



HEALTH
IMPROVEMENT ORGANIZATION

Community Health Assessment

Jackson County, Michigan

2016 Report



Health Improvement Organization (HIO)

The Health Improvement Organization Coordinating Council is a collaborative of community stakeholders committed to improving the health status of the community and creating a seamless health improvement infrastructure that addresses Jackson's highest priority health issues. The HIO Coordinating Council serves as the stakeholder planning committee for Allegiance's Board HIO Committee, Jackson County's Healthy Community initiative, the United Way of Jackson County's Community Solutions Team on Health, and the "Health Strand" of the Jackson 2020 initiative. The scope of our responsibility includes monitoring community level health status and condition indicators, identifying specific health priorities and developing community action plans to address common goals.

In this model, community stakeholders work with public health experts to develop and complete a community health assessment for Jackson County. This assessment provides a data collection mechanism that better aligns efforts among community partners and creates a more strategic framework for local health improvement activities.

The Community Health Assessment (CHA) process is designed to:

- Collect and analyze health information for Jackson County (and subpopulations within our county)
- Benchmark our health status against other communities, the state and nation
- Prioritize health issues within the community
- Create a system for disseminating data to community organizations and residents
- Initiate strategic planning to address these issues through collaborative activities
- Monitor the impact of health initiatives on community health outcomes

The first HIO Community Health Assessment was completed in 2008 and led to the creation of our first HIO Community Action Plan, aimed to reduce obesity and smoking and improve emotional health among Jackson County residents. The results from our second survey, completed in 2011, informed the development of the HIO Community Action Plan for 2013-2020. The results of the most recent assessment are being used to update the 2013-2020 plan as needed.

Contributing Partners

| | |
|---|---|
| AARP | Jackson County Parks and Recreation |
| Allegiance Health | Jackson County Substance Abuse Prevention Coalition |
| Big Brothers/Big Sisters | Jackson Health Network |
| Center for Family Health | Jackson YMCA |
| Community Action Agency | LifeWays |
| Cradle to Career | Marriage Matters Jackson |
| Fitness Council of Jackson | Michigan State University |
| Great Lakes Industry | Partnership Park Downtown Neighborhood Association |
| Great Start | United Way of Jackson County |
| Jackson Community Foundation | University of Michigan |
| Jackson County Health Department | YMCA Storer Camps |
| Jackson County Intermediate School District | |

Acknowledgements

The Jackson County Community Health Assessment includes multiple sources of data including the Community Health Assessment survey conducted from May 2014 to August 2014. This information was obtained to gain a better understanding of the health status of residents in Jackson County.

The Health Improvement Organization is a voluntary partnership of local organizations and agencies working to improve the health of the community. Many thanks to our Health Improvement Organization Coordinating Council CHA Ad Hoc Committee members for their time and energy in the development and analysis of the assessment, to the many community members and partners that participated in information collection and to Allegiance Health and the Jackson County Health Department for providing funding for this project.

Community Health Assessment Ad Hoc Committee Members

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Executive Summary

The Jackson County Community Health Assessment survey was conducted from May 2014 to August 2014 in order to obtain information on the health status of Jackson County residents. A total of 1,205 Jackson County residents 18 and older responded to a 177 question survey asking about their health status, insurance coverage, personal health habits and health care experiences. In addition to the survey, the HIO conducted an extensive review of data from various secondary sources. The HIO categorized the assessment results into the following topic areas:

Morbidity and mortality

Chronic disease and risk factors

Behavioral health

Maternal and child health

Clinical services

Economic, social, and environmental factors

Using these results the HIO Coordinating Council is updating its current action plan detailing ways organizations, agencies and community members can address main health issues to better the overall health of Jackson County residents. The results of the Community Health Assessment are a valuable resource because they:

- Assist in development of long-range health goals for the community
- Guide in strategic planning and program development
- Unify efforts in the allocation of community resources
- Strengthen grant proposals to fund current and future projects

Areas of Concern

According to the 2016 Community Health Assessment , 2013-2014 Michigan Profile for Healthy Youth (MiPHY) and additional secondary data sources:

- Only 10% of Jackson County residents understand the guidelines for physical activity and nutrition
- Approximately 30% of Jackson County residents smoke; the state rate is 21%, and the city of Jackson rate is higher than the county rate (36%)
- About 31% of mothers that delivered babies in Jackson County report smoking during pregnancy
- Approximately 43% of middle school students and 52% of high school students report exposure to secondhand smoke within the past seven days
- About 59% of residents report feeling worried, tense, or anxious within the past 30 days
- Among Jackson County residents, 40% are classified as obese, which is higher than the State of Michigan rate of 32%
- About 36% of residents have been diagnosed with high cholesterol and 40% with high blood pressure, both increased since 2011 to rates of 34% and 38% respectively.
- Among Jackson County residents, only 28% meet the guidelines for physical activity, which is better than the state rate of 20%, and 10% meet the guidelines for fruit and vegetable consumption
- Among Jackson County middle school students, 30% meet nutrition guidelines and 54% meet physical activity guidelines

- Among Jackson County high school students, 23% meet nutrition guidelines and 52% meet physical activity guidelines
- About 25% of residents report their neighborhood as somewhat dangerous or extremely dangerous for exercising alone at night
- Only 16% of residents participate in a wellness program at work, 38% of employers promote smoking cessation, 42% promote physical activity, and 40% promote healthy eating
- 33% of respondents indicated that their employer offers tobacco cessation services
- From 2011-2013 African American infants were four times more likely to die before their first birthday than Caucasian infants
- In the City of Jackson the teen pregnancy rate in 2013 was 105.7 per 1,000 females age 15-19, the birth rate was 67.1, and the repeat teen birth rate was 24.4

Contributing factors

From the Jackson County Community Health Assessment, the HIO Coordinating Council was able to identify some factors that could be contributing to these health problems. Some of these factors include:

- Lack of health insurance
- Difficulty accessing affordable health services
- Poor communication between health care providers and patients about health risks
- Inaccurate personal view and understanding of health risks
- Unemployment
- Achieved educational level
- Lower annual household incomes and poverty levels Lack of social and emotional support
- Lack of community health policy development
- Need for coordinated environmental and systems change efforts

The HIO Coordinating Council will be looking at how these and many other contributing factors can be addressed in order to affect the main health issues noted from the Community Health Assessment.

Survey Methodology

Sampling strategy

Similar to other state and national surveys of health behaviors, the method used for this survey was a random digit dial telephone survey of Jackson County residents. The sample was stratified by census tract, meaning the population was sampled evenly throughout all census tracts in the county (with the prison census tract being omitted). Cellular and landline telephone numbers of Jackson County residents in each census tract were randomly dialed until the target number of surveys was completed for each tract.

Data weighting

Similar to state and national survey results, the survey sample was weighted to reflect the actual age, gender, race, marital status, educational attainment, and home dwelling status of the community based on Census data for Jackson County.

Distribution of respondents

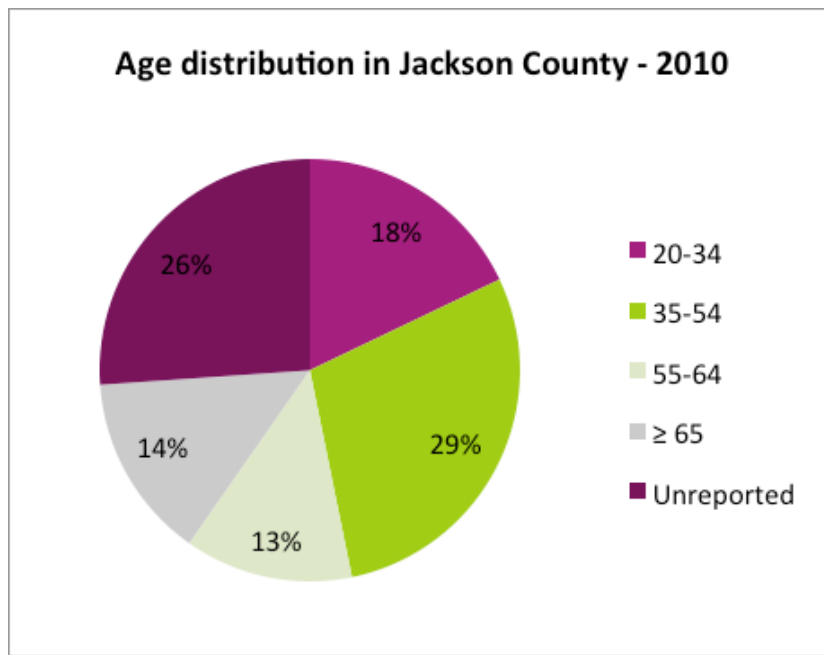
A total of 1,205 adults in Jackson County completed the telephone survey. Within Jackson County, 32% of respondents lived in the City of Jackson and the remaining 68% lived outside of the city.

Comparison Data

Where state and national comparisons are noted, data was obtained from equivalent state and national survey results with identical or very similar survey questions. The state and national comparison data included in this report are drawn from the Behavioral Risk Factor Surveillance System (BRFSS) and Michigan Profile for Healthy Youth.

Demographics

This section describes the demographic landscape of Jackson County. According to the 2013 Jackson County Census estimates, the gender distribution of Jackson County adults is 49% female and 51% male. The most recent available data for age distribution of Jackson County residents is the 2010 Jackson County Census, which outlines the age distribution of adults for Jackson as 20-34 (18%), 35-54 (29%), 55-64 (13%), and 65 and older (14%).



Data on the ethnic background of Jackson County residents according to the 2010 Census shows a distribution of white (88%), African American (8%), Hispanic or Latino (3%), Asian (1%), and less than 1% as American Indian or Alaska Native.

Marital status as collected from 2008–2012 American Community Survey data reports 51% of Jackson County residents as currently married, 35% never married, 10% divorced, 1% separated, and 3% are widowed. Sexual orientation as reported by Jackson County residents show 98% identifying as straight, 1% as gay, and less than 1% as bisexual or something else; 6% of residents reported being part of an unmarried couple or in a domestic partnership.

Morbidity and Mortality Data

Health Status

Based on the 2016 CHA findings, 12% of residents reported their general health is excellent, 24% very good, 36% good, 18% fair, and 10% poor. About 30% of respondents indicated that poor physical or mental health kept them from their usual activities within the past 30 days. This is higher than the state rate of 23% in 2013.

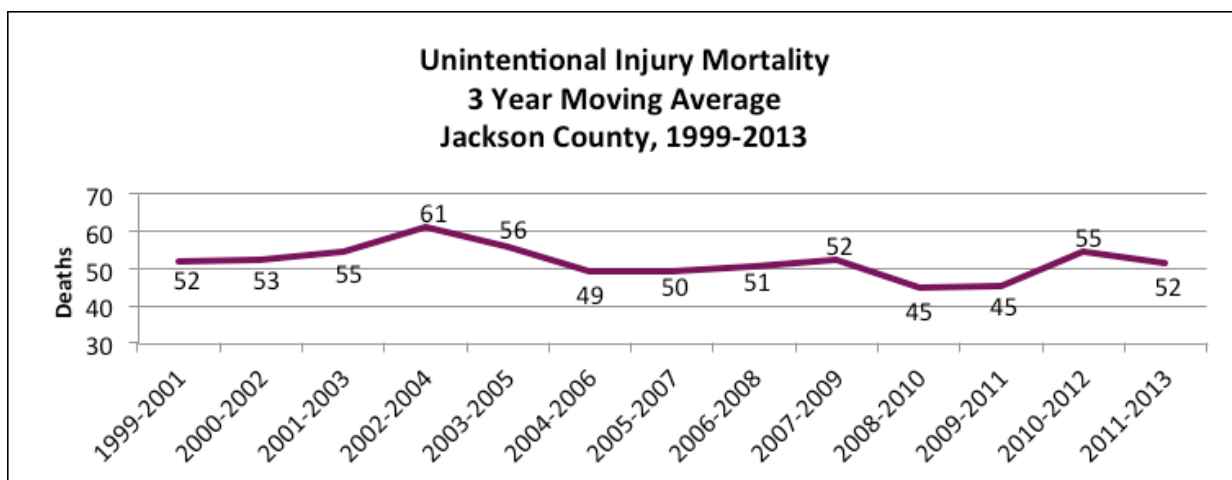
Leading Causes of Death

Based on State of Michigan Vital Statistics from 2012, the leading cause of death in Jackson County per 100,000 deaths was cancer (200.6). Heart disease was the second leading cause of death (168.7), followed by Alzheimer's (49.5), Chronic Lower Respiratory Disease (48.0), unintentional injuries (41.8), stroke (40.4), Diabetes Mellitus (25.7), kidney disease (14.8) and pneumonia/flu (14.1). The rate of suicide is calculated as a five-year moving average. The 2007-2011 suicide rate for Jackson County is 16.7 deaths per 100,000.

| Leading Cause of Death | | | | | | |
|---|----------------|-------|-------|----------|-------|-------|
| Age Adjusted Mortality Rate – Per 100,000 | | | | | | |
| Year | Jackson County | | | Michigan | | |
| | 2008 | 2011 | 2012 | 2008 | 2011 | 2012 |
| Heart Disease | 206.5 | 185.3 | 168.7 | 220.2 | 201.6 | 197.9 |
| Cancer | 197.9 | 193.2 | 200.6 | 183.9 | 177.2 | 174.9 |
| Chronic Lower Respiratory Disease | 55.7 | 59.0 | 48.0 | 47.6 | 46.0 | 45.2 |
| Stroke | 43.9 | 35.7 | 40.4 | 42.2 | 38.7 | 37.2 |
| Unintentional Injuries | 25.4 | 26.0 | 41.8 | 35.3 | 37.5 | 36.6 |
| Diabetes Mellitus | 27.6 | 28.1 | 25.7 | 25.2 | 24.6 | 21.5 |
| Alzheimer's | 36.5 | 47.2 | 49.5 | 24.7 | 24.2 | 24.6 |
| Pneumonia/Flu | 18.4 | 16.3 | 14.1 | 17.0 | 15.0 | 15.7 |
| Kidney Disease | 13.1 | 22.1 | 14.8 | 15.1 | 14.1 | 13.4 |
| Suicide | 14.3 | 16.1 | N/A | 11.6 | 12.2 | 12.4 |

Unintentional injuries are the fifth leading cause of death in the county. A three year moving average of unintentional injury mortality shows that there have been some slight increases over time.

- The majority of unintentional injuries in Jackson County are due to motor vehicle crashes and falls
- Persons 75+ and older are the highest risk group for fall injury deaths; falls constitute 60% of accidental deaths in the 75+ age group in Jackson County; further analysis of fall related injury deaths from 1999 - 2013 indicate that the majority occur in the home and residential institution settings.



Cancer

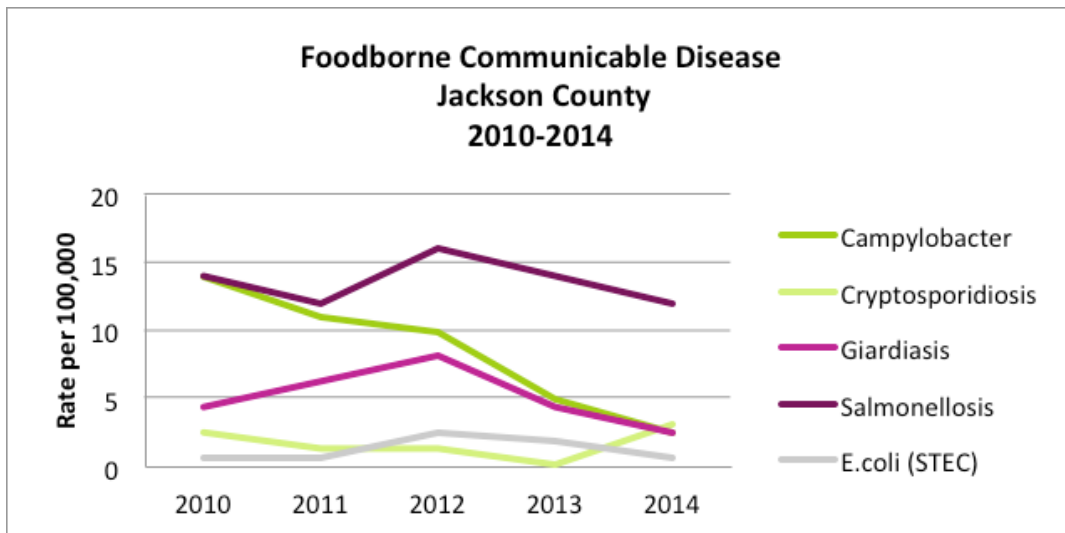
| Cancer Mortality Rate | | | | | | |
|---------------------------------|---------|----------|---------|----------|---------|----------|
| Age Adjusted Rate – Per 100,000 | | | | | | |
| Year | 2008 | | 2011 | | 2012 | |
| | Jackson | Michigan | Jackson | Michigan | Jackson | Michigan |
| Total Cancer | 195.3 | 184 | 193.5 | 176.8 | 201.2 | 174.3 |
| Breast | - | 24.2 | 23.7 | 22.5 | 28.6 | 22.1 |
| Colorectal | 18.9 | 16.6 | 16.3 | 15.9 | 14.3 | 14.6 |
| Lung | 69.3 | 53.9 | 57.1 | 50.9 | 69.0 | 49.6 |
| Prostate | - | 21.8 | - | 19.0 | 24.2 | 19.1 |

As presented in the table above, lung cancer was the leading cause of death by cancer in Jackson County in 2012. The age adjusted rate of lung cancer deaths was 69.0 per 100,000 deaths, compared to the State of Michigan rate of 49.6 per 100,000 deaths.

Communicable Disease

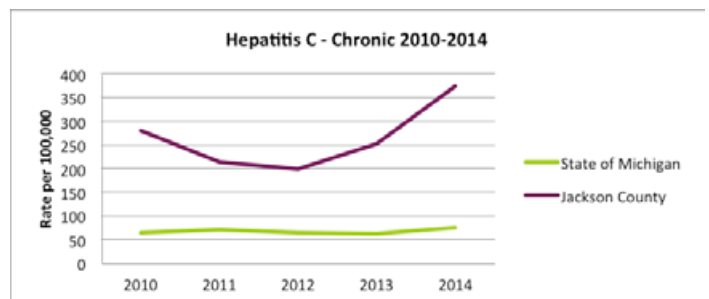
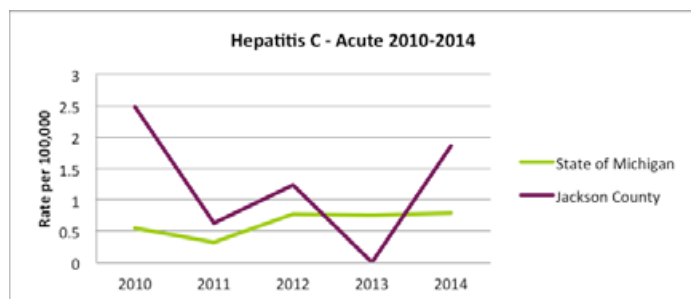
Food Borne Illness

The CDC estimates that each year approximately 48 million Americans (1 in 6) become ill, 128,000 are hospitalized and 3,000 die from foodborne illness. However, since the CDC estimates that about 90% of foodborne illnesses do not get reported, the actual number of illness is significantly higher. Over the past 5 years, with the exception of Cryptosporidiosis, Jackson County has experienced a general decrease in foodborne communicable illness.



Hepatitis C

Hepatitis C virus infection is the most common blood-borne infection in the United States. Hepatitis C can cause serious health problems including liver damage, liver failure, and liver cancer. 80% of people infected with hepatitis C will develop a chronic, or lifelong, infection. Currently hepatitis C is most commonly spread through the sharing of needle or other equipment used to inject drugs. Jackson County has been above the State of Michigan average for the past 5 years, for both acute and chronic rates of hepatitis C, with the exception of the acute rate in 2013.

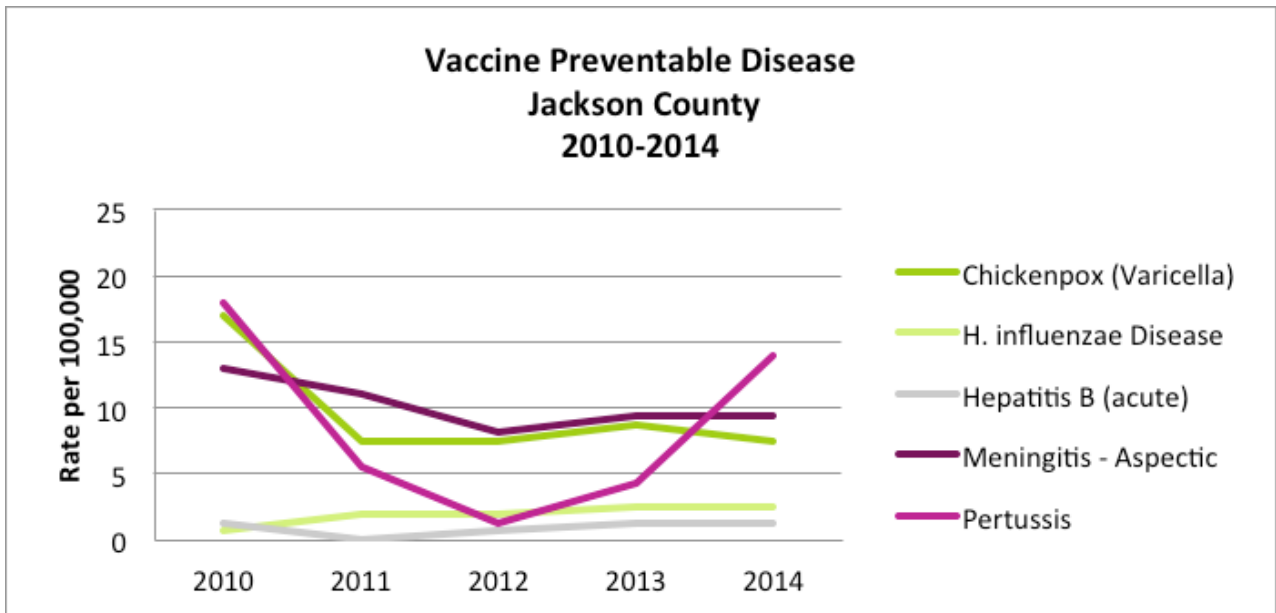
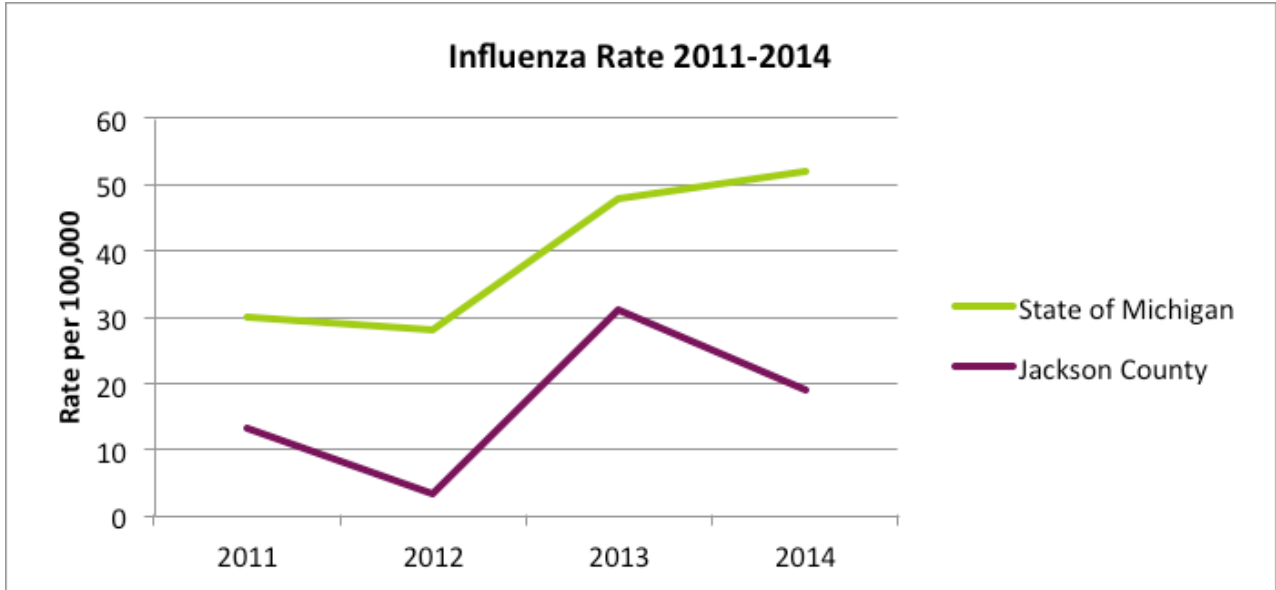


Vaccine Preventable Disease

In order to keep vaccine-preventable diseases at a low prevalence, it is important for public health officials to educate the community on the importance of protecting themselves and their children against such diseases as influenza and pertussis.

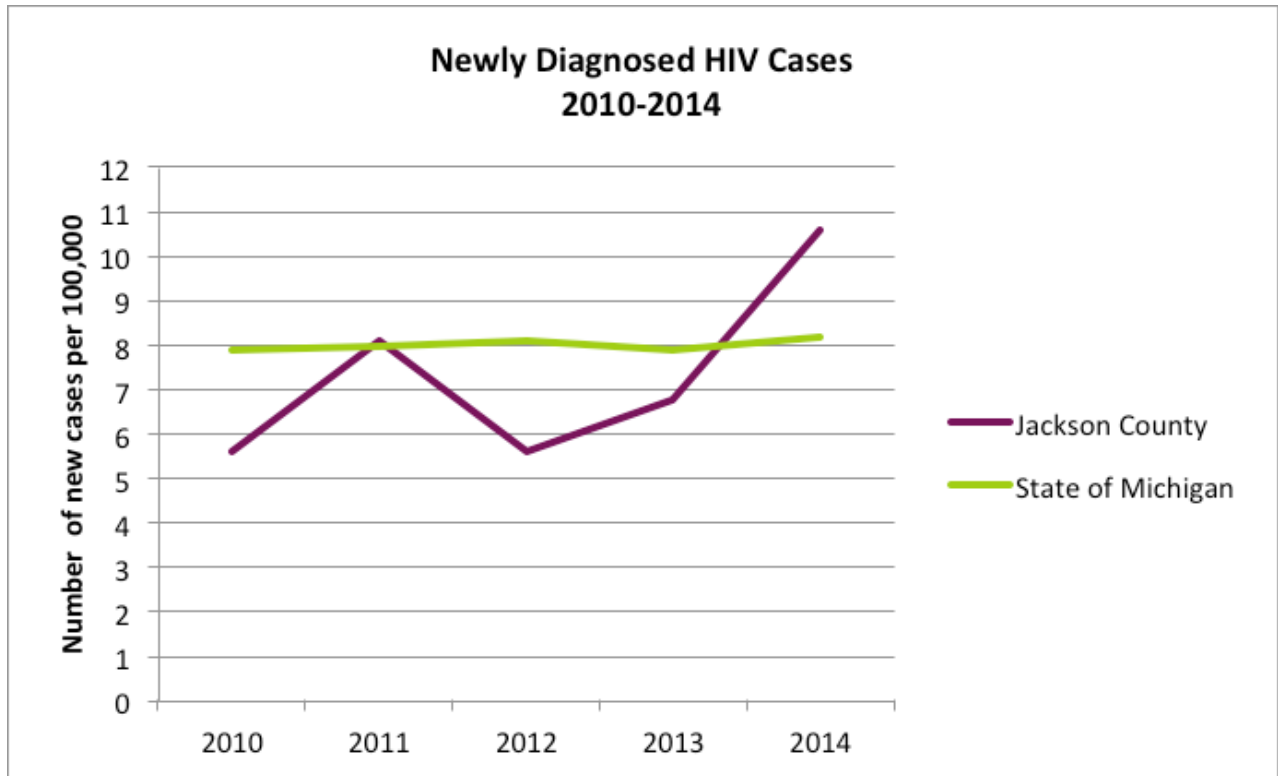
- In 2014, the rate of reported influenza in the county was 19 per 100,000 and 1,965 per 100,000 of flu-like illness

- In 2014, the Jackson County pertussis rate was 14 per 100,000 as compared to the State of Michigan rate of 11 per 100,000



Sexually Transmitted Disease

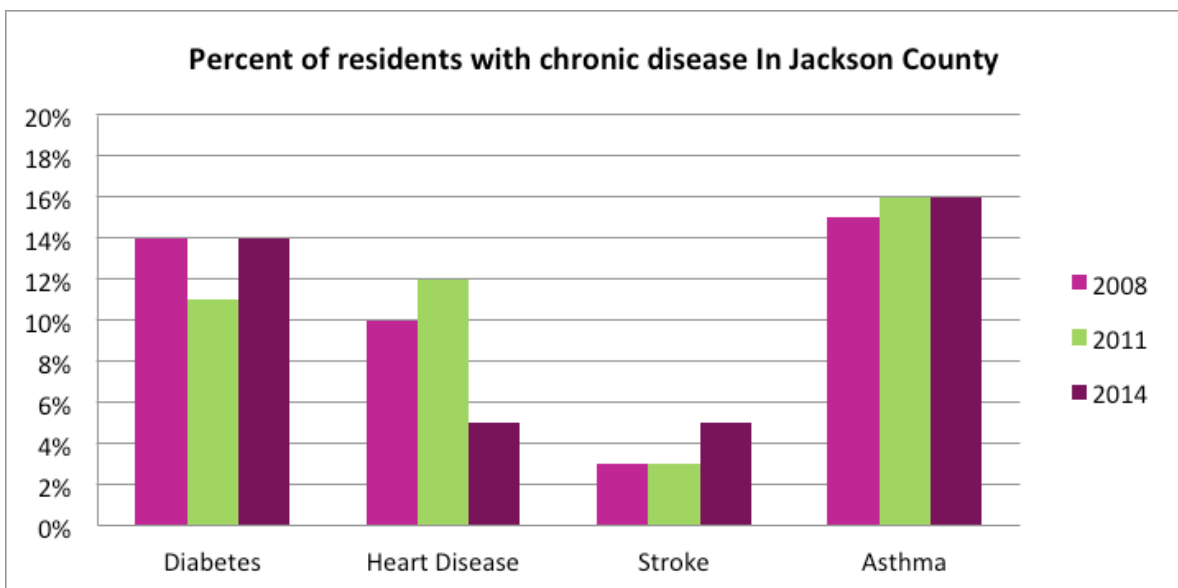
Sexually Transmitted Diseases (STDs) including gonorrhea, syphilis, chlamydia, and hepatitis B result in increased morbidity, mortality, and health care costs. According to 2014 data from the Michigan Disease Surveillance System, the number of newly reported cases of STDs in Jackson County per 100,000 include: chlamydia (505), gonorrhea (33), primary syphilis (1.87), and secondary syphilis (1.24). Additionally MDHHS data shows the number of newly diagnosed cases of HIV per 100,000 in Jackson County has surpassed those of the State of Michigan.



Chronic Disease and Risk Factors

Chronic Disease

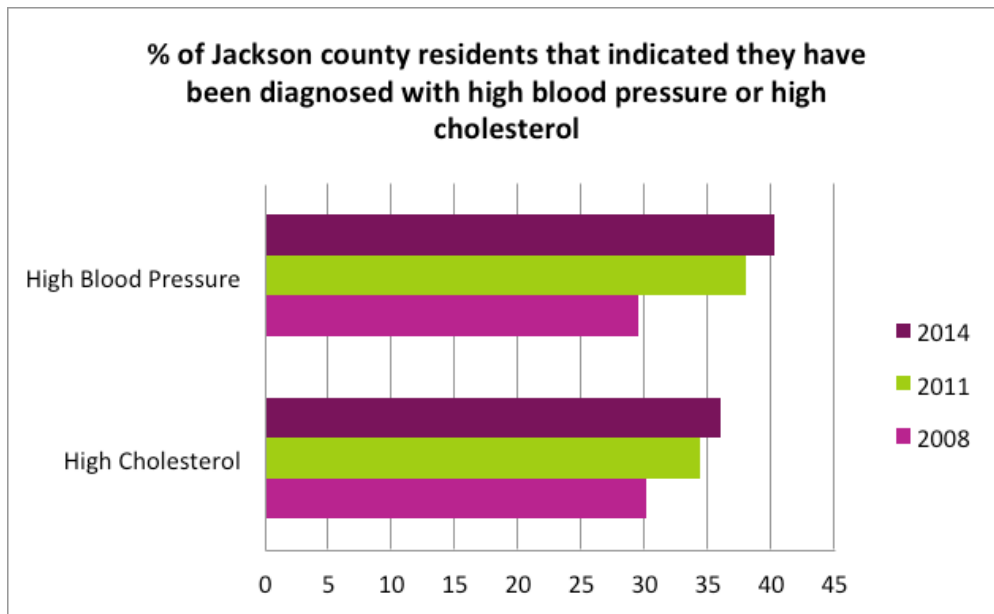
While some risk factors for chronic diseases cannot be changed, such as family history and age, many can be prevented or reduced by choosing a healthy lifestyle. These risk factors include pre-diabetes, high blood pressure, high blood cholesterol, smoking, being overweight and being obese; most of which can be prevented or reduced by healthy eating and engaging in regular physical activity.



Heart Disease

Heart disease is the second leading cause of death in Jackson County; approximately 5% of respondents reported having been diagnosed with heart disease, a decrease from the 2011 rate of 12%.

- 40% of Jackson residents have been diagnosed with high blood pressure; this is higher than the state of Michigan rate of 35% and an increase in the Jackson rate of 38% in 2011 and 29% in 2008
- The 2014 rate of diagnosed high blood cholesterol in respondents was 36%; this is up from the 2011 rate of 34% and the 2008 rate of 30%



Asthma

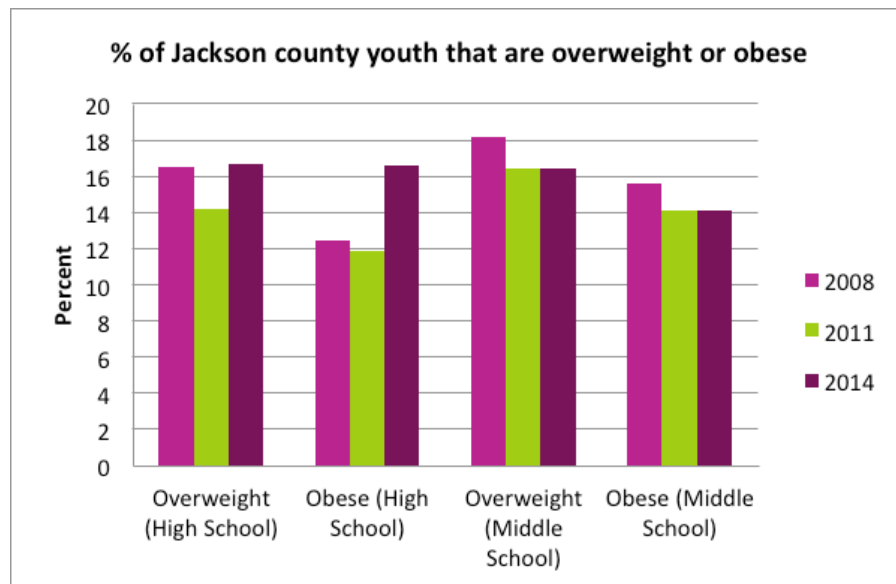
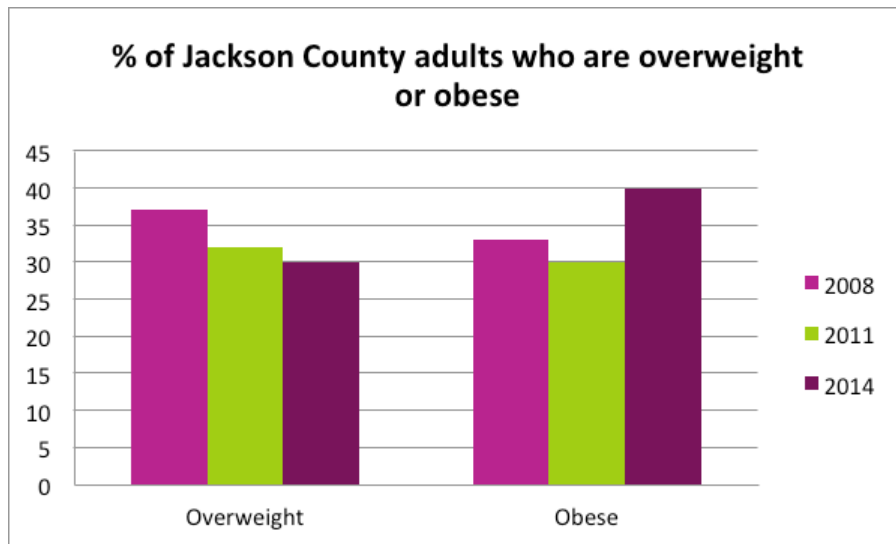
Survey respondents indicating that they had been diagnosed with asthma in 2014 was at 17%; this is a slight rise from 2011 (16%) and 2008 (15%). While the percent of those in Jackson County having been diagnosed with asthma has stayed stable, the number of asthma hospitalizations for children and adults have decreased significantly in Jackson and Michigan since 2008.

| 2008 2011 2012 - Michigan Vital Statistics | | | | | | |
|--|---------|--------|---------|--------|---------|-------|
| # of hospitalizations | | | | | | |
| Year | 2008 | | 2011 | | 2012 | |
| | Jackson | MI | Jackson | MI | Jackson | MI |
| Children | 111 | 4,293 | 44 | 2,841 | 40 | 2,707 |
| Adults | 176 | 12,147 | 94 | 11,623 | 90 | 7,843 |

Obesity

Jackson residents have a significant burden of overweight and obesity.

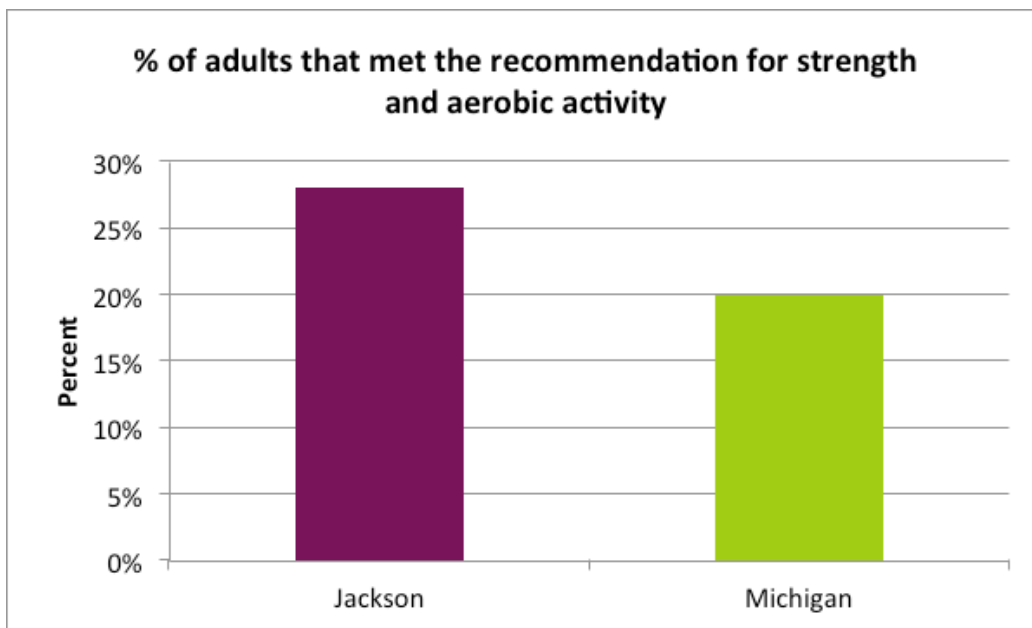
- 30% of Jackson residents fall into the body mass index (BMI) category of overweight, a decrease from the 2011 rate of 32% and the 2008 rate of 37%
- The obesity rate increased to 40% in 2014 compared to 37% in 2011 and 33% in 2008
- According to Jackson County's 2014 MiPHY data, 16% of Middle School and 17% of High School students are overweight, while 14% and 17% are obese, respectively



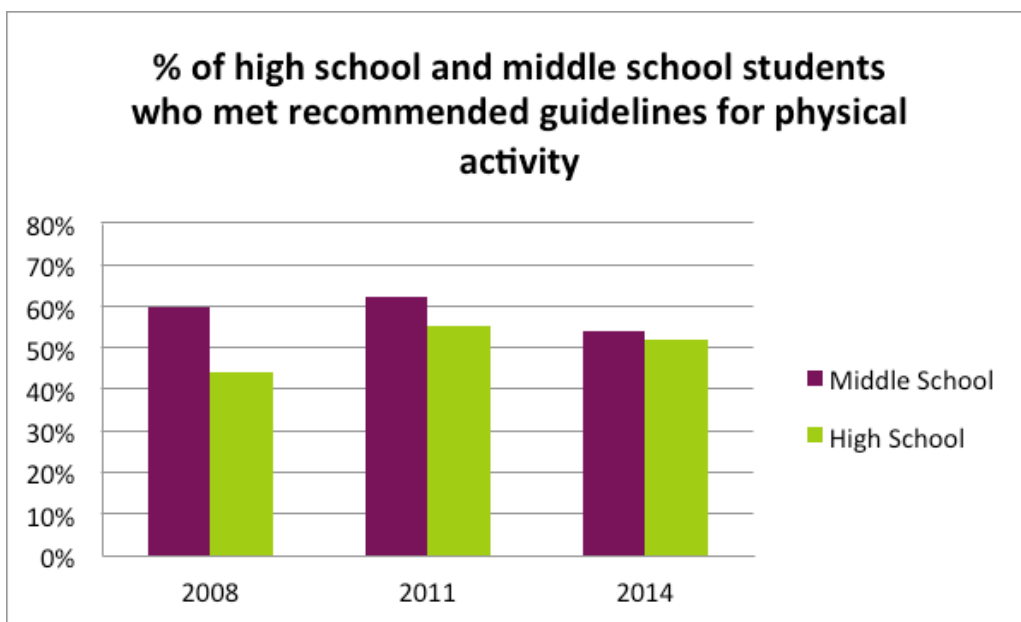
Respondents were also asked to report their perceived weight status. About 7% reported being underweight, 35% reported being normal weight, 43% reported being overweight, and 15% reported being obese. It should be noted that there is a difference between perceived obese weight status and actual BMI. Most survey respondents (58%) reported receiving no advice about their weight from a healthcare provider, 32% being advised to lose weight, 3% were advised to gain weight, and 8% were advised to maintain their current weight.

Physical Activity

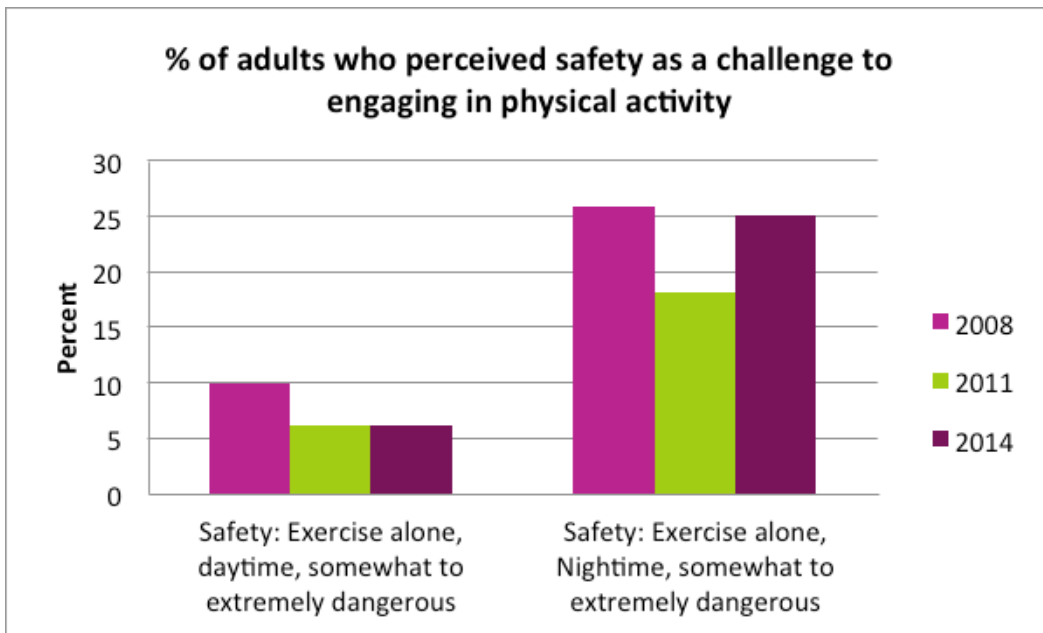
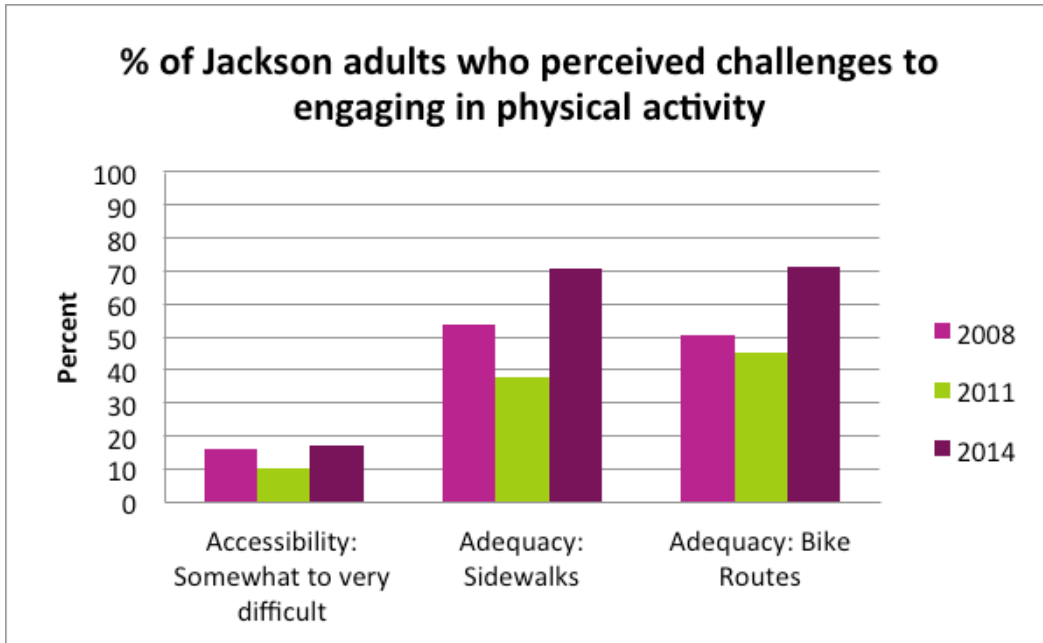
Participating in regular physical activity may protect against a wide range of chronic diseases. In 2014, only 28% of Jackson County adults met recommendations for strength and aerobic activity which, for the calculation of this indicator, is defined as 150+ minutes of aerobic activity per week and 2 or more times of strength training per week. This is higher than the state rate of 20%. Trend data is not available based on 2008 and 2011 CHA data as BRFSS changed the formula used to calculate adults meeting physical activity recommendations prior to the 2014 survey.



According to the 2014 Michigan Profile for Healthy Youth (MiPHY), 54% of middle schools students and 52% of high school students met recommended guidelines for physical activity.



Barriers can create challenges for residents wanting to be physically active. Some of these challenges include neighborhood safety, adequacy of bike routes and sidewalks, and location of areas to be physically active. From 2008 to 2014, there has been an increase in perceived adequacy of sidewalks and bike routes.



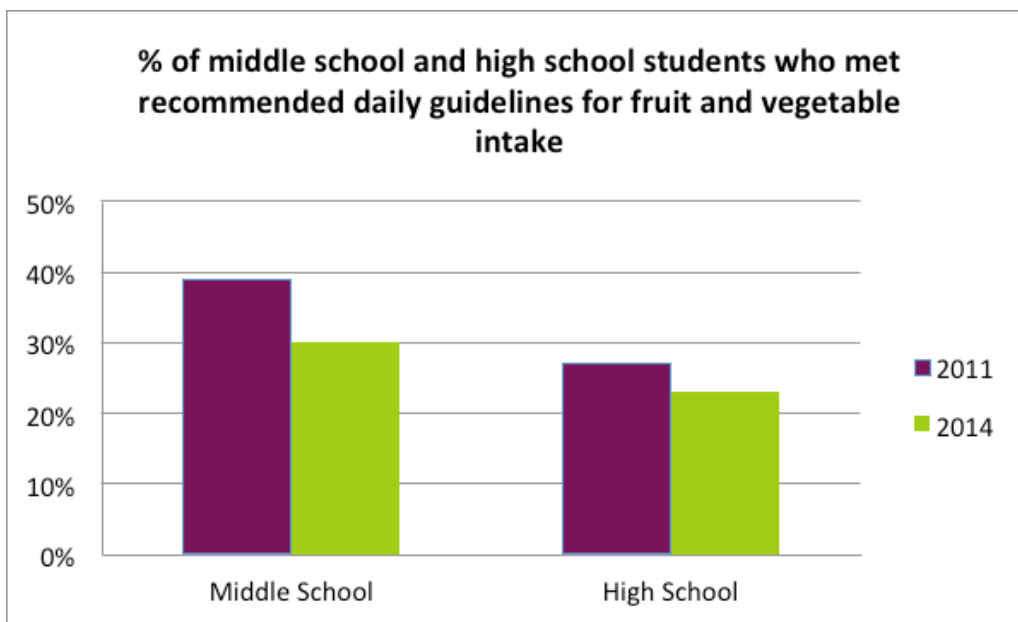
To better understand physical activity behaviors, respondents were asked about sedentary behaviors. In 2014, approximately 25% of Jackson residents report watching 5 or more hours of television daily, 10% reported watching 4 hours daily and 17% report watching 3 hours daily. In addition, 10% of respondents state that they spend 5 or more hours on average each day using a computer or playing computer games outside of work.

Healthy Eating

A well balanced diet provides health benefits – people who eat more vegetables and fruits as part of an overall healthy diet are likely to have a reduced risk of some chronic diseases. The Community Health Assessment also assessed nutrition related behaviors among residents.

- 10% of residents met the recommended 5 or more servings of fruit and vegetables, with an average of 2.71 servings among all respondents

According to the 2013-2014 MiPHY survey results, 30% of Jackson County middle school students and 23% of high school students met recommended guidelines for nutrition. This represents a decrease in both age ranges compared to 2011 (39% and 27% respectively).



Residents were asked about their understanding of recommendations for both physical activity and nutrition, and 10% reported they understood current recommendations; this is a 2% decrease when compared to 2011 data.

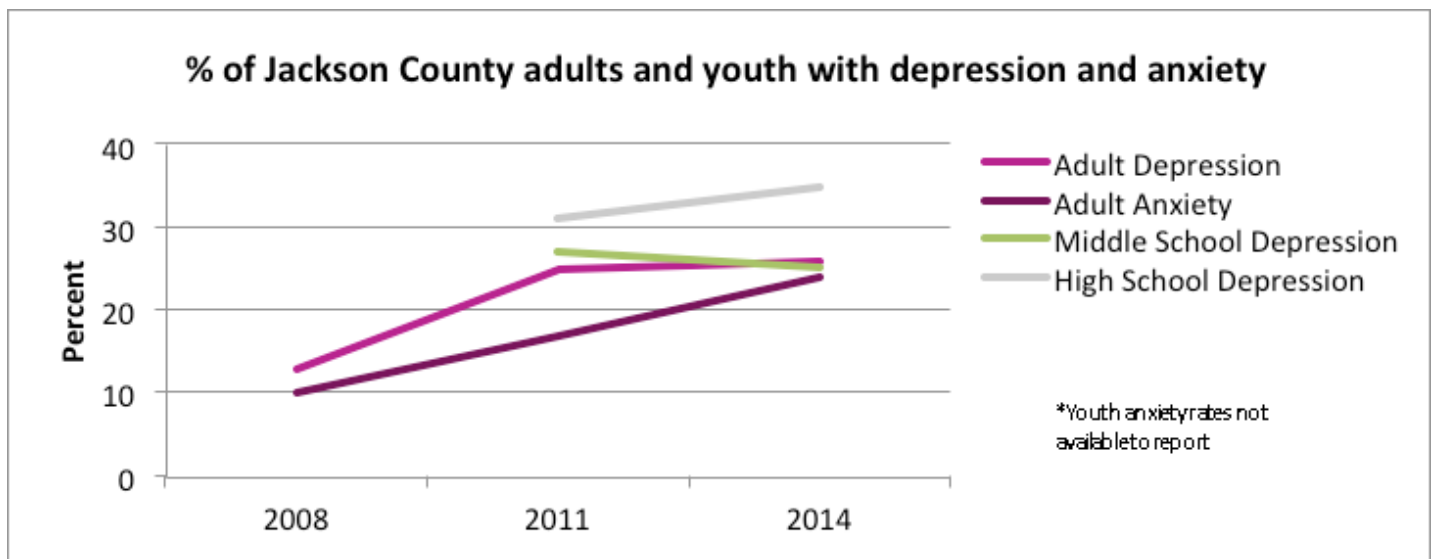
Behavioral Health

Behavioral Health Status

Behavioral health is used to describe an individual's level of cognitive or emotional well-being. Maintaining a positive state of mind is known to enable a person to function effectively within society and improve physical health. Individuals who have good behavioral health are well-adjusted to society, are able to relate well to others, and feel satisfied with their role in society. Behavioral health disorders can cause serious problems within relationships, physical health and job functions.

Residents of Jackson were also asked about their basic behavioral health:

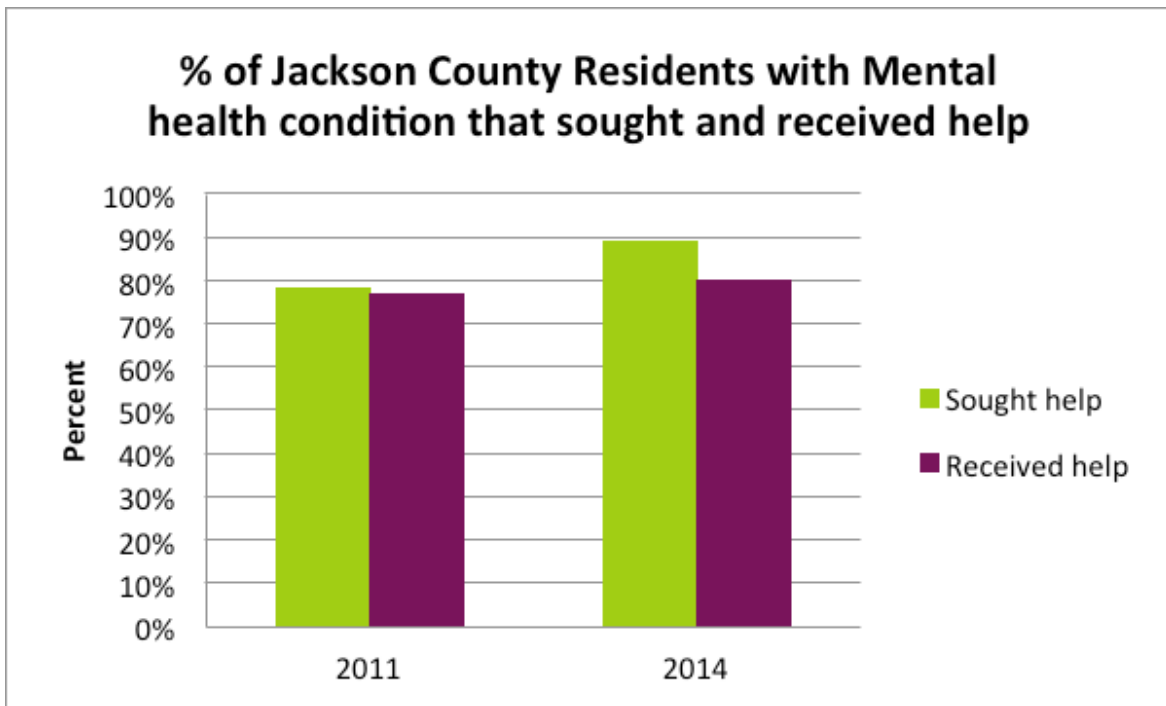
- The rate of those reporting being diagnosed by their provider with depression (26%) has stayed relatively stable since 2011(25%), but still represents a significant increase since 2008 (13%)
- The rate of anxiety diagnosis has increased since 2008 (10%) and 2011 (17%) to 24% in 2014
- About 59% of residents reported feeling worried, tense, or anxious in the past 30 days; this rate has stayed relatively stable since 2011 (60%)
- On average, residents reported 20 days of feeling healthy and full of energy in the past 30 days
- About 19% of residents reported limitation in the past 30 days due to a behavioral health condition
- Approximately 31% of residents report little pleasure or interest in doing things in the past 2 weeks
- About 29% of residents reported feeling down, depressed or hopeless within the past 2 weeks



Behavioral Health Services

The following statistics from the CHA and secondary data sources represent the state of behavioral health services in Jackson County:

- Among residents that reported having a mental health problem in the past year, 89% sought help for the problem; this is an increase from 78% in 2011
- 80% of those that had a mental health problem in the past year reported receiving help for the problem; this is an increase from 77% in 2011
- 17% of all residents reported receiving medication or treatment for a mental health problem, compared to 15% in 2008 and 18% in 2011
- 59% of patients age 18 and older visiting Jackson Health Network, Jackson's clinically integrated network, were screened for depression using the PHQ-2 questionnaire in 2014



Knowledge and Beliefs

Several questions were asked regarding knowledge and beliefs around mental health issues.

- As a measure of stigma around mental health, respondents were asked whether they agree or disagree that people are generally caring and sympathetic to people with mental illness; 17% of respondents strongly agreed and 30% agreed slightly
- 63% of respondents indicated that they would definitely seek help for a behavioral health problem and 28% indicated that they would probably seek help; this is a positive increase compared to 2008 and 2011, in which respondents indicated 52% and 54%, respectively, for definitely seeking help
- 62% of residents strongly agreed that treatment can help people with mental illness lead normal lives, compared to 72% in 2011
- About 79% indicated that they would not be embarrassed at all to seek mental health services, 16% somewhat embarrassed, 2% embarrassed, and 2% extremely embarrassed
- Approximately 71% of residents recognized at least 7 symptoms of depression

Social Support

In order to better understand the level of social support among Jackson residents, respondents were asked about their social and emotional support.

- 52% of residents reported always and 23% usually receiving the social and emotional support they need; for residents responding 'always' this represents a 13% increase compared to 39% of respondents in 2011
- 81% of residents indicated awareness of local programs or services that are available to help with behavioral, mental or emotional problems

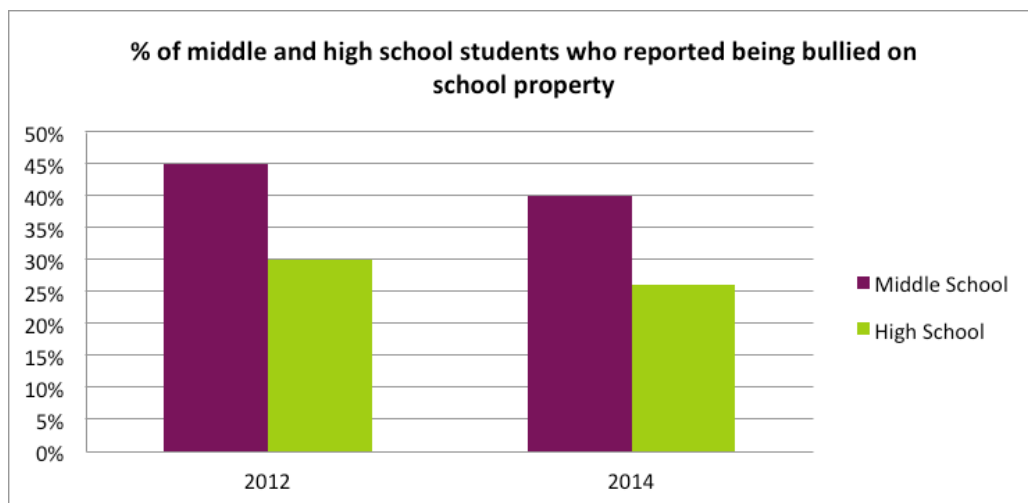
Violence and Bullying

With regard to ever having been threatened or physically harmed by an intimate partner, about 17% of respondents reported they had been. Based on MiPHY survey data, about 9% of high school students reported being physically hurt by someone they were dating in the past year.

Bullying is defined as “unwanted, aggressive behavior among school aged children that involves a real or perceived power imbalance.” Victims of bullying may often lose sleep or feel sick, feel hopeless or helpless, may want to skip school, or even think about suicide. Bullying can affect individuals in many ways and have a major influence on the health of our youth.

According to the 2013-2014 MiPHY survey,

- 40% of middle school students and 26% of high school students reported being bullied on school property in the past 12 months (45% and 30% in 2012 respectively)

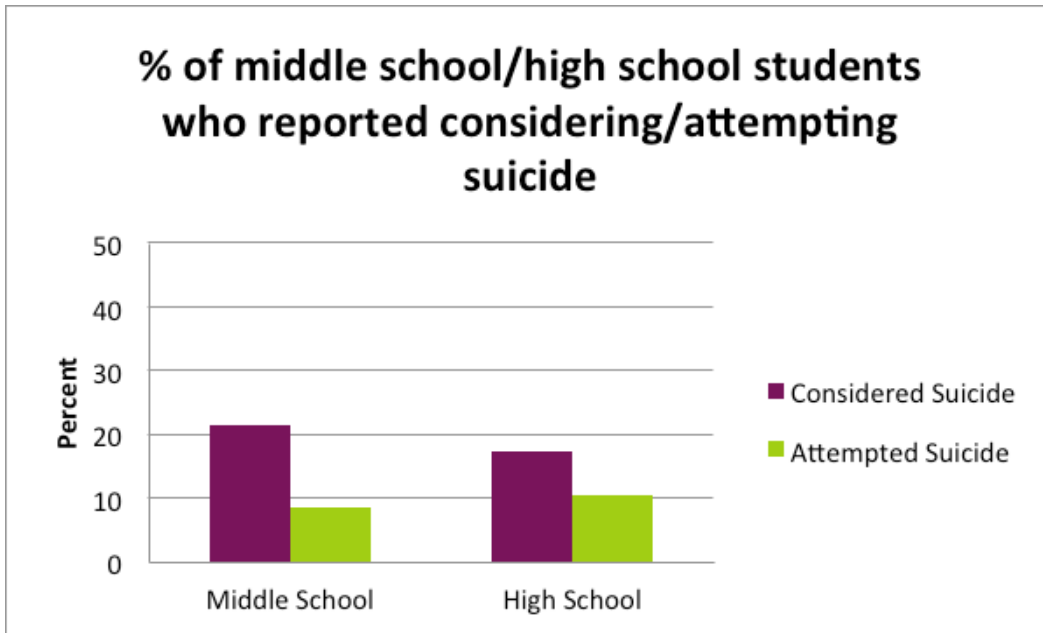


- 22% of middle school students and 19% of high school students reported being electronically bullied in the past 12 months (23% and 22% respectively in 2012)
- 32% of middle school students and 36% of high school students have read emails or website messages that spread rumors about other students in the past 12 months (38% and 44% in 2012 respectively)
- 20% of middle school students and 23% of high school students reported having read emails or website messages that contained threats to other students in the past 12 months (27% and 30% in 2012 respectively)

Youth Mental Health

As a measure of depression, the MiPHY survey measures the percent of students who felt so sad or hopeless almost every day for two weeks or more in a row that they stopped doing some usual activities during the past 12 months. In 2014, 25% of middle school students and 35% of high school students fit these depression criteria. In 2012 the rates were 27% and 31% respectively.

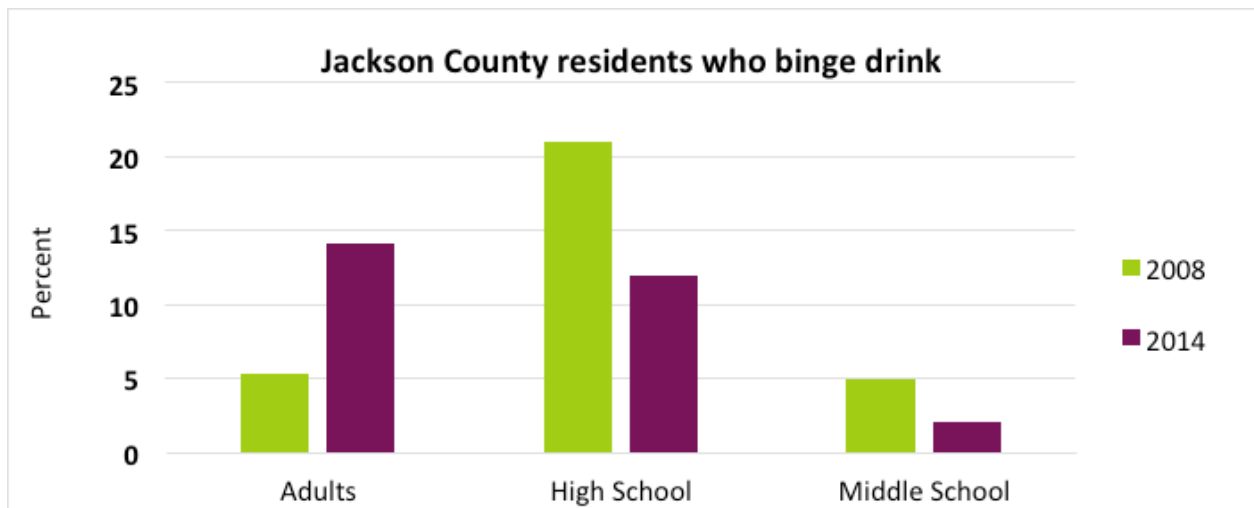
The following chart represents the rates of students in Jackson County that have seriously considered suicide and that have attempted suicide in the past 12 months.



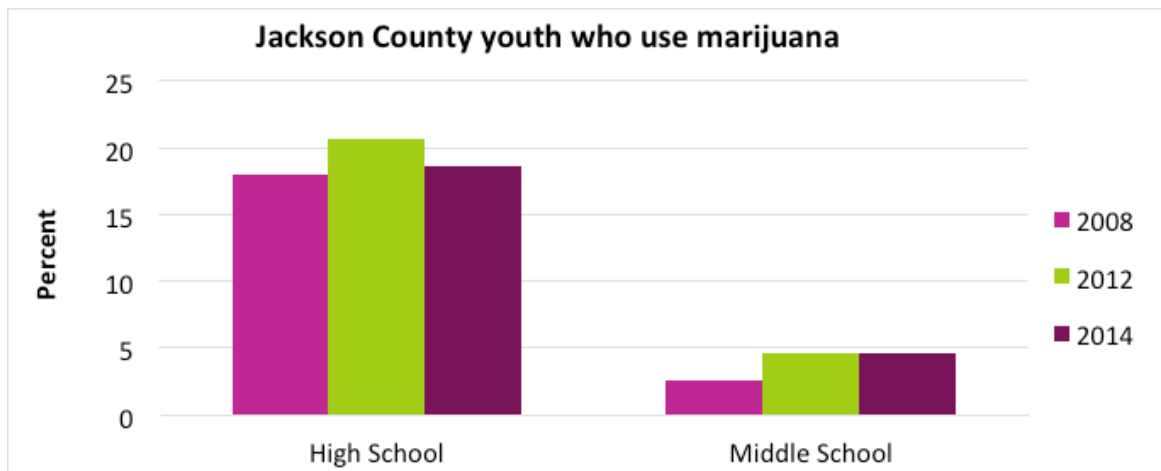
Substance Use

A comprehensive approach to health includes substance abuse prevention on the continuum of care. Substance use disorders impact the health of individuals, their families and their communities. Substance abuse prevention and early intervention strategies reduce the impact of behavioral health conditions in the community.

- 46% of Jackson County residents drink alcohol, 30% smoke tobacco, and 18% use marijuana or hashish
- Jackson County youth reported 44% of high school students drink alcohol
- 5% of middle school students and 19% of high school students reported using marijuana
- Rates of Jackson County high school and middle school students who binge drink has decreased from 2008 to 2014 however, we have seen a significant increase in adults who binge drink within this time frame



Early intervention and substance abuse prevention strategies targeting youth help lessen addiction and substance dependency in adulthood. Prevention efforts can prevent or reduce the risk of developing behavioral health problems including prescription drug misuse and abuse, and the onset of other chronic diseases resulting from drug and alcohol use.



Opiate/ Other Drug Use

According to the Substance Abuse Mental Health Services Agency (SAMHSA), addressing the impact of substance abuse alone is estimated to cost Americans \$600 billion.

- 6% of residents reported ever using prescription pain relievers not prescribed or taken only for the experience or feeling it caused
- 15% of residents reported having used cocaine at least once and about 2% reported trying heroin

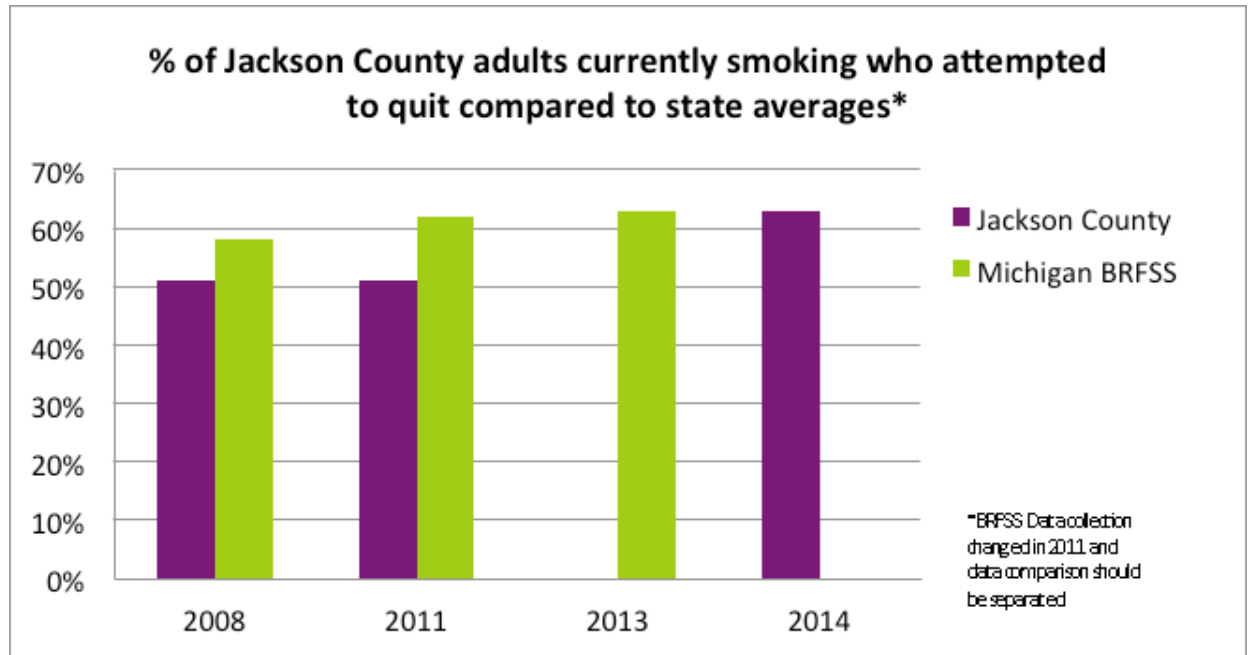
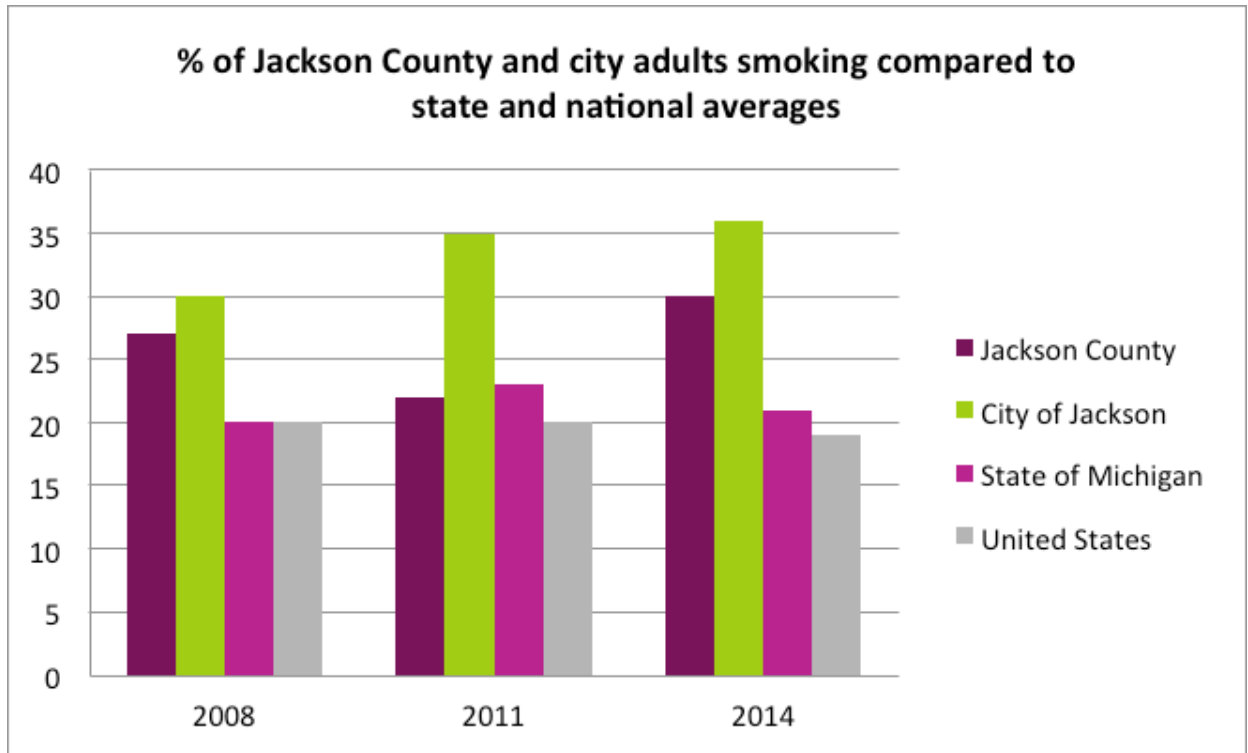
Tobacco Use

Lung cancer was the leading cause of death by cancer in Jackson County in 2012. The age adjusted rate of lung cancer deaths was 69.0 per 100,000 deaths, compared to the State of Michigan rate of 49.6 per 100,000 deaths.

Cigarette smoking is the leading cause of lung cancer. According to the 2016 CHA findings, 30% of Jackson residents smoke, with a higher percentage of 36% within the city limits. This is higher than the 2011 CHA reported rate of 22% and the 2013 Michigan rate of 21%. Those residents reporting smoking cigars, cigarillos, or very small cigars in the past 30 days is at 3%, and 3% of residents reported using smokeless tobacco products including chewing tobacco, snuff, or dip in the last 30 days.

Exposure to secondhand smoke can also increase one's risk of a wide range of health problems, including lung cancer and heart disease.

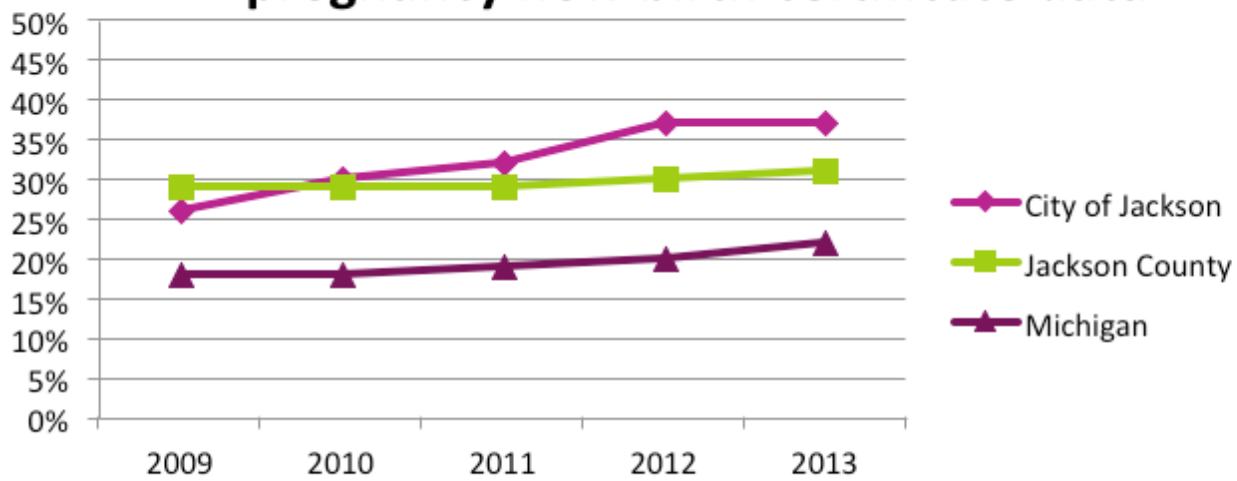
- 39% of CHA respondents indicated being exposed to secondhand smoke within the past 7 days
- 43% of middle school students and 52% of high school students reported exposure to secondhand smoke during the past 7 days



The percentage of adults in the Jackson Community aware of resources available to assist them in quitting tobacco use such as telephone quit lines, local health clinic services and cessation classes is 50%. The rate of Jackson County adults reporting they stopped smoking for one day or longer in the past 12 months in an attempt to quit smoking (63%) is at the same level as adults surveyed in the Michigan Behavioral Risk Factor Surveillance System.

Pregnant women who smoke carry a higher risk of having pre-term labor or miscarriage, lower birth weight babies and babies who have an increased risk of lung or respiratory problems as well as preterm-related infant death. Birth certificate data shows that the City of Jackson and Jackson County are higher than the state of Michigan average for the number of women who reported smoking during pregnancy.

Births to mothers who smoked during pregnancy new birth certificate data



Definitions: The number of births to mothers who smoked during pregnancy (from the new birth certificate, used in Michigan beginning in July 2007). This is a two-year average for 2009 and a three year average for subsequent years. The percent is based on total live births. An * indicates fewer than six occurrences in the relevant period.

Data Source: Kids Count Data Center <http://datacenter.kidscount.org/data/tables/>

Data Source: Division for Vital Records and Health Statistics, Michigan Department of Community Health.

The social and economic characteristics of the 2011 - 2013 three year average Fetal Infant Mortality Data for Jackson County show that smoking was a factor in 42% of the cases where a child died prematurely.

Based on MiPHY data, the cigarette smoking rate among middle and high school students in Jackson County is on the decline.

- The middle school smoking rate was 2% in 2014, showing a decrease from 2011 (3%) and 2008 (4%)
- The high school smoking rate was 11% in 2014, showing a decrease from 15% in 2011 and 18% in 2008

| Middle School and High School Tobacco Rates | | | | | | | |
|--|--|------|------|--|------|------|--------------------------|
| MiPHY Indicator | Middle School 7 th grade MiPHY Trend Data | | | High School 9 th and 11 th grades MiPHY Trend Data | | | Direction of movement |
| | 2008 | 2011 | 2014 | 2008 | 2011 | 2014 | |
| Smoked cigarettes during the past 30 days | 4% | 3% | 2% | 18% | 15% | 11% | ↓ |
| Cigars, cigarillos, or little cigars during past 30 days | 2% | 2% | 1% | 11% | 8% | 7% | ↓ |
| Use chewing tobacco, snuff or dip during past 30 days | 5% | 1% | 3% | 22% | 11% | 5% | ↓ |

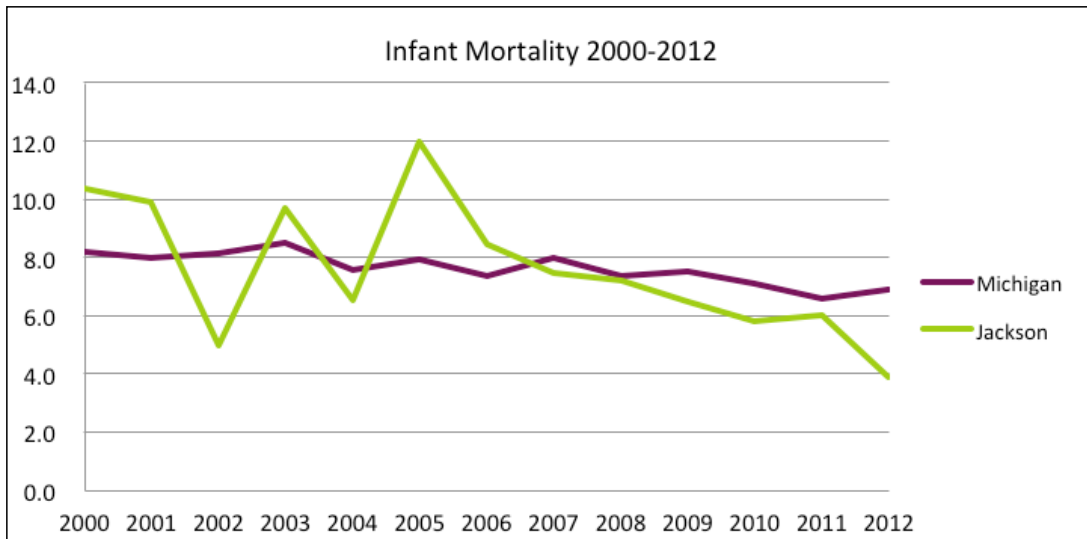
All fifteen school districts in Jackson County have implemented Comprehensive Tobacco Free Policies. These policies prohibit the use of tobacco products on campus and district property and at school or district sponsored events at any location. Most schools have adopted policies which restrict non-tobacco nicotine and newly emerging tobacco products as well.

Maternal Child Health

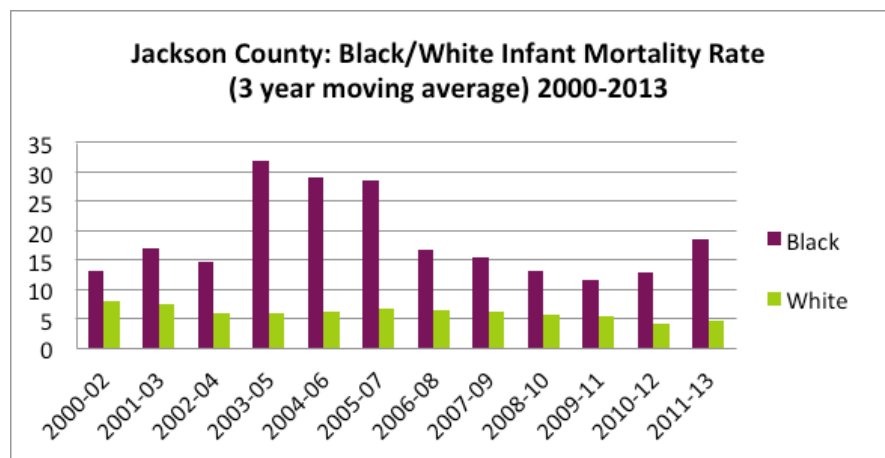
Infant Mortality, Birth Weight, and Preterm Births

Maternal and child health indicators are important in gaining a full understanding of a community's health. The infant mortality rate (death of a child before their first birthday) is the number of infant deaths for every 1,000 live births. This rate is often used as an indicator to measure the health and well-being of a community.

Jackson County's infant mortality rate is on the decline. Jackson's rate was 7.2 infant deaths per 1,000 live births in 2008, 6.0 in 2011, and 3.9 in 2012. The Jackson infant mortality rate was lower than the state rates of 7.4, 6.6, and 6.9 respectively.



There continue to be significant racial disparities related to infant mortality rates in Jackson County. From 2008-2010 African American infants were 2.3 times more likely to die before their first birthday than Caucasian infants. That number rose to four times more likely from 2011-2013.



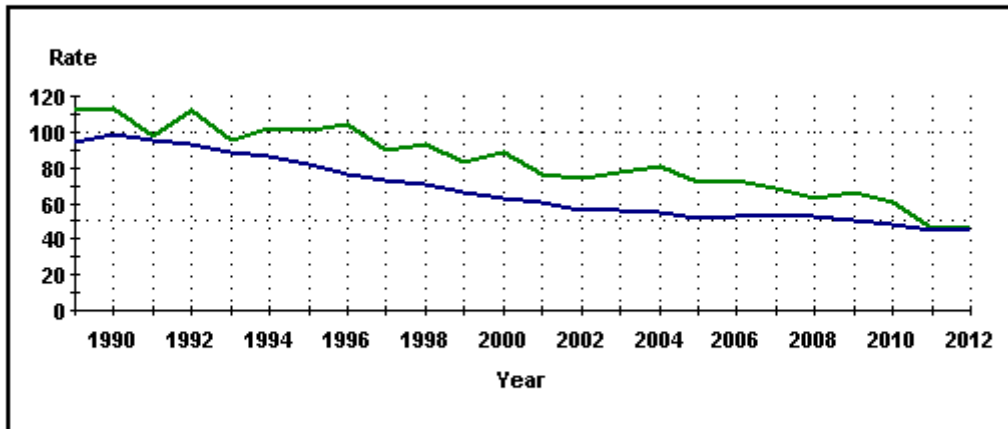
Infants born at low birth weight (less than 2,500 grams or 5.5 pounds) and especially very low birth weight (less than 1,500 grams or 3.25 pounds) are more likely than infants of normal birth weight to die in the first year of life and to experience long-range physical and developmental health problems. In 2013, 8% of births in Jackson County were categorized as low birth weight and 2% very low birth weight.

Teen Pregnancy and Birth Rate

A community's teenage pregnancy rate is estimated as the number of pregnancies per 1,000 females aged 15-19 in a population.

- Jackson County's teen pregnancy rate in 2012 was 47 while the Michigan rate was 45.5; in 2011 the Jackson rate was 45.8, comparable to the Michigan rate of 44.4, and in 2008 the rate was 63, compared to the Michigan rate of 58

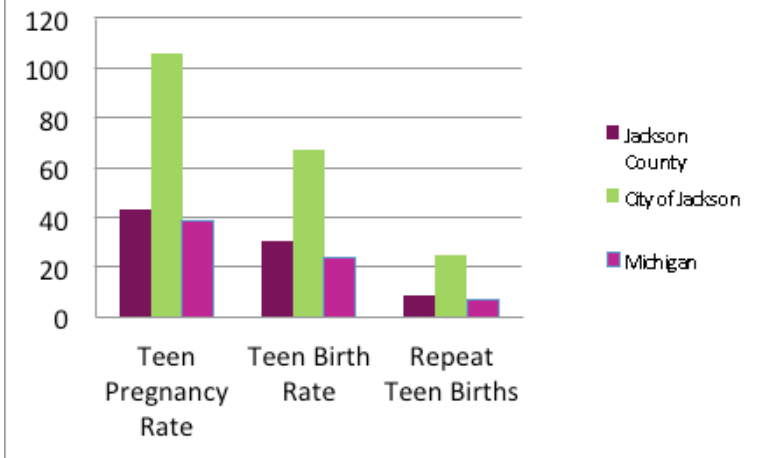
Teen Pregnancy Rates, Jackson County Residents, 1989-2012



Source: Live births, abortions and population estimates obtained from the Vital Records & Health Data Development Section, Michigan Department of Community Health.



2013 Teen Pregnancy, Birth Rates & Repeat Teen Births (Rates per 1,000 females, aged 15-19)



The MiPHY surveys collect data regarding student sexual health and activity.

- In 2014, 6% of middle school students in Jackson County reported ever having sexual intercourse; in 2011 the rate was 5%, and in 2008 the rate was 8%
- 34% of high school students reported ever having sexual intercourse, compared to the 2011 rate of 41% and 2008 rate of 42%
- Of students that reported having sexual intercourse, 53% of middle school students reported using a condom during their last sexual intercourse; this marks a decline of about 19% since 2008 (72%) and 2012 (71%)

- 61% of high school students that reported having sexual intercourse reported using a condom which represents a slight decline since 2008 (65%) and 2012 (63%)

Clinical Services

Due to recent changes in the national healthcare landscape, preventative services have recently become the focus of many community health initiatives. These services provided by health care providers allow people to identify risk factors and illnesses before they reach a level that could cause irreparable damage. CHA respondents were asked a series of questions regarding use of clinical services and preventive screening and ability to access recommended services.

Preventive Screening

Based on the 2016 CHA findings, 82% of Jackson County residents have had an annual physical in the past year. This marks an increase from 2008 and 2011 rates of 77% and 71%, respectively. The 2013 Michigan rate was 70%.

- 92% of respondents in 2014 reported having their blood pressure checked within the past year
- 85% report having their cholesterol checked within the past five years
- 65% of residents reported receiving a diabetes screening within the past year (56% in 2011)

Women over the age of 40 were asked to indicate when they last received a mammogram. In 2014 about 73% of women reported receiving a mammogram within the past two years. In 2008 the rate was 83% and in 2011 the rate was 81%. It should be noted that between the 2008 and 2011 CHA reports, national guidelines for mammograms changed; new recommendations state women should initiate regular screening at age 50, repeating every two years. The drop in the 2014 rate could reflect this change, as the question was still asked of women over 40.

Men over the age of 39 were asked if they have ever discussed with their doctor the disadvantages and advantages of Prostate Specific Antigen testing. About 50% reported they have not discussed the advantages or disadvantages with their doctor, 25% discussed the advantages and disadvantages, 24% discussed only the advantages, and 1% discussed only the disadvantages.

All respondents over the age of 50 were asked when they last received a colorectal cancer screening and blood stool test using a home kit. About 55% of residents received a colorectal cancer screening within the past five years, and 44% reported using a home blood stool test ever.

Many factors can affect a woman's pregnancy and the health of her future newborn. Therefore, it is important that both women and men complete regular, scheduled visits with their physician. Among Community Health Assessment respondents that identified as being sexually active:

- 40% of women aged 18-44 received reproductive health services in the past 12 months. Of those, 35% with health insurance received a method of birth control or prescription for a method within the past 12 months
- Of respondents 24 years old or younger, 79% received a method of birth control or prescription for a method within the past 12 months
- Only 4% of sexually active males aged 18-44 reported receiving reproductive health services in the past 12 months

Immunizations

The Michigan Department of Health and Human Services (MDHHS) provides detailed information regarding the rates of vaccination for residents of all ages who are reported through the Michigan Care Improvement Registry (MCIR) in the form of a County Quarterly Immunization Report Card. The table below highlights Jackson County's immunization status compared to the Michigan average for vaccinations recommended by age group.

- Jackson County ranks 22nd out of 84 Michigan counties (including the City of Detroit) for children ages 19-35 months who have received all recommended vaccinations

Influenza and Pneumonia

The Healthy People (HP) 2020 goal for children (above 6 months) and adults is 70% vaccination for influenza on an annual basis. Adults responding to the CHA were asked about influenza vaccination.

- 39% of respondents indicated receiving a flu vaccine by injection or nose spray in the past year
- MCIR reports indicate that for the 2013-2014 Flu season, 33% of children (6 months-17 years) and 23% of adults received 1 dose of influenza vaccine in Jackson County
- Additionally, 41% of respondents indicate receiving a pneumococcal vaccine ever

Human Papillomavirus

While above the Michigan average, Jackson County continues to lag below HP 2020 goals for HPV vaccination in adolescents aged 13-17 years. Currently the completion rate of the 3 recommended doses of HPV vaccine in Jackson County for females of this age group is 35.9% and 20.5% for males.

| Jackson County Quarterly Immunization Report Card, March 31, 2015 | | | | |
|---|---|-----------|----------|--------------|
| Age | Vaccine Measure | Jackson % | MI Ave % | HP 2020 Goal |
| 19 - 35 months | Birth Dose Hep B coverage | 81.8 | 79.3 | 85% |
| | 43133142* series | 76.9 | 74 | 80% |
| 13-17 years | 132321**series | 79.6 | 66.4 | n/a |
| | 3+ HPV (females) | 35.9 | 27.5 | 80% |
| | 3+ HPV (males) | 20.5 | 15 | n/a |
| | Mening. Up-to-date (17 years) | 50.2 | 36.8 | n/a |
| Adult | 1+ Tdap (19-64 yrs) | 39.5 | 32.5 | n/a |
| | 1+PPSV (65+yrs) | 33.1 | 27.7 | 90% |
| | 1+ PCV13 (65+yrs) | 4.2 | 3.6 | n/a |
| | 1+ Zoster (60+yrs) | 22.2 | 17.9 | 30% |
| 2013-2014 Flu Season | 1+ Flu (6months-17 yrs) | 32.5 | 32.6 | 70% |
| | 1+ Flu (18+ yrs) | 23.2 | 18 | 70% |
| Note: | * 4 Dtap, 3 Polio, 1 MMR, 3 Hib, 3 HepB, 1 Varicella, 4 PCV, 2 HepA | | | |
| | ** 1 Tdap, 3 Polio, 2 MMR, 3 HepB, 2 Var, 1 MCV4 | | | |
| | Source: 3/31/15 Jackson County Quarterly Immunization Report Card | | | |

Oral Health

CHA respondents were asked a series of questions about oral health behaviors.

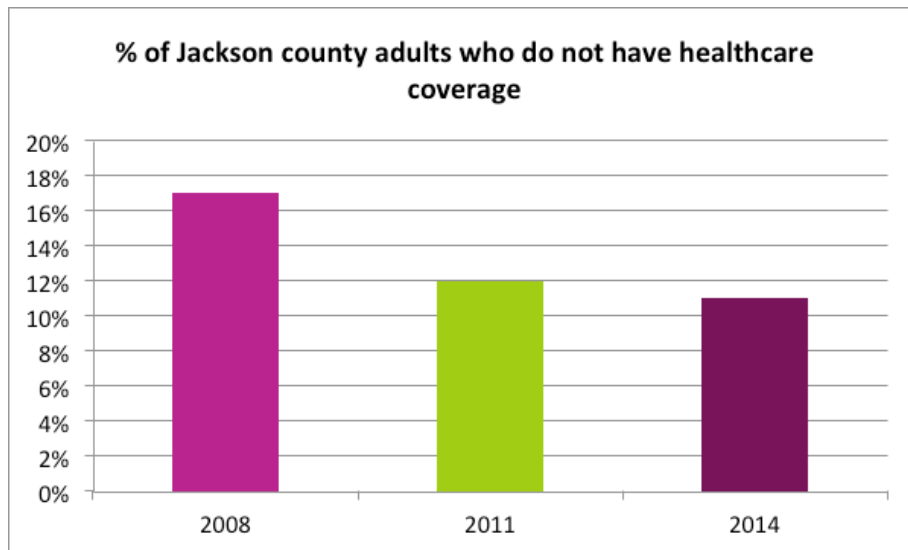
- 92% of respondents indicated brushing their teeth daily, 4% some days, 1% rarely, and 4% not at all
- 34% of residents reported flossing daily, 36% some days, 16% rarely and 15% not at all
- 33% reported having one to five teeth extracted, 12% six or more but not all, 7% all teeth, and 48% none
- On average, children in Jackson County brush their teeth 1.95 times per day and use dental floss 2.51 times per week
- 19% of residents reported difficulty accessing dental care, with 9% of these residents reporting cost as a barrier to accessing dental care for a child within the past year
- 68% of adults in Jackson County have visited the dentist for any reason in the past year, and about 60% have had their teeth cleaned by a dentist or dental hygienist in the past year
- 92% of respondents indicated that all children under the age of 18 had been to a dentist in the past 12 months, an increase from 81% in 2008 and 2011
- 89% of children visited a dentist for preventive care in the past year, and about 18% of children had a toothache, decayed teeth, or unfilled cavities in the past year

Access to Care and Utilization

Access to Care

The percentage of residents in Jackson County that do not have healthcare coverage is on the decline. In 2008 the rate of uninsured residents in Jackson County was 17 %, in 2011 it was 12% and in 2014 it was 11%. About 4% of children in Jackson County are without health insurance.

- In 2014, the average monthly enrollment in Medicaid among Jackson residents was 23,497, the 2013 average was 20,527 enrollees (2014 average excludes April as data were not reported by the State)
- Among residents that reported not having insurance coverage, the reasons reported were: cannot afford it (50%), chose not to get it (15%), not available (2%), not employed (12%), and other reason (22%). Only 3% of veterans in Jackson County report not having health care coverage
- 8% of respondents reported transportation as a barrier to accessing health care services, a small increase from 7% in 2008 and 5% in 2011
- Cost was a barrier for 17% of residents needing basic health care services, 19% needing prescriptions, and 27% needing dental care
- Cost was a barrier for only 1% of children needing a doctor's visit in the past 12 months, this remains relatively unchanged since 2008 (2%) and 2011 (2%)



Based on the 2016 CHA findings, 63% of residents indicated having one personal doctor or health care provider. An additional 20% reported having more than one personal provider and 17% reported having none. About 42% of respondents strongly agreed that they receive exactly what they wanted and needed for their health care, and 36% somewhat agreed. About 27% of residents reported ever using a form of alternative or complimentary therapy including chiropractic manipulation, massage and acupuncture.

Healthcare Utilization

In 2014, 26% of residents reported going outside of the Jackson community for any healthcare within the past 12 months. This is a small decrease from the 2011 rates of 30% and 2008 rate of 28%.

Emergency Department Utilization

The average number of times that residents have visited a hospital emergency room for their own health in the past 12 months has increased since 2008. In 2008 the average was 0.63 times, in 2011 an average of 0.73 times, and in 2014 an average of 0.98 times. In 2014, 68% of residents reported visiting the emergency room for their own health within the past 12 months, a rate that has stayed steady since 2008. The average number of times that residents have visited a hospital emergency room for their children's health in the past 12 months was 0.69 times, down from 1.47 times in 2011 (2008 data not available). In 2014, 65% of residents reported visiting the emergency room for their children's health within the past 12 months, a rate that has increased from 51% in both 2008 and 2011.

Urgent Care Utilization

The average number of times during the past 12 months that Jackson County residents have gone to an urgent care facility due to their own health was 0.32 times. The average number of times that residents have visited an urgent care facility for their children's health in the past 12 months was 0.75 times. In 2014, 37% of residents had visited an urgent care facility due to their children's health.

Hospitalizations

In 2012 there were 22,673 hospitalizations in Jackson County due to all causes. In 2008 the Allegiance Health acute care readmission rate was 12.1, in 2011 the rate was 11.8, and in 2014 the rate was 11.9.

In 2014, Allegiance Health recorded 20 cases of MRSA infection. In the same year, Allegiance recorded 12 cases of C. difficile infection.

Ambulatory care sensitive (ACS) conditions are illnesses that can often be managed effectively on an outpatient basis and generally do not result in hospitalization if managed properly. In 2012, the Jackson County rate of ACS hospitalizations per 100,000 individuals was 258.1. The table below represents the rates of hospitalization for the leading ACS diagnoses.

| 2008 -2012 - Michigan Vital Statistics | | | | |
|--|-----------------------|-------|---------|-------|
| Rate – Per 100,000 | | | | |
| Year | Annual avg. 2007-2011 | | 2012 | |
| | Jackson | MI | Jackson | MI |
| Total ACS | 255.3 | 268.6 | 258.1 | 259.1 |
| Congestive Heart Failure | 31.6 | 37.7 | 36.9 | 33.1 |
| Bacterial Pneumonia | 42.1 | 31.9 | 38.7 | 27.6 |
| Chronic Obstructive Pulmonary | 25.2 | 25.9 | 19.8 | 25.4 |
| Kidney/Urinary Infections | 16.4 | 17.3 | 15.5 | 18.3 |
| Cellulitis | 14.1 | 15.9 | 14.3 | 16.8 |
| Diabetes | 14.0 | 13.3 | 13.5 | 14.6 |
| Asthma | 13.5 | 15.8 | 8.1 | 13.7 |
| Grand Mal & Other Epileptic Conditions | 7.7 | 7.0 | 7.4 | 8.2 |
| Dehydration | 7.3 | 7.8 | 5.4 | 5.7 |
| Gastroenteritis | 5.6 | 3.9 | 6.0 | 4.1 |
| All Other ACS | 77.8 | 92.2 | 92.6 | 91.5 |

Healthcare Decisions

The most referenced sources that residents reported obtaining their most recent health information from include health care providers (47%), followed by the Internet (32%), and family (12%).

- 70% of residents reported always having the opportunity to ask questions of their health care providers, 14% usually having the opportunity, 11% sometimes having the opportunity, and 9% never
- 72% of residents reported always feeling that their provider made an effort to make sure they understood everything needed to take care of their health, 12% reported usually, 11% reported sometimes, and 6% reported never

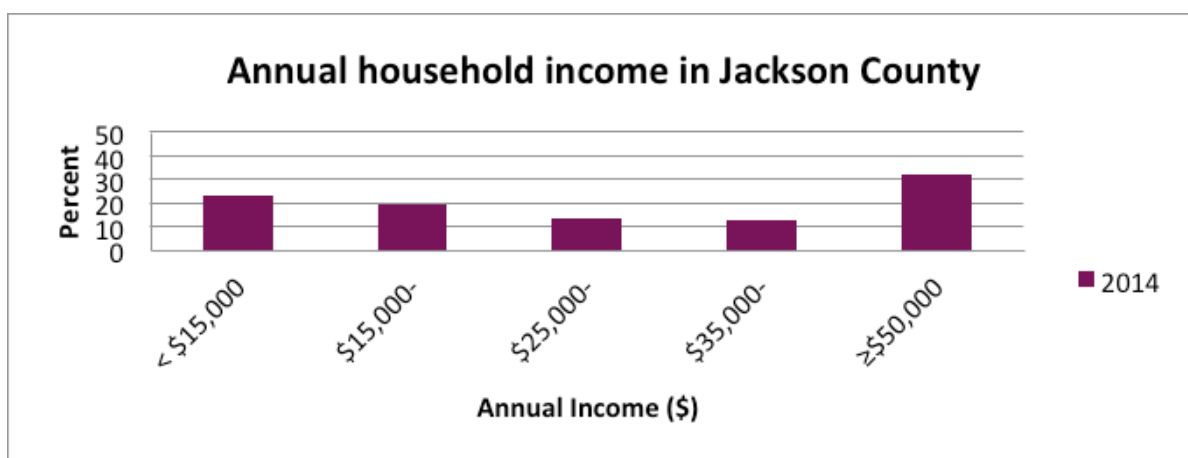
Economic, Social, and Environmental Factors

The health of communities and individuals is impacted by more than health behaviors and clinical care. Social, economic, and environmental factors also play a role in shaping health outcomes.

Economic Factors

Employment and Income

Based on CHA responses, about 40% of Jackson County residents are employed. Of those currently employed, 30% reported being employed full time and 9% reported being employed part time. Of those currently unemployed, 6% have been employed for more than 1 year and 4% have been unemployed for less than 1 year. Based on US Census data from 2012, about 13% of adults and 25% of children in Jackson County live in poverty. The table below represents annual household income of Jackson County residents based on 2016 CHA findings.



Education

The 2008-2012 American Community Survey data reported 26% of Jackson County residents have obtained a college degree or higher, 32% have some college or technical school, 31% have a high school diploma, 8% some high school, and 4% have never attended high school. Jackson's high school graduation rates are comparable to Michigan rates (30% in 2013), however the attainment of a bachelors degree or higher is lower than the Michigan rate. In 2013, 26% of Michigan residents held a bachelors degree or higher, compared to 19% in Jackson County.

Residents were also asked to indicate the highest level of education they aspire to attain. About 6% of respondents wish to complete their GED, 2% less than high school, 18% high school only, 11% less than two years of college or trade school, 15% two or more years of college or a two-year degree, 31% finish college, 15% master's degree or equivalent, and 2% doctoral or professional degree.

Dwelling Status

The 2008-2012 American Community Survey data reports 73% of Jackson County residents living in owner-occupied homes and 27% living in renter-occupied homes. Based on the 2016 CHA findings of number of people living or staying in the home, the average household in Jackson has 2.77 residents.

Social and Environmental Factors

Food Security

Food security is defined as including both physical and economic access to food that meets people's dietary needs as well as their food preferences. Access to a grocery store that sells fruits and vegetables is sometimes a challenge for urban and rural communities.

- 12% of CHA respondents stated they had a lot or some difficulty accessing a grocery store that sells fruits and vegetables
- About 40% of respondents indicated that the closest convenience store or small grocery store is more than a 30 minute walk away
- 42% of respondents reported they were always, usually, or sometimes worried about having enough money to buy nutritious meals in the past year; this was an increase from 24% in 2011

Built Environment

Approximately 17% of Jackson residents reported some sort of difficulty finding a place to exercise, an increase from 10% in 2011.

- 71% of residents reported feeling their sidewalks are adequate, an increase from 38% in 2011
- Based on the 2014 National Citizen Survey results, 48% of residents have a positive perception of recreational opportunities in Jackson County
- 24% of residents reported using walking trails, with 21% reporting their community does not have any
- About 19% of residents reported using schools that are open for public recreation activities, with 7% reporting their community does not have any schools open for public activities

Workplace Health

Policies and programs available in the workplace can have a significant impact on the health of employees and their families. The CHA included a number of questions about workplace health. Based on the 2016 CHA findings, Jackson County residents missed an average of 12.5 days of work in the past year due to illness. In 2008 the average was 12.2 days and in 2011 the average was 7.1 days.

Based on 2014 CHA data, Jackson County residents reported the following about workplace wellness programs:

- 16% of Jackson County residents reported participating in a wellness program at work

- 38% of respondents indicated that their employer had promoted smoking cessation or a tobacco-free lifestyle to employees in the past 12 months
- 33% of respondents indicated that their employer offers tobacco cessation services
- 30% of respondents indicated that their employer provides opportunities for physical activity at work, however only 42% reported their employer had promoted physical activity to employees
- 40% of respondents indicated their employer promoted healthy eating to their employees in the past 12 months
- 44% of residents indicated their employer provides access to healthy foods at work

Home, Air, and Water Quality

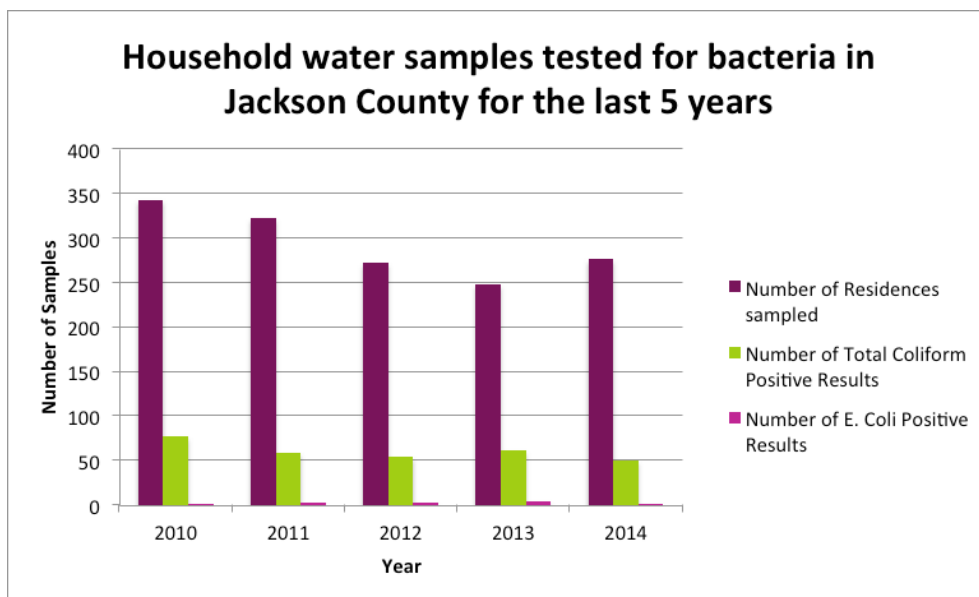
Radon Gas Testing

Exposure to radon gas is a significant risk for lung cancer. Long term exposure to radon can increase the risk of lung cancer and exposure to radon and cigarette smoke concurrently increases the risk of lung cancer more than either exposure alone. The 2014 National Citizen Survey assessed the percentage of respondents that have had their homes tested for radon, including during the purchase of the home. About 33% of Jackson County residents surveyed through the National Citizen Survey reported having had their home tested for radon.

Water Well Testing

Jackson County Residents are encouraged to sample their on-site water supply anytime there is work performed on their well, if the well head/casing is flooded, if the well casing is struck by lightning or if they have any concern over their water quality. Water supplies are sampled for Total Coliform Bacteria. Coliform bacteria are an indicator organism that, while not necessarily capable of causing illness, can imply the presence of some sort of contamination of the water supply, whether it be in the well itself or in the plumbing of the home. The presence of E. coli bacteria in a water supply is indicative of human or animal waste entering the water supply.

The following data was collected from the Michigan Department of Environmental Quality's (MDEQ) Wastetrack Program and is limited to samples submitted to the MDEQ Laboratory. Many residents utilize a local laboratory and that data is not included in this chart.

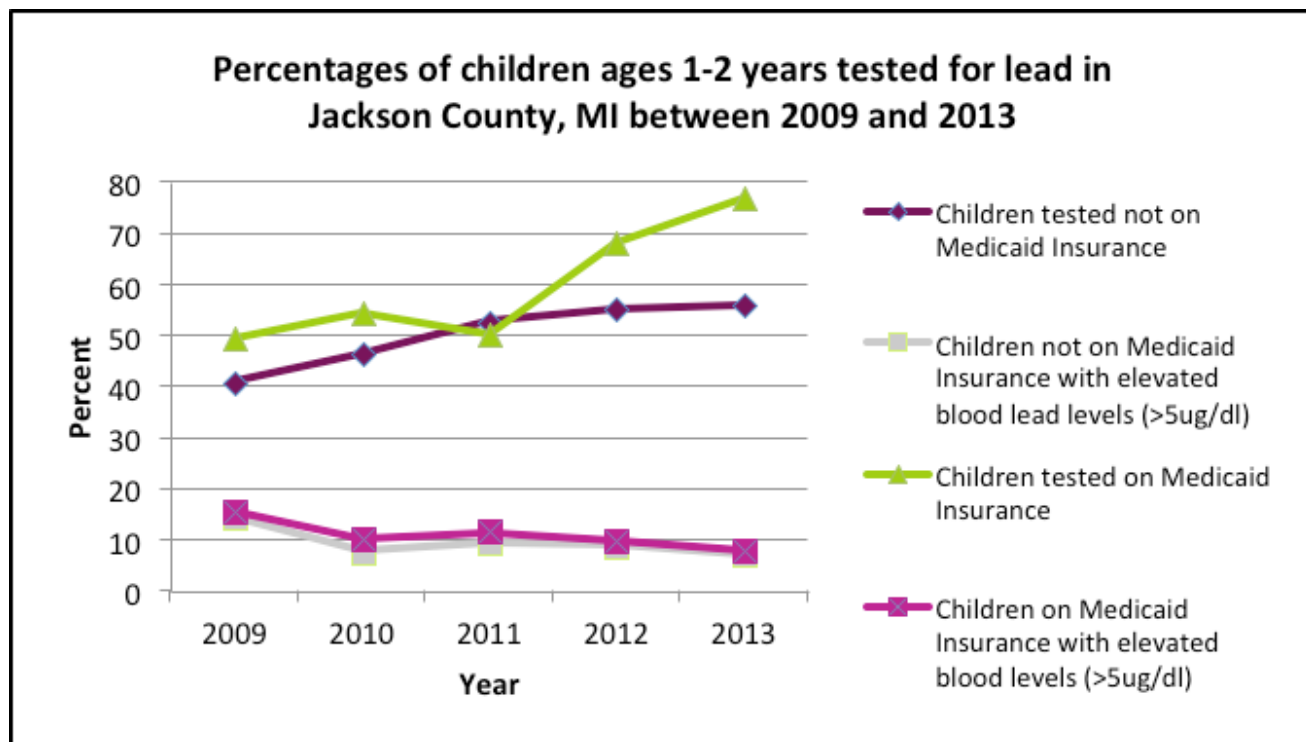


- Less than 1% of Jackson County Residents reported that they used no fuel under the House Heating Fuel section
- Less than 1% of Jackson County Residents reported that their housing units lacked complete household plumbing
- Less than 1% of Jackson County Residents reported that their housing units lacked complete kitchen facilities
- 1% of Jackson County Residents reported that their living arrangements were of such a configuration that 1.51 persons occupied each bedroom

Childhood Lead Exposure

The following graph from Kids Count Data Center depicts the recent trends in childhood lead testing and elevated levels.

The City of Jackson is designated a high risk target community for childhood lead exposure by the Michigan Department of Health and Human Services. Community efforts to reduce children’s exposure to lead are a high priority.





HEALTH
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