BRANCH, HILLSDALE, ST. JOSEPH

COMMUNITY HEALTH NEEDS ASSESSMENT 2023

ST. JOSEPH COUNTY

Contents

ACKNOWLEDGEMENTS

The purpose of the Branch, Hillsdale, St. Joseph Community Health Needs Assessment (CHNA) and Community Health Improvement Plan (CHIP) is to identify trends in death and illness so that human service organizations can design strategies for improvement. It draws on a wide variety of information sources including work by partner organizations and original interviews with affected residents. It is a partnership between the three community collaboratives in Branch, Hillsdale and St. Joseph counties in Michigan (BHSJ), and the local health department serving that jurisdiction, the Branch, Hillsdale, St. Joseph Community Health Agency (BHSJCHA). The three collaboratives are the Branch County Community Network (BCCN), the Hillsdale Human Services Network (HSN) and the St. Joseph Human Service Commission (HSC). Many

dozens of local hospitals, non-profits, faith-based and human service organizations are part of these collaboratives. County community collaboratives are a recognized part of the structure of human services in Michigan dating back to 1995 during the administration of Governor John Engler. While it is true that State funding for these collaboratives has disappeared, most Michigan counties continue to rely upon them for local strategic planning, evaluation and innovation on behalf of their residents.

As of this writing, the leaders of these organizations are Madison Hostetler (BCCN), Grace Broesamle (HSN) and Laura Brott (HSC). These three individuals supported the work of the CHNA/CHIP, encouraged their members to do the same and provided excellent feedback to the project team. Many other people used the opportunity afforded by the CHNA/CHIP process to tell us about community needs, or address them, including, but not limited to those named below.

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Sincere apologies to anyone we missed.

Leadership from Three Rivers Health was provided by Hope Bailey, Vice President of Nursing. The report was written by Alex Bergmooser, Health Education and Promotion Supervisor at BHSJCHA; Marcus Cheatham, consultant; and Thomas Carey student intern.

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EXECUTIVE SUMMARY

- Our community, like the rest of the United States, has experienced a striking increase in mortality since the Great Recession of 2008. Rural communities like ours have suffered the greatest mortality increases.
- Most of the increase in mortality is due to the COVID pandemic. Our counties had higher than average COVID mortality, and some deaths occurred because of disruption of the health care system.
- Some other causes of death that increased after 2008 are still doing so. There include:
    - Chronic diseases like diabetes, lung disease and kidney disease, which are related to unhealthy lifestyles. Efforts to increase community health have not borne fruit and our residents have not improved their diets or exercise.
    - Suicides, drug overdoses and car crashes, which are related to substance abuse and poor mental health.
- Babies born in our counties are healthier than average. But our mothers are not healthier than other mothers, meaning this could be reversed without action now.
- Our counties have low homicide rates. However, non-lethal violence has increased, meaning we should take action now to protect public safety.
- Teen alcohol and tobacco use has declined dramatically.
- Teen vaping, which increased over the past decade, has levelled off or declined slightly.
- Despite legalization of marijuana, teen use has not increased significantly yet.
- Seniors are experiencing an increase in the rate of poor health outcomes for conditions like Alzheimer's, falls and septicemia that is not solely due to the aging of the population.
- The rate of childhood immunizations has declined slightly. Our counties remain under-immunized overall.

FORWARD—A UNIQUE YEAR

This document is being prepared at a uniquely challenging time in which American communities are facing surprising and alarming health trends in sickness and death. Until the past decade, the health status of Americans seemed to steadily improve. Between World War II and 2000 life expectancy increased by 22 percent to 77 years and the age-adjusted mortality rate was cut in half. This was because off tremendous improvements in public health including the halving of tobacco use, enormous strides in automobile safety and the advent of life-saving vaccines. The gaps in health between Americans of different socio-economic backgrounds began to close.

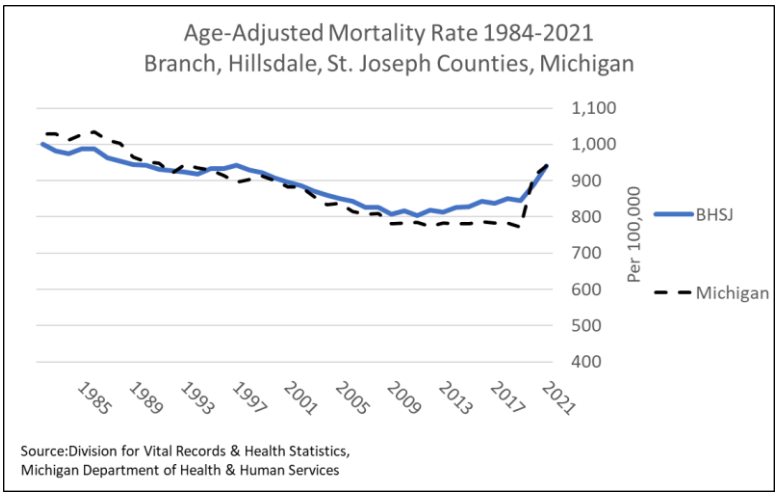


Figure 1. Age-Adjusted Mortality

However, beginning around 2008 some of these positive trends began to stagnate or go into reverse. Consider the age-adjusted mortality rate per 100,000, just mentioned above, which is the number of people who die out of every 100,000 every year. "Age-adjusted" means the data are corrected so that different places appear to have the same proportion of old and young people, so you can compare communities without worrying that any differences are caused by differences in age.

The age-adjusted mortality rates in our three counties jumped more than 15 percent between 2010 and 2021. The disappointing reversals have been no less apparent in our three counties than they were in our country's typical mortality hot spots along the southern border, in the Mississippi delta, Appalachia or de-industrialized manufacturing communities.

Figure 1 shows the trend in the mortality rates from 1982 through 2021 (for legibility some years' labels are skipped). The blue line is for Branch, Hillsdale and St. Joseph counties and blue will be used for the three counties throughout this report. The dashed line is for Michigan as a whole (dashes were selected so people who have difficulty seeing color can tell the difference). The first thing to notice is the long downward trend in mortality. You can see that our counties had lower mortality than the State until the late 1990s. You can also see that mortality began to stagnate, and then increase after the Great Recession of 2008, and our area then had higher mortality than the rest of Michigan. Finally, the sharp upward spike after 2020 is the COVID pandemic. In 2021 mortality was again as high as it was in 1997. If you only take one thing away from this report, this should be it. The focus of our assessment is the causes of and local efforts to address this historic reversal.

While there are still plenty of positive trends to celebrate (which we will also discuss in detail), the reversals challenge local community organizations charged with protecting the well-being of their residents. Groups like United Ways, health departments, hospitals and other community-based organizations have as part of their missions taking local action to measurably improve health. Federal and State governments and grant-making organizations sometimes seem to be saying, “If only you do the right things, your community, too, can be a so-called Blue Zone”. (The term “Blue Zone” refers to communities with very high health status.) But gradually it has become clear that what seemed to be working before, is no longer. This underscores the importance of the health improvement planning portion of this project during which we have the opportunity to reexamine our beliefs about the best ways to improve health and reevaluate past efforts.

If this weren’t enough, our three counties, like the entire world, have faced the COVID pandemic. In fact, many of the statistics presented here were computed during 2021, the worst year of the pandemic, during which people everywhere experienced unusually high mortality rates. One way to think about this is that the statistics are, therefore, “misleading”. However, assessing health at this time also affords us the opportunity to ask, “What really happened to us during the COVID pandemic?” and to take critical stock of our response. Furthermore, as we realize, something similar will probably happen again, and we need to be sure we are as prepared as we need to be.

This report consists of two distinct parts. The first part is the community health needs assessment (CHNA). This is the largest proportion of the two documents and consists of a data analysis designed to help community members understand trends in the causes of death and illness in our counties. The second part is the community health improvement plan (CHIP) which—based on the data in the CHNA—is a report on a plan to improve health to which local organizations have committed themselves. In addition, some of the data and some parts of the health improvement plan are unique to individual counties, so there are three slightly different versions of these.

We will refer to the two documents together by the abbreviation CHNA/CHIP. The reader should also be aware that wherever I refer to these documents informally, for example as "the assessment", it is always implied that the health improvement plan included.

ABOUT HEALTH ASSESSMENT AND IMPROVEMENT PLANNING

Community health assessment and improvement planning in public health is a complex and fascinating subject. It is connected to the boosterism of the middle of the 20th century when American communities competed for skilled workers trained under the GI bill; it is heavily influenced by Deming's theory of management and the movement to use statistics for quality improvement from the same time period; it responds to the public health campaigns of the 1970s around topics like tobacco and automobile safety; in the 1980s the Institutes of Medicine thought the approach could keep Americans focused on health while responding to the public rejection of excessive regulation; and most recently it has incorporated elements of movements for social justice that seek to reduce the disparity in sickness and death between people of different backgrounds.

For our purposes, though, the most important thing to understand is that health assessments have now been incorporated into the common wisdom about how communities should go about improving health. Almost all human services organizations active locally in American communities use some form of health assessment. These assessments may go by other names, like strategic planning or needs assessment, but most of the details are similar. Boards of directors and state and grant funders typically require them as part of the funding process, as a contract deliverable or as part of an accreditation process. Here we are concerned about one particular variety: the Community Health Needs Assessment (CHNA) required of both hospitals and local health departments.

In Michigan, local health departments such as BHSJCHA are required to do CHNAs by two oversight bodies. The first is the Public Health Accreditation Board (PHAB). PHAB is a national, non-profit, voluntary association created collaboratively by the CDC and the Robert Wood Johnson Foundation in 2007. PHAB was created because of the obvious lack of uniformity and clear standards in public health across states and territories. As time passes more and more

state and local health departments are participating in national accreditation and its leadership is broadly accepted today. To date 315 local health departments have been accredited by PHAB, (about 10 percent of the total) and that number is growing fast. Eight Michigan health departments are nationally accredited.

Equally important is Michigan's Local Public Health Accreditation Program (MLPHAP). MLPHAP was created by the Michigan Department of Health and Human Services (MDHHS) in 1998 to ensure local health departments operate in compliance with Michigan law. All Michigan health departments are required to participate in MLPHAP. Over the years it has evolved into a quality improvement organization. In 2018 MLPHAP began modifying its requirements to better align with PHAB. The alignment of MLPHAP and PHAB guidance creates clear direction for Michigan health departments, and it is this development that BHSJCHA leadership is responding to.

It is important to discuss hospital CHNAs because hospitals, like Three Rivers Health, are encouraged to work with health departments on CHNAs. However, CHNAs are not part of hospital accreditation, which involves other organizations like The Joint Commission and the National Committee for Quality Assurance. Instead, under the Affordable Care Act the Internal Revenue Service requires hospitals to do CHNAs. This actually makes sense, because it is the IRS that determines if hospitals are meeting the requirements for not-for-profit tax status, which includes documenting their community service. CHNAs are used by hospitals to show that they understand their community's health needs and have plans to meet them.

These different approaches to health assessments have led to the creation of several different formal processes to guide CHNAs. Three of the most commonly used include:

- Mobilizing for Planning and Partnership (MAPP) developed by the National Association of County and City Health Officials (NACCHO). This framework is frequently used by local health departments and NACCHO has continued to update the guidance to keep pace with changes in public health.
- Community Health Assessment Toolkit by the American Hospital Association Community Health Improvement Network (ACHI). One difference between MAPP and the ACHI toolkit is that while local health department health improvement plans frequently call

for community action, hospital plans often lead to changes in the way hospitals provide services.

- Protocol for Assessing Excellence in Environmental Health (PACE-EH) also by NACCHO. This is a health assessment model specifically for environmental health.

At BHSJ we are not following any one of these models exactly. Decades of experience mean that many local health departments are learning to capitalize on the strengths of their community partners to create health assessments more efficiently and health improvement plans of greater relevance to the people affected by them.

Many, if not most, community organizations do needs assessments like those done by health departments and hospitals. For example, United Ways call theirs "community needs assessments" too; Community Action Agencies—which administer federal Community Service Block Grants—do the same thing; and Great Start Collaboratives—which in Michigan are county organizations focused on maternal and child health—have multi-year strategic planning cycles based on needs assessments. We counted no fewer than 15 hospital and non-profit assessments that were done in the past three years in our three counties and there were probably several more.

The proliferation of CHNAs creates both a conundrum and an opportunity. The conundrum arises from the fact that CHNAs have become commonplace. When health departments began doing CHNAs, oversight bodies instructed them to "convene the community" to do the assessments as if it had never been convened before, and for many participants this experience was indeed the first time they had thought systematically about local health needs. Now however there is the danger of CHNAs becoming burdensome as community members are asked by the numerous organizations doing them to react to what turns out to be the same data over and over, and to repeat responses when asked what to do about what they see in the data.

On the other hand, the opportunity that exists arises from the sheer number of organizations doing assessments. Health advocates now have a tremendous amount of information at their fingertips. Most of the organizations around the table in a community collaborative already

have published information about the populations they serve, and already have plans in place to address identified needs, usually available on-line. These organizations are anxious to recruit others to support their plans. In fact, in 2020, NACCHO published the MAPP Evolution Blueprint which essentially pointed local health departments toward an approach to community health improvement that more fully integrates the strategies of all the organizations in a community.

> "It's collaboration. We have the ability to work together. I tell people we are small but we are mighty. When you look around you see so many things we've done together."
>
> Agency Director

Despite duplicativeness, it is probably the case that CHNAs have had a positive impact on the culture of health in American communities. Although it is unlikely that any single CHNA will uncover new information or lead to novel approaches, the fact that health assessment is now part of the normal business of community health in most local organizations means health advocates have a shared language and approach. Most are now well-informed about a host of health issues and understand current thinking about how to address them.

The table below summarizes the results of four CHNAs completed by hospitals with campuses in the BHSJ counties. The table indicates the priorities that were selected for inclusion in the hospital's health improvement plan. It is important to note that everyone makes addressing both chronic disease and mental health a priority in some form. As we will see, these priorities reflect what was learned in our CHNA also. Chronic diseases resulting from unhealthy lifestyles remain the leading killers in America; and mental health including both mild to severe mental health disorders and substance abuse underlie many other health care problems. These CHNAs have led to tangible improvements in the community, including the expansion of needed services such as inpatient mental health services.

Health System	Year	Priorities
Three Rivers Health	2019	Mental Health, Obesity, Substance Abuse, Suicide, Prevention Education, Access, Affordability
Coldwater Promedica	2019	Mental Health, Chronic Disease (Healthy Eating), Substance Abuse, Social Determinants (Food Insecurity)
Beacon Health	2021	Mental Health, Chronic Disease, Health Care Access

Hillsdale Hospital	2022	Mental Health Access, Chronic Disease Treatment, Recruit health professionals, Expand Medicaid Access, Reduce Opioid Prescribing, Increase Prenatal Care, Discharge Planning Resources, Telehealth

Figure 2 Some Previous CHNAs

CHNAs and the CHIPs based on them do have one glaring weakness. That is, community health improvement plans are necessarily local in scope while many of the factors influencing health arise outside a community. For example, a community can put in a traffic light to reduce car crashes, but it cannot make cars safer since they are manufactured elsewhere. A school can implement a drug awareness campaign but cannot stop internet sales or block social media content glamorizing drug use. A community can build affordable housing but cannot change the national tax code or increase the budgets of state housing authorities.

When the movement for local community health improvement was first being conceived, it was thought that if 3,000 counties, parishes and other local jurisdictions in 57 states and territories, each containing dozens or organizations concerned about health, were all doing CHNAs and CHIPs it would add up to a strong national culture of health, and perhaps things worked this way for a while. However, at least for the past decade the data seem to tell us that local efforts to improve health have been overwhelmed by national trends pulling us in the wrong direction. In rural areas things like stagnating household incomes, job losses and lack of investment and opportunity, that drive so much of our health, have just become part of the way life is. CHNAs do not tell local communities how to address these powerful external forces.

DATA SOURCES

We live in a time of great skepticism about science. Here I do not want to discuss the causes and consequences of this skepticism, but I do want to emphasize forcefully that the data presented here probably portray a very accurate picture of reality. The data used in this community health assessment come from sources created deliberately at the behest of legislators, so that American communities can understand their own health status. This mostly consists of state vital records systems which feed into federal systems like the CDC. As mentioned earlier, many local organizations do some form of CHNA, and report it in their own way, so it may appear there are many conflicting data sources. And one can consult data bases

such as Kids Count, the Kaiser Family Foundation and the Robert Wood Johnson County Health Rankings that compile data from many sources, but all of these are actually presenting the same information, which is only available from the originating source, that is official state vital records.

In fact, the different assessments are mostly based on the same data. Think of the data as a river running through a community. We do many different things with the water—serve tap water, bottle water, brew beer, etc. but the source of the water is the same. The state agencies that create the data are the water treatment plant. If they do their job correctly, we can all use the water safely.

The data sources we used are indicated below in Figure 3. The text in the hyperlinks is partial but the embedded link is complete and should take one directly to a page from which one can get more information about the source and query data.

DATA	Source	Link
Leading Causes of Death	MDHHS	vitalstats.michigan.gov
Mortality Trends	MDHHS	vitalstats.michigan.gov
Provisional Mortality Data	MDHHS	vitalstats.michigan.gov
Cancer	MDHHS	vitalstats.michigan.gov
Year of Life Lost	MDHHS	vitalstats.michigan.gov
Rates of Hospitalization	MDHHS	vitalstats.michigan.gov
BRFSS Trends	CDC	nccd.cdc.gov
Michigan BRFSS	MDHHS	michigan.gov/mdhhs/keep-mi-healthy
Infant Mortality	MDHHS	vitalstats.michigan.gov
Birth Characteristics	MDHHS	vitalstats.michigan.gov
Crime	Michigan State Police	michigan.gov/msp
Labor Statistics	BLS	bls.gov/lau
Poverty	Census: Small Area Income and Poverty Estimates	census.gov/data-tools/demo/saipe
Household Income and Education	Census: American Community Survey	census.gov/cedsci
Youth Substance Abuse	Monitoring the Future	monitoringthefuture.org
Michigan Profile for Healthy Youth	Michigan Dept. of Education	mi-sudder.com
Communicable Disease	MDHHS	michigan.gov/mdhhs/inside-mdhhs
Influenza	CDC	cdc.gov/flu
Immunizations	MDHHS	michigan.gov/mdhhs/adult-child-serv

Figure 3 Data Sources

While the published data are a boon to the community, each of our three counties is one-of-a-kind, and fully understanding ourselves requires careful conversations about our unique experiences. To supplement the published data, BHSJCHA collected new local data by conducting interviews with a small group of community members, especially but not exclusively people working in human services organization, and held focus groups with people from populations likely to be missed by traditional data collection methods.

The main purpose of the interviews with community members was to lay the groundwork for the Health Improvement Plan. The reason the interviews are important is because the plan is for the community. It requires others to agree to carry it out, and it is occurring in an environment of scare resources when other organizations already are doing work aimed at improving community health. Therefore, it is important to understand in some detail what others think is important and what they are willing to do. The interviews followed a high-level open-ended script used in many CHNAs but were also used to float ideas about collaborative interventions that were emerging from our data.

In our interviews and in community meetings where the CHNA was being discussed, we also asked people's opinions about who we are in danger of excluding from this process, and we worked to set up focus groups with people from those groups. The community suggested focus groups with Hispanic and Haitian immigrants, the Amish community, low-income mothers, clients of Community Mental Health (people with disabilities, mild to severe mental illness and people in treatment for substance abuse) and people with physical limitations. We reached out to partners serving all these groups and found support for focus groups with low-income mothers and CMH clients. One of our focus groups with mothers was conducted mostly in Spanish.

The interviews and focus groups provided a rich source of ideas for the Health Improvement Plan. Concise summaries of the interviews and focus groups are attached to this document as appendicies. To share the interviews and focus groups in this document, we have opted not to create more tables and charts but rather to use telling testimony in call-out boxes to extend the

findings where it is relevant. For example, testimony from low-income mothers appears in the section on maternal and child health.

INEQUALITY AND HEALTH

Perhaps the most fundamental insight coming from public health research is that sickness and death are not random, they are concentrated in low-income, vulnerable populations. Think, for example about infant mortality, one of the causes of death that distresses us the most. Infant deaths, as you probably know and as we will see, are heavily concentrated in the lowest income and most vulnerable families. But in our counties, it can be difficult to analyze this statistically for several reasons. Our counties have relatively small populations, and low-income families are just a portion of those small populations. Furthermore, pregnancies are even rarer, and infant deaths, mercifully, much rarer still. For many kinds of health issues like this, we will not be able to explore in detail how it is concentrated in low-income populations in one or another of our counties simply because we do not have enough local data to do so. But the unequal distribution of health is so important to understanding how it affects us and what the possible solutions might be, that we are going to take a little time now to talk about inequality in detail, and then I'm going to ask you to bear it in mind throughout this report, even when we're are dealing with an issue with insufficient data.

To make it clear just how unequally sickness and death are distributed, we are going to look at it in two different ways. First, we will look at it spatially, to see how it is concentrated in the places where low-income people tend to live. Then we will look at survey data on health outcomes to see how see how poor outcomes mostly affect vulnerable individuals.

> "Poverty and homelessness underly everything else. It is inequality that drives the illnesses you see in the community."
>
> Community member discussing high rates of chronic disease.

To see how poor health is concentrated, let's look at two maps of the state of Michigan: One is a map of the percentage of families living in poverty as measured by the United States Census, and the other a map of total mortality rate—the same data we looked at in Figure 1, but

mapped instead of graphed over time. We will see that the areas with the lowest income also have the highest mortality rates.

Figure 4. Poverty Rate

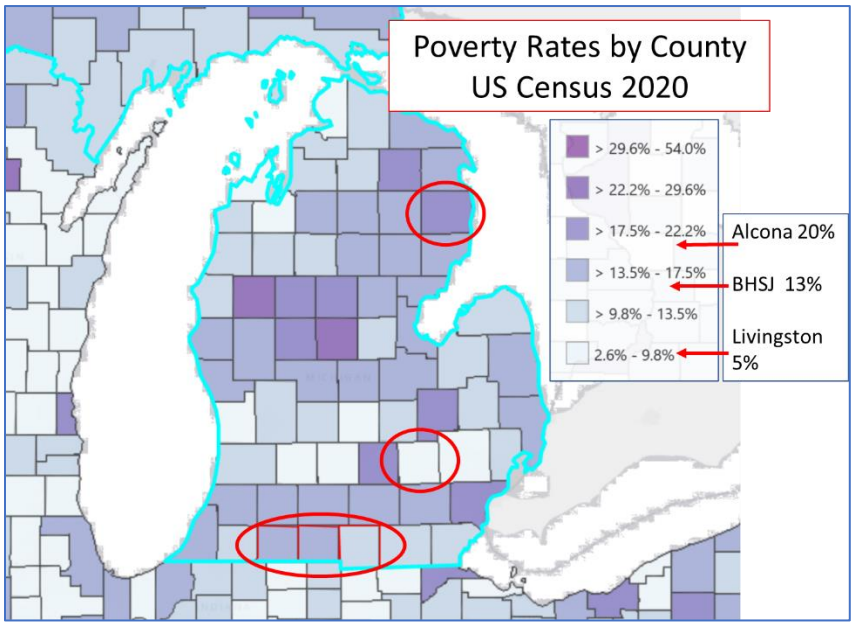
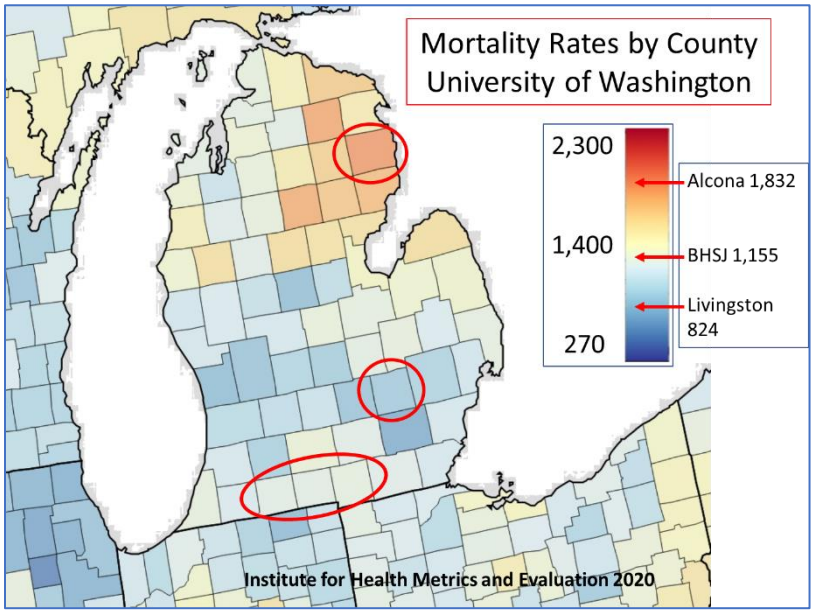


Figure 4 is the map of poverty. As you can see, poverty (darker blue) is concentrated in northern Michigan, especially the "index finger" of the mitten. Low poverty levels (white) are in a belt across the middle of the State where mid-sized cities like Grand Rapids and Ann Arbor are found. Southern Michigan (light blue) has medium poverty levels. To make it easy to see this pattern I have highlighted three areas: Alcona county, a high poverty area in the north; Livingston County with very low poverty in the middle belt; and our community with average poverty in the south. Notice that the poverty level in Alcona (20 percent) is four times as high as the poverty level in Livingston (5 percent). This huge spread is very typical of American states.

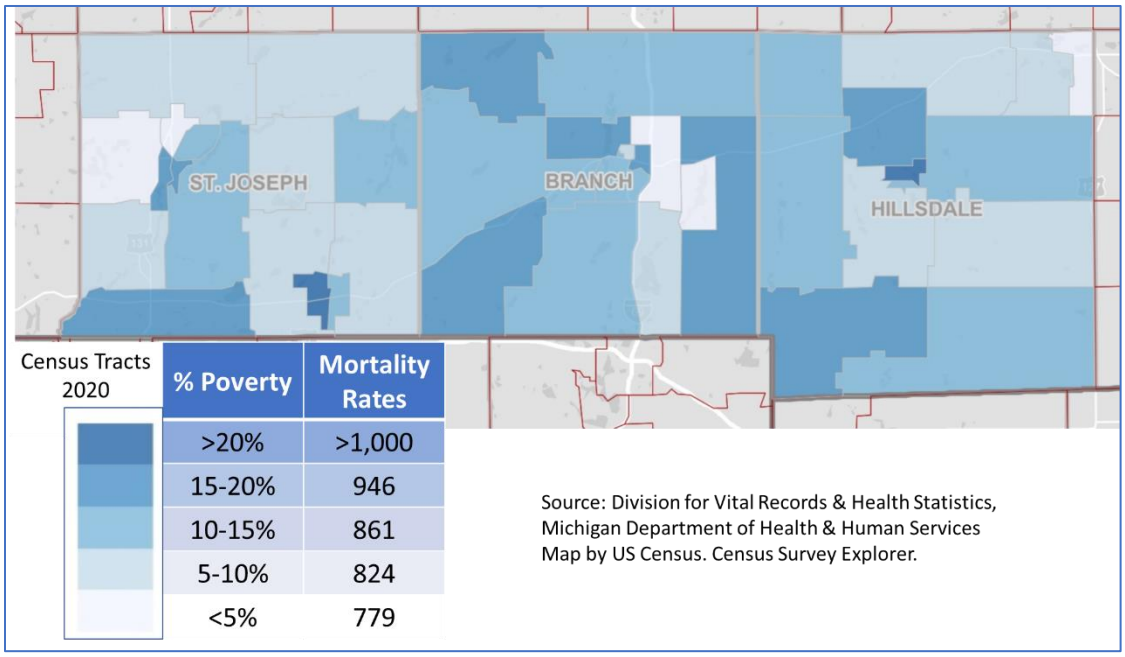
Figure 5, below, is the map of mortality. Again, high mortality areas (warm colors) tend to be in the north, low mortality (cool colors) in the middle with average mortality (white) in the south. The mortality rate in Alcona (1,832 deaths per 100,000 people per year) is more than twice as high as the rate in Livingston (842). The pattern is the same for mortality as it is for poverty, and again this large disparity is typical of American states.

Figure 5. Map of Mortality Rate



It is important to know that this pattern exists right down to the local level, even in Branch, Hillsdale and St. Joseph counties. Figure 6 is a map (from the Census) that shows the poverty rate by Census tract for our three counties, sorted into five groups, where darker blue shows higher poverty and very light blue is low poverty. With your eyes it is easy to pick out the towns of Hillsdale, Coldwater, Sturgis and Three Rivers. You can see that these towns tend to have a low-income neighborhood with affordable housing near the city center, and on the outskirts, a more affluent neighborhood which probably has new low density construction.

Figure 6. Local Mortality and Poverty Map



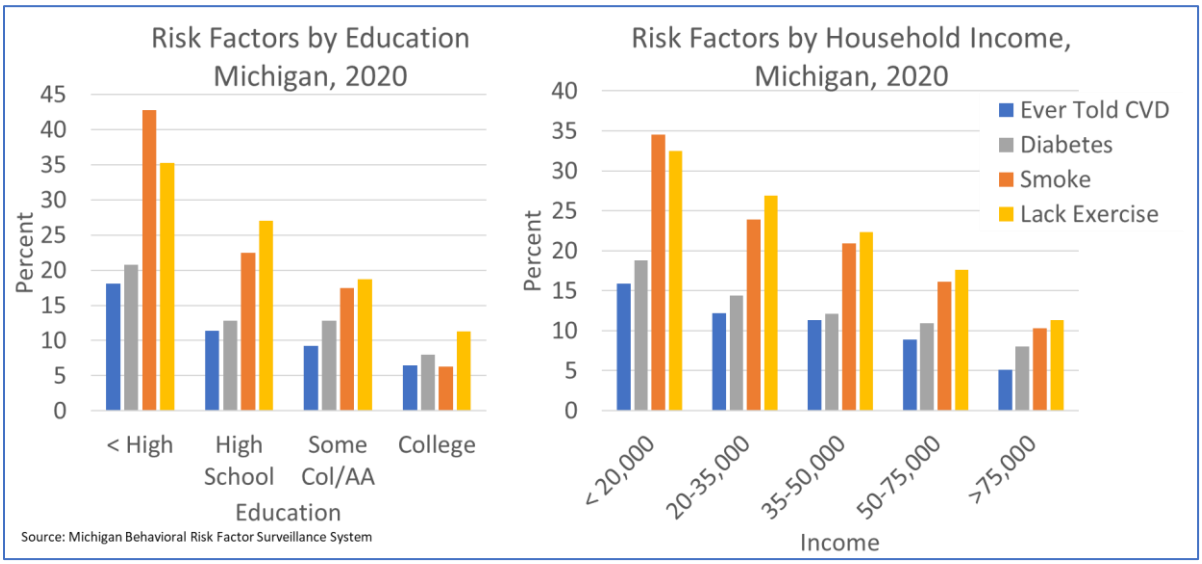
The data table on the map shows the average poverty and mortality rate for each level of poverty. As you can see the local range in poverty rates (5 percent to 20 percent) is the same as for the counties in Figure 4. And as with counties, the tracts with the highest poverty have the highest mortality and vice versa. The tracts with the lowest mortality (779) have roughly the same rate as Livingston County. Because the data are grouped, the map does not tell us the exact poverty rate of the tract that is highest, all we can tell is that it is more than 1,000, but I think it must be close to Alcona County. The inequality in our counties is a microcosm of the inequality in the wider world.

> "Poverty is everywhere, and it drags the community down. It affects our workforce because it is difficult for people to do well at work given what they are dealing with in the rest of their lives."
>
> Community leader on the challenge of addressing poverty.

Finally, inequality in health affects individual residents of our community no matter where they live. One of the most powerful ways to see this is in survey data that connects people's socio-economic condition with their health status like the Michigan Behavioral Risk Factor Survey (BRFS). Here we will look at data for the State as a whole, because the large sample size makes it easy to see the patterns in the data, but later we will look at survey data for just our counites. The two charts in Figure 7 are bar charts showing the

percentage of survey respondents who gave affirmative answers to four questions. Two of the questions are about whether the survey respondents engage in behavior that poses a risk for poor health: Smoking and lack of exercise. Two of the questions are about whether the respondents were told they have common health conditions that could be caused by smoking and lack of exercise: diabetes and heart disease (CVD).

Figure 7. Inequality in Health Risk Factors and Outcomes



People's survey responses are broken out against two scales, one showing their level of education, from less than high school to college completion, the other showing their household income ranging from less than $20,000 per year to over $75,000 per year. The results are clear, people with lower levels of education or lower incomes are much more likely to engage in behavior that is a risk to their health and are much more likely to have poor health outcomes. People with lower incomes and educations are roughly three to four times more likely than their more affluent neighbors to engage in risky behavior or have a chronic disease. The chart shows that the most educated and affluent among us as a group have amazingly low levels of risk and consequently very good health. It may be difficult for some of us to imagine the struggles of our neighbors.

This principle—that health is unequally distributed—is the basis of one of the most fundamental insights in public health. That is, in order to prevent disease and death, it is important to concentrate efforts on the people most likely to be affected. An example that is perhaps an oversimplification, but at least is very clear, is black lung disease. If only coal miners get black lung, efforts to prevent it must focus on coal miners. Educating bus drivers about the disease would not help much. The MAPP Evolution Blueprint, mentioned before, found one of the most difficult aspects of the CHNA/CHIP process is maintaining a focus on populations most at risk. Some reasons include the fact that low-income, vulnerable populations may not be fully engaged with public organizations, they may be difficult to reach or may be resistant to interventions. There may be political reasons that it is difficult to reach them, too. Think of border communities where some people feel we should not provide health care services to undocumented people. Whatever one thinks of the politics, denying health care services would definitely make it harder to reduce sickness and death among them.

> "Es difícil llegar a las citas o al trabajo porque nadie en el autobús habla español. Pero no podemos obtener licencias de conducir debido a nuestro estado. Si llegamos tarde, simplemente nos metemos en problemas, pero no es culpa nuestra."
>
> "It is hard to get to appointments or work because no one on the bus speaks Spanish. But we can't get driver's licenses because of our status. If we are late we just get in trouble, but it's not our fault."
>
> Focus group member

DEMOGRAPHICS

Southern Michigan, including our counties, is dotted with livable small and medium sized towns located among working farms and beautiful rivers and lakes. It is part of rural Michigan and shares both the virtues (low infant mortality, low crime) and vices (chronic disease, suicide, overdoses) of the rest of rural Michigan and indeed rural America as a whole. But being located between Interstates 90 and 94 connecting Detroit and Chicago, it is also changing, with options for economic development and an influx of job seekers. The three BHSJ counties have a population of over 150,000 people. Just under 90 percent of the population is White but not Hispanic. But the non-white and Hispanic proportion of the population has increased 75 percent since 2000.

"Algunos de mis amigos no pueden pagar el alquiler. Entonces se están repartiendo, dos o tres familias en una casa. Es difícil para ellos."

"Some of my friends can't afford rent. So they are doubling up, two or three families in a house. It's tough for them."

Father describing struggles

In the preceding section we looked at the strong relationship between economic well-being and health. Historically, the economy has been one of the most, if not the most, important drivers of health. Since the 19th century the gradual growth of the wealth of Americans has been accompanied by falling death rates and increased longevity. However, in the short run, there are many—mostly unintentional—countercyclical effects that can make this hard to see. To give but two examples, when the economy booms more goods are shipped, more workers are on the road and people drive more for recreation, resulting in an increase in car crashes. In an economic slump, people may drink and smoke less, improving their health. Furthermore, an external shock like a war or pandemic can affect health independently of the overall economy. Today widely accepted measures of economic well-being are not revealing their relationship to health in simple charts.

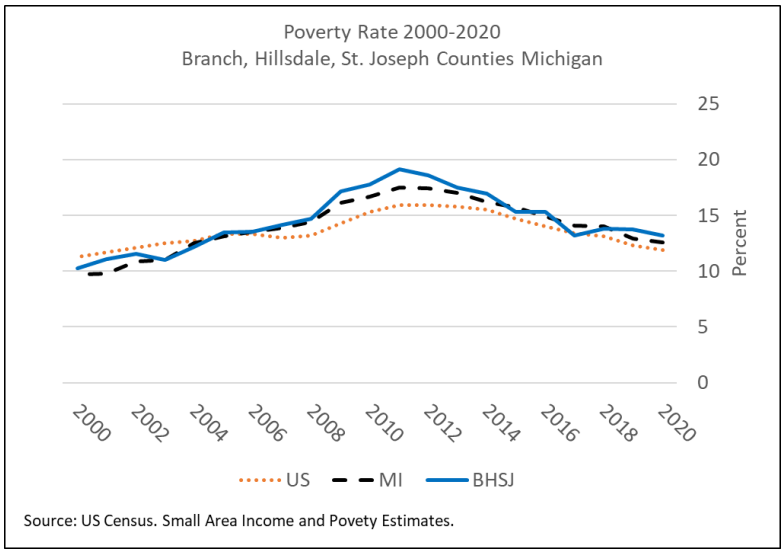


Figure 8 shows the percentage of the population living in poverty. The poverty rate was rising early in this century, and then rose faster after the great recession of 2008. During this time health, as measured by the overall mortality rate, was improving. After that the economy began to recover, but that is when mortality rates began to stagnate and then increase. Thus far the poverty rate in our area has reflected State and national trends, except during the Great Recession when our counties were hit harder than some other areas.

Figure 8 Poverty Rate Trend

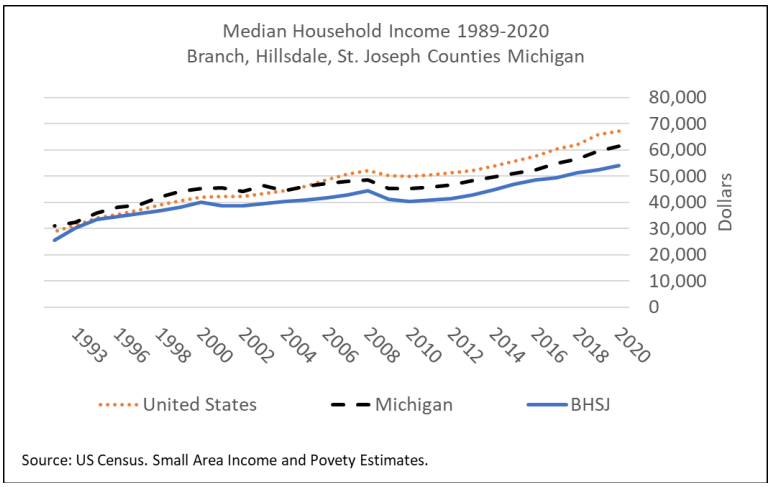
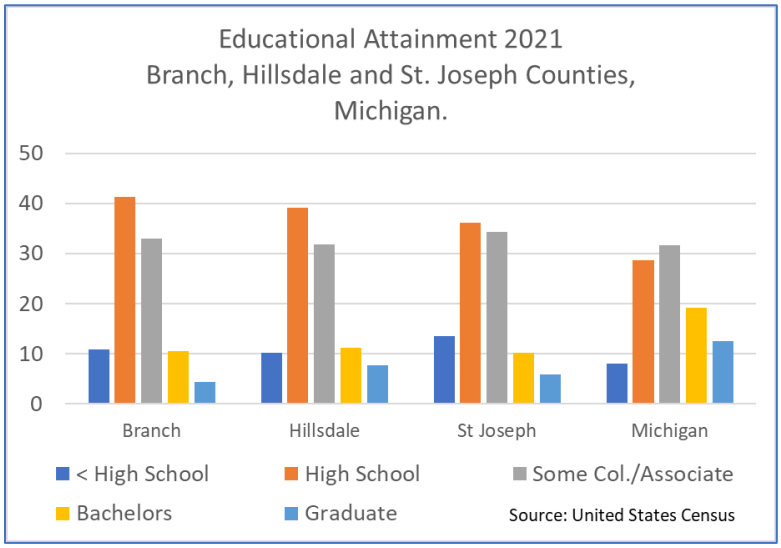


Figure 9 Median Household Income

Alternatively, we can use the median household income to measure the economy. Median household income usually increases steadily as wages rise gradually. In Figure 9 you can see the brief hiccup in household income during the great recession, but then incomes resume their climb even as mortality rates begin to increase. Household income remains significantly lower in our area than elsewhere.

What happened to the economy during the COVID pandemic? Good local data are not available for 2021 yet. The Census Bureau has announced that median household income was flat in 2021, but most economists expect it to have resumed its upward march when 2022 figures are released.

Figure 10. Education



In Figure 7 we showed that people with higher levels of education tend to be healthier and we showed that this relationship is very strong. Figure 10 shows that people in our counties are less likely to have graduated from high school or completed college than people in Michigan in general. For example, in our area about 10 percent of people have completed college compared to nearly 20 percent in Michigan as a whole. This is typical of rural Michigan counties. However as with the economic indicators we just discussed, we do not mean to imply that there is a simple law-like relationship between having a degree and health.

Rather, access to education in our community and measures of health are probably both characteristic of those communities that have suffered the largest reversals in health in this century.

COVID

This CHNA is appearing on the heels of an unprecedented health event, the COVID pandemic. It is true mortality began rising in 2008, twelve years before the pandemic, but most of the increase in deaths since 2020 is due to COVID. It is important to explore the pandemic thoroughly for two reasons: First, we need to understand whether there have been important increases in mortality other than COVID, and second, it is likely we will face other pandemics in the future and we need to learn as much as we can from this one, to be better prepared.

Figure 11. Excess Mortality During COVID

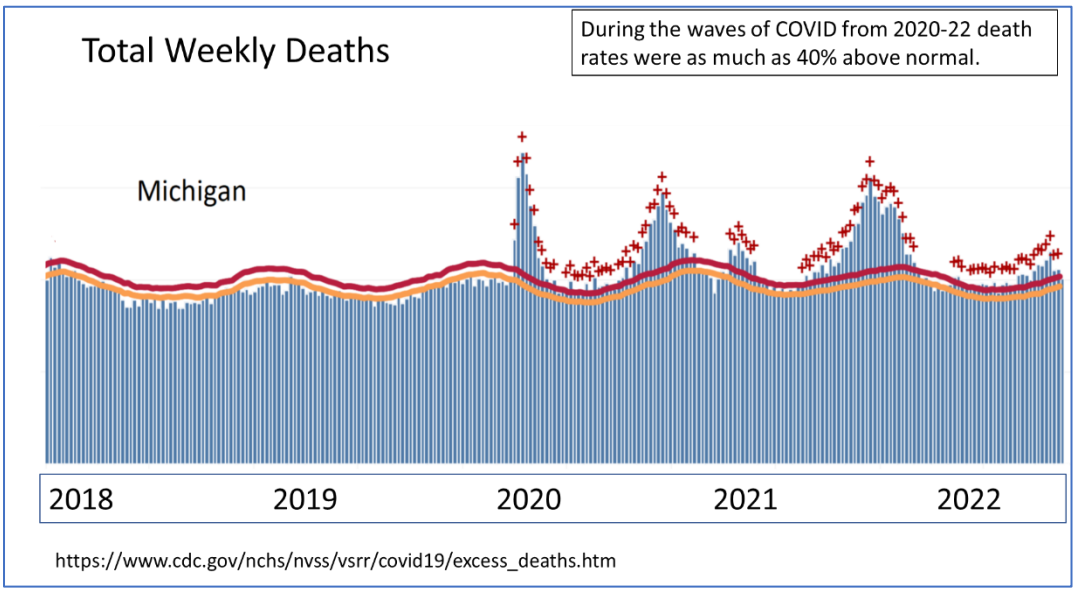


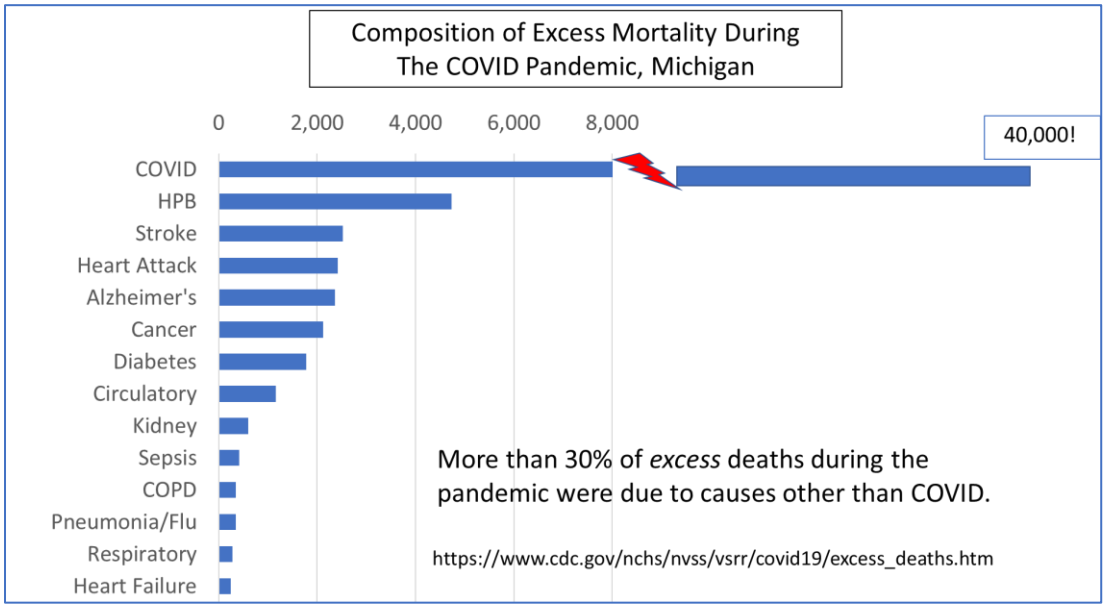
Figure 11 is a bar chart of the number of weekly deaths in Michigan from 2018 through 2022. There are 52 skinny bars for each year on the chart. You can see that deaths rise and fall in a regular pattern. They are slightly lower in the summer and higher in the winter. The CDC has calculated a range for the average deaths for each week in this cycle, which is displayed as two orange lines. Anything below the light orange line is considered below normal, and anything above the dark orange line is above normal or “excess”.

Notice the five waves of COVID beginning in the spring of 2020. Deaths surge above the dark orange line. The deaths above the line are counted as excess deaths. Some weeks deaths in

Michigan were 40 percent higher than normal. There has been no other health event like this since World War Two.

What do these excess deaths actually consist of? Figure 12 shows the number of excess deaths for each cause identified. The data are from death certificates. Death certificates contain information about all the things, including accidents, injuries and medical complications that

Figure 12. Causes of Excess Mortality



contribute to a death. The chart shows the one condition that was thought to be the primary cause of death. As you can see over 40,000 people died from COVID during that time. The bar for COVID is so long it would not fit on the chart. But there were many excess deaths resulting from other things including high blood pressure (HBP), stroke, Alzheimer's, cancer, diabetes, etc. We all remember that the health care system was swamped during the pandemic, and people could not get care for conditions that normally would have been successfully treated. More than 30 percent of the excess deaths during the pandemic were due to these other things.

> "I was sick when I was pregnant. The doctor told me it was COVID. I did have COVID, but something else was wrong and he wouldn't listen to me. Later I found out I had pre-eclampsia too."
>
> Focus Group Participant

There has been a lot of discussion about the actual causes of death during the pandemic. For example, some people think that there were fewer COVID deaths than reported, because deaths resulting from other causes were wrongly coded as COVID. At this point readers can see that if miscoding occurred, it certainly did not create a phantom pandemic. You can see with your own eyes the huge, unusual spikes in deaths occurring between 2020 and today. If most of these deaths were not due to COVID then we have an even worse problem: an enormous heath crisis of unknown cause. However, other people wonder if the apparent increases in other causes of death (heart disease, Alzheimer's, cancer, etc.) could have been caused by COVID in some way. Perhaps a COVID infection raises the risk of subsequent stroke or heart attack, for example. Resolving these controversies is beyond the scope of this report, but it is fair to say that the available data indicate many different things have contributed to the increases in sickness and death that have happened to us.

Before we leave COVID it is important to take note of the fact that COVID deaths were distributed just like other causes of death, that is unequally. Figure 13 is a map of Michigan counties like the ones we saw earlier. On this map dark red indicates areas of high COVID mortality, and light yellow is low COVID mortality. Notice the scale on the map. Some places in Michigan had rates of COVID mortality nearly four times higher than others, and again, this disparity is similar to other places in America. The three places we looked at before—Alcona, Livingston and our counties—are circled. Notice that Alcona has a very high COVID death rate, Livingston has a low rate, and BHSJCHA has a rate in the middle. The pattern of inequality for COVID is the same as other causes of death.

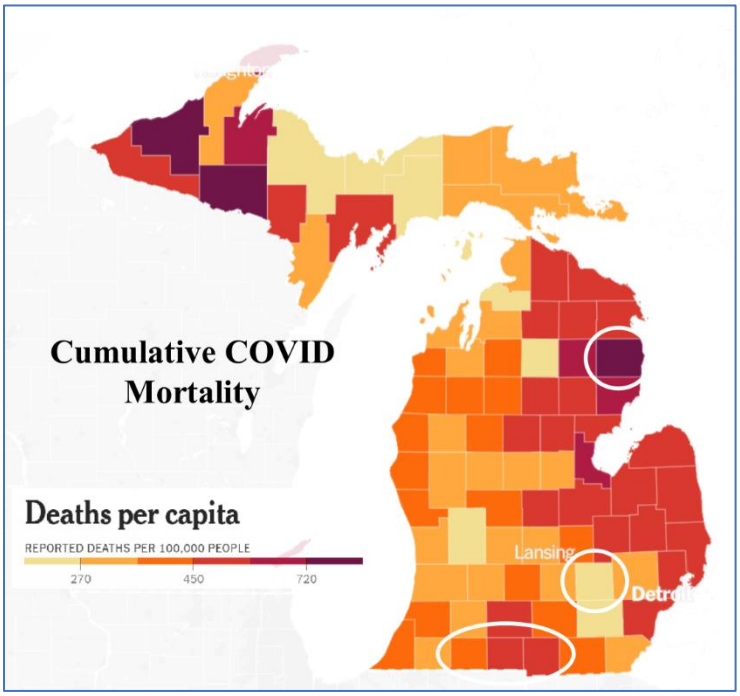


Figure 13 Map of COVID Mortality

THE DATA

LEADING CAUSES OF DEATH

The rest of this report is devoted to the data analysis for this CHNA. We will examine the health of our community in detail, looking at the important causes of sickness and death, comparing our counties to other places to see how we stack up, and examining trends across time to see what is improving and what is getting worse. But one of the easiest and most powerful places to begin is with a simple count. This act of counting deaths and illnesses will be a good first step toward identifying priorities for action.

Let's begin by looking at three things:

- The leading causes of death. This is just a count of the number of deaths for each cause, per 100,000 people, ranked in order.
- Years of potential life lost for each cause of death. This statistic weights the deaths of the youngest most heavily, the way we often do intuitively. It is computed by taking the difference between the average life span and age at death. If the average life span is 75 years, then when an infant dies at birth they lose 75 years of life. If someone lives to be 75 or older, they lose no years of life. The statistic is the sum of the years of life lost for all deaths, per 100,000 people.
- The leading causes of hospitalization. People are hospitalized for many things that do not kill them, and many fatal conditions do not result in hospitalization. But hospitalizations provide important information about the burden of illness.

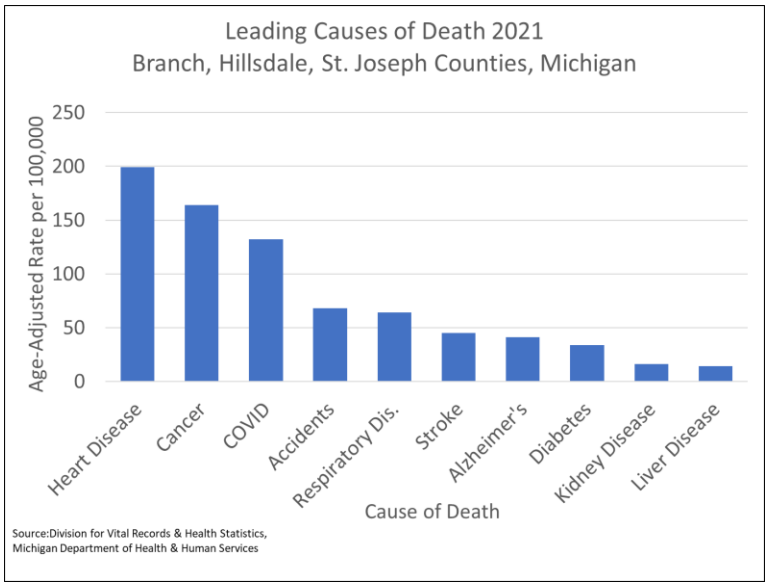


Figure 14 Leading Causes of Death

As you look at Figure 14, notice the left-hand axis which is the death rate per 100,000. Conveniently, our three counties have a population of about 150,000 people, a little bit more than 100,000. This means it is easy to estimate the total number of deaths from the rate per 100,000 without any calculation. When you see the rate, just increase it by about 50 percent in your mind and that will be roughly the number of deaths.

Figure 14 shows that three causes of death accounted for most deaths in 2021, heart disease, cancer and COVID. For comparison, in 2021 there were 398 heart disease deaths in the three counties, 344 cancer deaths and 269 COVID deaths. No other cause of death rivals any one of these. Heart disease and cancer are by far the leading causes of death, and we will return to them many times. Taken together these two illnesses account for 37 percent of the total. In 2021 COVID killed nearly as many people as heart disease or cancer. This shows why the pandemic was so profound. A brand-new killer had appeared and risen near the top of the chart. Most of the other causes of death in Figure 14 are related to chronic disease: respiratory disease, stroke, diabetes, etc. This is important because these conditions are often caused by the same risk factors that cause heart disease and cancer, illustrating how chronic disease remains the major health challenge of our time. Some of the other causes may be surprising. There has been a recent increase in car crashes, which has made accidents the fourth leading cause of death. Car crashes and other accidents often

> "For most people it is just cheaper to eat fast food, so they do it no matter what I say. With my patients, when I know how much fast food they are eating, I can guess just about when they are going to finally get sick. It has that kind of effect."
>
> Local Physician

happen to younger people and tend to be associated with substance abuse, suggesting some new issues we will learn more about below. The seventh leading cause of death is Alzheimer's. Remember the data are age-adjusted meaning the position isn't just due to the aging of our population—Alzheimer's really kills a significant number of people telling us issues of aging must continue to be a priority.

Figure 15 shows there are four leading causes of years of potential life lost: Accidents, cancer, COVID and heart disease. In terms of years of life lost, accidents now become the main concern because crashes tend to kill younger people with more years of life to lose. This reflects the trauma that the crash death of a young person inflicts on a community. In 2021, cancer, COVID and heart disease accounted for nearly equal years of life lost. This reinforces the earlier point that COVID briefly became as serious as any other cause of death you can name.

Other causes of death that tend to affect younger people now appear on the chart. Suicide and homicide appear in the fifth and ninth places. These causes of death are also often associated with substance abuse. And cirrhosis is rarely caused by anything other than alcohol abuse. Together these things direct our attention to the risk-taking behavior of youth. Also on the chart are premature births and birth defects. While these are rare, they affect infants. And both can be reduced by having healthier mothers and pregnancies. This suggests that maternal and child health should be a focus of our attention.

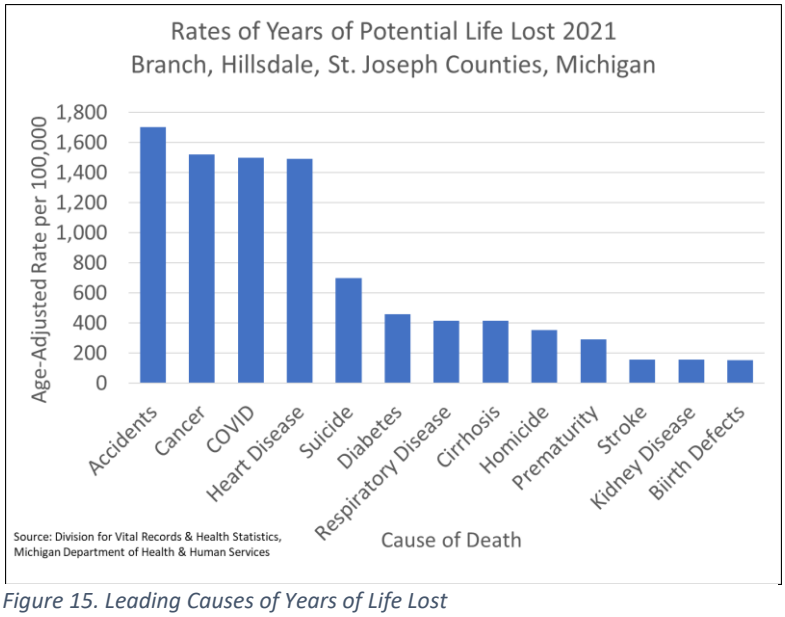


Figure 15. Leading Causes of Years of Life Lost

Examining the leading causes of hospitalization, we see heart disease, which often requires in-patient treatment, is again in the first position. Cancer, one of the top killers, is only the 11th

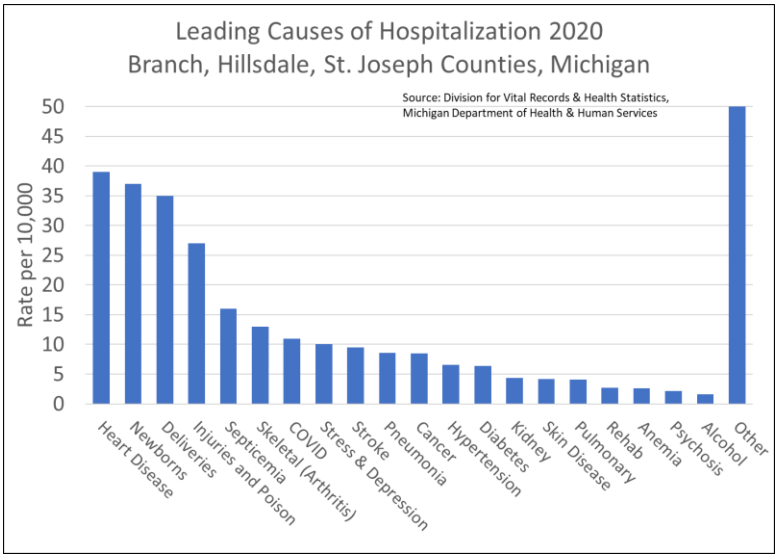


Figure 16 Leading Causes of Hospitalization

leading cause of hospitalization because treatment is so often on an out-patient basis. The next two causes of hospitalization are the hospital stays of newborns and their mothers. These are usually normal events to be celebrated, not illnesses, but their presence does remind us of the importance of maternal and child health. In the fourth position is something called "injuries and poisoning". This includes accidents and injuries like car crashes and in the hospital data it also includes overdoses. Taken together with acute alcohol poisoning (20th position) this tells us that the risk-taking behavior of young people poses a major challenge to health. In the 5th, 6th and 18th positions are septicemia, a serious infection, musculoskeletal conditions like arthritis, and anemia. These are often, but not always, problems of aging.

There is usually a delay reporting hospitalizations. The data in this chart are from 2020. Therefore, COVID appears only in the 7th position and, and as we saw in the 2021 data on the leading causes of death, will probably move up next year. There is another communicable illness, pneumonia, in the 10th position. Many years pneumonia ranks as a top ten cause of death, reminding us that communicable diseases remain a potent threat. Two of the top causes of hospitalization have to do with mental health, stress (8th) and psychosis (19th). Viewing the data, community members commented on the difficulty of finding beds for people who need to be hospitalized with mental health problems. Many of the remaining causes of hospitalization are chronic conditions like stroke, hypertension, diabetes and kidney disease. These conditions are mostly preventable and should be rare. Diabetes should not result in hospitalization if it is managed correctly. This underscores the importance of prevention in maintaining good health.

In the next section of this CHNA we are going to explore detailed data about the specific health conditions that we have identified as possible priorities in this section. This will enable us to confirm that these are indeed our priorities and gain a better understanding of how to address them. Briefly, these priorities are chronic disease, mental health and substance abuse, maternal and child health, violence, diseases of aging and infectious disease.

CHRONIC DISEASES

We will begin with the two most significant causes of death, heart disease and cancer. Fortunately, although these are the two conditions which kill the most people, they do not seem to be worsening at this time.

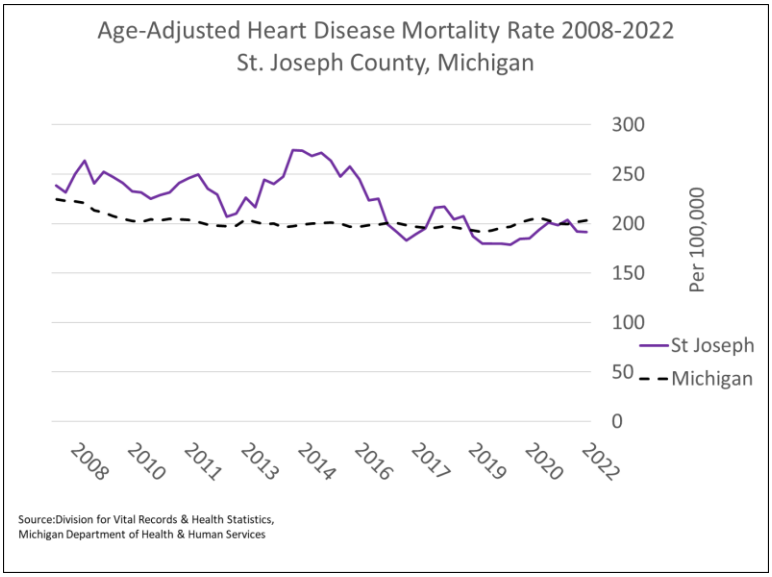
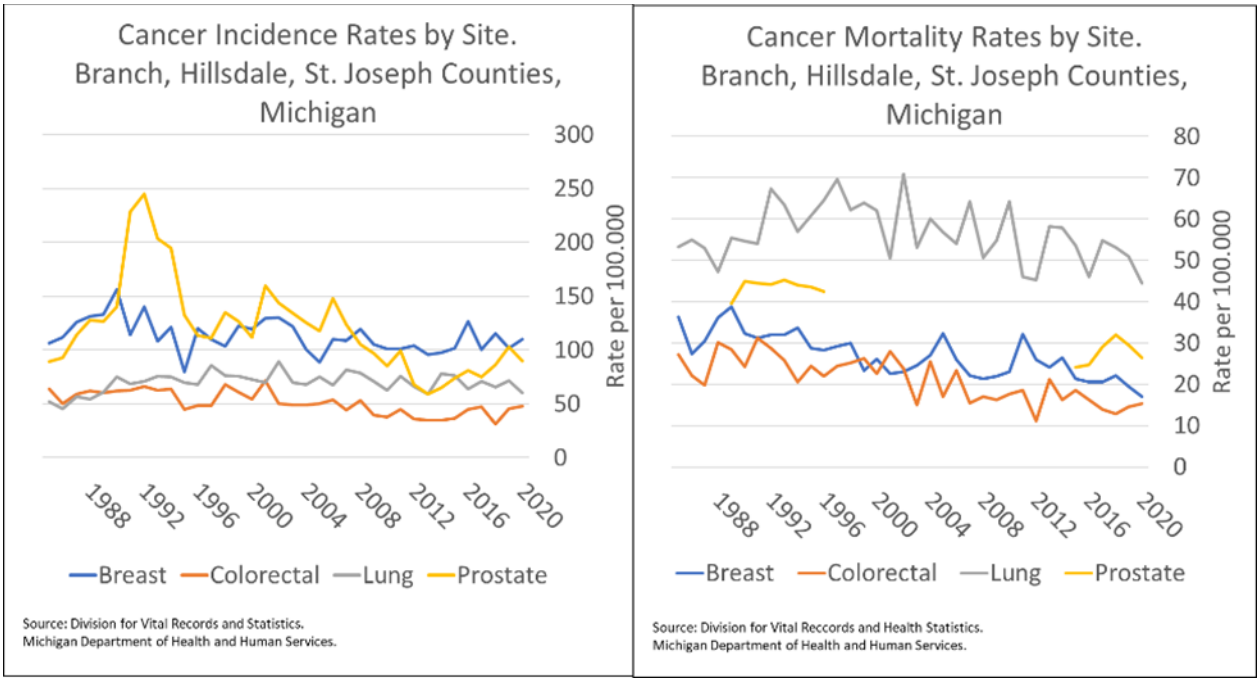


Figure 17 Heart Disease Mortality

Figure 17 shows the age-adjusted heart disease mortality rate for our county compared to the State as a whole. Since there are far fewer heart disease deaths in the county than in the State as a whole, the line for the County is less stable and wanders around. However, both the State and County heart disease death rates seem to be coming down gradually. The County rate often appears to be higher than the State rate, which is typical of rural areas. As we will see, any decline in deaths from heart disease is probably not due to our efforts to prevent it, but rather due to expensive advances in clinical care.

Figure 18, below, contains two charts showing trends in four common types of cancer: breast, colorectal, lung and prostate for the three counties in the jurisdiction together. One chart shows the incidence rate for these cancers, which is the number of cases regardless of the outcome.

Figure 18. Cancer Incidence and Mortality



The other shows the number of deaths for each. Both the incident rates and mortality rates for every type of cancer seem to be level or coming down. The yellow lines for prostate cancer need a little explanation. The incident rate seems to spike in the 1990s. This is because at that time it was believed that catching prostate cancer early would increase the survival rate. There were many campaigns recruiting men for testing so many more prostate cancers were found, but later it was realized that most of the cancers discovered did not need immediate treatment and the campaigns were allowed to expire. This also explains the gap in the prostate mortality data. The way data were coded was changed temporarily.

While it is good news that the two leading causes of death do not seem to be getting worse, we need to continue to address them. Since they kill so many people, we can't reduce mortality much without doing so. Also, other chronic conditions that are the result of the same risky behavior that cause cancer and heart disease are increasing, so trends in these conditions might foreshadow reversals.

Figure 19. Diabetes Mortality Rate

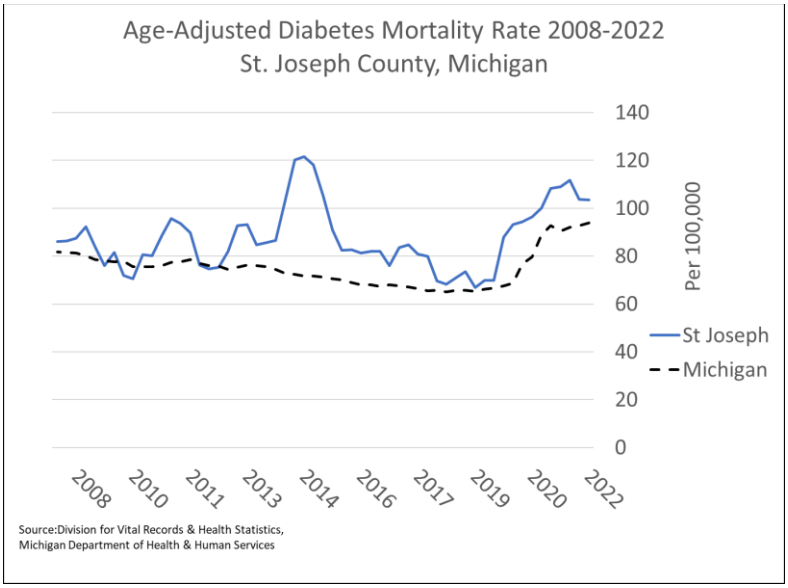
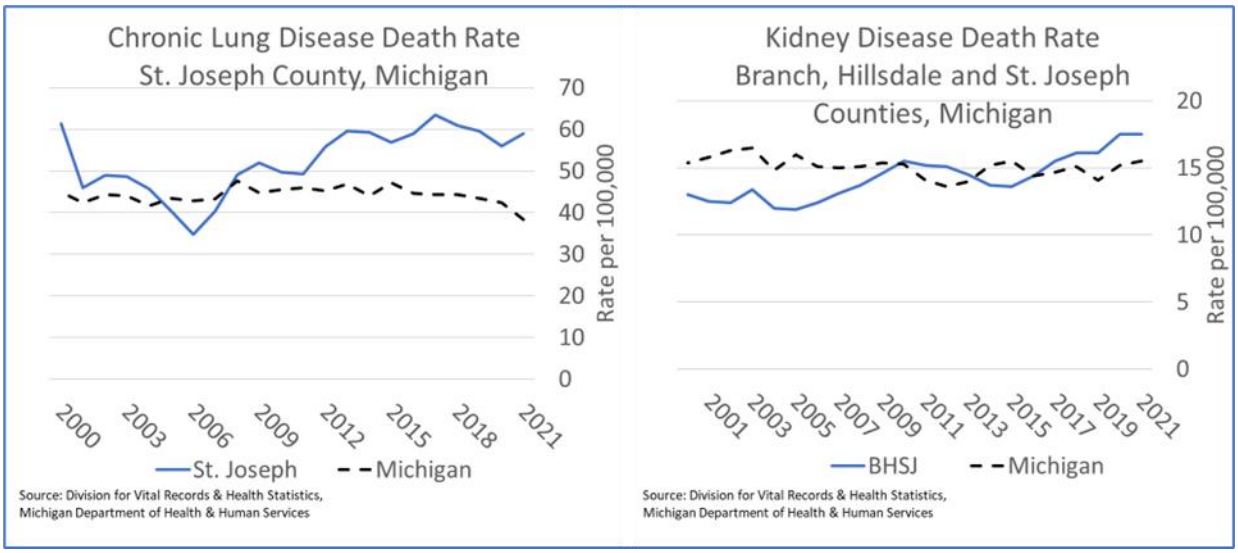


Figure 19 shows the trend in the diabetes mortality rate for our county. The rate gradually rises above the State average, which has been the case in many rural areas. We have confidence that the spike we see after 2020 (in contrast to 2014) is real, because we see it in the statewide data also. As we have already discussed, there are various opinions about why this spike has occurred. It could be because it was difficult for people with diabetes to get care during the pandemic, or COVID may have worsened the conditions of diabetics who were infected.

Some of the other chronic diseases that are leading causes of death do not appear to be getting worse at the state or national level but are stagnating and maybe worsening in rural areas. Two examples are chronic lung disease and kidney disease.

Figure 20. Trend in Lung and Kidney Disease



First of all, notice that the chart for lung disease is for our county specifically, while the chart for kidney disease is for the three counties taken together. There are many more deaths due to lung disease than kidney disease, as you can see from looking at the scale on the right side of each chart. Therefore, to get enough data to analyze for kidney disease we needed to group the three counties. The main points remain the same for both charts. Neither lung disease nor kidney disease has gotten a lot worse (The line for lung disease is noisy, however.) But both causes of death end up being higher in our community than the State average. This is a trend commonly seen in rural communities.

MENTAL HEALTH AND SUBSTANCE ABUSE

Chronic diseases are not the only thing contributing to our overall mortality increase. Next, we will turn our attention to causes of death that are related in some way to mental health or substance abuse.

Let's start by looking at the trend in adult mental health. As a reminder, this chart is based on data from the Behavioral Risk Factor Survey (BRFS). The most recent survey was done in 2020. About 400 adults in our three counties responded to the survey, which is just enough to analyze altogether, but not enough to compare individual counties. The blue line shows the percent of respondents who said they were currently experiencing stress or depression. The bars on the right show the same thing for the year 2020 for the State as a whole and also for the two Michigan communities which had the highest and lowest levels. In this case Monroe County was the highest and the Western Upper Peninsula was the lowest.

> "We had a teenager who suddenly needed to be hospitalized for a mental health crisis, but there was no where for her to go. So we had to just keep her in the emergency department for days. Imagine that, being in crisis and being stuck in this tiny room without the right kind of care."
>
> Local Health Care Professional

The trend in the percent of adults who report poor mental health seems to range between 10 and 15 percent without a clear direction, although for the last two years our counties have been above the State average. Experts do not agree on whether adult mental health in the US is getting worse or not. As we will see, some aspects of mental health are getting worse, but others are getting better. We will be able to be specific about what some of the problem areas and bright spots are.

Figure 21. Poor Mental Health

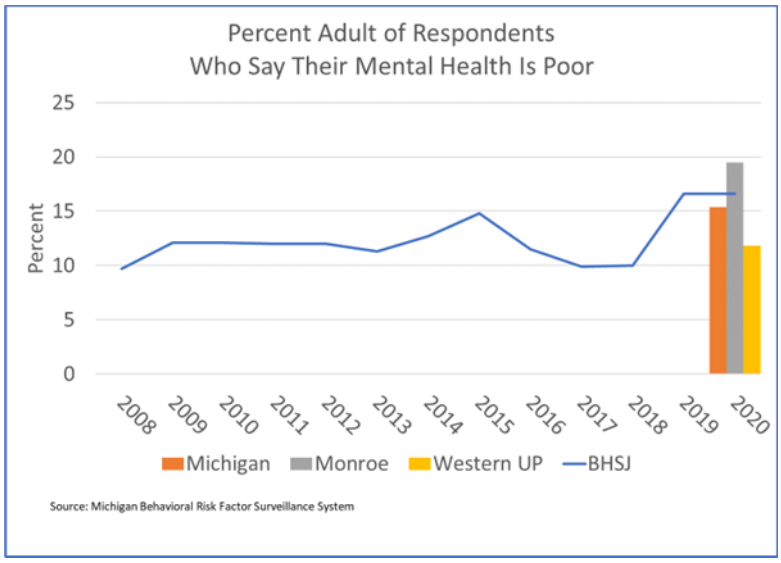
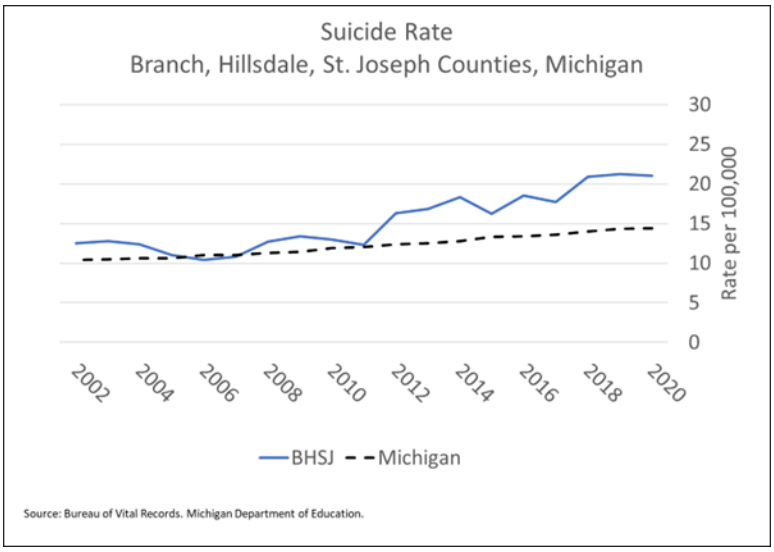


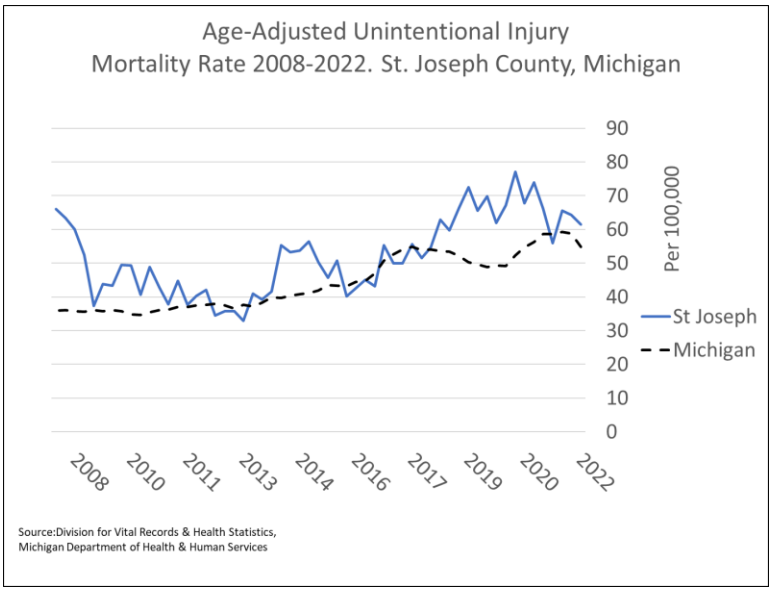
Figure 22. Suicide Rate



One of the most important mental health crises our communities are facing is suicide. Suicide has been increasing steadily for all groups for years, but the increase is greatest among men who live in rural areas. While the numbers of deaths due to suicide are low compared to the leading causes, suicides have become emblematic of the rise in rural mortality that has stubbornly defied our prevention efforts. Because of the trauma it can inflict on a community, suicide is like certain other rare causes of death—infant mortality, crash fatalities, overdoses—that have an outsized impact on survivors.

If it is true that mental health is not getting worse, but suicides are increasing, that could mean that while most people are not more likely to contemplate suicide, those who do are more likely to act and succeed.

Figure 23. Unintentional Injuries



The unintentional injury rate is increasing all over the country. While the rate includes things other than car crashes, such as falls by seniors, car crashes seem to be what is driving the increase. The historic decline in car crash fatalities of the late 20th century was the result of strides in vehicle safety demanded by drivers and health advocates. Vehicles have not become less safe. Instead, researchers say that driver behavior, including aggressive driving and texting while driving, but especially driving while intoxicated are behind the increase in fatalities.

There have been several surprising, positive trends in health in this century so far, especially with respect to youth. We need to identify these positive trends so we can ensure the gains are sustained. One such trend (which I never thought I would see after years of doing this work) is that youth alcohol consumption has declined a great deal. Figure 24 is from the Michigan Profile for Healthy Youth, a survey administered by most school districts to all their students every two years. Since it is a survey of almost all the students there

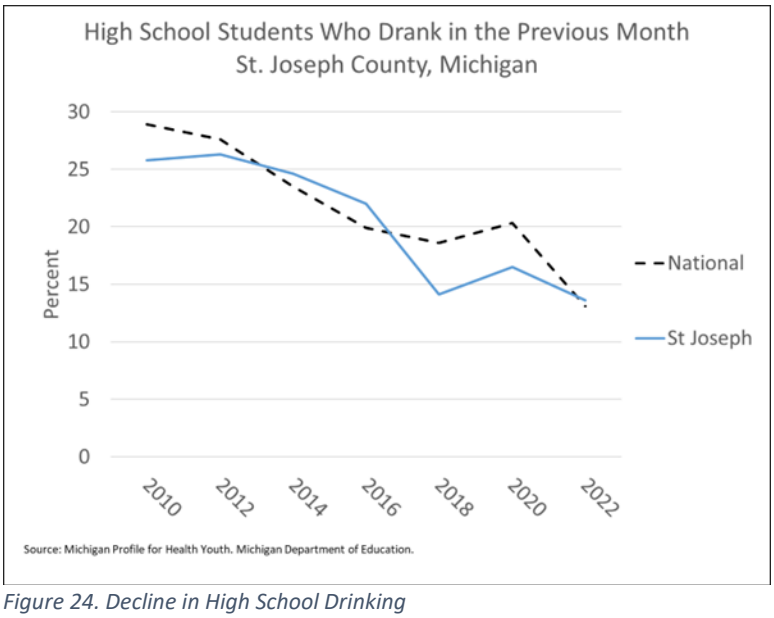


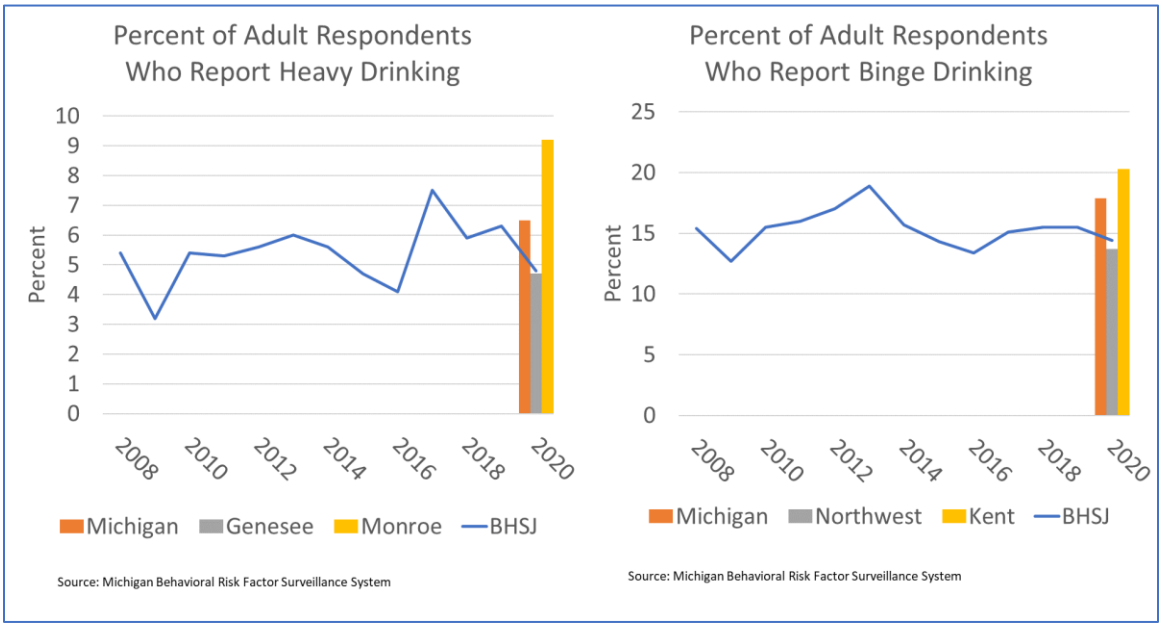
Figure 24. Decline in High School Drinking

is plenty of data at the individual county level. The chart shows the percentage of high school seniors who reported drinking. Notice that the precipitous decline in drinking in our county precisely parallels the Statewide decline. Exactly the same thing is seen in national, and even global data also.

Notice that the decline in youth drinking began years ago, well before the pandemic and before remote learning. Researchers confirm the change is real, but do not agree on the causes. Notably, they do not say that our prevention efforts have finally succeeded. Instead, they speculate, social media has changed how youth socialize in ways that have reduced the number of occasions for drinking.

Unfortunately, adult drinking has not followed the same trend. The two charts below show that adults are drinking the same (if not more) as they used to.

Figure 25. Trend in Adult Drinking



These two charts are from the BRFS. Since only 400 people completed this survey in our three counties the trend lines wander around some. But one can see that they more or less end up where they started. The chart on the left is for heavy drinking which means daily drinking two or more drinks. The chart on the right is binge drinking, which means occasionally consuming

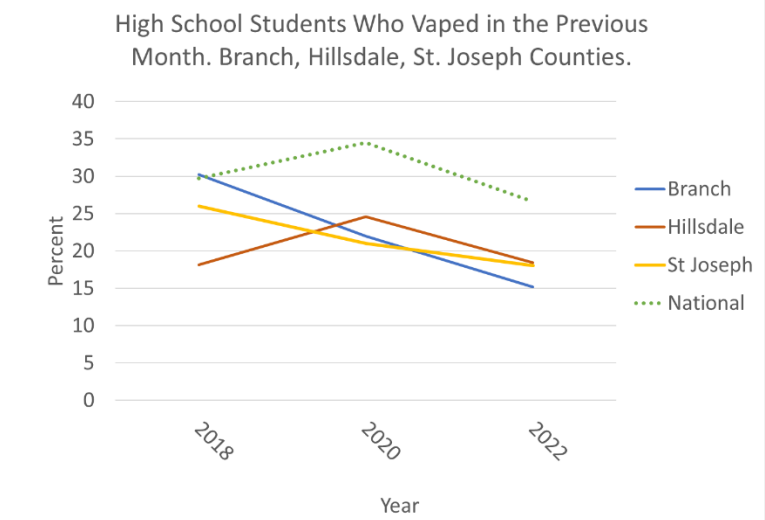
> "We need to deal with serious mental illness… I mean teenagers should not be committing suicide in this county. How does that even happen?"
>
> Interview Participant

four drinks for women or five for men. Notice that the trend lines end near the one community in Michigan which had the lowest drinking rate—Genesee County for heavy drinking and Northwest Michigan (Western UP) for binge drinking. Does our community really have a lower-than-average adult drinking rate? The answer is yes it does. On average people in rural areas drink less than people in urban areas. This is because it is people with higher incomes—like affluent urban salaried workers—who purchase most alcohol. This is a tendency we see across the state and nation.

For most of this century we have watched vaping—the use of e-cigarettes—increase rapidly among teenagers and high school students. The most recent data suggest that vaping has peaked and may even have started to come down.

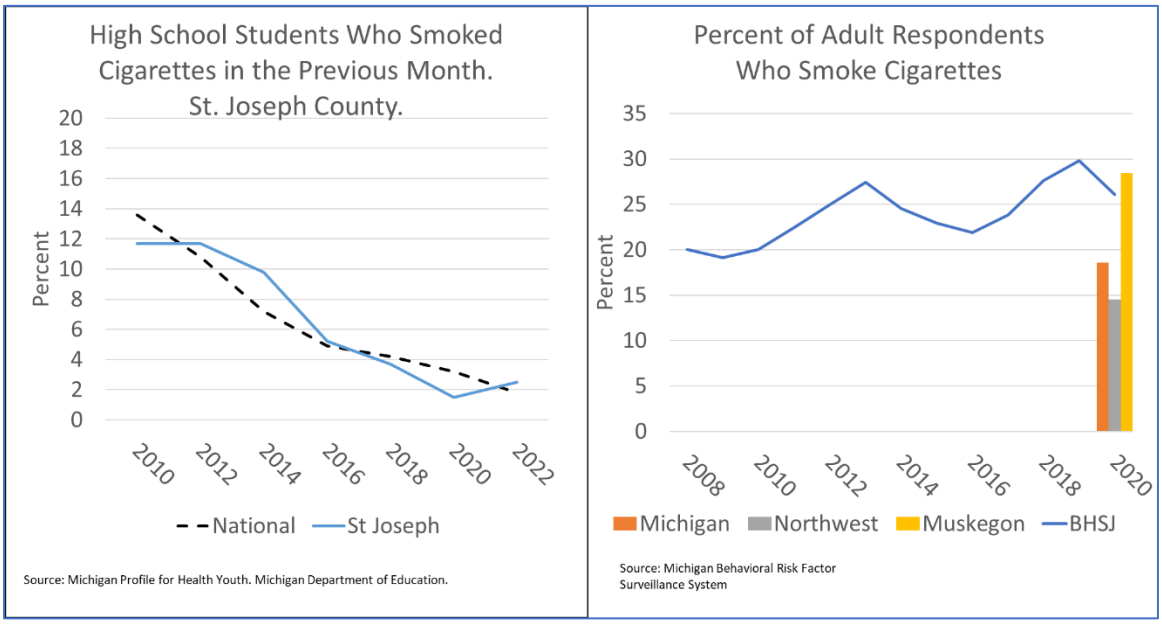
Figure 26. Vaping Has Leveled Off

The chart on the right shows the trend for each of our counties separately and also includes the national trend from the Monitoring the Future project at the University of Michigan. The past two survey years, 2020 and 2022, are the first ones in which we have seen decreases.



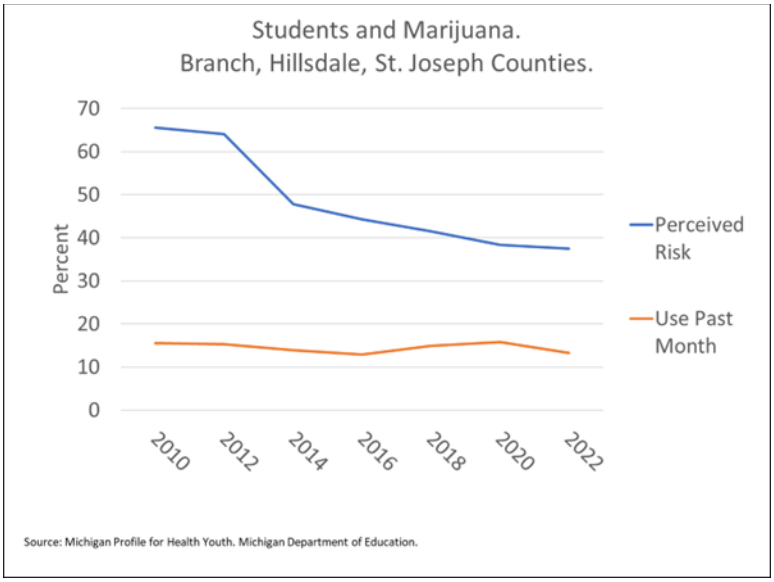
The two charts below are about tobacco smoking. The chart on the left is for youth and the chart on the right is for adults.

Figure 27. Adult vs. High School Smoking



Amazingly, tobacco smoking by teens had almost disappeared by the time of the pandemic. Both locally and Statewide only two or three percent of youth currently still smoke traditional cigarettes. Tobacco remains the single most important cause of preventable death in the US, so this is a very significant change with as yet unknown implications for the long-term health of this generation. However, adults are still smoking as much as ever. You can see that the trend line for adult smoking in our counties ends near Muskegon, the one community in Michigan that had the highest smoking rate in the BRFS survey. This makes sense, because historically tobacco has been the drug of choice in rural areas. Public health has had little success convincing rural residents to stop smoking, but the change in youth behavior could mean that future generations will be different.

Figure 28. Youth Marijuana Use



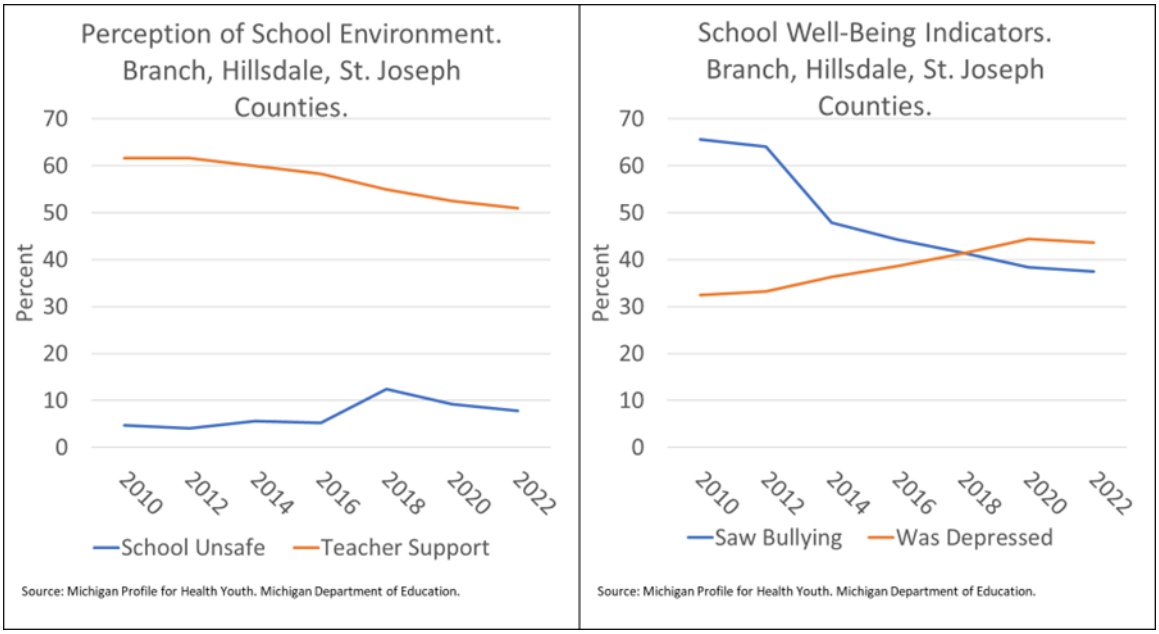
The legalization of marijuana could pose a serious threat to the health of youth. While public health strongly supports decriminalization of most drugs, the aggressive mass-marketing of marijuana which has occurred should be expected to result in increased use by youth. Indeed, as the chart on the left shows, since legalization attitudes toward marijuana among youth have shifted and less than 40 percent now report considering marijuana use to be risky. Gratifyingly, however, the use of marijuana by youth has not increased since legalization and it has remained steady around only 15 percent. Overall, the current low levels of alcohol, tobacco and marijuana use by youth are real cause for celebration.

> "Schools need all the support we can give them, instead of tearing them down. The parents are having a hard time too, and need the schools because they can't do it all on their own."
>
> Parent

Still, we know there is a great deal of concern about the well-being of youth. So, I want to look at a couple of other charts from the Michigan Profile for Healthy Youth that may help us understand how other changes may be affecting them. Let's start by looking at the chart on the right of Figure 29, below. The blue line on the top of that chart shows the percentage of students who reported witnessing bullying. In 2010 two-thirds of students said they witnessed bullying but by 2022 less than 40 percent said that. In Michigan, school districts have worked for years to address bullying and students are well-aware of this and this result probably reflects the fruits of that effort. However, the same chart shows that even as bullying decreased the proportion of students who said they feel depressed increased more than 10 points. That is not what we would have expected. Why would that be?

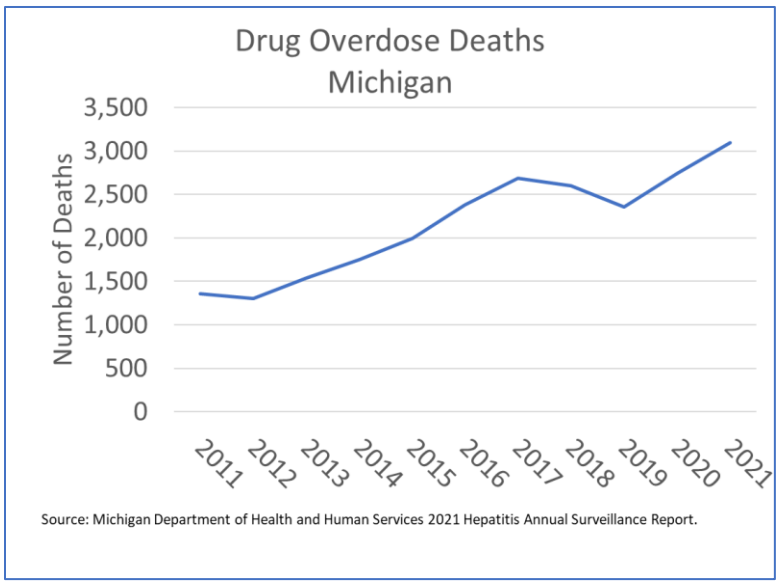
Consider the chart on the left of Figure 29. The orange line on the top shows that the percentage of students who felt supported by a teacher has decreased by about 10 points and the decline happened well before remote learning. This is significant because teacher support is critical to student well-being, particularly students who have unstable backgrounds. For example, one of the things that contributes the most to the resilience of a student who has experienced trauma is the support of another adult like a teacher.

Figure 29. School Environment



We know our school environment has been disrupted by rapid changes in curricula, technology and personnel in recent years. It may be that students feel less connected to their teachers than in the past. In pursuing other things might we have neglected the nurturing environment our students need? This is not to suggest that there is something seriously wrong with schools, quite the contrary. Given our youth's awareness of school shootings, it is very good to note that at least 90 percent of youth feel safe at school.

Figure 30. Trend in Overdose Deaths



While trends in youth substance abuse are moving in the right direction overdoses, especially by opioids, remains an epidemic in its own right. The chart on the left shows the number (not the rate) of deaths in Michigan. We have displayed the numbers for Michigan as a whole because that way there are enough numbers to see the strong upward trend clearly. In 2017 when we had over 2,500 deaths from opioids, we thought the crisis had reached its peak, but during the pandemic overdoses came roaring back. We have presented the raw numbers for our counties in Figure 37 on page 46.

HEALTH BEHAVIORS

When health departments first began creating CHNAs and writing CHIPs one of the main goals was to reduce the leading causes of death by changing the behaviors that harm our health, such as eating unhealthy food and foregoing exercise. The thinking was that, armed with good data, we would be able to persuade people to lead healthier lifestyles. The data about such behaviors that we will look at in this section used to form the core of CHNAs. Now we appreciate how much health risks are concentrated in low-income, vulnerable populations where people face many barriers to healthier living. For lower income people, meeting the daily needs of a family may preclude following health guidelines. Moreover, our lifestyles have changed so much, simple binary prescriptions like "eat less and lose weight" do not work the way we thought they would. For example, the foods we are presented with have changed so much, even people who try hard to lead a healthy lifestyle

> "Low incomes determine what people can eat… or not. It isn't healthy, we wind up with diseases like diabetes. We need to break that cycle."
>
> Interview Respondent

often still remain overweight. Making big improvements in the health of our population will require making deeper changes in our economies of food and work.

Figure 31. High School Nutrition

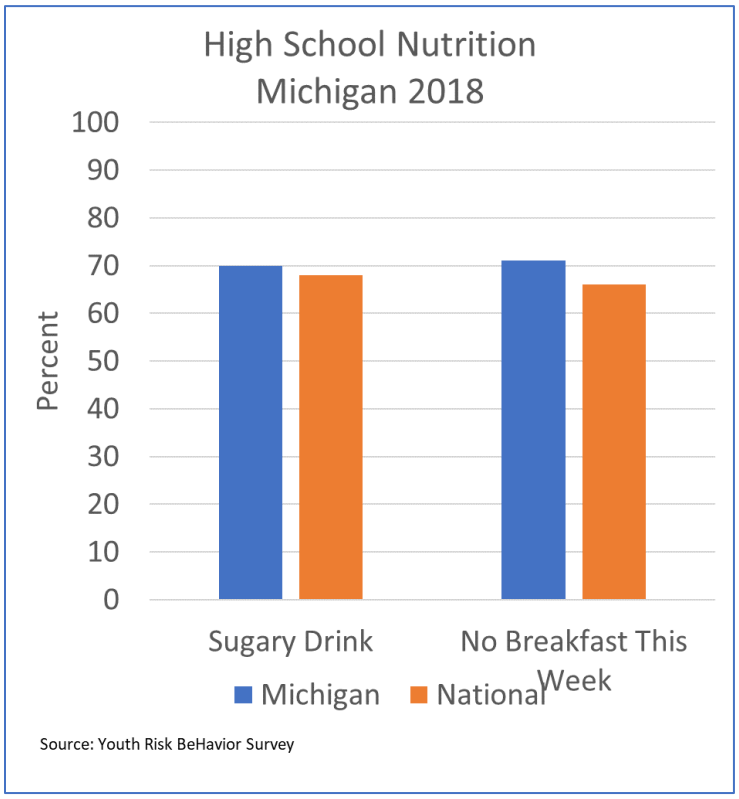
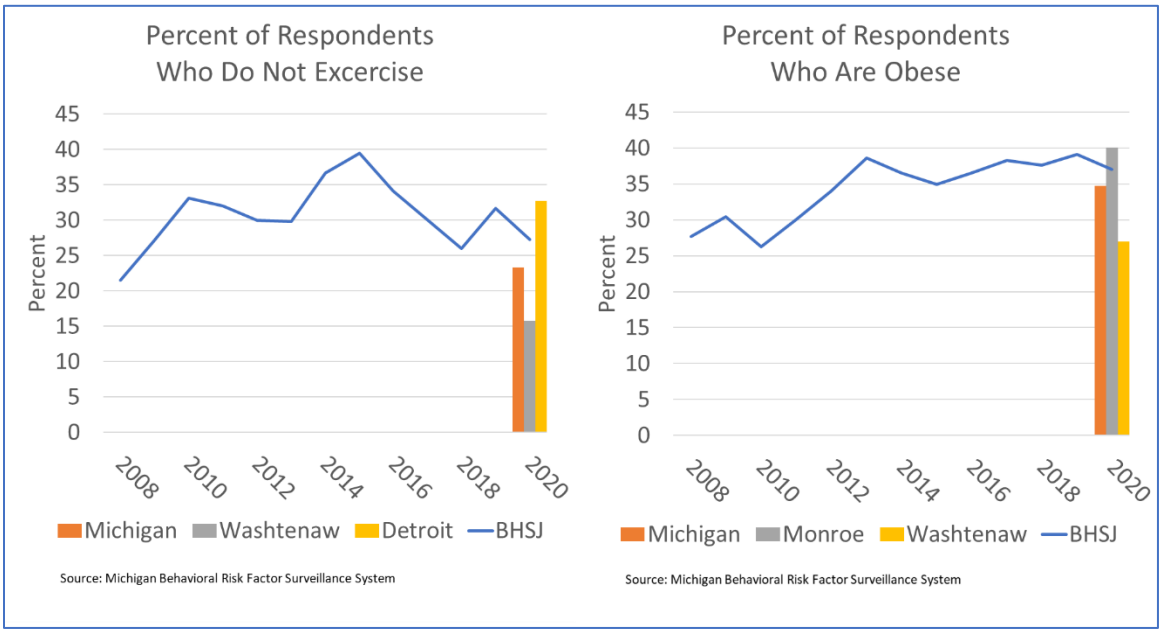


Figure 31 is nutrition data from the National Youth Risk Behavior survey. Good local data on nutrition is not available at the present time. Researchers have come to understand that the kind of nutrition surveys they had been conducting were not yielding useful information. The chart is included to remind us that most of us are still not eating as well as we should. It shows that most (70 percent) of students arrive at school without eating breakfast and are fueling up on sugary sodas, setting the stage for metabolic disorders later in life.

The two charts below are from the BRFS. The chart on the left shows the percentage of adults in our area who get absolutely no exercise and the chart on the right shows the percentage of the population that is obese. The main point is to illustrate the fact that we are not making progress in improving lifestyles. Fifteen years ago, I used to tell the communities I was working with that we Americans had become as obese as is possible for a human population, and yet the chart shows we have continued to gain weight.

Figure 32. Trend in Selected Health Risk Factors



MATERNAL AND CHILD HEALTH

Few things are of greater concern to us than the health of newborns. Historically, some rural areas in the United States have been places where babies are more likely than average to be born healthy. This is true in our counties. This is a wonderful thing, and it is worth preserving. But it is important to emphasize that this is not necessarily because the families these babies are born into have a lot of advantages. We have already seen how pernicious inequality is in low-income rural areas. Therefore, this wonderful aspect of our community could be at risk.

> "I thought breast feeding would be easy but it wasn't. I thought I had to supplement… I didn't understand my baby's needs. It was confusing. If the hospital has a lactation consultant its great, but if not, you are just on your own."
>
> Focus Group Participant

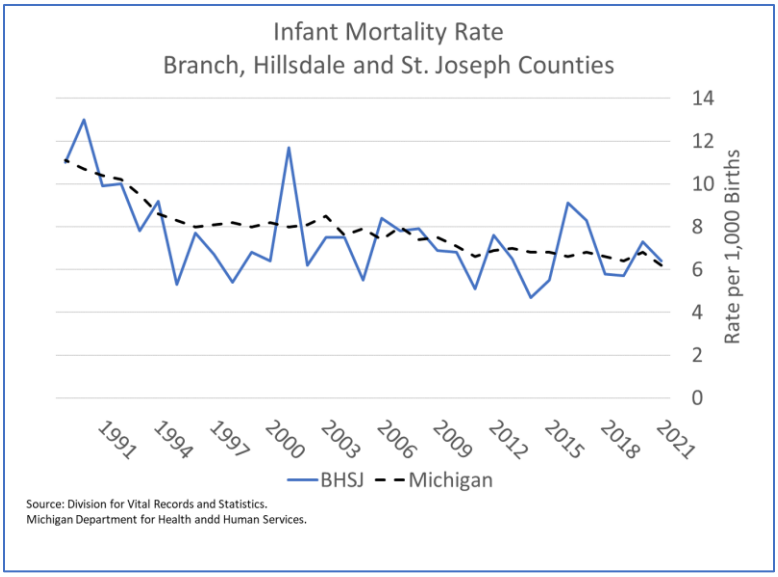
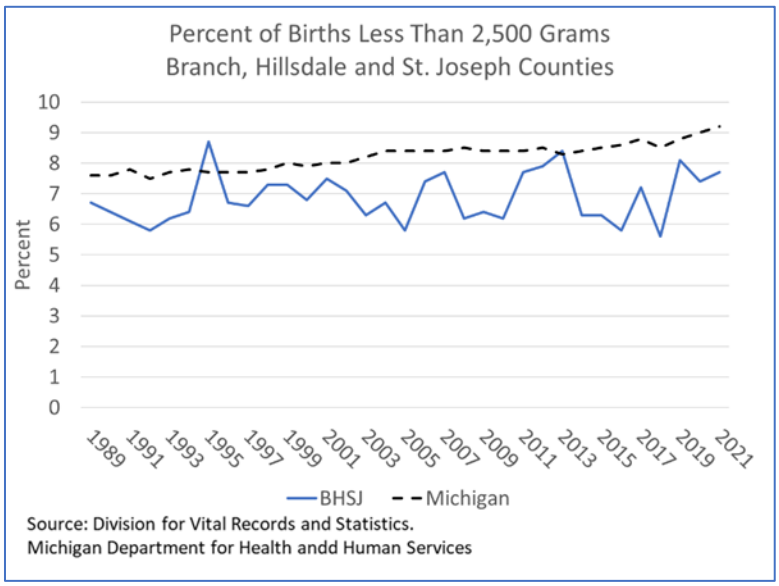


Figure 33 Infant Mortality

Figure 33 shows the trend in the infant mortality rate in our area compared to the State. You can see that infant mortality is continuing to fall, and that infant mortality in our area is usually below the State average. Unfortunately, the decline in infant mortality is not the result of families being healthier overall. It is because of great improvements in neo-natal intensive care, meaning unhealthy babies are being saved by heroic and expensive efforts.

Figure 33. Low Birth Weight

The trend in the low birthweight rate illustrates this. You can see that for the State as a whole the low birthweight rate is actually increasing, meaning babies are being born less healthy. Impressively, though, that has not been true in our area, where the low birthweight rate has been flat and well below the State average.



In Branch, Hillsdale and St. Joseph counties our babies are still being born healthy. Why should we be concerned about maternal and child health?

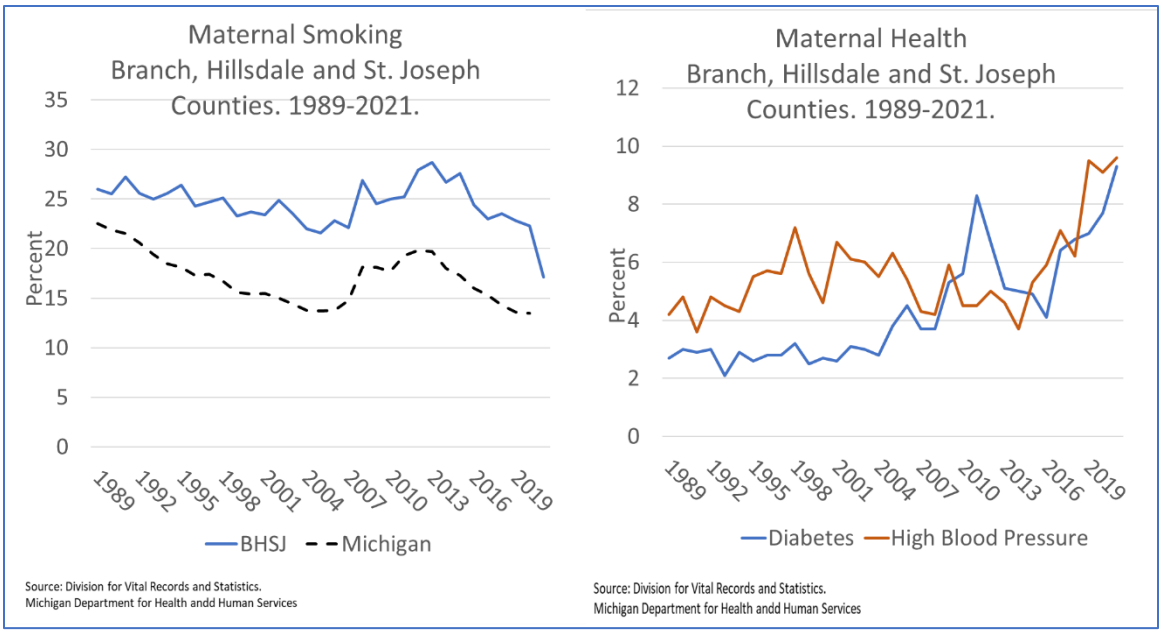


Figure 34. Maternal and Child Health Risk Factors

The two charts in Figure 34, above illustrate the causes for concern. The chart on the left shows the percentage of mothers who smoked while pregnant. Tobacco use is strongly associated with poor birth outcomes. Since the 1990s around a quarter of mothers have smoked in our area. This is about the same as the overall adult smoking rate, showing that until quite recently mothers were not quitting. The recent decline in maternal smoking may not be long lasting. You can see that during the Great Recession mothers resumed smoking in large numbers—a phenomenon that was noted worldwide. The chart on the right shows the trend in both maternal diabetes and maternal high blood pressure which can result in premature birth and other problems. Since the Great Recession these two risk factors have risen dramatically. Maternal high blood pressure has approximately doubled, and the rate of maternal diabetes has increased more than that. This is a powerful warning that our birth outcomes might start moving in the wrong direction. It is

> "I had two miscarriages, and when I finally got pregnant again, I was scared. I needed mental health care but it was only available post-partum. Its too hard to get access."
>
> Focus Group Participant

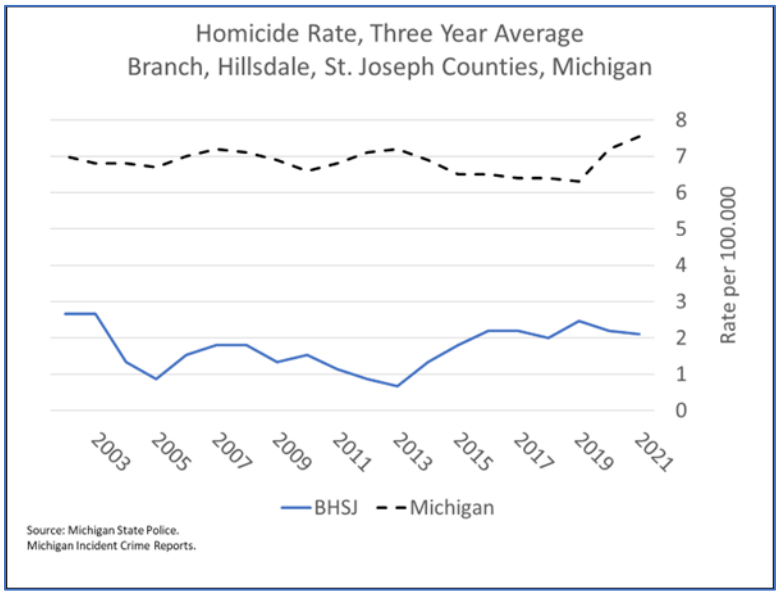
important to act now to protect the good maternal and child health our community has enjoyed for so long.

VIOLENCE

We are rightly concerned about violence. Like car crashes and infant mortality, homicide is a cause of death that can traumatize survivors. However, contrary to what is commonly believed, the United States does not have an extremely high homicide rate. The US homicide rate is high compared to other advanced capitalist countries, but globally, our homicide rate is about average, and the homicide rate in many American communities—ours being one—is quite low.

Most of us are aware that there has been a spike in violent crime since the beginning of the pandemic. The graph on the left shows that spike in homicides for Michigan. So far homicides are not much above the long-term trend. Furthermore, the homicide rate is about half of what it was in the 1980s. That is still too high, but not as dramatic as is often feared.

Figure 35. Trend in Homicides



The graph also shows that the rate in our counties (computed as a three-year average to smooth the line) is about a quarter of the State rate and shows no upward trend. This is another example of a unique and valuable characteristic of our community that we should work hard to preserve.

It is important to think about how to keep violence low, because there is no guarantee it will always be so. For example, there are other communities where people look like us and live similar lifestyles and yet have much higher rates of homicide—parts of the mountain west for example. It is also not the case that people in our counties are not inclined toward violence. The

graph below shows the trend in assaults for our counties. Unfortunately, the trend is sharply upward.

The three counties are graphed together to show how similar the trends are. While it appears that the spike in homicides began with the pandemic, it looks like assaults began to increase after the great recession. Researchers have offered many theories for recent trends in crime and two things stand out: loss of economic opportunity and reduced social cohesion. What more can we do to ensure that most residents have the means to support healthy families and have a sense of belonging?

Figure 36. Assault Rate

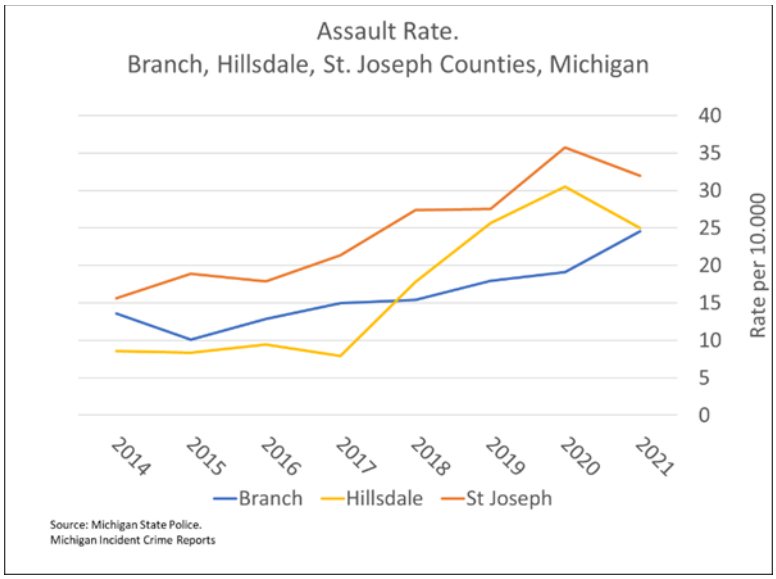


TABLE OF RARE CAUSES OF DEATH

To help readers digest all this information about different causes of sickness and death we provide this table of deaths for some of the more rare causes for the years 2011 through 2021. Remember that the leading causes of death are chronic diseases like cancer and heart disease (diabetes, stroke, respiratory disease, kidney disease). These are preventable. They also kill on average about 10 times more people in a given year than the rarer causes do. But the rare causes capture our attention both because they can be traumatic (suicide, homicide) and because they can be stubborn and resist our prevention efforts.

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Average
Suicide	23	30	20	30	19	31	25	33	35	25	32	**27.5**
Homicide	0	2	1	3	4	3	3	3	5	2	5	**2.8**
Car Crash	18	29	18	24	16	29	27	40	33	28	37	**27.2**
Falls	13	8	13	21	13	14	16	25	19	19	20	**16.5**
Overdose	17	11	14	13	14	24	21	20	18	22	22	**17.8**
Infant Mortality	10	13	13	9	10	17	15	11	10	13	11	**12.0**

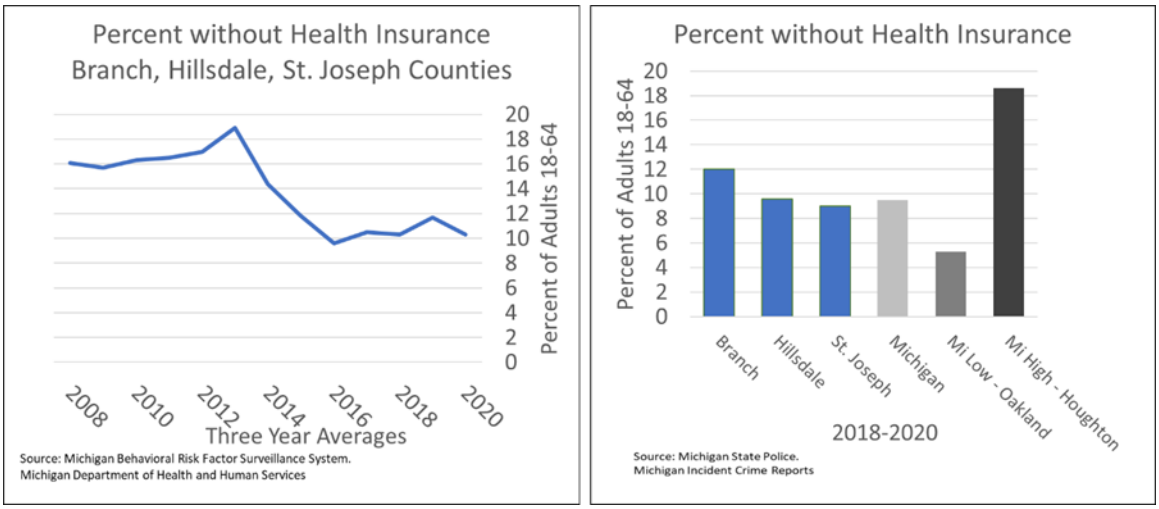
Figure 37. Rare Causes of Death

Suicide and car crashes are the most numerous followed by overdoses and falls. Homicide is the rarest. All of these causes except infant mortality seem to have increased over the decade. Some of them (infant mortality, car crashes) were higher farther back in time and have come down. Others (suicide, overdoses) were once lower and have increased. Some of the trends are hard to explain. Falls are a big threat to seniors. They may not be able to recover from a fall and can succumb to a preventable condition like pneumonia or sepsis. Why should falls be increasing? It turns out that even the age-adjusted rate of falls is increasing. This means not only are there more seniors, but that each individual senior's chance of falling is increasing. Do seniors have less support than in the past?

ACCESS TO CARE

The remainder of this CHNA will focus on health interventions that can prevent sickness and death. For much of the past three decades, public health has been focused on expanding access to preventive care by increasing the proportion of the population with health insurance coverage.

Figure 38. Health Insurance



The charts above show that health insurance coverage has indeed expanded. They both show the proportion of the population that still does not have health insurance. The chart on the right shows that our three counties have an uninsured rate near the State average of around ten percent. The chart on the left shows how this came about. The Affordable Care Act was

> More people have insurance today, and that is great. But in rural areas we are still buried in uncompensated care. Its putting rural hospitals out of business and that is making it even harder for people. They have nowhere to go."
>
> Hospital Executive

passed in 2010, the health insurance marketplace opened in 2013, and Michigan created the Healthy Michigan Plan in 2014. As a result, the proportion of people without health insurance was nearly cut in half. This is important because it means low-income Michiganders can get access to comprehensive health services including mental health, oral health care and help managing chronic conditions. The system is not perfect. Coverage on the Marketplace can be limited and Medicaid still imposes work requirements that some people with physical or mental limitations cannot meet.

One way that having health insurance should help reduce mortality is by screening for chronic disease threats. We have already discussed the high prevalence of behavior like poor diets or lack of exercise that can cause chronic diseases. If we are not going all-in on healthy lifestyles then we should be getting screened for diseases like cancer where early detection can be life-saving.

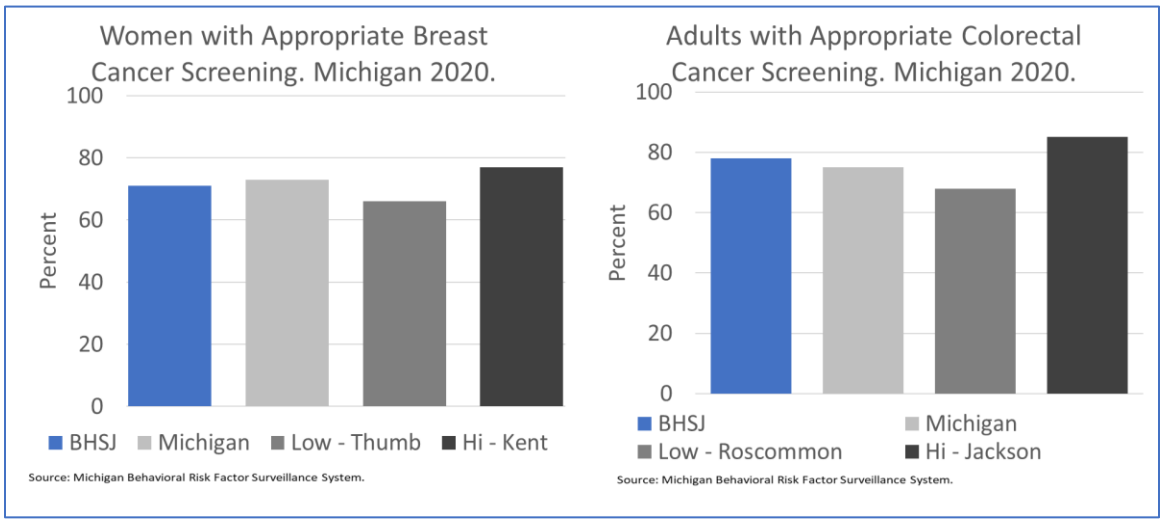


Figure 39. Health Screenings

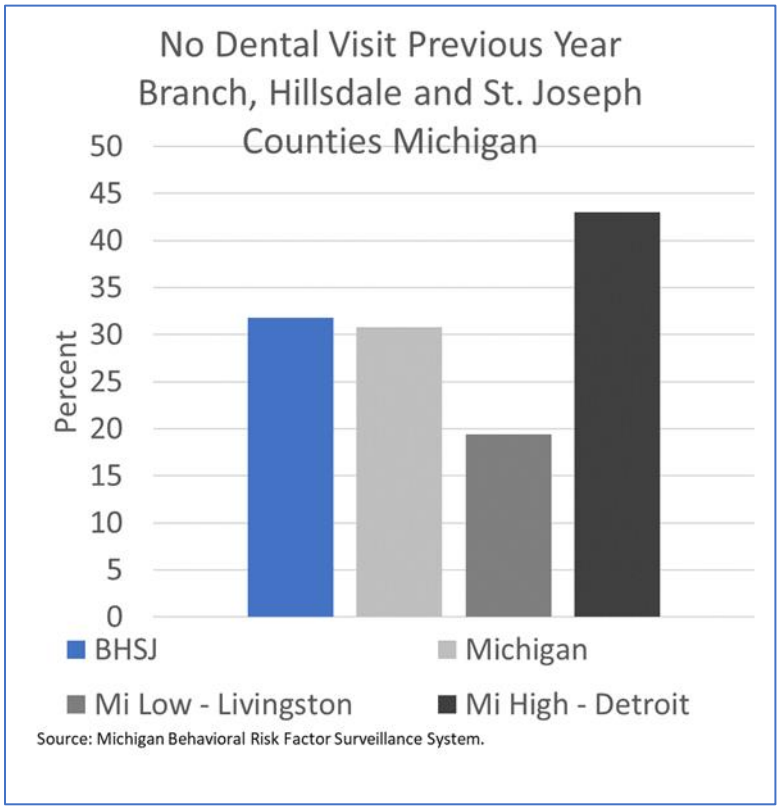
The charts above show rates of screening for breast and colorectal cancer. The charts show that screening rates do not vary a great deal by location in Michigan and that our area is about average. The screening rates are not bad (70 percent for breast cancer and 80 percent for colorectal). Better quality data is not available because over time criteria for screening and the

survey questions used to measure it keep changing to keep pace with evolving science meaning our time series keep getting disturbed.

Clearly the expansion of health insurance by itself has not resulted in an explosion of better health. Low-income, vulnerable people face barriers to using the health care system other than the ability to pay for care, and the expansion of coverage was not accompanied by reforms to make the system easier to navigate. While we cannot fix these systemic issues locally, we can do more to help people keep their coverage and use it effectively.

Oral health is still not as well integrated into our systems of prevention as it should be. Oral health is integral to our well-being. Periodontal disease doubles the risk of stroke, for example. As we age many of us end up with metabolic disorders and periodontal disease exacerbates diabetes and vice-versa. The chart on the right shows that about a third of us are not getting regular access to oral health care.

Figure 40. Oral Health Screening



Michigan has been working to expand access to oral health care by creating the Healthy Kids dental program and embedding oral health in Medicaid. Southern Michigan has a robust network of high quality dental clinics that serve everyone, but specialize in children and adults on Medicaid. These are a great asset to our community and we should do as much as possible to make sure everyone knows they can use them.

COMMUNICABLE DISEASE

Public health was created mostly to prevent the transmission of communicable diseases like tuberculosis, typhoid fever and diphtheria, which once were the leading causes of death. Modern lifestyles have made chronic diseases the leading killers, but communicable disease is still a threat. Among other health surprises stemming from the pandemic, we are still dealing with are swings in the rates of communicable diseases.

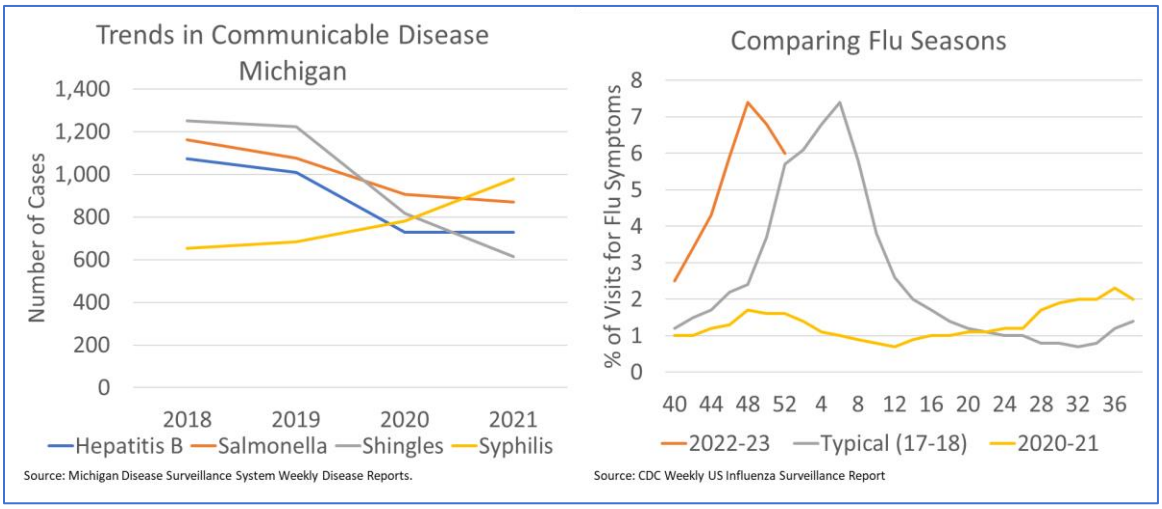


Figure 41. Communicable Disease Trends

The chart above, on the left, shows the number of cases of four nasty communicable diseases in Michigan for 2018 through 2021. The diseases are hepatitis B which attacks the liver, salmonella a food borne illness, shingles which is related to chicken pox and causes skin lesions, and the complex, potentially fatal sexually transmitted disease syphilis. Surprisingly, three of these actually went down during the pandemic. Hepatitis B and salmonella probably went down because of less frequent contact between people. Syphilis probably increased because people had difficulty accessing preventive services and treatment. It is less clear why reported cases of shingles went down. People would have acquired shingles long ago when they had chicken pox. Perhaps what happened is this: some cases of shingles are very mild. Maybe people with mild shingles just didn't seek care and so the cases have gone unrecorded.

Whatever the case, can we expect diseases like these to come roaring back? The chart above on the right suggests that is indeed the case. It is a graph of influenza cases for three years: a typical year (2017-18), the first year of the COVID pandemic (2020-21), and this year (2022-23).

The numbers across the bottom of the chart are the weeks of the year. So week 52 is the last week of December. You can see that in a typical year, influenza peaks after Christmas and New Year's. Like hepatitis and salmonella, Influenza disappeared during the pandemic. However this year, as we all experienced, influenza, finally free to spread again, arrived early. At the time I am writing we are dealing with an unusual outbreak of the virus RSV.

Like hepatitis B and influenza, COVID is vaccine preventable, and Michigan has historically been a leader in creating and disseminating vaccines. Since we can see that communicable diseases are not going away, we are going to continue to need vaccines. But a consequence of the pandemic is that a portion of the public has become very reluctant to accept them.

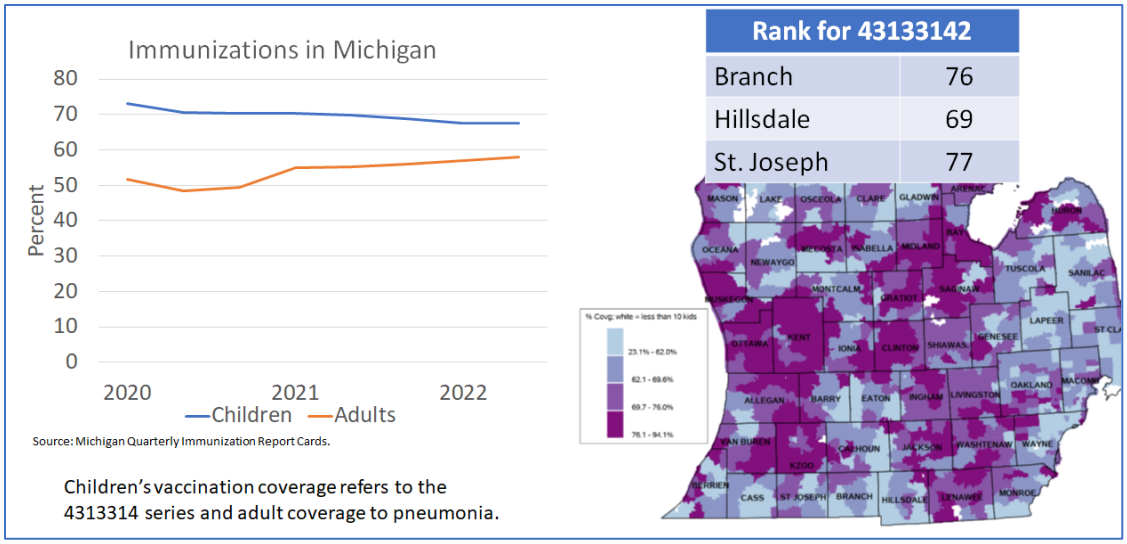


Figure 42. Immunizations

Are we facing a vaccination crisis? The news is mixed. For example, the chart on the left, above shows the vaccination rates for children in blue (the usual childhood vaccines) and adults in orange (pneumonia). The slide shows that childhood immunization coverage has only declined a little, and adult coverage has actually increased. So its true a few parents have been affected by vaccine fears, but not most, and some adults may have gained an appreciation for the importance of vaccines. The map on the right shows that our challenge is the unevenness of coverage. It is a map of the rate of coverage for childhood vaccines in which purple is high levels of coverage (70-90 percent) and blue is lower levels (70 into the 20s). You can see that

our counties are in a low coverage area and the table at the top of the chart shows you that we are in the back of the pack. We rank between 69th and 77th out of 83 Michigan counties.

The consequence of having lower levels of vaccination coverage in some pockets is that as a community we suffer higher levels of sickness and death than we need to. The unvaccinated, even though they do not mean to do so, wind up sickening others. We saw this clearly in the section on COVID. Branch, Hillsdale and St. Joseph counties have many admirable qualities which we have highlighted here. But we can do a better job of protecting everyone.

CONCLUSION

This CHNA has documented an alarming and sharp increase in mortality since 2008. This increase challenges local human service organizations which have as their mission the improvement of community health. These results have been presented to the community collaboratives in each of our three counties: the Branch County Community Network on December 14, 2022, the Hillsdale Human Services Network on December 13, 2022 and St. Joseph Human Services Commission on January 10, 2023.

However, the increase in mortality is not the fault of these local organizations. The rise in mortality is due to broad increases in economic inequality at the national level. In fact, local organizations are doing many things that are sustaining struggling individuals and enhancing the lives of our families despite national trends.

> "Our community is close knit. We have great collaboration and continue to support each other. We've made a lot of progress in chronic disease prevention and need to do more together."
>
> Local Nonprofit Director

Here are just a few examples:

1. Keystone place in St. Joseph County coordinates resources to assure community wide access to housing.
2. Teen Share is a homeless shelter for teens and a project of the Branch County Coalition Against Domestic and Sexual Violence. Community Action Agencies in the three counties coordinate homeless services.
3. The Branch County Community Foundation funded restoration of the Eby Center, assuring a space for youth and community activities throughout the year. Community Foundations grant hundreds of thousands of dollars a year in the three counties.

4. The Fresh Food Initiative of Hillsdale County sustains food pantries throughout the community to fight hunger. The United Way coordinates food distribution in St. Joseph County.
5. Affinity House is a comprehensive program of community supports by and for people living with mental illness in St. Joseph County. Pines Behavioral Health has a clubhouse in Branch County.
6. Kiwanis Clubs provide mentoring to youth throughout the three counties. Hillsdale Kiwanis sponsor Aktion Club for adults with disabilities.
7. Great Start Parent Support Groups help parents assure healthy development for their children in the three counties.
8. The community has a strong network of health care services for vulnerable people including federally qualified health centers and dental clinics.

Our data analysis as well as those of other partner organizations, and our conversations with community members of all backgrounds have validated the short list of priorities for action previously identified by the three community collaboratives. These are:

PRIORITIES

1. Chronic disease: Reduce the leading killers including heart disease and cancer and related conditions like diabetes, stroke and respiratory illnesses.
2. Mental Health
    a. Access to treatment, especially inpatient, for mental health disorders. Includes substance abuse and suicide prevention.
    b. Substance abuse prevention including addiction and overdoses.
3. Maternal and Child Health. This has three parts: early access to prenatal care, affordable quality childcare and income supports for low-income families.
4. Violence: the homicide rate in our community is low, but other forms of violence are increasing. We should take action now.
5. Aging: assure access to health for seniors.
6. Infectious Disease: Restore trust in vaccines.

Figure 43 CHNA Priorities

The next steps in this process are the formulation and execution of a Health Improvement Plan to address these priorities. Such a plan was created in June 2023 and a description of the process for creating the plan, and the plan itself are attached to this document.

Finally, in closing, we advise the collaboratives to consider routinely going beyond strictly local initiatives and to engage in advocacy with legislators at the State level more deliberately and in partnership with sister organizations from elsewhere in Michigan. Our local organizations

cannot be successful outside of a policy environment that enables individuals and families to thrive. It is beyond the scope of this document to dive into details about how this could be done, but in fact our local organizations are all connected to groups that do this kind of advocacy now, so what we are saying is not novel. But we are saying that such advocacy is needed to change the direction of the economy and return to the path of health and community vitality.

LIST OF FIGURES

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