MICHIGAN STATE HEALTH ASSESSMENT

2022 Addendum

Our Vision

Michigan will be a state with safe, connected, healthy, and vibrant communities, where every person is valued. Those who live, learn, work, play, and age in Michigan will have trust in and equitable access to services and safe environments that support a healthy life.

STATE OF MICHIGAN
DEPARTMENT OF HEALTH AND HUMAN SERVICES
LANSING

GRETCHEN WHITMER
GOVERNOR

ELIZABETH HERTEL
DIRECTOR

June 16, 2023

Dear Michigan Partners,

I am happy to share the 2022 Michigan State Health Assessment (SHA) with you.

Over the past couple of years, our team has engaged stakeholders from across the state to identify strengths in our public health system as well as identify needs; and develop strategic priorities. These stakeholders came from a broad range of backgrounds to participate in the assessment, and this embodies the communities of Michigan. I want to extend a big thank you to all our stakeholders for their time and commitment to this work.

Since the onset of the COVID-19 pandemic, it has been especially challenging to continue the work of public health while also having to grapple with COVID-19 in our personal lives. Our public health system has been put through the greatest test, and I am astonished by the way we have worked together and tirelessly fought every day to protect Michiganders.

The COVID-19 pandemic presented a unique challenge to completing the assessment and I am proud of the work our team has done. I would like to extend a sincere thank you to everyone for their participation on the State Health Assessment.

Michiganders' health is influenced by a wide swath of factors, spanning every facet of daily life – from what we eat and where we live, to how we interact in our community. This comprehensive view of our successes and our challenges offers a vital tool for improving health at every opportunity.

Please join us in continuing this dialogue as we shape our State Health Improvement Plan (SHIP) in the future. I look forward to envisioning a healthier, more equitable Michigan alongside you.

In appreciation,

Sarah Lyon-Callo, M.S., Ph.D.
Interim Senior Deputy Director / State Epidemiologist
Public Health Administration

Michigan SHA Core Team

Michigan SHA Activities were guided by staff from the Public Health Administration at MDHHS and facilitated by a team from MPHI. Individuals involved throughout the SHA process include:

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MDHHS Michigan Department of Health & Human Services

MPHI®

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Introducing the State Health Assessment

Introduction

The Michigan Department of Health and Human Services, along with partners from across Michigan's public health system, came together to complete a State Health Assessment (SHA) between June 2019 and September 2020. This SHA process engaged organizations and individuals across the state, and was intended to identify and describe:

- The health of the state's population and areas of health improvement;
- Factors contributing to health challenges; and
- Existing state resources that can be mobilized to address health needs.

There were multiple opportunities for people who live, work, learn, play, and age in Michigan to provide input, including through involvement of community organizations in the planning process, focus groups and survey opportunities, and an opportunity to provide input to prioritize among strategic issues that emerged.

The four priorities that emerged from the original SHA process included:

1. Engage in policy, systems, and environmental change efforts to address racism and other biases that lead to health inequities in Michigan.
2. Strengthen the ability of Michigan's communities to equitably support families and prevent childhood trauma.
3. Improve equitable access to healthy food and community resources that promote physical activity.
4. Increase accountability and enforcement of environmental regulations and policies.

As this original SHA process concluded, partners were focusing efforts on responding to the COVID-19 pandemic. As response efforts had become more routinized in 2022, Michigan decided to revisit the SHA process and make updates to ensure the SHA incorporated all the changes, advances, new knowledge, and lessons learned that have occurred over the past two years. This SHA Addendum summarizes the findings of these activities which concluded with partners affirming the original SHA priorities.

Moving into the future, Michigan will continue to make updates to the SHA, gathering information about health conditions and needs of individuals across Michigan.

SHA Addendum Process

Michigan continued to utilize the Mobilizing for Action through Planning and Partnership (MAPP) framework for the SHA for this update. Staff from the Michigan Public Health Institute (MPHI) designed and facilitated the SHA Addendum Process. The process included:

- Reviewing existing data from the four assessments that comprised the original assessment,
- Conducting listening sessions with partners and community members,
- Updating the four SHA assessments with new data according to recommendations, and
- Meeting with SHA partners to review updated data and assess whether the four identified SHA priorities still held or needed to be updated.

This report will summarize feedback from listening sessions, share updated SHA data, and conclude with a summary of partner feedback on the four SHA priorities. The original SHA data and this addendum will be used to inform development of Michigan's State Health Improvement Plan.

Public Health System Partner & Community **Feedback**

Public Health System Partner & Community **Feedback**

To update the Public Health System Assessment, Forces of Change Assessment, and State Themes and Strengths Assessment, MPHI staff held three listening sessions with public health system partners to review original assessment findings and to update these assessments based on the knowledge and experiences of those present. Additionally, MPHI created a two-page summary of assessment findings and shared that document, along with a brief survey, to gather input from community members.

High-level themes from discussions and survey results are included below by Assessment. A full list of ideas shared is included in Appendix A.

Public Health System Assessment

The Public Health System Assessment answers the questions:

- What are the activities, competencies, and capacities of the public health system?
- How are the 10 Essential Public Health Services being provided?

To update this assessment, public health system partners reviewed initial assessment findings and provided their input in alignment with the following questions.

- What new, different, or emerging information is missing from the public health system assessment data?
- What else do we need to consider when it comes to the changes in the public health system, specifically related to the four priority areas?

Themes from discussions with public health system partners and feedback from community members included the following, arranged by Essential Service as applicable.*

*At the time of Michigan's initial SHA activities, the revised 10 Essential Services model had not yet been released; findings are aligned with the previous version of this model as it was used to organize results in the initial assessment.

Essential Service		Themes from Sessions
1	Monitor health status to identify community health problems.	Data gaps still exist for specific populations including, those with disabilities, people in rural areas, and immigrants.
2	Diagnose and investigate health problems and health hazards.	*No themes identified.*
3	Inform, educate, and empower people about public health issues.	• Future initiatives should be reframed to emphasize valuable programs and services public health provides. • The public's trust in public health decreased, and there is a need for educational and outreach efforts to rebuild the relationship.
4	Mobilize partnerships to identify and solve health problems.	• Some partnerships have strengthened due to the need to coordinate to meet needs due to COVID-19. However, previous partnerships or co-owned activities have stopped due to the demands of COVID-19 response and need to be re-established. • Advancing cross-sectoral partnerships to increase population health in Michigan is a need.
5	Develop policies and plans that support individual and statewide health efforts.	System racism and discrimination are major barriers to health, and there is a need for increased prioritization of health equity within public health initiatives.
6	Enforce laws and regulations that protect health and ensure safety.	COVID-19 increased the politicization of public health and exacerbated challenges including enforcing public health laws.

Essential Service	Themes from Sessions (Continued)
7 Link people to needed personal health services and assure the provision of health care when otherwise unavailable.	• Public health is currently viewed with distrust by the community, and individuals could be hesitant to accept guidance and recommendations from their local public health officials. • During COVID-19, reliance on technology increased access to services for some while creating barriers for other groups. • Transportation to receive needed services was also a barrier that was exacerbated by the COVID-19 pandemic. • Populations living in rural areas experience unique health barriers that impact access to needed care and resources.
8 Assure a competent public and personal health care workforce.	• COVID-19 was a major cause of stress for public health professionals and led to staff burnout. • High turnover has occurred in the workforce due to job stress, highlighting the need for better working conditions, including increased opportunities for professional development and pay for public health professionals. • There has been a reduction of workforce capacity due to stress and worker shortages. • The public health workforce has been negatively impacted by large staff turnover and a loss of institutional knowledge across all levels.
9 Evaluate effectiveness, accessibility, and quality of personal and population-based health services.	There is a need for better data gathering and reporting of smaller populations, including those living in rural areas and for racial and ethnic minority populations.
10 Research for new insights and innovative solutions to health problems.	COVID-19 spurred innovation and creative problem solving within the field of public health.

Forces of Change Assessment

The Forces of Change Assessment answers the questions:

- What is occurring or might occur that affects the health of people in Michigan or the public health system?
- What specific threats or opportunities are generated by these occurrences?

To update this assessment, public health system partners reviewed initial assessment findings and provided their input in alignment with the following questions.

- What is occurring or might occur that affects the health of people in Michigan or the public health system?
- What specific threats or opportunities are generated by these occurrences?
- What new trends (patterns over time) have emerged that impacted health over the past two years?
- What new factors (discrete elements) have emerged that impacted health over the past two years?
- What new events (one-time occurrences) have emerged that impacted health over the past two years?

Themes from discussions with public health system partners and feedback from community members included the following, arranged by the different categories of forces utilized during initial assessment activities.

Category	Themes from Sessions
Social & Cultural	• Public distrust of health care increased due to the prevalence of misinformation surrounding COVID-19. The pandemic also increased mistrust of government for many populations. • Inequities remain and can present barriers for accessing health care. • COVID-19 impacted schooling and childcare, causing many children to fall behind in their education. • Throughout the pandemic, there was a decrease in individuals seeking preventative public health services. • Health insurance policies influence personal health decisions through their policies and practices, both positively and negatively. • Substance misuse has increased, particularly the use of opioids. • There is an increased need for affordable and accessible mental health and substance misuse treatment. • Gun violence is a continued concern, including mass shootings and police shootings.
Economic	• COVID-19 negatively impacted the economy and reduced employment, causing financial stress for many people. • Economic instability and the high cost of health care decrease access to needed services and resources. • Current economic conditions have restricted access to needed supplies and increased the cost of necessities. • The shortage in infant formula has negatively impacted the health of families.
Political & Legal	• Increased politicization of public health has occurred, with personal health decisions influenced by political affiliation. • Public distrust of public health is an ongoing issue due to historical injustices. Participants highlighted that COVID-19 increased feelings of distrust.

Category	Themes from Sessions (continued)
Technical & Scientific	• COVID-19 increased telehealth options, creating access for some groups and barriers for others. • Technological advancements have occurred, including telehealth and expanded data sharing.
Environmental	• Funding has increased for environmental health programs. • The impact of climate change on health has increasingly become a priority. • A lack of safe, affordable housing and inadequate or aging infrastructure negatively impact health.
Ethical	The prioritization of eliminating COVID-19 reduced access to other needed services and treatments.

State Themes and Strengths Assessment

The Themes and Strengths Assessment answers the questions:

- What is important to the state?
- How is quality of life perceived in the state?
- What assets does the state have that can be used to improve the public's health?

To update this assessment, public health system partners reviewed initial assessment findings and provided their input in alignment with the following questions.

- What new, different, or emerging themes and strengths are missing from the data?
- What assets do we have that can be used to improve the four priority areas?

Themes from discussions with public health system partners and feedback from community members included the following themes, organized by categories of Social Determinants of Health.

Category	Themes from Sessions
Economic Stability	• There are food deserts with low access to nutritious foods in many areas across the state. • Ideas for increasing food access included expanding successful initiatives, such as community gardens, and increasing available funding. • Housing is a need across all income levels, and there is a lack of affordable and safe housing.
Neighborhood and Built Environment	• Safe and reliable public transportation was a continued need, especially among low-income communities. • There is a need to invest funding in local communities and identify creative ways to engage local leaders.
Health Care Access and Quality	• Mental health needs have increased due to the COVID-19 pandemic, despite the shortage of available mental health providers. • Technology is proving to be essential for accessing healthcare; however, many rural communities lack access to reliable internet. • There is potential to collaborate with existing community organizations and events to provide public health services in areas where community members are already gathering.
Social and Community Context	• More services and resources are needed to support older adults aging in place. • Climate change has an impact on the health of individuals and communities. • Substance misuse and associated drug-related harms have increased. • Establishing and sustaining local partnerships is critical to successfully addressing health inequities.

Category	Themes from Sessions (continued)
Education Access and Quality	• The transition to virtual school during COVID-19 decreased children's access to public health services and resources, and this transition disproportionately impacted children from low-income families. • It is important to provide high-speed internet access to all children enrolled in schools and people who live in areas lacking access.
Other Factors Influencing Health and Wellness	• Certain populations have historic and current experiences of discrimination when receiving health care. • Politics can be a barrier to health; legislators often have not consulted public health professionals when creating and supporting related laws.

Health Status Assessment

To update the Health Status Assessment, MPHI convened public health system partners to review indicators that are critical to the health of Michiganders, have the potential for comparative value, and are relevant to communities across the state. Partners reviewed indicators from the original SHA Health Status Assessment in alignment with each of the priority areas and were also able to suggest additional indicators related to things that may have changed or emerged over the course of the preceding two years.

After reviewing indicators, participants answered the following questions either verbally or via the online polling software Mentimeter:

- What is occurring or might occur that affects the health of people in Michigan or the public health system?
- Are there additional or more current data sources, related to the indicators we just discussed, that you would suggest we investigate?
- What new indicators/data sources could be added to give us a better picture of Michigan's needs aligned with this priority area?
- What else should we consider for this priority area?
- What other indicators of health status in Michigan should we consider?

Feedback included the following **data sources**:

- Michigan Profile for Healthy Youth (MiPHY)
- Kids Count Data
- Children's Protective Services data
- Statewide Comprehensive Outdoor Recreation Plan (SCORP)

Additionally, when asked during a listening session what other indicators should be added or considered, participants included the following:

- Michigan's leading causes of death and death rate disparities.
- Life expectancy.
- Cancer screening access.
- COVID impact on childhood immunizations.
- Youth mental health.
- Food insecurity.
- Physical activity.
- Employment.
- Income.
- Health insurance.
- Impacts of racism on health.
- Language barriers.
- ACES data and related health outcomes.
- Rural vs. urban differences in health outcomes.
- Access to parks and green spaces.
- Housing security.
- Access to healthy food.
- Lead drinking water lines.
- Child lead poisoning data.
- Municipal water quality and contaminants.
- Air and water quality, including relating to poor health outcomes and impact of redlining.

The MPHI team compiled these suggestions and located available data. The following data are arranged by SHA Priority and include indicators the team were able to update with data that have been released since the original Health Status Assessment as well as indicators suggested by public health system partners to be included in this addendum.

PRIORITY 1

Engage in policy, systems, and environmental change efforts to address racism and other biases that lead to health inequities in Michigan.

When asked what new indicators or data sources should be considered for Priority 1 for the SHA Addendum, partners suggested the following.

Note: Items with an asterisk (*) indicate that a data source for this indicator was not readily available but will be kept on the list as updates to the SHA are made in the future.

Suggested New Indicators

- COVID-19 hospitalizations by demographic*.
- Data related to COVID-19 over-burdening Michigan hospitals*.
- Effects of racism on toxic stress and chronic illness.
- Rural versus urban health outcomes.
- Cancer screening rates by demographic.
- Language barriers and access to services*.
- Employment disparities.

The data shared in the following pages include updates to data related to Priority 1 included in the initial SHA report as well as data suggested by public health system partners.

Leading Causes of Death

The leading causes of death in Michigan and the U.S. have remained largely the same since 2002, with the ranking of leading causes changing slightly from year to year. However, in 2020 COVID-19 became the third leading cause of death and Intentional Self-Harm (Suicide) fell out of the top 10 causes of death.

Figure 1. Michigan Leading Causes of Death – 2020 vs 2017[i]

	Michigan Rank		Michigan Rate		U.S. Rate	
Cause of Death	2020	2017	2020	2017	2020	2017
Heart Disease	1	1	206.0	196.3	167.0	165.0
Cancer	2	2	158.8	161.3	143.7	152.5
COVID-19	3	n/a	86.5	n/a	91.5	n/a
Unintentional Injuries	4	3	56.2	54.0	54.0	49.4
Stroke	5	5	44.8	39.3	38.6	37.6
Alzheimer's Disease	6	4	42.5	44.4	36.2	40.9
Diabetes Mellitus	7	6	37.0	34.6	32.2	31.0
Kidney Disease	8	7	26.3	22.1	24.6	21.5
Pneumonia/Influenza	9	8	14.8	14.7	12.7	13.0
Intentional Self-Harm (Suicide)	n/a	10	-	13.6	-	14.0

In reviewing data related to leading causes of death in Michigan, there are clear disparities in the data by race and ethnicity. Specifically, Black and Hispanic Michiganders have been disproportionately affected by the conditions related to leading causes of death (cardiovascular disease, stroke, cancer, Alzheimer's, diabetes, kidney disease, and pneumonia). Additionally, 2021 BRFSS data show that a higher percentage of individuals who have lower income and education levels, Black, Indigenous, and people of color (BIPOC) individuals, and individuals who are living with a disability report poor physical health.

COVID-19 Cases, Deaths, and Vaccine Coverage

When looking at COVID data overall, indicators show that COVID-19 disproportionately affected Black and American Indian/Alaska Native Michiganders in both incidence and mortality rates.

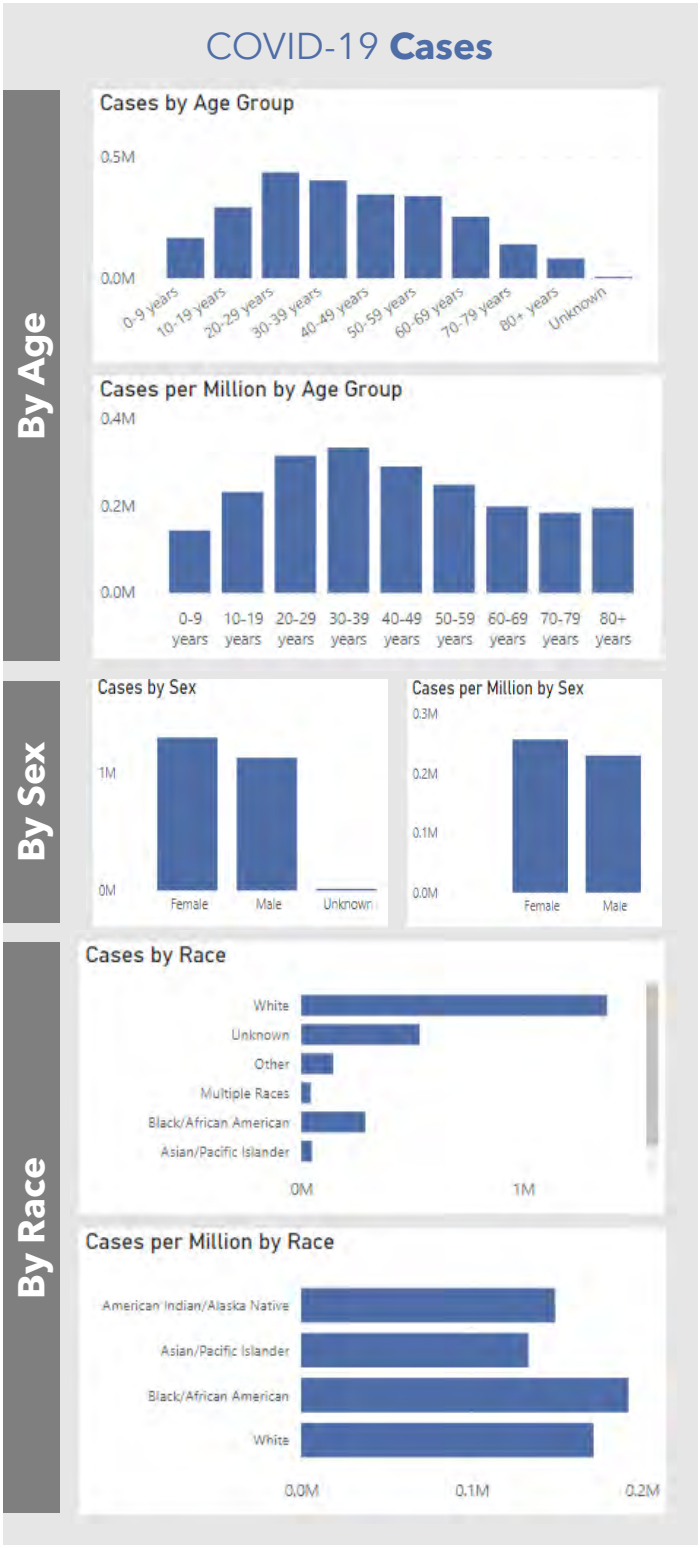


Figure 2. Michigan COVID Cases and Cases per Million by Demographic (March 2022) [ii]

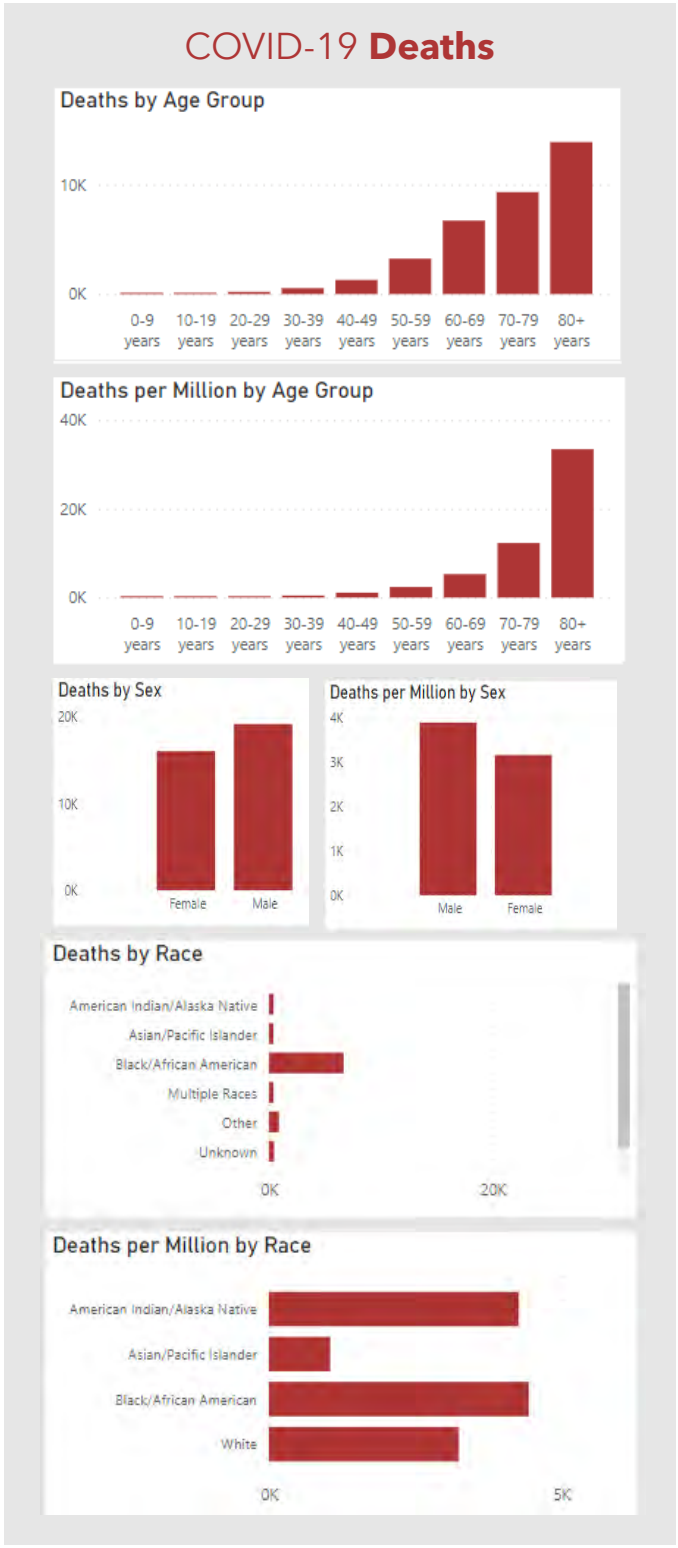


Figure 3. Michigan COVID Deaths and Deaths per Million by Demographic (March 2022) [iii]

When COVID-19 mortality rates are broken down by sex and race/ethnicity, we can see that males of all races have higher rates of death due to COVID-19 than females. Additionally, Black and Hispanic males have higher rates of death due to of COVID-19 than any other race or sex, with Black females experiencing the third highest death rate.

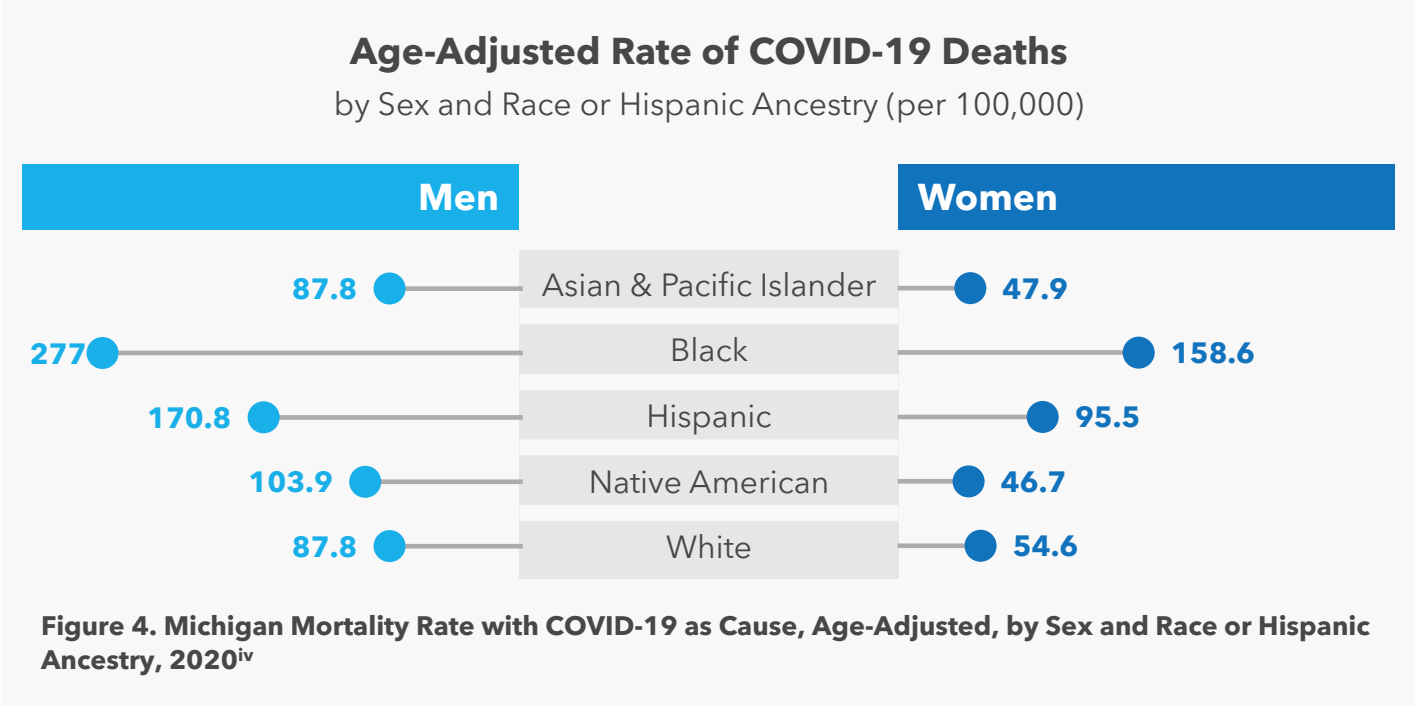
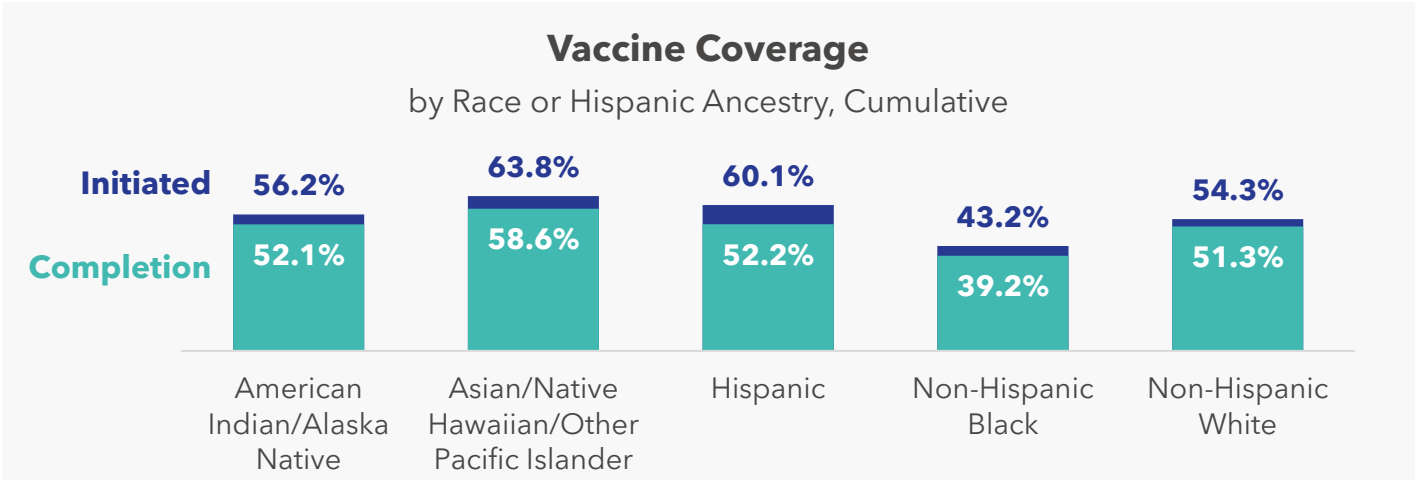


Figure 4. Michigan Mortality Rate with COVID-19 as Cause, Age-Adjusted, by Sex and Race or Hispanic Ancestry, 2020[iv]

When looking at COVID-19 immunization data to date, the graphic below demonstrates that a smaller percentage of non-Hispanic Black Michiganders had evidence of being vaccinated for COVID-19 than individuals of other race/ethnicity groups. It is important to note that approximately 25% of vaccination records have "unknown" or "other" race/ethnicity.



**The data represents the rates of initial and complete vaccination coverage for MI residents that report their race/ethnicity and age. Due to under-reporting of race/ethnicity, the true coverage among these groups may be higher.*

Figure 5. Michigan COVID-19 Rates of initial and complete vaccination coverage, September 2022)* [v]

COVID-19 also affected many health outcomes, with a greater impact on BIPOC populations.

- **Opioid overdoses increased during the pandemic in Michigan**. Opioid overdoses are most often experienced disproportionately by BIPOC individuals, younger individuals, and individuals involved in the criminal justice system.[vi]
- **COVID-19 had a disproportionate effect on BIPOC women giving birth during the pandemic.** Pregnancy increases the risk of severe illness from COVID-19, and COVID-19 infection increases risk of early pre-eclampsia. Data also showed that Black pregnant women had higher rates of contracting COVID-19 compared to white pregnant women, mirroring overall infection rates in those populations. [vii] Finally, many women experienced traumatic or challenging birthing experiences due to practices that had to be put in place due to the pandemic. [viii]
- **Among children and adolescents, mental health-related emergency room visits increased significantly during the pandemic**, with a 24% increase in children aged 5-11 and a 31% increase for children aged 12-17. [ix] School closures led to increased food insecurity for many children. [x] Additionally, medical clinic closures and other barriers present during the pandemic led to missed or delayed preventive care visits and routine immunizations, as well as blood lead screenings. [xi]

The graph below portrays the number of COVID-19-related hospitalizations over time. Times at which COVID-19 rates were higher align with time points at which hospitalizations increased and Michigan's hospitals could have been at or near capacity.

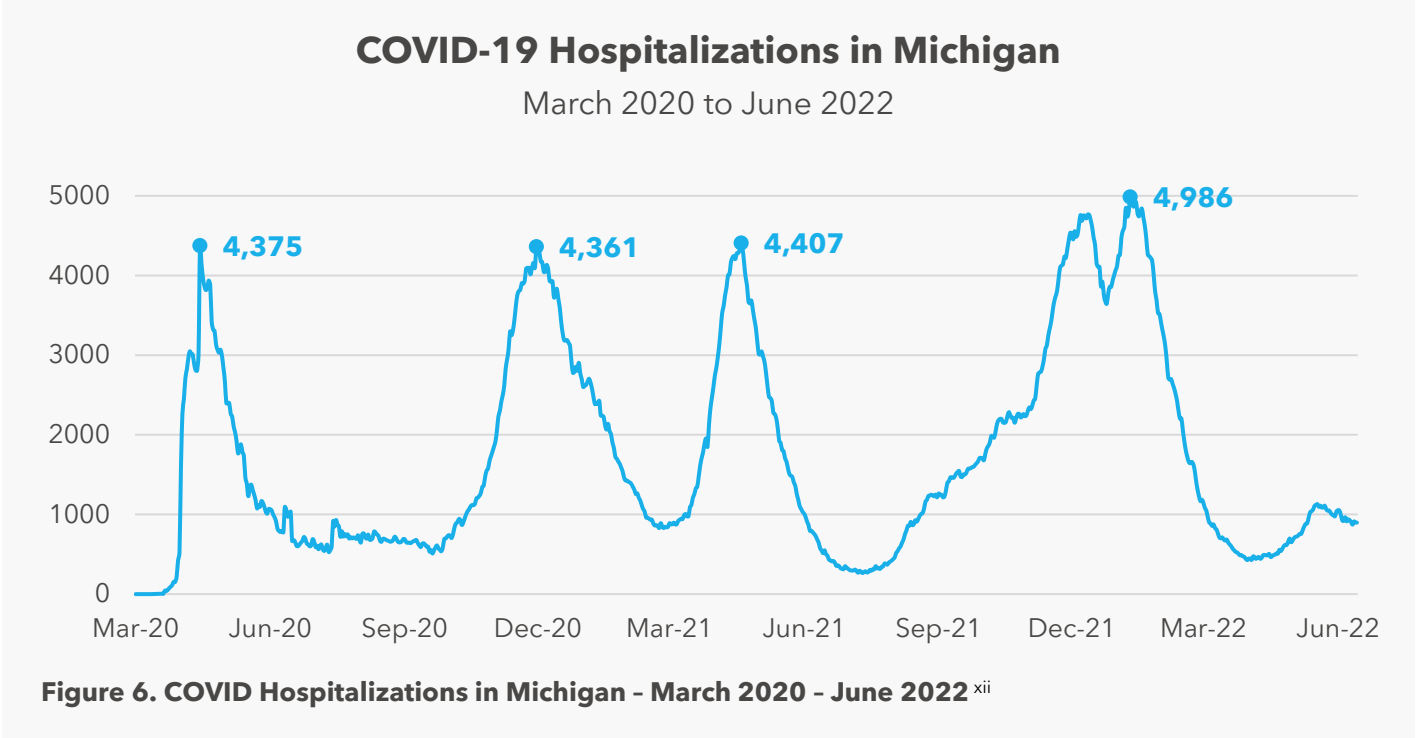


Figure 6. COVID Hospitalizations in Michigan – March 2020 – June 2022 [xii]

Effects of Racism on Toxic Stress and Chronic Illness

There is a wealth of qualitative data linking racism to toxic stress and chronic illness. [xiii] Health disparities data show that BIPOC populations are disproportionately impacted by chronic illnesses and conditions, including those related to the top 10 causes of death in Michigan. The effects of experienced and perceived racism build up over time, creating an "allostatic load", which is defined as the "cumulative biological burden exacted on the body through daily adaptation to physical and emotional stress." This level of stress is considered a risk factor for chronic diseases and conditions including cardiovascular disease, obesity, diabetes, depression, cognitive impairment, and inflammatory and autoimmune disorders. Stress can also prematurely age the immune system, increasing the risk of illness and age-related diseases. Perceived discrimination and racism have also been shown to lead to an increased potential of engaging in unhealthy behaviors, such as smoking, alcohol and substance use, improper nutrition, and refusal to seek medical services, all of which are also risk factors for the chronic diseases and conditions listed above.

Rural versus Urban Health Disparities

Multiple barriers create challenges for rural residents to access and use reliable health services and information, including barriers such as geography, distance, inclement weather, and lack of financial resources and specialty health care services. According to the CDC, [xiv] **compared to urban residents, rural residents:**

- Experience higher all-cause mortality rates,
- Have higher rates of premature morbidity and mortality from diseases such as cancer, heart disease, and childhood obesity,
- Have lower access and use of preventive health care services, and
- Higher rates of engaging in unhealthy behaviors.

A higher percent of rural Americans, compared to their urban counterparts, die from heart disease, cancer, chronic lower respiratory disease, and stroke. Additionally, unintentional injury deaths are approximately 50% higher in rural areas, partly due to greater risk of death from motor vehicle crashes and opioid overdoses. Finally, children in rural areas with mental, behavioral, and developmental disorders face more challenges than children in urban areas with the same disorders, potentially due to limited access to needed services and supports.

Cancer Screenings

When looking at differences in rates of individuals receiving cancer screenings in Michigan, we can see that overall, **Hispanic Michiganders** have lower rates of screening for all types of cancers listed than other race/ethnicity groups. **White** and **Black** Michiganders have similar rates of cancer screening for all types of cancer, with white Michiganders having slightly higher rates of mammography and cervical cancer screening and Black Michiganders having slightly higher rates of prostate cancer screenings.

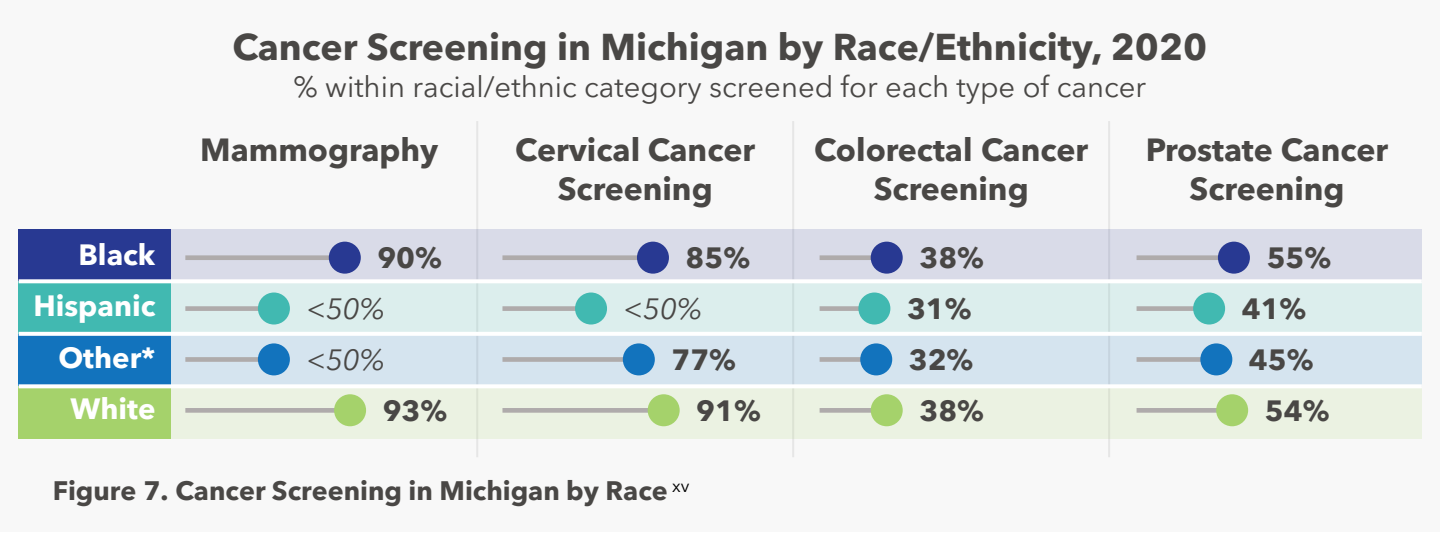


Figure 7. Cancer Screening in Michigan by Race [xv]

Additional disparities affect rates of prostate cancer screening in Michigan, including education and income. Rates of prostate cancer screening increase, by both education and income, with screening percentages higher for individuals who have more education or a higher income.

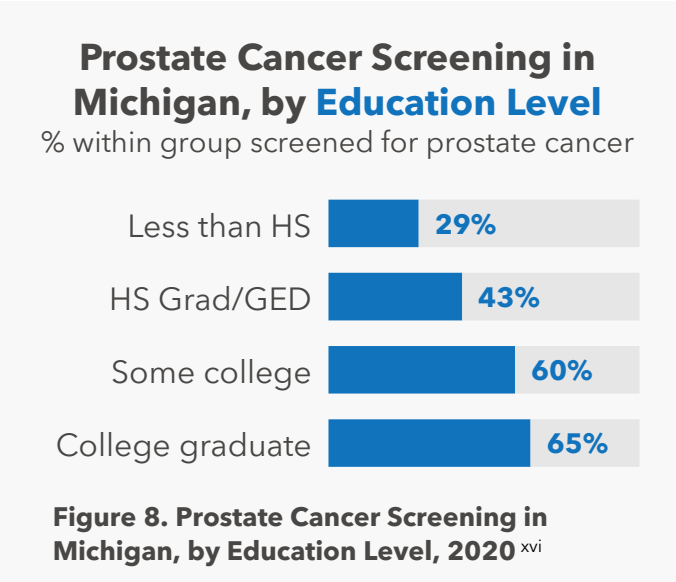


Figure 8. Prostate Cancer Screening in Michigan, by Education Level, 2020 [xvi]

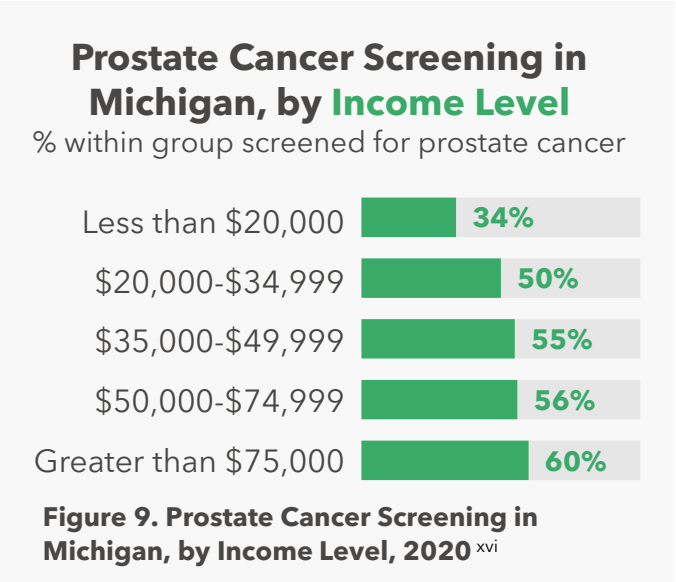


Figure 9. Prostate Cancer Screening in Michigan, by Income Level, 2020 [xvi]

*Individuals in the 'Other' group could have responded indicating the following races: American Indian or Alaska Native, Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, Other Asian, Native Hawaiian, Guamanian or Chamorro, Samoan, Other Pacific Islander, or Other.

Employment Disparities

In comparison to the period between just before the start of the pandemic, about 2% of Michiganders lost their jobs or became otherwise unemployed between February 2020 and May 2021. When looking at the change in workforce participation by demographics, we can see a nearly 2.5% decrease in workforce participation for both white and Black Michiganders. Data by gender show that more females than males left the workforce. Those with the least education were hardest hit, with more than 9% of workers without a high school diploma leaving the workforce over that time. The only group with an increase in workforce participation between February 2020 and May 2021 were individuals with a college education or higher.

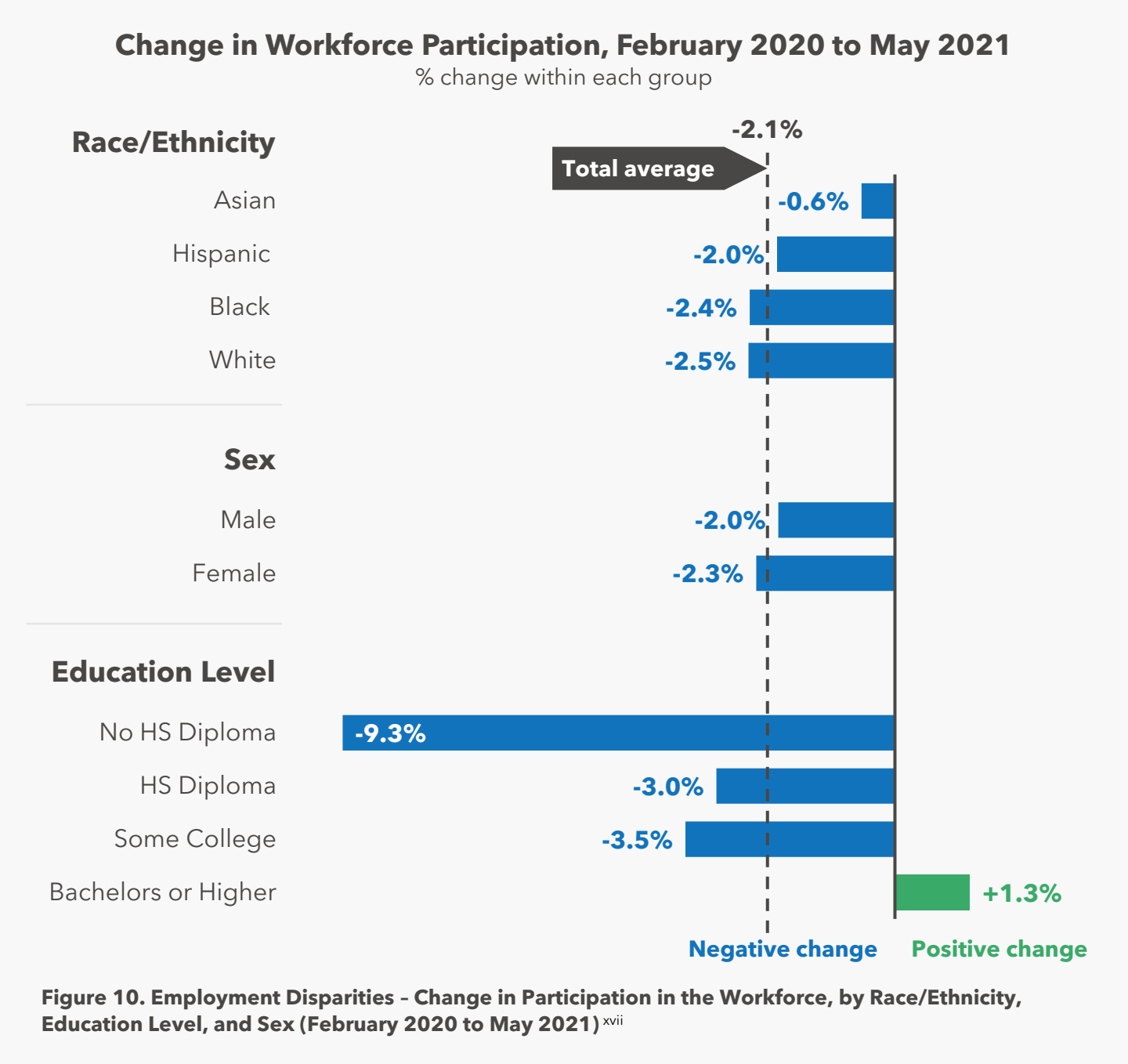


Figure 10. Employment Disparities – Change in Participation in the Workforce, by Race/Ethnicity, Education Level, and Sex (February 2020 to May 2021) [xvii]

PRIORITY 2

Strengthen the ability of Michigan's communities to equitably support families and prevent childhood trauma.

When asked what new indicators or data sources should be considered for Priority 2 for the SHA Addendum, partners suggested the following.

Suggested New Indicators

- CPS calls/referrals/investigations.
- Impacts of COVID-19 on the foster care system.
- Bullying.
- Injury data.
- Kids Count data.
- ACEs – specifically information related to childhood hunger and COVID-19.

The data shared in this section includes updates to information in the initial SHA report and suggested updates related to Priority 2.

CPS Calls

Reports of child abuse in Michigan sharply declined following the beginning of the pandemic in March 2020. While rates have steadily increased across 2020, as of October 2020, calls were still far below where they were in October of 2019.

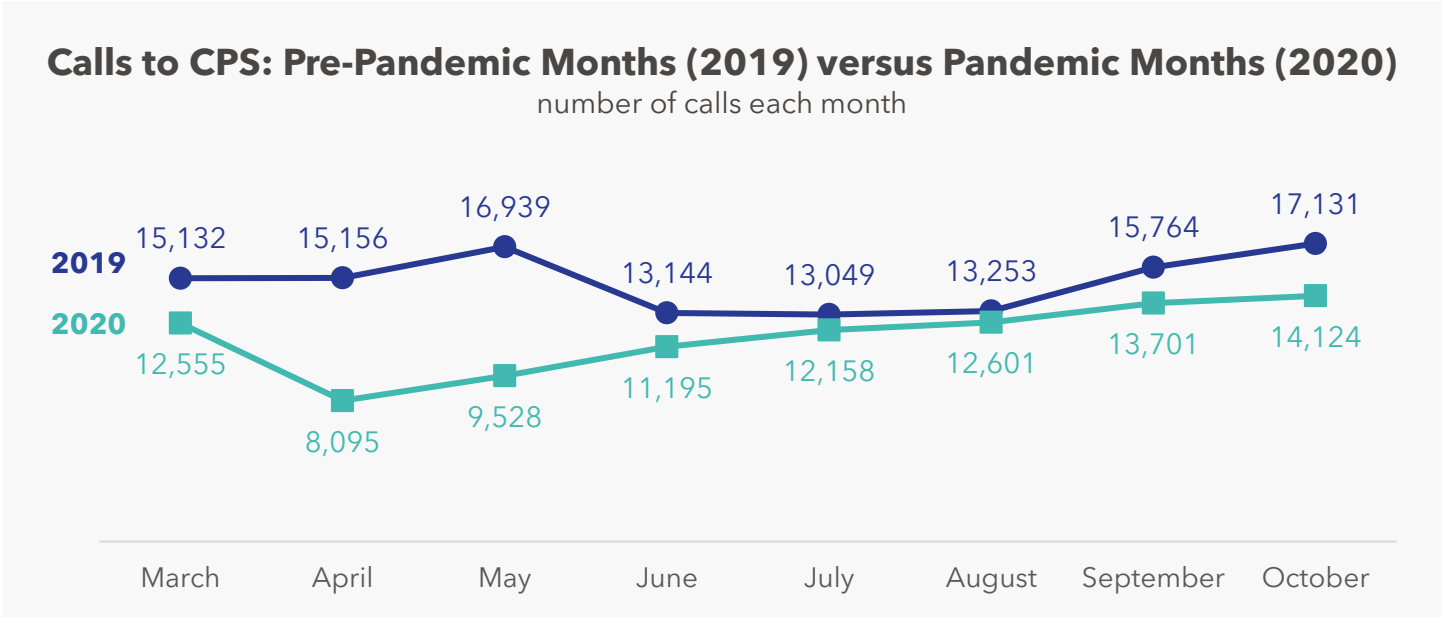


Figure 11. Calls to CPS 2019 vs. 2020, Michigan [xvii]

When looking at foster care data between 2017 and 2020, rates of children in foster care dropped slightly in 2020 over previous years. While the percentage of children receiving monthly caseworker visits remained steady over time, the percentage of children receiving visits in home had a sharp decline in 2020. The rate of children subject of an investigated report alleging child mistreatment also fell in 2020 compared to previous years. These data along with the data in Figure 11 show that there was greater risk of under-reported child mistreatment beginning in 2020 with the onset of the COVID-19 pandemic.

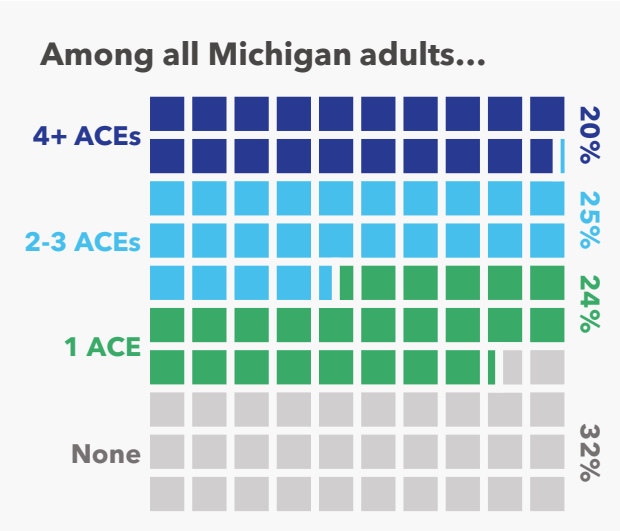
Table 1. COVID-19 and Foster Care [xix]	2017	2018	2019	2020
Children in Foster Care	11,918	12,121	11,676	10,661
Children in Foster Care receiving monthly caseworker visits	96%	97%	97%	97%
Children in Foster Care receiving caseworker visits in the home	98%	98%	98%	81%
Rate of children subject of an investigated report alleging child mistreatment (per 1,000 population)	69.2	73.3	75.1	60.8

Adverse Childhood Experiences

Adverse Childhood Experiences, or ACEs, have lifelong impacts on health and well-being.[xx] Examples of ACEs include violence, abuse, incarceration of a household member, or growing up in a family with mental health or substance misuse problems. The more ACEs an individual experiences, the higher the likelihood that that individual will experience conditions such as depression, asthma, cancer, and diabetes in adulthood. For individuals who have experienced a higher level of ACEs, there could be a greater risk for engaging in risky behaviors such as smoking and heavy drinking, a potential for not achieving high levels of education and employment potential, and for passing ACEs to the next generation.

When looking at the impact of COVID-19 on ACEs, emerging information[xxi] indicates that ACEs may be exacerbated by social isolation, job loss, school closures, and other pandemic-related stressors. Parental anxieties increased over the course of the pandemic, which also could have increased childhood stressors. The pandemic and its response disproportionately affected low-income and BIPOC populations, which are also at greater risk for experiencing ACES overall.

Michigan Behavioral Risk Factors Surveillance (BRFS) data from 2019 reveal that 68% of Michigan adults reported experiencing at least one ACE in their lifetime. Additionally, approximately one in five Michigan adults have experienced four or more ACEs in their lifetime, which has a much higher associated risk of adverse health outcomes. When looking at the types of ACEs these adults reported experiencing related to household dysfunction, nearly a third reported household substance abuse, while slightly fewer reported parental separation or divorce. Additionally, more than 20% reported household mental illness, and nearly as many reported household physical violence. When asked about the types of abuse they experienced, 38% reported verbal abuse in childhood, more than a quarter reported physical abuse, and 14% reported experiencing sexual abuse in their childhood.



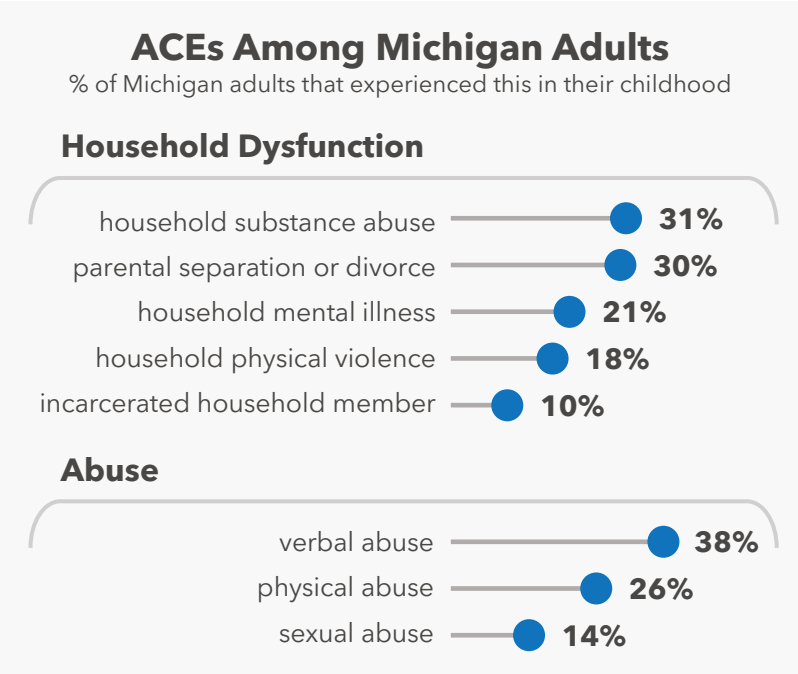


Figure 12. Adults reporting ACEs, 2019[xxii]

Individuals experiencing a higher number of ACEs as children face greater health risks later in life. Greatest risks involve poor mental health and depression, followed by smoking, poor physical health, and asthma.

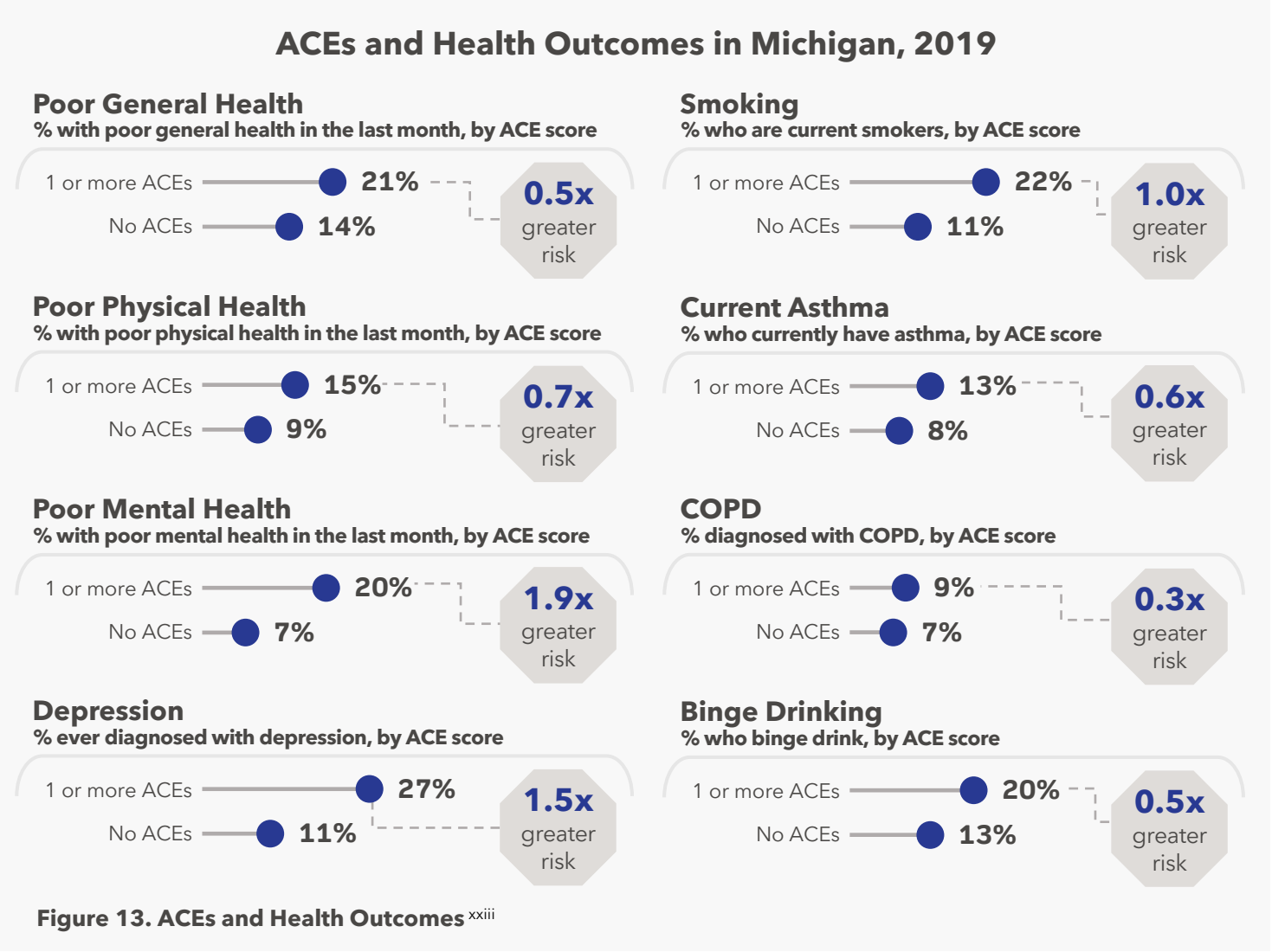


Figure 13. ACEs and Health Outcomes [xxiii]

Included in the ACEs description related to physical neglect is food insecurity. Prior to the pandemic, rates of food insecurity, defined as the "percentage of households unable to provide adequate food for one or more household members due to lack of resources," was on the decline, although percentage of food insecure households in Michigan was higher than the overall U.S. percentage. Kids Count data [xxiv] for Michigan revealed that between July 25 and August 8, 2022, approximately 20% of households surveyed with children birth to age 17 had at least one household member who had experienced a loss of income in the previous four weeks. Additionally, while up to 15% of households indicated they sometimes or often did not have food to eat prior to the pandemic, data from between July 25 and August 8, 2022, showed that 39% of households with children surveyed had children who were not eating enough because food was unaffordable.

Childhood Poverty

Kids Count data revealed disparities in rates of childhood poverty in Michigan by race/ethnic group over the period from 2011 to 2021 (note that data for 2020 were not available). Overall rates of childhood poverty in Michigan have decreased over time, and the same trend is generally true for rates of childhood poverty by race or ethnicity. However, there are large disparities between racial and ethnic groups, with the rate of non-Hispanic white children living in poverty being less than a third of the rate for non-Hispanic Black children. Hispanic or Latino children also have double the percentage of children living in poverty than non-Hispanic white children.

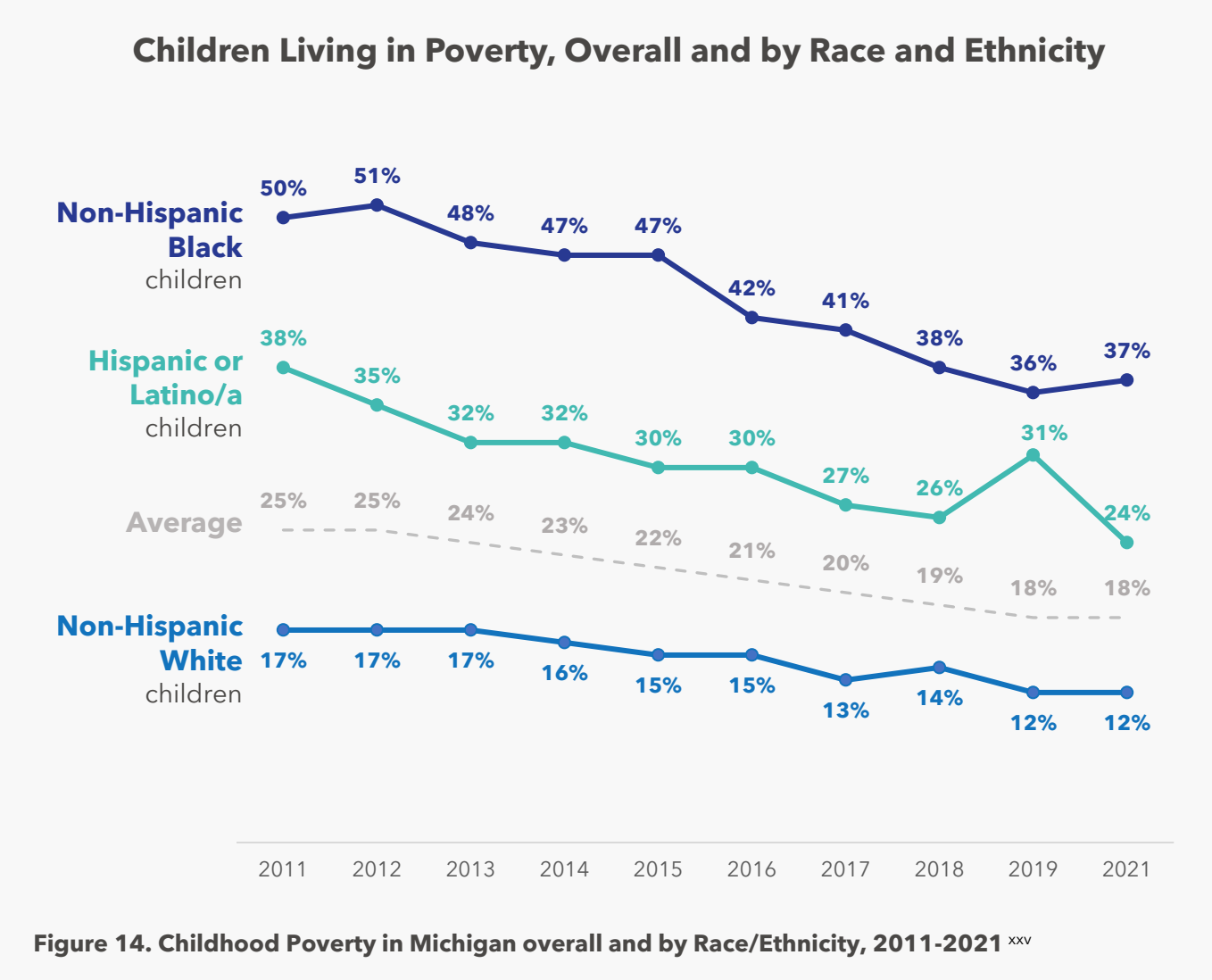


Figure 14. Childhood Poverty in Michigan overall and by Race/Ethnicity, 2011-2021 [xxv]

Bullying

When looking at children's experiences with bullying, a higher percent of Hispanic youth in Michigan experience bullying, with less than half reporting they were never bullied. However, the biggest disparity in data is with children experiencing bullying almost every day, with Black, non-Hispanic children experiencing daily bullying at a rate of at least 3.6 times that of any other group.

Childhood Bullying in Michigan, 2019-2020

% of children aged 6-17 years bullied, picked on, or excluded by other children

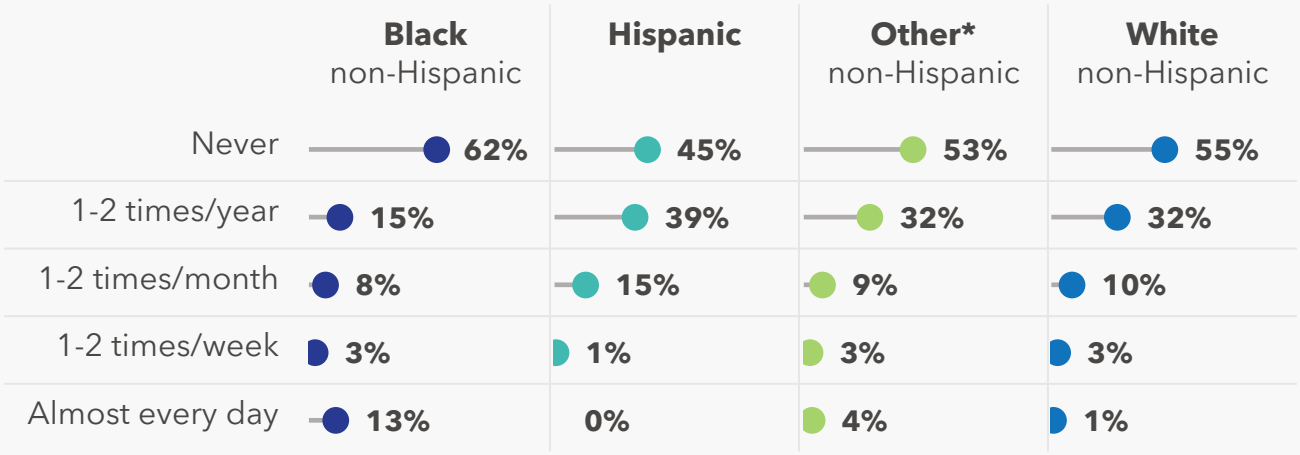


Figure 15. Childhood Bullying, 2019-2020 [xxvi]

*Individuals in the 'Other' group could have responded indicating the following races: American Indian or Alaska Native, Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, Other Asian, Native Hawaiian, Guamanian or Chamorro, Samoan, or Other Pacific Islander.

Teen Suicide

Rates of teen suicide have increased over time and is a leading cause of death for youth aged 10–24 years old across the U.S. Teen suicide rates are higher in Michigan than in the U.S. Additionally, white male teens have higher rates of death by suicide as a cause than Black youths or female youths. Bullying and ACEs are risk factors associated with suicide among teens.

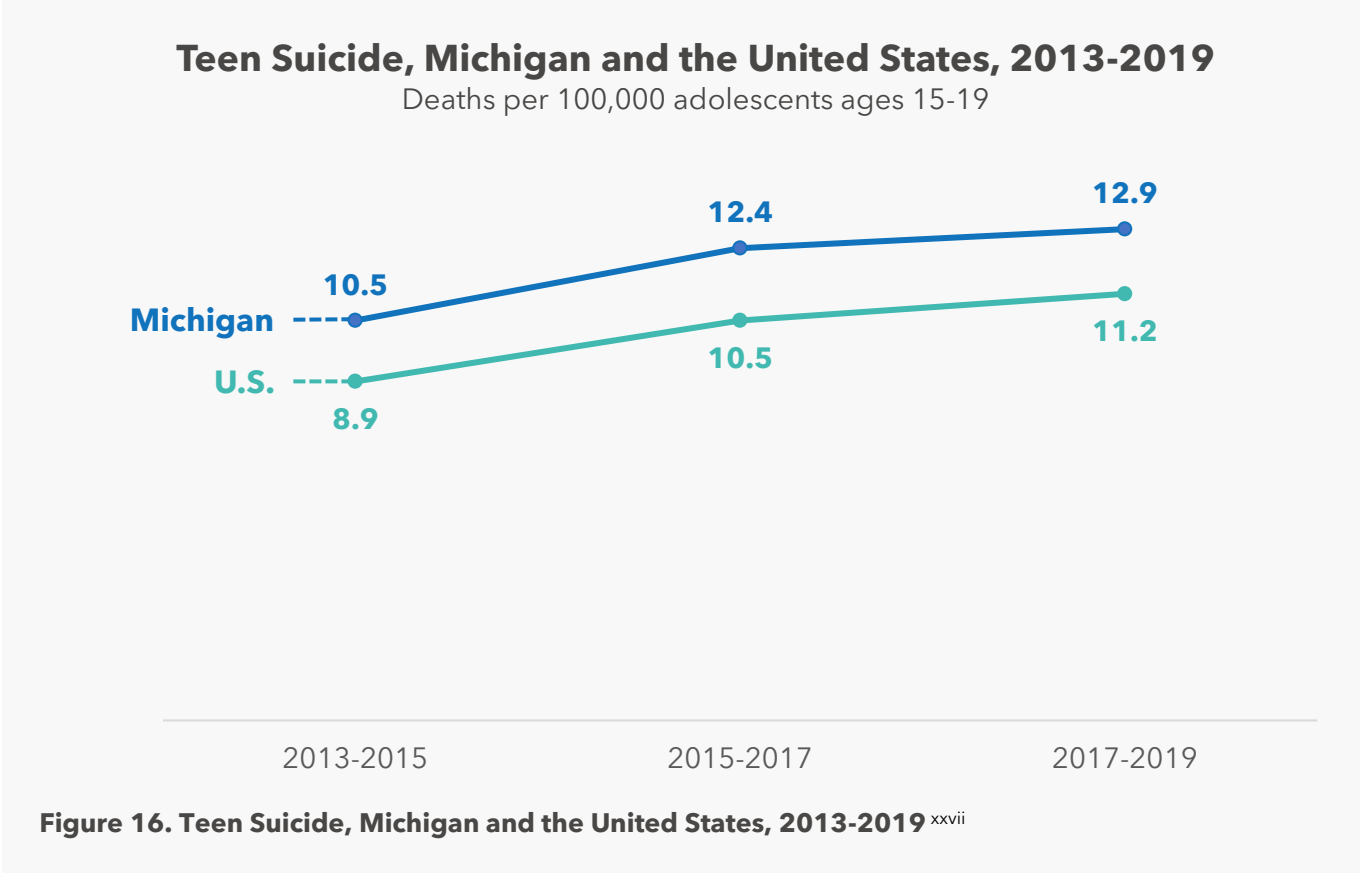


Figure 16. Teen Suicide, Michigan and the United States, 2013-2019 [xxvii]

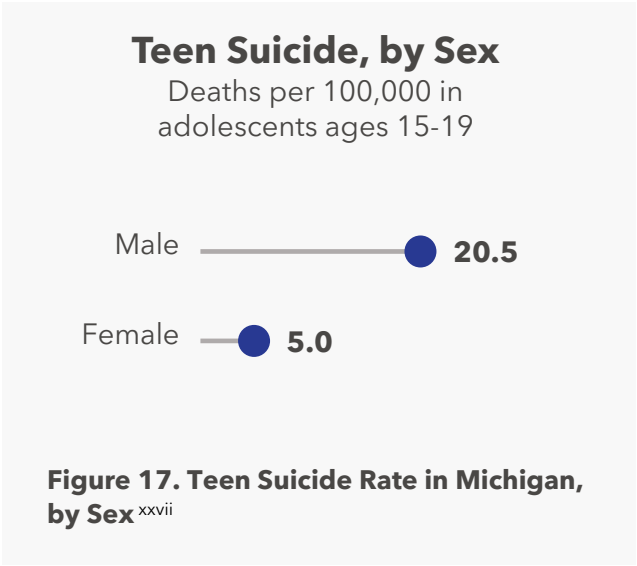


Figure 17. Teen Suicide Rate in Michigan, by Sex [xxvii]

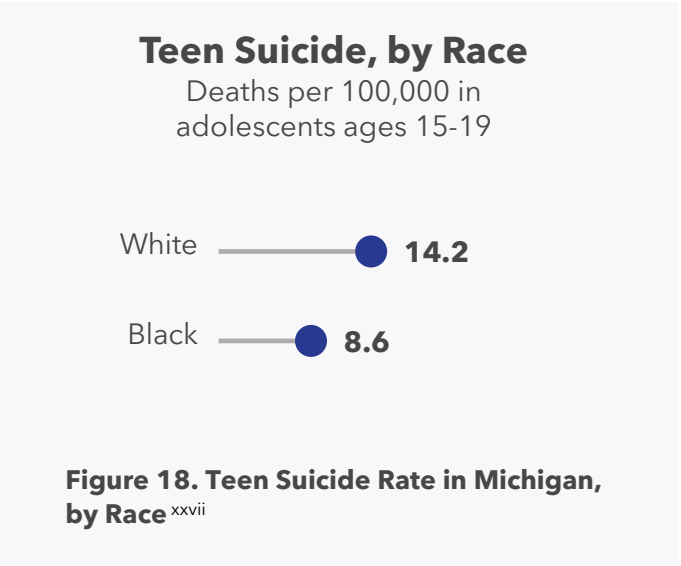


Figure 18. Teen Suicide Rate in Michigan, by Race [xxvii]

Child Injury Death

While child unintentional injury death rates have decreased in the United States over time between 2010 – 2019,[xxviii] **disparities in child injury death rates remain.** Specifically, between 2018-2019, child unintentional injury death rates were highest among:

- Male children.
- Babies under 1 year old and teens aged 15-19 years.
- American Indian/Alaskan Native children and Black children.

Motor vehicle crashes caused more deaths than other causes of unintentional injury, and rates in rural areas were higher than in metro or urban areas in the United States.

Drowning was the leading cause of injury death for children aged 1 to 4 years old. Drowning rates were higher among Black children than white children, specifically 2.6 times higher among Black children aged 5 to 9 years old than white children in the same age group, and 3.6 times higher among Black children aged 10 to 14 years old than white children in the same age group.

There were also some increases in child injury death rates for specific populations between 2010 to 2019, including:

- **Suffocation death rates increased 20% among infants overall** and 21% among Black children;
- **Motor vehicle death rates among Black children increased 9%** while rates among white children decreased 24%;
- **Poisoning death rates increased 50% among Hispanic children and 37% among Black children** while rates among white children decreased by 24%.

PRIORITY 3

Improve equitable access to healthy food and community resources that promote physical activity.

Partners shared the following when asked what new indicators or data sources should be considered for Priority 3 for the SHA Addendum. Items with an asterisk (*) indicate that a data source for this indicator was not readily available but will be kept on the list as updates to the SHA are made in the future.

Suggested New Indicators

- Access to parks/trails/green spaces[+].
- Food insecurity.
- Access to healthy food.
- COVID-19 impacts on:
    - Childhood obesity.
    - Grocery store closures*.
    - Gym closures*.

The data shared below include updates to data related to Priority 3 included in the initial SHA report as well as data suggested by public health system partners.

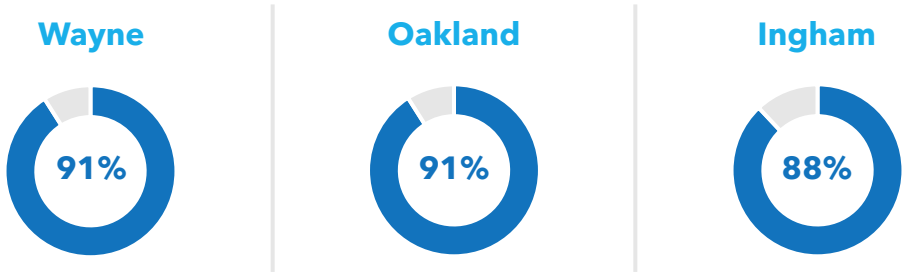
[+] An updated State Comprehensive Outdoor Recreation Plan is forthcoming, and data will be incorporated into the SHA as updates are made.

Access to Exercise Opportunities

As defined by the County Health Rankings, Access to Exercise Opportunities measures the "percentage of individuals in a county who live reasonably close to a location for physical activity." Locations for physical activity are defined as parks or recreational facilities. For this indicator, individuals are considered to have access to exercise opportunities if they:

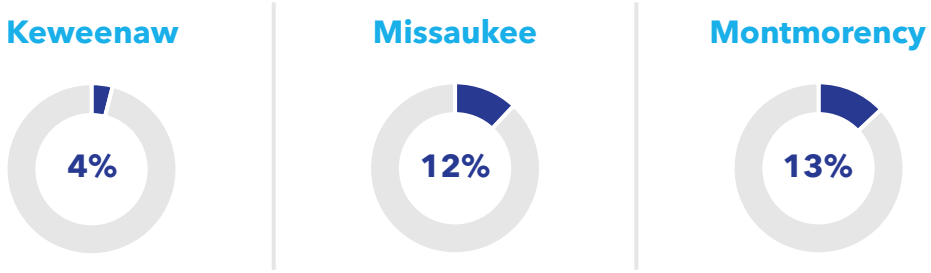
- Reside in a census block that is within a half mile of a park, or
- Reside in an urban census block that is within one mile of a recreational facility, or
- Reside in a rural census block that is within three miles of a recreational facility.

In Michigan, the three counties where people are rated as having **most access** to locations for physical activity include:



% of the population in each county who have adequate access to locations for physical activity.

The three counties with **lowest access** to locations for physical activity included:



% of the population in each county who have adequate access to locations for physical activity.

Qualitative data collected through the community survey conducted during the initial SHA process and during listening sessions with public health system partners provided some additional considerations regarding access to physical activity. Including that proximity to parks and greenspace does not guarantee safety to engage in physical activity in those areas, and having greenspace available in rural areas that is not considered a "park" may lead to distortion in access data as they are defined.

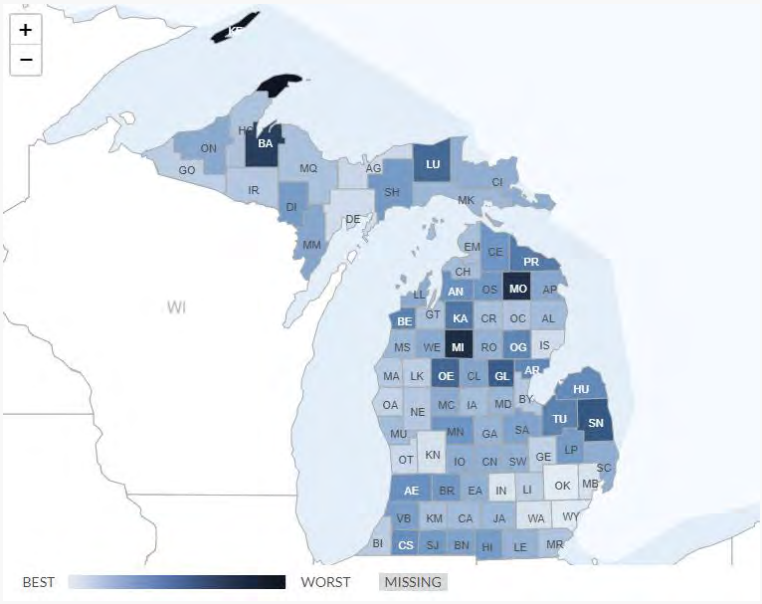


Figure 19. Access to Opportunities for Physical Activity, 2021 [xxix]

Food Insecurity

According to Feeding America, [xxx] approximately 1.1 million individuals of all ages in Michigan, or about 11.5% of the population, experienced food insecurity in 2020.

When looking at differences by race and ethnicity, there are clear disparities with Black and Latino/Hispanic Michiganders experiencing food insecurity at two to nearly three times the rate of white, non-Hispanic Michiganders.

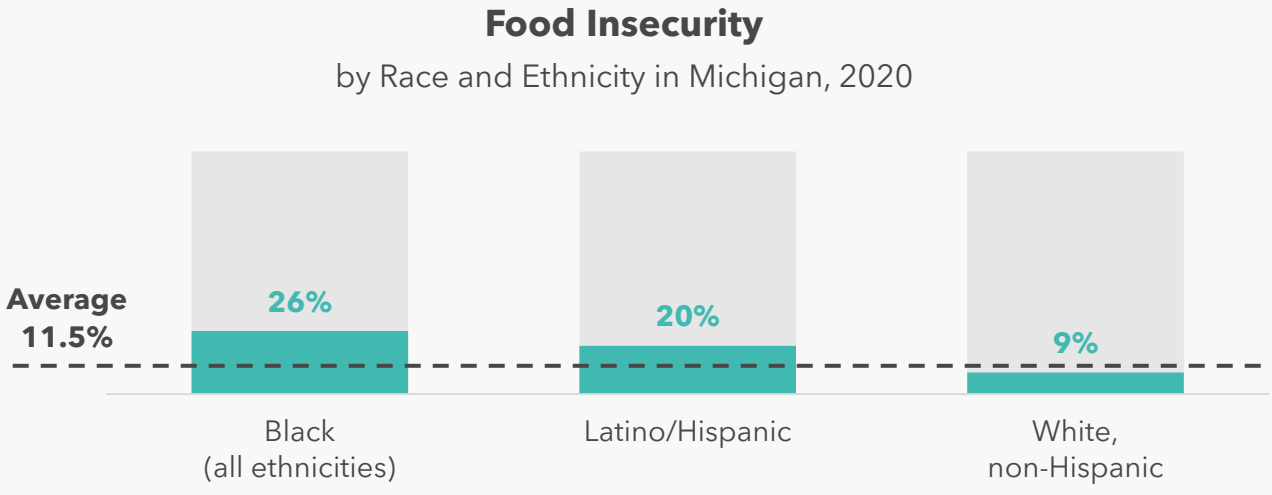
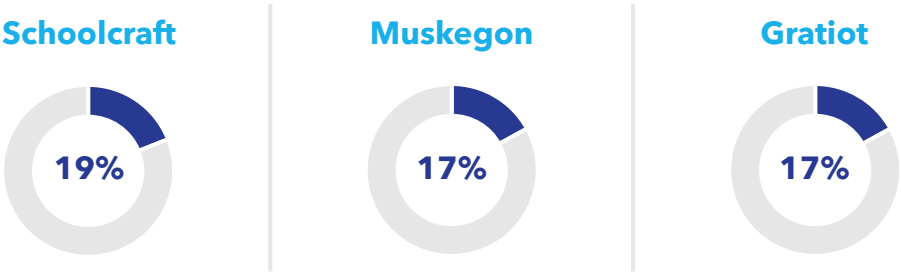


Figure 20. Food Insecurity by Race and Ethnicity in Michigan, 2020 [xxxi]

As defined by the County Health Rankings, Limited Access to Healthy Food is defined as the "percentage of population who are low-income and do not live close to a grocery store. Several Michigan counties do not have any population with limited access to healthy foods, including Benzie, Arenac, Barry, Ogema, Osceola, Antrim, and Charlevoix.

Counties with the **highest percentage of the population with limited access to healthy food** included:



% of the population in each county that are low-income and do not live close to a grocery store.

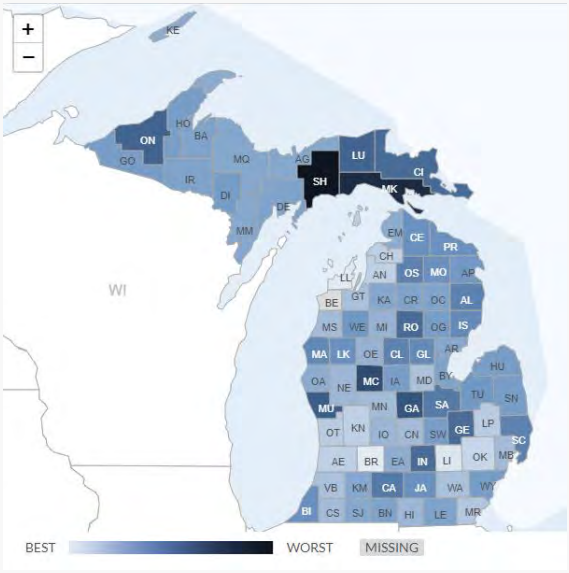


Figure 21. Limited Access to Healthy Food, 2019 [xxxii]

COVID-19 Impact on Childhood Obesity

According to a study conducted in 2021, [xxxiii] youth across the U.S. gained more weight during the COVID-19 pandemic than before the pandemic. The greatest increase in rates of overweight and obesity were for youth aged 5 to 11, which experienced an 8.7% increase in the study population. Adolescents aged 12 to 15 saw a 5.2% increase, and those aged 16 to 17 saw a 3.1% increase. Most of the increase among youth aged 5 through 15 was due to an increase in obesity rather than an increase in overweight youth.

PRIORITY 4

Increase accountability and enforcement of environmental regulations and policies.

Partners suggested the following when asked what new indicators or data sources should be considered for Priority 4 for the SHA Addendum, partners suggested the following. Items with an asterisk (*) indicate that a data source for this indicator was not readily available but will be kept on the list as updates to the SHA are made in the future.

Suggested New Indicators

- Lead Drinking Water Lines
- Childhood Lead Poisoning Data
- Municipal Water Quality Reports*
- Indoor Air Quality*

The data shared in this next section include updates to data related to Priority 4 included in the initial SHA report as well as data suggested by public health system partners.

Air and Water Pollution

In the original SHA assessment activities, community input was collected through elevated concerns about pollution in both air and water and the effects of pollution on health in their communities.

Air pollution in communities can lead to adverse health effects, including heart and lung problems, and can even lead to premature death. Small pollutants, such as those from auto exhaust, power plants, or industry, can penetrate deep into lung tissue and enter the bloodstream. Health effects can include decreased lung function, asthma, cardiovascular impacts including heart attack and early death from heart or lung disease. Additionally, environmental impacts from air pollution can include adverse effects on water and soil nutrients.

Rates of fine particulate matter air pollution have decreased over time, and air pollution in Michigan in the past 10 years has generally been lower than rates in the U.S. overall. However, as with other indicators, certain populations are more susceptible or are experiencing greater impacts of health risks from air pollution, including older adults, children and infants, and those living with chronic conditions affecting the heart and respiratory system. Additionally, adults living in urban areas and racial and ethnic minorities tend to have a higher chance of being exposed to air pollution.

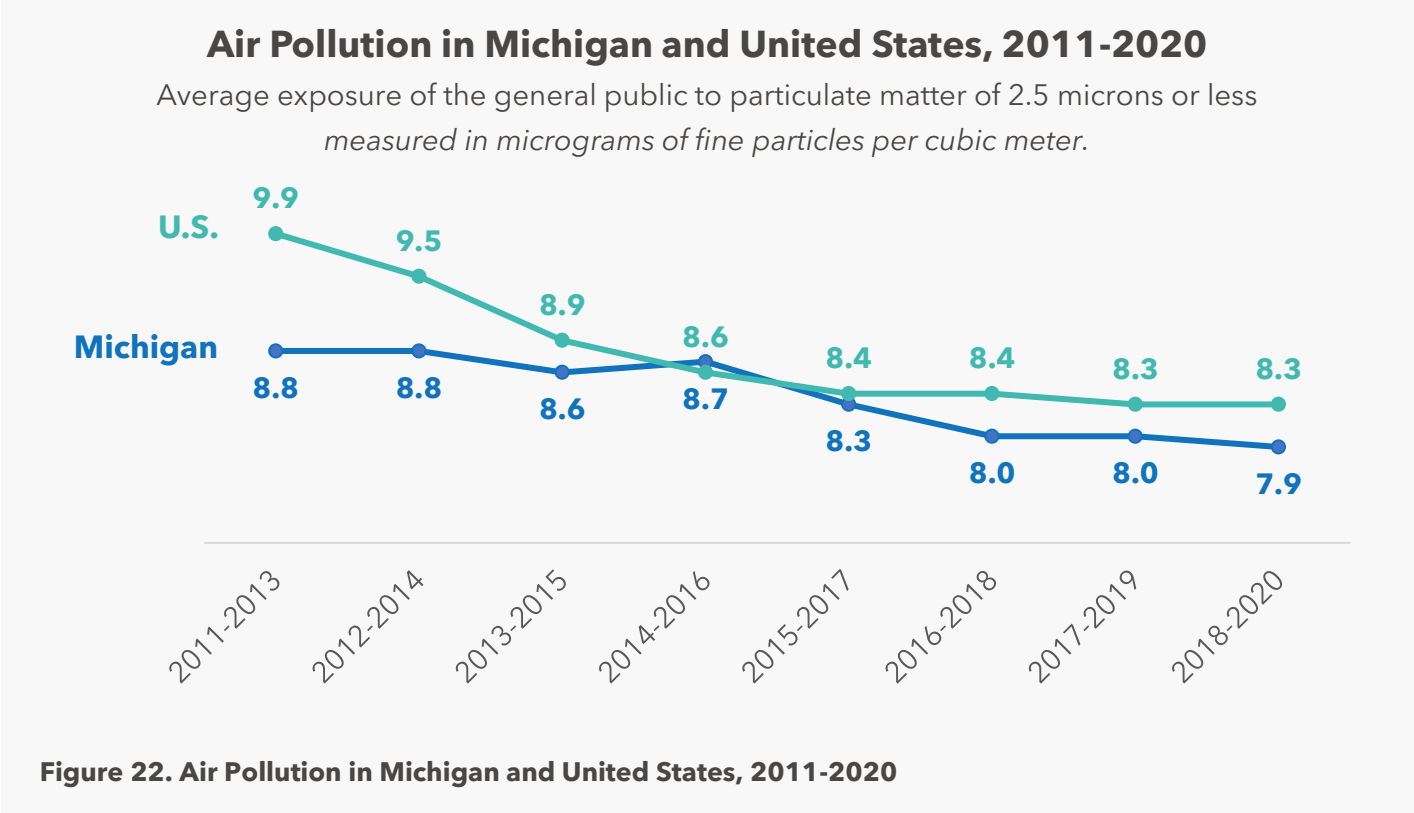


Figure 22. Air Pollution in Michigan and United States, 2011-2020

Safe drinking water has an impact on health, preventing birth defects, infectious diseases, and premature death. One of the main polluters of drinking water systems is agriculture, including pesticides, fertilizer, and other agricultural byproducts. Rural and low-income areas could experience higher serious drinking water system violations, as well as areas with previous violations and areas with a higher percentage of minoritized residents.

Michigan's percentages of water systems affected by a serious water violation during the year vary between 0.1% and 2.6%, while U.S. rates overall have decreased over time, with 2.2% in 2018 and reducing to 0.8% in 2021.

Drinking Water Violations, Michigan and U.S., 2018-2021

Percentage of community water systems with a serious drinking water violation during the year.

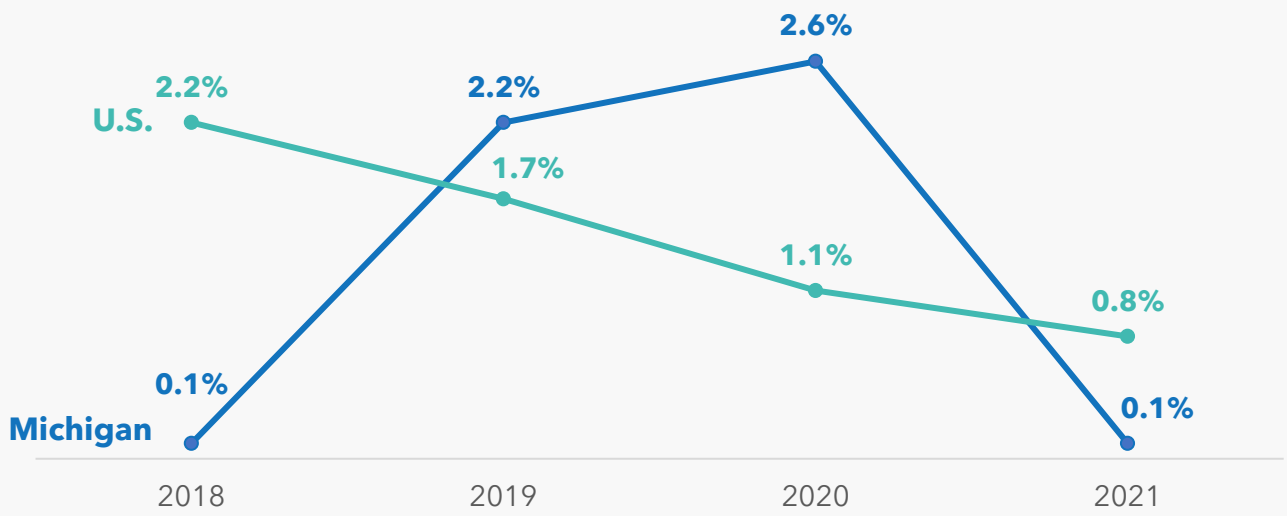


Figure 23. Drinking Water Violations, Michigan and U.S., 2018-2021 [xxxiv]

Lead in Drinking Water in Michigan

As with other sources of pollution, lead in drinking water can have adverse health effects, especially in children and pregnant women. Health effects of lead exposure for children can include physical and behavioral effects such as nervous system damage, learning disabilities, shorter stature, impaired hearing, and impaired formation and function of blood cells. For pregnant women, exposure to lead can lead to reduced growth of the fetus and premature birth.[xxxv] Between 2021 and 2022, four communities in Michigan had more than 10% of their water samples that fell above 15 parts per billion (ppb) which means they have an Action Level Exceedance and must take corrective action, Another four communities were at 15 ppb between 2019 and 2022.[xxxvi]

The percentage of children in Michigan who have blood tests that reveal an elevated blood lead level (EBLL) has decreased over time, from 10.9% in 2010 to 3.5% in 2021. Michigan has implemented new programs and processes to support prevention and treatment of EBLL in Michigan since 2015 at both the state and local levels, including alignment of the Childhood Lead Poisoning Prevention Program with the Lead Safe Homes program.

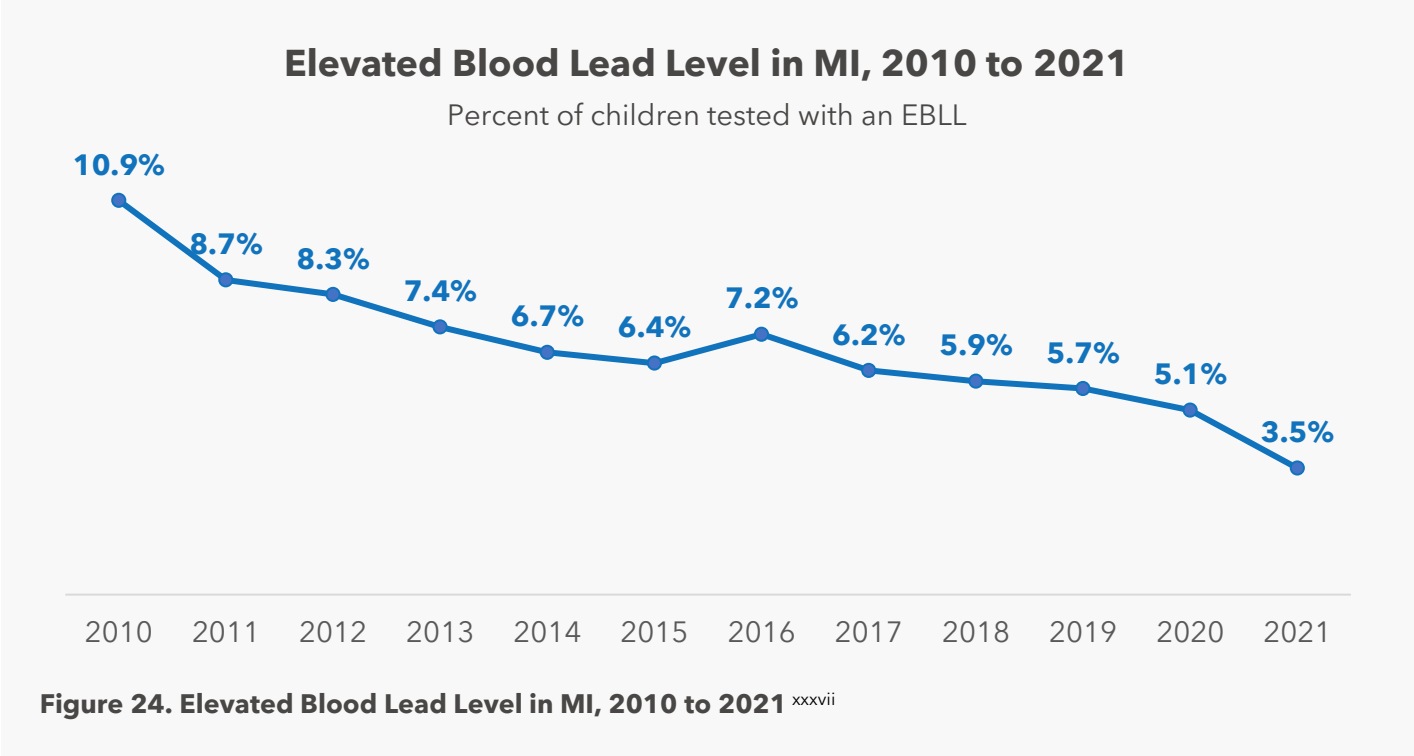


Figure 24. Elevated Blood Lead Level in MI, 2010 to 2021 [xxxvii]

PRIORITY CONSENSUS

Following collection and analysis of data related to all four SHA assessments, MPHI staff compiled data and presented it to public health system partners in three virtual sessions to work toward revising and/or affirming SHA priorities. For each of the four priorities, MPHI presented updated assessment data and asked participants if there was anything else to consider or any remaining questions, and whether the priorities remained an area of need for Michigan. Overall, participants in all three sessions unanimously affirmed the four priorities that emerged from the SHA Process, emphasizing the importance of each to improving the health of all Michiganders now and in the future.

Future Work

The priority strategic issues identified through the SHA, and affirmed through this SHA Addendum process, will be addressed through the upcoming State Health Improvement Plan (SHIP). As with the SHA process, a wide array of public health system partners will be engaged in developing plans to address priorities, building on the assets and expertise available throughout the public health system in Michigan.

To continue to better understand the health of the population in Michigan, MDHHS and MPHI will also engage in the ongoing monitoring, refreshing, and adding of data and data analysis of the SHA. This will largely occur through monitoring available data sources from MDHHS programs and partners as available, participating in other meetings and planning processes, and reviewing ongoing assessment work at state and local levels.

Appendices

Appendix A
Public Health System Assessment

The Public Health System Assessment answers the questions:

- What are the activities, competencies, and capacities of the public health system?
- How are the 10 Essential Public Health Services being provided?

Themes from discussions with public health system partners and feedback from community members included the following.

1. What new, different, or emerging information is missing from the public health system assessment data?

- Some partnerships have strengthened due to the need to coordinate to meet needs due to COVID-19. However, previous partnerships or co-owned activities have fallen off due to the demands of COVID response and need to be re-established.
- Public health funding has greatly expanded in the form of COVID infrastructure grants. There is a need to look at longer-term investment in public health at the federal, state, and local levels.
- COVID-19 has increased the politicization of public health and exacerbated challenges including adequately funding public health programs and enforcing public health laws.
- Public health is currently viewed with distrust by the community, and individuals could be hesitant to accept guidance and recommendations from their local public health officials. Future initiatives should be reframed to emphasize valuable programs and services public health provides.
- Many groups have experienced a worsening of socioeconomic conditions due to inflation and COVID-related economic challenges.
- System racism and discrimination is a major barrier to health, and participants called for an increased prioritization of health equity within public health initiatives.

- High turnover has occurred in the workforce due to job stress, highlighting the need for better working conditions, including increased opportunities for professional development and pay for public health professionals.
- COVID-19 was a major cause of stress for public health professionals and led to staff burnout.
- COVID-19 spurred innovation and creative problem solving within the field of public health.
- Data gaps still exist for specific populations including those with disabilities, people in rural areas, and immigrants.
- There is a need for better data gathering and reporting of smaller populations, including those living in rural areas and for racial and ethnic minority populations.
- During COVID-19, reliance on technology increased access to services for some while creating barriers for other groups.
- The public health workforce has been negatively impacted by large staff turnover and a loss of institutional knowledge across all levels.

2. What else do we need to consider when it comes to the changes in the public health system, specifically related to the four priority areas?

- The public's trust decreased towards public health. There is a need for educational and outreach efforts to rebuild the relationship.
- Access to healthy food and food insecurity is a continued concern.
- The social isolation from COVID-19 increased mental health needs of both adults and children.
- Violence and crime are continued community concerns.
- Advancing cross-sectoral partnerships to increase population health in Michigan is a need.
- Populations living in rural areas experience unique health barriers that impact access to needed care and resources.
- There continues to be a high level of health needs within marginalized populations.

- Built environment and aging infrastructure are important factors in future public health initiatives.
- A fair and equitable public health system should be the goal for public health with a call for designing anti-racist programs and systems.
- Housing is an important driver of health, and many Michigan communities are faced with a lack of affordable and safe housing.
- Technology has been a barrier to health among populations that do not have access to smart phones or reliable internet.
- Reliable transportation is a need for many populations to access needed services and resources. This worsened during COVID-19 when many sources of transportation were unavailable.
- There has been a reduction of workforce capacity due to stress and worker shortages.
- Some legislative action promoted health during COVID-19 by addressing social determinants of health.

Forces of Change Assessment

The Forces of Change Assessment answers the questions:

- What is occurring or might occur that affects the health of people in Michigan or the public health system?
- What specific threats or opportunities are generated by these occurrences?

Themes from discussions with public health system partners and feedback from community members included the following.

1. What new trends (patterns over time) have emerged that impacted health over the past two years?

- Increased politicization of public health has occurred, with personal health decisions influenced by political affiliation.
- Public distrust of public health is an ongoing issue due to historical injustices. Participants highlighted that COVID-19 increased feelings of distrust.
- Inequities remain and can present barriers for accessing health care.
- Funding has increased for environmental health programs.
- The impact of climate change on health is becoming a priority.
- Participants described changes in workforce, highlighting a need for increased numbers of quality staff.
- COVID-19 negatively impacted the economy and reduced employment, causing financial stress for many people.
- COVID-19 impacted schooling and childcare, causing many children to fall behind in their education.
- A lack of safe, affordable housing and inadequate or aging infrastructure negatively impact health.
- COVID-19 increased telehealth options, creating access for some groups and barriers for others.

- The number of available resources to support communities expanded because of COVID-19.
- There is increased need for affordable and accessible mental health and substance misuse treatment.
- Social Determinants of Health (SDOH) continue to be a priority for public health programs and interventions.
- Over the course of pandemic there was a decrease in individuals seeking preventative public health services.
- Health insurance influences personal health decisions through their policies and practices, both positively and negatively.

2. What new factors (discrete elements) have emerged that impacted health over the past two years?

- Technological advancements have occurred, including telehealth, and expanded data sharing.
- A changing and unstable workforce negatively impacts healthcare staffing.
- Public distrust of healthcare increased due to the prevalence of misinformation surrounding COVID-19.
- The COVID-19 pandemic increased the existing mistrust of government for many populations.
- Participants expressed that there has been an increasing politicization of public health, which was worsened by COVID-19.
- Fear and mistrust in healthcare and public health negatively impact health.
- Economic instability and high cost of health care decrease access to needed services and resources.
- There has been an overall reduction in preventative screenings.
- During COVID-19 there was an expansion of provided services to meet the needs of the community.
- Transportation is a continued public need.

- There is an ongoing need for housing for people experiencing an emergency or homelessness.
- Communication of available resources within neighborhoods and communities of color needs to be enhanced and expanded.
- Current economic conditions have restricted access to needed supplies and increased the cost of necessities.

3. What new events (one-time occurrences) have emerged that impacted health over the past two years?

- The prioritization of eliminating COVID-19 reduced access to other needed services and treatments.
- Substance misuse has increased, particularly use of opioids.
- Gun violence is a continued concern, including mass shootings and police shootings.
- Politics and legislation were significant factors impacting health for many populations who have been socially and economically marginalized. Some legislation promoted health while other policies created major barriers.
- The shortage in infant formula has negatively impacted the health of families.

State Themes and Strengths Assessment

The Themes & Strengths Assessment answers the questions:

- What is important to the state?
- How is quality of life perceived in the state?
- What assets does the state have that can be used to improve the public's health?

Themes from discussions with public health system partners and feedback from community members included the following.

1. What new, different, or emerging themes and strengths are missing from the data?

- Mental health needs have increased due to the COVID-19 pandemic, despite the shortage of available mental health providers.
- The transition to virtual school during COVID-19 decreased children's access to public health services and resources, and this transition disproportionately impacted children from low-income families.
- Certain populations have historic and current experiences of discrimination when receiving healthcare.
- Demographic shifts occurring throughout the state should be examined when considering population health.
- The importance of assessing unintended consequences of public health efforts needs to be considered for future initiatives.
- Technology is proving to be essential for accessing health care; however, many rural communities lack access to reliable internet.
- Safe and reliable public transportation was a continued need, especially among low-income communities.
- More services and resources are needed to support older adults aging in place.
- There are food deserts with low access to nutritious foods in many areas across the state.
- Housing is a need across all income levels, and there is a lack of affordable and safe housing.

- Politics can be a barrier to health and legislators often have not consulted public health professionals when creating and supporting related laws.
- The impact of the economy on health is important to consider.
- Climate change has an impact of health of individuals and communities.
- Substance misuse has increased along with an increase in associated drug-related harms.
- Strengths emerging from COVID-19 included increased flexibility and ability to adapt to community needs through increasing available services and expanding partnerships.

2. What assets do we have that can be used to improve the four priority areas?

- There is a need to invest funding in local communities and identify creative ways to engage local leaders.
- Establishing and sustaining local partnerships is critical to successfully addressing health inequities.
- There is potential to collaborate with existing community organizations and events to provide public health services in areas where community members are already gathering.
- Ideas for increasing food access included expanding successful initiatives, such as community gardens and increasing available funding.
- There are opportunities to utilize Federally Qualified Health Centers (FQHCs) to expand access to health care.
- Services for older adults and increased supports are needed to help this population age in place.
- It is important to provide high speed internet access to all children enrolled in schools and people who live in areas lacking access.
- Compensated translation and interpretation services from community organizations are an available asset.
- Strong leaders and new public health initiatives are assets supporting community health.

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