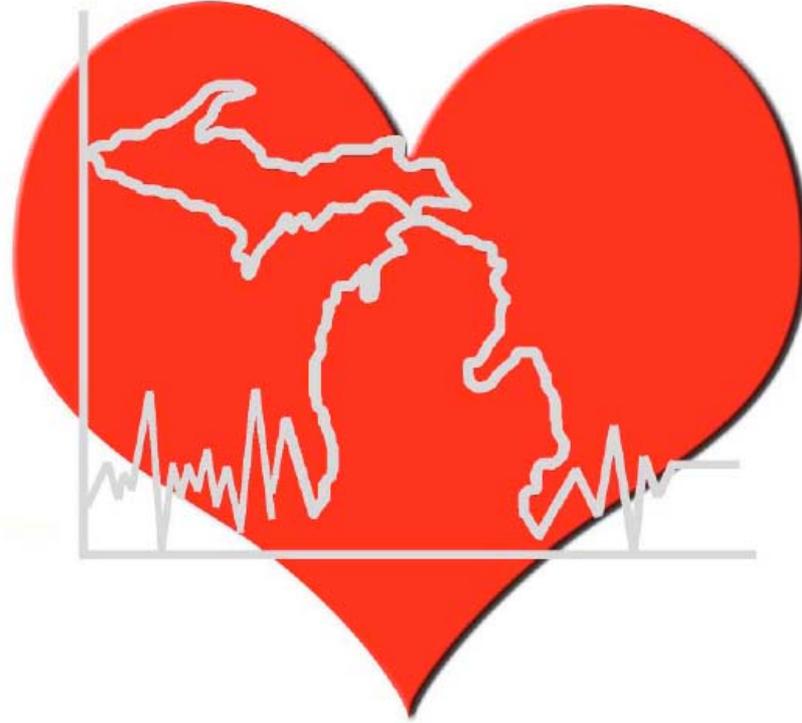


Heart Disease and Stroke in Michigan: 2011 Surveillance Update, Part II



*Michigan Department
of Community Health*



May 3, 2011



Outline

- Background of Methods Used
- Comparison of CVD Mortality in Michigan to U.S. and Healthy People Objectives
- County-level Mortality, Years of Potential Life Lost and Risk Factor Maps
- County Health Rankings



Introduction

- This report is the second part of the Heart Disease and Stroke in Michigan: 2010 Surveillance Update
- The focus is on burden at the county-level for each of the five major diseases of the heart and blood vessels
- Special attention is given to the contiguous five-county region in the state with the greatest age-adjusted cardiovascular disease-related burden



Diseases and their corresponding ICD codes discussed in the report

Cardiovascular Disease

ICD-10: I00-I78

ICD-9: 390-434, 436-448

Diseases of the Heart

ICD-10: I00-I09, I11, I13, I20-I51

ICD-9: 390-398, 402, 404, 410-429

Coronary Heart Disease

ICD-10: I20-I25

ICD-9: 410-414, 429.2

Heart Failure

ICD-10: I50

ICD-9: 428

Diseases of the Blood Vessels

Stroke

ICD-10: I60-I69

ICD-9: 430-434, 436-438, 435

Ischemic

ICD-10: I63-I65

ICD-9: 433-434,
436

Hemorrhagic

ICD-10: I60-I62

ICD-9: 430-431

Transient Ischemic Attack

ICD-9: 435



Methods

Age-adjusted Rates: Populations often differ in their distribution of age, which may in turn affect the overall rate of events in that population. Therefore, when comparing rates of events in populations of different age distributions, it is important to account for those differences. 2000 US standard population was used to age-adjust.

Prevalence: the proportion of individuals in a population who have the disease at a point in time or during a given time period. It is often used to describe the health burden on a given population. Prevalence is computed by dividing the number of existing cases at a particular point or period in time by the total population from which the cases came. It is often multiplied by 100 and expressed as a percent.

Years of Potential Life Lost: an estimate of the average time an individual would have lived if they had not died prematurely.

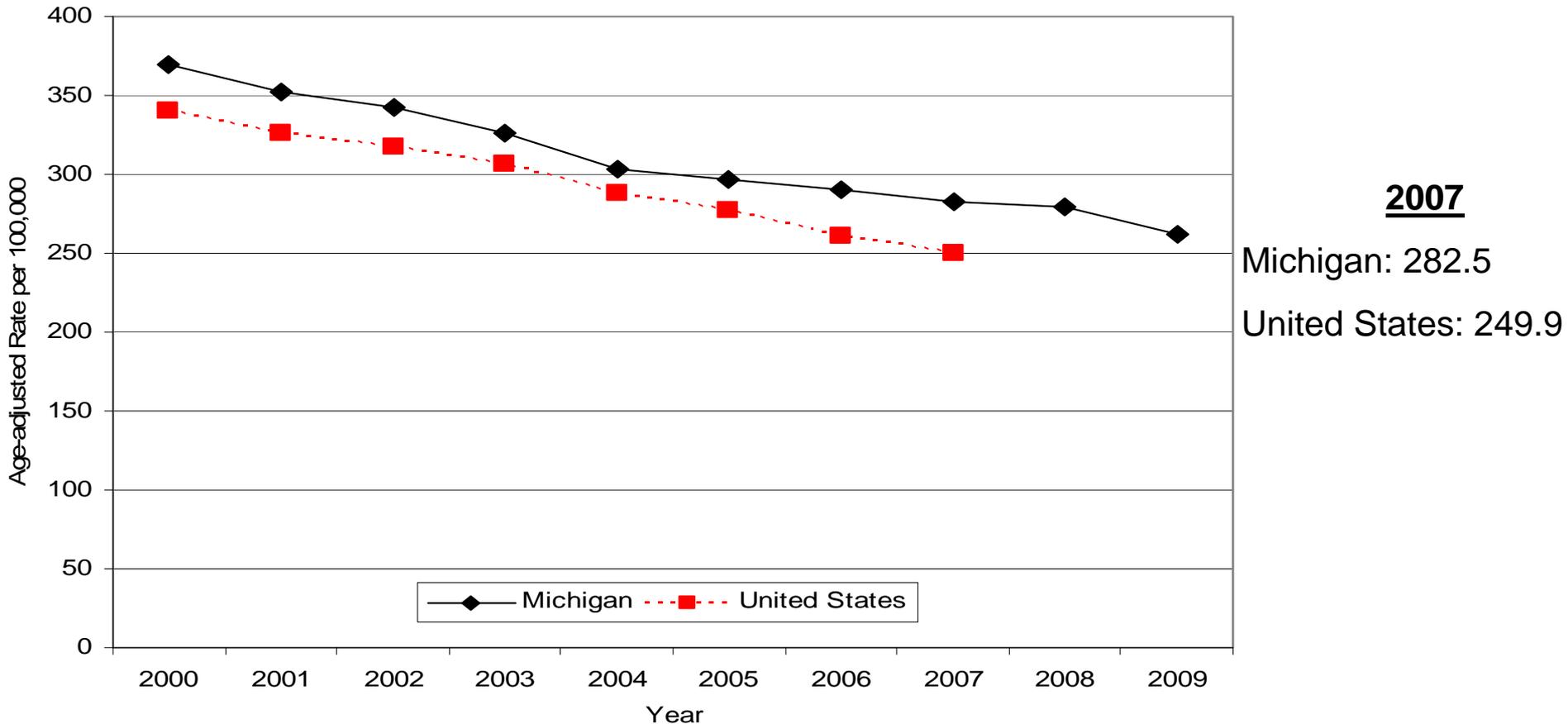
Data Mapping: ArcGIS Map was used to create the maps seen in the report



Comparison of CVD in Michigan and U.S.



Age-adjusted Mortality Rates for Cardiovascular Disease for Michigan and United States, 2000-2009

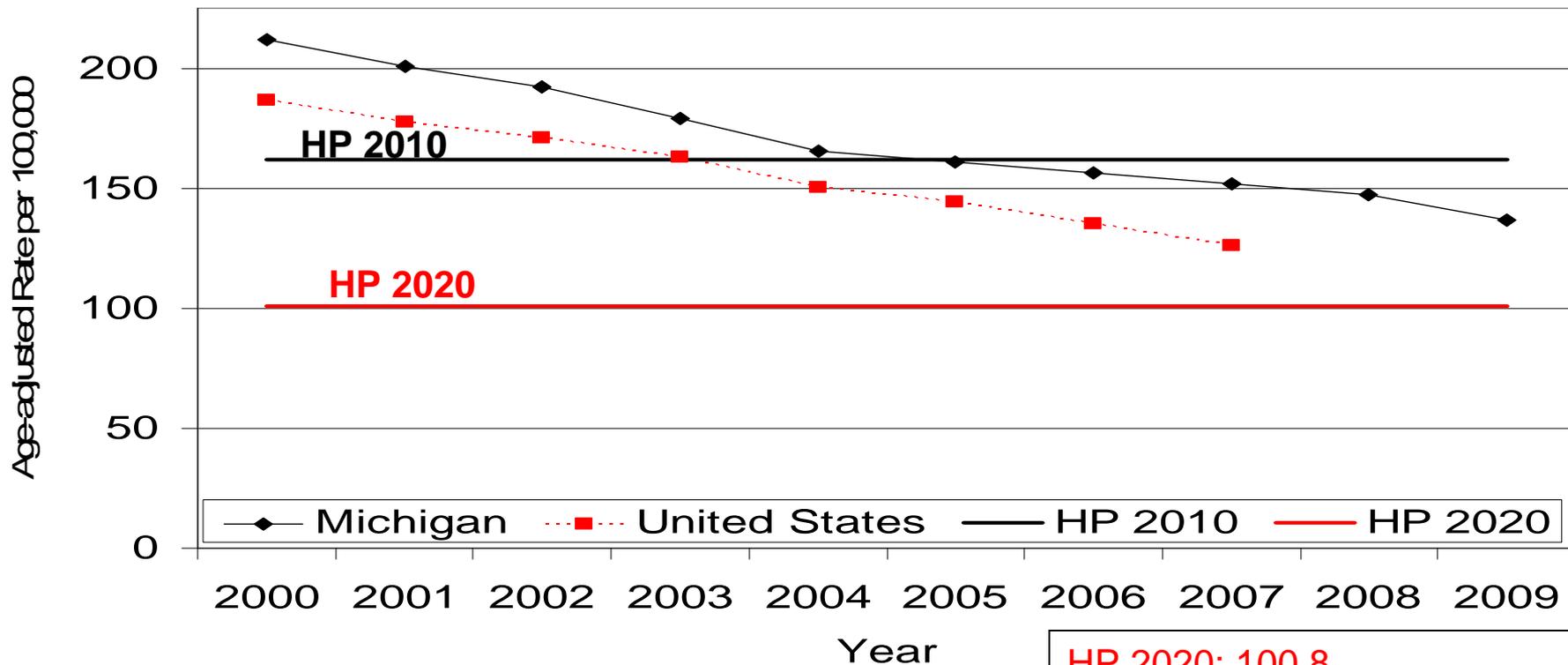


Source: MDCH Vital Statistics

Age-adjusted to the 2000 U.S. standard population



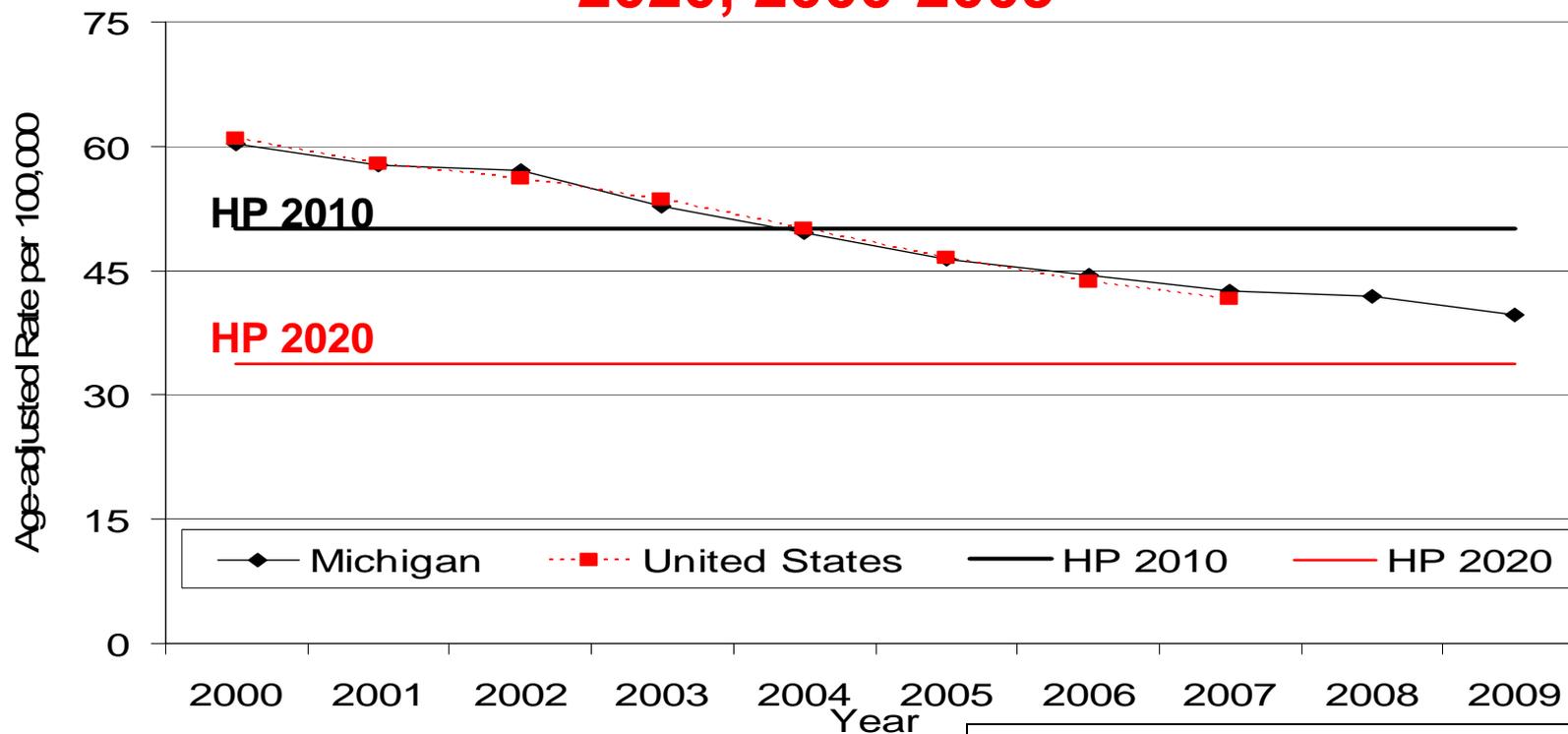
Age-adjusted Mortality Rates for Coronary Heart Disease for Michigan and United States compared to *Healthy People* 2010 and 2020, 2000-2009



HP 2020: 100.8
 HP 2010: 162 (per 100,000)
 2007 Michigan: 151.6
 2007 United States: 126



Age-adjusted Stroke Mortality Rates for Michigan and United States compared to *Healthy People 2010* and *2020*, 2000-2009



HP 2020: 33.8 (red line)
 HP 2010: 50 (per 100,000)
 2007 Michigan: 42.5
 2007 United States: 41.6

Source: MDCH Vital Statistics
 Age-adjusted to the 2000 U.S. standard population



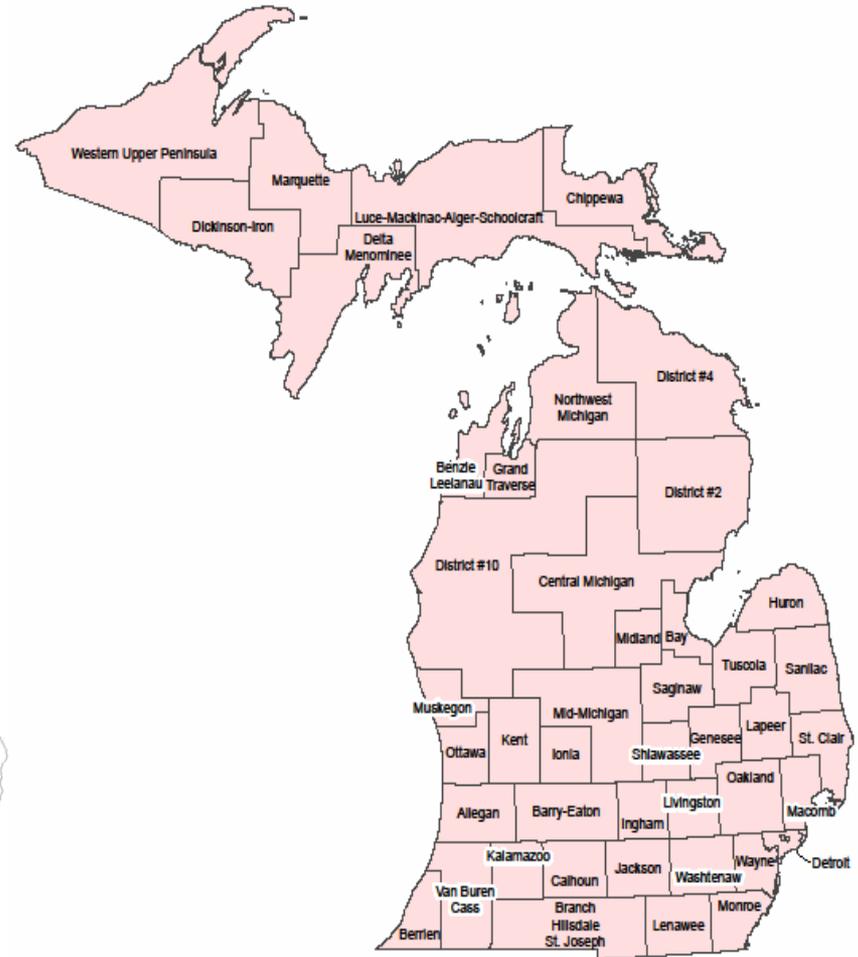
Geography of CVD Mortality in Michigan



County Location Map

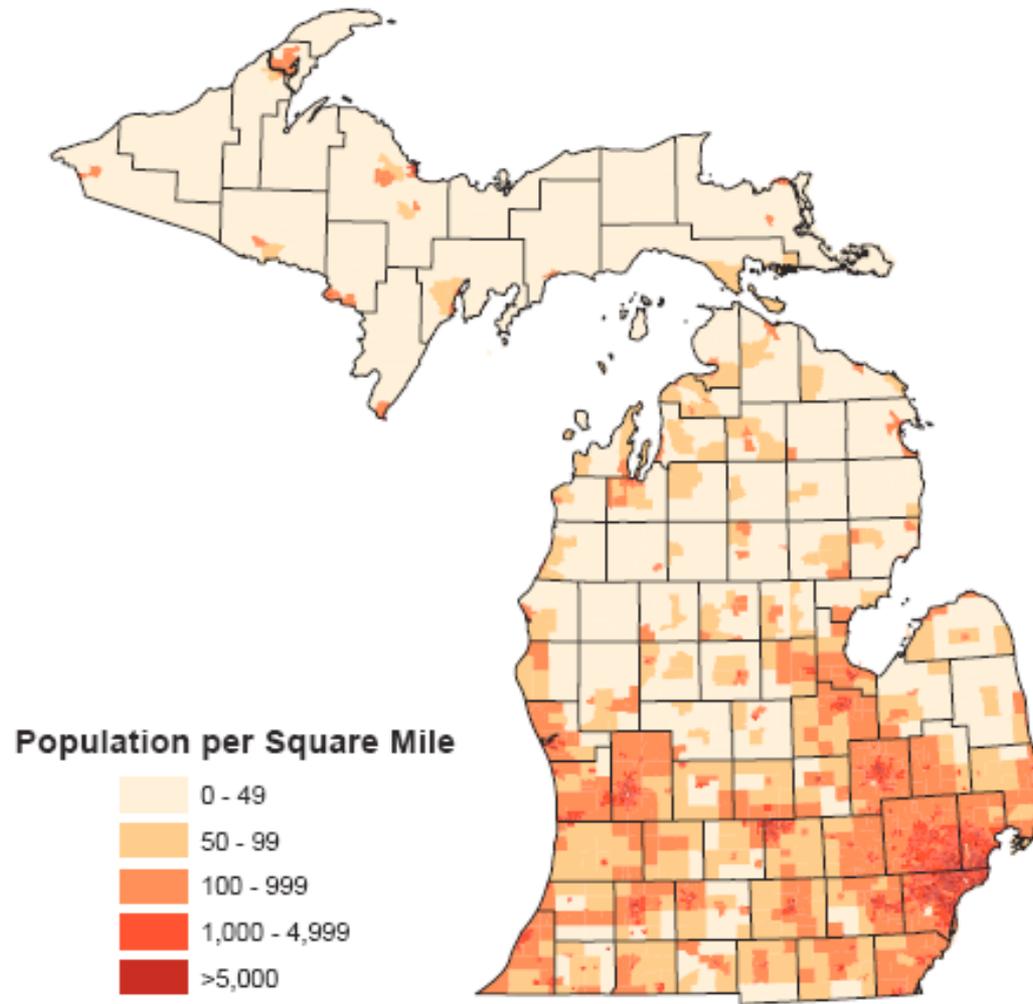


LHD Location Map





Population Density Map



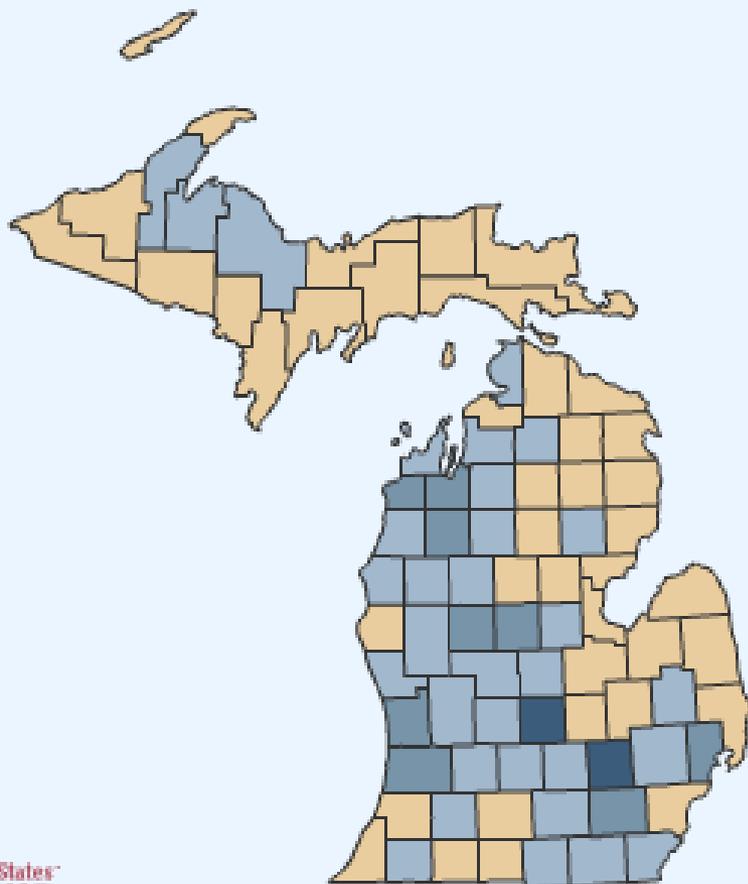


2010 CENSUS RESULTS

Michigan STATE POPULATION: 9,883,640

POPULATION CHANGE BY COUNTY: 2000-2010

LOSS 0-5% 5-15% 15-25% 25% +



BACK TO U.S. MAP

VIEW FULL SCREEN

STATE POPULATION BY RACE MICHIGAN: 2010

| PERCENT OF POPULATION | CHANGE 2000-2010 |
|---|------------------|
| White alone 78.9% | -2.0% ↓ |
| Black or African American alone 14.2% | -0.9% ↓ |
| American Indian and Alaska Native alone 0.6% | 6.0% ↑ |
| Asian alone 2.4% | 34.9% ↑ |
| Native Hawaiian and Other Pacific Islander alone - | -3.3% ↓ |
| Some Other Race alone 1.5% | 13.5% ↑ |
| Two or More Races 2.3% | 19.7% ↑ |

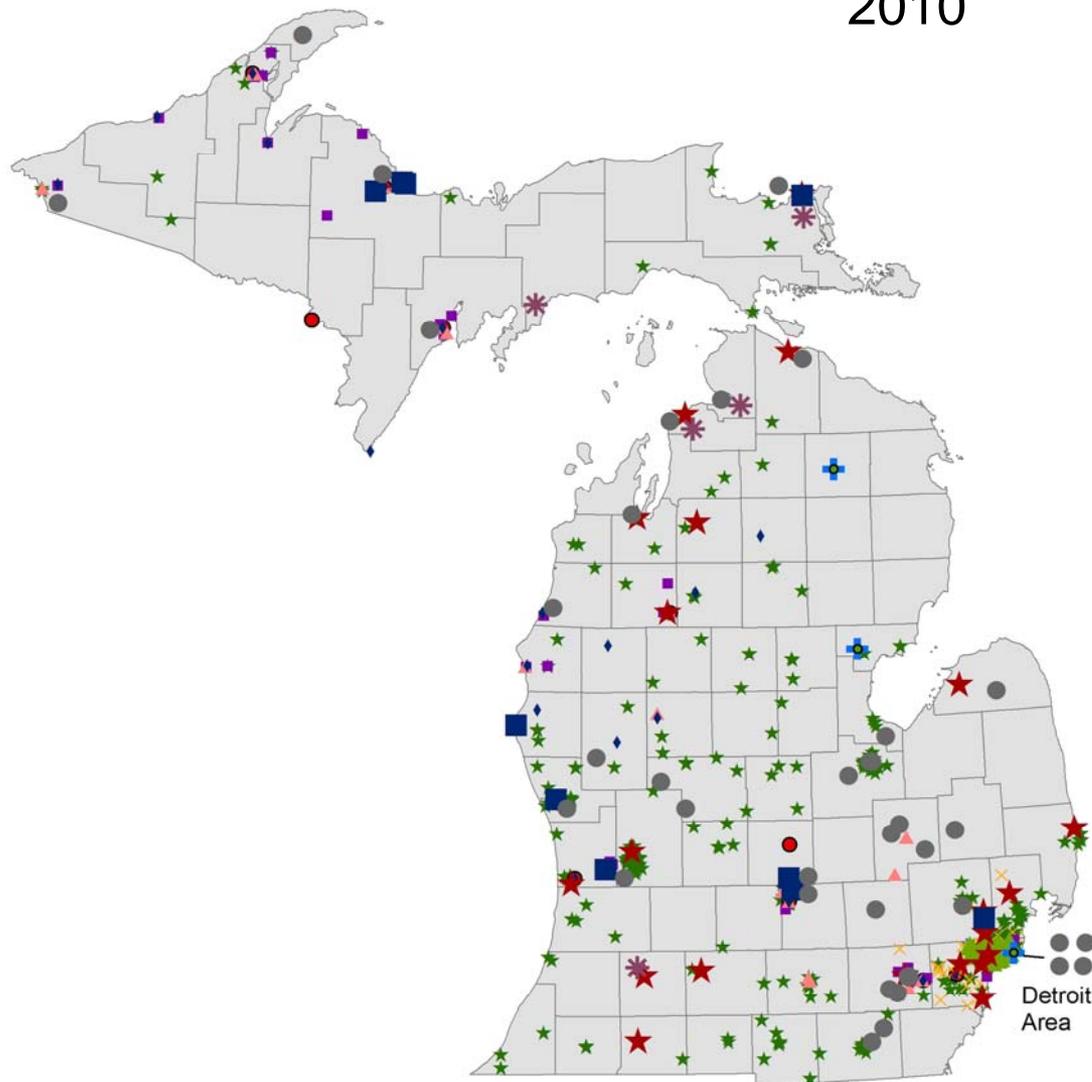
STATE POPULATION BY HISPANIC OR LATINO ORIGIN MICHIGAN: 2010

| PERCENT OF POPULATION | CHANGE 2000-2010 |
|---------------------------------|------------------|
| Hispanic or Latino 4.4% | 34.7% ↑ |
| Not Hispanic or Latino 95.6% | -1.7% ↓ |



Public Health CVD Funded Programs:

2010



Programs Include:

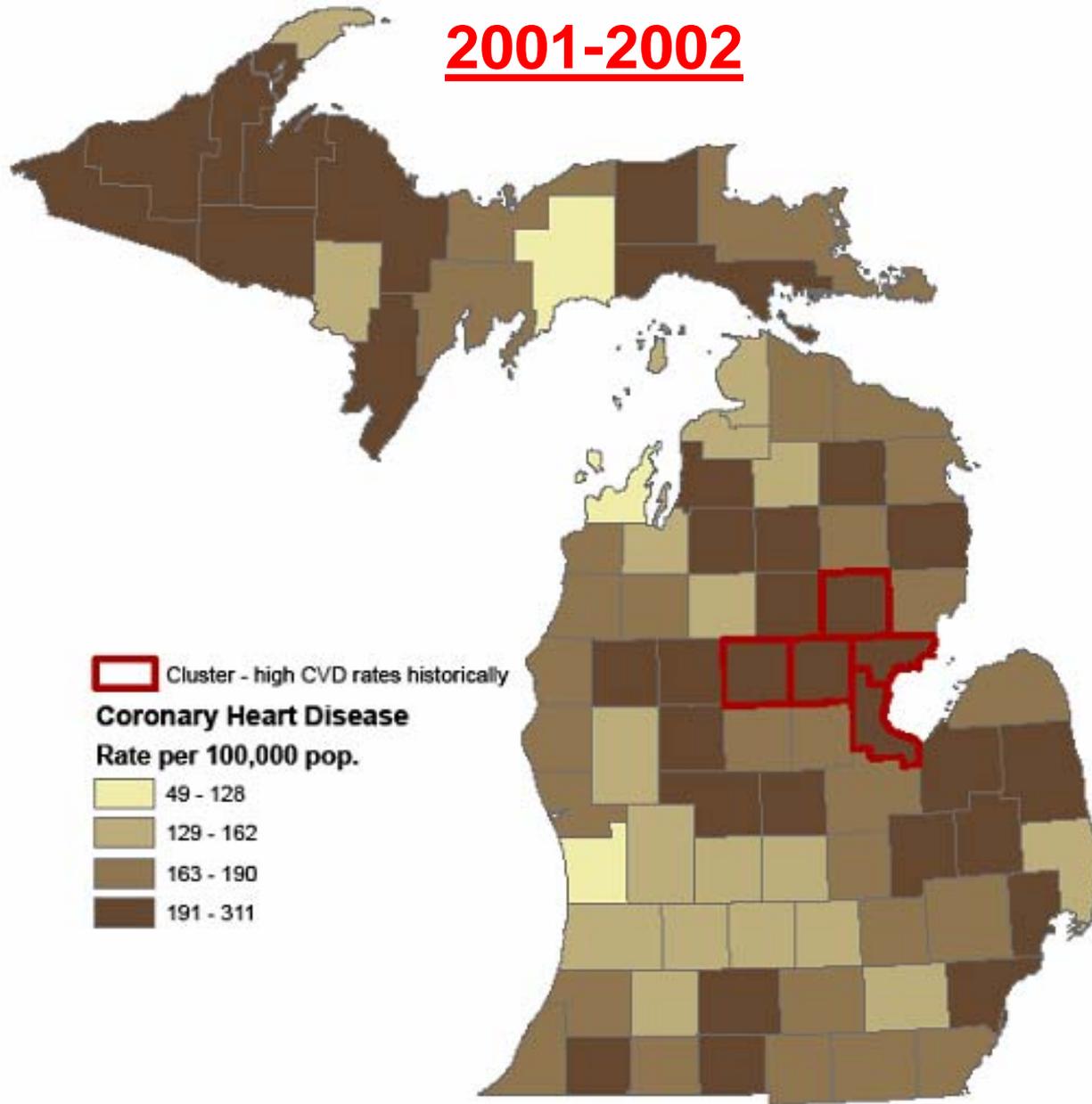
- Building Healthy communities
- Healthy School and Childcare Initiatives
- Faith-Based Initiatives
- Stroke Registry and Quality Improvement Programs
- Heart Disease Quality Improvement Projects
- High Blood Pressure Initiatives



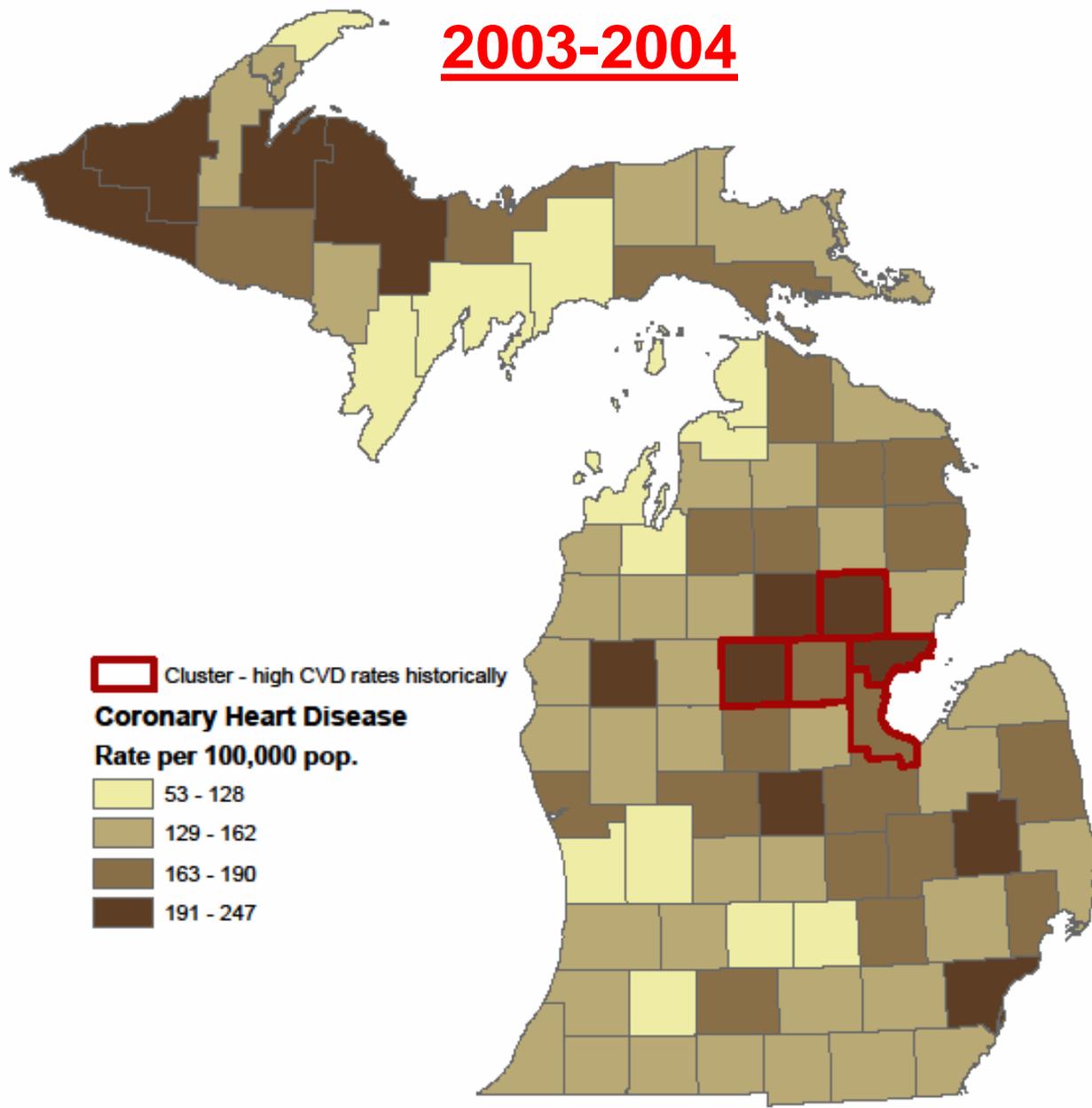
Age-adjusted Coronary Heart Disease Mortality Rates by County

*Data displayed in two year
increments

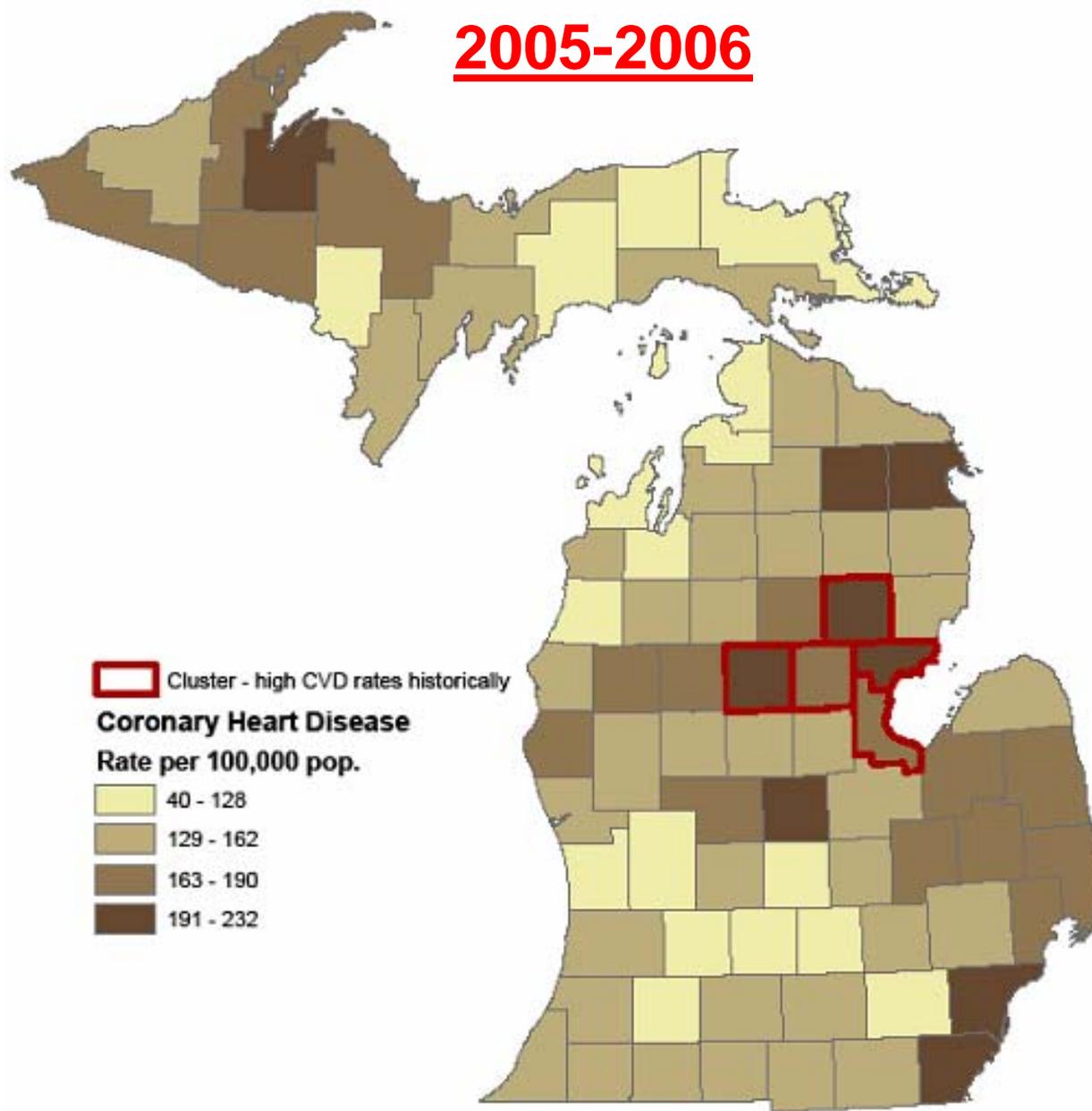
2001-2002



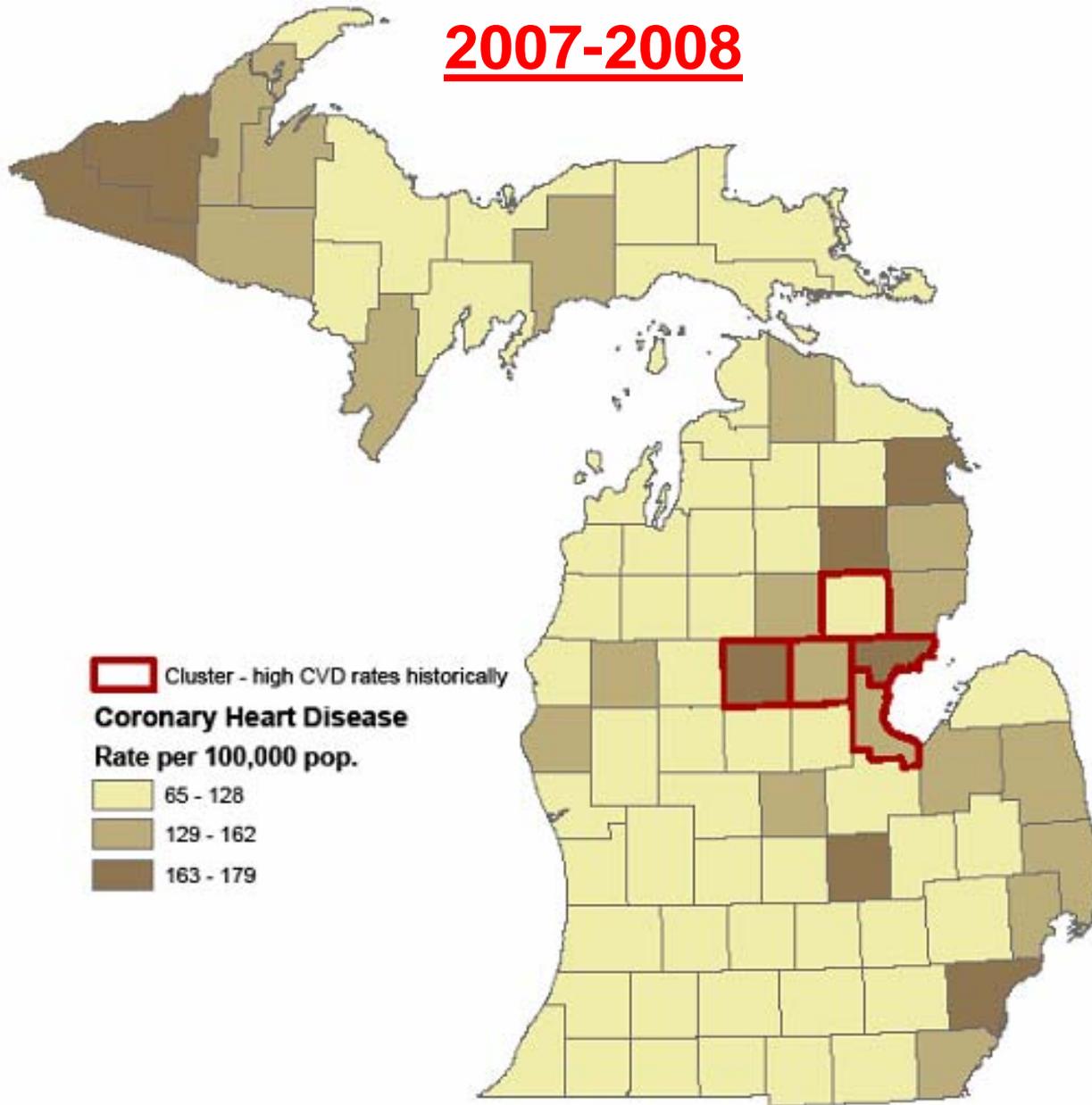
2003-2004



2005-2006



2007-2008





Maps Displaying Age-adjusted Mortality Rates by County



Cardiovascular Disease Mortality Rates 2002-2006

State Rate: 307.9 (per 100,000)

National Rate: 296.4* (per 100,000)

Age-Adjusted Mortality Rate per 100,000
Michigan Rate is 307.9

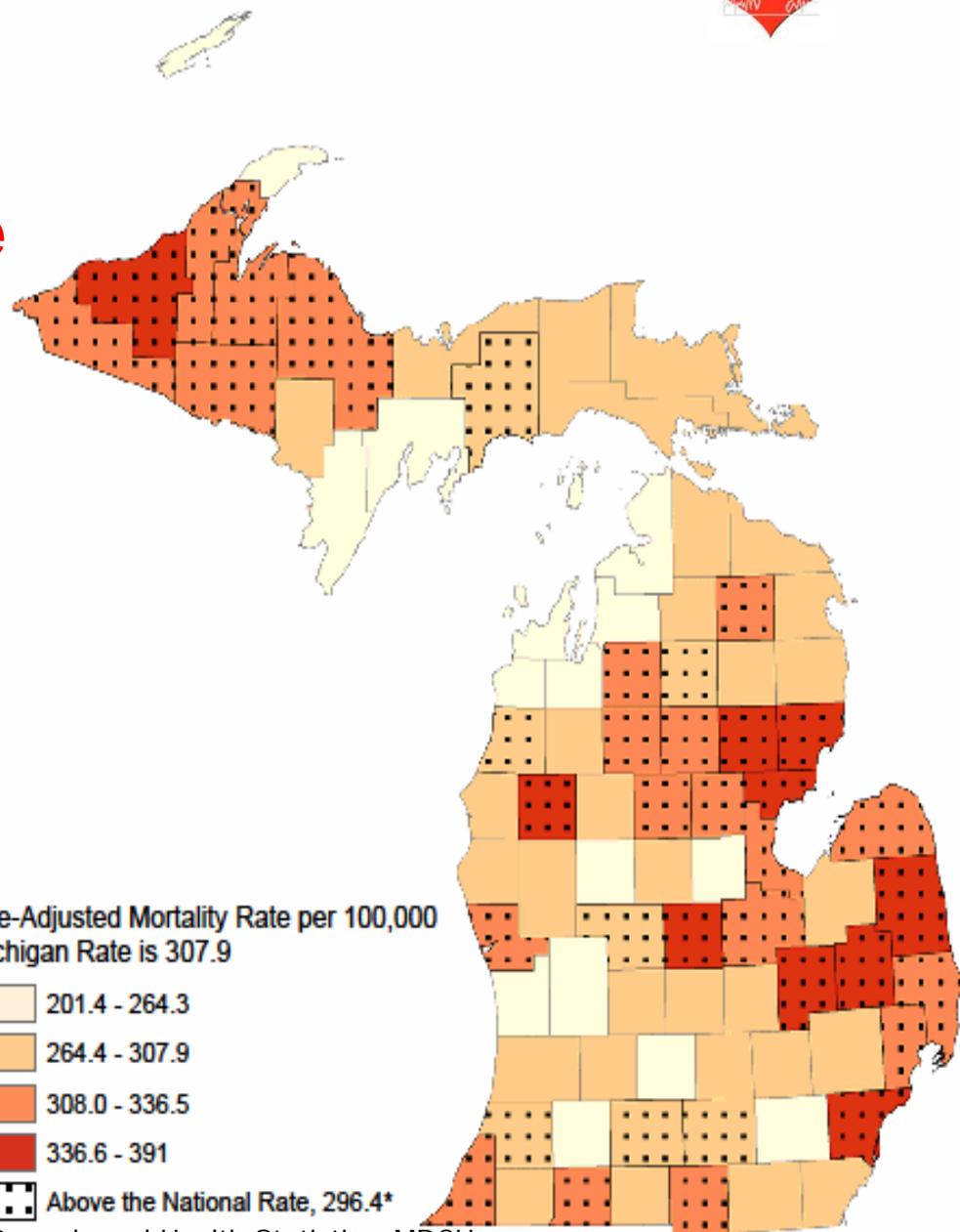
201.4 - 264.3

264.4 - 307.9

308.0 - 336.5

336.6 - 391

Above the National Rate, 296.4*



* Using 2002-2005 aggregate data

Source: Michigan Resident Inpatients Data Files, Division for Vital Records and Health Statistics, MDCH

Age-adjusted to the 2000 U.S. standard population

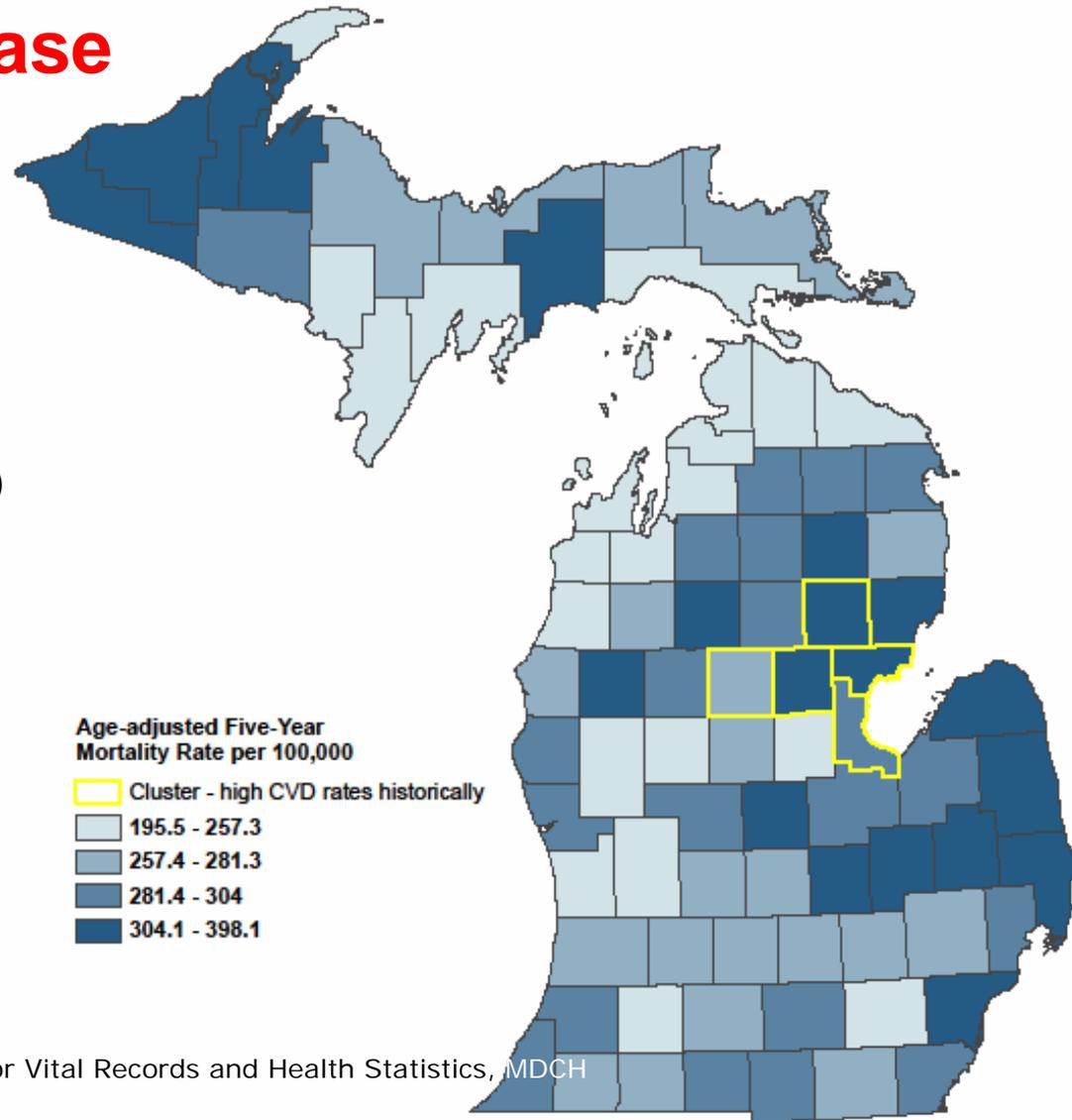


Cardiovascular Disease Mortality Rates 2004-2008

State Average: 294.0 (per 100,000)

National Average*: 275.6 (per 100,000)

* Using 2003-2007 aggregate data

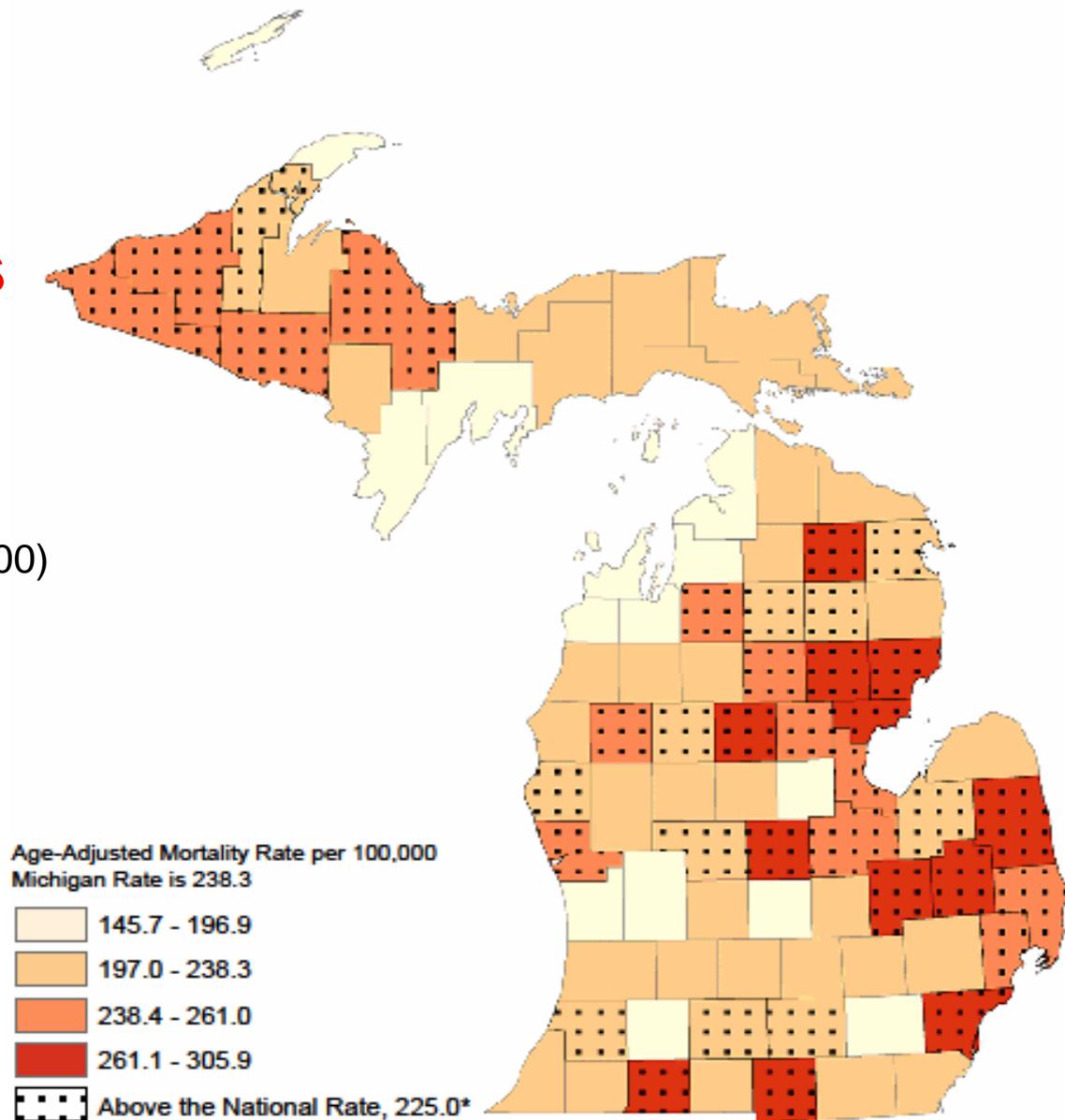




Heart Disease Mortality Rates 2002-2006

State Average: 238.3 (per 100,000)

National Average: 225.0* (per 100,000)



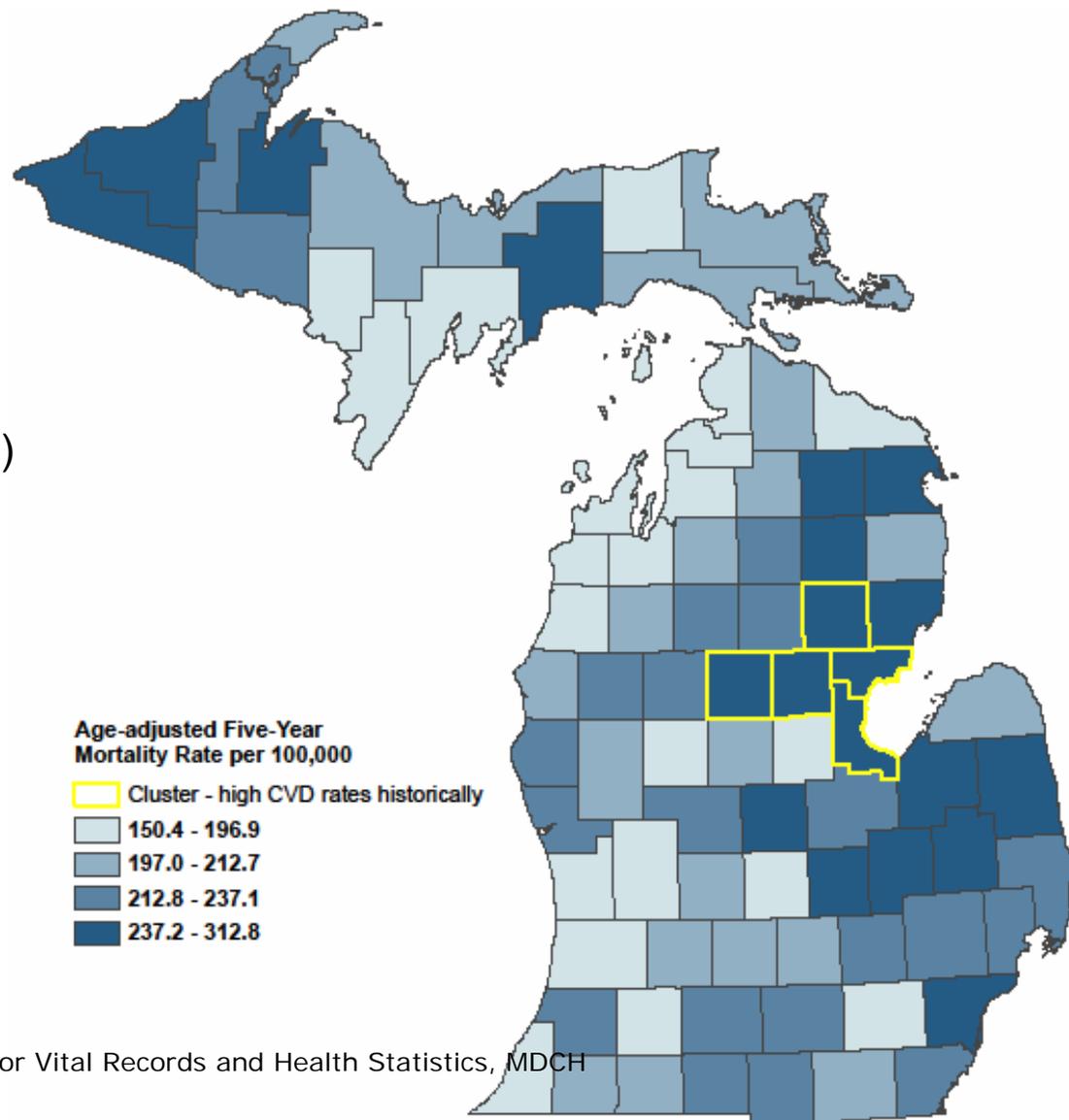
* Using 2002-2005 aggregate data



Heart Disease Mortality Rates 2004-2008

State Average: 229.0 (per 100,000)

National Average*: 209.9 (per 100,000)



* Using 2003-2007 aggregate data

Source: Michigan Resident Inpatients Data Files, Division for Vital Records and Health Statistics, MDCH

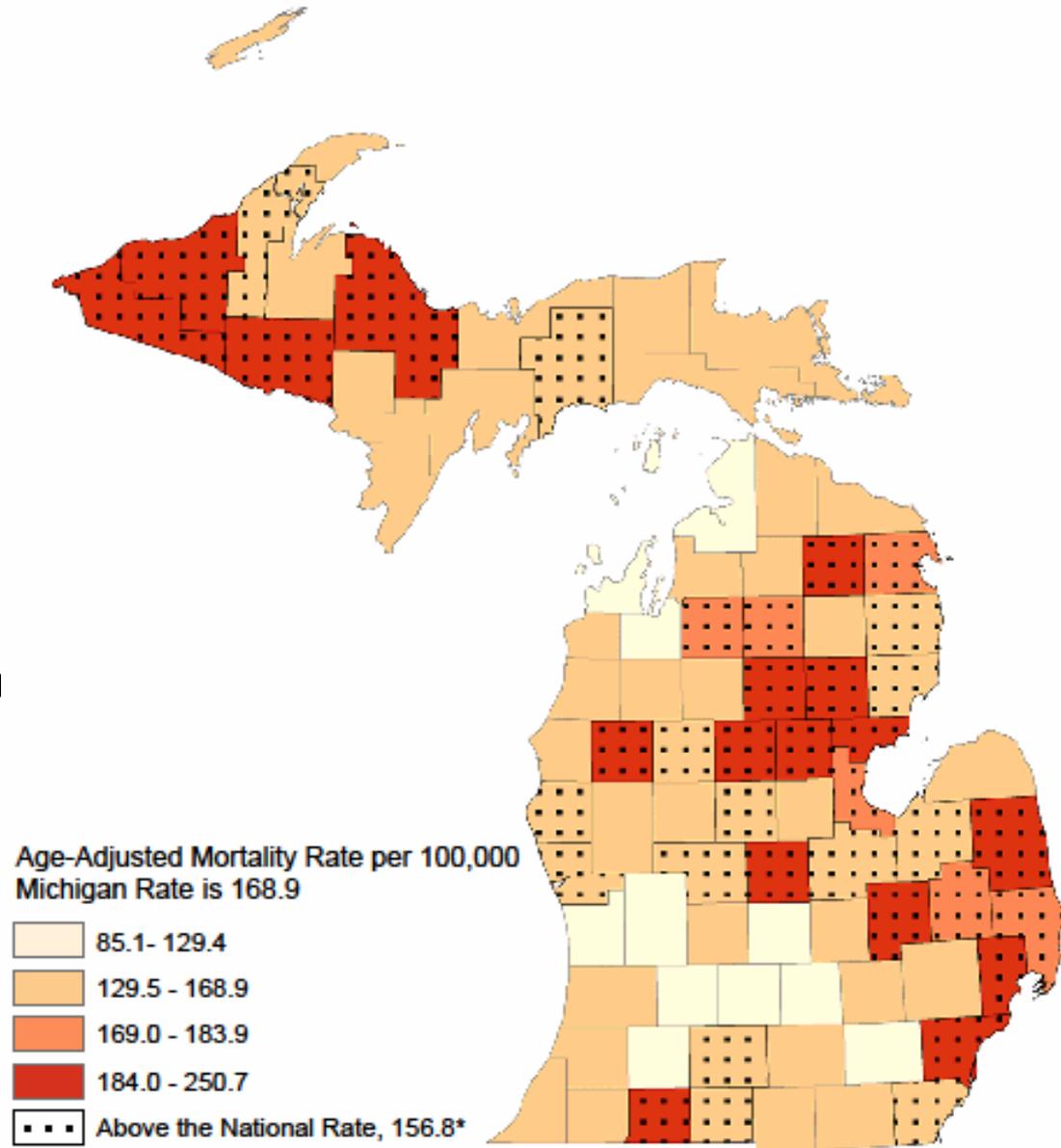
Age-adjusted to the 2000 U.S. standard population



Coronary Heart Disease Mortality Rates 2002-2006

State Average: 168.9 (per 100,000)

National Average: 156.8* (per 100,000)



* Using 2002-2005 aggregate data

Source: Michigan Resident Inpatients Data Files, Division for Vital Records and Health Statistics, MDCH

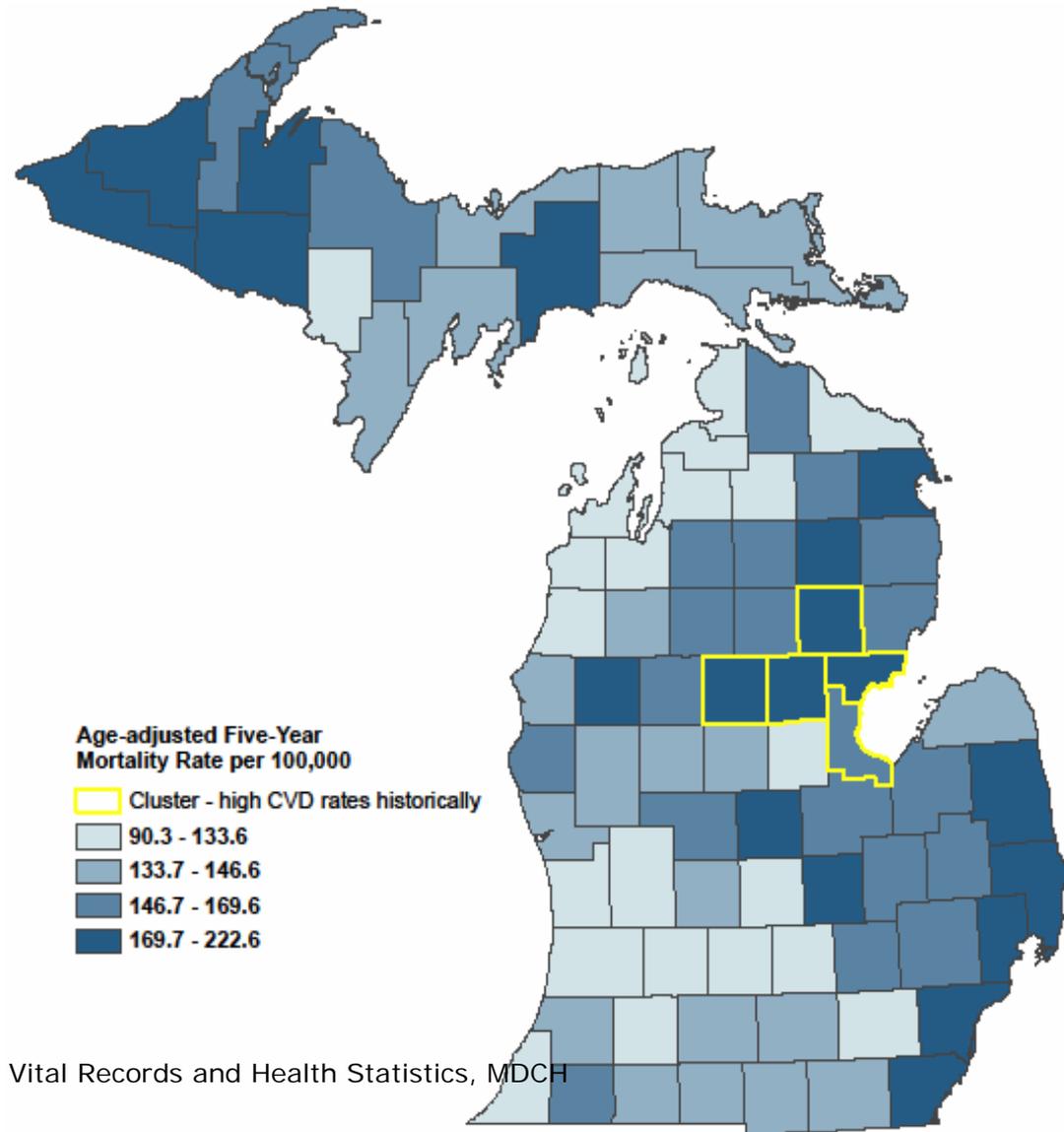
Age-adjusted to the 2000 U.S. standard population



Coronary Heart Disease Mortality Rates 2004-2008

State Average: 158.1 (per 100,000)

National Average*: 143.3 (per 100,000)



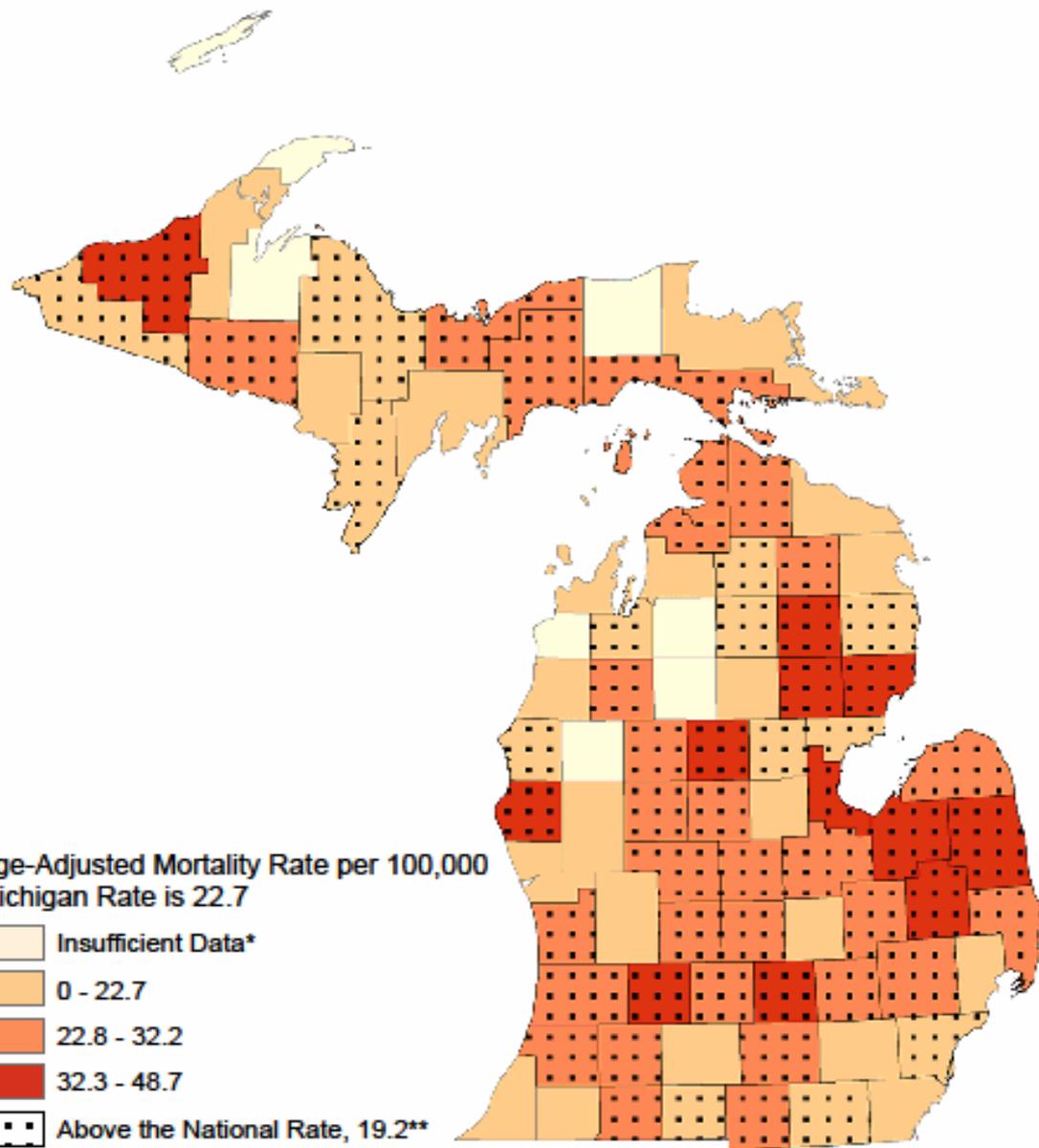
* Using 2003-2007 aggregate data



Heart Failure Mortality Rates 2002-2006

State Average: 22.7 (per 100,000)

National Average: 19.2* (per 100,000)



* Using 2002-2005 aggregate data

Source: Michigan Resident Inpatients Data Files, Division for Vital Records and Health Statistics, MDCH

Age-adjusted to the 2000 U.S. standard population

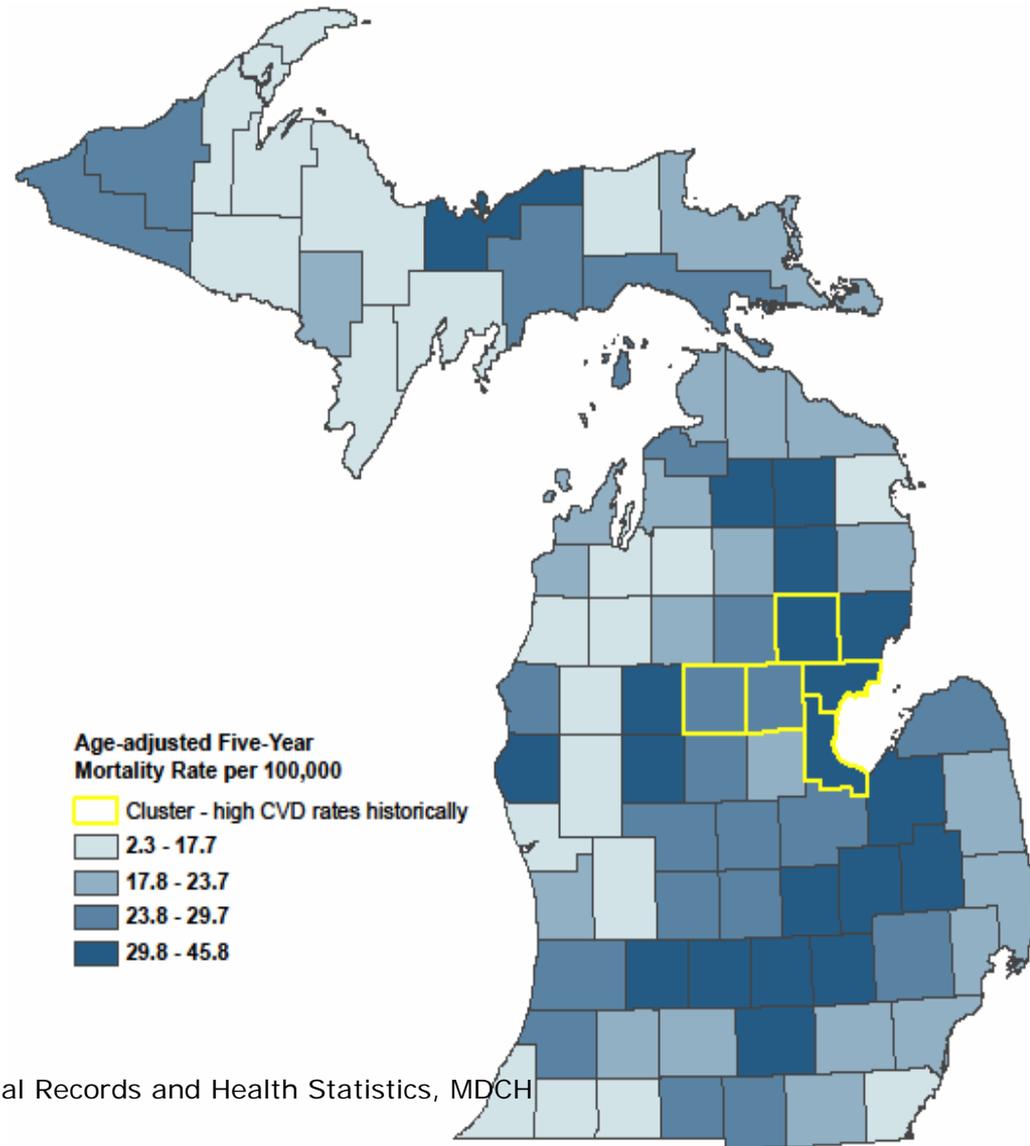


Heart Failure Mortality Rates 2004-2008

State Average: 23.2 (per 100,000)

National Average*: 18.7 (per 100,000)

* Using 2003-2007 aggregate data

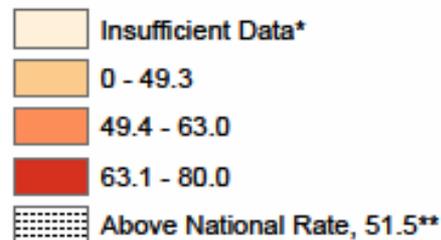




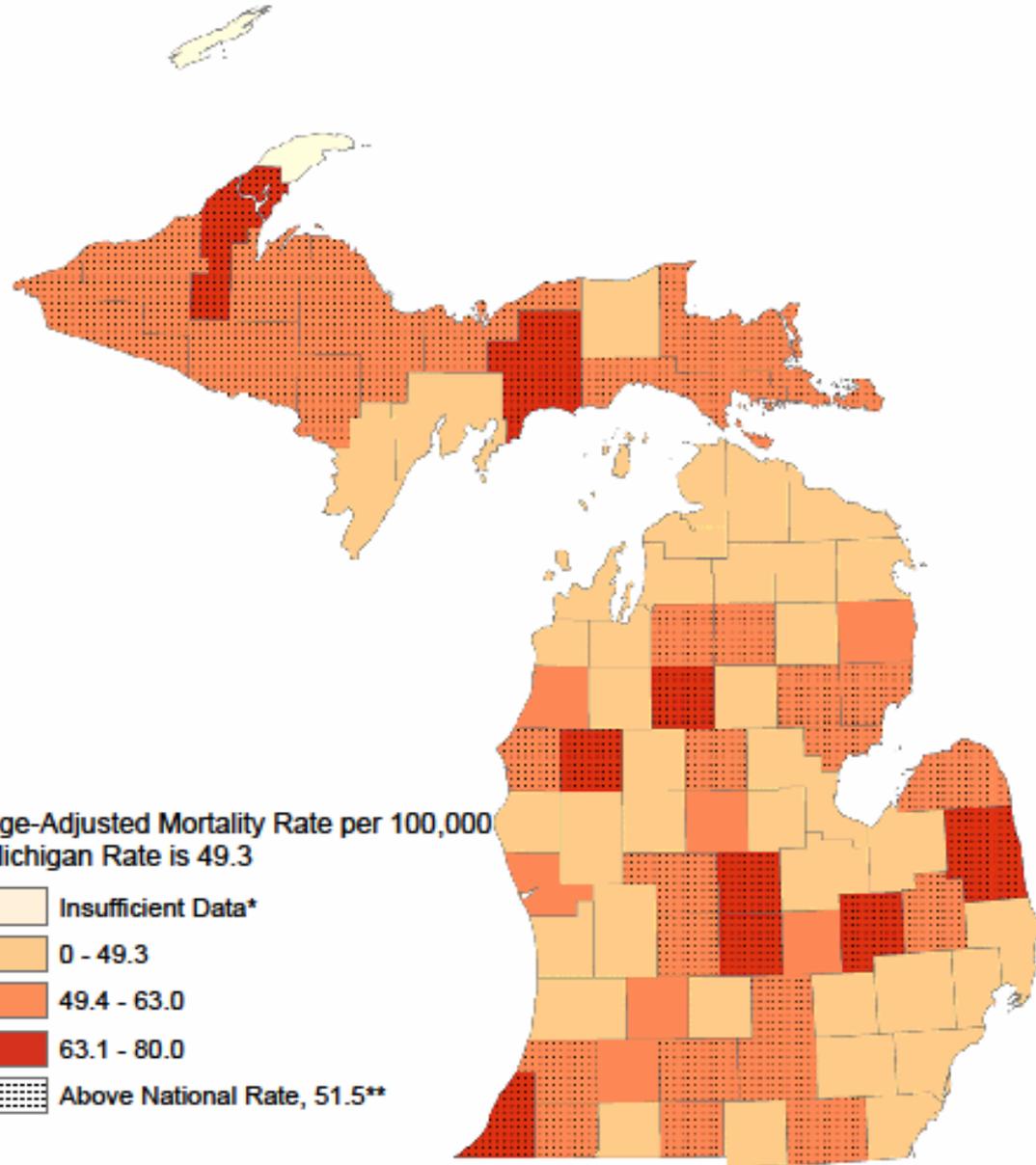
Stroke Mortality Rates 2002-2006

State Average: 49.3 (per 100,000)
National Average: 51.5* (per 100,000)

Age-Adjusted Mortality Rate per 100,000
Michigan Rate is 49.3



* Using 2002-2005 aggregate data



Source: Michigan Resident Inpatients Data Files, Division for Vital Records and Health Statistics, MDCH

Age-adjusted to the 2000 U.S. standard population

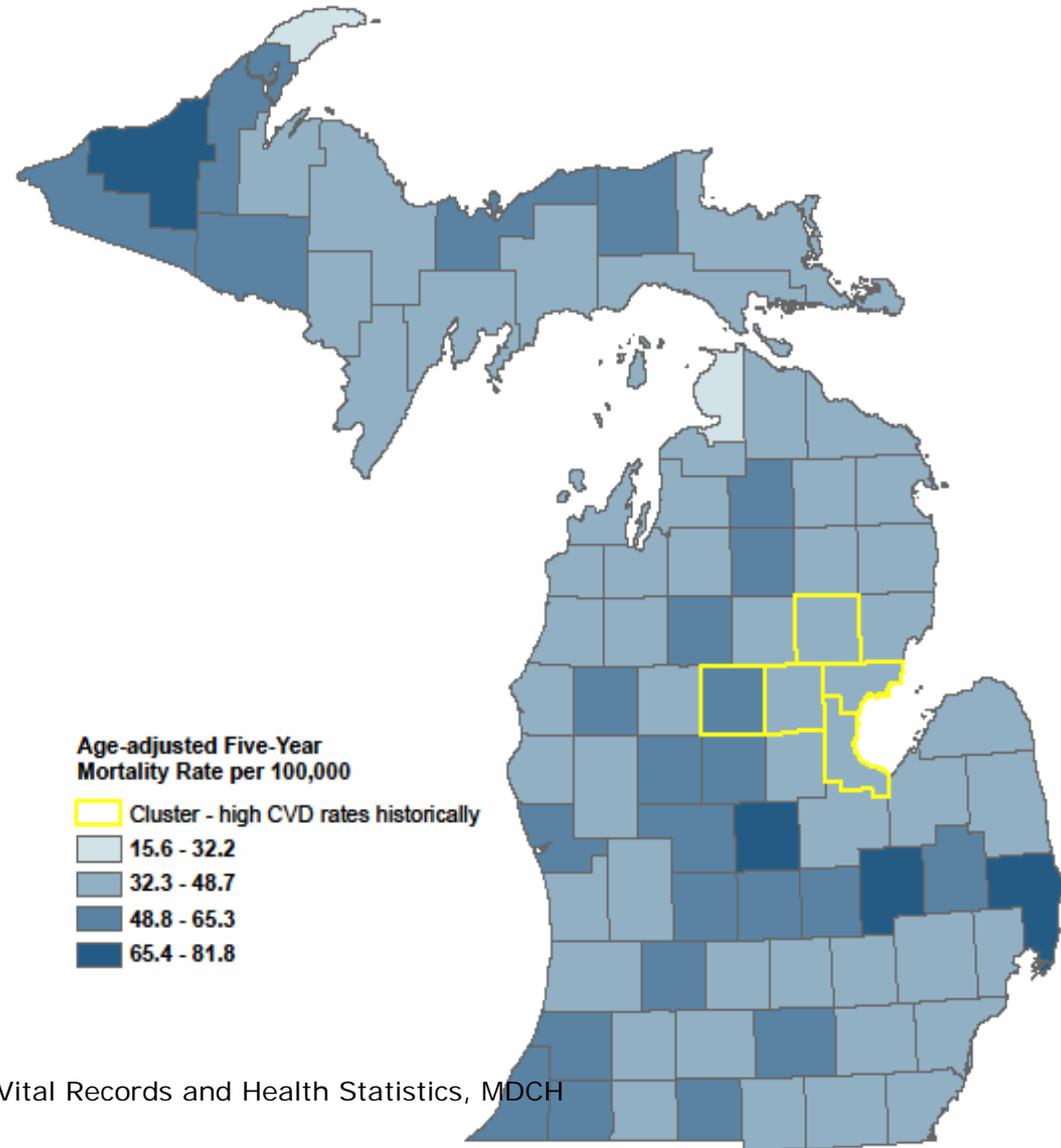


Stroke Mortality Rates 2004-2008

State Average: 45.6 (per 100,000)

National Average*: 47.0 (per 100,000)

* Using 2003-2007 aggregate data





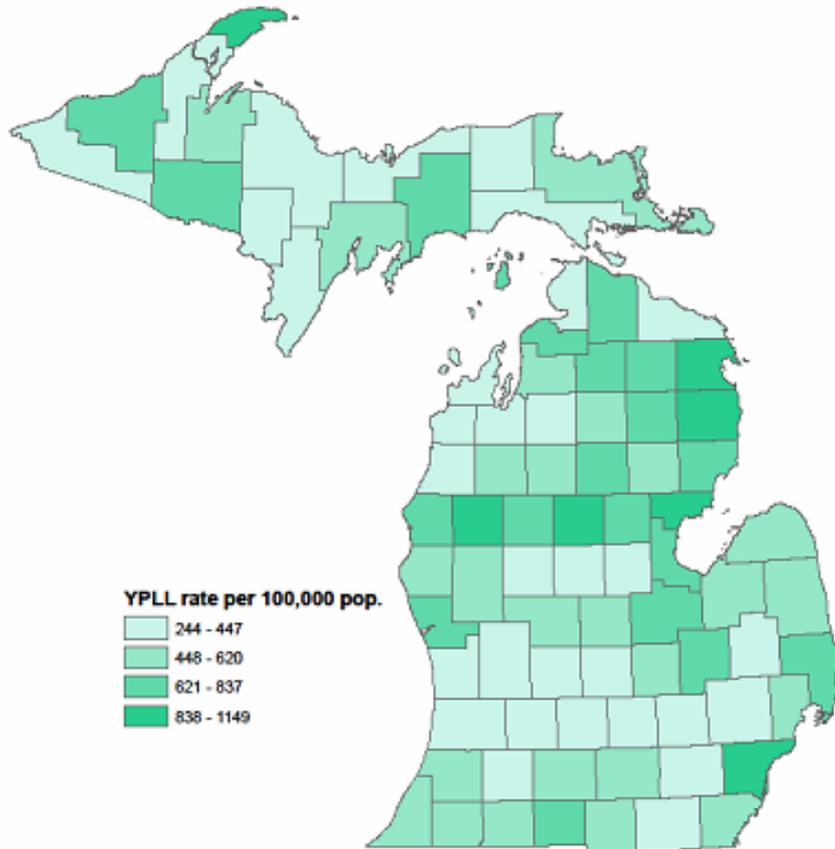
Years of Potential Life Lost (YPLL)

- a measure of mortality that gives more weight to deaths among younger individuals
- an estimate of the average years a person would have lived if they had not died prematurely, using an assumed life expectancy as a reference in the calculation



Years of Potential Life Lost (YPLL): Heart Disease (65 and 75 years of age)

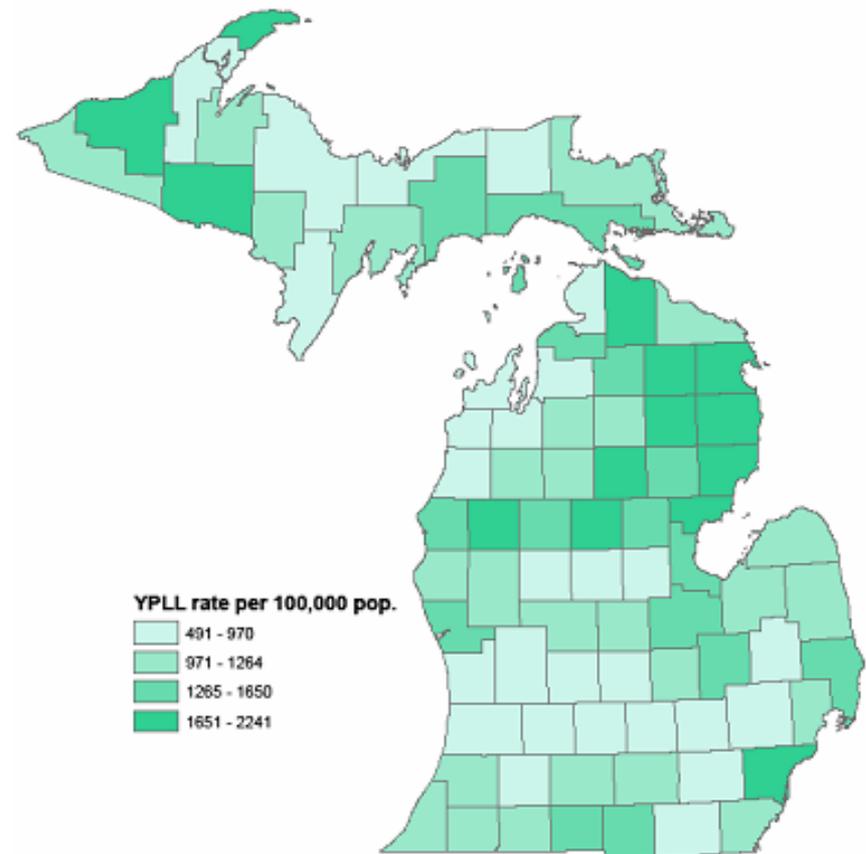
Years of Potential Life Lost from Heart Disease
Michigan, 2004-2008; using age 65 standard



Henry Miller and Adrienne Nickles; March 25, 2011

Source: 2004-2008 Death Files
Vital Records and Health Data Development Section
Michigan Department of Community Health

Years of Potential Life Lost from Heart Disease
Michigan, 2004-2008; using age 75 standard



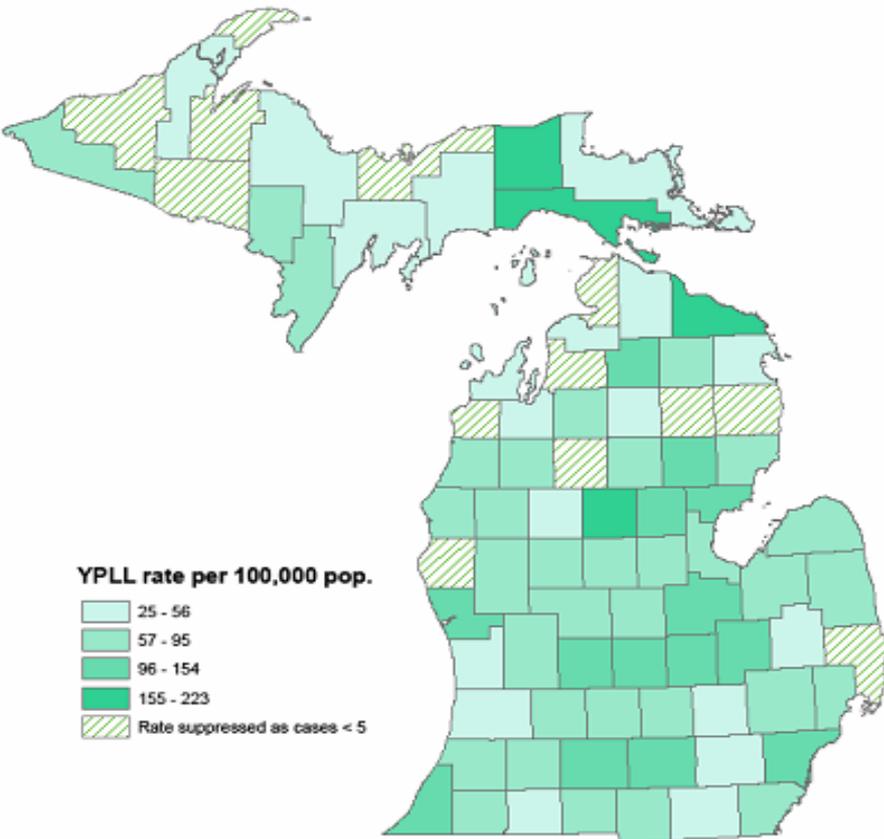
Henry Miller and Adrienne Nickles; March 25, 2011

Source: 2004-2008 Death Files
Vital Records and Health Data Development Section
Michigan Department of Community Health



Years of Potential Life Lost (YPLL): **Stroke** (65 and 75 years of age)

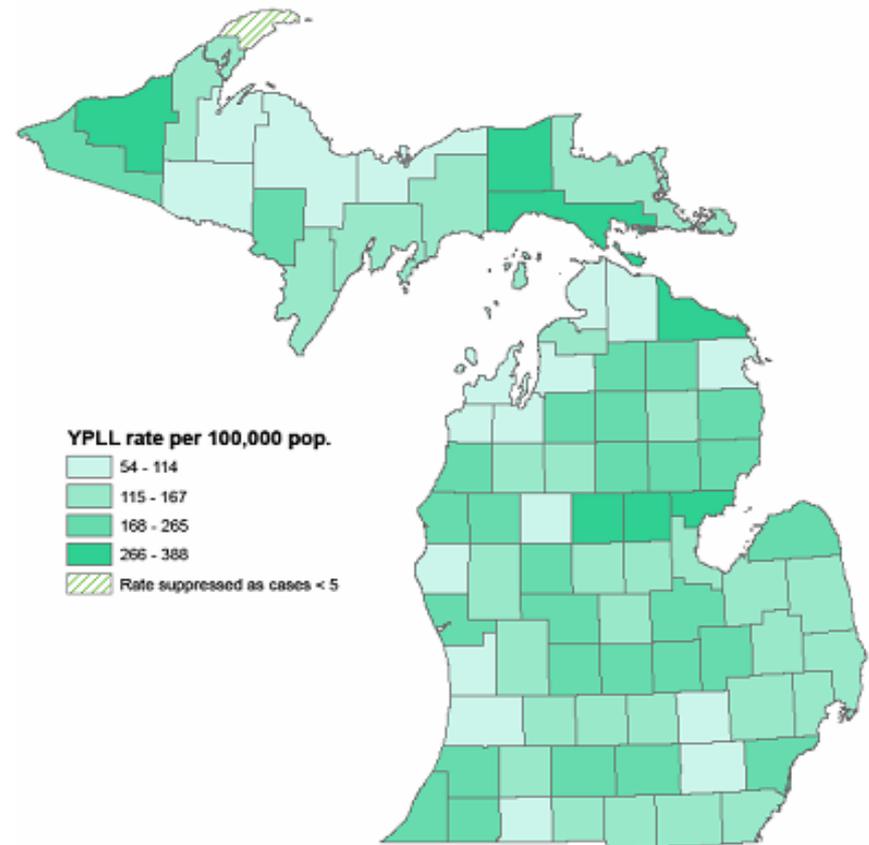
Years of Potential Life Lost from Stroke
Michigan, 2004-2008; using age 65 standard



Henry Miller and Adrienne Nickles; March 28, 2011

Source: 2004-2008 Death Files
Vital Records and Health Data Development Section
Michigan Department of Community Health

Years of Potential Life Lost from Stroke
Michigan, 2004-2008; using age 75 standard



Henry Miller and Adrienne Nickles; March 28, 2011

Source: 2004-2008 Death Files
Vital Records and Health Data Development Section
Michigan Department of Community Health



Risk Factors of CVD in Michigan



Cardiovascular Disease Risk Factors



Smoking

Physical Inactivity

High Blood Pressure

Dietary Behavior

High Blood Cholesterol

Overweight and Obesity

Diabetes

Risk Factor Clustering



Prevalence of CVD Risk Factors, Michigan Adults 1990-2009

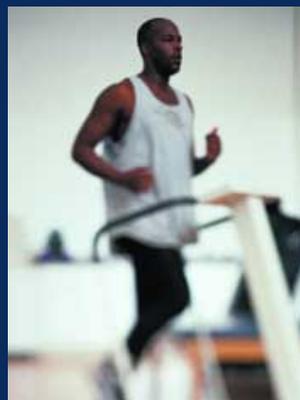
Compared to 2009 National Prevalence

| RISK FACTOR | 1990 | 2001 | 2005 | 2009 | US 2009 | 2009 NATIONAL RANKING |
|--|------|------|------|------|---------|-----------------------|
| Current Smoking | 29.2 | 26.1 | 21.9 | 19.8 | 17.9 | 18 |
| Blood Pressure: Ever Told High | 23.3 | 27.1 | 27.8 | 30.4 | 28.6 | 22 |
| Cholesterol: Ever Told High | 27 | 33.0 | 38.9 | 38.9 | 37.4 | 18 tied |
| Overweight (BMI>25) | 47.4 | 60.4 | 63.1 | 66.6 | 63.2 | 17 |
| Obese (BMI>30) | 14.1 | 24.7 | 26.5 | 30.9 | 27.1 | 10 |
| Fruits & Vegetables: <5 servings/day | NA | NA | 77.2 | 77.8 | 76.5 | 20 |
| No Leisure Time Physical Activity | NA | 23.5 | 22.6 | 24.1 | 23.9 | 28 |
| Diabetes | 4.9 | 7.2 | 8.1 | 9.4 | 8.24 | 15 |

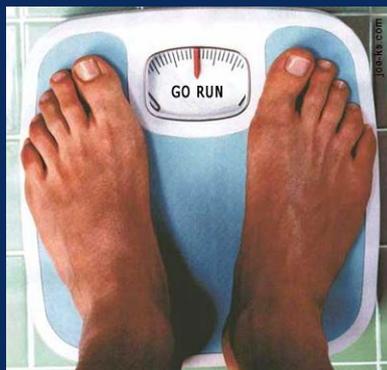


Only 5% of Michigan adults
engage in these four key healthy lifestyles*

**Regular
leisure-
time
physical
activity**



**No
Smoking**



**Healthy
weight**

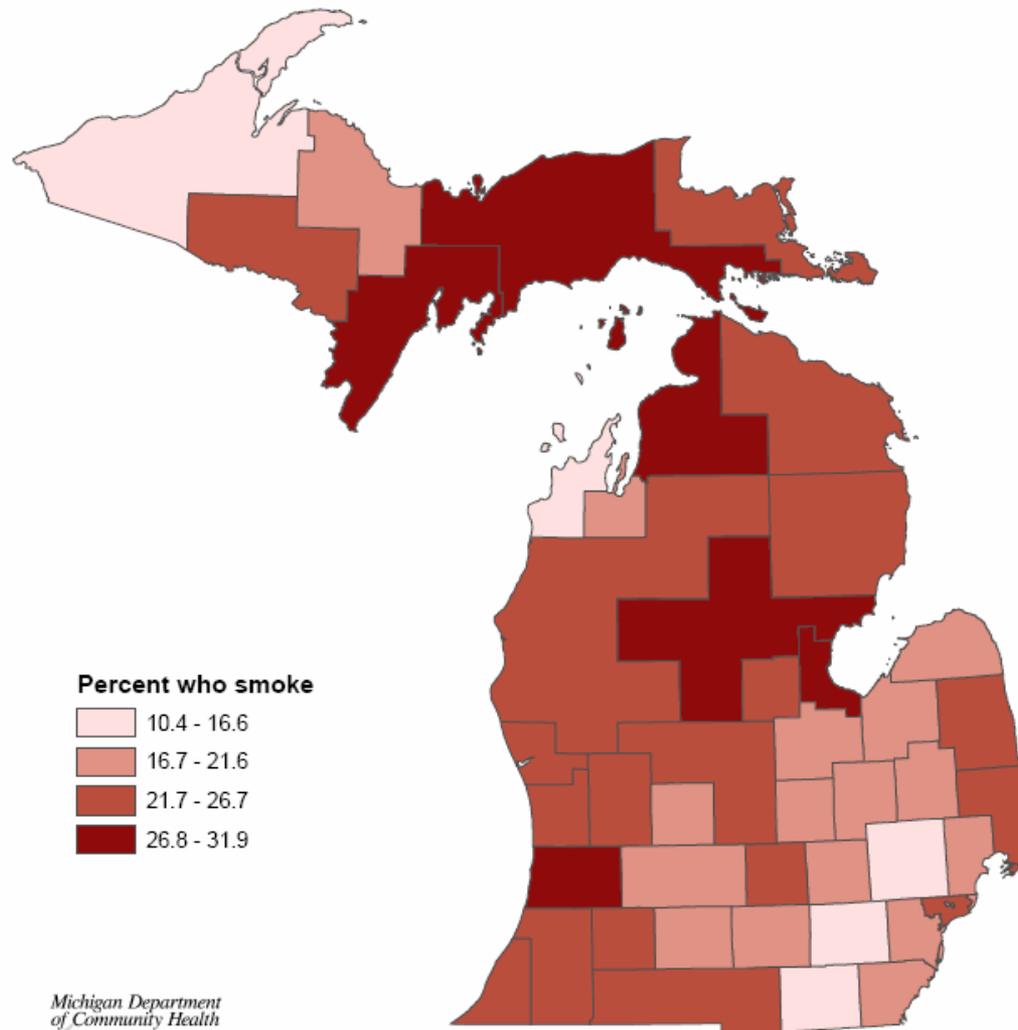


**5 or
more
fruits &
veggies
each
day**

* BRFS, MI, 2009 Actual 4.6%



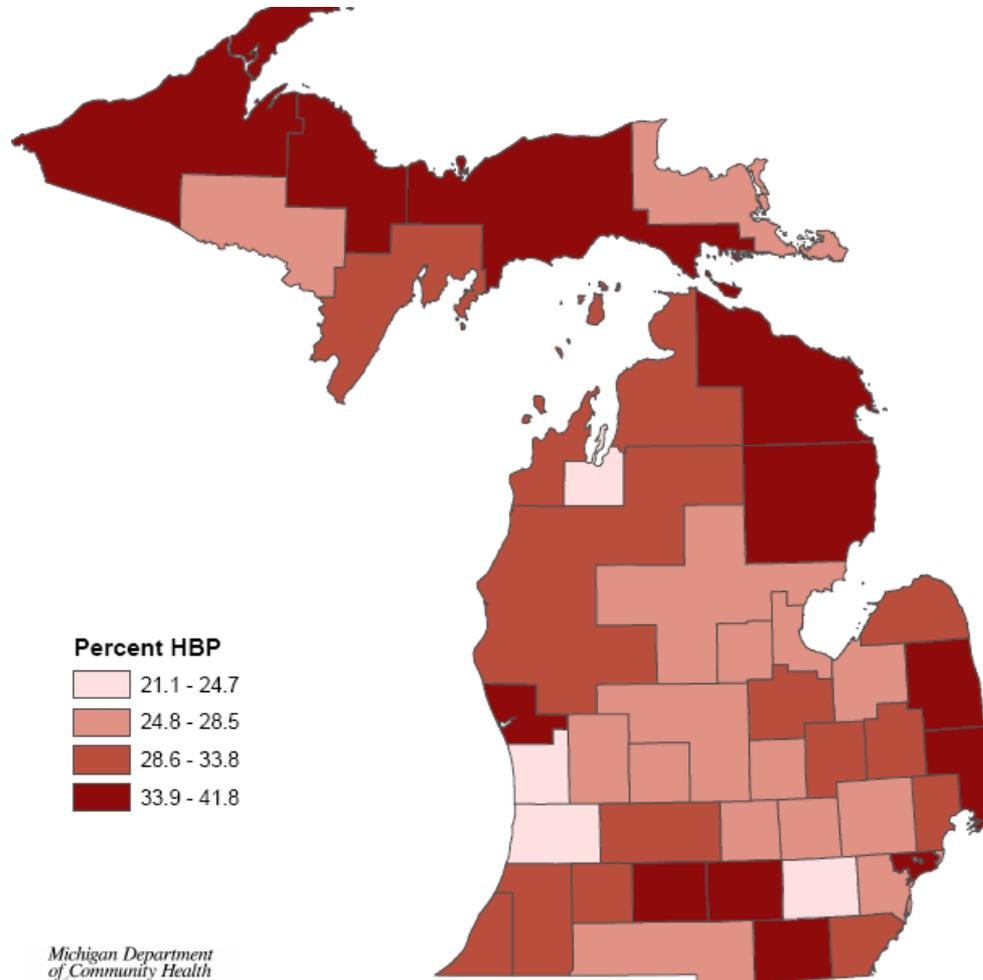
Current Smoking by Local Health Department (LHD)*



* BRFSS
2007-2009



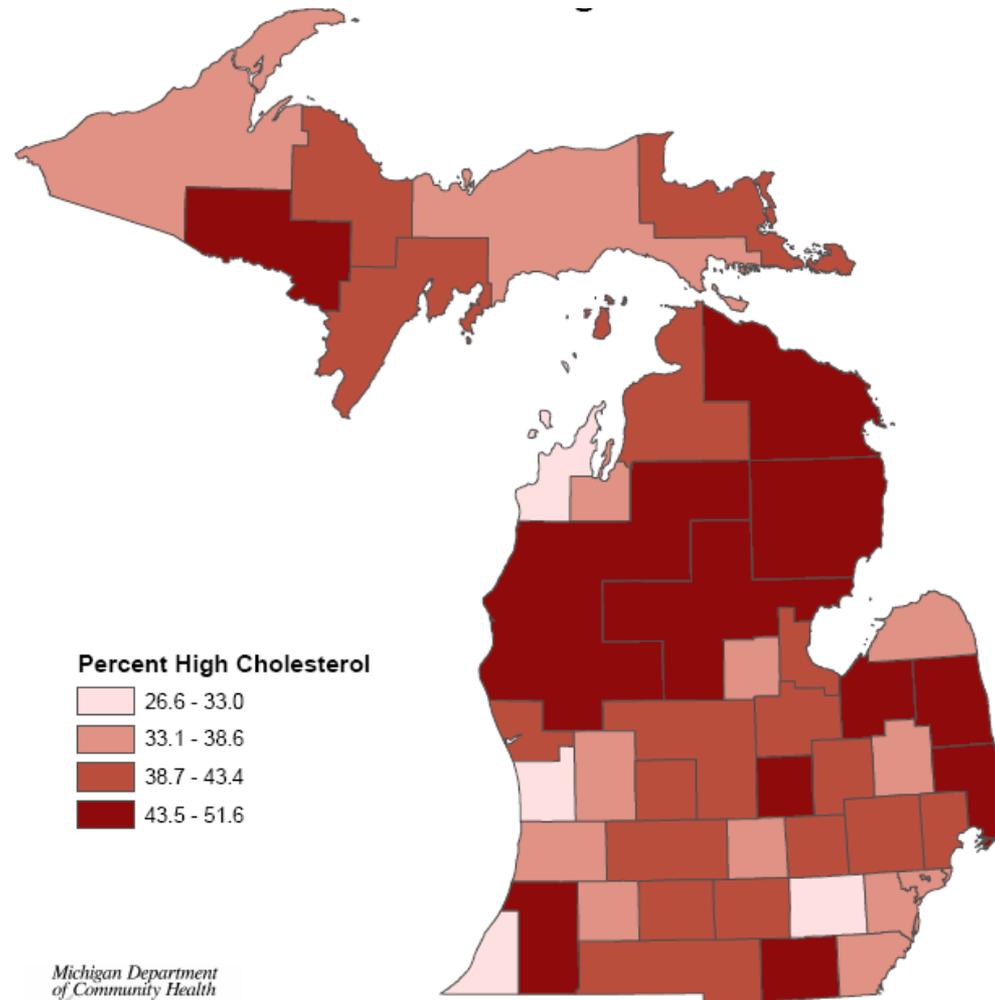
High Blood Pressure by LHD*



* BRFSS
2007-2009



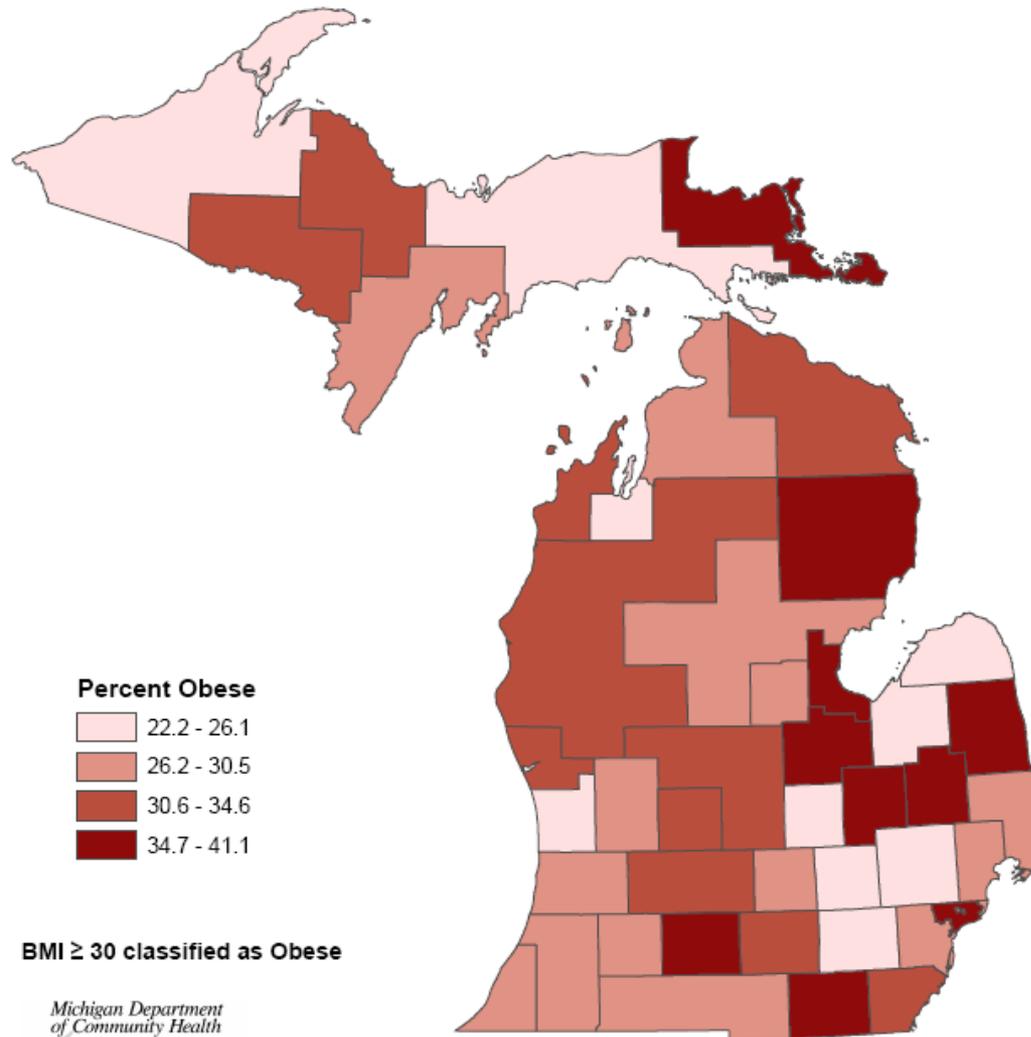
High Blood Cholesterol by LHD*



* BRFSS
2007-2009



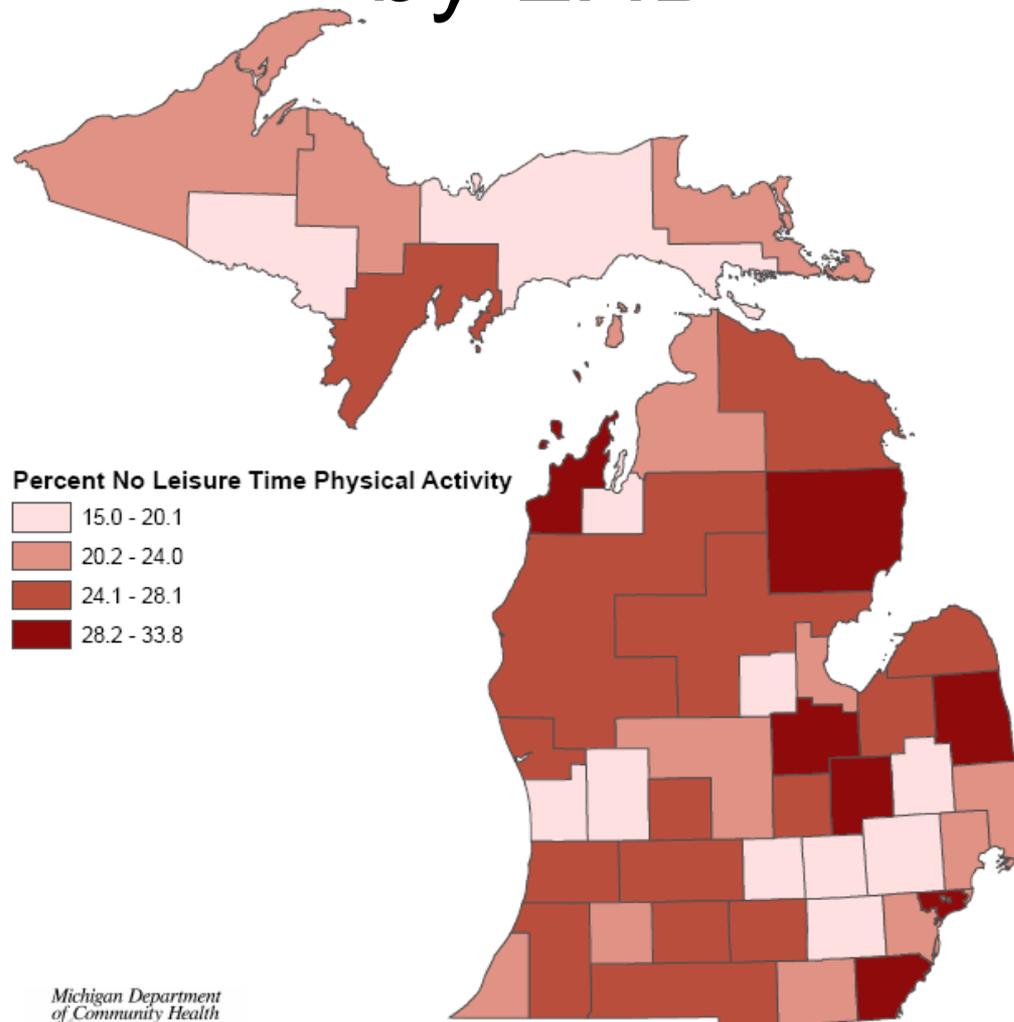
Obesity by LHD*



* BRFSS
2007-2009



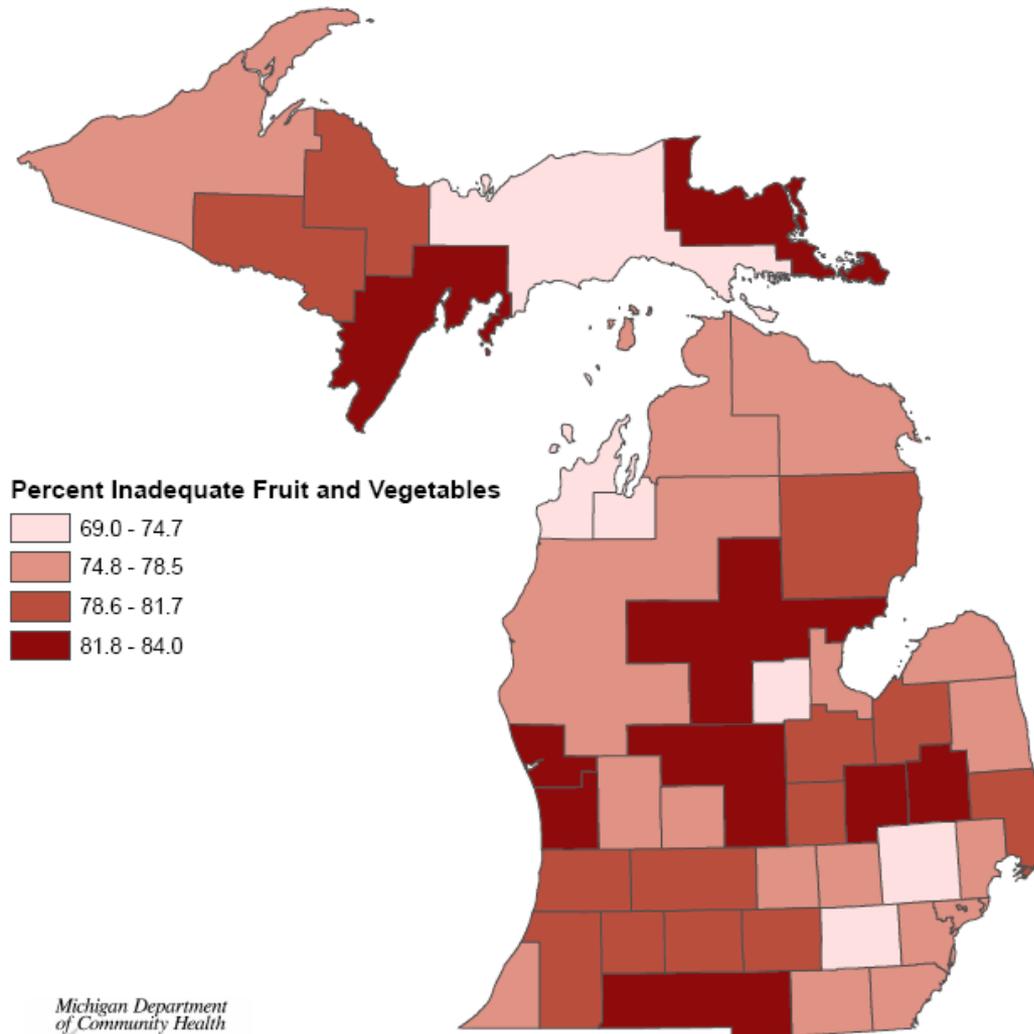
No Leisure Time Physical Activity by LHD*



* BRFSS
2007-2009



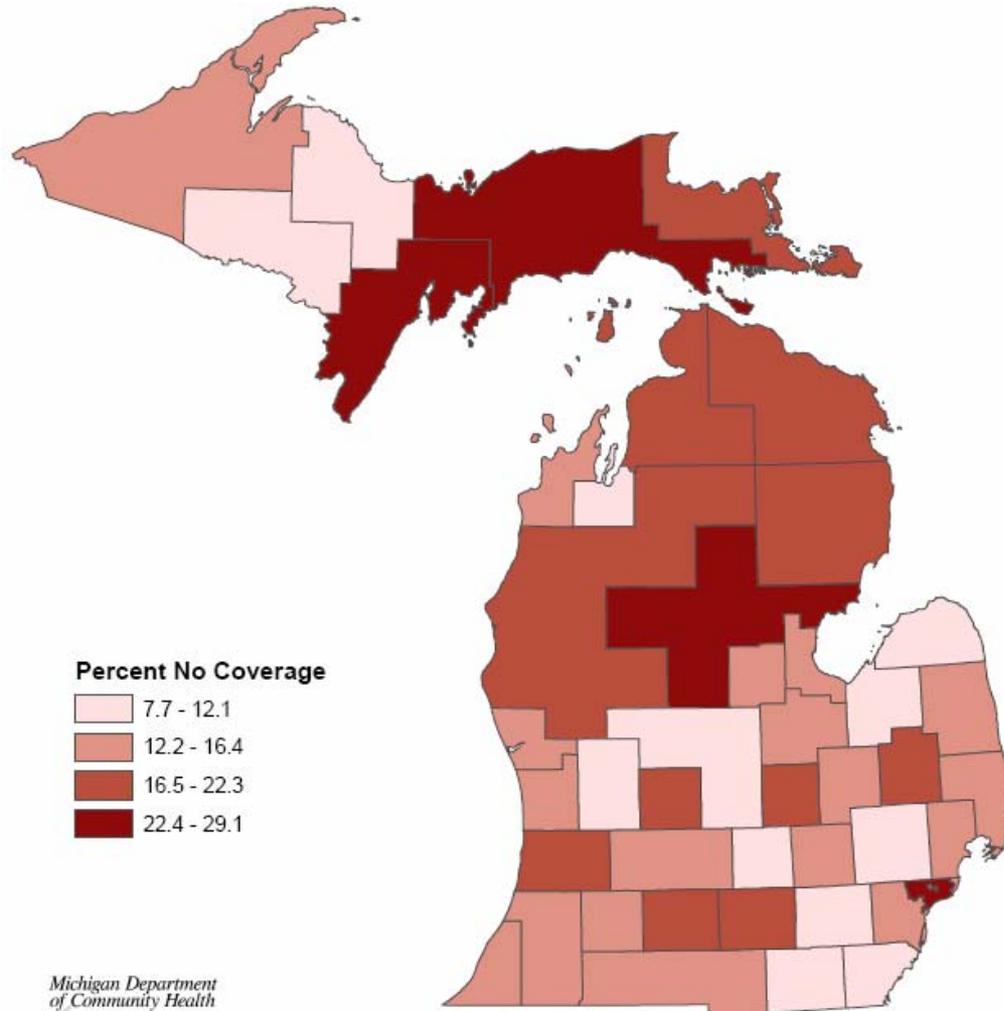
Fruit & Vegetable Intake by LHD*



* BRFS
2007-2009



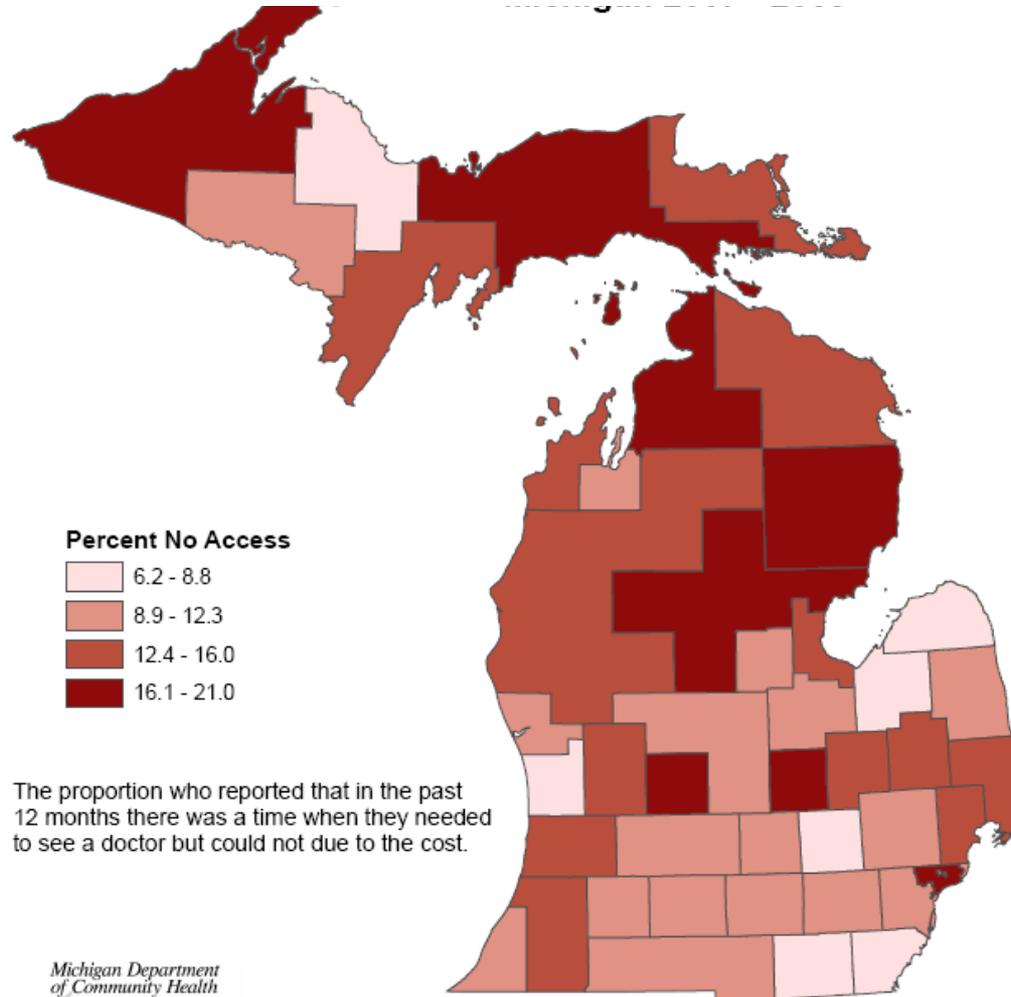
No Healthcare Coverage by LHD*



* BRFS
2007-2009



No Healthcare Access Due to Cost*



* BRFSS
2007-2009



County Health Rankings



County Health Rankings

The County Health Rankings:

A call to action

Home

FAQs

Contact Us

Rankings Methods

Engaging Partners

Finding Solutions

WELCOME TO THE COUNTY HEALTH RANKINGS

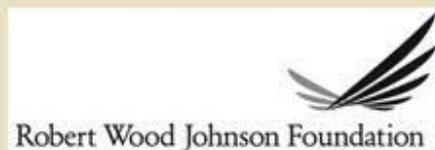
The County Health Rankings

The County Health Rankings are being developed by the University of Wisconsin Population Health Institute through a grant from the Robert Wood Johnson Foundation and will be released in February 2010. This Web site will serve as a focal point for information about the County Health Rankings, a project developed to:

- Increase awareness of the many factors—clinical care access and quality, health-promoting behaviors, social and economic factors, and the physical environment—that contribute to the health of communities
- Foster engagement among public and private decision makers to improve community health and
- Develop incentives to encourage coordination across sectors for community health improvement.

The project builds on the University of Wisconsin Population Health Institute's experience in producing the Wisconsin County Health Rankings annually since 2003.

The Robert Wood Johnson Foundation



The Robert Wood Johnson Foundation focuses on the pressing health and health care issues facing our country. As the nation's largest philanthropy devoted exclusively to improving the health and health care of all Americans, we work with a diverse group of organizations and individuals to identify solutions and achieve comprehensive, meaningful and timely change. For more than 35 years we've brought experience, commitment and a rigorous, balanced approach to the problems that affect the health and health care of those we serve. When it comes to helping Americans lead healthier lives and get the care they need, we expect to make a difference in your lifetime. For more information visit RWJF.org.

PROJECT NEWS

Upcoming webinars:

State Team Webinar: *Media Strategies and Communications*

Led by Burness

Communications and UW
Population Health Institute Staff
Wednesday, January 20 2:00-
3:30pm CST (3:00-4:30pm
EST; 12:00-1:30pm PST)

[Click here to register](#)

Local Health Department

Webinar: *Communication
Toolkits and Key Messages for the
Media and Stakeholders*

Led by Burness

Communications and UW
Population Health Institute Staff
Tuesday, February 2 2:00-
3:30pm CST (3:00-4:30pm
EST; 12:00-1:30pm PST)

[Click here to register](#)

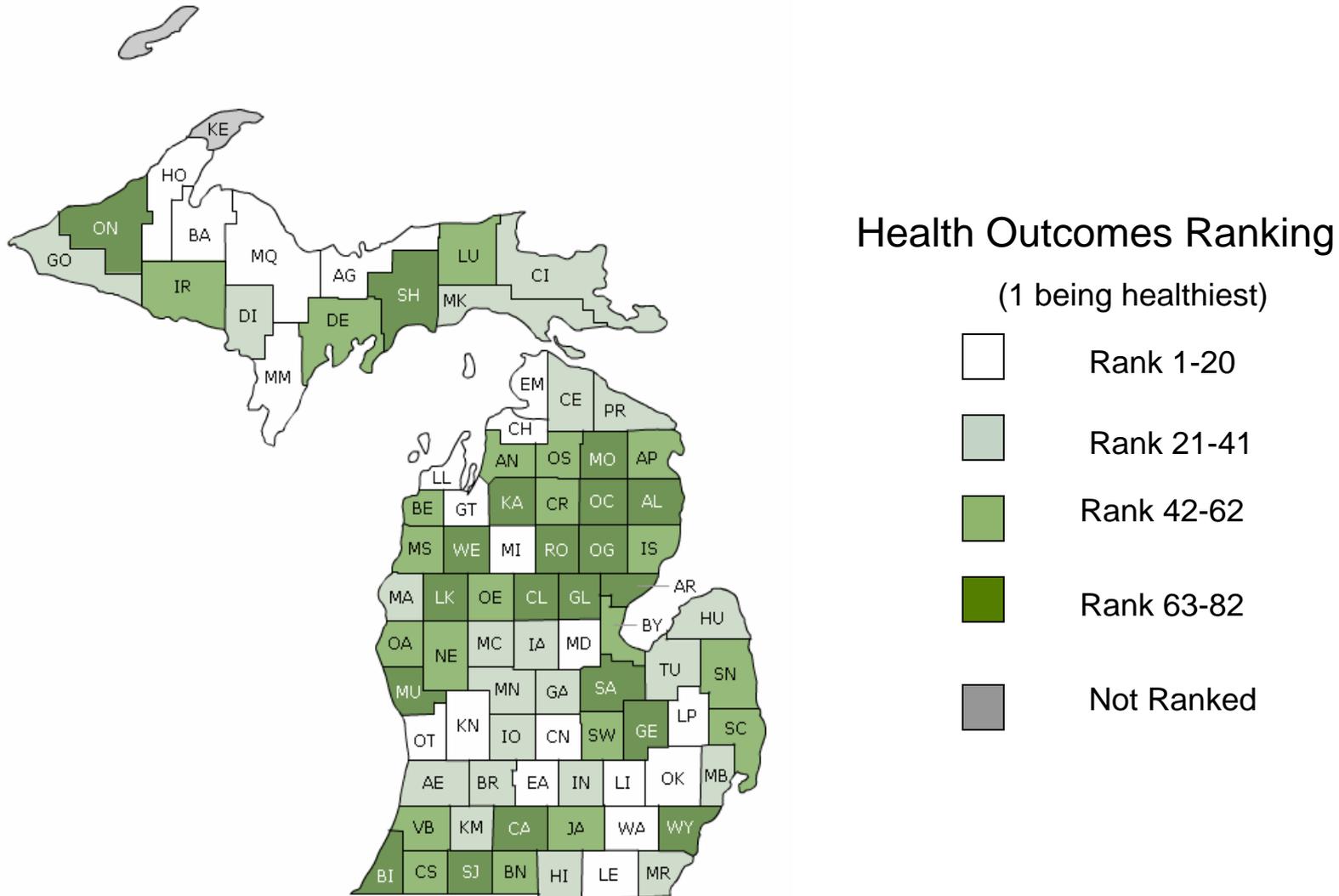
Coming soon:

- Recording and slides from Feb 19 Local Health Department webinar

Now available:

- [Updated list of metrics \(with weights\)](#)
- [Introductory webinar for local health agencies \(recorded 12/7/09, 22 minutes\)](#)

County Health Rankings: Michigan





Health Rankings: 5 Counties

| | Health Outcomes* | Risk Factors* |
|---------|------------------|---------------|
| Arenac | 63 | 65 |
| Bay | 46 | 49 |
| Clare | 82 | 76 |
| Gladwin | 76 | 80 |
| Ogemaw | 66 | 64 |

* Out of 82 counties with 82 being highest. Source: www.countryhealthrankings.org (2011)



Summary of Findings:

- The burden of overall CVD and HD mortality is higher in Michigan when compared to the national mortality trend, yet the rates have been consistently decreasing.
- Healthy People 2010 goals for coronary heart disease and stroke mortality rates have been reached and surpassed and are headed towards reaching the new Healthy People 2020 goals.
- Part 1 of this series showed that Blacks continue to have higher rates in Michigan and higher than the national Black rate.

Summary of Findings From 5 County Study:

- County-level mortality maps indicate a persistent CVD, HD, CHD, and HF burden in a contiguous five county area consisting of Arenac, Bay, Clare, Gladwin and Ogemaw.
- County Health Rankings lists those five counties in the higher group with some of the worst in the state for health outcomes and risk factors.



Next Steps

- Surveillance and reporting of the mortality, morbidity and associated risk factors for CVD will continue. Reports and presentations will be available online at www.michigan.gov/cvh.
- Planning continues to explore, report and discuss the 5 County cluster.
- A background summary document, power point and discussion questions have been developed to present to regional local leaders and decision makers.
- MDCH and other leaders and experts have been solicited to guide the five county area study.
- Michigan Public Health Institute Center for Data Management and Translational Research (MPHI-CDMTR) was contracted to assist in the development of a report concerning this study, discussion sessions and evaluation.



Michigan Quality Improvement Consortium (MQIC)



MQIC 2010 Performance Report*:

Selected CVD Measures

| (Community Rates) | LDL-C level <100 mg.dl HEDIS 2010 | Statins for CVD Pts Non-HEDIS 2009 | % Diagnosed HBP Non-HEDIS 2009 | HBP Controlled HEDIS 2010 |
|--------------------|--|--|---|--|
| Commercial | 62.35% | 77.47% | 14.9% | 69.7% |
| Medicaid | 42.36% | 71.51% | 10.88% | 58.7% |
| Medicare | 65.34% | 81.89% | 46.4% | 69.35% |
| Ntl HEDIS | Commercial: 59.2% Medicaid: 41.2% Medicare: 55.7% | NA | NA | Commercial: 64.1% Medicaid: 55.3% Medicare: 59.8% |
| MQIC Best Practice | Commercial: 69.74% Medicaid: 48.46% Medicare: 73.39% | Commercial 81.69% Medicaid: 88.89% Medicare: 84..38% | Commercial: 11.38% Medicaid: 4.01% Medicare: 31.48% | Commercial: 73.06% Medicaid: 67.88% Medicare: 74.09% |

* Michigan Quality Improvement Consortium (MQIC) 2010 Annual Performance Measurement Report, March 31, 2011 (online at www.mqic.org) HEDIS = Healthcare Effectiveness Data Information Set (www.ncqa.org)



Questions?

- Contact:

- Adrienne Nickles

- nicklesa@michigan.gov

The Michigan Heart Disease and Stroke Surveillance Updates Part I and II can be found here:

http://www.michigan.gov/documents/mdch/CVD_ImpactReport_Updatefor_MCA_Final_10_19_10_336718_7.pdf or you can go to the Section website and look on the “What’s New page.”



Resources

- MDCH, Cardiovascular Health, Nutrition and Physical Activity Section

www.michigan.gov/cvh

- American Heart Association 2011 Statistical Update

http://my.americanheart.org/professional/General/Heart-Disease-and-Stroke-2011-Statistical-Update_UCM_424014_Article.jsp

- Michigan Community Health Information from Vital Statistics

<http://www.mdch.state.mi.us/pha/osr/chi/index.asp>

- Risk Factor Data by Community

www.michigan.gov/brfs

- County Health Rankings

www.Countyhealthrankings.org