per 100,000	2005-07	36.8	34.9	1.9	1.1	2011-13	55.9	38.5	17.4	1.5	11	37.7%	↑	16

↑: Increase (worsening) in inequity. ↓: Decrease (improvement) in inequity. ↔: No Change. NA or ♦: Data Not Available.

a: Complete definitions and references for all indicators and ranking systems are listed in the Michigan Health Equity Dataset Technical Notes, which can be found online at www.michigan.gov/minorityhealth. Most indicators are limited to American Indians with non-Hispanic ancestry but there are some exceptions. The American Indian estimates for gonorrhea have low reliability and precision (denoted as highlighted in the table) and should be interpreted with caution. Some data sources did not have American Indian data. Due to MIBRFS methodology changes that took place in 2011, estimates in Time 1 are not available for comparison.

b: Indicator rank in order of health outcome relative to reference in Time 2, with best (1) being the indicator with the most positive health outcome relative to the reference group. Rate ratios were used to determine these rankings with estimates to nearest tenth decimal place.

c: The inequity status measure is the percent change in the rate between the index minority population and the reference population for the noted time periods. The inequity status does not take into account changes in health status over time. Upward arrows indicate a relative increase in the inequity; downward arrows indicate a relative decrease in the inequity; horizontal arrows indicate no change in the equity gap. A change of less than 5% in either direction was considered no change.

d: Indicator rank in order of improvement in disparity over time, with best (1) being the indicator with the largest improvement in health status relative to the reference group between Time 1 and Time 2. Percent change in rate ratios were used to determine these rankings to nearest tenth decimal place. Rate ratios that were less than 5% in either direction were considered the same and ranked together next. Rate ratios that had an inequity status that were improving were considered as a negative number (better) in ranking. Similarly, rate ratios that had an inequity status that were worsening were considered as a positive number (worse) in ranking.

Suggested citation: Michigan Health Equity Data Reference Tables. Lansing, MI: Michigan Department of Health and Human Services Health Disparities Reduction and Minority Health Section and Lifecourse Epidemiology and Genomics Division; 2016.

For more information email colormehealthy@michigan.gov.

Health Equity Data Table 3. Arabs compared to Whites as the reference group, Michigan

Indicators ^a	Time 1 (Baseline)					Time 2 (Most Recent Data)						Change Over Time		
	Year/s	Arab Rate	White Rate	Rate Difference	Rate Ratio	Year/s	Arab Rate	White Rate	Rate Difference	Rate Ratio	Rank: Relative to Reference in Time 2 (Best to Worst) ^b	% Change in Rate Ratio	Inequity Status ^c	Rank: Improvement over Time (Best to Worst) ^d
Social Determinants														
Median annual household income, \$	2005-07	\$45,545	\$51,794	\$6,249	1.1	2011-13	\$37,707	\$51,705	\$13,998	1.4	11	20.6%	↑	9
Children below poverty, %	2005-07	29.4%	12.1%	17.3%	2.4	2011-13	46.1%	17.3%	28.8%	2.7	15	9.7%	↑	8
Unemployment rate, %	2007	NA	6.1%	NA	NA	2014	NA	5.8%	NA	NA	NA	NA	◆	NA
High school dropout rate, %	2007	NA	10.8%	NA	NA	2014	NA	7.3%	NA	NA	NA	NA	◆	NA
Persons not registered to vote, %	2008	NA	22.4%	NA	NA	2012	NA	20.4%	NA	NA	NA	NA	◆	NA
Households with no vehicle available, %	2005-07	6.5%	4.8%	1.7%	1.4	2011-13	7.6%	5.8%	1.8%	1.3	9	-3.2%	↔	4
Children live in community not usually safe, %	2003	NA	8.3%	NA	NA	2011-12	NA	6.5%	NA	NA	NA	NA	◆	NA
Juvenile crime rate, per 1,000 population	2008	NA	14.1	NA	NA	2014	NA	8.1	NA	NA	NA	NA	◆	NA
Health Status, Behaviors, Healthcare														
Self-reported fair/poor health, %	NA	NA	NA	NA	NA	2012-14	29.7%	14.5%	15.2%	2.0	14	NA	◆	NA
Adult obesity prevalence, %	NA	NA	NA	NA	NA	2012-14	30.5%	29.8%	0.7%	1.0	6	NA	◆	NA
Adult tobacco use - current smoker, %	NA	NA	NA	NA	NA	2012-14	18.3%	22.7%	-4.4%	0.8	3	NA	◆	NA
High school student obesity prevalence, %	2005-07	NA	10.5%	NA	NA	2011-13	NA	11.5%	NA	NA	NA	NA	◆	NA
High school student - current smoker, %	2005-07	NA	19.3%	NA	NA	2011-13	NA	14.7%	NA	NA	NA	NA	◆	NA
Children (19-25 mo) not immunized - 431331 series, %	2007	NA	23.5%	NA	NA	2014	NA	20.3%	NA	NA	NA	NA	◆	NA
No health insurance coverage, %	2009	17.5%	10.9%	6.6%	1.6	2014	12.4%	7.4%	5.0%	1.7	13	NA	◆	NA
Morbidity and Mortality														
Heart disease mortality rate, per 100,000	2005-07	159.6	219.7	-60.1	0.7	2011-13	186.7	191.3	-4.6	1.0	6	34.3%	↓	2
Stroke mortality rate, per 100,000	2005-07	34.6	43.6	-9.0	0.8	2011-13	43.0	35.8	7.2	1.2	8	51.4%	↓	1
Diabetes mortality rate, per 100,000	2005-07	25.8	24.9	0.9	1.0	2011-13	27.5	21.8	5.7	1.3	9	21.7%	↑	11
All-cancer mortality rate, per 100,000	2005-07	126.0	186.1	-60.1	0.7	2011-13	151.3	171.8	-20.5	0.9	4	30.1%	↓	3
Chronic lower resp. disease mortality rate, per 100,000	2005-07	19.5	45.1	-25.6	0.4	2011-13	21.7	48.2	-26.5	0.5	1	4.1%	↔	4
Gonorrhea incidence, per 100,000	2007	NA	19.8	NA	NA	2014	NA	20.8	NA	NA	NA	NA	◆	NA
HIV prevalence, per 100,000	2007	NA	61.0	NA	NA	2014	NA	72.0	NA	NA	NA	NA	◆	NA
Preterm Births, %	2005-07	7.1	7.8	-0.7	0.9	2011-13	8.6	9.0	-0.5	0.9	4	4.8%	↔	4
Infant mortality rate, per 1,000 live births	2005-07	6.8	6.0	0.9	1.1	2011-13	7.2	5.2	2.0	1.4	11	20.8%	↑	10
Unintentional injury mortality rate, per 100,000	2005-07	18.8	34.9	-16.1	0.5	2011-13	20.3	38.5	-18.2	0.5	1	-2.1%	↔	4

↑: Increase (worsening) in inequity. ↓: Decrease (improvement) in inequity. ↔: No Change. NA or ◆: Data Not Available.

a: Complete definitions and references for all indicators and ranking systems are listed in the Michigan Health Equity Dataset Technical Notes, which can be found online at www.michigan.gov/minorityhealth. Data for many of the indicators were not available for Arab ancestry. Due to MIBRFS methodology changes that took place in 2011, estimates in Time 1 are not available for comparison.

b: Indicator rank in order of health outcome relative to reference in Time 2, with best (1) being the indicator with the most positive health outcome relative to the reference group. Rate ratios were used to determine these rankings with estimates to nearest tenth decimal place.

c: The inequity status measure is the percent change in the rate between the index minority population and the reference population for the noted time periods. The inequity status does not take into account changes in health status over time. Upward arrows indicate a relative increase in the inequity; downward arrows indicate a relative decrease in the inequity; horizontal arrows indicate no change in the equity gap. A change of less than 5% in either direction was considered no change.

d: Indicator rank in order of improvement in disparity over time, with best (1) being the indicator with the largest improvement in health status relative to the reference group between Time 1 and Time 2. Percent change in rate ratios were used to determine these rankings to nearest tenth decimal place. Rate ratios that were less than 5% in either direction were considered the same and ranked together next. Rate ratios that had an inequity status that were improving were considered as a negative number (better) in ranking. Similarly, rate ratios that had an inequity status that were worsening were considered as a positive number (worse) in ranking.

Suggested citation: Michigan Health Equity Data Reference Tables. Lansing, MI: Michigan Department of Health and Human Services Health Disparities Reduction and Minority Health Section and Lifecourse Epidemiology and Genomics Division; 2016.

For more information email colormehealthy@michigan.gov.

Health Equity Data Table 4. Asians/Pacific Islanders compared to Whites as the reference group, Michigan

Indicators ^a	Time 1 (Baseline)					Time 2 (Most Recent Data)						Change Over Time		
	Year/s	Asian Rate	White Rate	Rate Difference	Rate Ratio	Year/s	Asian Rate	White Rate	Rate Difference	Rate Ratio	Rank: Relative to Reference in Time 2 (Best to Worst) ^b	% Change in Rate Ratio	Inequity Status ^c	Rank: Improvement over Time (Best to Worst) ^d
Social Determinants														
Median annual household income, \$	2005-07	\$68,611	\$51,794	-\$16,817	0.8	2011-13	\$72,513	\$51,705	-\$20,808	0.7	13	-5.5%	↑	13
Children below poverty, %	2005-07	11.0%	12.1%	-1.1%	0.9	2011-13	13.3%	17.3%	-4.0%	0.8	17	-15.4%	↑	14
Unemployment rate, %	2007	2.6%	6.1%	-3.5%	0.4	2014	4.8%	5.8%	-1.0%	0.8	17	94.2%	↓	1
High school dropout rate, %	2007	9.8%	10.8%	-1.0%	0.9	2014	5.1%	7.3%	-2.2%	0.7	13	-22.6%	↑	16
Persons not registered to vote, %	2008	18.7%	22.4%	-3.7%	0.8	2012	40.4%	20.4%	20.0%	2.0	24	137.2%	↑	21
Households with no vehicle available, %	2005-07	6.1%	4.8%	1.3%	1.3	2011-13	6.8%	5.8%	1.0%	1.2	22	-7.7%	↓	10
Children live in community not usually safe, %	2003	NA	8.3%	NA	NA	2011-12	NA	6.5%	NA	NA	NA	NA	♦	NA
Juvenile crime rate, per 1,000 population	2008	2.5	14.1	-11.6	0.2	2014	1.6	8.1	-6.5	0.2	1	11.4%	↓	8
Health Status, Behaviors, Healthcare														
Self-reported fair/poor health, %	NA	NA	NA	NA	NA	2012-14	6.2%	14.5%	-8.3%	0.4	3	NA	♦	NA
Adult obesity prevalence, %	NA	NA	NA	NA	NA	2012-14	13.8%	29.8%	-16.0%	0.5	8	NA	♦	NA
Adult tobacco use - current smoker, %	NA	NA	NA	NA	NA	2012-14	9.7%	22.7%	-13.0%	0.4	3	NA	♦	NA
High school student obesity prevalence, %	2005-07	12.4%	10.5%	2.0%	1.2	2011-13	6.6%	11.5%	-4.9%	0.6	10	-51.7%	↑	20
High school student - current smoker, %	2005-07	18.0%	19.3%	-1.3%	0.9	2011-13	7.4%	14.7%	-7.4%	0.5	8	-46.4%	↑	19
Children (19-25 mo) not immunized - 431331 series, %	2007	29.5%	23.5%	6.1%	1.3	2014	21.0%	20.3%	0.7%	1.0	20	-17.9%	↓	4
No health insurance coverage, %	2009	11.3%	10.9%	0.4%	1.0	2014	9.6%	7.4%	2.2%	1.3	23	25.1%	↑	17
Morbidity and Mortality														
Heart disease mortality rate, per 100,000	2005-07	113.3	219.7	-106.4	0.5	2011-13	77.7	191.3	-113.6	0.4	3	-21.2%	↑	15
Stroke mortality rate, per 100,000	2005-07	31.2	43.6	-12.4	0.7	2011-13	25.3	35.8	-10.5	0.7	13	-1.2%	↔	12
Diabetes mortality rate, per 100,000	2005-07	15.3	24.9	-9.6	0.6	2011-13	14.6	21.8	-7.2	0.7	13	9.0%	↓	9
All-cancer mortality rate, per 100,000	2005-07	91.2	186.1	-94.9	0.5	2011-13	95.6	171.8	-76.2	0.6	10	13.5%	↓	6
Chronic lower resp. disease mortality rate, per 100,000	2005-07	9.3	45.1	-35.8	0.2	2011-13	10.7	48.2	-37.5	0.2	1	7.7%	↓	10
Gonorrhea incidence, per 100,000	2007	15.6	19.8	-4.2	0.8	2014	9.2	20.8	-11.6	0.4	3	-44.0%	↑	18
HIV prevalence, per 100,000	2007	25.0	61.0	-36.0	0.4	2014	42.0	72.0	-30.0	0.6	10	42.3%	↓	2
Preterm Births, %	2005-07	7.1	7.8	-0.7	0.9	2011-13	9.6	9.0	0.6	1.1	21	16.3%	↓	5
Infant mortality rate, per 1,000 live births	2005-07	7.6	6.0	1.6	1.3	2011-13	4.6	5.2	-0.7	0.9	19	-31.4%	↓	3
Unintentional injury mortality rate, per 100,000	2005-07	12.3	34.9	-22.6	0.4	2011-13	15.4	38.5	-23.1	0.4	3	13.5%	↓	6
↑: Increase (worsening) in inequity. ↓: Decrease (improvement) in inequity. ↔: No Change. NA or ♦: Data Not Available.														

a: Complete definitions and references for all indicators and ranking systems are listed in the Michigan Health Equity Dataset Technical Notes, which can be found online at www.michigan.gov/minorityhealth. Some indicators used Asian only while the majority used Asian/Pacific Islander combined. The Asian/Pacific Islander estimates for self-reported fair/poor health for Time 2 has low reliability and precision (denoted as highlighted in the table) and should be interpreted with caution. Due to MBRFS methodology changes that took place in 2011, estimates in Time 1 are not available for comparison.

b: Indicator rank in order of health outcome relative to reference in Time 2, with best (1) being the indicator with the most positive health outcome relative to the reference group. Rate ratios were used to determine these rankings with estimates to nearest tenth decimal place.

c: The inequity status measure is the percent change in the rate between the index minority population and the reference population for the noted time periods. The inequity status does not take into account changes in health status over time. Upward arrows indicate a relative increase in the inequity; downward arrows indicate a relative decrease in the inequity; horizontal arrows indicate no change in the equity gap. A change of less than 5% in either direction was considered no change.

d: Indicator rank in order of improvement in disparity over time, with best (1) being the indicator with the largest improvement in health status relative to the reference group between Time 1 and Time 2. Percent change in rate ratios were used to determine these rankings to nearest tenth decimal place. Rate ratios that were less than 5% in either direction were considered the same and ranked together next. Rate ratios that had an inequity status that were improving were considered as a negative number (better) in ranking. Similarly, rate ratios that had an inequity status that were worsening were considered as a positive number (worse) in ranking.

Suggested citation: Michigan Health Equity Data Reference Tables. Lansing, MI: Michigan Department of Health and Human Services Health Disparities Reduction and Minority Health Section and Lifecourse Epidemiology and Genomics Division; 2016.

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Health Equity Data Table 5. Hispanics/Latinos compared to Whites as the reference group, Michigan

Indicators ^a	Time 1 (Baseline)					Time 2 (Most Recent Data)						Change Over Time		
	Year/s	Hispanic Rate	White Rate	Rate Difference	Rate Ratio	Year/s	Hispanic Rate	White Rate	Rate Difference	Rate Ratio	Rank: Relative to Reference in Time 2 (Best to Worst) ^b	% Change in Rate Ratio	Inequity Status ^c	Rank: Improvement over Time (Best to Worst) ^d
Social Determinants														
Median annual household income, \$	2005-07	\$38,187	\$51,794	\$13,607	1.4	2011-13	\$36,702	\$51,705	\$15,003	1.4	13	3.9%	↔	8
Children below poverty, %	2005-07	29.7%	12.1%	17.6%	2.5	2011-13	35.8%	17.3%	18.5%	2.1	20	-15.7%	↓	6
Unemployment rate, %	2007	9.4%	6.1%	3.3%	1.5	2014	8.8%	5.8%	3.0%	1.5	15	-1.5%	↔	8
High school dropout rate, %	2007	28.9%	10.8%	18.1%	2.7	2014	15.2%	7.3%	7.9%	2.1	20	-22.2%	↓	3
Persons not registered to vote, %	2008	42.2%	22.4%	19.8%	1.9	2012	14.2%	20.4%	-6.2%	0.7	3	-63.1%	↓	1
Households with no vehicle available, %	2005-07	7.3%	4.8%	2.5%	1.5	2011-13	9.2%	5.8%	3.4%	1.6	17	4.3%	↔	8
Children live in community not usually safe, %	2003	30.2%	8.3%	21.9%	3.6	2011-12	26.1%	6.5%	19.6%	4.0	25	10.4%	↑	19
Juvenile crime rate, per 1,000 population	2008	7.6	14.1	-6.5	0.5	2014	5.2	8.1	-2.9	0.6	2	19.1%	↓	5
Health Status, Behaviors, Healthcare														
Self-reported fair/poor health, %	NA	NA	NA	NA	NA	2012-14	27.2%	14.5%	12.7%	1.9	19	NA	◆	NA
Adult obesity prevalence, %	NA	NA	NA	NA	NA	2012-14	40.4%	29.8%	10.6%	1.4	13	NA	◆	NA
Adult tobacco use - current smoker, %	NA	NA	NA	NA	NA	2012-14	22.0%	22.7%	-0.7%	1.0	8	NA	◆	NA
High school student obesity prevalence, %	2005-07	14.1%	10.5%	3.7%	1.3	2011-13	17.1%	11.5%	5.6%	1.5	15	10.5%	↑	20
High school student - current smoker, %	2005-07	28.5%	19.3%	9.2%	1.5	2011-13	17.1%	14.7%	2.3%	1.2	10	-21.5%	↓	4
Children (19-25 mo) not immunized - 431331 series, %	2007	24.2%	23.5%	0.8%	1.0	2014	20.8%	20.3%	0.5%	1.0	8	-0.6%	↔	8
No health insurance coverage, %	2009	24.1%	10.9%	13.2%	2.2	2014	16.6%	7.4%	9.2%	2.2	23	1.5%	↔	8
Morbidity and Mortality														
Heart disease mortality rate, per 100,000	2005-07	164.7	219.7	-55.0	0.7	2011-13	138.9	191.3	-52.4	0.7	3	-3.1%	↔	8
Stroke mortality rate, per 100,000	2005-07	40.0	43.6	-3.6	0.9	2011-13	33.9	35.8	-1.9	0.9	6	3.2%	↔	8
Diabetes mortality rate, per 100,000	2005-07	34.5	24.9	9.6	1.4	2011-13	33.9	21.8	12.1	1.6	17	12.2%	↑	22
All-cancer mortality rate, per 100,000	2005-07	128.4	186.1	-57.7	0.7	2011-13	118.2	171.8	-53.6	0.7	3	-0.3%	↔	8
Chronic lower resp. disease mortality rate, per 100,000	2005-07	17.7	45.1	-27.4	0.4	2011-13	23.4	48.2	-24.8	0.5	1	23.7%	↓	2
Gonorrhea incidence, per 100,000	2007	45.0	19.8	25.2	2.3	2014	43.0	20.8	22.2	2.1	20	-9.1%	↓	7
HIV prevalence, per 100,000	2007	132.0	61.0	71.0	2.2	2014	158.0	72.0	86.0	2.2	23	1.4%	↔	8
Preterm Births, %	2005-07	9.0	7.8	1.2	1.2	2011-13	11.6	9.0	2.5	1.3	12	11.0%	↑	21
Infant mortality rate, per 1,000 live births	2005-07	7.5	6.0	1.5	1.3	2011-13	6.5	5.2	1.3	1.2	10	-1.4%	↔	8
Unintentional injury mortality rate, per 100,000	2005-07	30.8	34.9	-4.1	0.9	2011-13	32.9	38.5	-5.6	0.9	6	-3.2%	↔	8

↑: Increase (worsening) in inequity. ↓: Decrease (improvement) in inequity. ↔: No Change. NA or ◆: Data Not Available.

a: Complete definitions and references for all indicators and ranking systems are listed in the Michigan Health Equity Dataset Technical Notes, which can be found online at www.michigan.gov/minorityhealth. Due to MiBRFS methodology changes that took place in 2011, estimates in Time 1 are not available for comparison.

b: Indicator rank in order of health outcome relative to reference in Time 2, with best (1) being the indicator with the most positive health outcome relative to the reference group. Rate ratios were used to determine these rankings with estimates to nearest tenth decimal place.

c: The inequity status measure is the percent change in the rate between the index minority population and the reference population for the noted time periods. The inequity status does not take into account changes in health status over time. Upward arrows indicate a relative increase in the inequity; downward arrows indicate a relative decrease in the inequity; horizontal arrows indicate no change in the equity gap. A change of less than 5% in either direction was considered no change.

d: Indicator rank in order of improvement in disparity over time, with best (1) being the indicator with the largest improvement in health status relative to the reference group between Time 1 and Time 2. Percent change in rate ratios were used to determine these rankings to nearest tenth decimal place. Rate ratios that were less than 5% in either direction were considered the same and ranked together next. Rate ratios that had an inequity status that were improving were considered as a negative number (better) in ranking. Similarly, rate ratios that had an inequity status that were worsening were considered as a positive number (worse) in ranking.

Suggested citation: Michigan Health Equity Data Reference Tables. Lansing, MI: Michigan Department of Health and Human Services Health Disparities Reduction and Minority Health Section and Lifecourse Epidemiology and Genomics Division; 2016.

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Health Equity Data Table 6. Index of Disparity (ID), Overall Population, Michigan

Indicators ^a	Year/s	Overall Inequity (ID) ^b : Time 1	Year/s	Overall Inequity (ID) ^b : Time 2	Rank: ID in Time 2 (Best to Worst) ^c	Change in Overall Inequity	Inequity Status ^d	Rank: Improvement over Time (Best to Worst) ^e
Social Determinants								
Median annual household income, \$	2005-07	22.4%	2011-13	27.8%	7	5.4%	↑	16
Children below poverty, %	2005-07	54.9%	2011-13	54.1%	21	-0.8%	↔	3
Unemployment rate, %	2007	53.2%	2014	49.0%	18	-4.2%	↔	3
High school dropout rate, %	2007	53.6%	2014	51.1%	19	-2.5%	↔	3
Persons not registered to vote, %	2008	26.3%	2012	41.1%	14	14.8%	↑	21
Households with no vehicle available, %	2005-07	43.9%	2011-13	45.8%	16	1.9%	↔	3
Children live in community not usually safe, %	2003	75.7%	2011-12	106.1%	24	30.4%	↑	22
Juvenile crime rate, per 1,000 population	2008	62.0%	2014	59.8%	22	-2.1%	↔	3
Health Status, Behaviors, Healthcare								
Self-reported fair/poor health, %	NA	NA	2012-14	52.7%	20	NA	◆	NA
Adult obesity prevalence, %	NA	NA	2012-14	19.4%	3	NA	◆	NA
Adult tobacco use - current smoker, %	NA	NA	2012-14	33.8%	11	NA	◆	NA
High school student obesity prevalence, %	2005-07	23.2%	2011-13	29.5%	10	6.2%	↑	18
High school student - current smoker, %	2005-07	49.0%	2011-13	38.2%	12	-10.9%	↓	1
Children (19-25 mo) not immunized - 431331 series, %	2007	12.5%	2014	13.3%	1	0.8%	↔	3
No health insurance coverage, %	2009	37.5%	2014	40.2%	13	2.7%	↔	3
Morbidity and Mortality								
Heart disease mortality rate, per 100,000	2005-07	29.2%	2011-13	25.8%	6	-3.4%	↔	3
Stroke mortality rate, per 100,000	2005-07	21.8%	2011-13	19.1%	2	-2.7%	↔	3
Diabetes mortality rate, per 100,000	2005-07	43.3%	2011-13	46.9%	17	3.6%	↔	3
All-cancer mortality rate, per 100,000	2005-07	25.5%	2011-13	20.2%	4	-5.3%	↓	2
Chronic lower resp. disease mortality rate, per 100,000	2005-07	48.7%	2011-13	45.1%	15	-3.6%	↔	3
Gonorrhea incidence, per 100,000	2007	111.3%	2014	119.8%	25	8.5%	↑	20
HIV prevalence, per 100,000	2007	97.3%	2014	102.7%	23	5.4%	↑	16
Preterm Births, %	2005-07	22.1%	2011-13	20.9%	5	-1.2%	↔	3
Infant mortality rate, per 1,000 live births	2005-07	31.6%	2011-13	29.2%	9	-2.4%	↔	3
Unintentional injury mortality rate, per 100,000	2005-07	21.8%	2011-13	28.6%	8	6.8%	↑	19
↑: Increase (worsening) in inequity. ↓: Decrease (improvement) in inequity. ↔: No Change. NA or ◆: Data Not Available.								

a: Complete definitions and references for all indicators and ranking systems are listed in the Michigan Health Equity Dataset Technical Notes, which can be found online at www.michigan.gov/minorityhealth.

b: The Overall Population Index of Disparity (ID) is a measure of how much disparity exists in the overall population, summarizing how far each group is from the population average. ID=0 indicates no disparity in the population; higher values of ID indicate increasing levels of disparity in the population (for that specific indicator). ID can be greater than 100%. ID does not reflect health status, but does reflect how much variation exists in the population.

c: Indicator rank in order of ID in Time 2, with best (1) being the indicator with the lowest ID. ID at Time 2 were used to determine these rankings with estimates to nearest tenth decimal place.

d: The inequity status measure is the difference between overall population inequity (ID) in Time 1 and Time 2 (exact years vary for each indicator, but for all indicators Time 1 is between 2003 and 2008 and Time 2 is between 2011 and 2014). Positive numbers (upward arrows) indicate a relative increase in the inequity; negative numbers (and downward arrows) indicate a relative decrease in the inequity; horizontal arrows indicate no change in the equity gap. A change of less than 5% in either direction was considered no change.

e: Indicator rank in order of improvement in disparity over time, with best (1) being the indicator with the largest improvement in health status between Time 1 and Time 2. The largest negative percent was considered the best. Percent change in ID were used to determine these rankings to nearest tenth decimal place. Rate ratios that were less than 5% in either direction were considered the same and ranked together.

Suggested citation: Michigan Health Equity Data Reference Tables. Lansing, MI: Michigan Department of Health and Human Services Health Disparities Reduction and Minority Health Section and Lifecourse Epidemiology and Genomics Division; 2016.

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Health Equity Data Table 7. Summary Table: Change in Health Inequity Over Time, by Race/Ethnicity and Overall Population, Michigan, 2003-2014

Indicators ^a	Inequity Status ^b					Overall Inequity ^c
	African Americans	American Indians/ Alaska Natives	Arabs	Asians/Pacific Islanders	Hispanics/ Latinos	
Social Determinants						
Median annual household income, \$	↑	↔	↑	↑	↔	↑
Children below poverty, %	↓	↓	↑	↑	↓	↔
Unemployment rate, %	↑	◆	◆	↓	↔	↔
High school dropout rate, %	↓	↑	◆	↑	↓	↔
Persons not registered to vote, %	↑	◆	◆	↑	↓	↑
Households with no vehicle available, %	↔	↔	↔	↓	↔	↔
Children live in community not usually safe, %	↑	◆	◆	◆	↑	↑
Juvenile crime rate, per 1,000 population	↑	↓	◆	↓	↓	↔
Health Status, Behaviors, Healthcare						
Self-reported fair/poor health, %	◆	◆	◆	◆	◆	◆
Adult obesity prevalence, %	◆	◆	◆	◆	◆	◆
Adult tobacco use - current smoker, %	◆	◆	◆	◆	◆	◆
High school student obesity prevalence, %	↓	◆	◆	↑	↑	↑
High school student - current smoker, %	↑	◆	◆	↑	↓	↓
Children (19-25 mo) not immunized - 431331 series, %	↔	↑	◆	↓	↔	↔
No health insurance coverage, %	↑	◆	◆	↑	↔	↔
Morbidity and Mortality						
Heart disease mortality rate, per 100,000	↔	↓	↓	↑	↔	↔
Stroke mortality rate, per 100,000	↔	↓	↓	↔	↔	↔
Diabetes mortality rate, per 100,000	↔	↔	↑	↓	↑	↔
All-cancer mortality rate, per 100,000	↔	↔	↓	↓	↔	↓
Chronic lower resp. disease mortality rate, per 100,000	↔	↔	↔	↓	↓	↔
Gonorrhea incidence, per 100,000	↓	↔	◆	↑	↓	↑
HIV prevalence, per 100,000	↑	↓	◆	↓	↔	↑
Preterm Births, %	↔	↑	↔	↓	↑	↔
Infant mortality rate, per 1,000 live births	↓	↓	↑	↓	↔	↔
Unintentional injury mortality rate, per 100,000	↑	↑	↔	↓	↔	↑
↑: Increase (worsening) in inequity. ↓: Decrease (improvement) in inequity. ↔: No Change. NA or ◆: Data Not Available.						

↑: Increase (worsening) in inequity. ↓: Decrease (improvement) in inequity. ↔: No Change. NA or ♦: Data Not Available.

a: Complete definitions and references for all indicators and ranking systems are listed in the Michigan Health Equity Dataset Technical Notes, which can be found online at www.michigan.gov/minorityhealth.

b: Indicator rank in order of health outcome relative to reference in Time 2, with best (1) being the indicator with the most positive health outcome relative to the reference group. Rate ratios were used to determine these rankings with estimates to nearest tenth decimal place.

c: The inequity status measure is the percent change in the rate between the index minority population and the reference population for the noted time periods. The inequity status does not take into account changes in health status over time. Upward arrows indicate a relative increase in the inequity; downward arrows indicate a relative decrease in the inequity; horizontal arrows indicate no change in the equity gap. A change of less than 5% in either direction was considered no change. See Tables 1-5 for specific data for each population.

d: The inequity status measure is the difference between overall population inequity (ID) in Time 1 and Time 2 (exact years vary for each indicator, but for all indicators Time 1 is between 2003 and 2008 and Time 2 is between 2011 and 2014). Positive numbers (upward arrows) indicate a relative increase in the inequity; negative numbers (and downward arrows) indicate a relative decrease in the inequity; horizontal arrows indicate no change in the equity gap. A change of less than 5% in either direction was considered no change. See Table 6 for specific data for overall population.

Suggested citation: Michigan Health Equity Data Reference Tables. Lansing, MI: Michigan Department of Health and Human Services Health Disparities Reduction and Minority Health Section and Lifecourse Epidemiology and Genomics Division; 2016.

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MICHIGAN HEALTH EQUITY DATASET TECHNICAL NOTES

A. Race/Ethnicity Categories (unless otherwise noted)

African American: Black alone, not Hispanic/Latino

American Indian/Alaska Native: AI/AN alone, not Hispanic/Latino

Arab: US Census American Community Survey data used Arab alone (excludes Assyrian/Chaldean/Syriac but does not exclude Hispanic/Latino). BRFs and mortality data includes Arab and Assyrian/Chaldean/Syriac and does not exclude Hispanic/Latino.

Asian/Pacific Islander: US Census American Community Survey data used Asian alone, not Hispanic/Latino. BRFs and mortality data included Asian and Pacific Islander, not Hispanic/Latino.

Hispanic/Latino: Hispanic/Latino (of any race)

White: White alone, Not Hispanic/Latino

B. Indicators

Median Annual Household Income

Definition: The median household income divides the income of all households into two halves, one-half of all households have incomes below the median and one-half of all households have incomes above the median income. This includes households with no income. Household income is the sum of the incomes over the past 12 months for all individuals ≥ 15 years old who live in the household at the time of the interview, whether or not they are related.

2005-2007 and 2011-2013 Data Location: www.factfinder.census.gov → Advanced Search → Topics (Select Income & Earnings → Households) → Select geographic area of interest (e.g., state=Michigan) → Select Race and Ethnic Groups separately for each race/ethnicity

2005-2007 Citation: U.S. Census Bureau, 2005-2007 American Community Survey.

2011-2013 Citation: U.S. Census Bureau, 2011-2013 American Community Survey.

Percent Children Below Federal Poverty Level

Definition: Percent of all individuals under 18 years who are in poverty. Poverty thresholds are determined using the family size and the number of family members under 18 years old. A child is living in poverty if their family's total family income in the last 12 months falls below the poverty threshold for their family. Note: Excludes individuals living in college dormitories, military quarters, and institutions such as prisons and nursing homes.

2005-2007 and 2011-2013 Data Location: www.factfinder.census.gov → Advanced Search → Topics (Select Poverty → Poverty) → Select geographic area of interest (e.g., state=Michigan) → Select Race and Ethnic Groups separately for each race/ethnicity

Numerator population: Number of individuals under 18 years who are below the federal poverty level.

Denominator population: Total number of individuals under 18 years.

2005-2007 Citation: U.S. Census Bureau, 2005-2007 American Community Survey.

2011-2013 Citation: U.S. Census Bureau, 2011-2013 American Community Survey.

Unemployment Rate

Definition: Percent of civilian labor force over 16 that is not employed. *Note:* Here populations for White, Black, and Asian races include individuals identifying as Hispanic ethnicity.

Numerator: Number of people who are unemployed

Denominator: Number of people in Civilian, Non-institutional Population Over 16 years and In Labor Force

Data Location: <http://www.bls.gov/lau/> → LAU Tables and Maps → Annual Average Statewide Data → Employment status of the civilian non-institutionalized population in states by sex, race, Hispanic or Latino ethnicity, marital status, and detailed age, 2014 (2007) annual average. Also contact LAUS for more information or help: (202) 691-6392.

Citation: Employment status of the civilian non-institutionalized population in states by sex, race, Hispanic or Latino ethnicity, marital status, and detailed age, 2014 (2007) Annual Averages. Local Area Unemployment Statistics, Bureau of Labor Statistics, U.S. Department of Labor.

High School Dropout Rate

Definition: Percentage of students who dropped out of high school, of all students who started 9th grade four years before dropout rate is calculated. *Note:* Includes only public high schools.

Numerator population: Number of students who left high school permanently at any time in four years before receiving a diploma, GED, or other certificate of completion.

Denominator population: Number of students who enrolled in 9th grade for the first time four years prior to year for which dropout rate is calculated. Cohort is adjusted for students who transfer in, students who transfer out, and students who are exempt.

Data Location: Center for Educational Performance and Information: MI School Data. <https://www.mischooldata.org/DistrictSchoolProfiles/StudentInformation/GraduationDropoutRate2.aspx> → Select School Year (2007-2008, 2013-2014) → Rate Year (Select 4-Year Graduation Cohort) → Race/Ethnicity

2007 and 2014 Citation: State of Michigan 2007 and 2014 Cohort 4-Year Graduation and Dropout Rate Reports by Subgroup. Lansing, MI: State of Michigan Center for Educational Performance and Information.

Percent Not Registered to Vote

Definition: Percentage of all citizens who are not registered to vote.

Numerator: Total number of citizens not registered to vote

Denominator: Total number of citizens

Data Location: U.S. Census Bureau, Current Population Survey, November 2008 and 2012
<http://www.census.gov/hhes/www/socdemo/voting/index.html> → Publications → Population Characteristic Reports and Detailed Tables → Select Year (2008, 2012) → Detailed Tables → Table 4b – by Sex, Race and Hispanic Origin

2008 Citation: U.S. Census Bureau, Current Population Survey, November 2008. Internet Release Date: February, 2009.

2012 Citation: U.S. Census Bureau, Current Population Survey, November 2012.

Households with No Vehicle Available

Definition: Percentage of all households that have no cars available for the use of household members.

Numerator: Number of households that have no passenger cars, vans, or pickup/panel trucks of one-ton capacity or less kept at home and available for the use of household members.

Denominator: Total number of households.

2005-2007 Citation: U.S. Census Bureau, 2005-2007 American Community Survey.

2011-2013 Citation: U.S. Census Bureau, 2011-2013 American Community Survey.

Children Living in Community Not Usually Safe

Definition: Percentage of parents that report their children live in communities or neighborhoods that are either considered 'never safe' or 'sometimes safe.' Note: Cell phones were added to the sampling frame in 2011/12 and may affect the comparability of estimates. Since the 2003 landline-only sample provides a better job of covering the population as compared to the 2007 landline-only sample, a comparability was chosen between the 2003 and 2011-2012 estimates.

Numerator: Children whose parents report their neighborhood or community is never safe or sometimes safe for children.

Denominator: Number of children (age 0-17 years) whose data are included in the National Survey of Children's Health sample.

2003 Citation: 2003 National Survey of Children's Health. Data query from the Child and Adolescent Health Measurement Initiative, Data Resource Center for Child and Adolescent Health website. Retrieved [2/02/15] from www.childhealthdata.org.

2011/12 Citation: 2011/12 National Survey of Children's Health. Data query from the Child and Adolescent Health Measurement Initiative, Data Resource Center for Child and Adolescent Health website. Retrieved [12/09/15] from www.childhealthdata.org.

Juvenile Crime Rate

Definition: The rate of all statewide crimes among juveniles aged 7-16 years per 1,000 population in Michigan. *Note:* Here populations for White, Black, and Asian races include individuals identifying as Hispanic ethnicity.

Numerator: The number of documented crimes in the state against persons, property, society, and all other crimes among juveniles aged 7-16 years.

Denominator: The population of juveniles 7-16 years in Michigan.

2007 and 2013 Citation: 2007/2013 Crime Data: Michigan Incident Crime Reporting, Production Database. Data provided by Michigan State Police Contact Wendy Easterbrook.

Juvenile crime rates were calculated using National Center for Health Statistics bridged-race intercensal population estimates. Data Source: Postcensal estimates of the resident population of the United States for July 1, 2010-July 1, 2014, by year, county, single-year of age (0 to 85+ years), bridged-race, Hispanic origin, and sex (Vintage 2014). Prepared under a collaborative arrangement with the U.S. Census Bureau. Available from: http://www.cdc.gov/nchs/nvss/bridged_race.htm as of 6/30/2015

Self-Reported Fair or Poor Health

Definition: Among all adults, the proportion who reported that their health, in general, was either fair or poor. Age-adjusted¹.

Numerator: Number of respondents who reported their health was fair or poor.

Denominator: Number of adults (18 years and over) in Behavioral Risk Factor Survey sample.

2005-2007 Data not used due to differences in BRFS methodology in 2011 that prevent comparisons.

2012-2014 Data Location: www.michigan.gov/brfs (Estimates for White, African American, AI/AN, and Overall from MiBRFS). Hispanic, Asian, and Arab estimates were from 2012/2013 Stand-alone Behavioral Risk Factor Survey data (email Health Disparities epidemiologist to request data).

2012-2014 Citation (White, Black, AI/AN, Total): C Fussman. 2015. Crude and Age-Adjusted Estimates for chronic health conditions, risk factors, health indicators, and preventive health practices by race/ethnicity, State of Michigan: 2012-2014 Behavioral Risk Factor Survey. Michigan Department of Health and Human Services, Bureau of Disease Control, Prevention, and Epidemiology, Chronic Disease Epidemiology Section.

2012-2014 Citation (for Hispanic, Asian, and Arab estimates): 2012/2013 Hispanic/Asian/Arab Behavioral Risk Factor Survey. Lansing, MI: Michigan Department of Health and Human Services, Lifecourse Epidemiology and Genomics Division and Health Disparities Reduction Minority Health Section.

Obesity Prevalence

Definition: Among all adults, the proportion of respondents whose BMI was greater than or equal to 30.0. BMI (body mass index) = [weight (in kilograms)/height² (in meters)]. Weight and height were self-reported and pregnant women were excluded. Age-adjusted¹.

Numerator: Number of respondents whose BMI was greater than or equal to 30.0.

Denominator: Number of adults (18 years and over) in Behavioral Risk Factor Survey sample.

2005-2007 Data not used due to differences in BRFS methodology in 2011 that prevent comparisons.

2012-2014 Data Location: www.michigan.gov/brfs (Estimates for White, African American, AI/AN, and Overall from MiBRFS). Hispanic, Asian, and Arab estimates were from 2012/2013 Stand-alone Behavioral Risk Factor Survey data (email Health Disparities epidemiologist to request data).

2012-2014 Citation (White, Black, AI/AN, Total): C Fussman. 2015. Crude and Age-Adjusted Estimates for chronic health conditions, risk factors, health indicators, and preventive health practices by race/ethnicity, State of Michigan: 2012-2014 Behavioral Risk Factor Survey. Michigan Department of Health and Human Services, Bureau of Disease Control, Prevention, and Epidemiology, Chronic Disease Epidemiology Section.

2012-2014 Citation (for Hispanic, Asian, and Arab estimates): 2012/2013 Hispanic/Asian/Arab Behavioral Risk Factor Survey. Lansing, MI: Michigan Department of Health and Human Services, Lifecourse Epidemiology and Genomics Division and Health Disparities Reduction Minority Health Section.

Tobacco Use – Current Smoker

Definition: Among all adults, the proportion who reported that they had ever smoked at least 100 cigarettes (five packs) in their life and that they smoke cigarettes now, either every day or on some days. Age-adjusted¹.

Numerator: Number of respondents who reported that they were current smokers.

Denominator: Number of adults (18 years and over) in Behavioral Risk Factor Survey sample.

2005-2007 Data not used due to differences in BRFS methodology in 2011 that prevent comparisons.

2012-2014 Data Location: www.michigan.gov/brfs (Estimates for White, African American, AI/AN, and Overall from MiBRFS). Hispanic, Asian, and Arab estimates were from 2012/2013 Stand-alone Behavioral Risk Factor Survey data (email Health Disparities epidemiologist to request data).

2012-2014 Citation (White, Black, AI/AN, Total): C Fussman. 2015. Crude and Age-Adjusted Estimates for chronic health conditions, risk factors, health indicators, and preventive health practices by race/ethnicity, State of Michigan: 2012-2014 Behavioral Risk Factor Survey. Michigan Department of Health and Human Services, Bureau of Disease Control, Prevention, and Epidemiology, Chronic Disease Epidemiology Section.

2012-2014 Citation (for Hispanic, Asian, and Arab estimates): 2012/2013 Hispanic/Asian/Arab Behavioral Risk Factor Survey. Lansing, MI: Michigan Department of Health and Human Services, Lifecourse Epidemiology and Genomics Division and Health Disparities Reduction Minority Health Section.

Adolescent Obesity

Definition: Among all high school students, the proportion of students that were at or above the 95th percentile for body mass index by age and sex.

Numerator: Number of students that were at or above the 95th percentile for body mass index by age and sex.

Denominator: Number of high school students in Youth Risk Behavior Survey sample.

Data Location: Individual survey year results available at www.michigan.gov/yrbs. Data years were combined and analyzed by Health Disparities Epidemiologist.

2005-2007 Citation: 2005 & 2007 Michigan Youth Risk Behavior Survey. Lansing, MI: Michigan Department of Education.

2011-2013 Citation: 2011 & 2013 Michigan Youth Risk Behavior Survey. Lansing, MI: Michigan Department of Education.

Adolescent Tobacco Use – Current Smoker

Definition: Among all high school students, the proportion of students that reported smoking cigarettes on one or more of the past 30 days.

Denominator: Number of high school students in Youth Risk Behavior Survey sample.

Data Location: Individual survey year results available at www.michigan.gov/yrbs. Data years were combined and analyzed by Health Disparities Epidemiologist (email to request data).

2005-2007 Citation: 2005 & 2007 Michigan Youth Risk Behavior Survey. Lansing, MI: Michigan Department of Education.

2011-2013 Citation: 2011 & 2013 Michigan Youth Risk Behavior Survey. Lansing, MI: Michigan Department of Education.

Children (19-35 months) Immunized for 431331 Series

Definition: Among all children aged 19-35 months in Michigan, the proportion who received immunizations for the 431331 series: 4 vaccines of DTap (Diphtheria, Tetanus, Pertussis), 3 Polio, 1 MMR (Measles, Mumps, Rubella), 3 Hib (Haemophilus influenzae type B), 3 Hepatitis B, 1 Varicella.

Numerator: Number of children aged 19-35 months in Michigan that received 431331 series.

Denominator: Total number of children aged 19-35 months living in Michigan.

Data Location: Data provided by Vaccine Preventable Disease Epidemiologist, Michigan Department of Health and Human Services.

Citation: 2007/2014 Michigan Care Improvement Registry. Lansing, MI: Michigan Department of Health and Human Services, Bureau of Disease Control, Prevention, and Epidemiology.

Percent Without Health Insurance

Definition: Percentage of the civilian non-institutionalized population with no reported health insurance coverage.

Numerator: Number of non-institutionalized people living in Michigan who do not have health insurance.

Denominator: Number of non-institutionalized people living in Michigan.

2009 Citation: U.S. Census Bureau, 2009 American Community Survey.

2014 Citation: U.S. Census Bureau, 2014 American Community Survey.

Heart Disease Mortality Rate

Definition: Number of deaths from heart disease per 100,000 people in the population, age-adjusted¹.

Numerator: Number of deaths occurring in the specified year for which heart disease was the underlying cause. The underlying cause of death is the condition giving rise to the chain of

events leading to death. Heart disease deaths were classified using ICD-10 codes I00-I09, I11, I13, and I20-I51.

Denominator: Number of people in the population derived from National Center for Health Statistics bridged-race intercensal & postcensal population estimates. *Source for years 2000-2009*: Intercensal estimates of the resident population of the United States for July 1, 2000-July 1, 2009, by year, county, single-year of age (0, 1, 2, ..., 85 years and over), bridged race, Hispanic origin, and sex. Prepared under a collaborative arrangement with the U.S. Census Bureau. Available from: http://www.cdc.gov/nchs/nvss/bridged_race.htm as of October 26, 2012, following release by the U.S. Census Bureau of the revised unbridged intercensal estimates by 5-year age group on October 9, 2012. *Source for years 2010-2013*: Postcensal estimates of the resident population of the United States for July 1, 2010-July 1, 2014, by year, county, single-year of age (0 to 85+ years), bridged-race, Hispanic origin, and sex (Vintage 2014). Prepared under a collaborative arrangement with the U.S. Census Bureau. Available from: http://www.cdc.gov/nchs/nvss/bridged_race.htm as of 6/30/2015. *Arab population estimates* were derived from 2000 Census, 2005-2009 ACS, and 2010-2012 ACS data using IPUMS. Source: Steven Ruggles, Katie Genadek, Ronald Goeken, Josiah Grover, and Matthew Sobek. Integrated Public Use Microdata Series: Version 6.0 [Machine-readable database]. Minneapolis: University of Minnesota, 2015. Data incorporated ancestry, language, and birthplace for individuals as other persons in the household (mother and father) from Middle Eastern and North African countries (list available upon request).

Data Location: Email Health Disparities Epidemiologist, Michigan Department of Health and Human Services, to request data.

Citation: 2005-2007 & 2011-2013 Michigan Resident Death Files, Division of Vital Records and Health Statistics, Michigan Department of Health and Human Services. Data analyses by Health Disparities Epidemiologist, Lifecourse Epidemiology and Genomics Division and Health Disparities Reduction and Minority Health Section.

Stroke Mortality Rate

Definition: Number of deaths from stroke per 100,000 people in the population, age-adjusted¹.

Numerator: Number of deaths occurring in the specified year for which heart disease was the underlying cause. The underlying cause of death is the condition giving rise to the chain of events leading to death. Heart disease deaths were classified using ICD-10 codes I60-I69.

Denominator: Number of people in the population (reference HD mortality rate indicator for methodology details).

Data Location: Email Health Disparities Epidemiologist to request data.

Citation: 2005-2007 & 2011-2013 Michigan Resident Death Files, Division of Vital Records and Health Statistics, Michigan Department of Health and Human Services. Data analyses by Health Disparities Epidemiologist, Lifecourse Epidemiology and Genomics Division and Health Disparities Reduction and Minority Health Section.

Diabetes Mortality Rate

Definition: Number of deaths from diabetes per 100,000 people in the population, age-adjusted¹.

Numerator: Number of deaths occurring in the specified year for which diabetes was the underlying cause. The underlying cause of death is the condition giving rise to the chain of events leading to death. Diabetes were classified using ICD-10 codes E10-E14.

Denominator: Number of people in the population (reference HD mortality rate indicator for methodology details).

Data Location: Email Health Disparities Epidemiologist to request data.

Citation: 2005-2007 & 2011-2013 Michigan Resident Death Files, Division of Vital Records and Health Statistics, Michigan Department of Health and Human Services. Data analyses by Health Disparities Epidemiologist, Lifecourse Epidemiology and Genomics Division and Health Disparities Reduction and Minority Health Section.

All-Cancer Mortality Rate

Definition: Number of deaths from cancer per 100,000 people in the population, age-adjusted¹.

Numerator: Number of deaths occurring in the specified year for which cancer was the underlying cause. The underlying cause of death is the condition giving rise to the chain of events leading to death. Cancer deaths were classified using ICD-10 codes C00-C97.

Denominator: Number of people in the population (reference HD mortality rate indicator for methodology details).

Data Location: Email Health Disparities Epidemiologist to request data.

Citation: 2005-2007 & 2011-2013 Michigan Resident Death Files, Division of Vital Records and Health Statistics, Michigan Department of Health and Human Services. Data analyses by Health Disparities Epidemiologist, Lifecourse Epidemiology and Genomics Division and Health Disparities Reduction and Minority Health Section.

Chronic Lower Respiratory Disease Mortality Rate

Definition: Number of deaths from chronic lower respiratory disease per 100,000 people in the population, age-adjusted¹.

Numerator: Number of deaths occurring in the specified year for which chronic lower respiratory disease was the underlying cause. The underlying cause of death is the condition giving rise to the chain of events leading to death. Cancer deaths were classified using ICD-10 codes J40-J47.

Denominator: Number of people in the population (reference HD mortality rate indicator for methodology details).

Data Location: Email Health Disparities Epidemiologist to request data.

Citation: 2005-2007 & 2011-2013 Michigan Resident Death Files, Division of Vital Records and Health Statistics, Michigan Department of Health and Human Services. Data analyses by Health Disparities Epidemiologist, Lifecourse Epidemiology and Genomics Division and Health Disparities Reduction and Minority Health Section.

Gonorrhea Incidence

Definition: Number of new gonorrhea cases in the referenced year, per 100,000 population.

Numerator: Number of new gonorrhea cases diagnosed and reported in the referenced year.

Denominator: Total population living in Michigan, as determined by intercensal annual population estimates, which included Census 2006 and 2014 data.

Data Location: Data provided by STD Epidemiologist, Michigan Department of Health and Human Services.

2007 Citation: 2007 Michigan Disease Surveillance System. Lansing, MI: Michigan Department of Health and Human Services, Bureau of Disease Control, Prevention, and Epidemiology.

2014 Citation: 2014 Michigan Disease Surveillance System. Lansing, MI: Michigan Department of Health and Human Services, Bureau of Disease Control, Prevention, and Epidemiology.

HIV Prevalence

Definition: Number of prevalent HIV and AIDS cases per 100,000 population.

Numerator: Number of HIV and AIDS cases reported and alive.

Denominator: Total population living in Michigan, as determined by intercensal annual population estimates, which included Census 2006 and 2014 data.

Data Location: www.michigan.gov/mdhhs → Keeping Michigan Healthy → Chronic Diseases → HIV/STD → HIV Case Reporting and Data → HIV Statistics and Data Reports

2007 Citation: Quarterly HIV/AIDS Report, Michigan. January, 2008. Lansing, MI: Michigan Department of Community Health, Bureau of Epidemiology, HIV/STD/VH/TB Epidemiology Section.

2014 Citation: Annual HIV Surveillance Report, Michigan. July, 2015. Lansing, MI: Michigan Department of Health and Human Services, Bureau of Disease Control, Prevention and Epidemiology, HIV/STD/TB/VH Epidemiology Section.

Proportion of Preterm Birth

Definition: Percent of singleton births that are born before 37 weeks gestation among all eligible live births.

Numerator: Number of singleton births that are born before 37 weeks gestation excluding births with gestational age less than 20 weeks.

Denominator: All eligible births excluding missing births and births with gestational age less than 20 weeks and greater than 42 weeks.

Data Location: Data provided by Infant Health Epidemiologist, Michigan Department of Health and Human Services.

Citation: 2005-2007 & 2011-2013 Michigan Resident Birth Files, Division of Vital Records and Health Statistics, Michigan Department of Health and Human Services. Data analyses courtesy of the Maternal and Child Health Section, Lifecourse Epidemiology and Genomics Division.

Infant Mortality Rate

Definition: Number of infant deaths per 1,000 live births.

Numerator: Number of infant deaths. An infant death is a death between 0 and <365 days old.

Denominator: All births in the specified population in the specified year.

Data Location: Data provided by Infant Health Epidemiologist, Michigan Department of Health and Human Services.

Citation: 2005-2007 & 2011-2013 Michigan Resident Birth and Death Files, Division of Vital Records and Health Statistics, Michigan Department of Health and Human Services. Data analyses courtesy of the Maternal and Child Health Section, Lifecourse Epidemiology and Genomics Division.

Unintentional Injury Mortality Rate

Definition: Number of deaths from unintentional injury per 100,000 people in the population, age-adjusted¹.

Numerator: Number of deaths occurring in the specified year for which unintentional injury was the underlying cause. The underlying cause of death is the condition giving rise to the chain of events leading to death. Unintentional Injury deaths were classified using ICD-10 codes V01-X59, Y85-Y86.

Denominator: Number of people in the population (reference HD mortality rate indicator for methodology details).

Data Location: Email Health Disparities Epidemiologist to request data.

Citation: 2005-2007 & 2011-2013 Michigan Resident Death Files, Division of Vital Records and Health Statistics, Michigan Department of Health and Human Services. Data analyses by Health Disparities Epidemiologist, Lifecourse Epidemiology and Genomics Division and Health Disparities Reduction and Minority Health Section.

C. Additional Definitions and Notes

1. All mortality rates reported here are **age-adjusted** by the direct method, using the total population of the United States as measured by the 2000 United States Census.
2. **Rank Relative to Reference in Time 2 (Best to Worst):** Indicator rank in order of health outcome relative to reference in Time 2, with best (1) being the indicator with the most positive health outcome relative to the reference group. Rate ratios were used to determine these rankings with estimates to nearest tenth decimal place. (*Equity Tables 1-5*)
3. **Inequity Status:** Measures the difference between overall population inequity (ID) in Time 1 and Time 2 (exact years vary for each indicator, but for all indicators Time 1 is between 2003 and 2008 and Time 2 is between 2011 and 2014). Positive numbers (upward arrows) indicate a relative increase in the inequity; negative numbers (and downward arrows) indicate a relative decrease in the inequity; horizontal arrows indicate no change in the equity gap. A change of less than 5% in either direction was considered no change. (*Equity Tables 1-5*)

If the Relative Differences are <1 then:		If the Relative Differences are >1 then:	
% Change >0	Decrease in disparity (better)	% Change >0	Increase in disparity (worse)
% Change <0	Increase in disparity (worse)	% Change <0	Decrease in disparity (better)

4. **Rank in Improvement over Time (Best to Worst):** Indicator rank in order of improvement in disparity over time, with best (1) being the indicator with the largest improvement in health status relative to the reference group between Time 1 and Time 2. Percent change in rate ratios were used to determine these rankings to nearest tenth decimal place. Rate ratios that were less than 5% in either direction were considered the same and ranked together. Rate ratios that had an inequity status that were improving were considered as a negative number (better) in ranking. Similarly, rate ratios that had an inequity status that were worsening were considered as a positive number (worse) in ranking. (*Equity Tables 1-5*)
5. **Rank in ID in Time 2 (Best to Worst):** Indicator rank in order of Overall Population Disparity (ID) in Time 2, with best (1) being the indicator with the lowest level of population disparity. The Index of Disparity (ID) was used to determine these rankings with estimates to nearest tenth decimal place. (*Equity Table 6*)
6. **Rank in Improvement over Time (Best to Worst):** Indicator rank in order of improvement in population disparity over time, with best (1) being the indicator with the largest improvement in overall population disparity between Time 1 and Time 2. (*Equity Table 6*)

7. Disparities are not necessarily inequities. These data **do not** provide any information about the reasons for the disparities or how to close the gaps.
8. These methods **do not** describe the quality of health status or how health is changing over time, but they **do** depict gaps in the health status between different groups and how those gaps grow or shrink over time.
9. Data in these tables are collected for 1-3 year intervals, and the number of individual respondents or cases for each condition may be too few to produce reliable estimates for Michigan minority populations. **These data should be interpreted cautiously in the absence of statistical estimates of reliability for the reported indicators and measures.**