



 **McLaren**
CENTRAL MICHIGAN

Community Health Needs Assessment – 2013

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Executive Summary

Community Health Need Assessment is an important tool in identifying the health needs of a community. The results assist in prioritizing health needs that lead to the allocation of appropriate resources and help create new partnerships to improve the health of the population we serve. In a time of an aging population, increased chronic disease, prevalence of obesity, a struggling economy, an ever growing number of uninsured and disparate accesses to care, hospitals are being challenged to maximize the use of their resources to respond to the needs of the communities they serve.

In 2012 through 2013 McLaren Central Michigan along with Thompson Reuters endeavored to conduct a comprehensive assessment that would not only fulfill the regulatory requirements of Section 501(r) of the 2010 Accountable Care Act, but also be a guide that may be used to develop and implement strategic initiatives while offering opportunities to work collaboratively with other community entities to address the health needs of Isabella and Clare county residents.

The assessment included the collection and analysis of the most up-to-date health, social, economic, housing, and other data as well as input gathered directly from community stake holders through group meetings, surveys, and one-on-one conversations lead by representatives from Thompson Reuters. Data was broken down between Isabella and Clare Counties. A summary of the key data follows along with implications for healthcare planning.

Demographics and Vital Statistics

McLaren Central Michigan's primary service area comprise the zip codes of 48858 and 48859 (Mt. Pleasant), 48883 (Shepherd), 48896 (Winn), 48893 (Weidman), 48617 (Clare), 48633 (Farwell), 48625 (Harrison), and 48632 (Lake), with a total population of 101,655. The largest community is Mt. Pleasant, making up 26% of the population. The service

area's population is primarily white (91%) and Native American (2.6%). It is also where Central Michigan University and the Saginaw Chippewa Indian Tribe are located along with McLaren Central Michigan.

The demographic profile of Isabella and Clare counties are significantly different with Isabella's median age of 25.1 and Clare's median age of 45.3. Isabella County's lower age is attributed to the student population of CMU. Residents over the age of 65 are 9.7% and 19.9% respectively. Overall there has been an increase in population of 7,060 representing a positive change of 6.9% with the increase all attributed to Isabella county. The population is expected to increase an additional 4.4% in Isabella County and decrease an estimated 9.5% in Clare County through 2020. The overall change for the service area is expected to be negligible. Even with little population growth there will be a need for a growing range of acute care services including heart and vascular disease, stroke, diabetes, cancer care and preventive services due to an aging population.

MCM's service areas overall minority population is also expected to continue to grow, increasing the need for outreach and clinical programs that address the unique needs of an increasingly diverse population.

Economic Factors, Poverty and Level of Insured

For both Isabella and Clare Counties the average household income is below the state average of \$59,772. Isabella's household income measures \$48,040, most likely lowered by the number of college students living in the community. Clare's is \$49,784.

Uninsured adults, persons ages 18 - 64, for Isabella County is 17% while Clare is 22.6%. The state average is 21.4%. When including persons 65 and older who are eligible for Medicare both counties fall under the state average of 15.5% with 13.3% for Isabella and 15.1% for Clare. Poverty rates are over the state average for both counties. The individual and household poverty rates for Isabella County are 31.6% and 13.0% respectively, while Clare County is 23.1% and 17.9%. The state average is 13.5% for individuals and 9.6% for households.

Lower socioeconomic status is associated with an increased risk for many diseases, including cardiovascular disease, arthritis, diabetes, chronic respiratory diseases and

cervical cancer as well as mental distress. MCM and other providers will need to provide affordable care as the low-income population continues to grow.

Maternal and Child Health

There were a total of 1,006 births in the MCM service area in 2011. This was slightly lower than the previous five years. Of these, an average of 67.6% of the mothers had adequate first trimester prenatal care. The federal government's Healthy People 2020 goal is 77.6%. An average of 12.3% of babies were born premature. In Clare County 8.4% of the babies were born weighing less than 2500 g. In Isabella County the rate was 7.9%. More than 30% of first-time mothers were delivered by cesarean section. Infant mortality rate for the service area is not available due to small numbers.

Chronic Disease and Mortality

Persons enrolled in Medicare and Medicaid exceeds the state average in Clare County (24.8%) but falls below the average in Isabella County (12.2%). The state average is 16.6%. Clare County is influenced by the number of people over the age of 65 while Isabella County is once again influenced by the student population.

Poverty rates are over the state average for both counties. The individual and household poverty rates for Isabella County are 31.6% and 13.0% respectively, while Clare County is 23.1% and 17.9%. The state average is 13.5% for individuals and 9.6% for households. Chronic Disease and Mortality: Cancer, Heart Disease and Stroke.

Chronic disease accounted for approximately 65% of all deaths in MCM's service area for both men and women. The three leading causes of death for men were heart disease 26%, cancer 26%, and chronic lower respiratory disease 7%. In Isabella County alone, cancer deaths outpaced heart disease deaths for men. These three contributing illnesses followed the state of Michigan trend. The three leading causes of death for women were cardiovascular disease 25%, cancer, 21%, and stroke 7%. Again, the top three contributing illnesses for women followed the state trend.

According to U.S. Centers for Disease Control and Prevention (CDC), chronic diseases are responsible for 70% of deaths and 75% of healthcare spending nationally. In 2009

these conditions accounted for 64% of the mortality rate in Isabella County and 67% in Clare County. The CDC also identifies four common risk factors that cause chronic disease: lack of physical activity, poor nutrition, tobacco use and excessive alcohol consumption.

Chronic disease is costly to the individual, healthcare providers and insurance companies. For example, the cost of heart disease in the United States was estimated to be \$444 billion in 2010. With the steadily growing older population in the two counties, these diseases will only become more prevalent unless more preventive action is taken. Without proper insurance, people will be unable to keep their health conditions under control and will end up in the hospital and emergency departments for issues that should and could be managed more cost effectively by regular visits to healthcare providers.

Infectious and Sexually Transmitted Disease

In 2012 the sexually transmitted infection rate for Isabella County was 283 per 100,000 and Clare County was 168 per 1000,000. Both counties were well below the state of Michigan rate of 500 per 100,000 but well above the national rate of 92 per 100,000.

Despite the availability of vaccines, pneumonia and seasonal flu are significant causes of hospitalization in both Isabella and Clare Counties. The best way to control communicable diseases is by maintaining high levels of vaccination in the population. Improving vaccine rates for established diseases requires public outreach and coordination among providers. Meeting emerging disease threats also requires highly coordinated rapid mobilization of public health and provider resources.

Mental Health/Social and Emotional Wellness

According to the National Institute of Mental Health, one in four adults across the nation experience a mental health disorder in any given year. Isabella and Clare Counties are no exception. In 2012 they averaged 3.2 and 5.0 poor mental health days respectively. This is compared to 3.7 state-wide and 2.3 nationally. Data indicates Isabella County at 10% of respondents reporting that their general health was poor or fair is below the Michigan total and in-line with the national benchmark. However,

20% of Clare County respondents feel their general health was poor or fair. Well above state and national marks. Community Mental Health is designed to address access to mental health services in the area, and MCM supports that initiative.

Growing Obesity Prevalence

The problem of obesity in the United States has reached epidemic levels and MCM's service area is experiencing equally high rates of obesity for adults and children. Isabella County has an adult obesity rate of 33% while Clare has a rate of 30%. The state of Michigan's overall rate is 32% and the national rate is 25%. Like many chronic health conditions, obesity is more common among lower-income and less-educated populations. Obesity is a central risk factor for chronic disease and increases the risk of many conditions, including diabetes, heart disease, lung disease, stroke, cancer and osteoarthritis.

Preventing and reducing obesity has the potential to greatly improve public health, reduce healthcare costs and restore economic losses due to disability. Outreach and interventions targeting children and high-risk adult populations are essential to reduce obesity in the community. In addition to medical care, resources for exercise, healthful foods and ongoing public education are required.

Access to Care

Access to care for low-income and uninsured patients while up from 2002, remains a concern. The U.S. census reported that 87 % of the total population had health insurance, compared to 84% in Isabella and Clare Counties. Michigan as a whole has 86% of its population insured. All numbers are lower than the Healthy People 2020 goal of 100%.

A lack of health insurance may cause people to skip preventive care and to use hospital emergency departments for routine care. A disproportionate share of access concerns is also occurring among low-income and minority populations.

Service Area Threats to Health

Analysis of the 2013 Community Health Survey data pointed to five major threats to community health and well-being:

- Maternal/Child Health
- Nutrition/Obesity
- Chronic Disease (cancer, heart, stroke, diabetes)
- Access to Care
- Mental Health

In response to the CHNA findings, the Strategic Planning Committee of the board developed a priority rank of the identified threats. The Strategic Planning Committee, working together with McLaren Central Michigan leadership, will develop and implement a complete action plan based on priority for full board approval.

Priority Needs Identified

Upon review of the Community Health Needs Assessment and analysis specific to Isabella and Clare Counties, McLaren Central Michigan has identified three priority needs that will be addressed during FY 2014-2016. Each priority area will have specific and measurable goals, objectives and outcomes, which will be outlined in the implementation plan.

McLaren Central Michigan believes that the most effective way to address needs in our community is to work collaboratively with our community partners and stakeholders. This approach allows us to maximize efforts and achieve the best use of our collective resources.

In selecting priorities we considered the degree of community need for additional resources, the capacity of our resources to meet the need and our expertise to address the issue. In particular we looked for health needs that require a coordinated response across a range of healthcare and community resources. We believe that these needs can benefit most from the integrated nature of our organization and our provider and community partners. Our 2014-2016 priority initiatives are:

1. Chronic Disease

As our nation and local communities continue to age, an increase in both the incidence and the prevalence of chronic disease is expected. The existing healthcare delivery system is not prepared to provide the comprehensive services that will be required to address these diseases. Nor is it prepared to respond to both direct and indirect burden that chronic disease is likely to create, including the significant financial strains on individuals, families and healthcare providers. Public health experts speak to the importance of education to prevent the onset of disease and improvement of healthy lifestyles along with screening to promote early detection and prompt treatment of chronic disease in an effort to limit associated disability. Additionally, education of

individuals with chronic disease to assist in the self-management of the disease will improve outcomes, lessen acute exacerbated episodes and promote longer, healthier lives with an emphasis on living in an optimum state of wellness. MCM is committed to providing care along all three levels of the chronic disease continuum, education, prevention and management.

2. Access to Care

An aging population, coupled with a struggling economy and an increased prevalence of chronic disease, creates a variety of access to care issues relating to both affordability and availability of care. MCM seeks to promote access through a variety of initiatives that will be delineated within our action plan. MCM will continue to work with individuals and families to promote access to medically necessary inpatient services by maintaining our financial assistance program. Additionally, we will work collaboratively with key community partners to develop and promote increased access for those un-insured and under-insured.

3. Maternal/Child Health

The infant death rate for Isabella County was 9.4/1000 births in 2010. This represents a higher rate than is exhibited for the state for the same time period. First trimester prenatal care is an indicator for infant death. Both Isabella and Clare Counties exhibited lower rates of prenatal care than the state as a whole. MCM will partner with local physicians, clinics and health departments to address these issues.

Non-Prioritized Needs

Two additional needs were identified in MCM's Community Health Assessment data – Maternal/Child health and Mental Health. While we consider these priority needs and will continue to participate in service area wide initiatives to address these concerns, an analysis of MCM's data specific to these priorities did not demonstrate a significant need at this time. We will, however, continue to monitor these trends and respond accordingly should they become a notable concern in MCM's service area.

4. Mental Health

Effective treatments for mental health conditions will help people achieve psychological, social and emotional well-being, which can lead to better overall health. Early identification and access to appropriate treatment and recovery options can accelerate the recovery process. Additional resources and coordination of medical, social and financial services are required. Access to a continuum of services and prevention are especially critical for children and adolescents. MCM seeks to improve overall mental health issues by working with community partners on early identification, treatment and management of mental health.

5. Obesity/Nutrition

The problem of adult/child obesity has reached epidemic levels, both nationally and in Isabella County. Currently over 30% of MCM's service area are considered obese. It is widely recognized that being obese can lead to a variety of chronic diseases, including heart disease, diabetes, hypertension, cancer, stroke, and osteoarthritis. With both a large young population and an aging population it is critical to address these issues to not only enhance health and well being but to reduce costs over a long term. Although these issues are important and need to be addressed, we believe there are other entities who should lead in this initiative.

Service Area Profile

McLaren Central Michigan's service area consists of two counties: Isabella, Clare and Mecosta. More specifically the seven zip codes of: 48858, 48883, 48893, 48632, 48622, 48617 and 48625 make up the primary service area and four zip codes of 48878, 49305, 49340, and 49310 making up the secondary service area. These service areas were identified using inpatient origin data from the Michigan Inpatient Data Base. Over 85% of our discharges originated from our primary service area which is Isabella and Clare Counties. This report will focus on the two counties.

Isabella County is located in the heart of Michigan's Lower Peninsula and is home to the Saginaw Chippewa Indian Tribe and Central Michigan University. Agriculture, oil and gas production, and manufacturing are the leading industries in the county. A majority of the commercial development is located in the city of Mt. Pleasant where U.S.-127 going north and south and M-20 going east and west intersect.

Mt. Pleasant is the county seat and the largest community with a population of 26,016. Union Township, with 12,927 residents and Chippewa Township with 4,654 residents are the next two largest communities. The total population is 70,311.

The largest employer in Isabella County is the Soaring Eagle Casino and Resort followed by Central Michigan University, and the Saginaw Chippewa Indian Tribe. McLaren Central Michigan is also located in Mt. Pleasant.

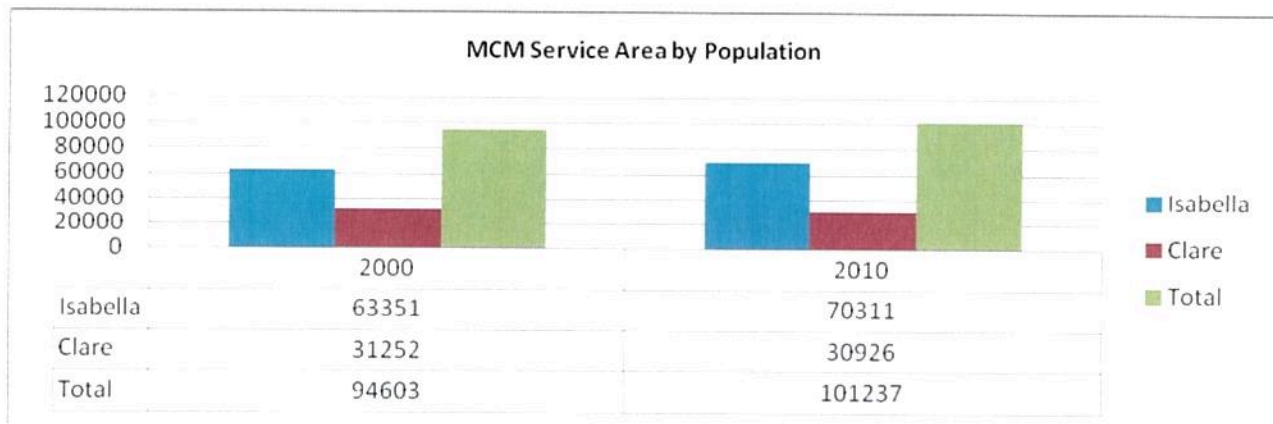
Clare County is located immediately north of Isabella County and is known as Michigan's "Gateway to the North." It is home to Mid-Michigan Community College with agriculture and manufacturing being the leading industries. The most commercial development is in the city of Clare where U.S.-127 and U.S.-10 meet.

Harrison is the county seat and is home to 2,114 residents while Clare boasts the largest population at 3,118. Clare County's total population is 30,926. Mid-Michigan Health is the largest employer in the county.

Demographic and Socioeconomic Indicators

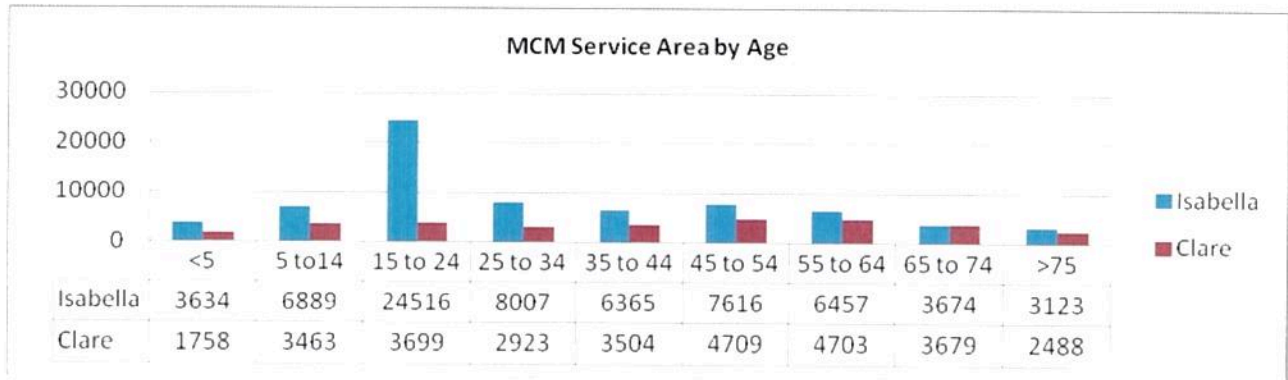
Current Population Demographics

Isabella County is the 28th most populated county in Michigan with a total of 70,311 residents in 2010. It occupies 573 square miles with a population density of 122.8 people per square mile. Clare County ranks 48th for total population of 63,351 with a density of 54.8 people per square mile. From the year 2000 thru 2010 Isabella County grew by 11% with Clare's population declining by 1.1% for a total increase of 7.0% in MCM's service area.



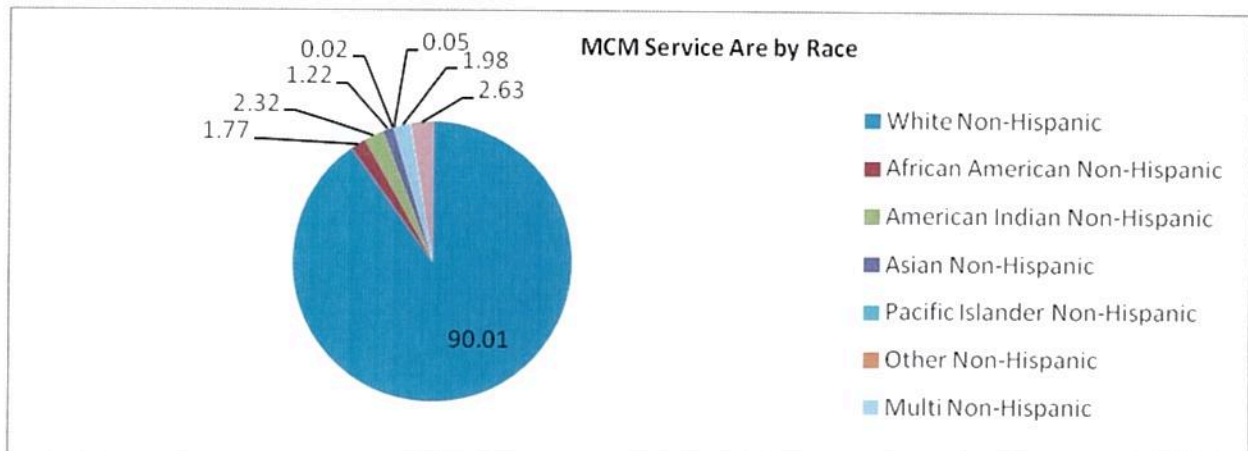
Demographics by Age

Compared to the median age of Michigan, which is 38.9, Clare County is much higher at 45.3 and Isabella County is significantly lower at 25.1 years of age. Isabella's low median age is attributed to the student population of Central Michigan University with approximately 27,000 students shifting that number. Isabella County has 9.7% of its population over 65 and Clare is at 19.9%.



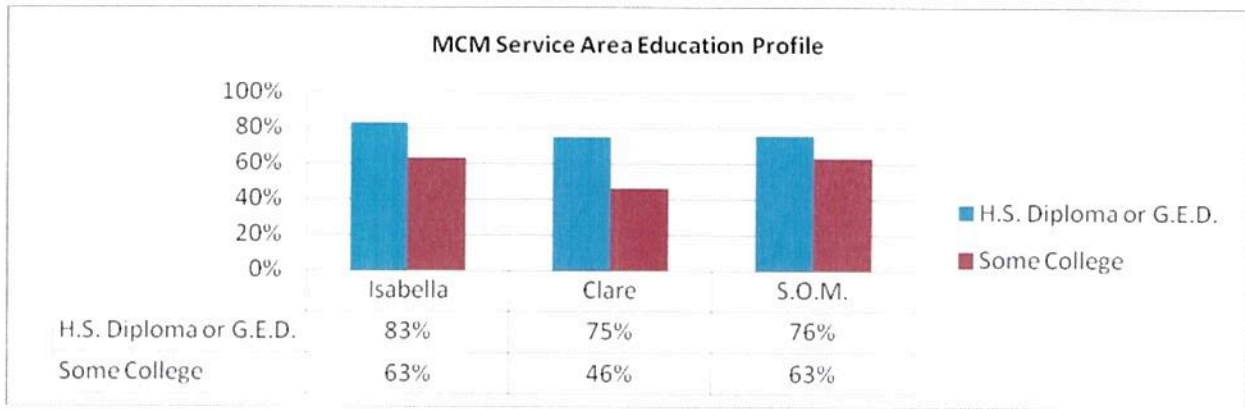
Demographics by Race

There has been no significant change in the racial distribution in the MCM service area. As indicated in the figure below, White Non-Hispanics make up 90% of the population while Hispanic and American Indian Non-Hispanic make up 2.63% and 2.32% respectively. A higher concentration of Native American population is concentrated in Isabella County where the Saginaw Chippewa Indian Tribe Reservation is located.



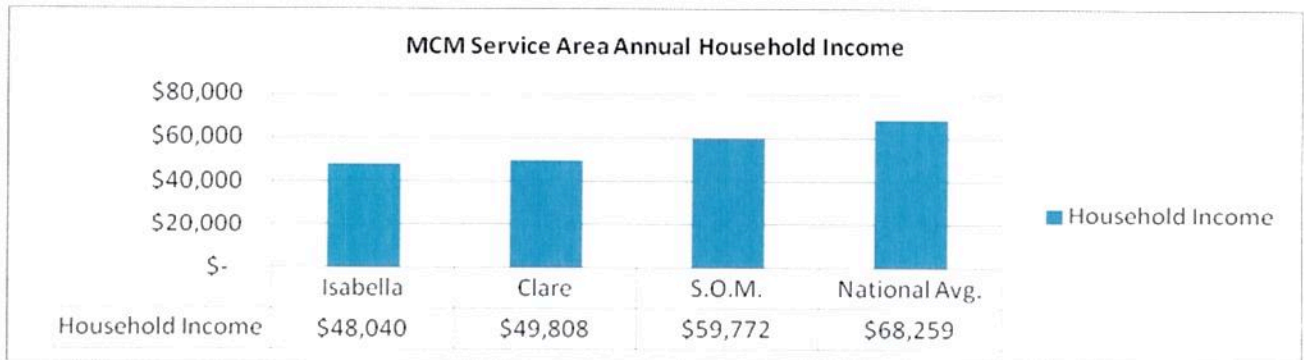
Education

In 2010, the percentage of the MCM service area population with a high school diploma or equivalent, and a college degree in Isabella County is at or above the state averages. Clare County is below the state average in both areas.



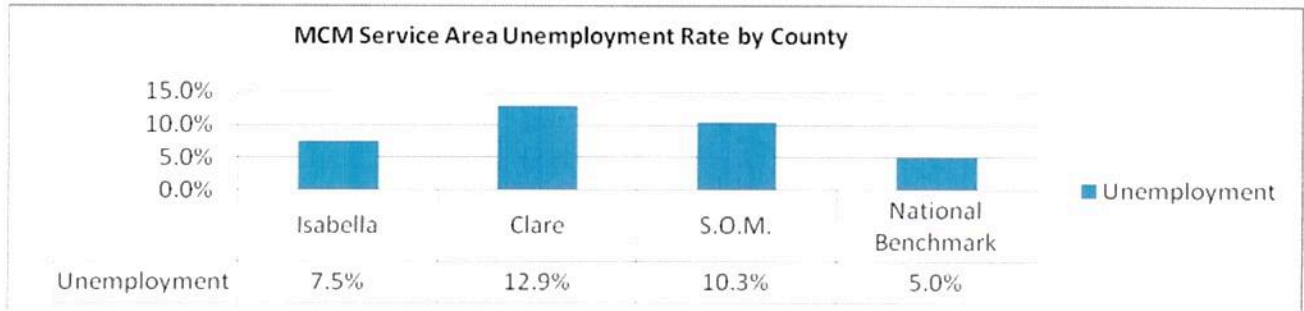
Household Income

Both Isabella and Clare Counties fall below state and national levels. Isabella County's average income of \$48,040 is likely lowered due to the high student population residing in the county.



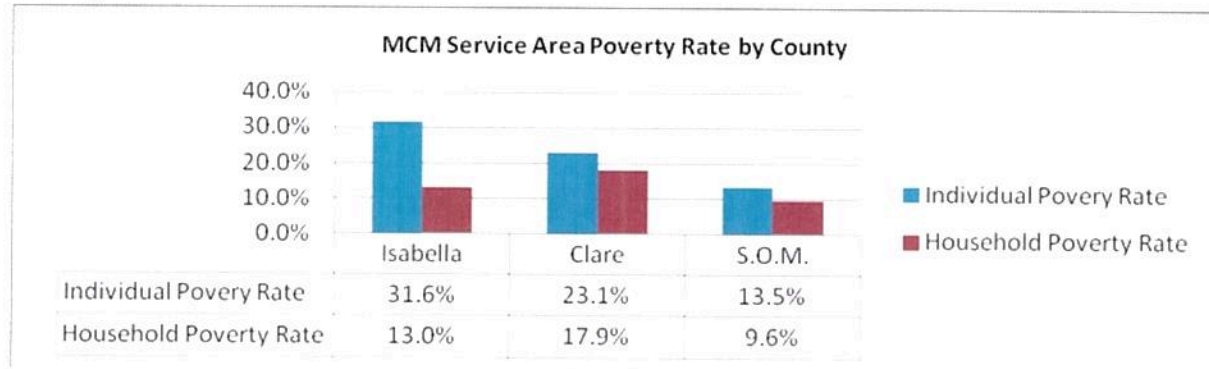
Unemployment

Unemployment in Isabella County (7.5%) is below S.O.M. (10.3%) but below the national benchmark. Clare County (12.9%) is above both the state level and the national benchmark.



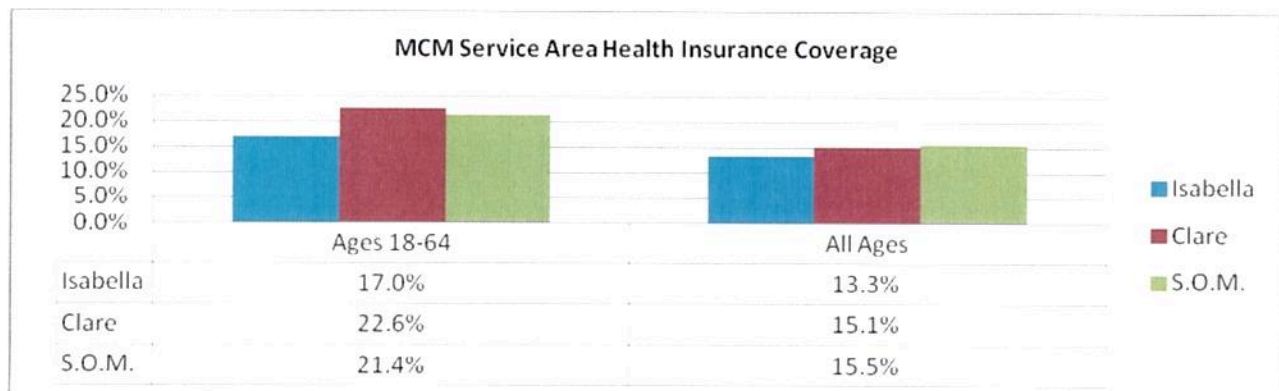
Poverty

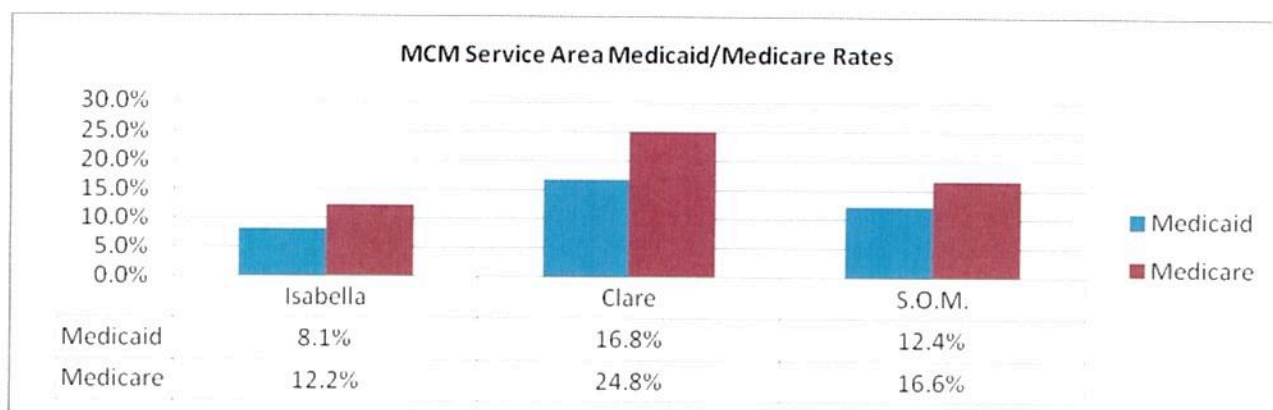
Isabella County's individual poverty rate is likely inflated due to the student population of the county. The household poverty rate is likely a truer indicator of the county's poverty rate. Clare County at 23.1% and 17.9% respectively for individual and household poverty are likely attributed to increased unemployment in the county.



Uninsured Adults

Uninsured statistics for all ages is lower due to the addition of people 65 and older who are eligible for Medicare. It also includes those 18 and under who may qualify for Medicaid. Isabella County is lower than the state rate of 15.5% but just over the national rate of 12.4% for all ages. Clare County exhibits a slightly lower rate than the state average at 15.1% and is also over the national rate. The figure below shows the increased rate of those covered by Medicare and Medicaid for Clare County.





Implications of Demographic and Socioeconomic Trends for Health Service

Based on the characteristics of the information documented above, the community health needs in the coming years will be significantly expanded and transformed in MCM’s service area. Healthcare and human services providers, community groups, government agencies and individual community members will be required to coordinate resources in order to meet the emerging needs of the population.

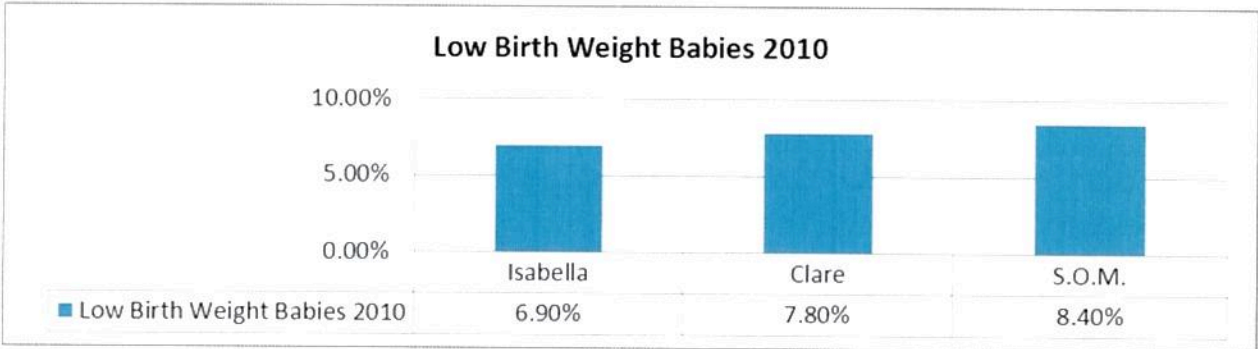
One of the biggest challenges that lay ahead is the aging of the population. With aging comes an increased rate of chronic conditions and diseases such as obesity, diabetes, arthritis, heart disease, cancer, and degenerative neurological conditions. With the increase in these conditions comes the increased need for a range of services, from wellness and prevention to the management of chronic conditions and acute care. This means that more healthcare professionals will be needed to provide services, from home health aides, social workers, dieticians and nurses to advance practice nurses, primary care physicians and skilled specialists.

Higher unemployment rates, lack of insurance, increasing poverty and homelessness will increase the need for access to affordable healthcare services. Social services also needed to mitigate the impact of low incomes on community and individual health. Significant planning and coordinating of services will be required to obtain the maximum positive impact on community health status for resources invested.

Maternal and Child Health

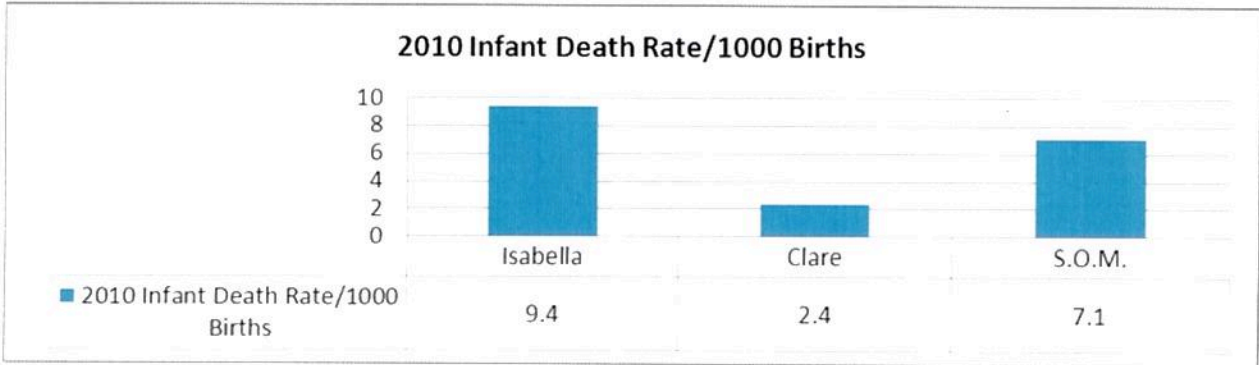
Low Birth Weight

Since the risk factor most closely associated with neonatal death is low birth weight (less than 2500 grams), raising infant birth weight can help reduce the infant mortality. Very low birth weight babies (less than 1500 grams), are at high risk of dying their first year. Review of the data for the MCM service area show rates less than what the state demonstrates.



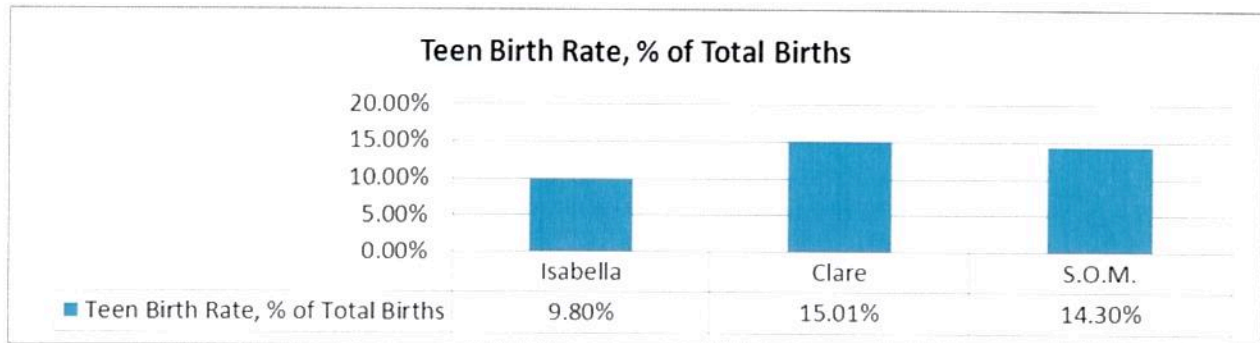
Infant Mortality

The 2010 infant mortality rate was 9.4 deaths per 1000 births and 2.4 deaths per 1000 births for Isabella and Clare Counties respectively. Isabella is identified as being over the state rate of 7.1 while Clare is under as indicated in the figure below. Infant mortality can be greatly impacted with improved access to prenatal care.



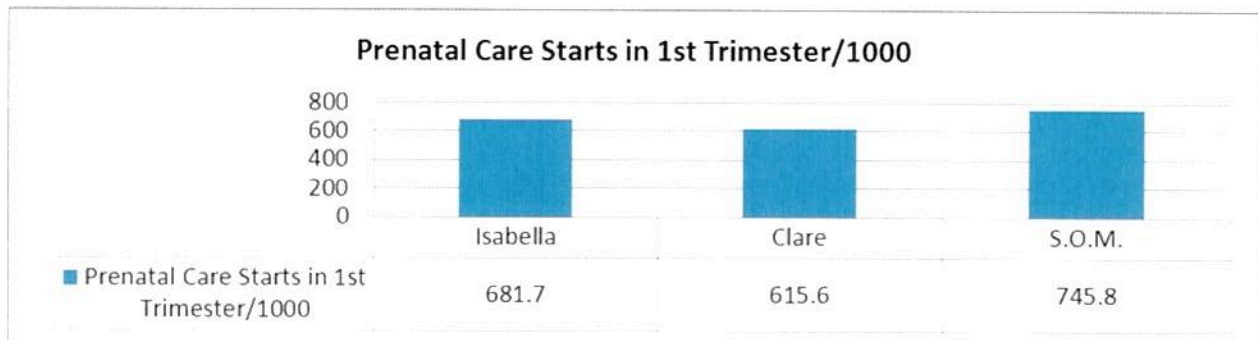
Teen Pregnancy

Infants born to teenage mothers, especially mothers younger than 15, are most likely to suffer from low birth weight, neonatal death and sudden infant death syndrome. These infants may also be at greater risk of child abuse, neglect, and behavioral and education problems at later stages. In 2010 the teen birth rate for MCM's service area was 9.8% in Isabella County and 15.01% for Clare County as illustrated in the figure below.



Prenatal Care

Women who begin prenatal care in their first trimester can improve their chances for having a healthy baby. In 2010 both Isabella and Clare Counties were well below the state rate of 745.8 prenatal care starts in the first trimester as indicated in the figure below.



Implication of Maternal and Child maternity Health

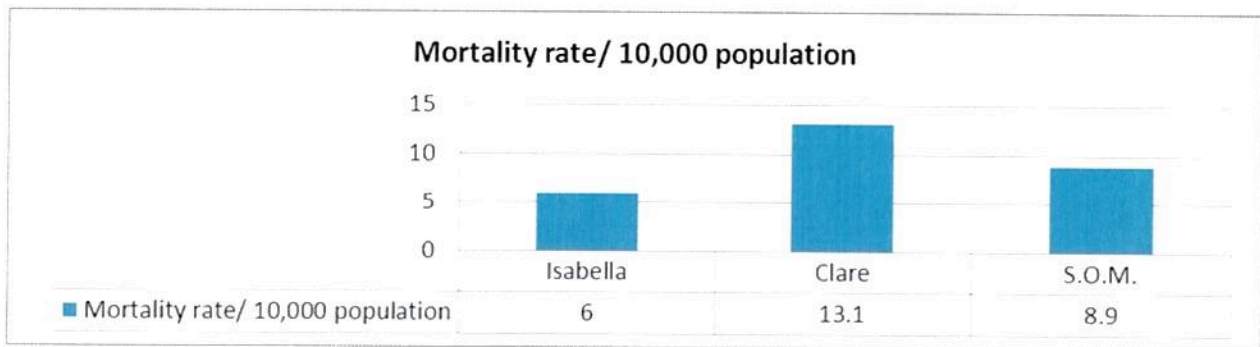
Targeted community outreach is needed to address the higher rate of infant mortality and lower rate of prenatal care in Isabella County. Target outreach for Clare County is also needed to address teen pregnancy and prenatal care. This outreach would require

the collaborative efforts of the health department, community clinics, physicians, schools and community groups.

Adult Morbidity and Mortality: Leading Causes of Death and Years of Potential Life Lost

Crude Mortality Rate

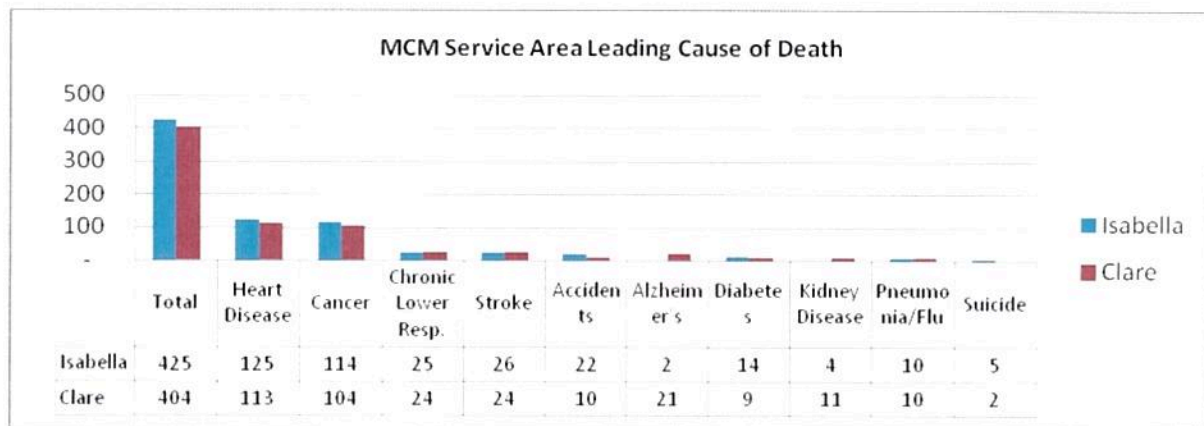
Crude mortality rate for MCM's service area varies by county. In 2010, Isabella had a rate of 6 per 10,000 persons while Clare County's rate was 13.1 per 10,000 persons. The state average is 8.9.



Leading Cause of Death

In 2010 there were 425 and 404 deaths in Isabella and Clare Counties respectively for a total of 829 in MCM's service area. Males accounted for 427 deaths and women accounted for 402 deaths.

The top three leading causes of deaths in the service area were heart disease, cancer, with stroke and chronic lower respiratory illness essentially tying for the third cause. Deaths attributed to heart disease totaled 236, Cancer totaled 218, stroke totaled 50 and chronic lower respiratory illness totaled 49.



Years of Potential Life Lost

The impact of premature death can be measured by years of potential life lost (YPLL). Years of potential life lost is an indicator that identifies preventable causes of death. Healthy people 2020 tracks healthy life expectancy using three measures: expected years of life in good or better health, expected years of life free of limitation of activity, and expected years of life free of selected chronic disease.

Cancer is the second leading cause of death in the United States, but accounts for the largest YPLL per 100,000 for both males and females. Deaths from motor vehicle accidents are the second leading cause of YPLL for both sexes in the United States. In MCM’s service area, cancer was the second leading cause of death, while accidents were the fifth leading cause of death.

According to the Michigan Department of Community Health, there are 5,842 years of potential life lost in Isabella County and 7,817 years of potential life were lost in Clare County due to premature death.

The Centers for Disease and Control and Prevention has identified four risk behaviors that lead to premature death. They are smoking, lack of physical activity, poor nutrition and alcohol consumption. In MCM’s service area, smoking is the single largest cause of chronic disease and premature death.

Implication of Leading Cause of Death and Years of Potential Life Lost

An aging population and the prevalence of heart disease, cancer, stroke and chronic lower respiratory illness as leading causes of death in MCM’s service area suggest a growing need for screening and acute care services. Prevention, chronic disease

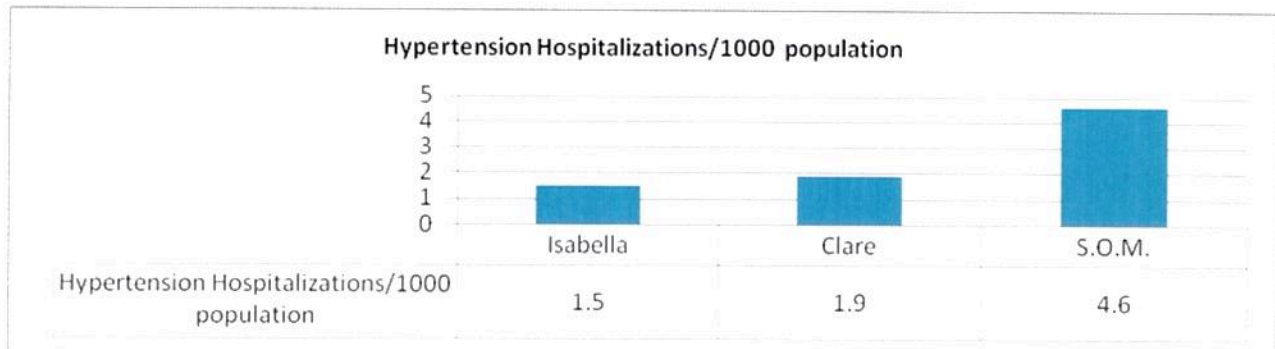
management and wellness services are also needed to reduce the financial and disability impact of these conditions.

Chronic Conditions and Diseases

Hypertension

Individuals with uncontrolled hypertension (high blood pressure) are more likely to have heart attacks or strokes than those with normal blood pressure.

In 2011, MCM's service area reported that just under 2% of the residents had unnecessary hospitalizations with uncontrolled hypertension. In 2011 the leading chronic cause of hospitalization in MCM's service area was heart disease with 30.1%. Although hospitalization for uncontrolled hypertension has begun to slowly increase, it is still well below the state rate of 4.6.



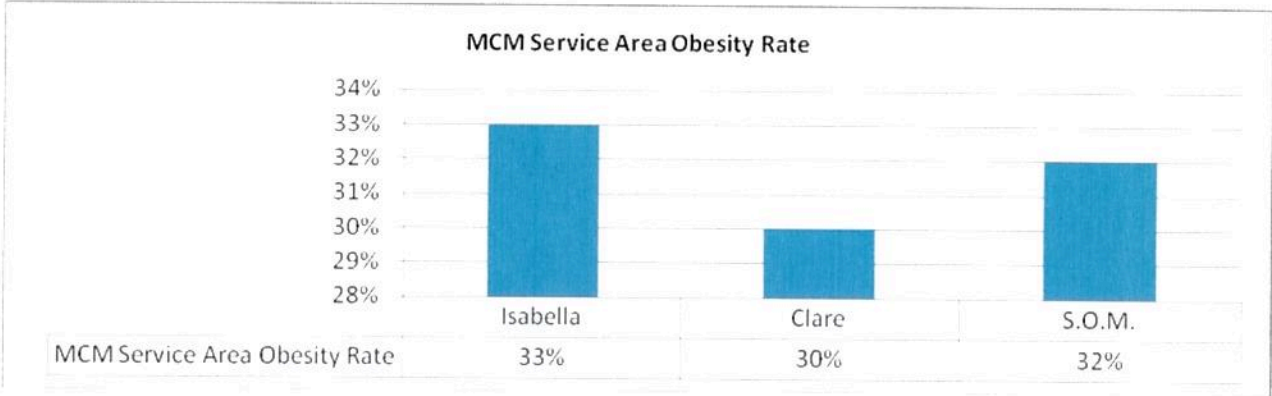
Hypercholesterolemia

Cholesterol is a substance normally produced by the liver, but also consumed in foods. When consumed in excess or not adequately metabolized, cholesterol levels build in the body, leading to diseases of the heart, including coronary artery disease, heart attack and stroke. Poor diet and lack of exercise are contributors to high cholesterol.

Obesity

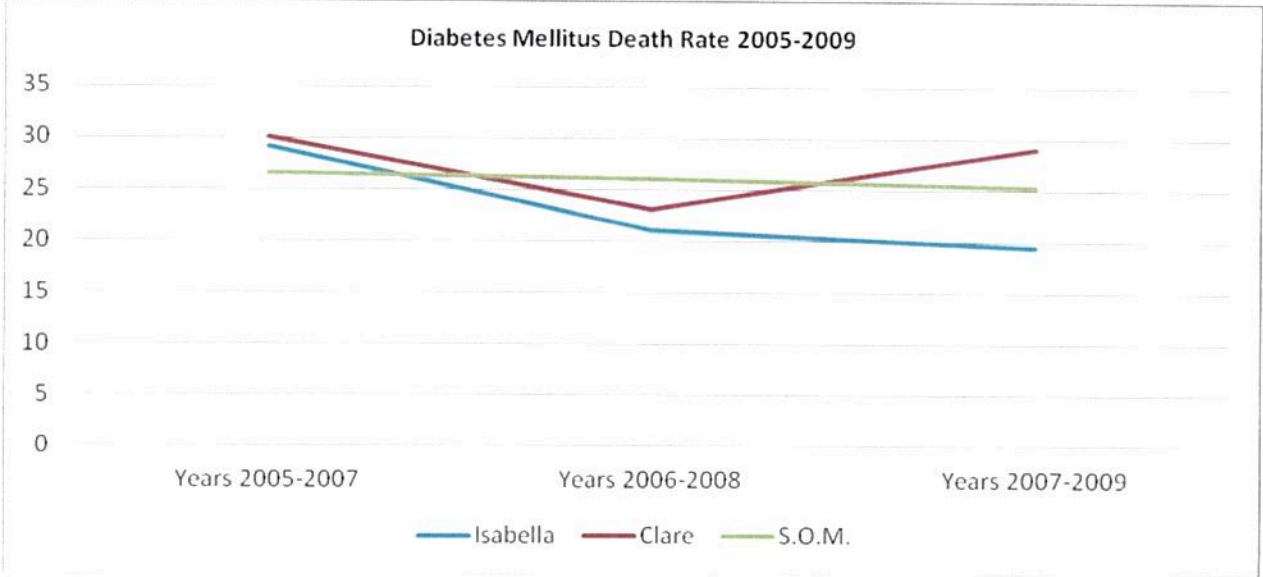
The incidence of obesity is a measure of the fraction of adults (age 20 and older) that has a body mass index (BMI) of greater than or equal to 30 kg/m². The figure below illustrates Clare County is just below the state rate while Isabella County is slightly

above the state rate. Numerous studies have shown that lifestyle adjustments such as increased physical activity and dietary changes can reduce obesity.



Diabetes

Diabetes mellitus, like many chronic diseases, may be the result of behavioral risk factors, such as poor diet and being overweight or obese. In MCM’s service area diabetes death rates have increased overall through 2009, decreasing to 19.4 deaths per 100,000 in Isabella County but increasing to 29 deaths per 100,000 in Clare County. Isabella County is lower than the state rate while Clare County is over the state rate.



Osteoporosis

Of the estimated 10 million Americans who have osteoporosis, 80 percent are females. Besides being female, other risk factors for osteoporosis include old age, family history,

low levels of hormones, diet, inactive lifestyle and smoking. Osteoporosis increases the likelihood of fractures and is associated with high levels of disability and mortality in older populations. While osteoporosis is often thought to impact older individuals, 85 to 90 percent of bone mass is acquired by age 18 for girls and 20 for boys. Therefore, the building of strong bones during childhood and adolescence is important for prevention of osteoporosis. With early diagnosis aggressive treatment, bone loss may be stopped and in many cases reversed thus lessening the chances of falls and fractures.

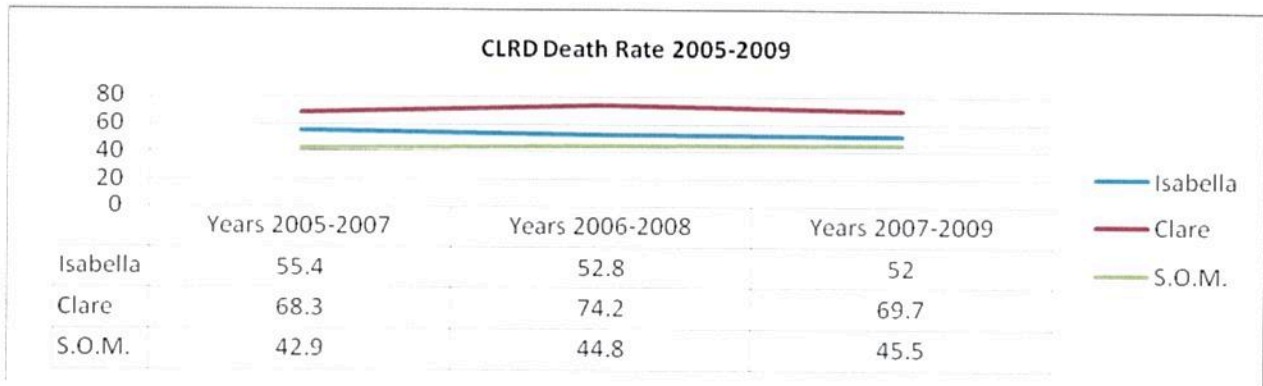
Asthma

Asthma is a disorder that causes the airways of the lungs to swell and narrow, leading to wheezing, shortness of breath, chest tightness and coughing. Asthma affects people of all ages, but it most often starts during childhood. In the United States, more than 22 million people are known to have asthma. Nearly 6 million of these people are children. Among children, asthma is a leading cause of hospital stays and school absences. In 2009 the top three reasons for hospitalization for of MCM/ service area of children younger than 5, apart from birth, were acute respiratory infections, pneumonia and asthma.

As with other chronic conditions, quality outcomes rely not only on the availability of proper treatment, but also on the proper use of medication and careful self-management by the patient. Patients with asthma need to avoid triggers such as extreme stress, tobacco smoke, allergens and environmental toxins.

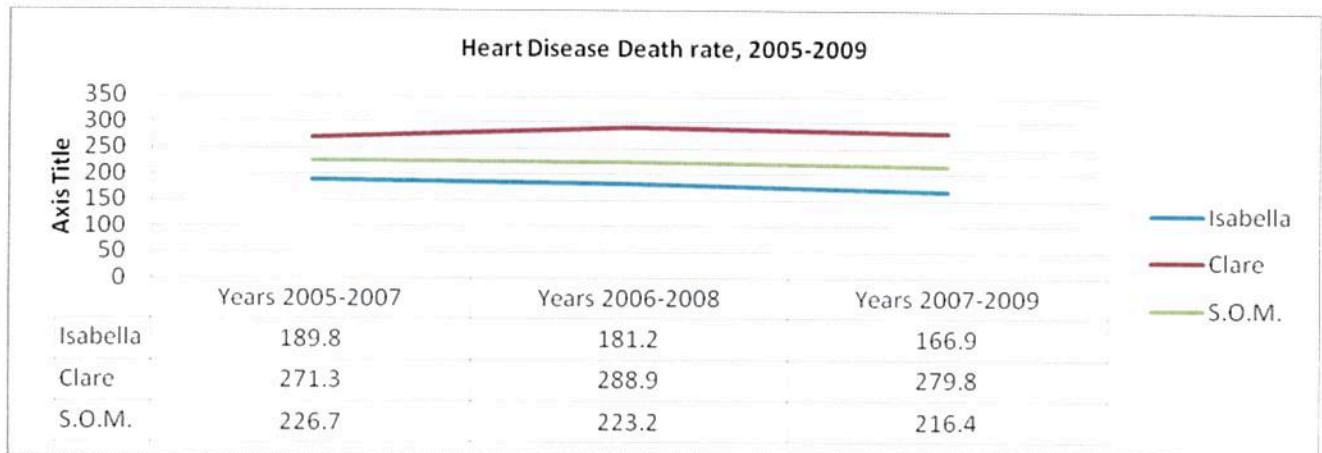
Chronic Lower respiratory Disease (CLRD)

Chronic lower respiratory disease, also known as CLRD, is a progressive disease and the fourth leading cause of death in the United States. The symptoms of CLRD typically worsen over time, especially if there is a continued exposure to cigarette smoke or other environmental hazards. A person with CLRD is more susceptible to infections which can damage lungs and airways. These infections may cause flare-ups, also known as exacerbations, which is a serious complication that can lead to hospitalization. As shown below, MCM's service area has a death rate from CLRD that is significantly higher than the state rate for the years 2005 through 2009. Thompson Reuter's results indicate that pulmonary disease has the second highest projected physician need for MCM's service area.



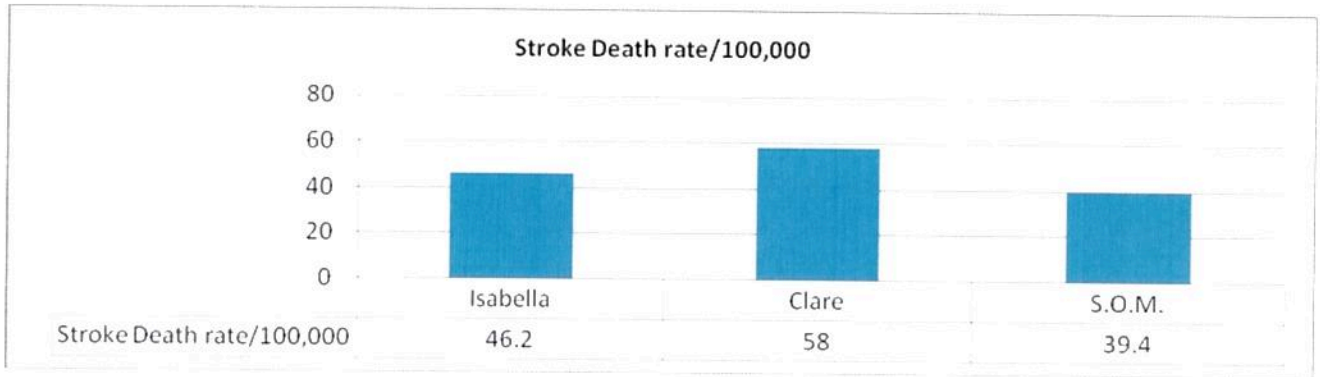
Cardiovascular Disease

In Isabella and Clare Counties the leading cause of death is heart disease. Even though the overall death rate per 100,000 has declined over the period from 2005 through 2009 for the entire service area the rate for Clare County remains high and is well above the State of Michigan rate. Thompson Reuters interviews of community members supports this data as their findings reflect the communities need for additional cardiac care.



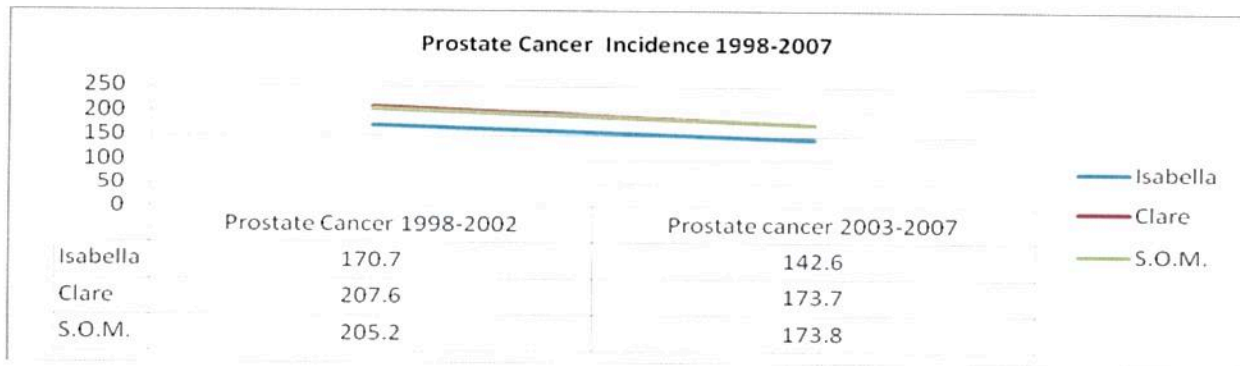
Stroke

Cerebrovascular disease, or stroke, was one of the leading causes of hospitalization in MCM's service area, with a mortality rate of 46.2 per 100,000 persons in Isabella County and 58.0 per 100,000 in Clare County. The state of Michigan overall stroke mortality rate in 2010 was 39.4.



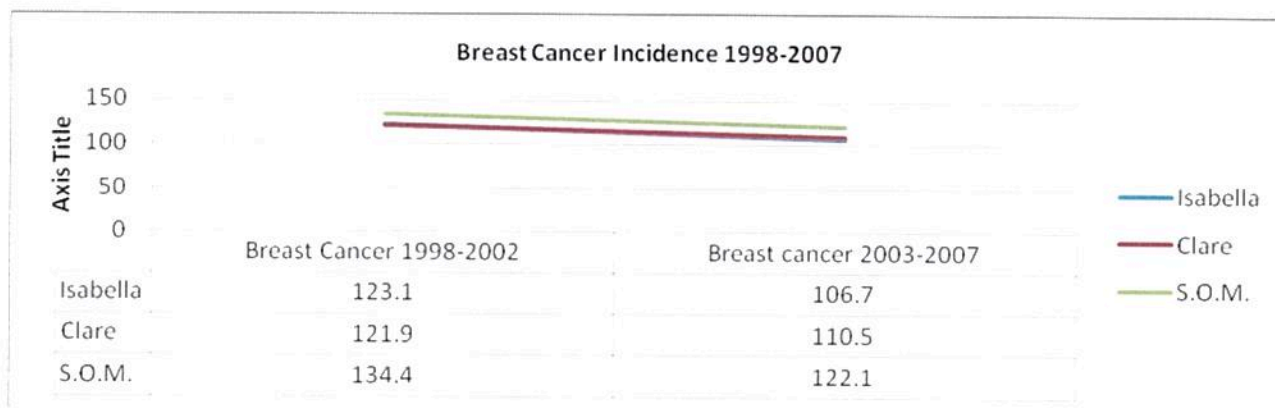
Prostate Cancer

The incidence of prostate cancer in males displayed a downward trend for MCM's service area. Both Isabella and Clare Counties trended down for the years 1998 through 2007. This is in-line with the state-wide trend.



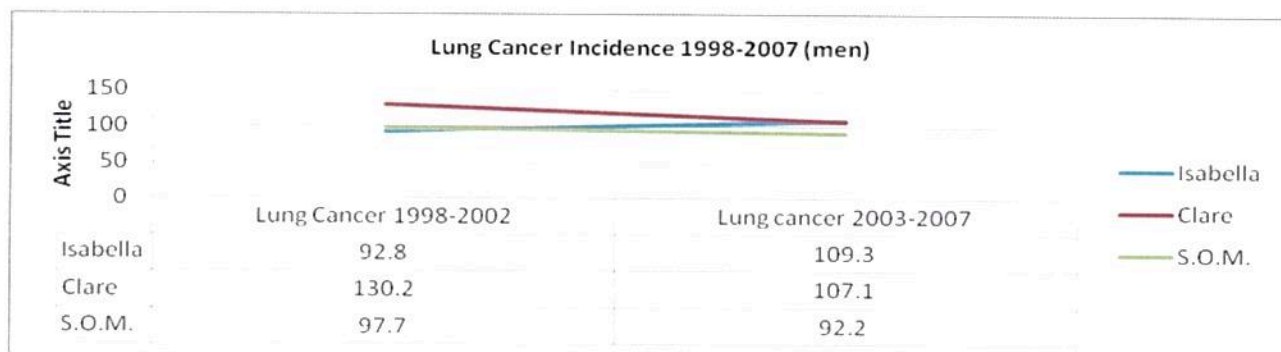
Breast Cancer

The incidence of breast cancer in women displayed a downward trend for MCM's service area. Both Isabella and Clare Counties trended down for the years 1998 through 2007. This is in-line with the state trend.

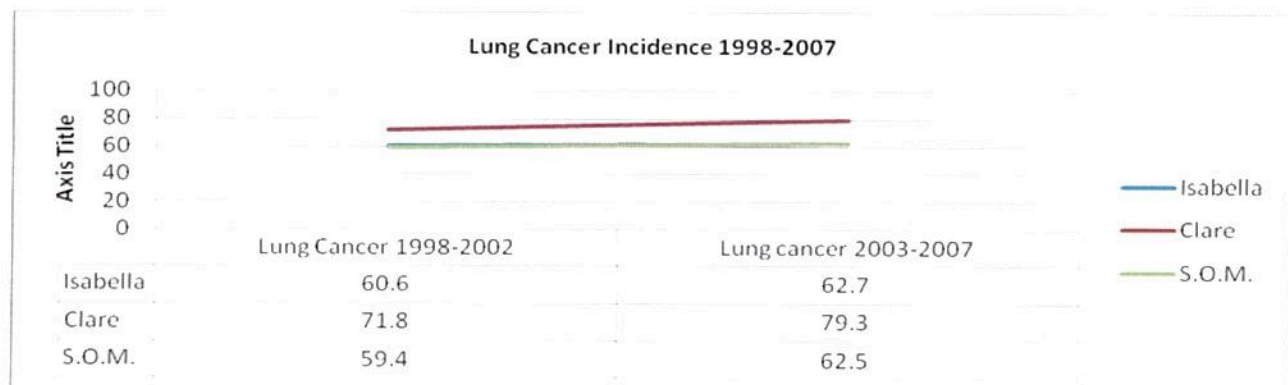


Lung and Bronchus

The incidence of lung cancer in men displayed an overall downward trend for MCM's service area. Isabella County (109.3) trended up for the years 1998 through 2007. Clare County followed the state trend and decreased over this time period to a rate of 107.1 incidences per 100,000 persons. Both counties were still over the state incidence rate.

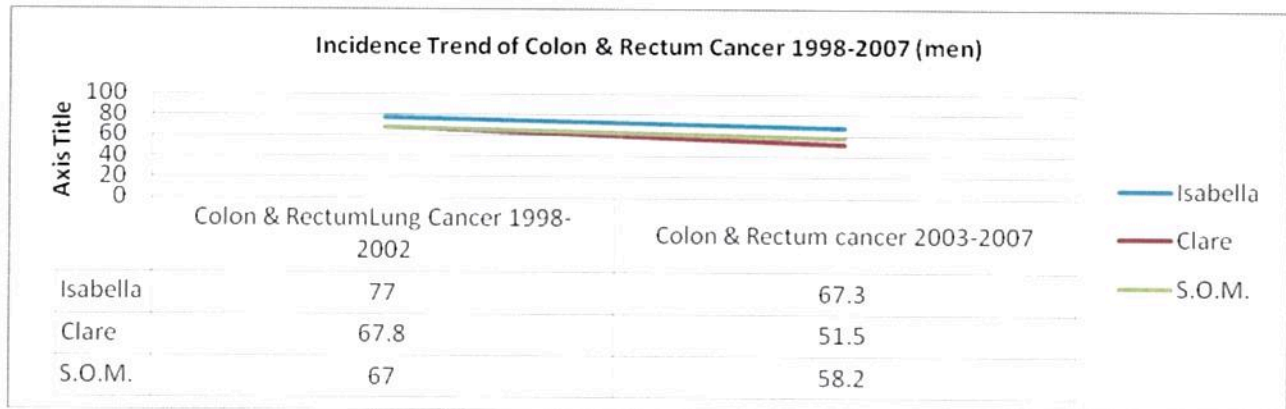


The incidence of lung cancer in women displayed an overall increase for MCM's service area. Both Isabella County (62.7) and Clare County (79.3) trended up, mirroring the state's trend. As with the men, both counties are over the state rate of 62.5 incidences per 100,000 persons.

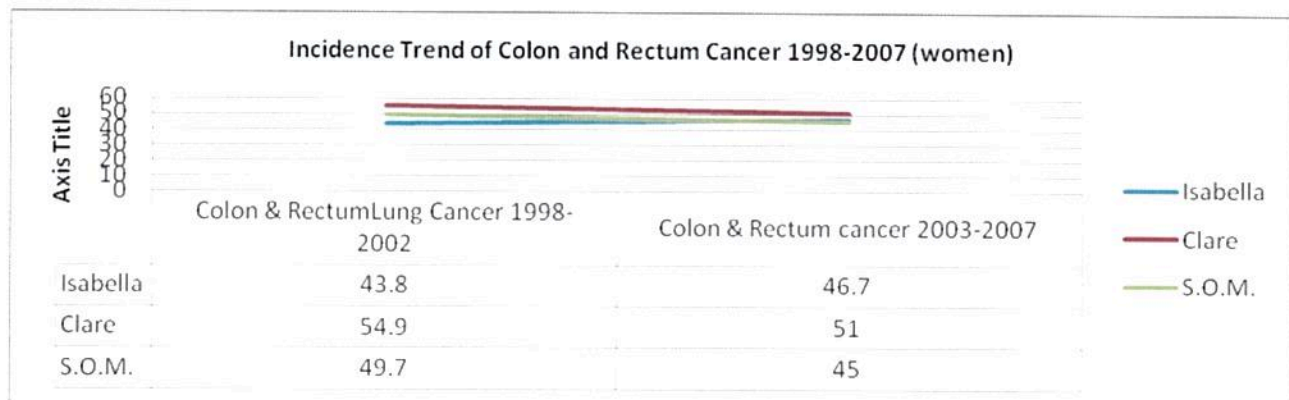


Colon and Rectum

The incidence of colon and rectal cancer in men displayed an overall decrease for MCM's service area. Both Isabella County (67.3) and Clare County (51.5) trended down, following the state's trend. Isabella County is over the state rate of 58.2 incidences per 100,000 persons while Clare is under the state's rate.

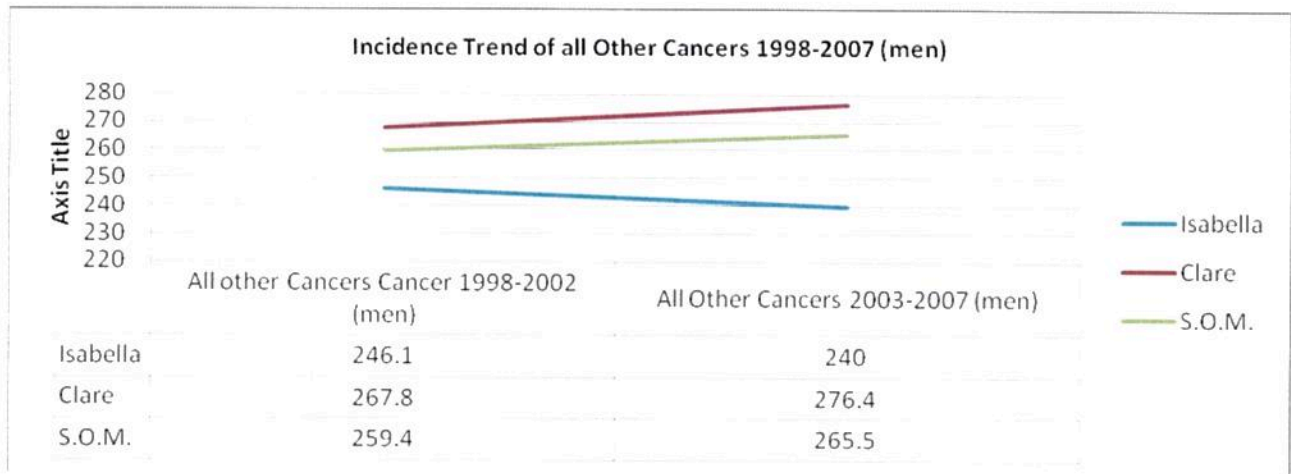


The incidence of colon and rectal cancer in women displayed an overall decrease for MCM's service area. Both Isabella County (46.7) trended up while Clare County (51) trended down, following the state's trend. Both counties are over the state rate of 45.0 incidences per 100,000 persons.

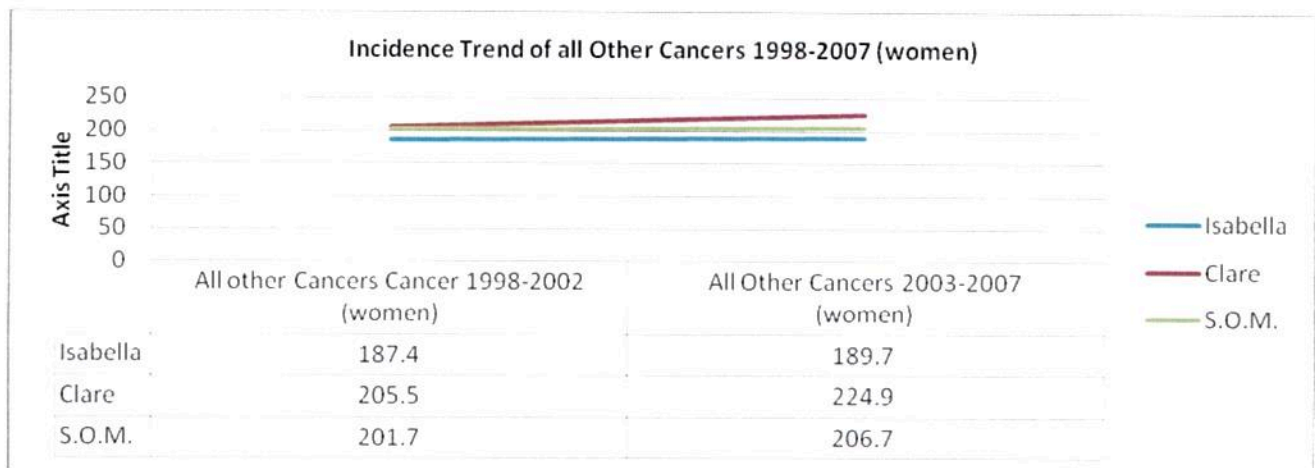


All other Cancer Types

The incidence of all other cancer types in men displayed an overall upward trend for MCM's service area. Isabella County (240) trended down for the years 1998 through 2007. Clare County followed the state trend and increased over this time period to a rate of 276.4 incidences per 100,000 persons. Isabella County was under and Clare County over the state rate of 265.5 incidences per 100,000 persons.



The incidence of all other cancer types in women displayed an overall upward trend for MCM’s service area. Isabella County (189.7) and Clare County (224.9) trended up for the years 1998 through 2007. Isabella County was under and Clare County over the state rate of 201.7 incidences per 100,000 persons. This rate also demonstrated an upward trend.

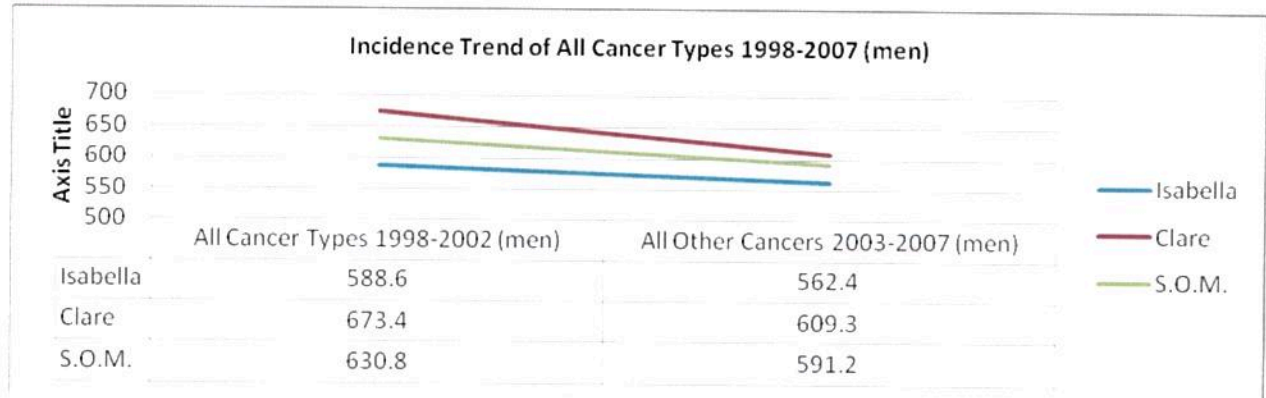


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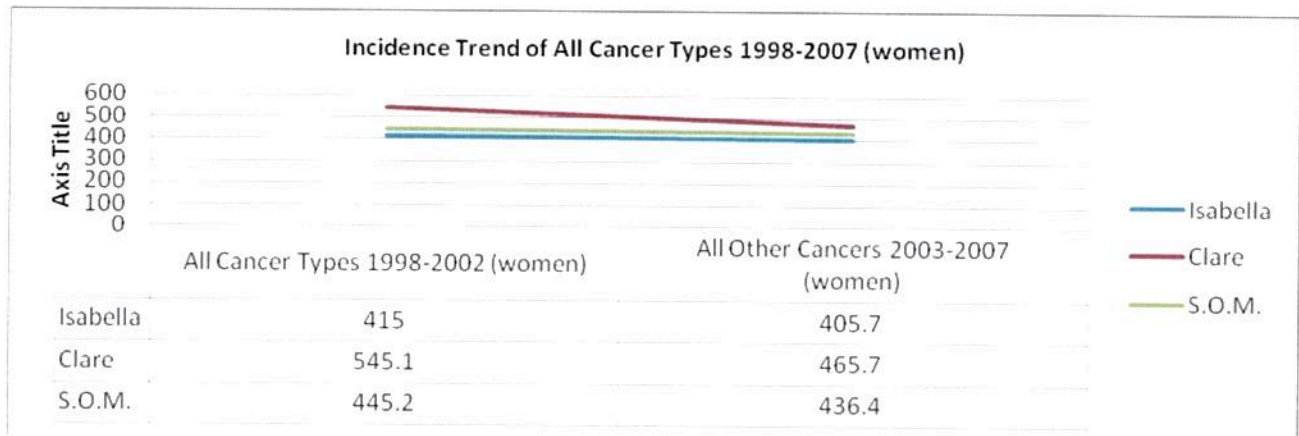
All Cancer Types

The incidence of all cancers in men displayed an overall decrease for MCM’s service area. Both Isabella County (562.4) and Clare County (609.3) trended down, in-line with the state’s trend. Isabella County is under the state rate of 591.2 incidences per 100,000

persons while Clare County is over this rate.



The incidence of all cancers in women displayed an overall decrease for MCM’s service area. Both Isabella County (405.7) and Clare County (465.7) trended down, in-line with the state’s trend. Isabella County is under the state rate of 436.4 incidences per 100,000 persons while Clare County is over this rate.



Implication of Chronic Diseases for Health Services Planning

There is a 68% death rate for chronic disease in MCM’s service area. Not only does this have a major impact on the community’s health status and individual quality of life, it also increases the direct cost of healthcare services and indirect costs of lost income due to disability. As the population of our service area ages, rates of chronic disease will also rise.

Chronic disease, while among the most common and costly of all health problems, can be alleviated through prevention and remediation. CDC stresses that for chronic

disease prevention to be most effective it must occur across the lifespan and consist of activities that include health promotion, early detection efforts and management of existing diseases and related complications.

Providing public education and outreach to at-risk populations may help prevent chronic disease, while support for primary and prevention-based care models may help provide the ongoing coordination of care required to address chronic disease.

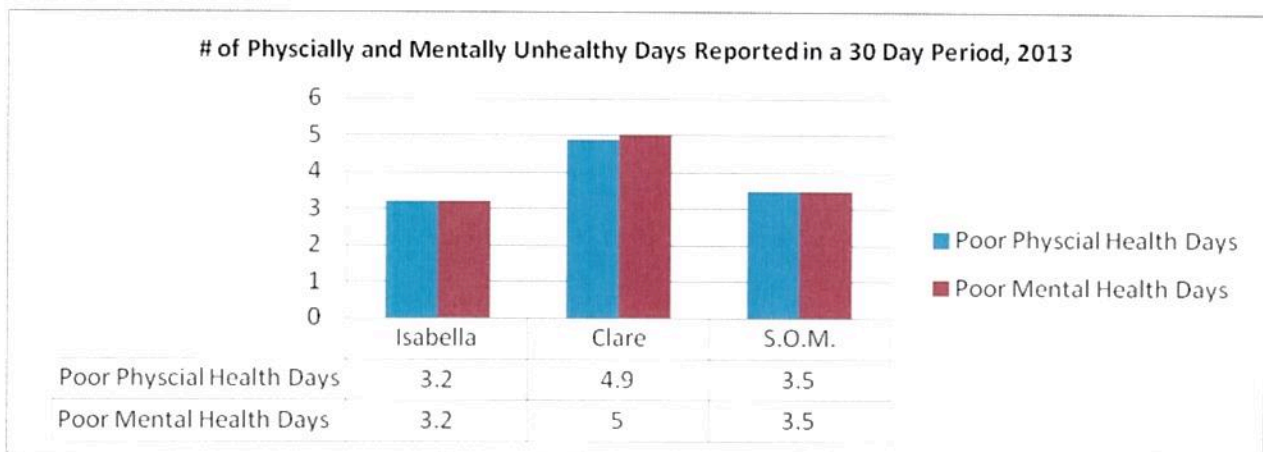
Additionally, social support services, such as transportation and lifestyle counseling, will be required to assist those disabled by chronic disease. Acute care facilities are also necessary to provide inpatient and advanced outpatient care for cancer, stroke, heart disease, pneumonia and other acute conditions resulting from chronic disease.

Thompson Reuters indicates that Radiation Therapy will present MCM with its highest demand increase along all its services. This corresponds to other research indicating the increased diagnosis and treatment of cancer.

Mental Health

Mental and physical health are self-reported measures of health status of individuals in the community, based on the response to two questions: 1. "Thinking about your physical health, which includes physical injury and illness, for how many days during the past 30 days was your physical health not good? 2) "Thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?" The data was gathered by the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System (BRFSS), and the incidence was calculated by the National Center for Health Statistics.

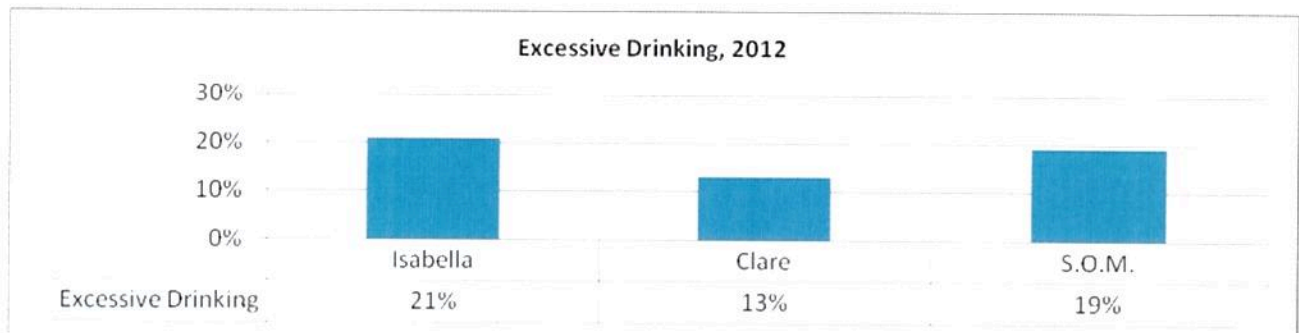
Isabella County demonstrated 3.2 days for both physical and mental health days which is lower than the state average of 3.5 days in both categories. Clare County measured 4.9 days for physical health days and slightly higher at 5 days for mental health days. Both rates are higher than the state's mark.



Binge Drinking

Binge drinking is defined as a time in the last month when they consumed four (women), five (men) or more drinks in a single occasion. In Isabella County alcohol use

is a significant public health issue with 21% of the population identifying themselves as binge drinkers. This number is significantly impacted by the student population in the county. Clare County's rate is 13% which is well under the 18% reported for the state.



Suicide

In 2010 Isabella County and Clare County had 5 suicides and 2 suicides respectively. Both well below the state rate of 12.5 suicides per 100,000 people. More than 90% of those who die by suicide have a diagnosable mental disorder.

Implications of Mental Health Data for Health Services Planning

Four of the 10 leading causes of disability in the United States and other developed countries are mental disorders according to the World Health Organization. By 2020 major depressive illness will be the leading cause of disability in the world for women and children. In the United States the annual economic, indirect cost of mental illness is estimated to be \$79 billion. Most of that amount, approximately \$63 billion, reflects the loss of productivity as a result of illness.

A combination of pharmacological and psychosocial treatments and support has been known to reduce symptoms and improve quality of life for between 70 and 90 percent of individuals diagnosed with mental illness. With appropriate, effective medication and a wide range of services tailored to their needs, most people who live with serious mental illness can significantly reduce the impact of their illness and find a satisfying degree of achievement and independence.

Effective treatments for mental health conditions will help people achieve psychological, social and emotional well-being, which can lead to better overall health. Early identification and access to appropriate treatment and recovery options can accelerate the recovery process. Additional resources and coordination of medical,

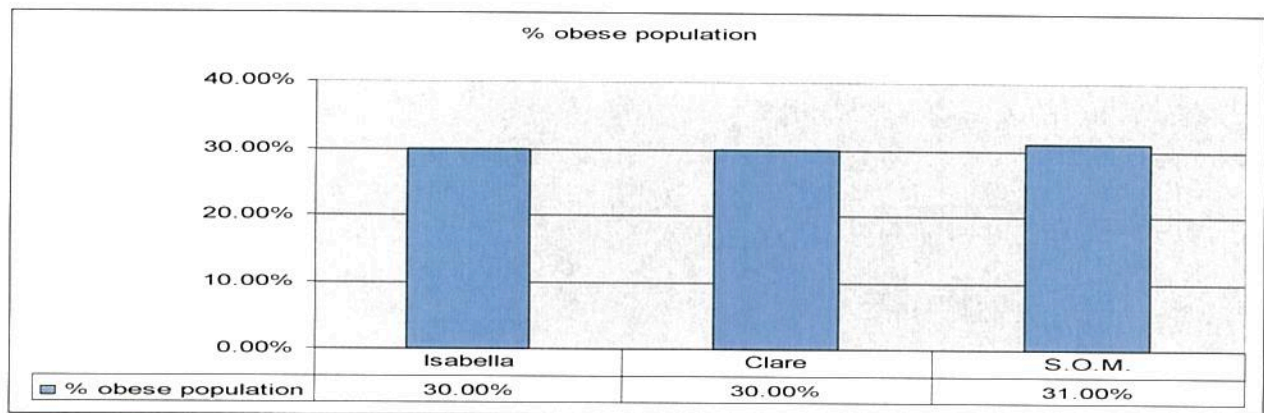
social and financial services are required. Access to a continuum of services and prevention are especially critical for children and adolescents.

The prevalence of substance abuse in Isabella County suggests a need for education and outreach. In particular, educating teens on the consequences of alcohol and drug use, and helping them to develop coping skills to resist peer pressure may help reduce future substance abuse.

Nutrition, Physical Activity and Obesity

Obesity Rates

Nationally, during the past 30 years, adult obesity rates have doubled and childhood obesity rates have more than tripled. Adult obesity rates of adults in Isabella and Clare Counties have risen steadily, with 30% of adults in MCM's service area currently being identified as obese. This is a measure of the fraction of population age 20 and older that has a body mass index greater than or equal to 30 kg/m². Both counties are just below the state average but still well above the national benchmark of 25%.



Childhood Obesity

Childhood obesity is threatening to make the current younger generation the first in history to have shorter life expectancy than their parents. Overweight and obese children and adolescents face the increased risk of weight-related health issues as adults, including cardiovascular disease and Type 2 diabetes. They're also more likely to experience psychological stress, social stigmatization and low self esteem. The long-term effects include problems with academics and social issues.

Nutrition and Physical Activity

Poor nutrition is a major cause of obesity. School lunch programs are often the targets of community focus groups, offering unhealthy foods that are lower in cost and easier to prepare. Nutritious foods are often more expensive than calorie-dense, less-nutritious foods. Vending machines that offer un-healthy foods are also an issue through out school systems.

All of these factors contribute to poor diet habits, particularly among low-income populations. Unemployment in particular has been shown to lead to an increase in unhealthful behaviors related to diet, alcohol and tobacco use, and exercise, which in turn lead to increased risk for disease and mortality.

Inactivity also promotes obesity. Children engage in less physical activity at school than in the past, and are less likely to spend time in public parks, which are often poorly maintained and unsafe in lower-income neighborhoods. American adults are more likely to drive for even short trips of a mile or less, and people of all ages spend more time watching television, working on computers or playing video games.

Implications of Nutrition, Activity and Obesity for health Services Planning

Obesity increases the risk of disease such as diabetes, heart disease, stroke and cancer. Preventing and reducing its prevalence would greatly improve public health; reduce healthcare costs and restore economic losses due to disability.

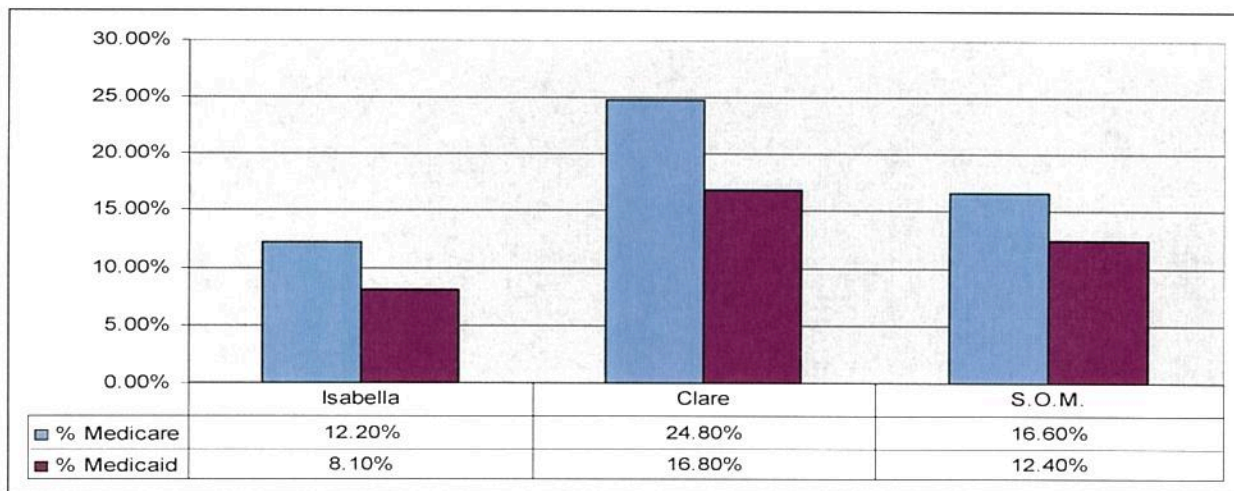
Outreach and interventions for children and high-risk adult populations are essential to reduce obesity in the community. In addition to medical care and nutrition counseling, resources to increase exercise, make healthy food available and public education are required. Coordination with county health officials and private organizations, schools and recreation facilities may help reduce obesity in the service area.

Access to Care

According to the U.S. Department of Health and Human Services, financial, structural and personal barriers can limit access to health care. The key financial barriers that patients experience are a lack of health insurance and not having the financial capacity to cover the health service outside their health plan or insurance program. Structural barriers include the lack of primary care providers, medical specialists or other healthcare professionals to meet the special needs. Personal barriers include cultural differences, language and transportation barriers, or not knowing how or when to seek care.

Medicare and Medicaid Coverage

Isabella County demonstrates Medicare and Medicaid rates below the overall rate for the state. These rates are affected by the student population of CMU. Clare County's rates are higher for both Medicare and Medicaid due to the older population of the county and the high unemployment rate as indicated in socioeconomic data of this assessment.



Cultural and Spiritual Sensitivity

Based on interviews Thompson Reuters conducted with tribal leadership and tribal members there is some concern about cultural sensitivity. They may decide not to seek treatment or seek treatment outside of the service area where they are less likely to be

recognized as a tribal member. It is important to recognize and understand the relationship between different cultures and their need for access to healthcare so that these barriers may be eliminated.

Service Line Growth

According to data gathered by Thompson Reuters specifically for MCM's service area, Isabella County will see significant growth in the need for Internal Medicine, Pulmonary, Orthopedics, General Surgery, Gastroenterology and Cardiology physicians. Clare County will need more access to General Surgery and Gastroenterology physicians. Attention will need to be paid to the ongoing recruitment and retention for these particular services.

Implications of Access to care

Access to care will be an increasing issue as the low-income, uninsured populations of Isabella and Clare Counties continue to grow. MCM is a leader in community efforts to provide services to uninsured and low-income individuals through its free clinic, and will continue to work with community partners to continue doing so.

Action Plan

Chronic Disease Management

Initiative: Patient Centered Medical Home

Key Contact: Sheila Kress
Director of Operations
McLaren Medical Group
(989) 779-5240

Target Date

- 2 Clinics currently designated
- 1 clinic nominated, 2 clinics re-nominated 12/31/14
- 2 clinics nominated, 3 clinics re-nominated 12/31/15
- 5 clinics nominated, 5 clinics re-nominated 12/31/16

Initiative: McLaren to Follow

Key Contact: Sheri Underwood
Chief Nursing Officer
McLaren Central Michigan
(989) 772-6720

Target Date

- Establish relationship with service area skilled nursing facilities 1/31/14
- Begin patient visits as S.N.F.s 2/28/14
- Quarterly meetings with S.N.F.s, MCM and MHC On Going
- Track and monitor readmissions On Going

Initiative: Diabetes Center

Key Contact: Nancy English
Physician Liaison
McLaren Central Michigan
(989)600-3357

Target Date

- Identify Funding 9/30/14
- Identify/establish a diabetes educator 12/31/14

- Start/Develop support group 12/31/14
- Establish a virtual center 3/31/14
- Recruit endocrinologist jointly with CMU & SCIT 12/31/14
- Consolidate services at new site 12/31/15

Access to Care

Initiative: Federally Qualified Health Clinic

Key Contact: Jennifer White
 Executive Director, FQHC
 (989) 953-5191

Target Date

- Apply for FQHC look-a-like designation 01/15/14
- Apply for FQHC grant TBD
- Add an additional physician 10/31/14
- Add 2 additional PA's or NP's 12/31/15
- Track and monitor patient volumes On going

Initiative: Free Clinic

Key Contact: Nancy King
 Manager, OB Services
 McLaren Central Michigan
 (989) 772-6756

Target date

- Establish pre-natal services/counseling 4/30/14
- Maintain once a week clinic operation On going
- Track and monitor patient volumes On going

Initiative: Physician Recruitment

Key Contact: Nancy English
 Physician Liaison
 McLaren Central Michigan
 (989) 600-3357

Target Date

- Establish Hospitalist Program 4/30/14
- Establish back-up Pulmonology coverage 4/30/14

- Add primary care physicians to primary service area 7/31/14
- Replace retiring/relocating physicians and reorganize under FQHC 10/31/14
- Add PA support to select primary care practices 12/31/15
- Commit to timely replacement of retiring/relocating physicians On Going
- Work with CMED to expand clinical services available in our service area On Going

Initiative: Insurance Enrollment Assistance

Key Contact: Carolyn Potter
 VP, Human Resources
 McLaren Central Michigan
 (989) 772-6857

Target Date

- Establish enrollment center location 1/31/14
- Identify and train staff on program 2/28/14
- Identify and train volunteers 2/28/14
- Advertise/promote service 3/31/14
- Monitor and track utilization On Going

Child/Maternal Health

Initiative: Prenatal Care

Key Contact: Nancy King
 Manager, OB Services
 McLaren Central Michigan
 (989) 772-6756

Target Date

- Establish point of entry for unplanned pregnancies with no access to care 6/30/14
- Advertise/promote services through all media types 7/31/14
- Distribute information with regard to prenatal care and referral agencies On Going
- Track and monitor referral compliance On Going

Key Stakeholders

American Red Cross

Central Michigan District Health Department

Central Michigan Pregnancy Services

Central Michigan University:

Health Services

College of Health Professions

Medical School

Clare Public Schools

Community Mental Health for Central Michigan

Isabella Citizens for Health

Isabella County Commission on Aging

Listening Ear

Mt. Pleasant Area Chamber of Commerce

Mt. Pleasant Public Schools

Nimkee Memorial Wellness Center

Saginaw Chippewa Indian Tribe

Women's Aid Services, Inc. -Gratiot-Clare-Isabella