

# **Summary Data Brief of the Changes in Health Disparities Between 2010-2019**

## **Introduction**

The focus of this summary data brief is health disparities and how they change in Michigan's populations over time. This summary data brief presents group-level data for five racial and ethnic groups in Michigan across two time periods (2008-2010) and (2017-2019) compared to Michigan's white population for these same periods. The data brief describes how populations compare to one another in terms of population rates for several social determinants of health and health outcomes. These comparisons describe populations relative to each other and if they become closer to one another (less disparate) or further from one another (more disparate) over time. The purpose of these data tables is to allow for routine monitoring of health disparities in Michigan and to evaluate their progress over time.

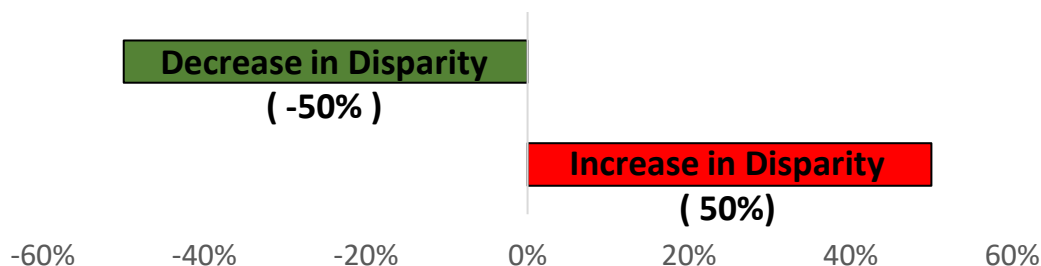
## **Health Indicators**

Each of the tables contains two sets of indicators with data for each racial and ethnic population. The first set of indicators include social, economic, and environmental determinants for individual and community health. The second set of indicators include health outcomes represented by mortality and morbidity rates for several diseases. Monitoring social determinants along with health outcomes is optimal for evaluating success in achieving sustainable health equity for racial and ethnic minority populations in Michigan.

## **Health Equity Measures**

**Change in Pairwise Disparity Over Time:** The change in pairwise disparity over time describes whether the index population (Racial/Ethnic Minority) rate has gotten closer to or farther from the white population rate from one time period to another.

The above listed health disparity measure is shown in both tabular form with the population rates for both the indexed and white population listed by each of the time periods, followed by the **Percent (%) Change in Pairwise Disparity Over Time**. The percent change in pairwise disparity over time for each health indicator is then shown graphically in order from greatest increase in disparity (positive percent) to greatest decrease in disparity (negative percent).



## Change in health disparity: African American and white community

- Within the African American community, several decreases in disparity between the African American and white American communities have occurred such as a 39.9% reduction in the unemployment rate and 16.7% reduction in not having a personal health care provider.
- These reductions have mainly been due to improvements in the rates of these social determinants of health for African Americans and some worsening in rates in the white community.
- Some of the biggest increases in disparity have been due to a worsening of mortality and morbidity rates in the white community such as rise in the rate of Alzheimer mortality (32.5 per 100,000 in 2010 to 51.9 per 100,000 in 2019).

Indicators	2008-2010		2017-2019		% Change in rate ratio
	African American	white American	African American	white American	
Social determinants					
Unemployment rate, % <sup>a</sup>	13.8%	7.10%	6.80%	2.50%	-39.9%
No routine checkup in past year, % <sup>b</sup>	17.5%	12.2%	17.8%	15.4%	-19.4%
High school dropout rate, % <sup>b</sup>	20.2%	7.86%	13.8%	6.59%	-19.0%
Living in different house than last year, % <sup>a</sup>	21.9%	12.6%	16.5%	11.5%	-17.5%
No personal health care provider, % <sup>b</sup>	19.4%	11.8%	15.2%	11.1%	-16.7%
Less than HS diploma, persons ≥25 years, % <sup>a</sup>	15.0%	8.60%	10.1%	6.40%	-9.52%
Cost burdened owners (mortgage cost >30% income), % <sup>a</sup>	48.6%	35.0%	32.1%	21.2%	-9.04%
Percent without health insurance, % <sup>b</sup>	15.9%	10.9%	7.30%	5.50%	-9.01%
Living in owner-occupied housing, % <sup>a</sup>	47.1%	79.8%	44.1%	79.0%	5.42%
Median housing value (dollars) <sup>a</sup>	84,100	142,600	83,800	174,800	18.7%
Poor physical health on at least 14 days in the past month, % <sup>b</sup>	24.3%	35.0%	17.5%	32.3%	22.0%
Mortality and morbidity indicators					
Aids mortality per 100,000 <sup>c</sup>	2.77	0.18	0.58	0.12	-67.3%
Heart failure mortality per 100,000 <sup>c</sup>	15.2	28.4	33.0	40.4	-53.1%
Hypertensive heart disease mortality per 100,000 <sup>c</sup>	36.3	14.5	41.1	26.7	-38.4%
Hypertension mortality per 100,000 <sup>c</sup>	48.7	22.6	55.9	37.5	-30.8%
Alzheimer's mortality per 100,000 <sup>c</sup>	11.9	32.5	22.6	51.9	19.3%
Kidney mortality per 100,000 <sup>c</sup>	21.4	17.7	29.0	17.5	37.6%
Asthma mortality per 100,000 <sup>c</sup>	2.48	0.70	3.28	0.59	58.3%

**Key:** Positive percentages represent an increase in disparity (difference) between the population of interest and the white population, while negative percentages represent a decrease in disparity. Percentages less than (+/-) 5% show no change in disparity. For ratios less than 1.00 these values are inverse.

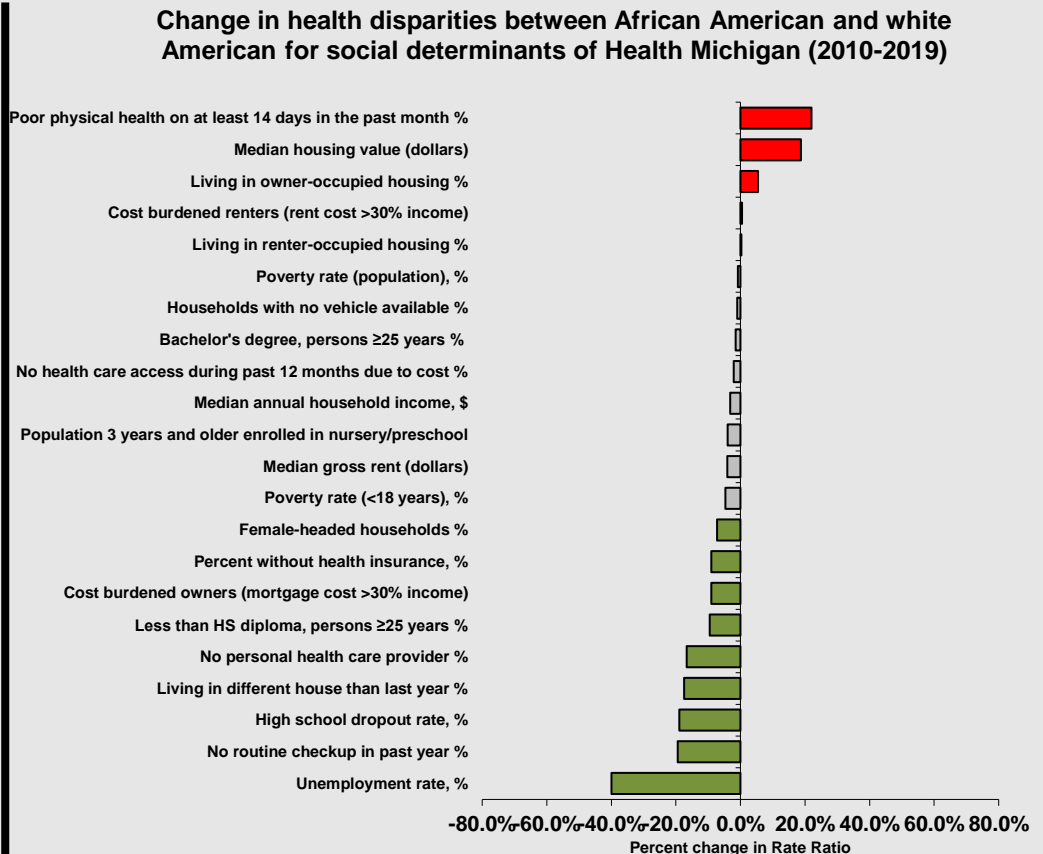
- Data Source: American Community Survey, population profile 3 year estimate 2008-2010; 1 year estimate 2019. For these indicators Asian estimate does not include Pacific Islanders and all races are non-Hispanic. For Indicators of Hispanic estimates, Hispanics include combination with one or more races.
- Data Source: Michigan Behavioral Risk Factor Survey, 3 year estimates 2008-2010; 2017-2019. For these indicators all race and ethnicities are non-Hispanic.
- Data Source: Division for Vital Records and Health Statistics. Michigan Department of Health and Human Services 1 year estimate 2019. Calculations for change in pairwise disparity for disparity comparisons to white populations can be found in the Michigan Health Equity Data Project's Michigan Health Equity Data Tables and Related Technical Documents 2000-2009. [https://www.michigan.gov/documents/mdch/MI\\_Health\\_Equity\\_Data\\_Tables\\_-\\_May\\_2011\\_361639\\_7.pdf](https://www.michigan.gov/documents/mdch/MI_Health_Equity_Data_Tables_-_May_2011_361639_7.pdf)

## Change in health disparity: African American and white community

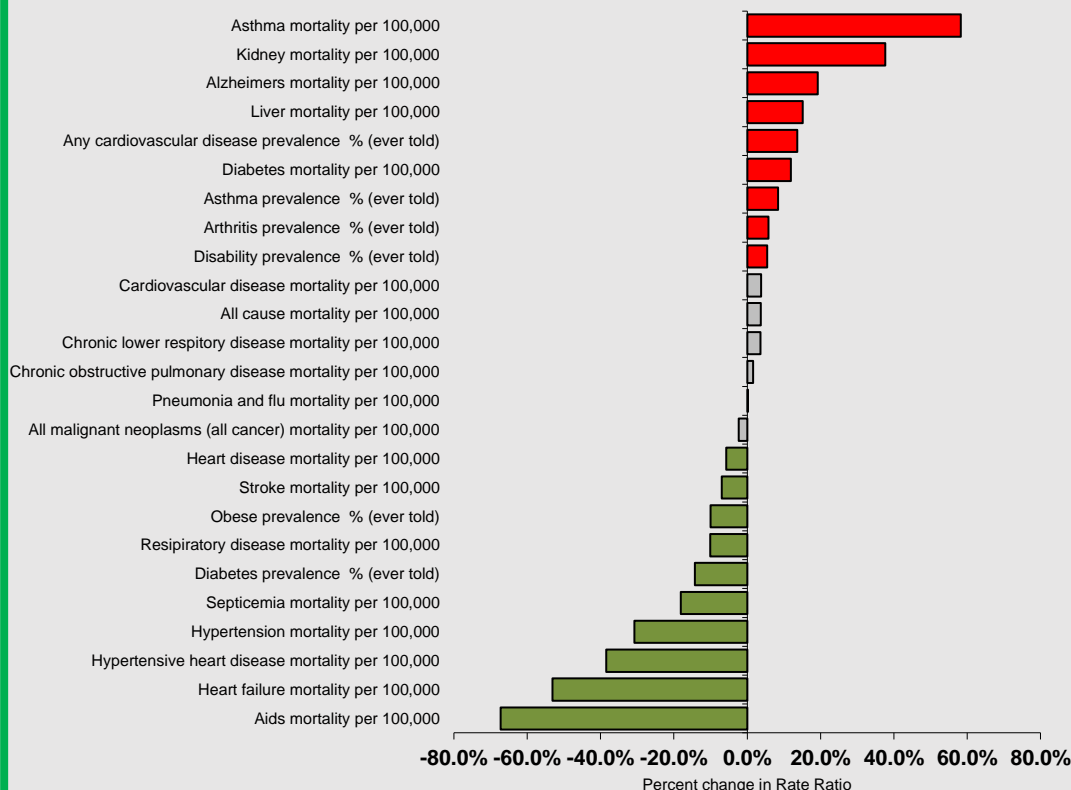
Indicators	2008-2010		2017-2019		% Change rate ratio
	African American	white American	African American	white American	
Social determinants					
Unemployment rate, % <sup>a</sup>	13.8%	7.10%	6.80%	2.50%	-39.9%
No routine checkup in past year, % <sup>b</sup>	17.5%	12.2%	17.8%	15.4%	-19.4%
High school dropout rate, % <sup>a</sup>	20.2%	7.90%	13.8%	6.59%	-19.0%
Living in different house than last year, % <sup>a</sup>	21.9%	12.6%	16.5%	11.5%	-17.5%
No personal health care provider, % <sup>b</sup>	19.4%	11.8%	15.2%	11.1%	-16.7%
Less than HS diploma, persons ≥25 years, % <sup>a</sup>	15.0%	8.60%	10.1%	6.40%	-9.50%
Cost burdened owners (mortgage cost >30% income) <sup>a</sup>	48.6%	35.0%	32.1%	21.2%	-9.00%
Percent without health insurance, % <sup>b</sup>	15.9%	10.9%	7.30%	5.50%	-9.00%
Female-headed households, % <sup>a</sup>	38.2%	9.60%	34.7%	9.40%	-7.20%
Poverty rate (<18 years), % <sup>a</sup>	45.0%	15.9%	35.6%	13.2%	-4.70%
Median gross rent (dollars) <sup>a</sup>	746	713	883	880	-4.10%
Population 3 years and older enrolled in nursery/preschool <sup>a</sup>	4.90%	5.40%	5.40%	6.20%	-4.00%
Median annual household income, \$ <sup>a</sup>	30,044	50,009	36,833	63,326	-3.20%
No health care access during past 12 months, % <sup>a</sup>	12.1%	9.90%	15.8%	13.2%	-2.10%
Bachelor's degree, persons ≥25 years, % <sup>a</sup>	15.5%	26.0%	18.2%	31.0%	-1.50%
Households with no vehicle available, % <sup>a</sup>	19.1%	5.50%	18.9%	5.50%	-1.00%
Poverty rate (population), % <sup>a</sup>	31.6%	12.2%	26.2%	10.2%	-0.80%
Living in renter-occupied housing, % <sup>a</sup>	49.2%	18.2%	51.8%	19.1%	0.32%
Cost burdened renters (rent cost >30% income) <sup>a</sup>	64.3%	52.2%	55.7%	45.0%	0.50%
Living in owner-occupied housing, % <sup>a</sup>	47.1%	79.8%	44.1%	79.0%	5.40%
Median housing value (dollars) <sup>a</sup>	84,100	142,600	83,800	174,800	18.7%
Poor physical health in 14 days in the past month, % <sup>b</sup>	24.3%	35.0%	17.5%	32.3%	22.0%
Mortality and morbidity indicators					
Aids mortality per 100,000 <sup>c</sup>	2.77	0.18	0.58	0.12	-67.3%
Heart failure mortality per 100,000 <sup>c</sup>	15.2	28.4	33.0	40.4	-53.1%
Hypertensive heart disease mortality per 100,000 <sup>c</sup>	36.3	14.5	41.1	26.7	-38.4%
Hypertension mortality per 100,000 <sup>c</sup>	48.7	22.6	55.9	37.5	-30.8%
Septicemia mortality per 100,000 <sup>c</sup>	16.8	9.13	17.2	11.4	-18.1%
Diabetes prevalence, % (ever told) <sup>b</sup>	14.3%	7.60%	14.2%	8.80%	-14.2%
Respiratory disease mortality per 100,000 <sup>c</sup>	55.4	92.4	68.7	104.2	-10.1%
Obese prevalence, % (ever told) <sup>b</sup>	41.9%	28.8%	42.3%	32.3%	-10.0%
Stroke mortality per 100,000 <sup>c</sup>	46.8	47.7	50.2	55.0	-6.90%
Heart disease mortality per 100,000 <sup>c</sup>	240.0	251.0	273.0	270.1	-5.70%
All malignant neoplasms mortality per 100,000 <sup>c</sup>	196.9	223.6	193.3	224.7	-2.40%
Pneumonia and flu mortality per 100,000 <sup>c</sup>	16.4	16.3	17.6	17.4	0.20%
Chronic obstructive pulmonary disease mortality per 100,000 <sup>c</sup>	23.2	52.7	28.2	62.8	1.70%
Chronic lower respiratory disease mortality per 100,000 <sup>c</sup>	28.7	58.8	33.7	66.7	3.60%
All cause mortality per 100,000 <sup>c</sup>	876.0	946.6	1007.9	1050.0	3.70%
Cardiovascular disease mortality per 100,000 <sup>c</sup>	310.9	320.4	350.4	347.8	3.80%
Disability prevalence, % (ever told) <sup>b</sup>	25.2%	22.4%	29.3%	24.7%	5.40%
Arthritis prevalence, % (ever told) <sup>b</sup>	30.0%	29.9%	29.3%	27.6%	5.80%
Asthma prevalence, % (ever told) <sup>b</sup>	17.8%	15.1%	20.7%	16.2%	8.40%
Diabetes mortality per 100,000 <sup>c</sup>	31.3	27.9	36.9	29.4	11.9%
Any cardiovascular disease prevalence, % (ever told) <sup>b</sup>	9.80%	7.90%	11.0%	7.80%	13.7%
Liver mortality per 100,000 <sup>c</sup>	13.8	15.4	14.7	19.4	15.1%
Alzheimer's mortality per 100,000 <sup>c</sup>	11.9	32.5	22.6	51.9	19.3%
Kidney mortality per 100,000 <sup>c</sup>	21.4	17.7	29.0	17.5	37.6%
Asthma mortality per 100,000 <sup>c</sup>	2.48	0.70	3.28	0.59	58.2%

## Change in health disparity: African American and white community

- The gap between African American and white American poor physical health rates increased by 22.0% between 2010 and 2019.
- In contrast, the gap in the individuals with no routine check up decreased between white and Black communities by 19.4%.
- This was due to white Americans having fewer routine check ups from 2010 to 2019 while the number of African American check ups stayed the same.
- The disparity in many of the SDOH indicators decreased between African and white Americans over this period.



### Change in Health Disparities between African American and white American for Health Indicators Michigan (2010-2019)



- Overall long-term causes of mortality such as chronic diseases like cardiovascular disease, diabetes, and kidney disease have increased in the disparity between African American and white Americans.
- There is still a reduction in disparity between these populations, but this is mainly due to both populations having worsening health.
- Additionally, many of the increases in disparity are due to African American having an increase in mortality and morbidity rates while white rates remain relatively similar.

## Change in health disparity: Hispanic American and white community

- Between the Hispanic American and white American communities, the disparity between mortality and morbidity has increased.
- Increases in disparity have been due to mortality and morbidity rates increasing in non-Hispanic white Americans at a faster pace than Hispanic Americans. For example, stroke mortality rates for Hispanic Americans increased 9.88 deaths per 100,000 in 2010 to 16.9 deaths per 100,000 in 2019 and the white community going from 47.7 deaths per 100,000 to 55.0 deaths per 100,000.
- Likewise reductions in disparities have been due to Hispanic American mortality and morbidity rates rising in diseases in which Hispanic Americans previously had lower rates than non-Hispanic white Americans such as Cancer mortality. This has led to Hispanic Americans gaining more parity with the much higher mortality and morbidity rates of white Americans.

Indicators	2008-2010		2017-2019		% Change in rate ratio
	Hispanic American	white American	Hispanic American	white American	
Social determinants					
High school dropout rate, % <sup>a</sup>	19.8%	7.90%	11.9%	6.59%	-27.9%
Living in different house than last year, % <sup>a</sup>	21.0%	12.6%	14.7%	11.5%	-23.3%
Population 3 years and older enrolled in nursery/preschool <sup>a</sup>	7.10%	5.40%	6.40%	6.20%	-21.5%
Poverty rate (population), % <sup>a</sup>	33.5%	15.9%	30.6%	13.2%	-14.2%
Bachelor's degree, persons ≥25 years <sup>a</sup>	15.5%	26.0%	20.0%	31.0%	8.20%
No health care access during past 12 months due to cost, % <sup>b</sup>	10.6%	9.90%	15.6%	13.2%	10.4%
Poor physical health on at least 14 days in the past month, % <sup>b</sup>	32.7%	35.0%	25.3%	32.3%	16.2%
No routine checkup in past year, % <sup>b</sup>	15.2%	12.2%	23.0%	15.4%	19.9%
Mortality and morbidity indicators					
Kidney mortality per 100,000 <sup>c</sup>	4.18	17.7	7.22	17.5	-75.0%
Pneumonia and flu mortality per 100,000 <sup>c</sup>	3.80	16.3	5.89	17.4	-45.0%
All malignant neoplasms (all cancer) mortality per 100,000 <sup>c</sup>	40.9	223.6	57.5	224.7	-40.2%
Stroke mortality per 100,000 <sup>c</sup>	9.88	47.7	16.9	54.9	48.4%
Hypertension mortality per 100,000 <sup>c</sup>	3.80	22.6	12.1	37.5	92.9%
Hypertensive heart disease mortality per 100,000 <sup>c</sup>	1.90	14.5	9.31	26.7	166.5%
Alzheimer's mortality per 100,000 <sup>c</sup>	2.09	32.5	10.1	51.9	202.2%

**Key:** Positive percentages represent an increase in disparity (difference) between the population of interest and the white population, while negative percentages represent a decrease in disparity. Percentages less than (+/-) 5% show no change in disparity. For ratios less than 1.00 these values are inverse.

- Data Source: American Community Survey, population profile 3 year estimate 2008-2010; 1 year estimate 2019. For these indicators Asian estimate does not include Pacific Islanders and all races are non-Hispanic. For Indicators of Hispanic estimates, Hispanics include combination with one or more races.
- Data Source: Michigan Behavioral Risk Factor Survey, 3 year estimates 2008-2010; 2017-2019. For these indicators all race and ethnicities are non-Hispanic.
- Data Source: Division for Vital Records and Health Statistics. Michigan Department of Health and Human Services 1 year estimate 2019. Calculations for change in pairwise disparity for disparity comparisons to white Populations can be found in the Michigan Health Equity Data Project's Michigan Health Equity Data Tables and Related Technical Documents 2000-2009. [https://www.michigan.gov/documents/mdch/MI\\_Health\\_Equity\\_Data\\_Tables\\_-\\_May\\_2011\\_361639\\_7.pdf](https://www.michigan.gov/documents/mdch/MI_Health_Equity_Data_Tables_-_May_2011_361639_7.pdf)

## Change in health disparity: Hispanic American and white community

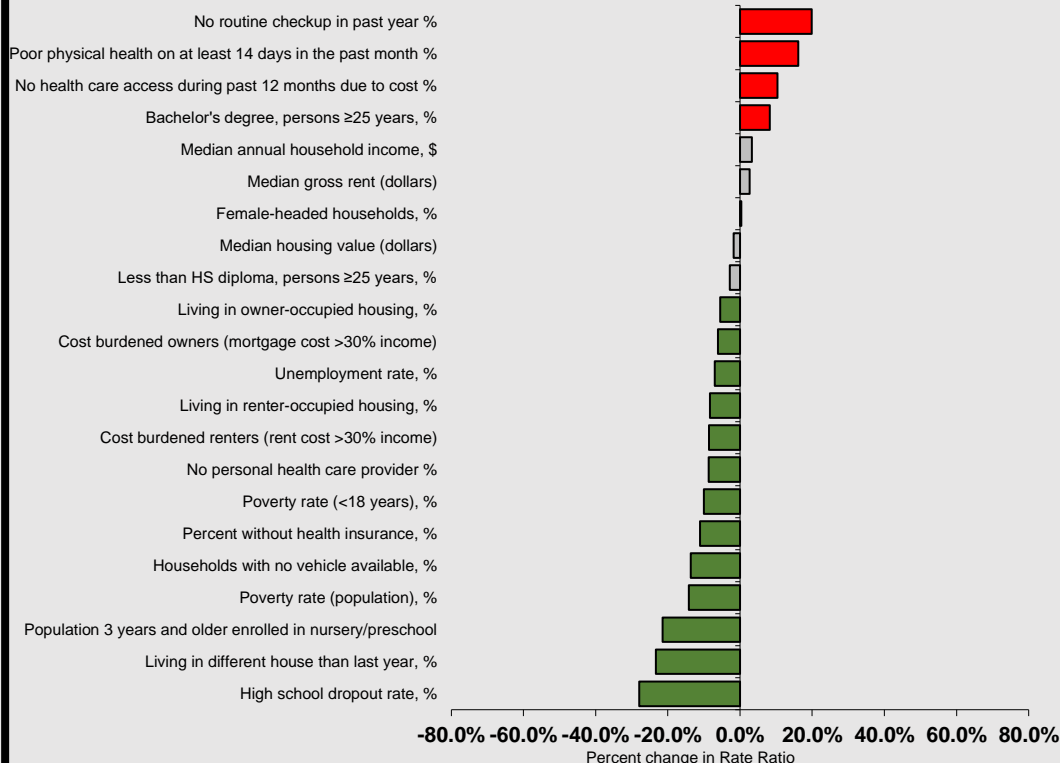
Indicators	2008-2010		2017-2019		% Change rate ratio
	Hispanic American	white American	Hispanic American	white American	
Social determinants					
High school dropout rate, % <sup>a</sup>	19.8%	7.90%	12.0%	6.59%	-27.9%
Living in different house than last year, %	21.0%	12.6%	14.7%	11.5%	-23.3%
Population 3 years and older enrolled in nursery/preschool <sup>a</sup>	7.10%	5.40%	6.40%	6.20%	-21.5%
Poverty rate (population), % <sup>a</sup>	27.6%	12.2%	19.8%	10.2%	-14.2%
Households with no vehicle available, %	8.80%	5.50%	7.60%	5.50%	-13.6%
Percent without health insurance, % <sup>b</sup>	22.3%	10.9%	12.5%	5.50%	-11.1%
Poverty rate (<18 years), % <sup>a</sup>	33.5%	15.9%	30.6%	13.2%	-10.0%
No personal health care provider, % <sup>b</sup>	17.7%	11.8%	15.2%	11.1%	-8.70%
Cost burdened renters (rent cost >30% income) <sup>a</sup>	53.5%	52.2%	50.1%	45.0%	-8.60%
Living in renter-occupied housing, %	37.3%	18.2%	35.9%	19.1%	-8.30%
Unemployment rate, % <sup>a</sup>	11.6%	7.10%	3.80%	2.50%	-7.00%
Cost burdened owners (mortgage cost >30% income) <sup>a</sup>	41.5%	35.0%	23.6%	21.2%	-6.10%
Living in owner-occupied housing, %	59.1%	79.8%	61.7%	79.0%	-5.50%
Less than HS diploma, persons ≥25 years, % <sup>a</sup>	30.0%	8.60%	21.7%	6.40%	-2.80%
Median housing value (dollars) <sup>a</sup>	98,900	142,600	119,100	174,800	-1.80%
Female-headed households, % <sup>a</sup>	17.5%	9.60%	17.2%	9.40%	0.40%
Median gross rent (dollars) <sup>a</sup>	715	713	906	880	2.70%
Median annual household income, \$ <sup>a</sup>	38,049	50,009	49,761	63,326	3.30%
Bachelor's degree, persons ≥25 years, % <sup>a</sup>	15.5%	26.0%	20.0%	31.0%	8.20%
No health care access during past 12 months, % <sup>b</sup>	10.6%	9.90%	15.6%	13.2%	10.4%
Poor physical health in14 days in the past month, % <sup>b</sup>	32.7%	35.0%	25.3%	32.3%	16.2%
No routine checkup in past year, % <sup>b</sup>	15.2%	12.2%	23.0%	15.4%	19.9%
Mortality and morbidity indicators					
Kidney mortality per 100,000 <sup>c</sup>	4.18	17.7	7.22	17.5	-75.0%
Pneumonia and flu mortality per 100,000 <sup>c</sup>	3.80	16.3	5.89	17.4	-45.0%
Arthritis prevalence, % (ever told) <sup>b</sup>	21.1%	29.9%	28.0%	27.6%	-43.8%
All malignant neoplasms (all cancer) mortality per 100,000 <sup>c</sup>	40.9	223.6	57.6	224.7	-40.2%
Cardiovascular disease mortality per 100,000 <sup>c</sup>	58.3	320.4	88.4	347.8	-39.5%
Heart disease mortality per 100,000 <sup>c</sup>	44.3	251.0	65.0	270.1	-36.4%
Asthma prevalence, % (ever told) <sup>b</sup>	10.6%	15.1%	15.3%	16.2%	-34.5%
Liver mortality per 100,000 <sup>c</sup>	10.3	15.4	15.8	19.4	-22.1%
Diabetes mortality per 100,000 <sup>c</sup>	10.3	27.9	11.8	29.4	-9.00%
Diabetes prevalence, % (ever told) <sup>b</sup>	13.0%	7.60%	14.9%	8.80%	-1.00%
Any cardiovascular disease prevalence, % (ever told) <sup>b</sup>	9.90%	7.90%	10.4%	7.80%	6.40%
Chronic obstructive pulmonary disease mortality per 100,000 <sup>c</sup>	7.03	52.7	8.93	62.8	6.70%
Heart failure mortality per 100,000 <sup>c</sup>	4.37	28.4	6.65	40.4	7.00%
Chronic lower respiratory disease mortality per 100,000 <sup>c</sup>	7.79	58.8	9.69	66.7	9.60%
Obese prevalence, % (ever told) <sup>b</sup>	33.8%	28.8%	43.9%	32.3%	15.8%
Respiratory disease mortality per 100,000 <sup>c</sup>	15.4	92.4	21.9	104.2	25.9%
Septicemia mortality per 100,000 <sup>c</sup>	2.28	9.13	3.61	11.4	26.4%
All cause mortality per 100,000 <sup>c</sup>	222.7	946.6	324.9	1050.1	31.5%
Disability prevalence, % (ever told) <sup>b</sup>	20.1%	22.4%	29.3%	24.7%	32.2%
Stroke mortality per 100,000 <sup>c</sup>	9.88	47.7	16.9	55.0	48.4%
Hypertension mortality per 100,000 <sup>c</sup>	3.80	22.6	12.2	37.5	92.9%
Hypertensive heart disease mortality per 100,000 <sup>c</sup>	1.90	14.5	9.31	26.7	166.5%
Alzheimer's mortality per 100,000 <sup>c</sup>	2.09	32.5	10.1	51.9	202.2%



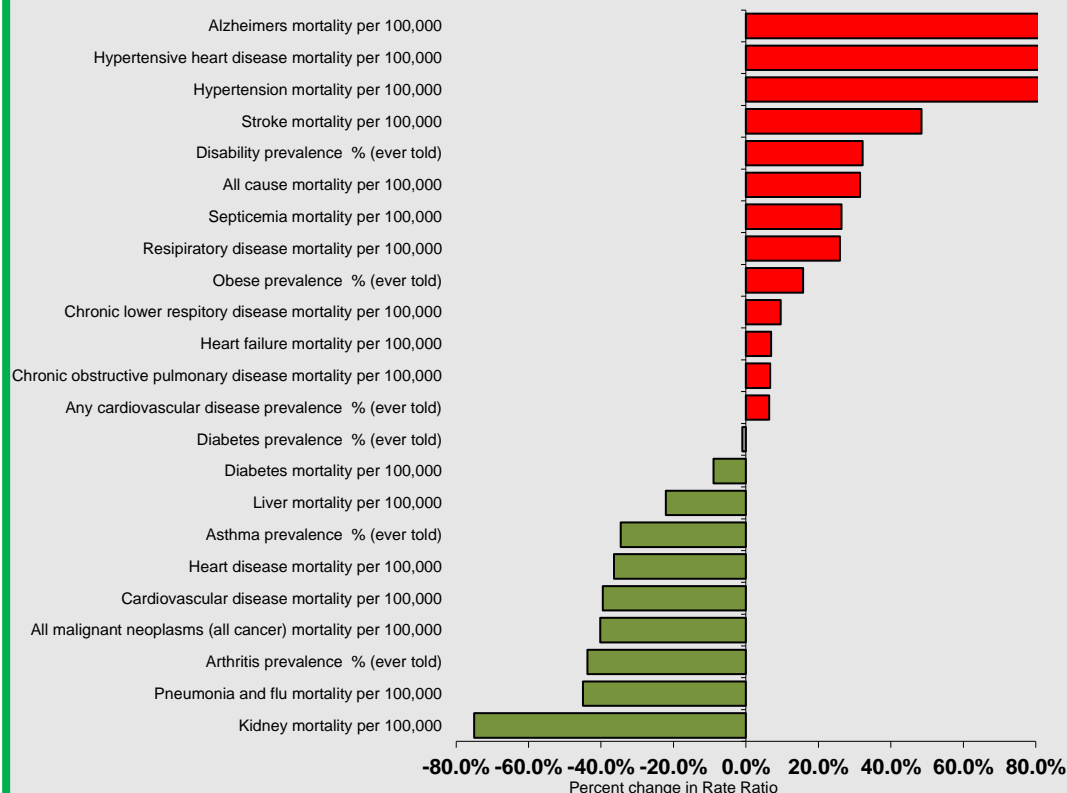
## Change in health disparity: Hispanic American and white community

- The disparity between Hispanic and non-Hispanic white Americans has decreased in many key SDOH indicators such as household income, poverty rate, and lack of personal health care providers. One example is the reduction in the number of Hispanic households without a vehicle from 2010 to 2019.
- Similar reductions in disparity have occurred and are due to the Hispanic American community gaining more parity with non-Hispanic white Americans across many of these SDOH indicators.

### Change in health disparities between Hispanic Americans and white Americans for social determinants of Health Michigan (2010-2019)



### Change in health disparities between Hispanic Americans and white Americans for health indicators Michigan (2010-2019)



- The disparity in mortality between the Hispanic and non-Hispanic white communities has increased for many chronic diseases such as hypertensive heart disease and all respiratory diseases.
- Many of the increases in disparity are due to a quicker rise in mortality and morbidity rates in the non-Hispanic white community. While mortality and morbidity has also increased in the Hispanic American community over this same period, it has been at a slightly slower rate when compared to the non-Hispanic white American leading to a larger gap in mortality and morbidity.

## Change in health disparity: Asian American and white community

- Within the Asian American community many rates for the social determinants of health are better than that of the white Americans which can affect how changes in disparities occur.
- Some of the decreases in SDOH disparity are due to an improvement of rates among Asian Americans such as a lowering of the poverty rate and an increase in individuals with bachelors' degrees. (Poverty rate: Asian Americans 2010: 14.5% – 2019: 10.2% | white Americans 2010: 12.2% - 2019: 10.2%)
- However, decreases in disparities for health indicators have been due to a rise of mortality and morbidity rates among Asian Americans bringing their rates closer to the much higher white American rates such as Septicemia mortality rates per 100,000. (Asian Americans 2010: 1.53 – 2019: 5.20 | white Americans 2010: 9.13 - 2019: 11.4)

Indicators	2008-2010		2017-2019		% Change in rate ratio
	Asian American	white American	Asian American	white American	
Social determinants					
No personal health care provider, % <sup>b</sup>	14.7%	11.8%	9.90%	11.1%	-28.4%
Poverty rate (population), % <sup>a</sup>	14.5%	12.2%	10.2%	10.2%	-15.9%
Percent without health insurance, % <sup>b</sup>	11.7%	10.9%	5.20%	5.50%	-11.9%
Bachelor's degree, persons ≥25 years, % <sup>a</sup>	61.1%	26.0%	65.0%	31.0%	-10.8%
Unemployment rate, % <sup>a</sup>	5.80%	7.10%	1.90%	2.50%	-7.00%
Poverty rate (<18 years), % <sup>a</sup>	14.1%	15.9%	9.30%	13.2%	20.6%
Female-headed households, % <sup>a</sup>	5.80%	9.60%	3.50%	9.40%	38.4%
Poor physical health on at least 14 days in the past month, % <sup>b</sup>	36.3%	35.0%	20.2%	32.3%	39.7%
No health care access during past 12 months due to cost, % <sup>b</sup>	1.90%	9.90%	5.00%	13.2%	97.4%
Mortality and morbidity indicators					
Septicemia mortality per 100,000 <sup>c</sup>	1.53	9.13	5.20	11.4	-171.5%
Asthma prevalence, % (ever told) <sup>b</sup>	6.10%	15.1%	12.0%	16.2%	-83.4%
Diabetes mortality per 100,000 <sup>c</sup>	4.89	27.9	8.86	29.4	-72.0%
Pneumonia and flu mortality per 100,000 <sup>c</sup>	1.83	16.3	3.36	17.4	-71.5%
Stroke mortality per 100,000 <sup>c</sup>	11.3	47.7	17.1	55.0	31.3%
Cardiovascular disease mortality per 100,000 <sup>c</sup>	46.8	320.4	70.3	347.8	38.5%
Heart disease mortality per 100,000 <sup>c</sup>	32.4	251.0	50.1	270.1	43.8%
All cause mortality per 100,000 <sup>c</sup>	147.9	946.6	244.2	1050.1	48.8%
Alzheimer's mortality per 100,000 <sup>c</sup>	2.14	32.5	9.78	51.9	186.7%

**Key:** Positive percentages represent an increase in disparity (difference) between the population of interest and the white population, while negative percentages represent a decrease in disparity. Percentages less than (+/-) 5% show no change in disparity. For ratios less than 1.00 these values are inverse.

- Data Source: American Community Survey, population profile 3 year estimate 2008-2010; 1 year estimate 2019. For these indicators Asian estimate does not include Pacific Islanders and all races are non-Hispanic. For Indicators of Hispanic estimates, Hispanics include combination with one or more races.
- Data Source: Michigan Behavioral Risk Factor Survey, 3 year estimates 2008-2010; 2017-2019. For these indicators all race and ethnicities are non-Hispanic.
- Data Source: Division for Vital Records and Health Statistics. Michigan Department of Health and Human Services 1 year estimate 2019. Calculations for change in pairwise disparity for disparity comparisons to white Populations can be found in the Michigan Health Equity Data Project's Michigan Health Equity Data Tables and Related Technical Documents 2000-2009. [https://www.michigan.gov/documents/mdch/MI\\_Health\\_Equity\\_Data\\_Tables\\_-\\_May\\_2011\\_361639\\_7.pdf](https://www.michigan.gov/documents/mdch/MI_Health_Equity_Data_Tables_-_May_2011_361639_7.pdf)



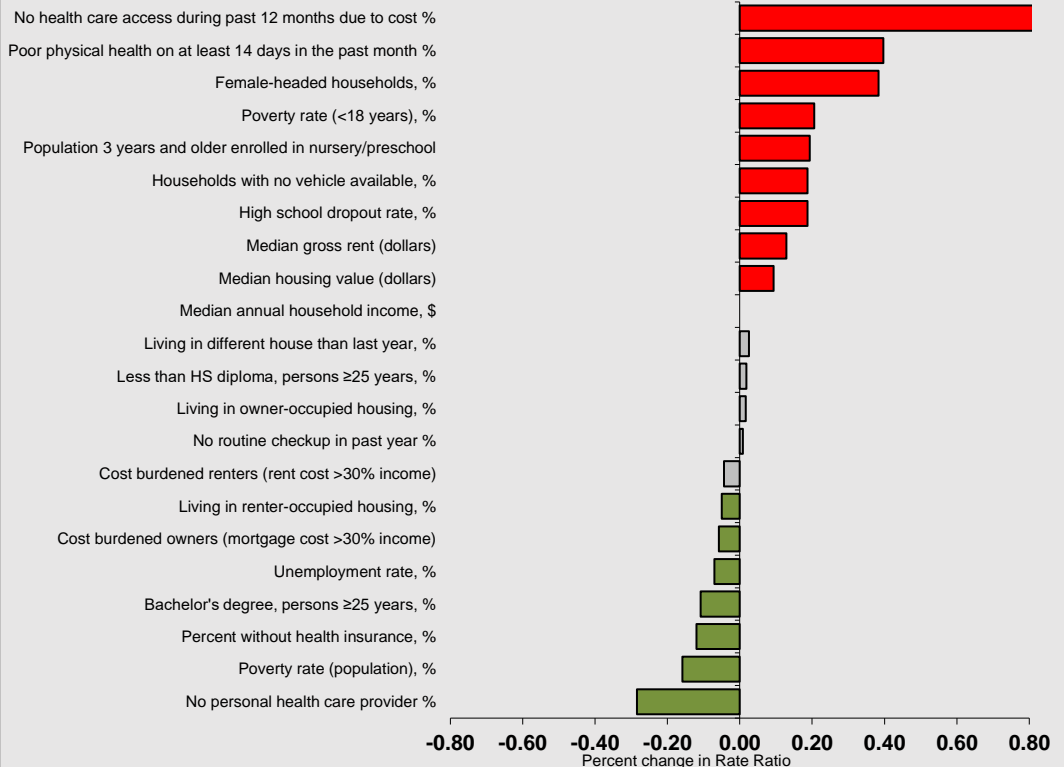
## Change in health disparity: Asian American and white community

Indicators	2008-2010		2017-2019		% Change rate ratio
	Asian American	white	Asian American	white	
Social determinants					
No personal health care provider, % <sup>a</sup>	14.7%	11.8%	9.90%	11.1%	-28.4%
Poverty rate (population), % <sup>a</sup>	14.5%	12.2%	10.2%	10.2%	-15.9%
Percent without health insurance, % <sup>b</sup>	11.7%	10.9%	5.20%	5.50%	-11.9%
Bachelor's degree, persons ≥25 years, % <sup>a</sup>	61.1%	26.0%	65.0%	31.0%	-10.8%
Unemployment rate, % <sup>a</sup>	5.80%	7.10%	1.90%	2.50%	-7.00%
Cost burdened owners (mortgage cost >30% income) <sup>a</sup>	36.8%	35.0%	21.0%	21.2%	-5.80%
Living in renter-occupied housing, % <sup>a</sup>	32.4%	18.2%	32.3%	19.1%	-5.00%
Cost burdened renters (rent cost >30% income) <sup>a</sup>	36.5%	52.2%	30.1%	45.0%	-4.30%
No routine checkup in past year, % <sup>b</sup>	11.7%	12.2%	14.9%	15.4%	0.89%
Living in owner-occupied housing, % <sup>a</sup>	64.7%	79.8%	65.1%	79.0%	1.64%
Less than HS diploma, persons ≥25 years, % <sup>a</sup>	9.50%	8.60%	7.20%	6.40%	1.84%
Living in different house than last year, % <sup>a</sup>	15.6%	12.6%	14.6%	11.5%	2.50%
Median annual household income, \$ <sup>a</sup>	68,632	50,009	90,409	63,326	4.00%
Median housing value (dollars) <sup>a</sup>	208,300	142,600	279,200	174,800	9.30%
Median gross rent (dollars) <sup>a</sup>	799	713	1113	880	12.9%
High school dropout rate, % <sup>a</sup>	6.40%	7.90%	4.37%	6.59%	18.7%
Households with no vehicle available, % <sup>a</sup>	6.40%	5.50%	7.60%	5.50%	18.8%
Population 3 years and older enrolled in nursery/preschool <sup>a</sup>	5.40%	5.40%	5.00%	6.20%	19.4%
Poverty rate (<18 years), % <sup>a</sup>	14.1%	15.9%	9.30%	13.2%	20.6%
Female-headed households, % <sup>a</sup>	5.80%	9.60%	3.50%	9.40%	38.4%
Poor physical health on at least 14 days in the past month, % <sup>b</sup>	36.3%	35.0%	20.2%	32.3%	39.7%
No health care access during past 12 months due to cost, % <sup>b</sup>	1.90%	9.90%	5.00%	13.2%	97.4%
Mortality and morbidity indicators					
Septicemia mortality per 100,000 <sup>c</sup>	1.53	9.13	5.20	11.4	-171.5%
Asthma prevalence, % (ever told) <sup>b</sup>	6.10%	15.1%	12.0%	16.2%	-83.4%
Diabetes mortality per 100,000 <sup>c</sup>	4.89	27.9	8.86	29.4	-72.0%
Pneumonia and flu mortality per 100,000 <sup>c</sup>	1.83	16.3	3.36	17.4	-71.5%
Obese prevalence, % (ever told) <sup>b</sup>	6.40%	28.8%	12.2%	32.3%	-70.0%
All malignant neoplasms (all cancer) mortality per 100,000 <sup>c</sup>	39.7	223.6	61.4	224.7	-53.8%
Diabetes prevalence, % (ever told) <sup>b</sup>	10.7%	7.60%	7.90%	8.80%	-36.2%
Kidney mortality per 100,000 <sup>c</sup>	3.67	17.7	4.89	17.5	-35.1%
Disability prevalence, % (ever told) <sup>b</sup>	6.00%	22.4%	8.90%	24.7%	-34.5%
Arthritis prevalence, % (ever told) <sup>b</sup>	15.5%	29.9%	13.6%	27.6%	-4.90%
Heart failure mortality per 100,000 <sup>c</sup>	3.06	28.4	4.28	40.4	-1.60%
Respiratory disease mortality per 100,000 <sup>c</sup>	11.0	92.4	13.5	104.2	8.40%
Hypertensive heart disease mortality per 100,000 <sup>c</sup>	2.14	14.5	4.28	26.7	8.80%
Chronic lower respiratory disease mortality per 100,000 <sup>c</sup>	4.58	58.8	4.58	66.7	11.9%
Hypertension mortality per 100,000 <sup>c</sup>	3.67	22.6	5.20	37.5	14.6%
Liver mortality per 100,000 <sup>c</sup>	2.75	15.4	3.97	19.4	14.7%
Chronic obstructive pulmonary disease mortality per 100,000 <sup>c</sup>	3.06	52.7	3.06	62.8	16.0%
Stroke mortality per 100,000 <sup>c</sup>	11.3	47.7	17.1	55.0	31.3%
Cardiovascular disease mortality per 100,000 <sup>c</sup>	46.8	320.4	70.3	347.8	38.5%
Heart disease mortality per 100,000 <sup>c</sup>	32.4	251.0	50.1	270.1	43.8%
All cause mortality per 100,000 <sup>c</sup>	147.9	946.6	244.2	1050.1	48.8%
Alzheimer's mortality per 100,000 <sup>c</sup>	2.14	32.5	9.78	51.9	186.7%

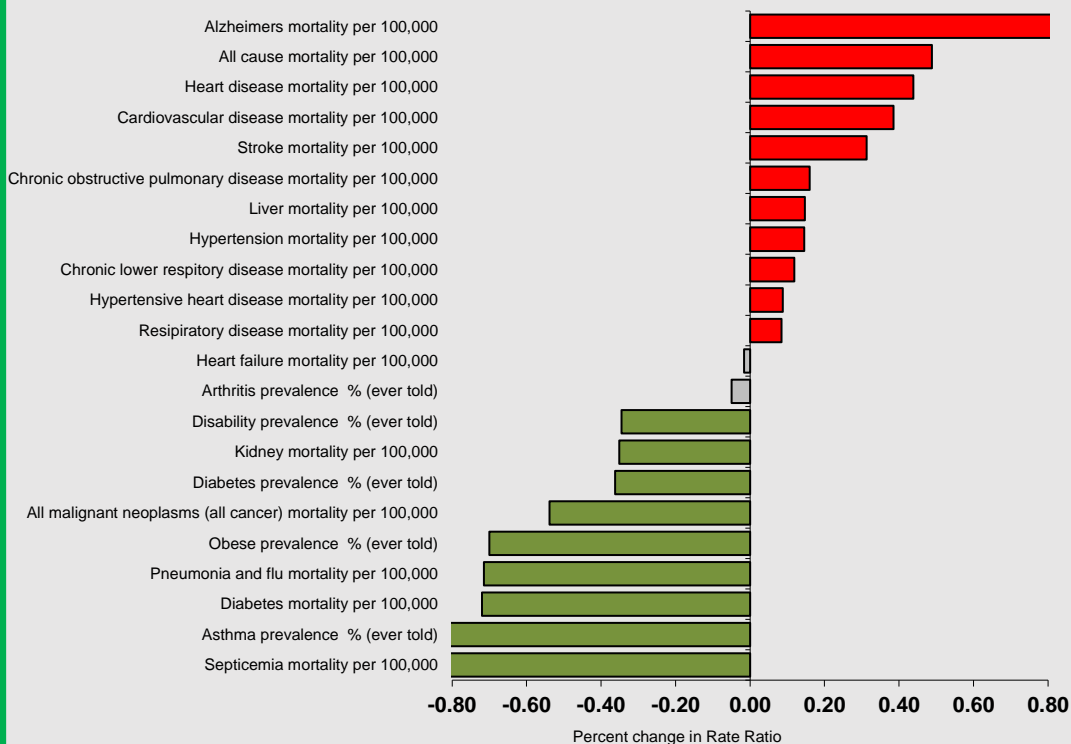
## Change in health disparity: Asian American and white community

- From 2010 to 2019, Asian Americans have seen an improvement in many SDOH indicators to be comparable or better than white American rates in the same indicators.
- Most increases in disparities have been due to Asian American SDOH rates improving while white American rates remain similar such as the case of poor physical health rates.
- Likewise, the reduction in disparities for SDOH indicators is due to improvements in rates in the Asian American community.

### Change in health disparities between Asian Americans and white Americans for social determinants of health Michigan (2010-2019)



### Change in health disparities between Asian Americans and white Americans for health indicators Michigan (2010-2019)



- Many of the reductions in disparity for health indicators between the white and Asian communities are due to the slower increase in the rates of Asian American mortality for a number of chronic diseases.
- For example, diabetes mortality rates for Asian Americans raised from 4.89 to 8.86 deaths per 100,000 from 2010 to 2019.
- Increases in disparities are due to worsening of health in white and Asian Americans with Asian American health declining at a slower rate.

## Change in health disparity: Native American and white community

- The disparity between the Native American and white American communities increased across most social determinants of health due to a worsening of SDOH rates among Native Americans such as an increase in the percent of individuals without High School diplomas.
- However, in some cases increases in disparities were due to an improvement in SDOH indicators among both native American and white communities but with there being a larger improvement in the white community than the native American community. For example, the proportion of individuals without health insurance. (Native Americans 2010: 17.1% – 2019: 14.6% | white Americans 2010: 10.9% - 2019: 5.50%)

Indicators	2008-2010		2017-2019		% Change in rate ratio
	Native American	white American	Native American	white American	
Social determinants					
Living in renter-occupied housing, % <sup>a</sup>	33.2%	18.2%	30.2%	19.1%	-13.3%
Less than HS diploma, persons ≥25 years, % <sup>a</sup>	14.7%	8.60%	12.0%	6.40%	-9.70%
Median gross rent (dollars) <sup>a</sup>	623	713	841	880	-9.40%
Poor physical health on at least 14 days in the past month, % <sup>b</sup>	29.9%	35.0%	24.7%	32.3%	10.5%
No personal health care provider, % <sup>b</sup>	18.0%	11.8%	21.1%	11.1%	24.6%
Population 3 years and older enrolled in nursery/preschool <sup>a</sup>	4.90%	5.40%	7.30%	6.20%	29.8%
Cost burdened renters (rent cost >30% income) <sup>a</sup>	50.9%	52.2%	60.6%	45.0%	38.1%
Cost burdened owners (mortgage cost >30% income) <sup>a</sup>	38.8%	35.0%	34.9%	21.2%	48.5%
Unemployment rate, % <sup>a</sup>	8.80%	7.10%	4.70%	2.50%	51.7%
Percent without health insurance, % <sup>b</sup>	17.1%	10.9%	14.6%	5.50%	69.2%
Mortality and morbidity indicators					
Hypertension mortality per 100,000 <sup>c</sup>	10.4	22.6	31.2	37.5	-80.9%
Cardiovascular disease mortality per 100,000 <sup>c</sup>	159.2	320.4	270.0	347.8	-56.2%
Heart disease mortality per 100,000 <sup>c</sup>	126.3	251.0	202.5	270.1	-49.0%
Pneumonia and flu mortality per 100,000 <sup>c</sup>	10.4	16.3	15.6	17.4	-40.3%
Arthritis prevalence, % (ever told) <sup>b</sup>	32.1%	29.9%	37.4%	27.6%	26.2%
Disability prevalence, % (ever told) <sup>b</sup>	25.2%	22.4%	36.2%	24.7%	30.3%
Diabetes mortality per 100,000 <sup>c</sup>	34.6	27.9	48.5	29.4	32.9%
Alzheimer’s mortality per 100,000 <sup>c</sup>	20.8	32.5	20.8	51.9	37.3%

**Key:** Positive percentages represent an increase in disparity (difference) between the population of interest and the white population, while negative percentages represent a decrease in disparity. Percentages less than (+/-) 5% show no change in disparity. For ratios less than 1.00 these values are inverse.

a. Data Source: American Community Survey, population profile 3 year estimate 2008-2010; 1 year estimate 2019. For these indicators Asian estimate does not include Pacific Islanders and all races are non-Hispanic. For Indicators of Hispanic estimates, Hispanics include combination with one or more races.

b. Data Source: Michigan Behavioral Risk Factor Survey, 3 year estimates 2008-2010; 2017-2019. For these indicators all race and ethnicities are non-Hispanic.

c. Data Source: Division for Vital Records and Health Statistics. Michigan Department of Health and Human Services 1 year estimate 2019.

Calculations for change in pairwise disparity for disparity comparisons to white Populations can be found in the Michigan Health Equity Data Project's Michigan Health Equity Data Tables and Related Technical Documents 2000-2009. [https://www.michigan.gov/documents/mdch/MI\\_Health\\_Equity\\_Data\\_Tables\\_-\\_May\\_2011\\_361639\\_7.pdf](https://www.michigan.gov/documents/mdch/MI_Health_Equity_Data_Tables_-_May_2011_361639_7.pdf)

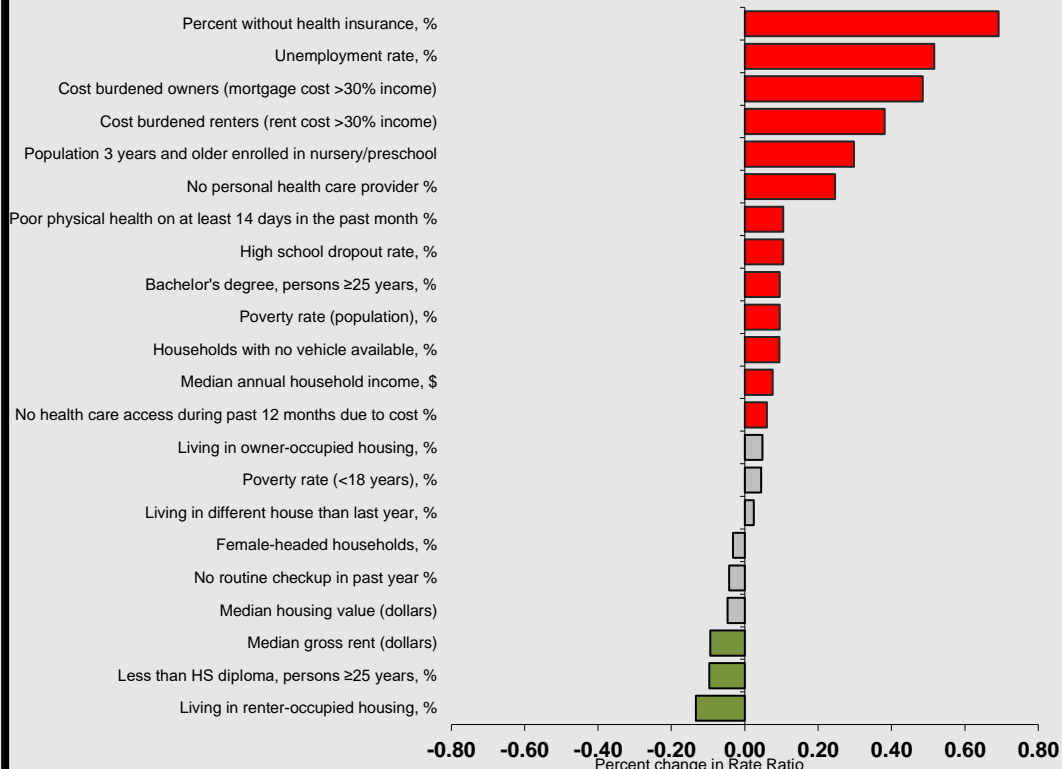
## Change in health disparity: Native American and white community

Indicators	2008-2010		2017-2019		% Change rate ratio
	Native American	white American	Native American	white American	
Social determinants					
Living in renter-occupied housing, % <sup>a</sup>	33.2%	18.2%	30.2%	19.1%	-13.3%
Less than HS diploma, persons ≥25 years, % <sup>a</sup>	14.7%	8.60%	12.0%	6.40%	-9.70%
Median gross rent (dollars) <sup>a</sup>	623	713	841	880	-9.40%
Median housing value (dollars) <sup>a</sup>	98,400	142,600	115,000	174,800	-4.70%
No routine checkup in past year, % <sup>a</sup>	16.3%	12.2%	19.7%	15.4%	-4.30%
Female-headed households, % <sup>a</sup>	17.3%	9.60%	16.4%	9.40%	-3.20%
Living in different house than last year, % <sup>a</sup>	20.0%	12.6%	18.7%	11.5%	2.40%
Poverty rate (<18 years), % <sup>a</sup>	34.7%	15.9%	30.1%	13.2%	4.50%
Living in owner-occupied housing, % <sup>a</sup>	63.6%	79.8%	66.0%	79.0%	4.80%
No health care access during past 12 months due to cost, % <sup>b</sup>	20.2%	9.90%	25.3%	13.2%	6.10%
Median annual household income, \$ <sup>a</sup>	35,256	50,009	41,232	63,326	7.60%
Households with no vehicle available, % <sup>a</sup>	12.7%	5.50%	13.9%	5.50%	9.40%
Poverty rate (population), % <sup>a</sup>	22.5%	12.2%	20.6%	10.2%	9.50%
Bachelor's degree, persons ≥25 years, % <sup>a</sup>	11.4%	26.0%	12.0%	31.0%	9.50%
High school dropout rate, % <sup>a</sup>	14.7%	7.90%	13.6%	6.59%	10.5%
Poor physical health on at least 14 days in the past month, % <sup>b</sup>	29.9%	35.0%	24.7%	32.3%	10.5%
No personal health care provider, % <sup>b</sup>	18.0%	11.8%	21.1%	11.1%	24.6%
Population 3 years and older enrolled in nursery/preschool <sup>a</sup>	4.90%	5.40%	7.30%	6.20%	29.8%
Cost burdened renters (rent cost >30% income) <sup>a</sup>	50.9%	52.2%	60.6%	45.0%	38.1%
Cost burdened owners (mortgage cost >30% income) <sup>a</sup>	38.8%	35.0%	34.9%	21.2%	48.5%
Unemployment rate, % <sup>a</sup>	8.80%	7.10%	4.70%	2.50%	51.7%
Percent without health insurance, % <sup>b</sup>	17.1%	10.9%	14.6%	5.50%	69.2%
Mortality and morbidity indicators					
Hypertension mortality per 100,000 <sup>c</sup>	10.4	22.6	31.2	37.5	-80.9%
Cardiovascular disease mortality per 100,000 <sup>c</sup>	159.2	320.4	270.0	347.8	-56.2%
Heart disease mortality per 100,000 <sup>c</sup>	126.3	251.0	202.5	270.1	-49.0%
Pneumonia and flu mortality per 100,000 <sup>c</sup>	10.4	16.3	15.6	17.4	-40.3%
Respiratory disease mortality per 100,000 <sup>c</sup>	74.4	92.4	112.5	104.2	-34.1%
Obese prevalence, % (ever told) <sup>b</sup>	40.5%	28.8%	31.5%	32.3%	-30.7%
Stroke mortality per 100,000 <sup>c</sup>	27.7	47.7	41.5	55.0	-30.1%
All cause mortality per 100,000 <sup>c</sup>	709.5	946.6	1005.5	1050.1	-27.7%
Kidney mortality per 100,000 <sup>c</sup>	13.8	17.7	17.3	17.5	-26.6%
Chronic obstructive pulmonary disease mortality per 100,000 <sup>c</sup>	43.3	52.7	64.0	62.8	-24.3%
All malignant neoplasms (all cancer) mortality per 100,000 <sup>c</sup>	183.4	223.6	209.4	224.7	-13.6%
Diabetes prevalence, % (ever told) <sup>b</sup>	13.0%	7.60%	13.2%	8.80%	-12.3%
Any cardiovascular disease prevalence, % (ever told) <sup>b</sup>	17.0%	7.92%	15.7%	7.80%	-6.50%
Chronic lower respiratory disease mortality per 100,000 <sup>c</sup>	58.8	58.8	67.5	66.7	1.10%
Liver mortality per 100,000 <sup>c</sup>	31.2	15.4	41.5	19.4	5.90%
Asthma prevalence, % (ever told) <sup>b</sup>	18.6%	15.1%	17.8%	16.2%	10.8%
Heart failure mortality per 100,000 <sup>c</sup>	12.1	28.4	20.8	40.4	20.5%
Arthritis prevalence, % (ever told) <sup>b</sup>	32.1%	29.9%	37.4%	27.6%	26.2%
Disability prevalence, % (ever told) <sup>b</sup>	25.2%	22.4%	36.2%	24.7%	30.3%
Diabetes mortality per 100,000 <sup>c</sup>	34.6	27.9	48.5	29.4	32.9%
Alzheimer's mortality per 100,000 <sup>c</sup>	20.8	32.5	20.8	51.9	37.3%

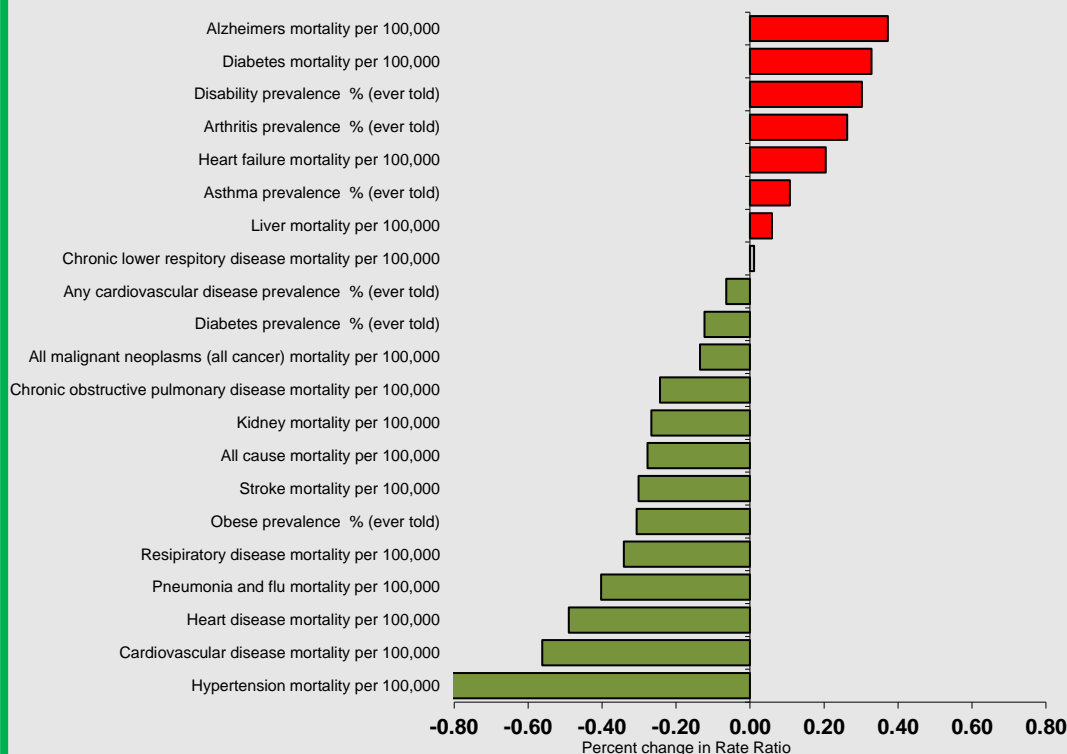
## Change in health disparity: Native American and white community

- Many of the social determinants of health indicators saw an increase in disparity for the Native American community, leaving larger gaps between the Native American and white community.
- For example, the number of individuals without healthcare access increased in the Native American community (20.2% in 2010 to 25.30% in 2019) much more quickly than the white community (9.90% in 2010 to 13.20% in 2019)

### Change in Health Disparities between Native Americans and white Americans for Social Determinants of Health Michigan (2010-2019)



### Change in health disparities between Native Americans and white Americans for health indicators Michigan (2010-2019)



- Reductions in the disparity between Native Americans and white Americans across chronic disease mortality and morbidity were due to a worsening in these rates in the Native American community.
- These included all-cause, hypertension mortality, cardiovascular disease mortality and many other disorders which saw increases in the rates of Native Americans with these disorders.
- While white American rates in these same disorders worsened as well, it was not as much as Native Americans.

## Change in health disparity: Arab American and white community

- The Arab American community saw decreases in disparity for no access to health care (44.7% reduction), no personal health care provider (25.9% reduction) and percent of individuals without health insurance (12.4% reduction).
- Many of these reductions were due to improvements in the Arab American rates for these social determinants and some improvements in the rates within the white community.
- However, many indicators for mortality and morbidity saw increases in disparity between the Arab and white American communities such as septicemia mortality (283.2% increase), which were due to worsening rates for mortality and morbidity in Arab Americans and white Americans.

Indicators	2008-2010		2017-2019		% Change in rate ratio
	Arab American	white American	Arab American	white American	
Social determinants					
No health care access during past 12 months due to cost, % <sup>b</sup>	14.1%	9.90%	10.4%	13.2%	-44.7%
No personal health care provider, % <sup>b</sup>	25.1%	11.8%	17.5%	11.1%	-25.9%
Cost burdened owners (mortgage cost >30% income) <sup>a</sup>	53.2%	35.0%	38.8%	21.2%	-20.4%
Percent without health insurance, % <sup>b</sup>	19.9%	10.9%	8.80%	5.50%	-12.4%
Bachelor's degree, persons ≥25 years, % <sup>a</sup>	31.7%	26.0%	33.6%	31.0%	-11.1%
Cost burdened renters (rent cost >30% income) <sup>a</sup>	64.0%	52.2%	61.7%	45.0%	11.8%
Unemployment rate, % <sup>a</sup>	7.30%	7.10%	3.30%	2.50%	28.4%
Poor physical health on at least 14 days in the past month, % <sup>b</sup>	32.0%	35.0%	20.5%	32.3%	30.6%
Less than HS diploma, persons ≥25 years, % <sup>a</sup>	20.7%	8.60%	20.9%	6.40%	35.7%
Population 3 years and older enrolled in nursery/preschool <sup>a</sup>	5.90%	5.40%	3.70%	6.20%	45.4%
Mortality and morbidity indicators					
Kidney mortality per 100,000 <sup>c</sup>	11.9	17.7	19.9	17.5	-70.4%
Stroke mortality per 100,000 <sup>c</sup>	18.9	47.7	35.5	55.0	-63.6%
Pneumonia and flu mortality per 100,000 <sup>c</sup>	9.15	16.3	14.5	17.4	-48.5%
Respiratory disease mortality per 100,000 <sup>c</sup>	30.7	92.4	47.9	104.2	-38.5%
Hypertensive heart disease mortality per 100,000 <sup>c</sup>	6.46	14.5	6.46	26.7	45.6%
All malignant neoplasms (all cancer) mortality per 100,000 <sup>c</sup>	131.4	223.6	22.6	224.7	82.9%
Alzheimer's mortality per 100,000 <sup>c</sup>	4.85	32.5	19.4	51.9	150.9%
Septicemia mortality per 100,000 <sup>c</sup>	2.69	9.13	12.9	11.4	283.2%

**Key:** Positive percentages represent an increase in disparity (difference) between the population of interest and the white population, while negative percentages represent a decrease in disparity. Percentages less than (+/-) 5% show no change in disparity. For ratios less than 1.00 these values are inverse.

- Data Source: American Community Survey, population profile 3 year estimate 2008-2010; 1 year estimate 2019. For these indicators Asian estimate does not include Pacific Islanders and all races are non-Hispanic. For Indicators of Hispanic estimates, Hispanics include combination with one or more races.
- Data Source: Michigan Behavioral Risk Factor Survey, 3 year estimates 2008-2010; 2017-2019. For these indicators all race and ethnicities are non-Hispanic.
- Data Source: Division for Vital Records and Health Statistics. Michigan Department of Health and Human Services 1 year estimate 2019. Calculations for change in pairwise disparity for disparity comparisons to white Populations can be found in the Michigan Health Equity Data Project's Michigan Health Equity Data Tables and Related Technical Documents 2000-2009. [https://www.michigan.gov/documents/mdch/MI\\_Health\\_Equity\\_Data\\_Tables\\_-\\_May\\_2011\\_361639\\_7.pdf](https://www.michigan.gov/documents/mdch/MI_Health_Equity_Data_Tables_-_May_2011_361639_7.pdf)



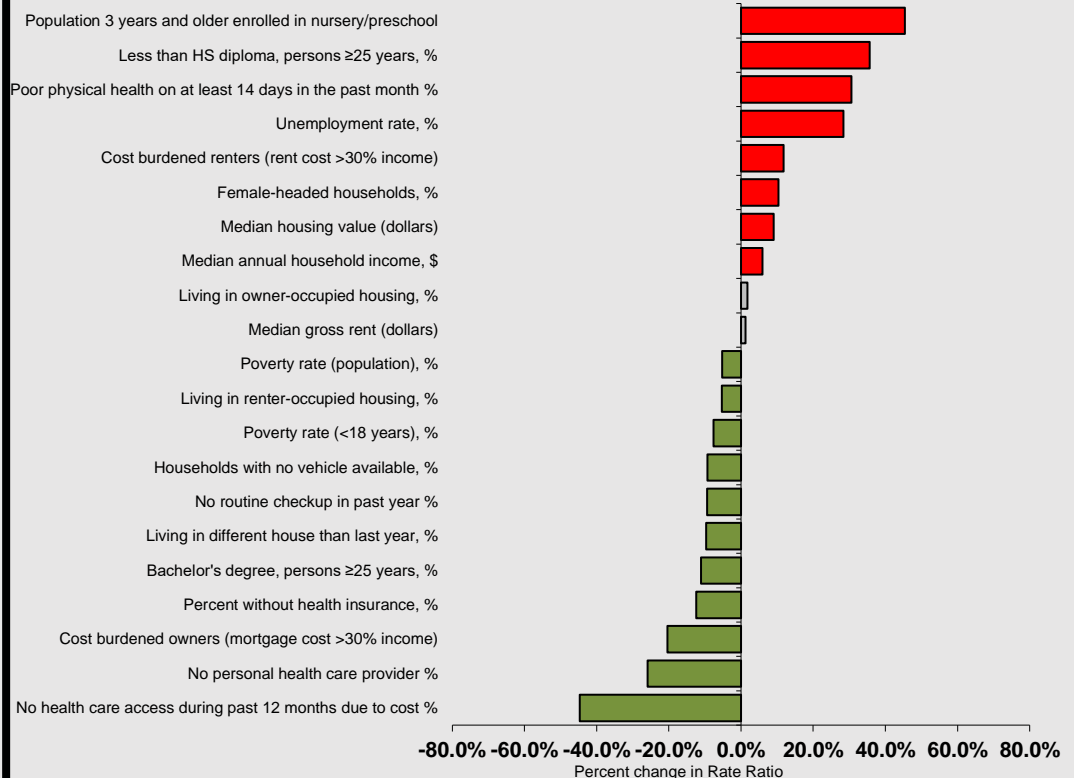
## Change in health disparity: Arab American and white community

Indicators	2008-2010		2017-2019		% Change rate ratio
	Arab American	white American	Arab American	white American	
Social determinants					
No health care access during past 12 months due to cost, % <sup>b</sup>	14.1%	9.90%	10.4%	13.2%	-44.7%
No personal health care provider, % <sup>b</sup>	25.1%	11.8%	17.5%	11.1%	-25.9%
Cost burdened owners (mortgage cost >30% income) <sup>a</sup>	53.2%	35.0%	38.8%	21.2%	-20.4%
Percent without health insurance, % <sup>b</sup>	19.9%	10.9%	8.80%	5.50%	-12.4%
Bachelor's degree, persons ≥25 years, % <sup>a</sup>	31.7%	26.0%	33.6%	31.0%	-11.1%
Living in different house than last year, % <sup>a</sup>	13.7%	12.6%	11.3%	11.5%	-9.60%
No routine checkup in past year, % <sup>b</sup>	13.9%	12.2%	15.9%	15.4%	-9.40%
Households with no vehicle available, % <sup>a</sup>	7.50%	5.50%	6.80%	5.50%	-9.30%
Poverty rate (<18 years), % <sup>a</sup>	36.5%	15.9%	32.6%	13.2%	-7.60%
Living in renter-occupied housing, % <sup>a</sup>	32.8%	18.2%	32.6%	19.1%	-5.30%
Poverty rate (population), % <sup>a</sup>	31.3%	12.2%	24.8%	10.2%	-5.20%
Median gross rent (dollars) <sup>a</sup>	812	713	1,015	880	1.30%
Living in owner-occupied housing, % <sup>a</sup>	66.1%	79.8%	66.6%	79.0%	1.80%
Median annual household income, \$ <sup>a</sup>	42,288	50,009	50,387	63,326	5.90%
Median housing value (dollars) <sup>a</sup>	162,600	142,600	217,400	174,800	9.10%
Female-headed households, % <sup>a</sup>	9.80%	9.60%	8.60%	9.40%	10.4%
Cost burdened renters (rent cost >30% income) <sup>a</sup>	64.0%	52.2%	61.7%	45.0%	11.8%
Unemployment rate, % <sup>a</sup>	7.30%	7.10%	3.30%	2.50%	28.4%
Poor physical health in 14 days in the past month, % <sup>b</sup>	32.0%	35.0%	20.5%	32.3%	30.6%
Less than HS diploma, persons ≥25 years, % <sup>a</sup>	20.7%	8.60%	20.9%	6.40%	35.7%
Population 3 years and older enrolled in nursery/preschool <sup>a</sup>	5.90%	5.40%	3.70%	6.20%	45.4%
Mortality and morbidity indicators					
Kidney mortality per 100,000 <sup>c</sup>	11.9	17.7	19.9	17.5	-70.4%
Stroke mortality per 100,000 <sup>c</sup>	18.9	47.7	35.5	55.0	-63.6%
Pneumonia and flu mortality per 100,000 <sup>c</sup>	9.15	16.3	14.5	17.4	-48.5%
Respiratory disease mortality per 100,000 <sup>c</sup>	30.7	92.4	47.9	104.2	-38.5%
Diabetes mortality per 100,000 <sup>c</sup>	15.6	27.9	22.6	29.4	-37.4%
Cardiovascular disease mortality per 100,000 <sup>c</sup>	154.0	320.4	226.2	347.8	-35.3%
Heart disease mortality per 100,000 <sup>c</sup>	126.6	251.0	175.6	270.1	-29.0%
All cause mortality per 100,000 <sup>c</sup>	479.3	946.6	678.0	1050.1	-27.5%
Diabetes prevalence % (ever told) <sup>b</sup>	10.4%	7.60%	8.90%	8.80%	-26.1%
All malignant neoplasms mortality per 100,000 <sup>c</sup>	131.4	223.6	162.6	224.7	-23.1%
Any cardiovascular disease prevalence, % (ever told) <sup>b</sup>	8.90%	7.90%	8.30%	7.80%	-5.50%
Hypertension mortality per 100,000 <sup>c</sup>	8.62	22.6	14.0	37.5	2.00%
Arthritis prevalence, % (ever told) <sup>b</sup>	24.7%	29.9%	21.2%	27.6%	7.00%
Heart failure mortality per 100,000 <sup>c</sup>	21.0	28.4	27.5	40.4	8.10%
Disability prevalence, % (ever told) <sup>b</sup>	20.3%	22.4%	19.8%	24.7%	11.5%
Chronic lower respiratory disease mortality per 100,000 <sup>c</sup>	14.5	58.8	18.9	66.7	14.3%
Chronic obstructive pulmonary disease mortality per 100,000 <sup>c</sup>	12.4	52.7	17.2	62.8	16.9%
Obese prevalence, % (ever told) <sup>b</sup>	30.9%	28.8%	28.3%	32.3%	18.3%
Asthma prevalence, % (ever told) <sup>b</sup>	14.9%	15.1%	12.6%	16.2%	21.2%
Liver mortality per 100,000 <sup>c</sup>	7.54	15.4	7.00	19.4	26.3%
Hypertensive heart disease mortality per 100,000 <sup>c</sup>	6.46	14.5	6.46	26.7	45.6%
Alzheimer's mortality per 100,000 <sup>c</sup>	4.85	32.5	19.4	51.9	150.9%
Septicemia mortality per 100,000 <sup>c</sup>	2.69	9.13	12.9	11.4	283.2%

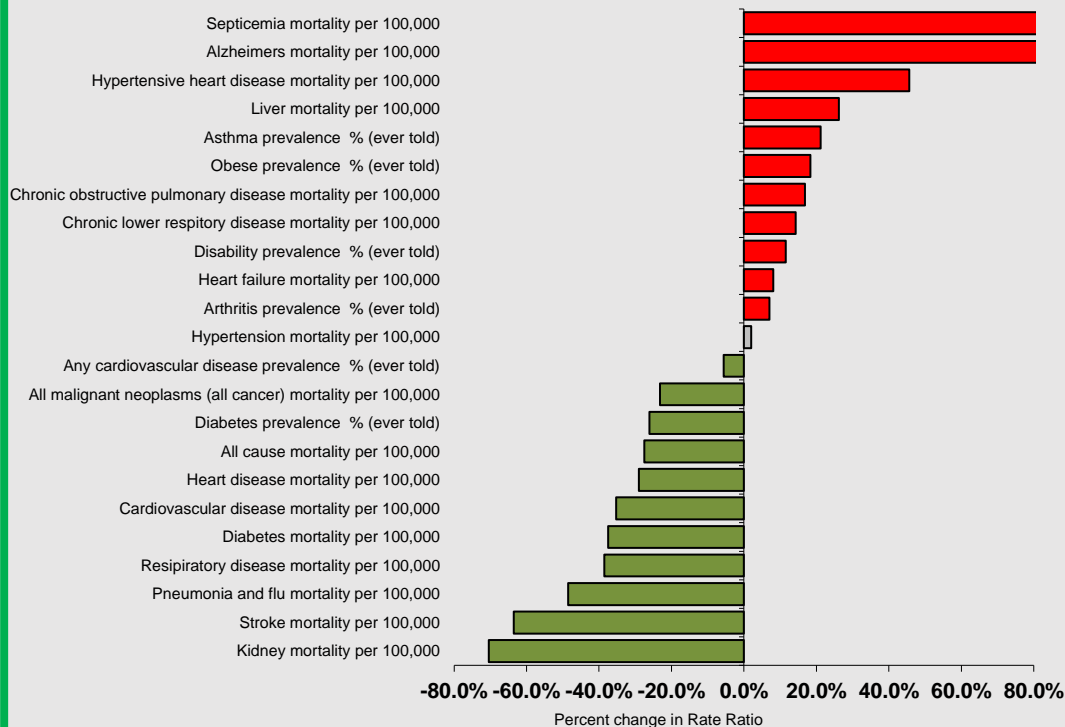
## Change in health disparity: Arab American and white community

- The disparity decreased for many social determinants of health indicators, such as mortgage cost burden to owners. (12.4% decrease).
- Much of this decrease in disparity is due to Arab and white Americans gaining more parity in the rates for these SDOH indicators, such as the number of households without vehicles (7.5% and 5.5% in 2010 and 6.80% and 5.5% in 2019 for Arab and white Americans respectively).

### Change in health disparities between Arab Americans and white Americans for social determinants of health Michigan (2010-2019)



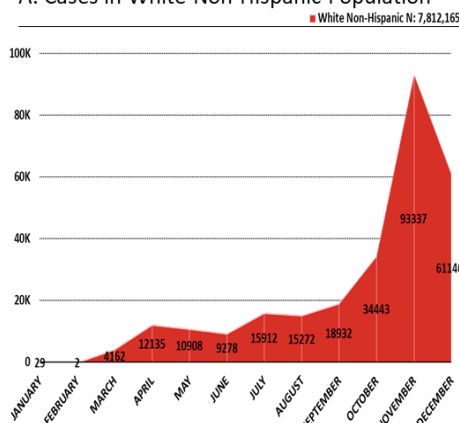
### Change in health disparities between Arab Americans and white Americans for health indicators Michigan (2010-2019)



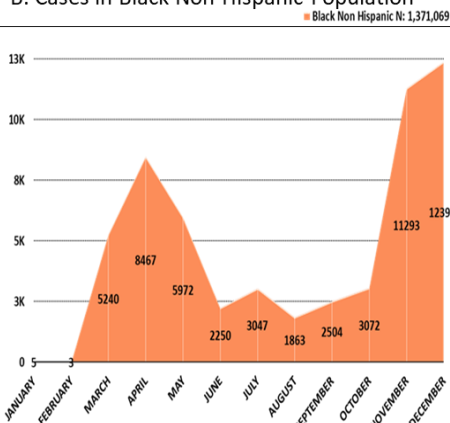
- There is an equal number of indicators that saw increases and decreases in disparity for chronic diseases between Arab and white Americans.
- Overall mortality and morbidity rates increased in both populations. Decreases in disparity such as hypertensive heart disease mortality are due to sharp rises in the mortality rates of Arab Americans.
- However, increases in disparity for mortality and morbidity indicators were mainly due to the rise in these rates within the white community.

## Confirmed and probable COVID-19 cases in Michigan by month and race, 01/01/2020-12/31/2020

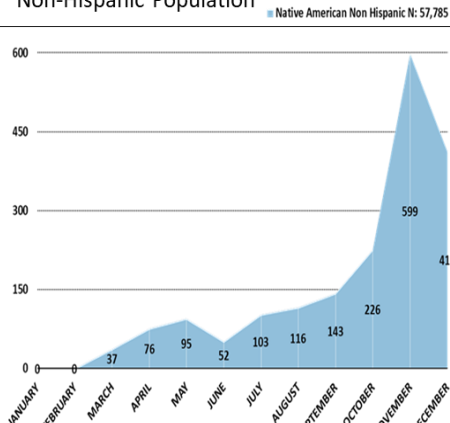
A. Cases in White Non-Hispanic Population



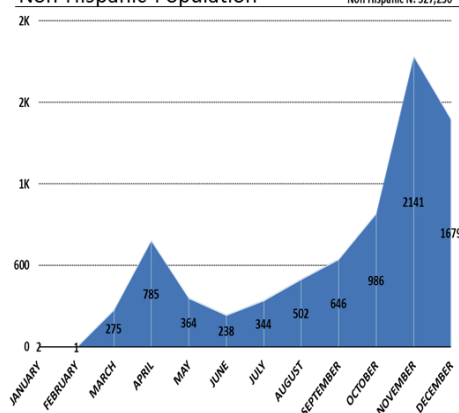
B. Cases in Black Non-Hispanic Population



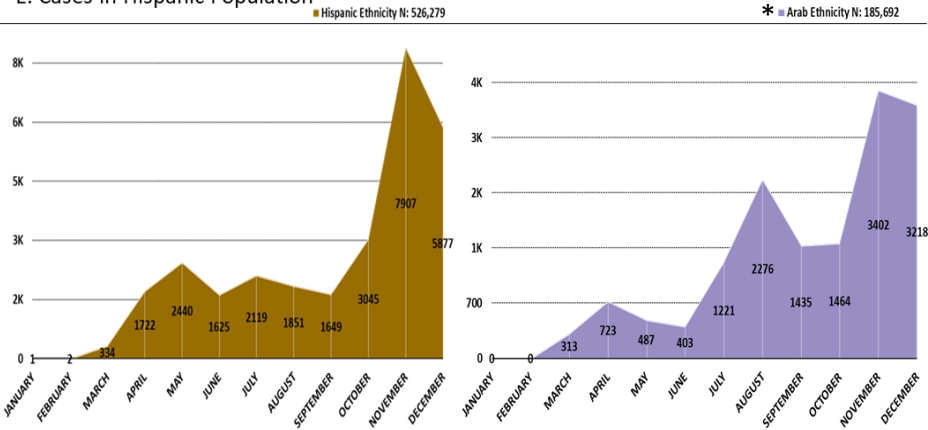
C. Cases in Native American Non-Hispanic Population



D. Cases in Asian and Pacific Islander Non-Hispanic Population



E. Cases in Hispanic Population



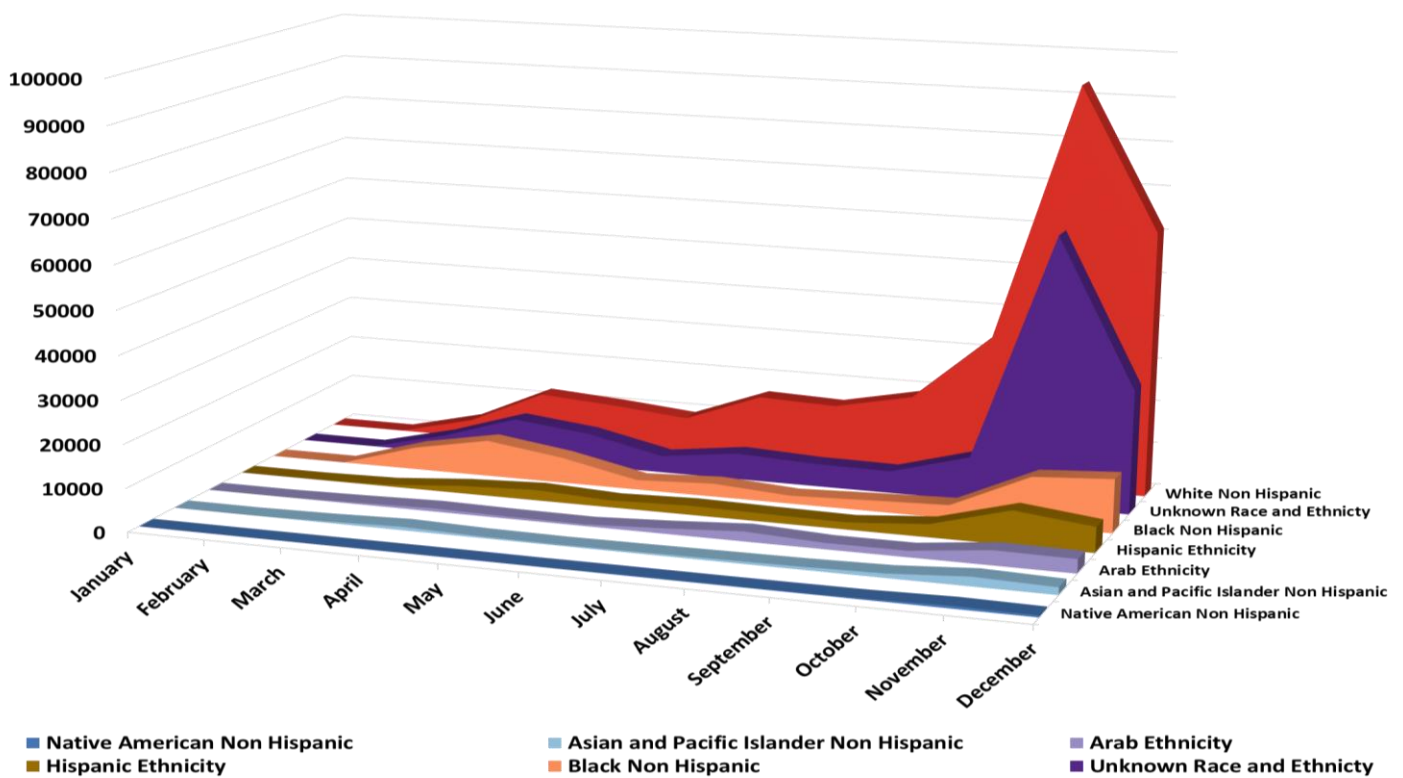
- The graphs above display the number of confirmed cases of COVID-19 reported to MDHHS for 6 racial and ethnic populations in Michigan. These charts are intended to present the trends in disease occurrence in these populations. Please note that different scales are used for each population to more clearly demonstrate these trends.
- Additionally, a large number of cases were missing information on race and ethnicity and therefore, excluded. Details of these cases missing racial and ethnic information are described on the following page.
- Within the African American, Asian American and Hispanic American populations, large rises in cases were seen from March-May 2020. In particular, the African American Community saw a rise in cases comparable to the white community despite the African American community being 1/5 the size of the white community.
- All populations saw a sharp rise in cases from October-November 2020.

Notes: Cases reflect date of onset of symptoms as denoted by reference date of when COVID-19 test was received. Most recent months of reports for 2020 and are subject to change as additional data becomes available.

\*COVID-19 Case information uses a different definition for Arab ethnicity than COVID-19 mortality information. Case information only identifies individuals of Arab ethnicity while Mortality information identifies individuals of Middle Eastern and North African (MENA) descent which include individuals of Arab ethnicity along with other ethnic groups.

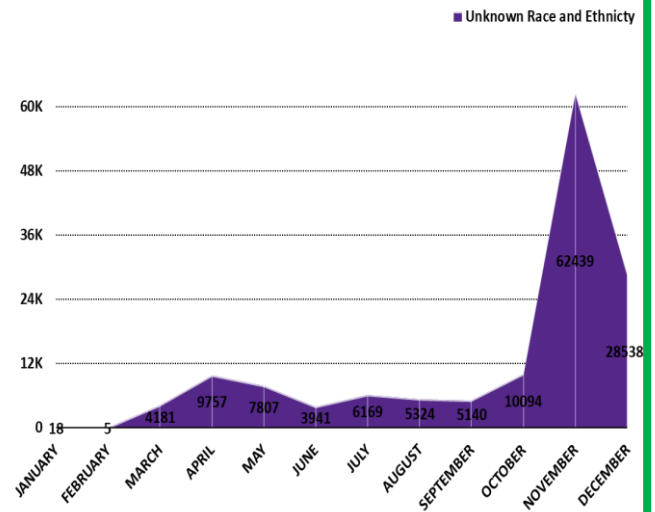
Source: MDHHS – Michigan disease surveillance system, 02/27/2021

## Confirmed and probable COVID-19 cases in Michigan by missing race and ethnicity information, 01/01/2020-12/31/2020



**Figure A**

- The graphs display the number of confirmed cases of COVID-19 reported to MDHHS for 6 racial and ethnic populations in Michigan along with the number of cases who were missing either racial or ethnic information.
- Figure A displays all racial and ethnic populations including the population missing racial and ethnic information ordered by size. Figure B displays the trend in disease occurrence among cases missing racial and ethnic information by month.
- Of the 550,000+ cases that occurred in 2020, nearly 130,000+ of these cases were missing some combination of race and ethnicity information with the bulk of cases missing information as to whether the individual is of Hispanic or Arab ethnicity.
- COVID-19 cases missing racial and ethnic information make up the second largest group among the racial and ethnic populations.



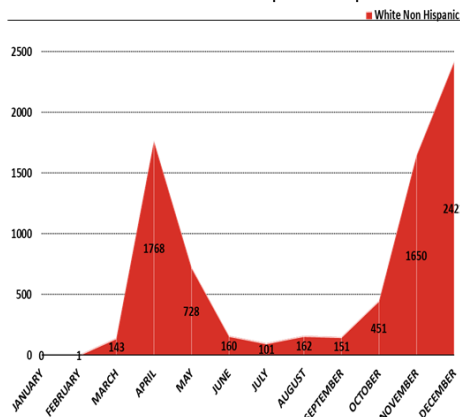
**Figure B**

Notes: Cases reflect date of onset of symptoms as denoted by reference date of when COVID-19 test was received. Most recent months of reports for 2020 and are subject to change as additional data becomes available.

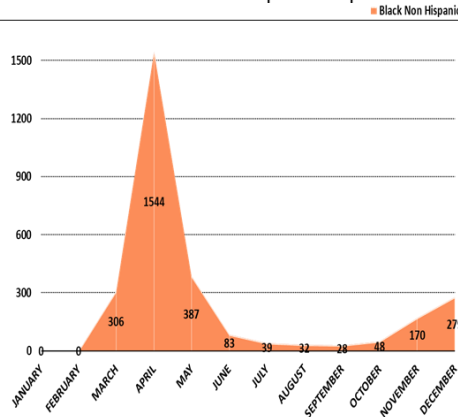
Source: MDHHS – Michigan disease surveillance system, 02/27/2021

# Confirmed and probable COVID-19 mortality in Michigan by month and race, 01/01/2020-12/31/2020

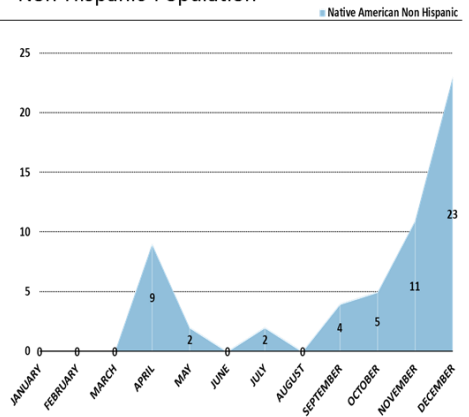
A. Deaths in White Non-Hispanic Population



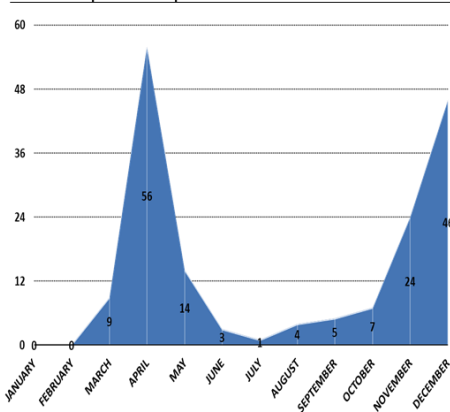
B. Deaths in Black Non-Hispanic Population



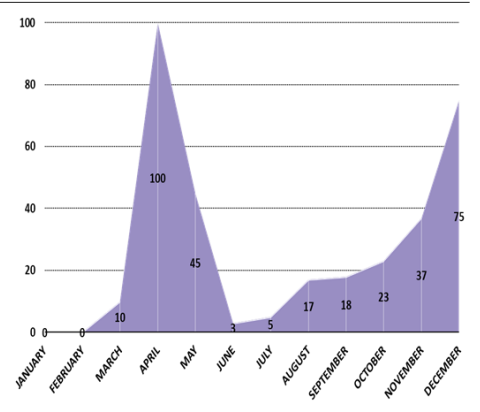
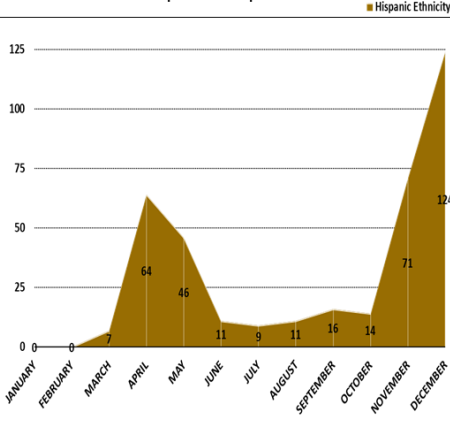
C. Deaths in Native American Non-Hispanic Population



D. Deaths in Asian and Pacific Islander Non-Hispanic Population



E. Deaths in Hispanic Population



- The graphs above display group level data for COVID-19 mortality within 6 racial and ethnic populations across Michigan with scales adjusted to the relative size of the population.
- Similar to cases, Michigan's racial and ethnic populations experienced a rise in COVID-19 deaths throughout the course of 2020, following their respective rise in cases from the periods of March-May and October-December 2020.
- Within the African American population from the months of March to June the African American population would see deaths at a similar number to the white community despite the African American community being 1/5 the size of the white community.

Notes: Above mortality is of COVID-19 as the underlying cause of mortality only and features no additional causes of mortality. Most recent months of reports for 2020 and are subject to change as additional data becomes available.

\*COVID-19 Case information uses a different definition for Arab ethnicity than COVID-19 mortality information. Case information only identifies individuals of Arab ethnicity while mortality information identifies individuals of Middle Eastern and North African (MENA) descent which include individuals of Arab ethnicity along with other ethnic groups.

Source: MDHHS – Division for Vital Records and Health Statistics, 02/27/2021