Five County Cardiovascular Disease Study

Heart Disease and Stroke Prevention Unit

May 2011

Consent to Participate

Your participation in this Town Hall discussion is totally voluntary. You can stop participating at any time and decide not to answer any questions. Your continued participation in the meeting will be considered your consent.

We will be audio taping the meeting as well as taking notes.

Topics

Overview of Issue

Background

Demographics

Hospitalization/Mortality Data

County Health Rankings

Cardiovascular Disease (CVD) Risk Factors

Community Resources

MDCH Program Initiatives

Questions and Discussion

Overview of Issue

In 2008 MDCH staff noted a contiguous five county area with high hospitalization rates for CVD, Heart Disease, Coronary Heart Disease, and Heart Failure.

Repeated analysis and further exploration of CVD risk factors, demographics and socioeconomic factors supported this was a higher risk area.

CVD if often referred to as heart disease and stroke. Heart disease includes heart attack and other types of heart disease.

Five Counties: Arenac, Bay, Clare, Gladwin, and Ogemaw
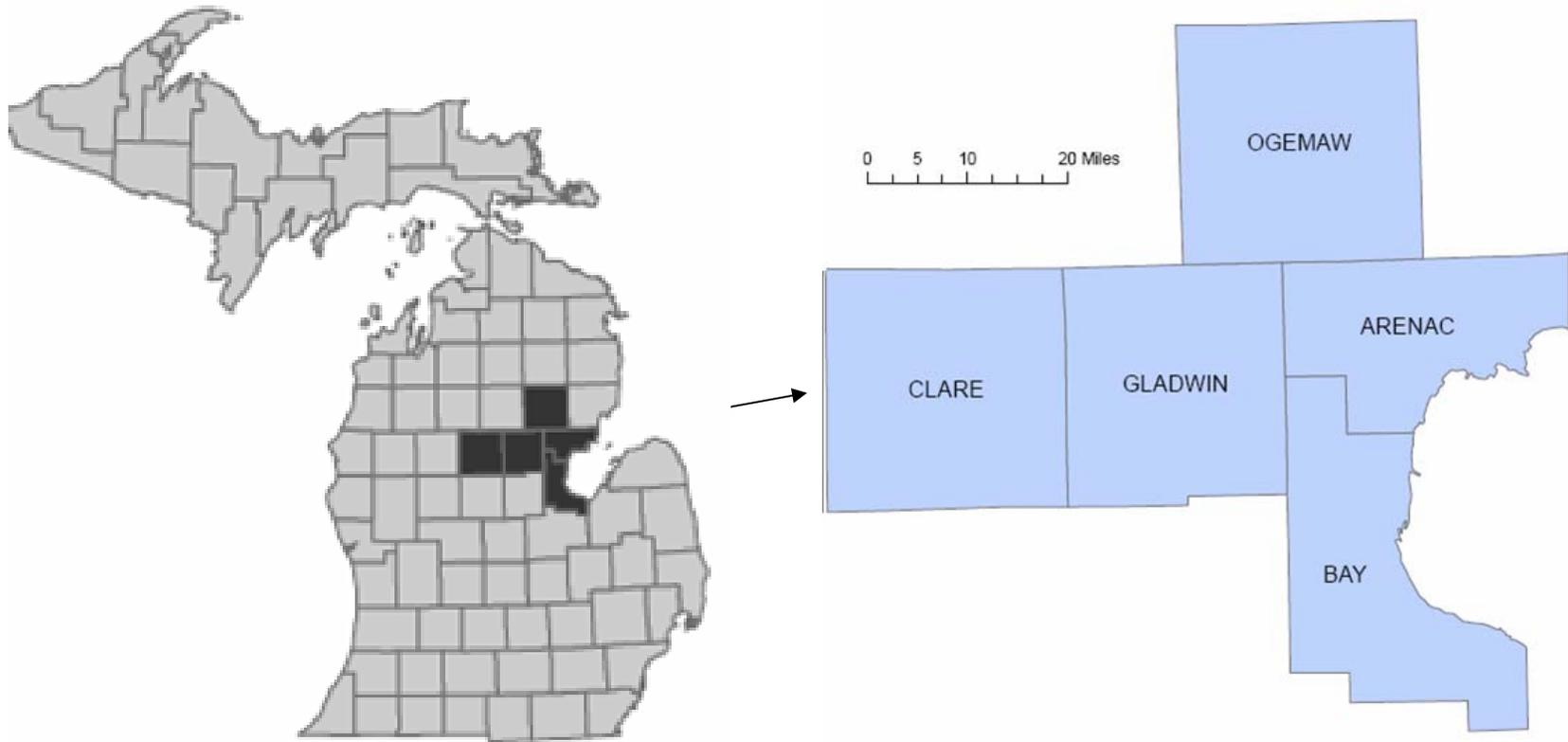
Initial Cardiovascular Disease (CVD) Hospitalization Map, 2002-2006
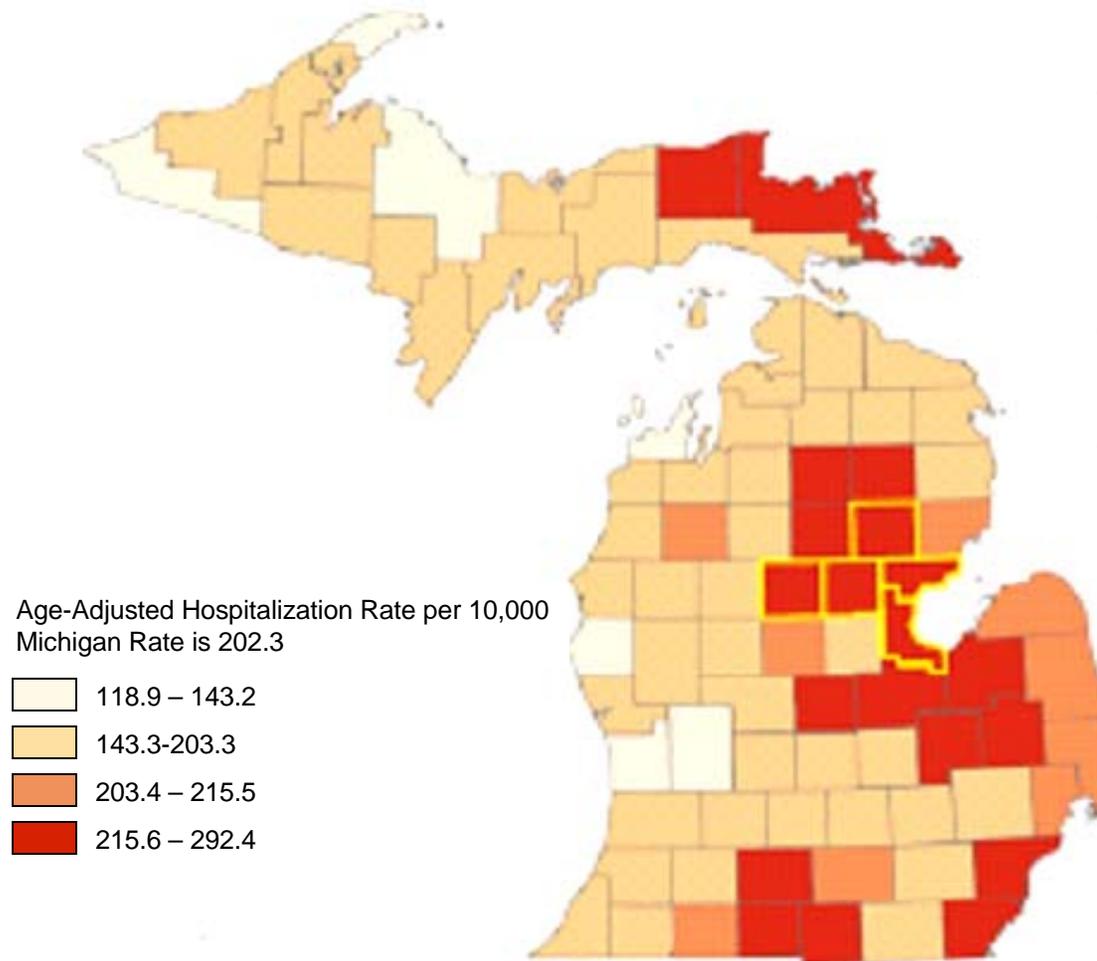
Similar high rates were also seen in:

- **heart disease**

- **heart failure**

- **coronary heart**

  disease

Age-Adjusted Hospitalization Rate per 10,000
Michigan Rate is 202.3

|	
	118.9 – 143.2
	143.3-203.3
	203.4 – 215.5
	215.6 – 292.4

Study Purpose

Explore additional health related and disease specific data to determine if geographical disparities persist among the five county cluster

Explore possible explanations and solutions with community members

Study Team

Velma Theisen, Manager HDSP Unit
Adrienne Nickles, HDSP Epidemiologist
Henry Miller, HDSP Evaluator, GIS
Christi Demitz, HDSP Pub. Hlth. Consultant
Stephanie Thompson, MPHI CDMTR
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Demographics:

Population density from 2010 Census

Region is largely low density

Persons per Square Mile by Census Tract

Less than 200 (633)
200 to 1,249 (522)
1,250 to 2,999 (588)
3,000 to 5,99 (699)
6,00 to 60,800 (315)
----- City
___ County

Michigan Department Of Community Health
MDCH
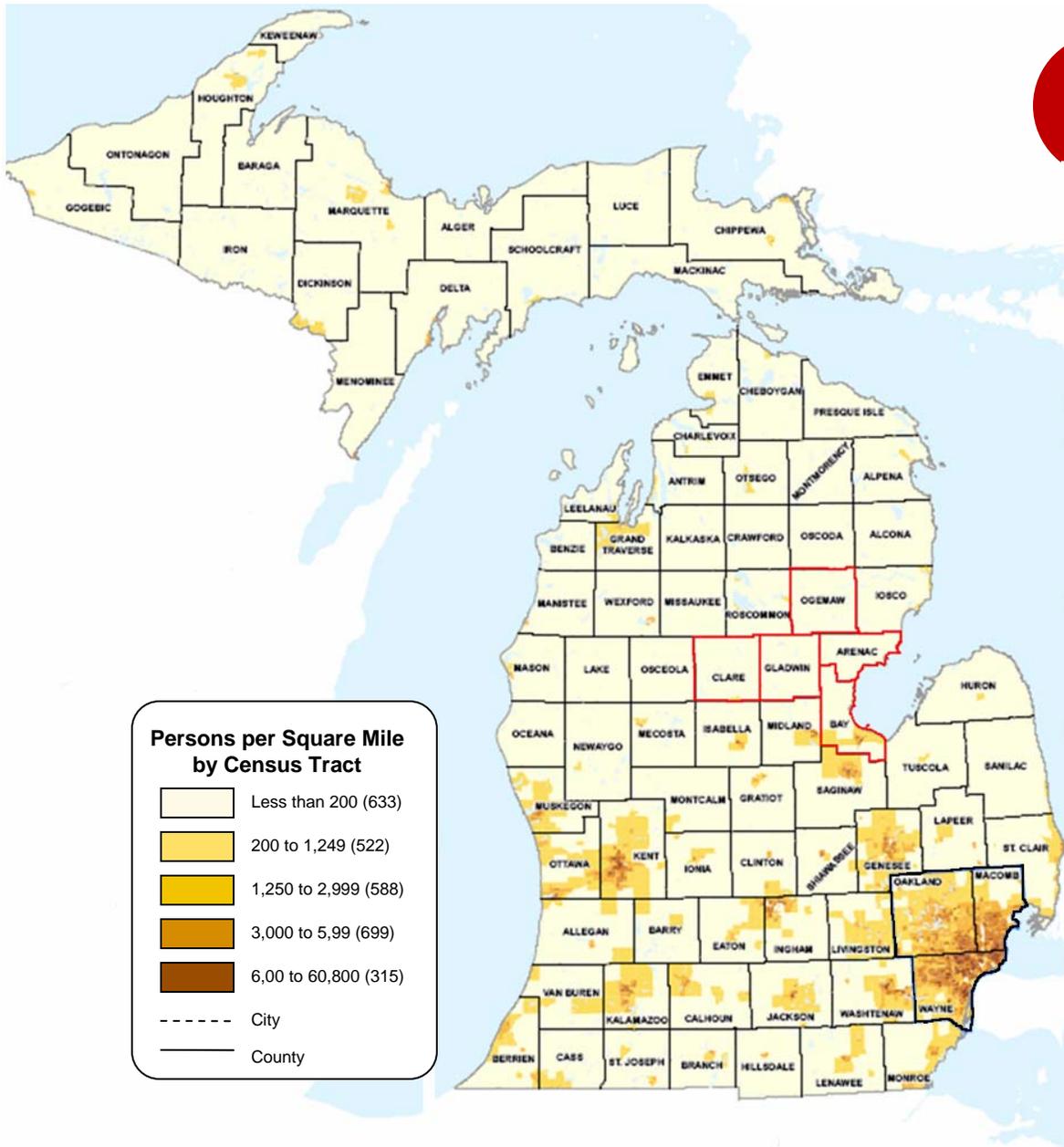
Demographics:

Urban – Rural
Classification,
2006

Region is
primarily rural

Urban-Rural Classification

- Large central metro
- Large fringe metro
- Medium metro
- Small metro
- Micropolitan (nonmetro)
- Noncore (nonmetro)

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Of Community Health**

M DCH
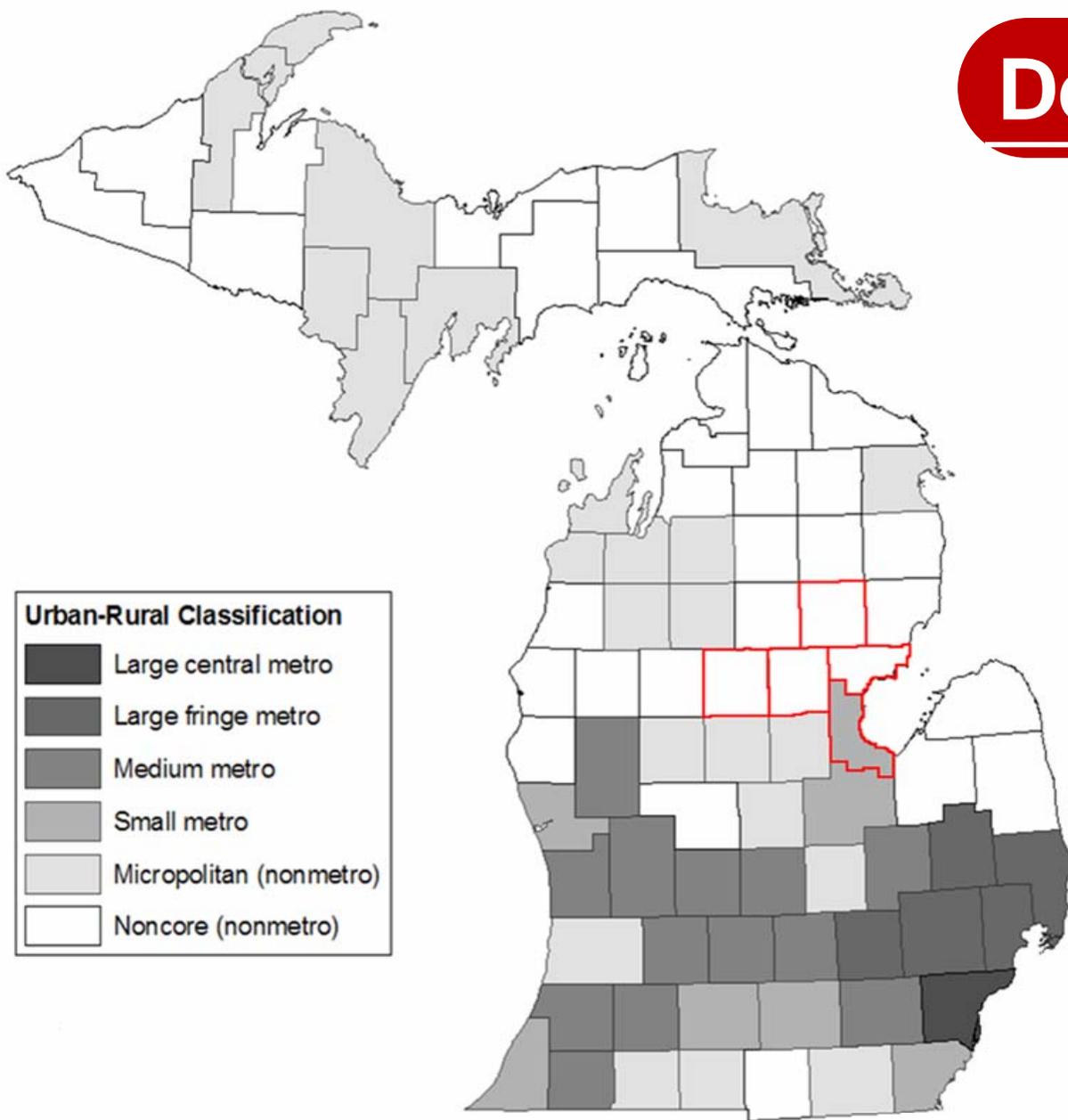
Demographics: Population Age 65 and Older, 2002

Pct. 65 and older
Quintiles
- 8.3 - 11.9
- 12.0 - 13.6
- 13.7 - 15.3
- 15.4 - 18.1
- 18.2 - 25.1
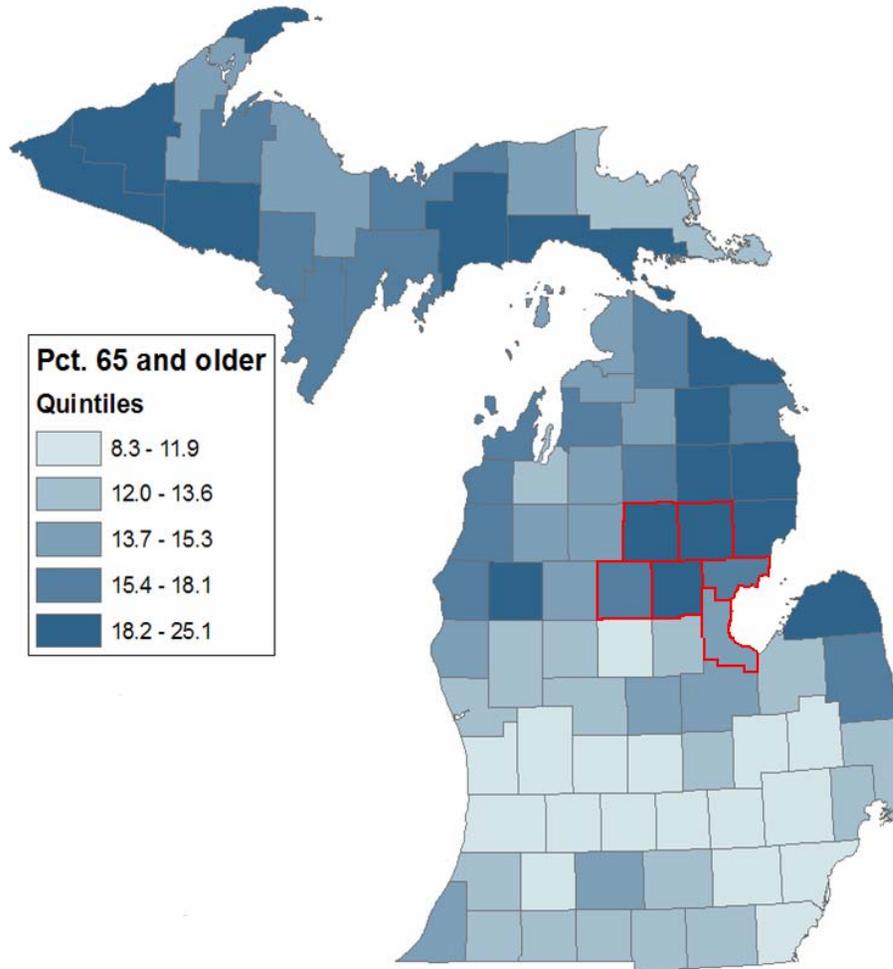
Region has a high population of senior citizens

# **Demographics**: Percent Age 25+ with Less Than a High School Education
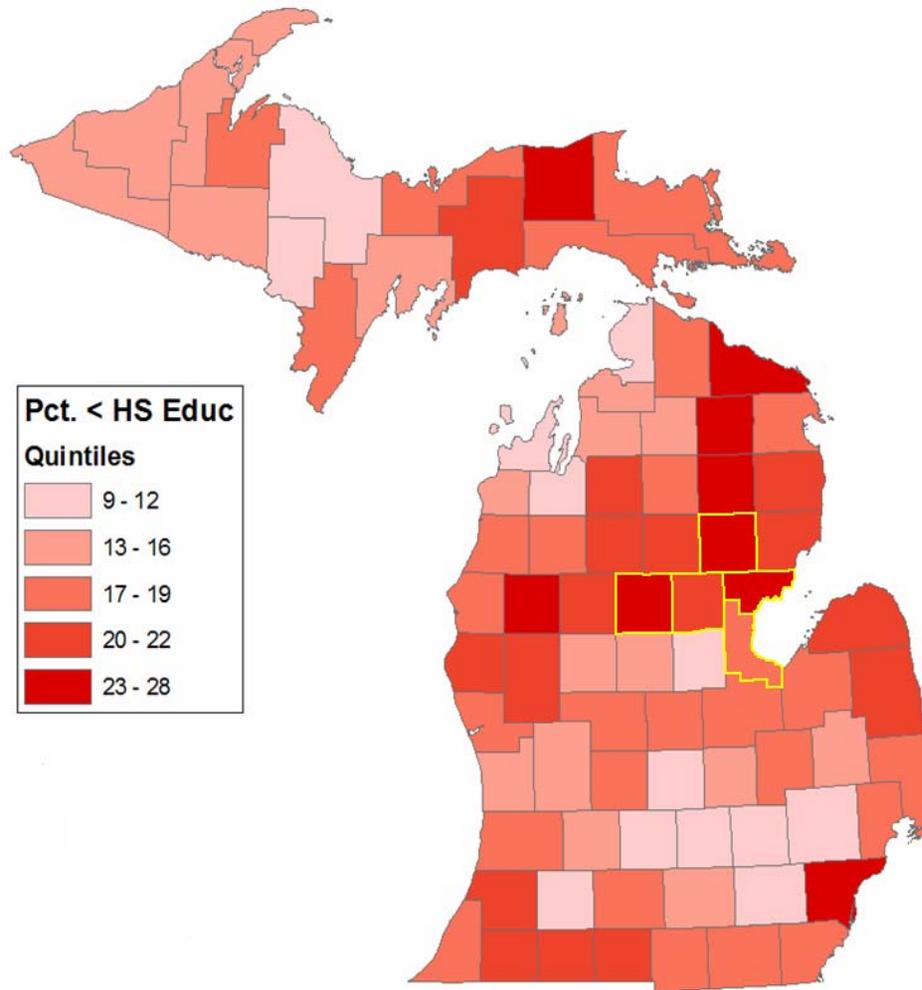
Region has higher percent population with less than a high school education

Pct. < HS Educ
Quintiles
9 - 12
13 - 16
17 - 19
20 - 22
23 - 28

Demographics: Percent Living in Poverty, 2004
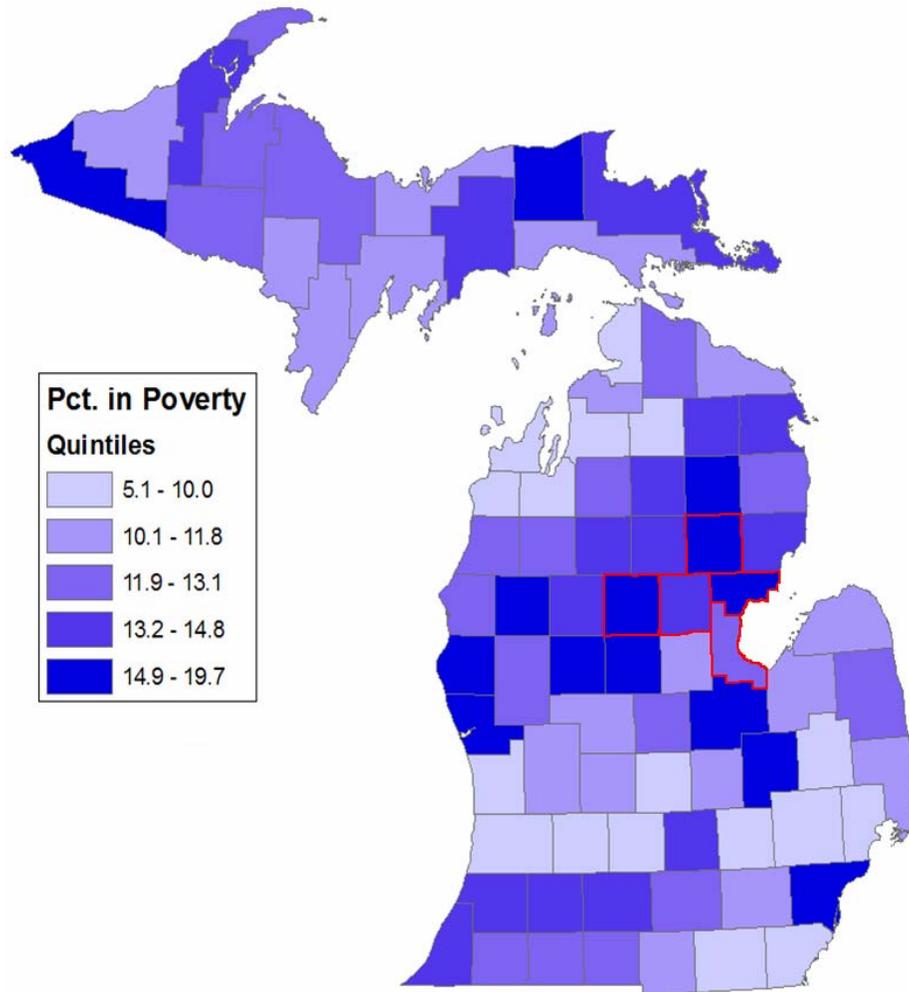
Region has higher rates of poverty

Pct. in Poverty
Quintiles

	5.1 - 10.0
	10.1 - 11.8
	11.9 - 13.1
	13.2 - 14.8
	14.9 - 19.7

Demographics: Percent Unemployed 2004 and 2010

2004

2010

Pct. Unemployed
Quintiles

- 3.4 - 6.5
- 6.6 - 7.3
- 7.4 - 8.5
- 8.6 - 9.7
- 9.8 - 13.8

All but 4 counties have unemployment rates over 10%

- Five-county Cluster

Unemployment Percent

- 6.0 - 6.5
- 6.6 - 9.7
- 9.8 - 13.8
- 13.9 - 24.0

(not seasonally adjusted)

Source: U.S. Bureau of Labor Statistics

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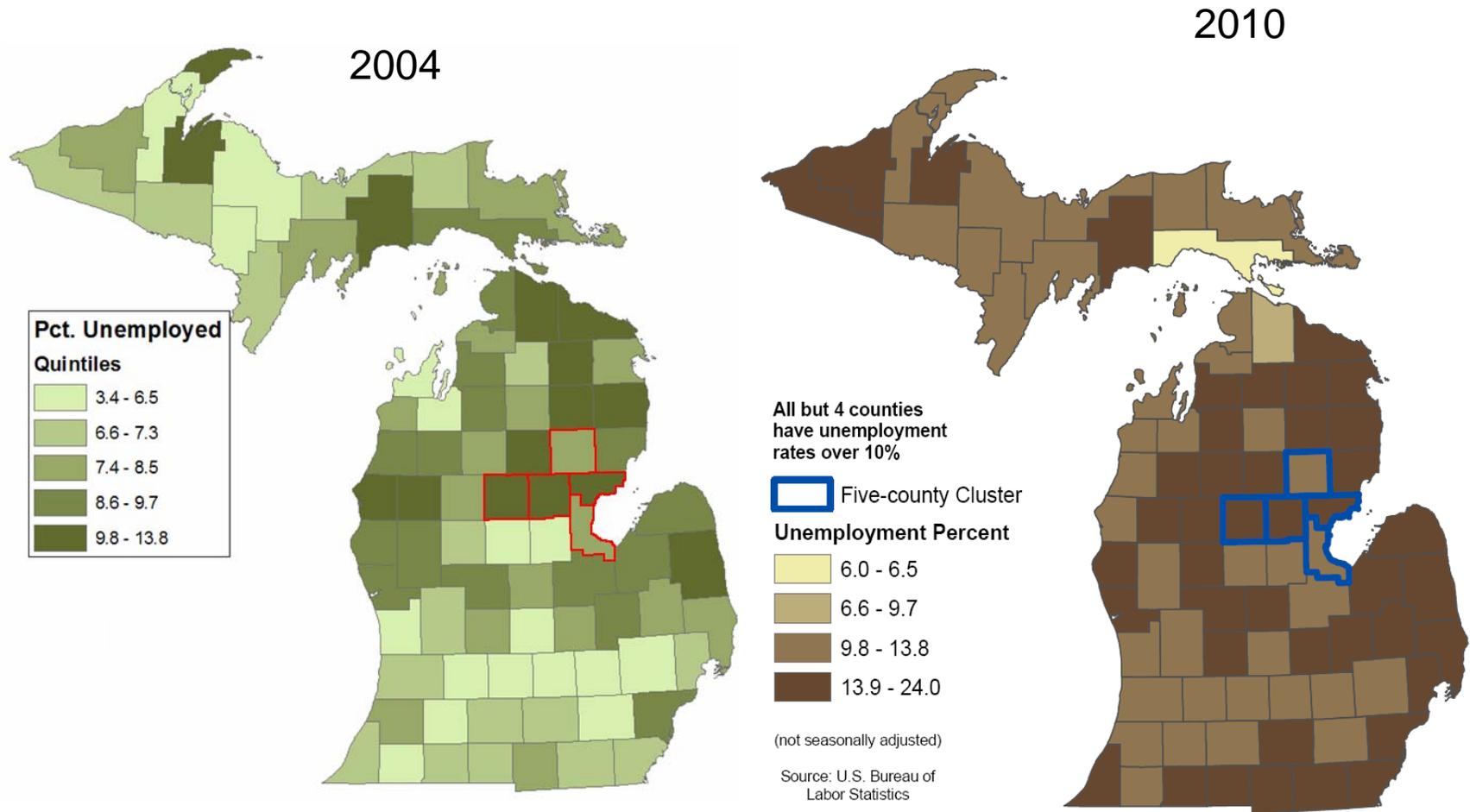
Demographics: Unemployment in Michigan Compared to United States


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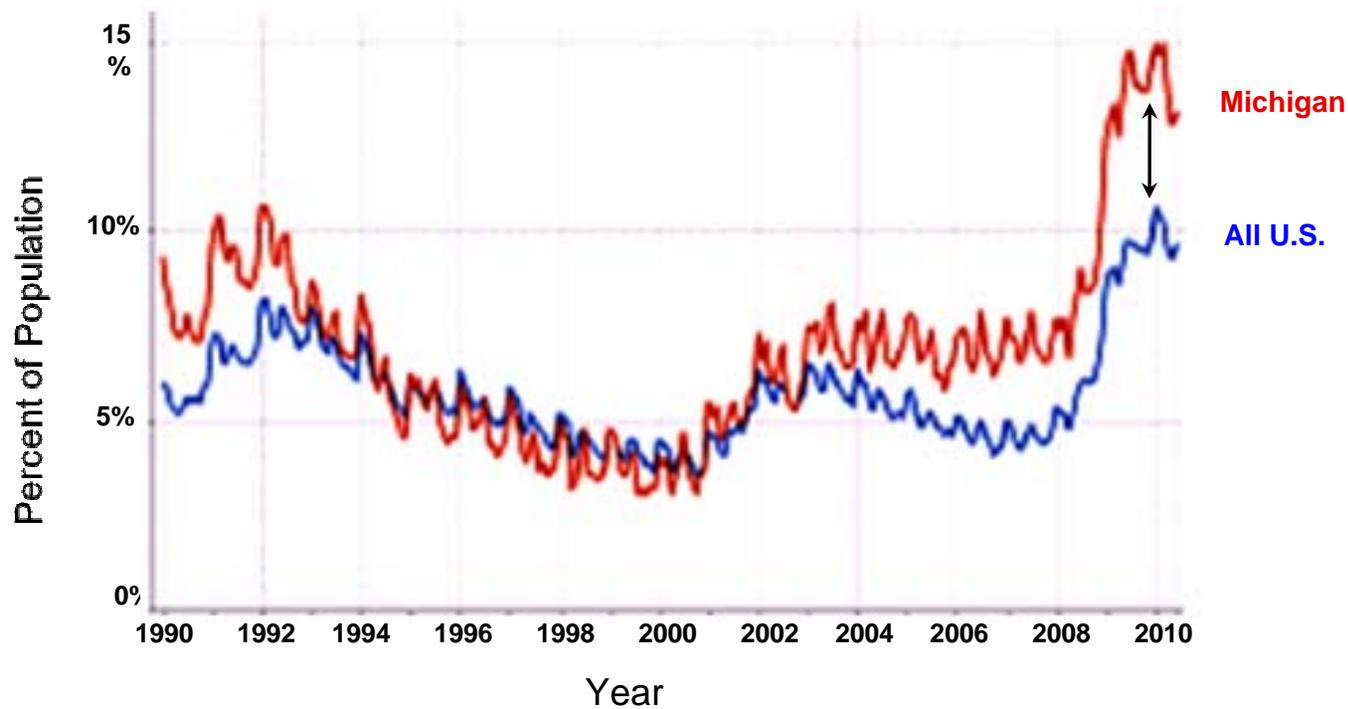
Demographics: Economic Indicators

County	Population (est. 2009) U.S. Census	Family Independence Program % pop.	Food Assistance Program % pop.	Medicaid % pop.	Jobless Rate (2010) DLEG
Michigan	9,969,727	2%	20%	19%	11.3
Arenac	16,092	1%	22%	23%	17.1
Bay	107,434	2%	19%	19%	12.3
Clare	30,104	2%	29%	28%	16.6
Gladwin	25,724	2%	22%	23%	17.0
Ogemaw	21,234	2%	27%	27%	13.8

Cardiovascular Disease

Heart Failure

Hospitalizations
2002 - 2006

Age-Adjusted Hospitalization Rate per 10,000
Michigan Rate is 203.3
- 118.9 - 143.2
- 143.3 - 203.3
- 203.4 - 216.5
- 216.6 - 292.4

Age-Adjusted Hospitalization Rate per 10,000
Michigan Rate is 36.9
- 14.0 - 24.7
- 24.8 - 35.8
- 35.1 - 42.1
- 42.2 - 55.4
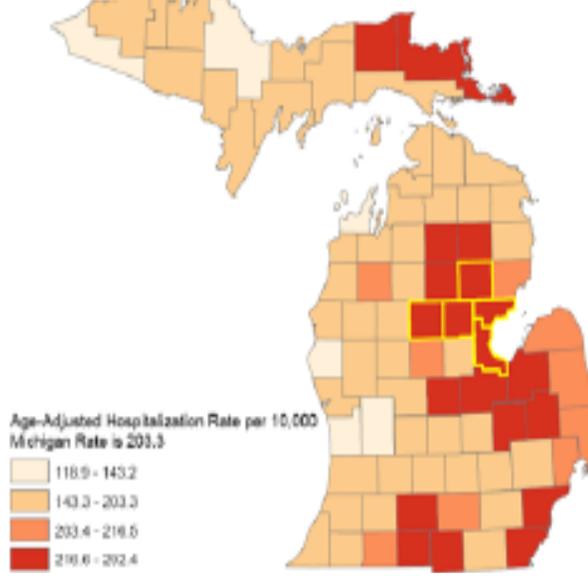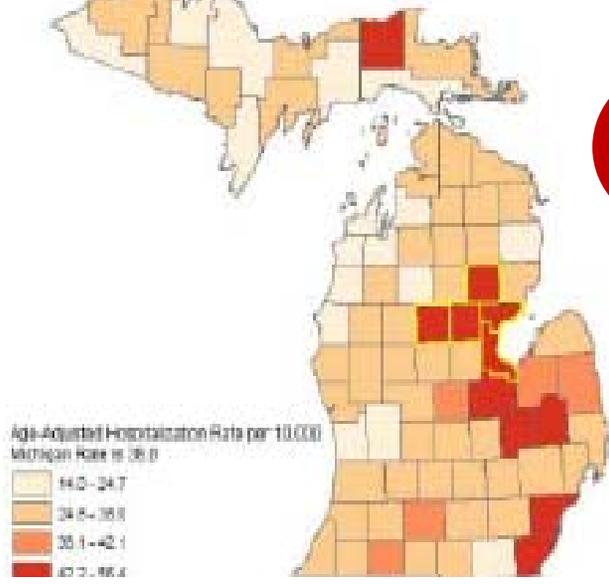
Coronary Heart Disease

Heart Disease

Age-Adjusted Hospitalization Rate per 10,000
Michigan Rate is 74.3
- 44.1 - 54
- 54.1 - 74.3
- 74.4 - 100
- 100.1 - 150.1

Age-Adjusted Hospitalization Rate per 10,000
Michigan Rate is 157.6
- 91.2 - 128.7
- 128.8 - 157.6
- 157.7 - 191.2

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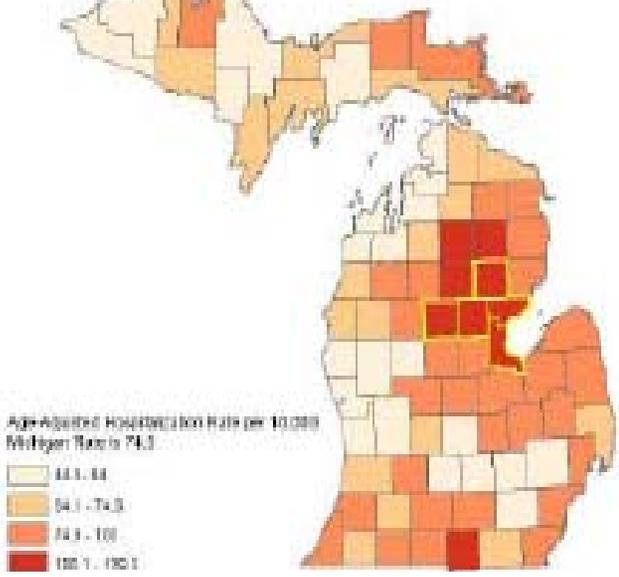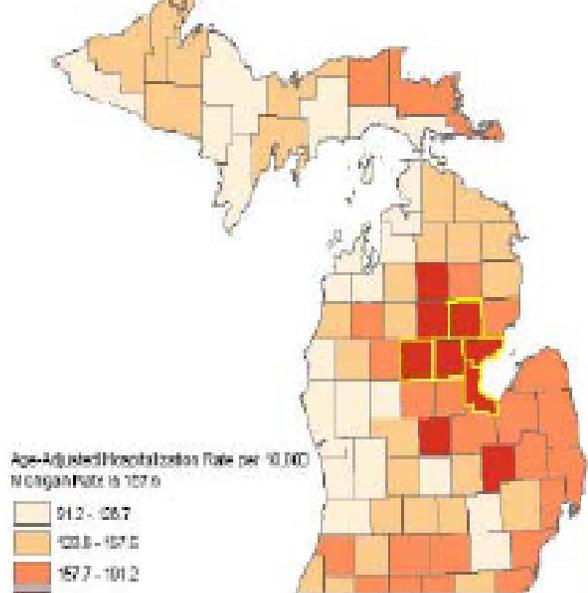
Hospitalization Data, 2004-2008

Cardiovascular Disease

Heart Disease

Cluster - high CVD rates historically
- 87 - 143
- 144 - 203
- 204 - 216
- 217 - 292

Cluster - high CVD rates historically
- 63 - 129
- 130 - 158
- 159 - 191
- 192 - 245
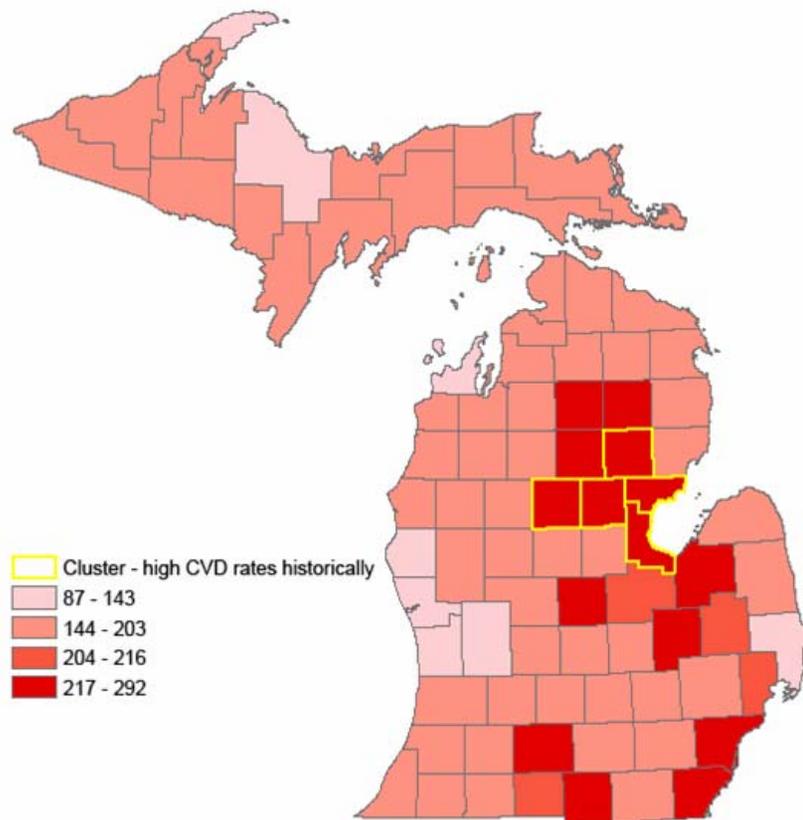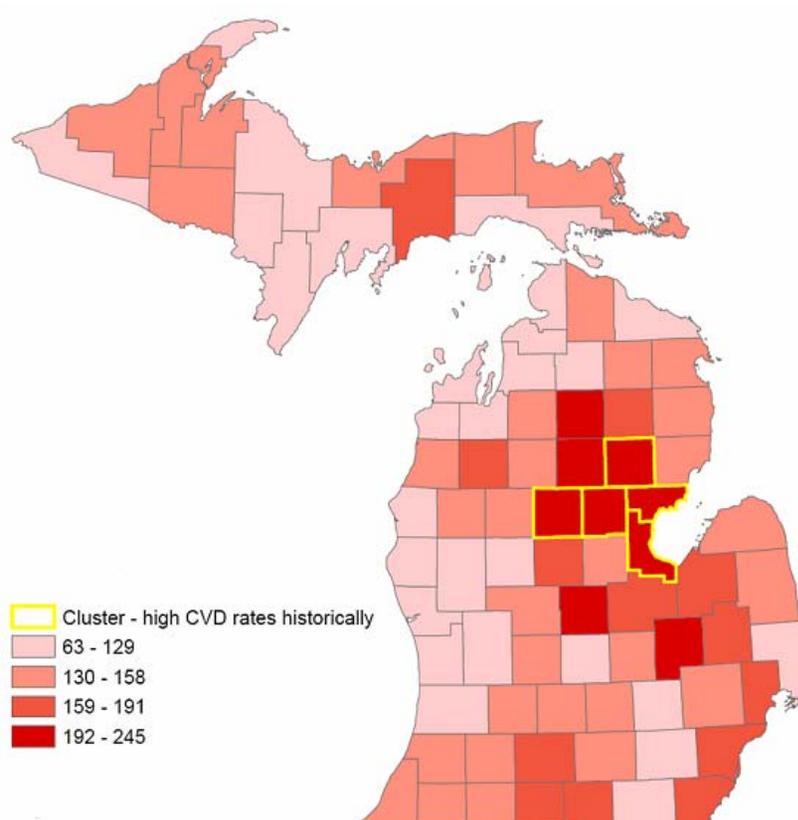
State Average: 196.7 (per 10,000)
Arenac: 291.5, Bay: 257.7, Clare: 256.1, Gladwin: 236.1, Ogemaw: 257.3

Hospitalization Data, 2004-2008

Heart Disease

Heart Failure

Cluster - high CVD rates historically
35 - 54
65 - 75
76 - 100
101 - 131

10 - 24
25 - 30
31 - 38
39 - 55
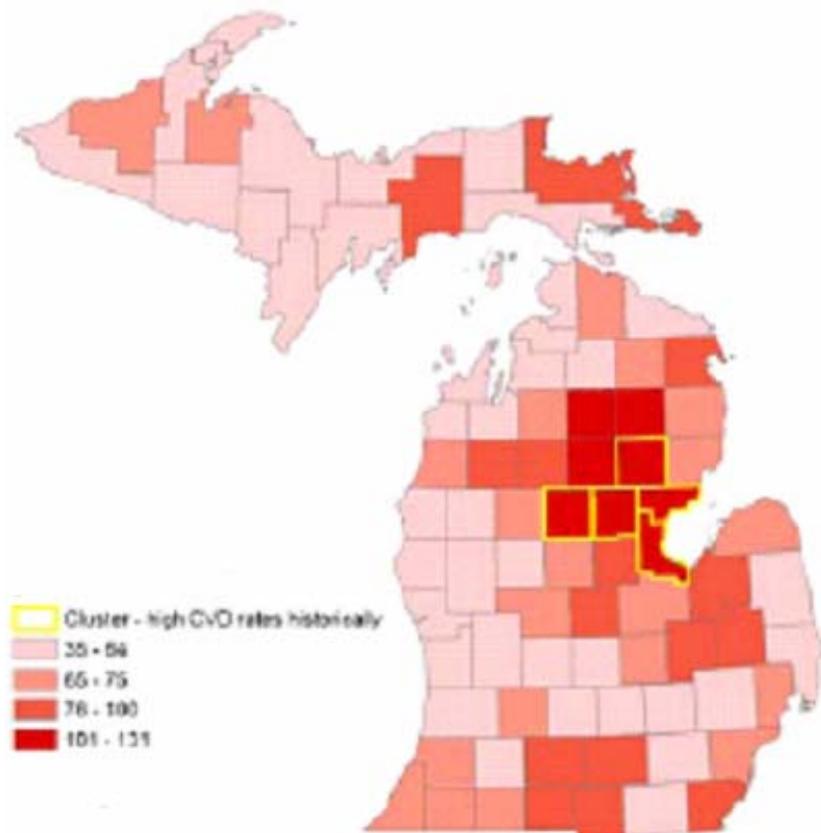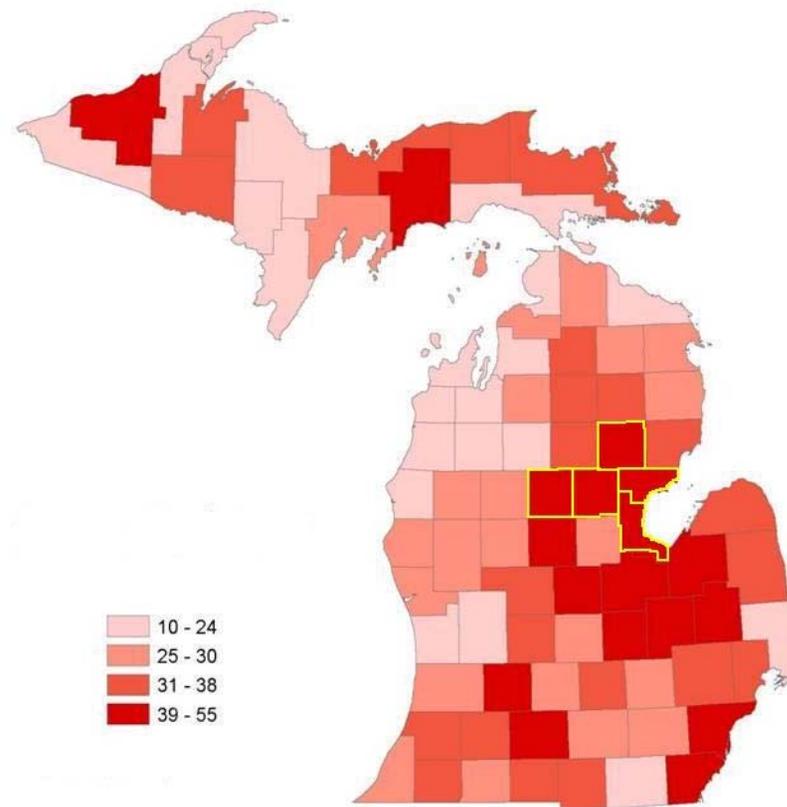
Mortality Data

Coronary Heart Disease by county in two year increments

Baseline: 1990-1991

Cluster - high CVD rates historically

Rate per 100,000 pop.
- 75 - 128
- 129 - 162
- 163 - 190
- 191 - 435

2001-2002

Cluster - high CVD rates historically

Rate per 100,000 pop.
- 49 - 128
- 129 - 162
- 163 - 190
- 191 - 311

2003-2004

Cluster - high CVD rates historically
Coronary Heart Disease
Rate per 100,000 pop.
- 53 - 128
- 129 - 162
- 163 - 190
- 191 - 247

2005-2006

Cluster - high CVD rates historically

Rate per 100,000 pop.
- 40 - 128
- 129 - 162
- 163 - 190
- 191 - 232

2007-2008

Cluster - high CVD rates historically

Rate per 100,000 pop.
- 65 - 128
- 129 - 162
- 163 - 179

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Mortality Data: Michigan Compared to National Rates, 2002-2006

Heart Disease

Heart Failure

Age-Adjusted Mortality Rate per 100,000
Michigan Rate is 238.3

- 145.7 - 196.9
- 197.0 - 238.3
- 238.4 - 261.0
- 261.1 - 305.9
- Above the National Rate, 225.0*

Age-Adjusted Mortality Rate per 100,000
Michigan Rate is 22.7

- Insufficient Data*
- 0 - 22.7
- 22.8 - 32.2
- 32.3 - 48.7
- Above the National Rate, 19.2**

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Of Community Health*

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Mortality Data: Michigan Compared to National Rates, 2002-2006

Coronary Heart Disease

Age-Adjusted Mortality Rate per 100,000
Michigan Rate is 168.9

- 85.1- 129.4
- 129.5 - 168.9
- 169.0 - 183.9
- 184.0 - 250.7
- Above the National Rate, 156.8*

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Mortality Data: Cardiovascular Disease, 2004-2008

Age-adjusted Five-Year
Mortality Rate per 100,000

☐ Cluster - high CVD rates historically
☐ 195.5 - 257.3
☐ 257.4 - 281.3
☐ 281.4 - 304
☐ 304.1 - 398.1

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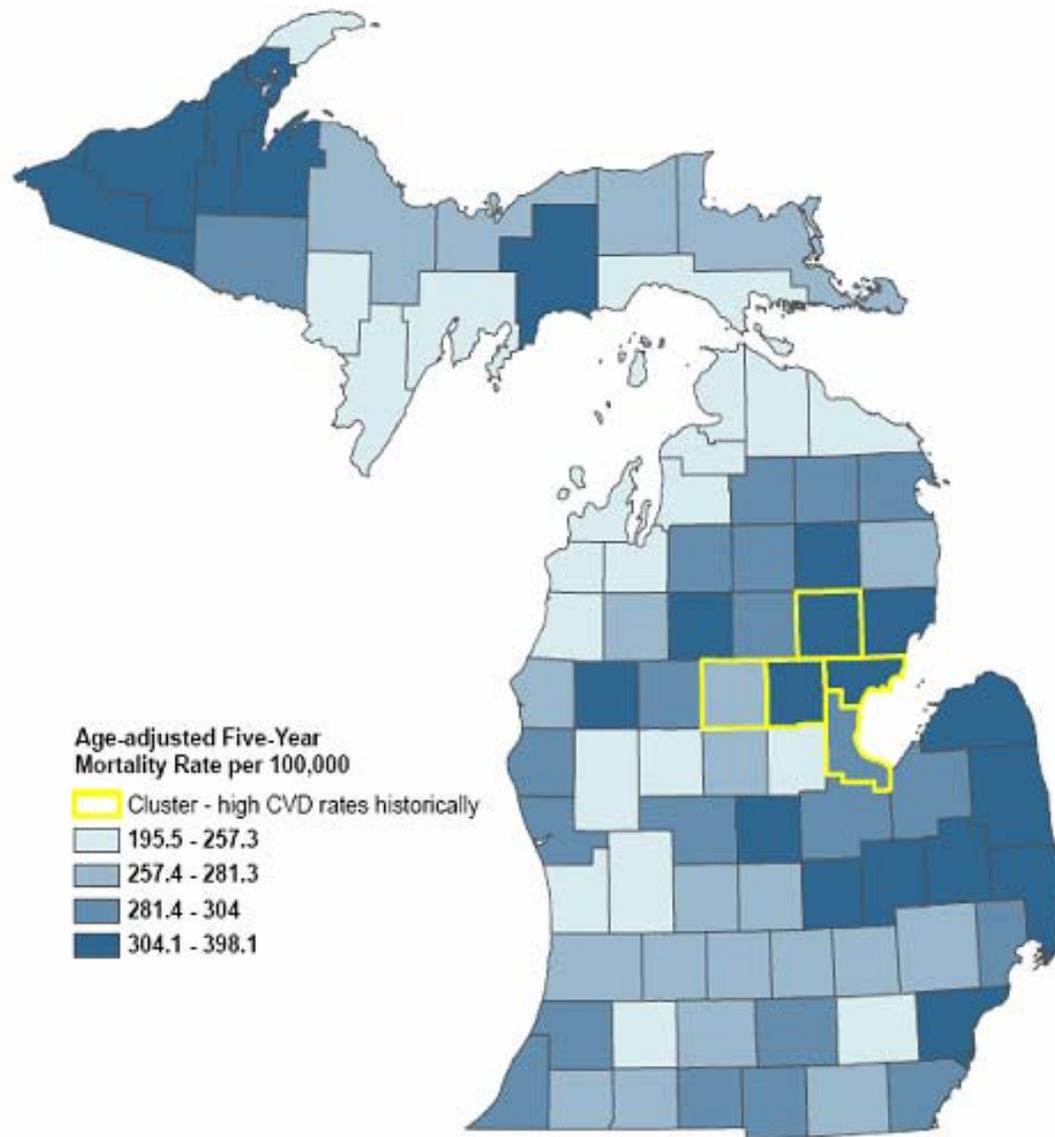
Mortality Data: Heart Disease and Coronary Heart Disease, 2004-2008

Heart Disease

Coronary Heart Disease

Age-adjusted Five-Year Mortality Rate per 100,000

Cluster - high CVD rates historically
150.4 - 196.9
197.0 - 212.7
212.8 - 237.1
237.2 - 312.8

Age-adjusted Five-Year Mortality Rate per 100,000

Cluster - high CVD rates historically
90.3 - 133.6
133.7 - 146.6
146.7 - 169.6
169.7 - 222.6

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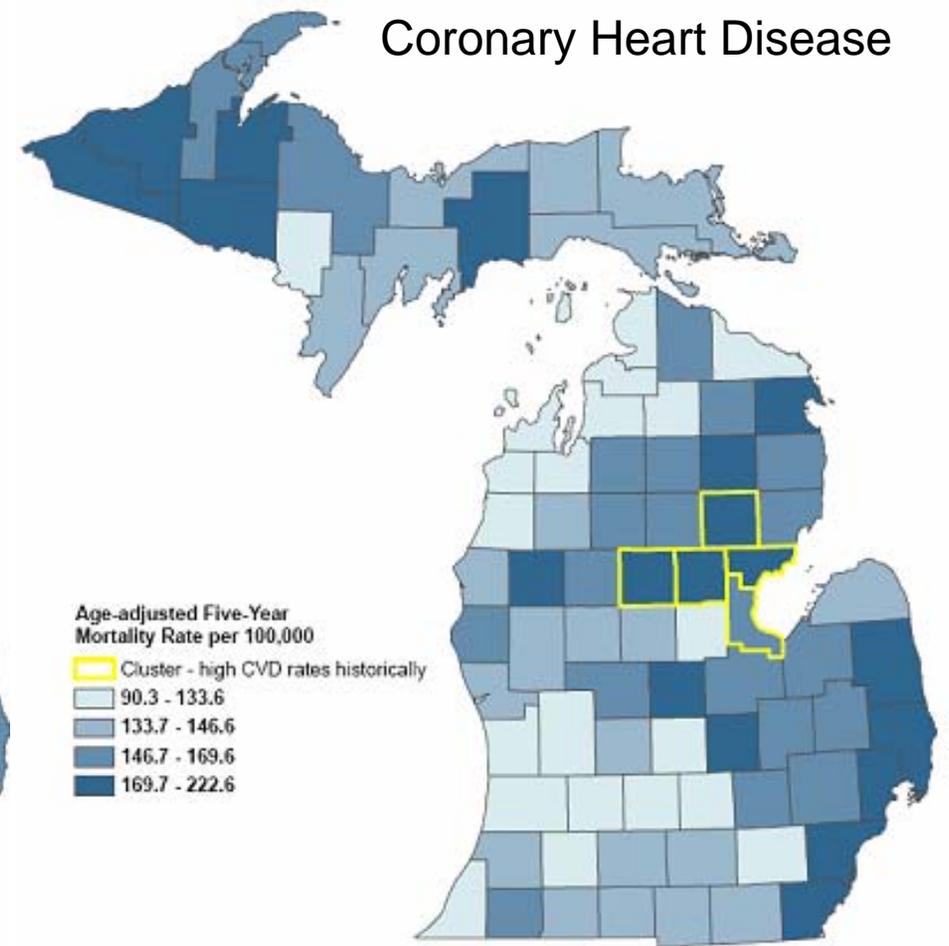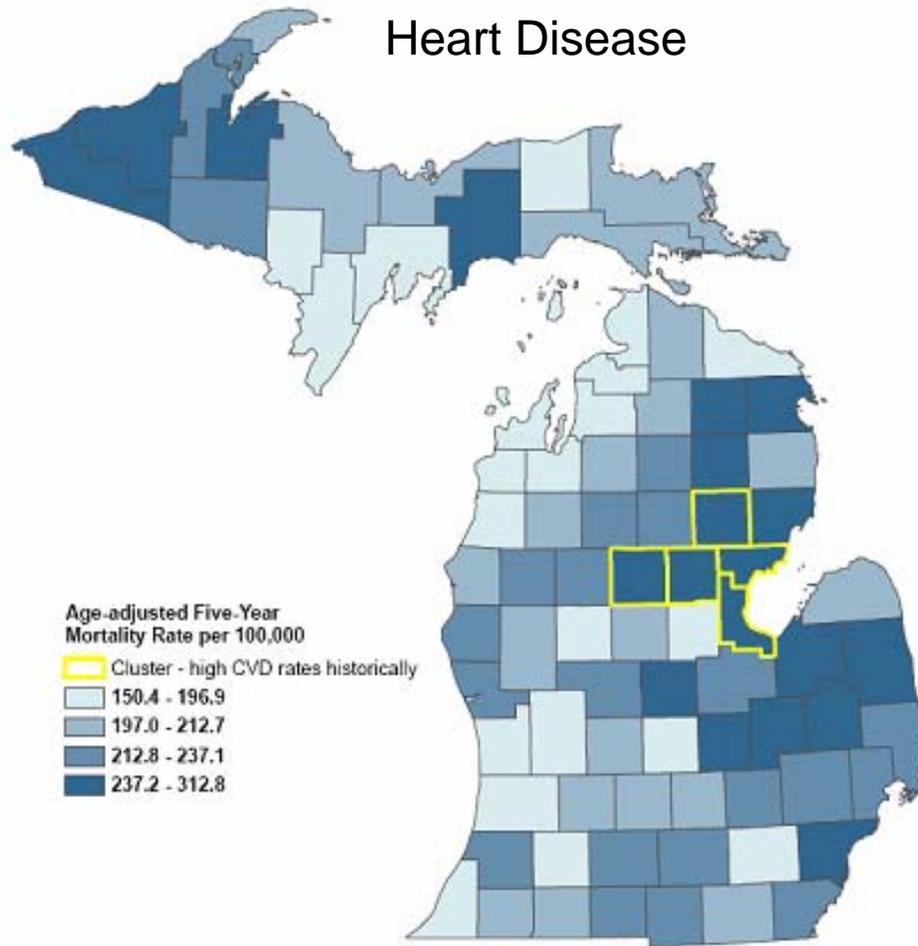
Mortality Data: Heart Failure and Stroke, 2004-2008

Heart Failure

Stroke

Age-adjusted Five-Year
Mortality Rate per 100,000
- ▢ Cluster - high CVD rates historically
- 2.3 - 17.7
- 17.8 - 23.7
- 23.8 - 29.7
- 29.8 - 45.8

Age-adjusted Five-Year
Mortality Rate per 100,000
- ▢ Cluster - high CVD rates historically
- 15.6 - 32.2
- 32.3 - 48.7
- 48.8 - 65.3
- 65.4 - 81.8

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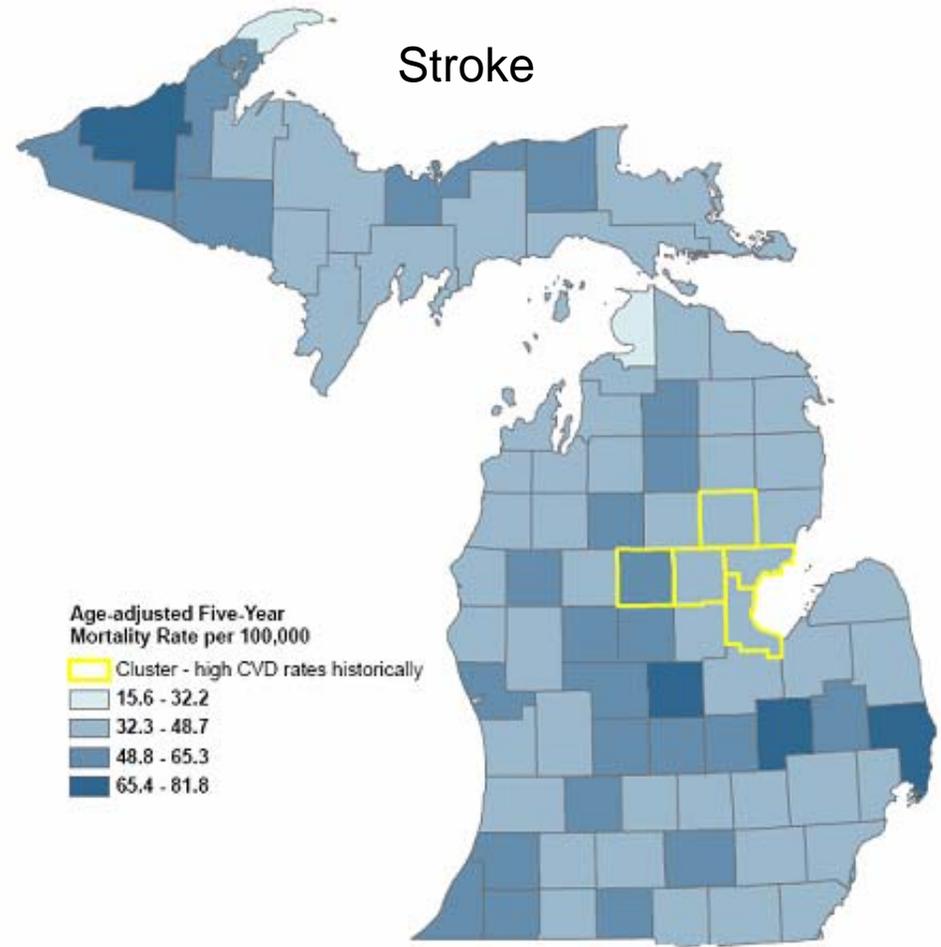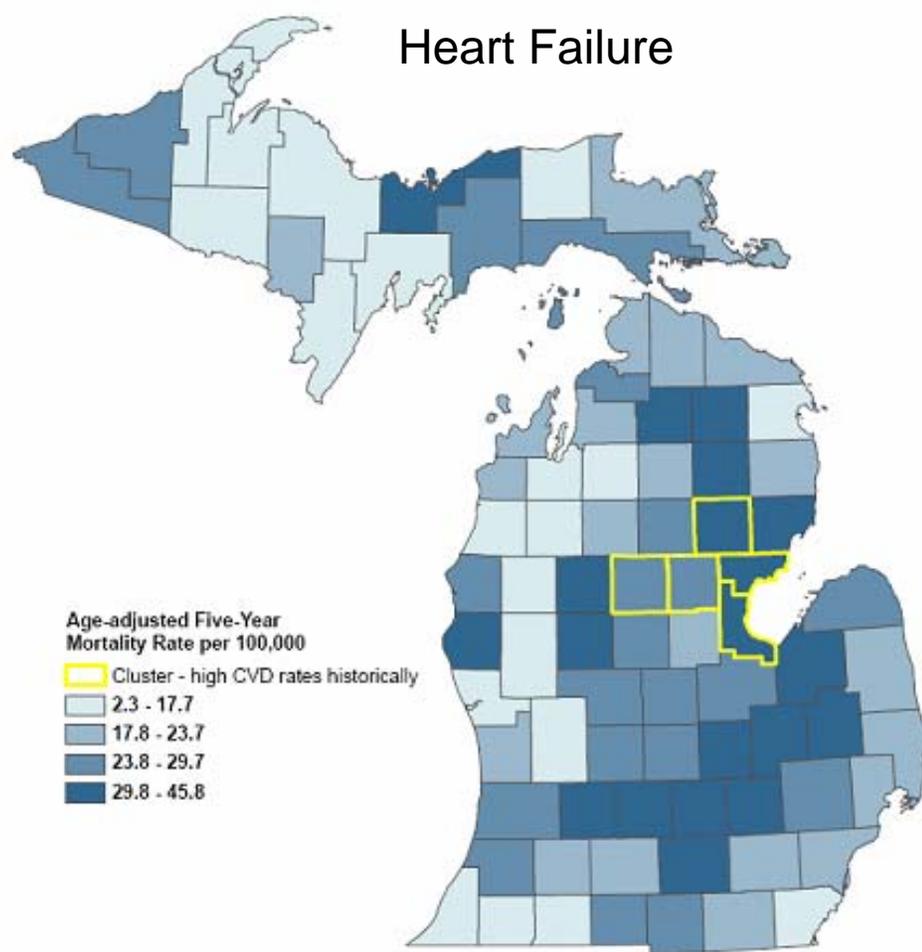
Mortality Data: Years of Potential Life Lost (YPLL) Heart Disease, 2004-2008

Heart Disease age
65 and younger

Heart Disease age
75 and younger

YPLL rate per 100,000 pop.

- 244 - 447
- 448 - 620
- 621 - 837
- 838 - 1149

YPLL rate per 100,000 pop.

- 491 - 970
- 971 - 1264
- 1265 - 1650
- 1651 - 2241

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Of Community Health*

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Mortality Data: Years of Potential Life Lost (YPLL) Stroke, 2004-2008

Stroke age 65 and younger

Stroke age 75 and younger

YPLL rate per 100,000 pop.
- 25 - 56
- 57 - 95
- 96 - 154
- 155 - 223
- Rate suppressed as cases < 5

YPLL rate per 100,000 pop.
- 54 - 114
- 115 - 167
- 168 - 265
- 266 - 388
- Rate suppressed as cases < 5

County Health Rankings: 2011

www.countyhealthrankings.org

Michigan County Health Rankings:
Health Outcomes Rankings, 2011

Rank 1 is the Healthiest

- Rank 1- 20
- Rank 21- 41
- Rank 42- 62
- Rank 63- 82
- Not Ranked

Michigan County Health Rankings:
Risk Factors Rankings, 2011

Rank 1 is the Healthiest

☐	Rank 1- 20
☐	Rank 21- 41
☐	Rank 42 - 62
☐	Rank 63 - 82
☐	Not Ranked

Cardiovascular Disease Risk Factors

Current Smoking

High Blood Pressure

High Blood Cholesterol

Physical Activity

Obesity & Overweight

Nutrition: Adequate Fruits & Vegetables

Diabetes

Access to Healthcare

Local Health Departments (LHD)
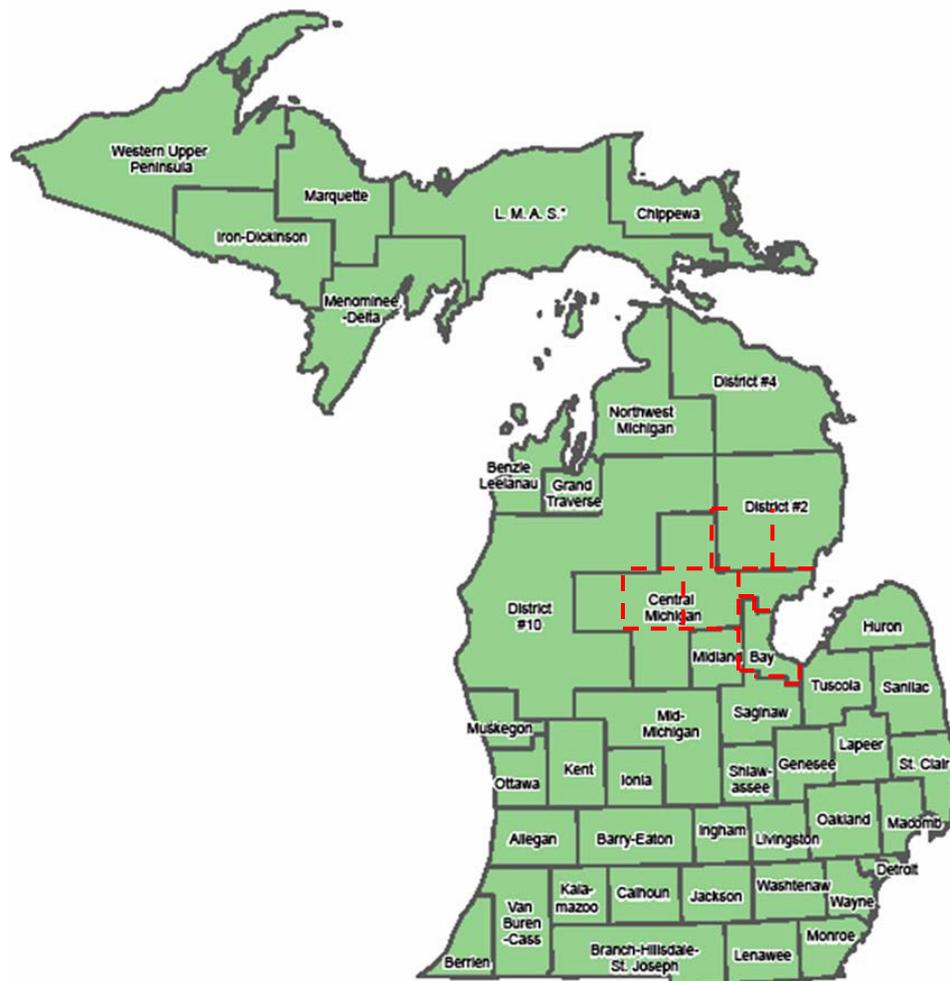

5 County Region Local Health Departments

1. Central Michigan
2. District Health Department #2
3. Bay

CVD Risk Factors:

Percent of Adults that Smoke

Percent who smoke

- 10.4 - 16.6
- 16.7 - 21.6
- 21.7 - 26.7
- 26.8 - 31.9
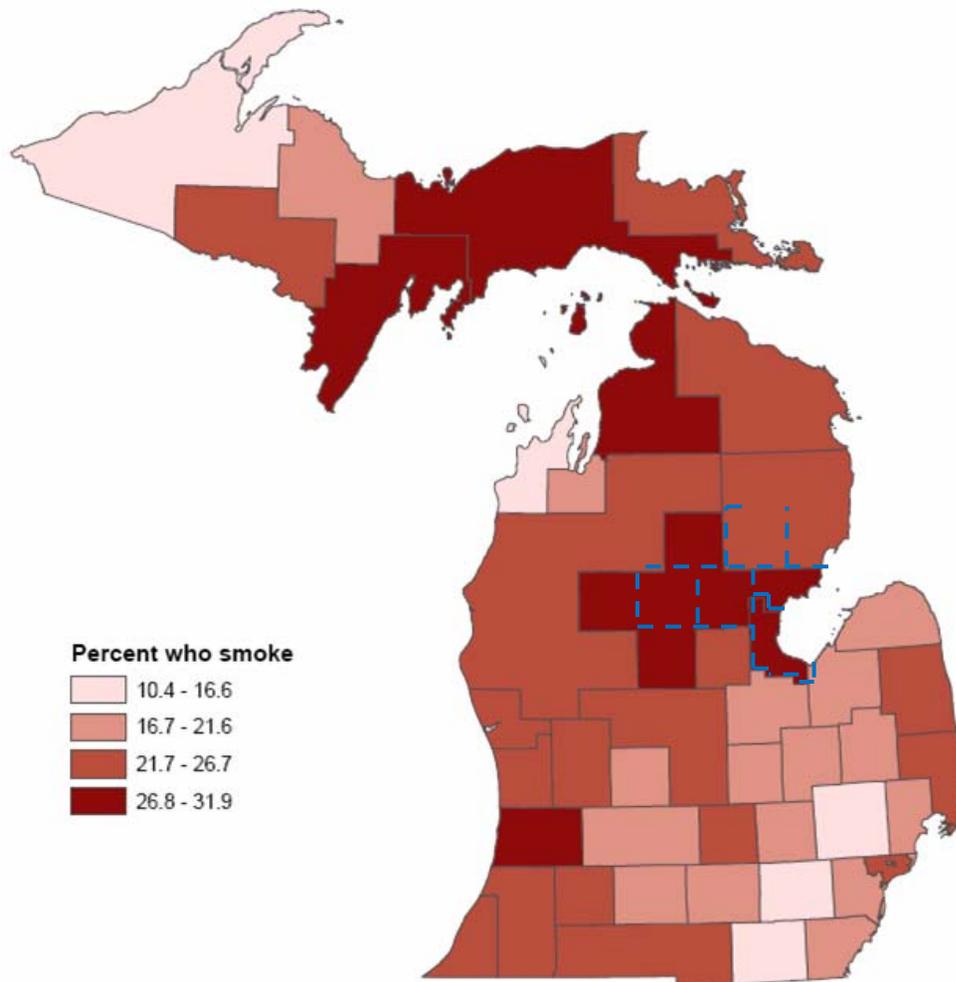
Data reported by LHD in BRFS 2007-2009

CVD Risk Factors: Percent of Adults
Reporting High Blood Pressure

Five-county Cluster

Percent HBP
- 21.1 - 24.7
- 24.8 - 28.5
- 28.6 - 33.8
- 33.9 - 41.8

Data reported by LHD in BRFS 2007-2009

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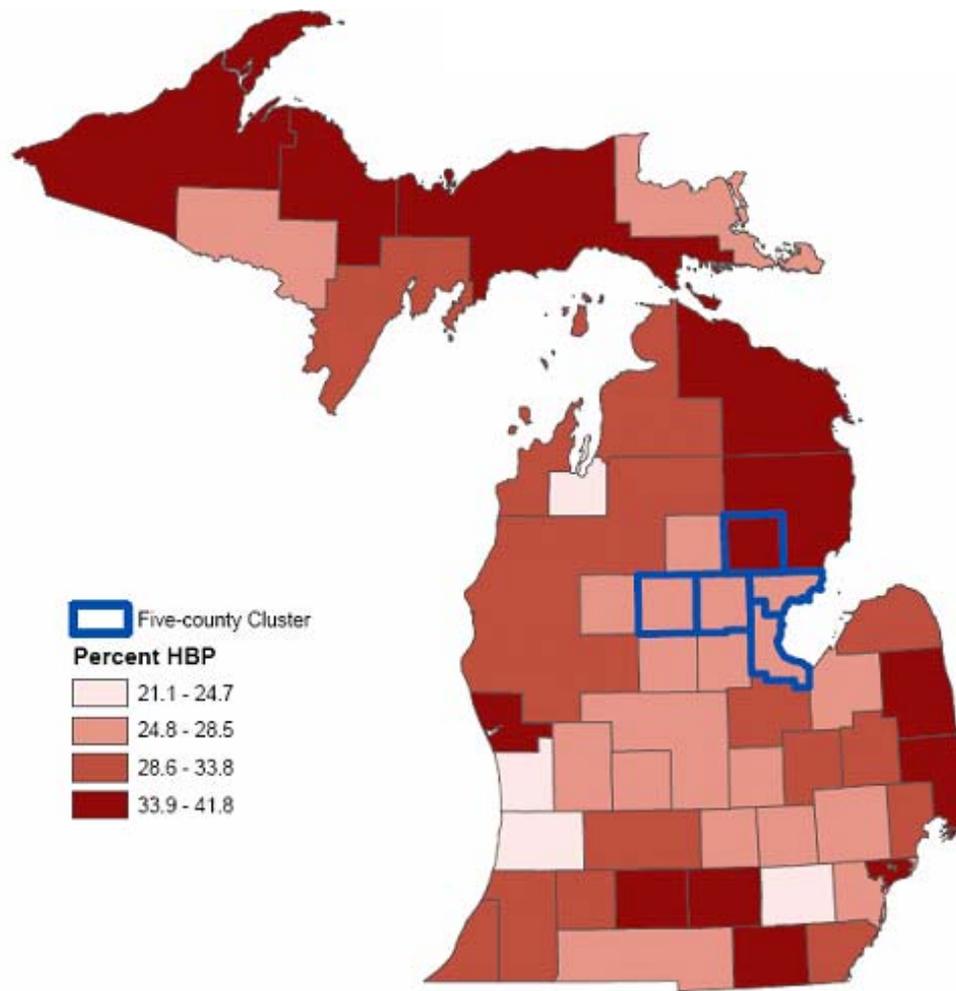
CVD Risk Factors: Percent of Adults
Reporting High Cholesterol

Five-county Cluster

Percent High Cholesterol
- 26.6 - 33.0
- 33.1 - 38.6
- 38.7 - 43.4
- 43.5 - 51.6
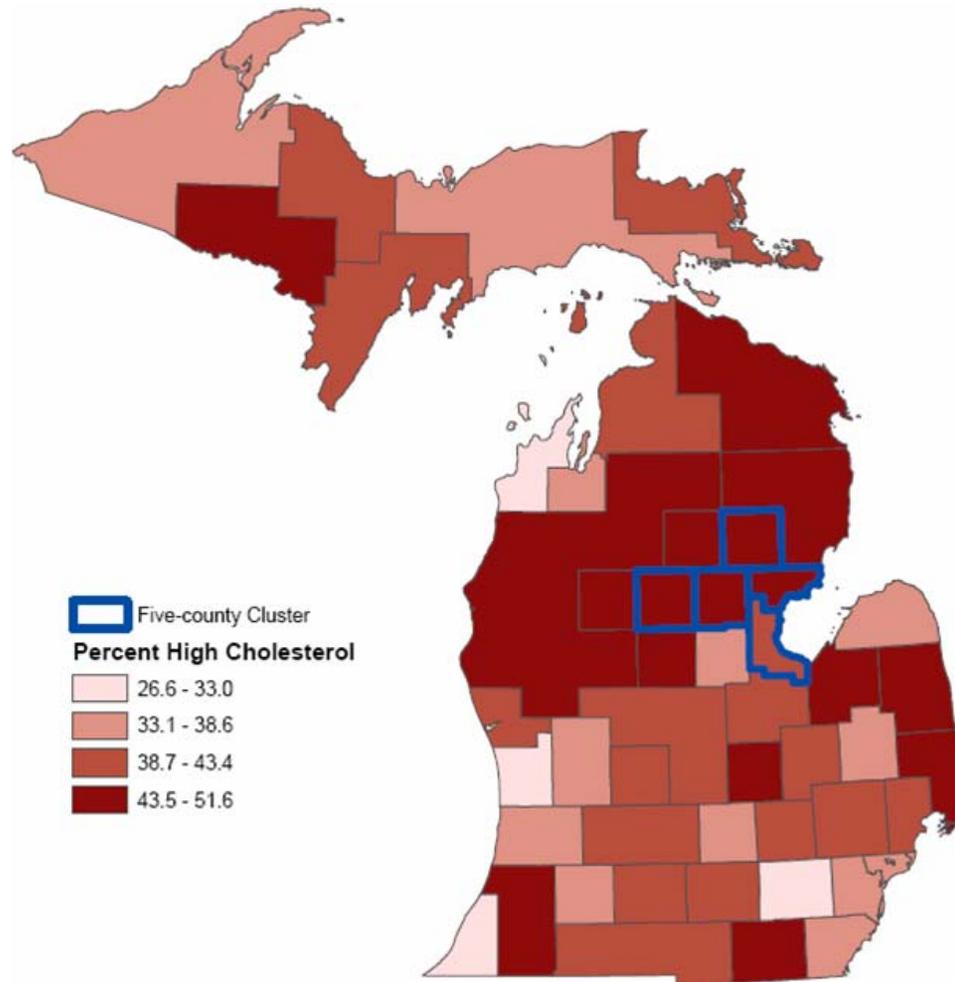
Data reported by LHD in BRFS 2007-2009

CVD Risk Factors: Percent of Adults with No Leisure Time Physical Activity

Five-county Cluster

Percent No Leisure Time Physical Activity

- 15.0 - 20.1
- 20.2 - 24.0
- 24.1 - 28.1
- 28.2 - 33.8
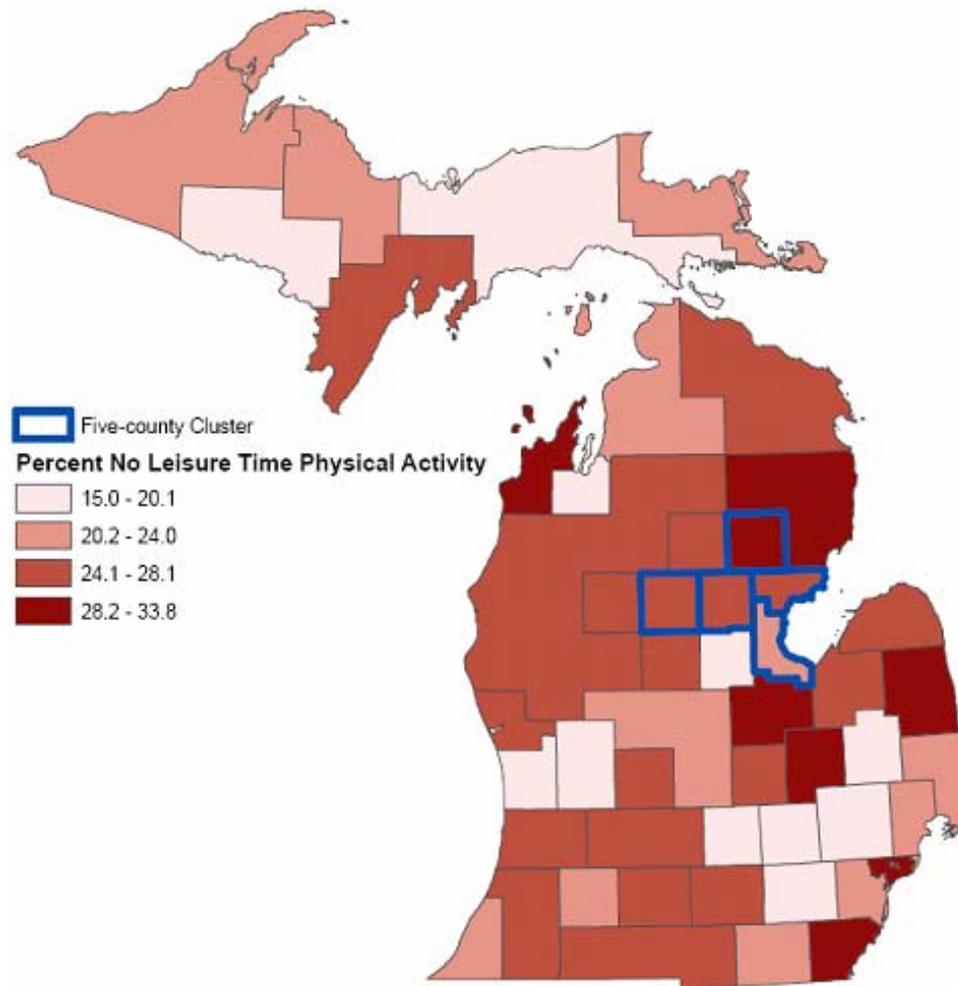
Data reported by LHD in BRFS 2007-2009

CVD Risk Factors:

Percent of Obese and Overweight Adults

Five-county Cluster

Percent Overweight/Obese

- 57.8 - 62.5
- 62.6 - 67.3
- 67.4 - 72.8
- 72.9 - 76.6

BMI ≥ 25 classified as Overweight
BMI ≥ 30 classified as Obese
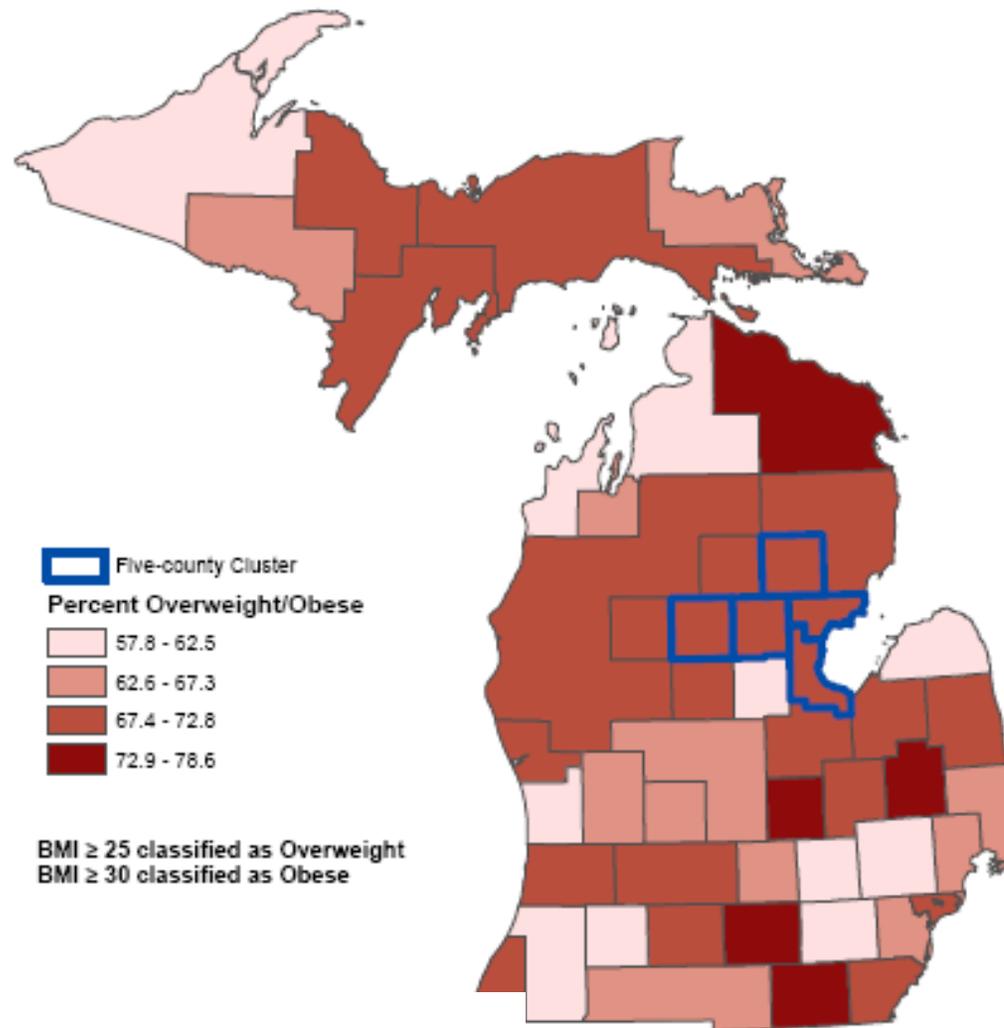
Data reported by LHD in BRFS 2007-2009

CVD Risk Factors: Percent of Adults with Limited Fruit & Vegetable Intake

Five-county Cluster

Percent Inadequate Fruit and Vegetables
- 69.0 - 74.7
- 74.8 - 78.5
- 78.6 - 81.7
- 81.8 - 84.0
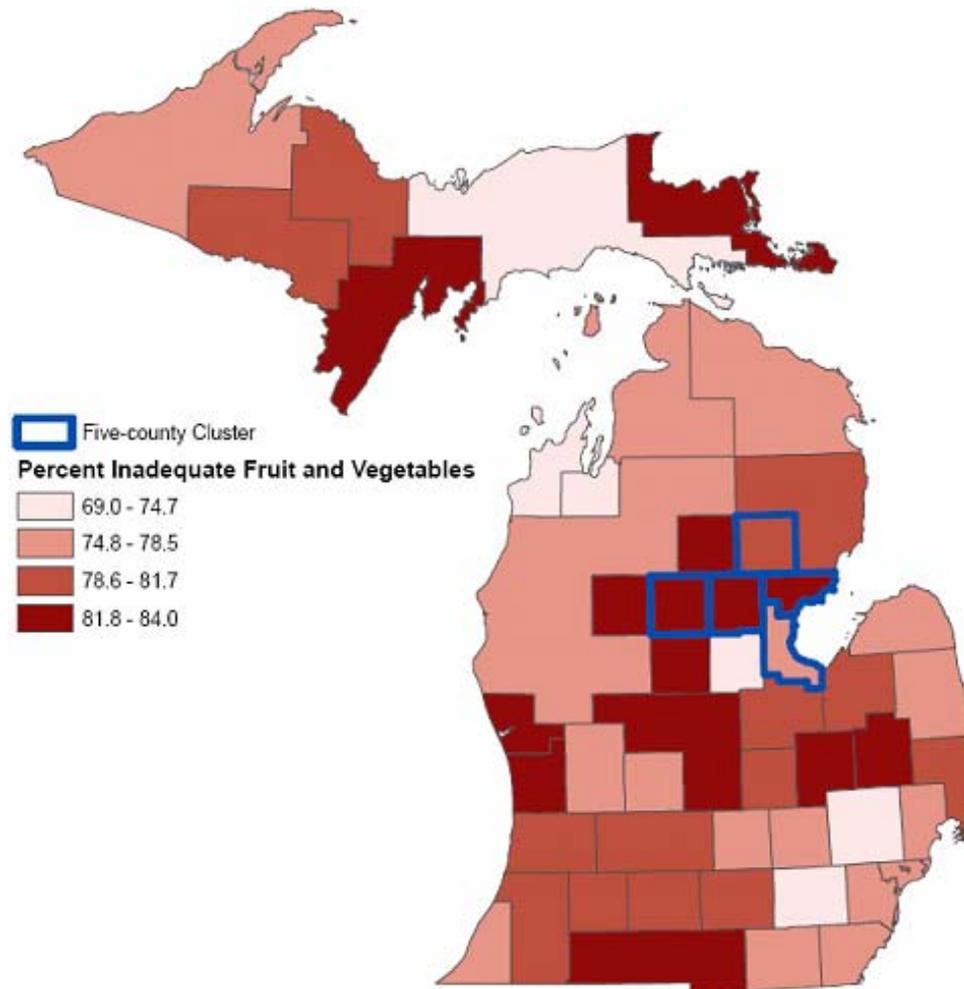
Data reported by LHD in BRFS 2007-2009

CVD Risk Factors:

Percent of Adults with Diabetes

Percent Diabetes
- 4.5 - 7.1
- 7.2 - 9
- 9.1 - 11.1
- 11.2 - 13.6
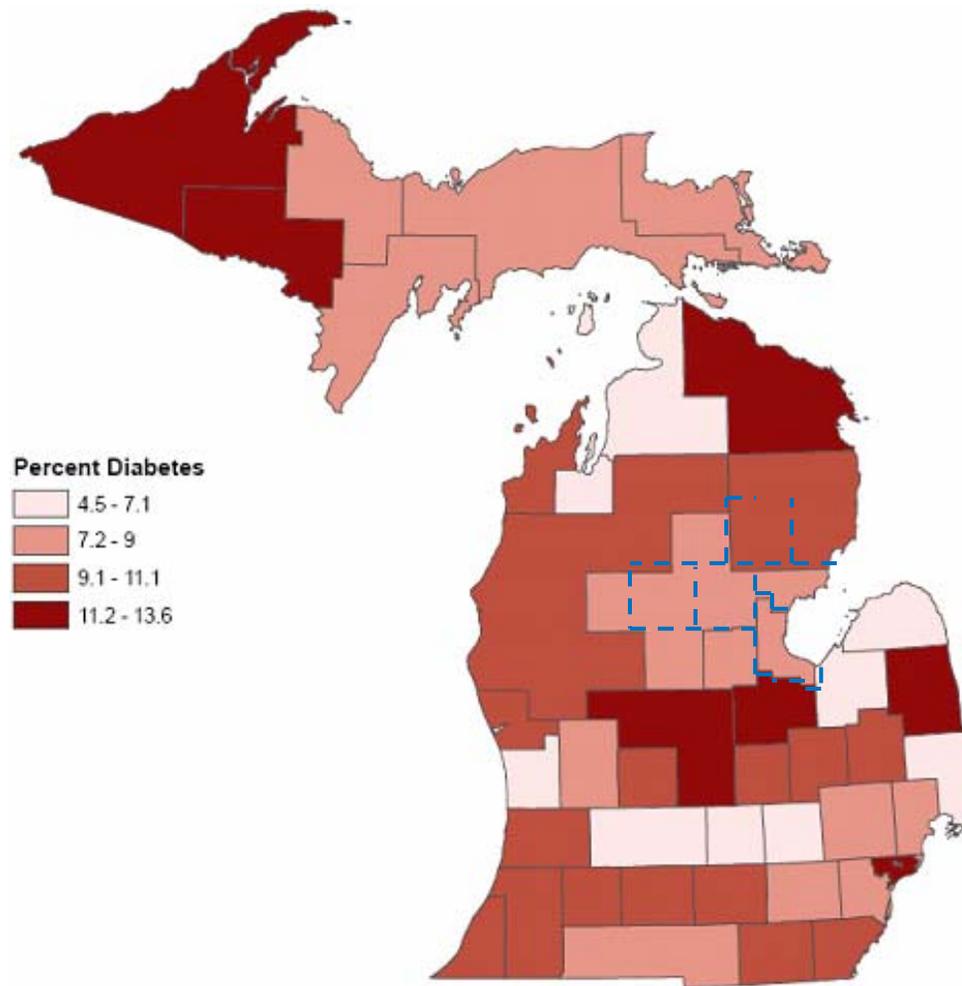
Data reported by LHD in BRFS 2007-2009

CVD Risk Factors: Percent of Adults
Without Healthcare Coverage or Access

Without Healthcare
Coverage

Without Healthcare
Access

Five-county Cluster
Percent No Coverage
- 7.7 - 12.1
- 12.2 - 16.4
- 16.5 - 22.3
- 22.4 - 29.1

Five-county Cluster
Percent No Access
- 6.2 - 8.8
- 8.9 - 12.3
- 12.4 - 16.0
- 16.1 - 21.0
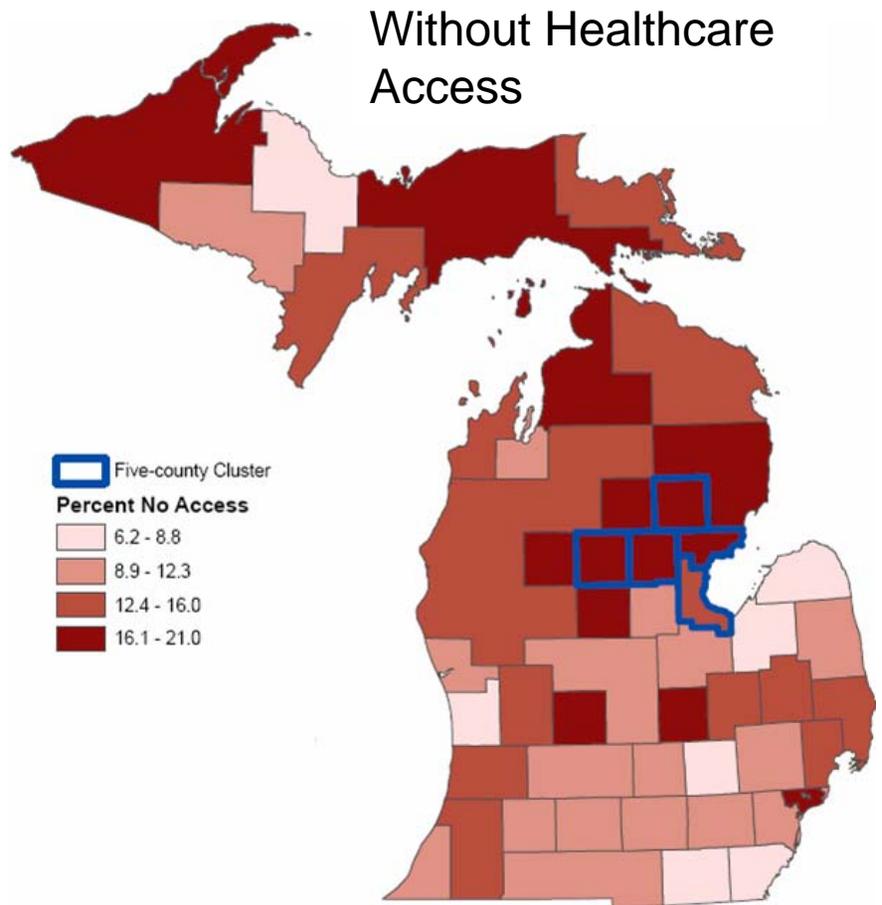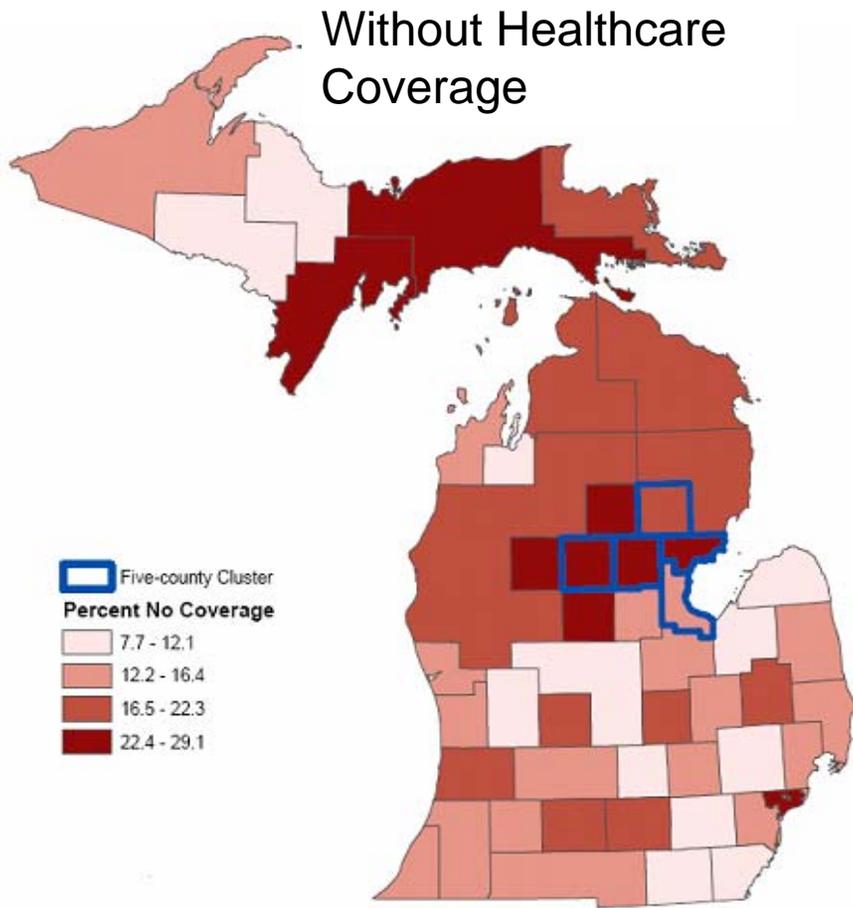
Data reported by LHD in BRFS 2007-2009

Number of Neurologists and Cardiologists by County, 2004

Neurologists

Neurologists per 100,000
Quintiles
- 0.00
- 0.01 - 1.97
- 1.98 - 2.81
- 2.82 - 6.17
- 6.18 - 27.71

Cardiologists

Cardiologists per 100,000
Quintiles
- 0.00
- 0.01 - 3.10
- 3.11 - 4.38
- 4.39 - 6.74
- 6.75 - 23.29
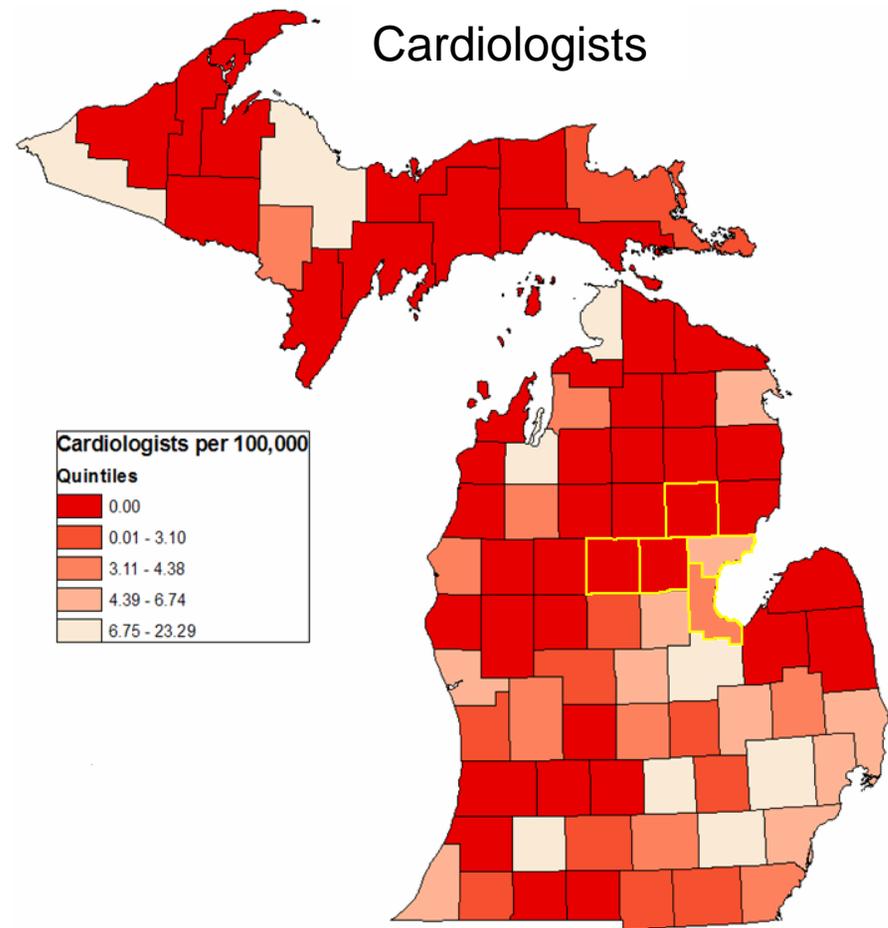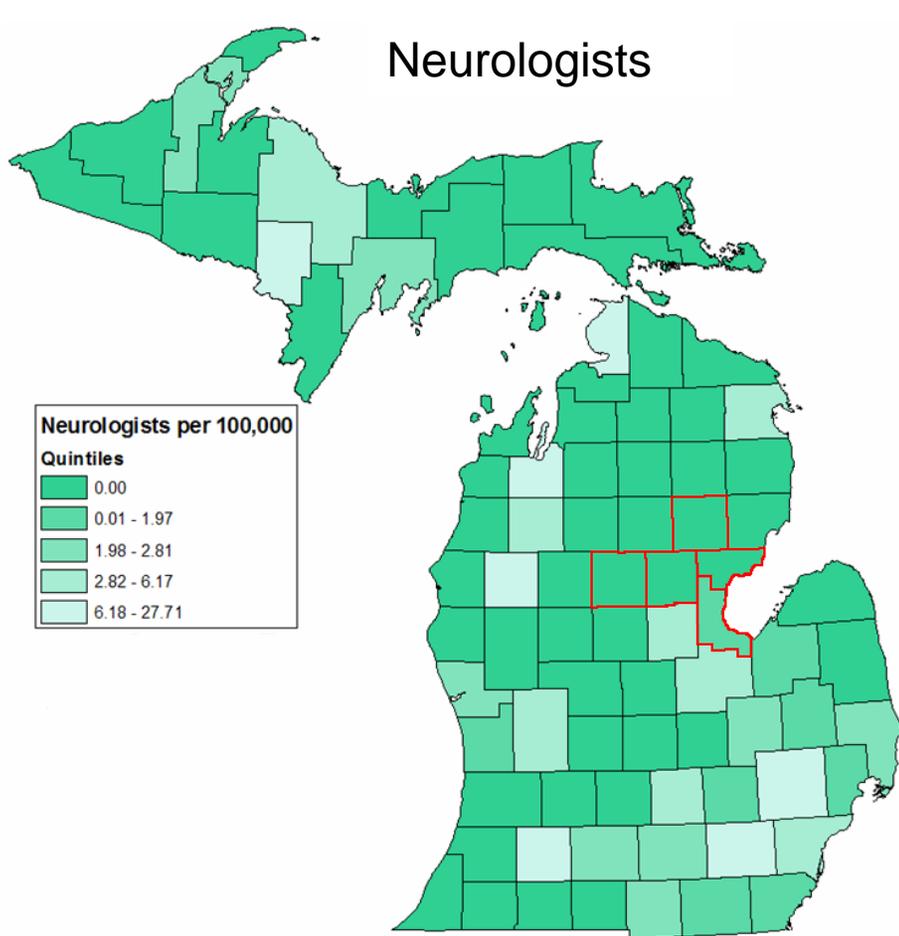
Health-Related Resources:

Michigan Hospitals

Five-county Cluster
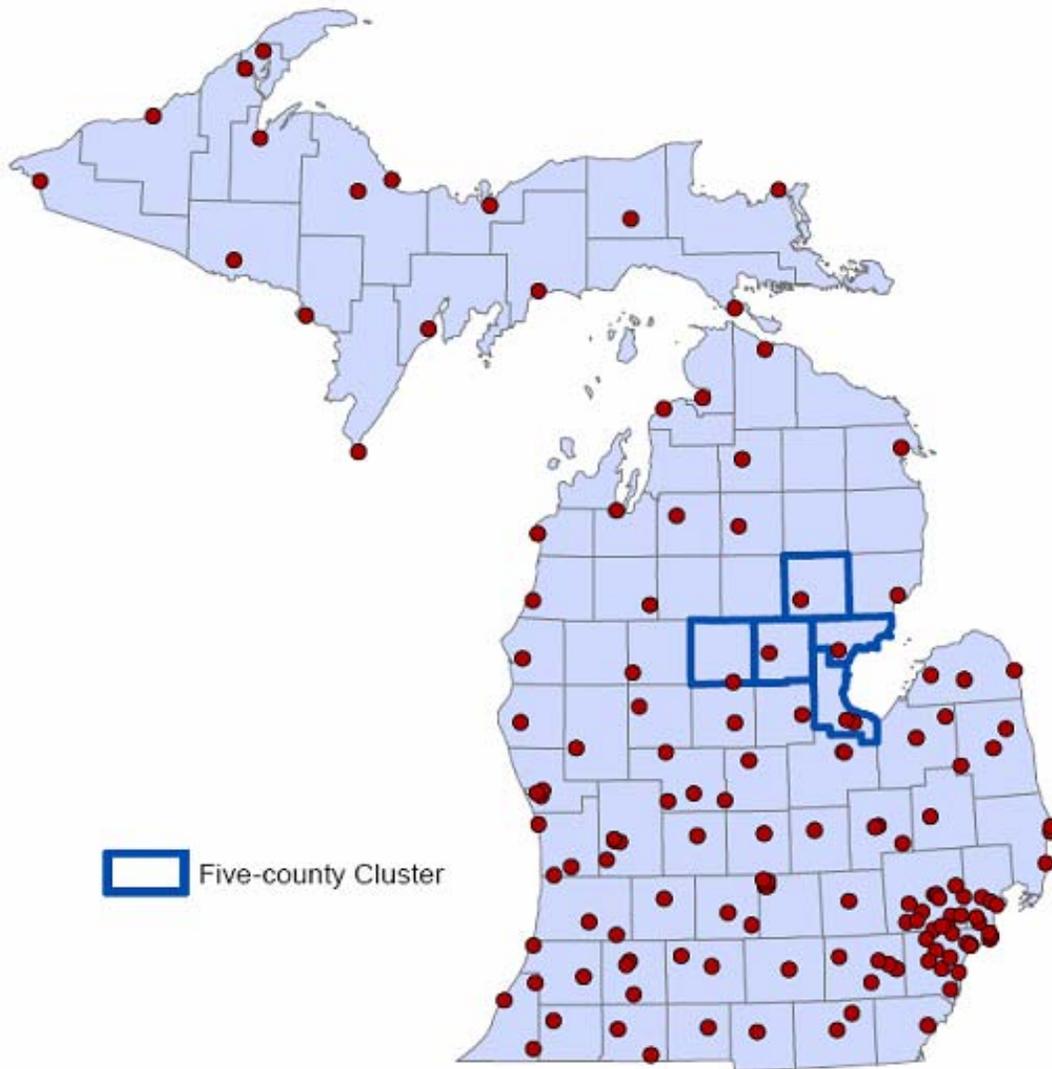
- **142 Hospitals Statewide**

- **6 Hospitals in Region**

  1) West Branch Regional

  2) St. Mary's Standish

  3) Mid-Michigan Gladwin

  4) Mid-Michigan Clare

  5) Bay Regional Medical Center

  6) Bay Regional Medical Center West

Health Related Resources:

Public Health CVD Programs, 2010
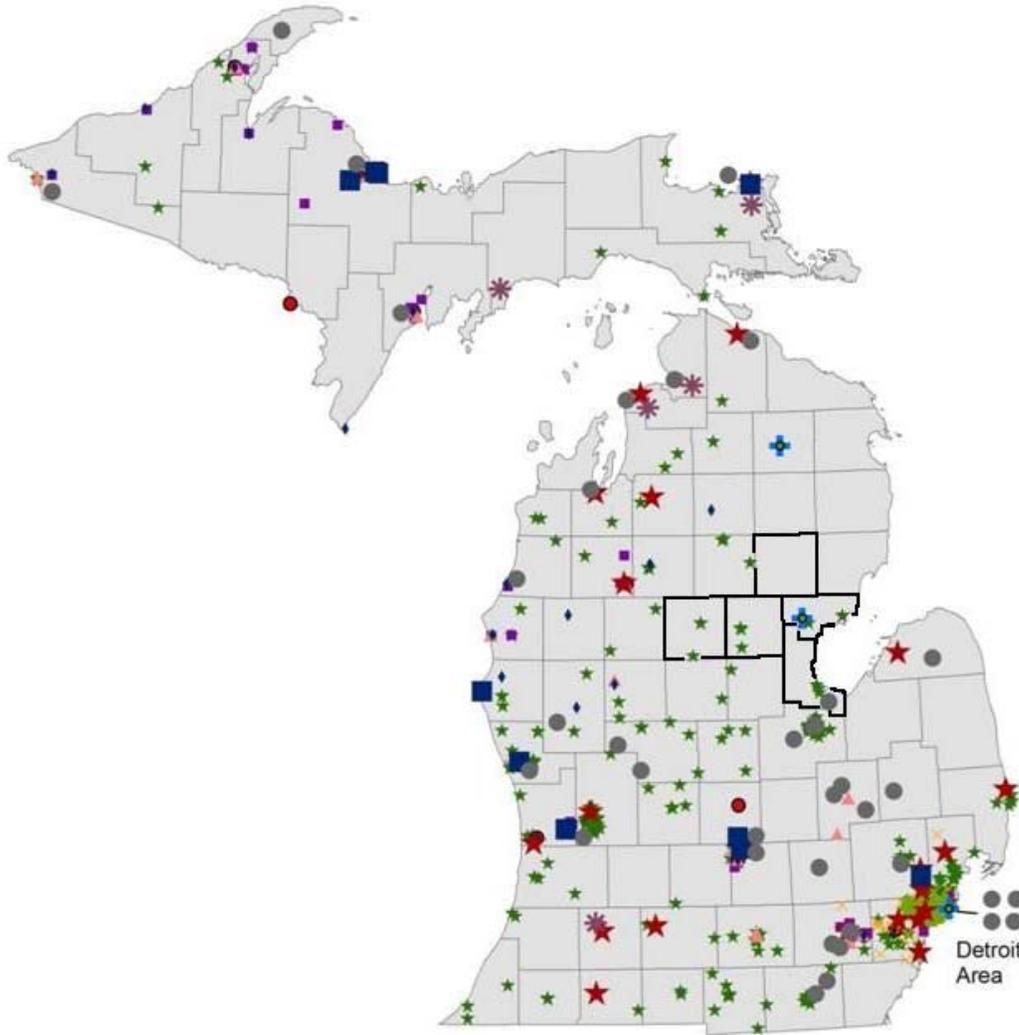
Programs Include:

•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

Detroit Area

Questions

What do you think about the high rates of CVD in this area?

Questions

What factors do you think may contribute to these rates?

Questions

Do You think any of these high rates are a result of the same families living in the area?

Questions

What do you think are some of the strengths in this region?

Questions

What can the community do to address these rates?

Questions

What kind of support could agencies provide to reduce the burden?

Questions

Are there any other thoughts, comments, recommendations about this issue you'd like to make?

Next Steps

Thank you for your time and input.