



Mapping Heart Disease, Stroke and Other Chronic Diseases:

A Program to Enhance GIS Capacity within State and Local Health Departments

Highlights from Idaho; Indiana; Louisiana; Maine; New York; Delta & Menominee, Michigan; and RiverStone, Montana

Submitted to the US Centers for Disease Control and Prevention Division for Heart Disease and Stroke Prevention and the National Association of Chronic Disease Directors

Prepared by the Children's Environmental Health Initiative at the School of Natural Resources, University of Michigan

August 2012

ACKNOWLEDGEMENTS

The following staff from each of the participating agencies provided valuable contributions to the success of this project's ability to enhance the use of GIS within state health departments for the prevention and treatment of heart disease, stroke, and other chronic diseases. In addition, we extend our deep appreciation to Environmental Systems Research Institute (ESRI) for their generous provision of software grants to the state and local health departments participating in this project.

Idaho Department of Health and Welfare

Andy Bourne
John Cramer
Robert Graff
Joe Pollard

Indiana State Department of Health

Steve Clarke
Peter Fritz
Anita Gupta
Champ Thomaskutty

Louisiana Department of Health and Hospitals

Alok Bhoi
Todd Griffin
Marisa Marino
Sara Perry

Maine Center for Disease Control and Prevention

Sara Huston
Nathan Morse
David Pied
Holly Richards

New York State Department of Health

Ian Brissette
Bonnie Eisenberg
Ann Lowenfels
Rachael Ruberto

Public Health, Delta & Menominee Counties, Michigan

Shanna Hammond
Lori Schultz
Casey Young

RiverStone Health, Montana

Laura Holmlund
Hillary Harris
Adam Harris

Children's Environmental Health Initiative, University of Michigan

Ben Coakley
Christopher Fresco
Meredith Martz
Marie Lynn Miranda
Nancy Schneider
Benjamin Strauss
Joshua Tootoo

Environmental Systems Research Institute

Bill Davenhall
Jennifer Schneider-Camp
Gary Scoffield

Division for Heart Disease and Stroke Prevention, US Centers for Disease Control and Prevention

Michele Casper
Linda Schieb

National Association of Chronic Disease Directors

Margaret Casey

INTRODUCTION

Geographic Information Systems (GIS) are powerful tools for enhancing the ability of state health departments to address the public health burden of heart disease, stroke, and other chronic diseases. In order to build the capacity of state and local health departments to utilize GIS for the surveillance and prevention of chronic diseases, the Division for Heart Disease and Stroke Prevention at the National Centers for Disease Control and Prevention (CDC) funds a collaborative training project with the National Association of Chronic Disease Directors and the University of Michigan. The central objective of this GIS Surveillance Training Project is to enhance the ability of state and local health departments to integrate the use of GIS into daily operations that support existing priorities for surveillance and prevention of heart disease, stroke, and other chronic diseases. Staff members from state and local health departments receive training regarding the use of GIS surveillance and mapping to address four major purposes:

- documenting geographic disparities,
- informing policy and program decisions,
- enhancing partnerships with external agencies, and
- facilitating collaboration within agencies.

In 2011, the following health departments were competitively selected to participate in this GIS Surveillance Training Project: Idaho; Indiana; Louisiana; Maine; New York; Delta & Menominee, Michigan; and RiverStone, Montana. The project is intentionally designed to develop a GIS infrastructure that can serve a vast array of chronic disease areas, yet with a focus on heart disease and stroke.

The maps displayed in this document highlight examples of how each participating health department produced maps to support their chronic disease priorities by documenting the burden, informing program and policy development, and enhancing partnerships. The extent of collaboration among chronic disease units within each health department is evident in the diversity of the teams that participated in the training and have continued to work to strengthen GIS infrastructure within their respective health departments.

CHRONIC DISEASE GIS EXCHANGE

To see additional maps that address heart disease, stroke and other chronic diseases, visit the Chronic Disease GIS Exchange at www.cdc.gov/dhdsp/maps/gisx. The site includes a map gallery, GIS training modules, and a wide range of GIS resources. Visitors to the site are also invited to submit their own map to the map gallery.

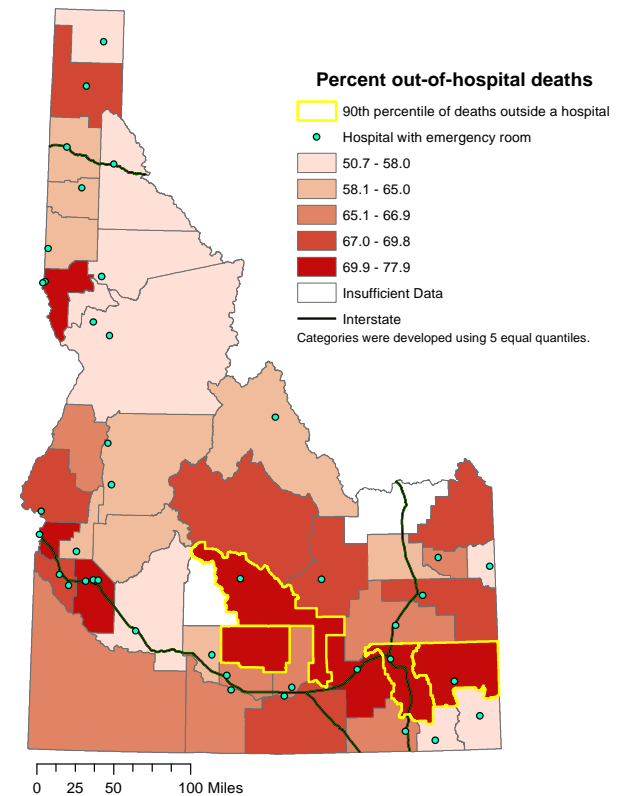
Idaho: Using GIS to Address Existing Priorities

Document the Burden:

Percent Out-of-Hospital Heart Disease Deaths by County, 2006-2010

This map illustrates the percent of heart disease deaths in each county that occurred outside a hospital from 2006-2010. It also shows the locations of hospitals in Idaho that have an emergency room open 24 hrs/day, 7 days/week. The mean percentage of out-of-hospital deaths for the state is 66.8%. The highlighted counties have out-of-hospital percentages in the 90th percentile. The highest annual average percentage of out-of-hospital deaths occurred in Caribou County, at 77.9%. Bear Lake County had the lowest 5-year percentage, with 50.7% outside a hospital. The highest percentages were concentrated in southeast and south central Idaho. This map will be used in conjunction with data on critical drive times to document issues regarding access to care for heart attack patients.

Percent Out-of-Hospital Heart Disease Deaths
by Idaho County, 2006-2010



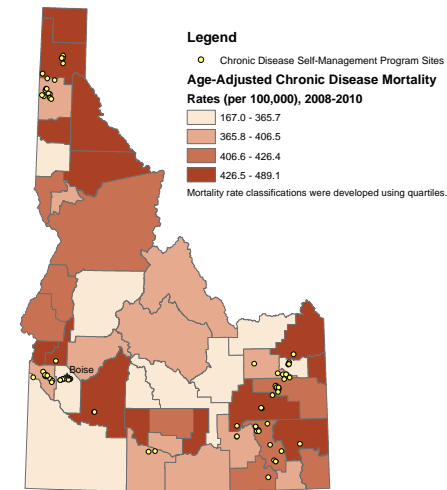
Source: Idaho Department of Health and Welfare; Bureau of Vital Records and Health Statistics (10/2011)
Out-of-hospital deaths include only Idaho residents.

Inform Policy and Program:

Chronic Disease Self-Management Program (CDSMP) Sites and Chronic Disease Mortality Rates by Idaho County

The purpose of this map is to help ensure that Chronic Disease Self-Management Program sites are located in areas which match the needs of people with chronic disease diagnoses or risk factors. The majority of Idaho's CDSMP sites are found clustered in northern Idaho, eastern Idaho, and the Treasure Valley (Boise and nearby urban areas). The counties with the highest chronic disease mortality rates are seen in northern, south central, and eastern Idaho. From this map, it would appear that south central Idaho is currently lacking the capacity of CDSMP sites to provide services to counties that have relatively high chronic disease mortality rates. This map will be shared with chronic disease program managers and Idaho Division of Public Health leadership.

Chronic Disease Self-Management Program (CDSMP) Sites and Chronic Disease Mortality Rates by Idaho County



Chronic diseases include malignant neoplasms, heart disease, cerebrovascular disease, diabetes, and arthritis. Age-adjusted rates per 100,000 population. Population based on mid-year population estimate, July 1, 2009, from the U.S. Census Bureau. Internet release July 23, 2010. Data Source: Idaho Department of Health and Welfare; Bureau of Vital Records and Health Statistics (9/2011).

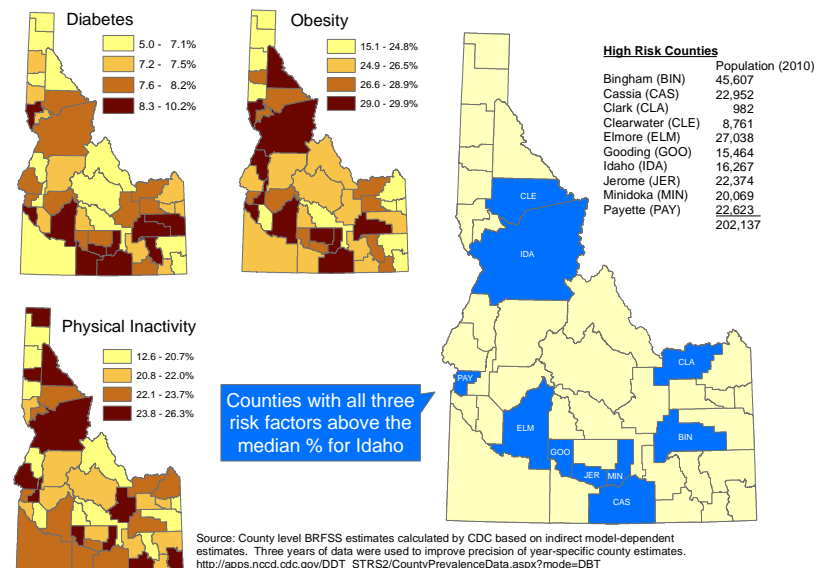


Enhance Partnerships:

Clustering of Chronic Disease Risk Factors 2008 Age-Adjusted BRFSS Prevalence

This map depicts the prevalence of two chronic conditions (diabetes, obesity) along with a risk factor (physical inactivity) known to contribute to both. The map can be used by diabetes and physical activity and nutrition programs to look at these respective conditions independently or to identify counties experiencing potential physical inactivity and diabetes/obesity syndemics. As such the map can be used to inform program integration efforts and to target geographic areas of increased risk. This map has been used in preliminary planning decisions among the diabetes and physical activity and nutrition programs. The map has been shared with program managers and Idaho Division of Health leadership.

Clustering of Chronic Disease Risk Factors, 2008 Age-adjusted BRFSS Prevalence



Sources: County level BRFSS estimates calculated by CDC based on indirect model-dependent estimates. Three years of data were used to improve precision of year-specific county estimates. http://apps.nccd.cdc.gov/DDT_STRS2/CountyPrevalenceData.aspx?mode=DBT Legend cutoffs are based on quartiles.

Indiana: Using GIS to Address Existing Priorities

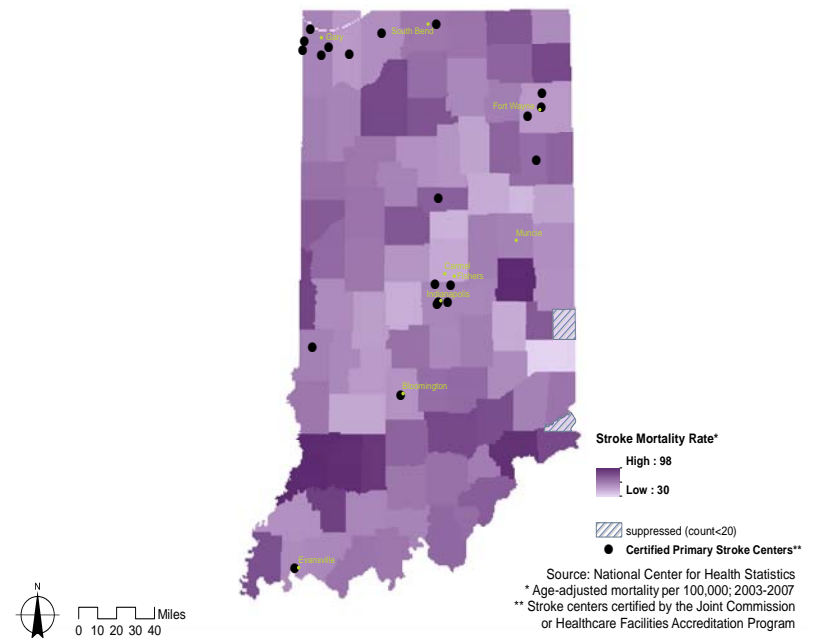
Document the Burden:

Stroke Death Rates and Certified Stroke Centers

Stroke is the fourth leading cause of death in Indiana, accounting for 1 in every 20 deaths. This map demonstrates the county-level burden of age-adjusted stroke death rates for adults 18 years and older. Data are suppressed for 2 counties due to the occurrence of fewer than 20 deaths during the period of analysis, 2003-2007. Rates for the other 90 counties range from 30 to 98 deaths per 100,000 with a mean of 52 deaths per 100,000. This map demonstrates the county-level geographic disparities that exist in stroke outcomes, including a multi-county area in southwestern Indiana with death rates at the upper extreme of the range.

Hospitals that treat stroke victims with a standard of care that complies with national guidelines can seek accreditation in order to be Certified Primary Stroke Centers. Indiana has 21 hospitals designated as Certified Primary Stroke Centers, as defined by the Joint Commission or the Healthcare Facilities Accreditation Program. Presence of a certified stroke center in a region is effective in helping improve stroke outcomes and reducing mortality. This map highlights the presence of certified centers in or near counties with low stroke mortality. Along with documenting mortality, this map can be used to inform stakeholders about the importance of timely access to quality stroke care for stroke patients.

Stroke Mortality and Certified Primary Stroke Centers, Indiana



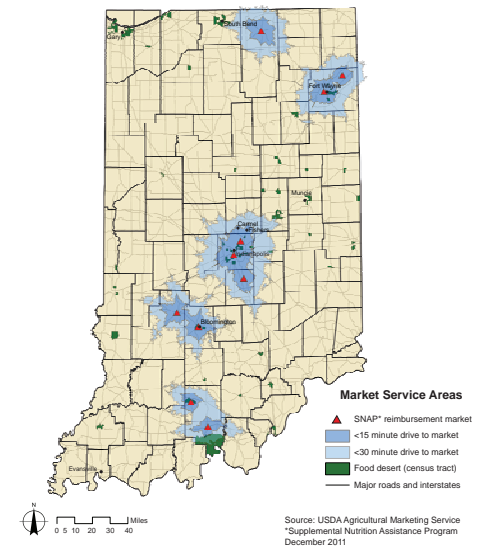
Inform Policy and Program:

Indiana Farmer's Markets: SNAP Reimbursement Service Areas, 2011

Chronic diseases, such as heart disease, stroke, and diabetes, are among the most prevalent, costly, and disabling health issues in Indiana. Leading a healthy lifestyle greatly reduces an individual's risk for developing a chronic disease and is a key component of most disease management plans. Limited availability of fresh fruits and vegetables is regarded as an impediment to lifestyle intervention. Indiana has improved access to fresh produce by expanding its Supplemental Nutrition Assistance Program (SNAP) reimbursement to include farmer's markets around the state.

This map serves to highlight the location of markets around the state that participate in the SNAP program. By assessing drive-times to the markets, the relative accessibility of the locations and the populations served by the markets were determined. Additionally, food deserts are depicted along with the service areas, because the deserts identify communities with high rates of poverty and limited access to grocery stores. By using this information and assessing existing market capacity, decisions on the strategic expansion of this program can be informed.

Indiana Farmer's Markets:
SNAP* Reimbursement Service Areas, 2011



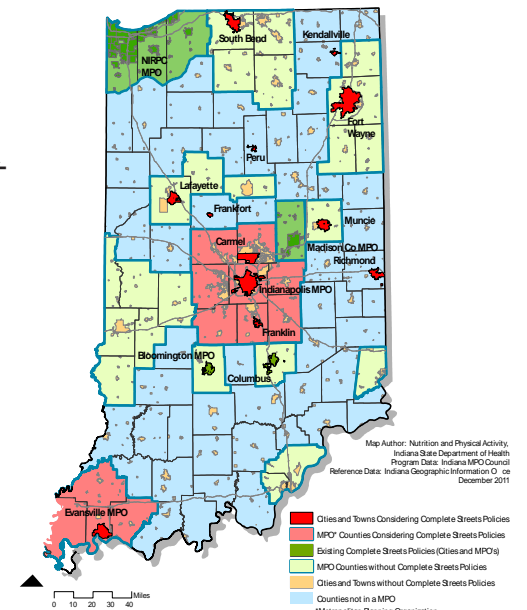
Enhance Partnerships:

Indiana Complete Streets Campaign: Target Communities

Indiana continues to struggle with a high prevalence of chronic diseases. The Division of Nutrition and Physical Activity (DNPA) is helping to lead an effort within Indiana to promote the creation of complete streets policies as a means of increasing access to active transportation, and therefore, to provide Indiana residents with increased physical activity opportunities. DNPA is working with a broad based coalition of stakeholders and other divisions in the Indiana State Department of Health to promote this idea.

This map serves as a benchmarking tool for the coalition in tracking our success in policy change for Complete Streets in Indiana. The map displays communities that have adopted these policies in the state along with those communities that are currently pursuing new policies. The primary objective of the map is to display both existing and potential Complete Street policies on one map for stakeholders to use in tracking their efforts. Counties that participate in a Metropolitan Planning Organization (MPO) are outlined, since MPOs are a key partner in promoting and implementing these policies. This map is used during Complete Streets Campaign monthly meetings as well as posted on the campaign's web page. It will be a valuable tool for communities and stakeholders to identify new partnerships and exchange information as they proceed in creating Complete Streets throughout the state.

Indiana Complete Streets Campaign
Where Policy Change is Happening



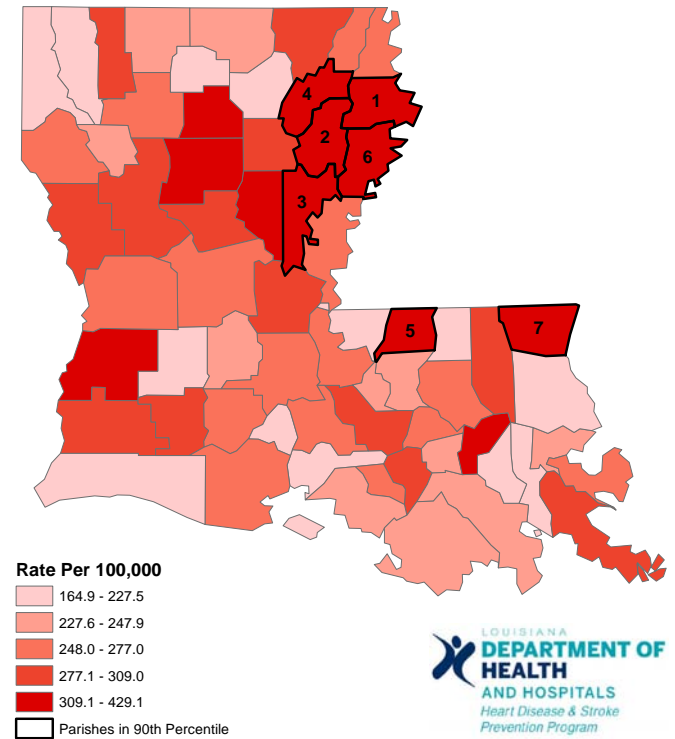
Louisiana: Using GIS to Address Existing Priorities

Document the Burden:

Louisiana Heart Disease Age-Adjusted Death Rates, 2003-2007

Heart disease was the primary cause of death in Louisiana in 2007, accounting for 25% (9,947) of all deaths. The five year (2003-2007) heart disease age-adjusted death rate for Louisiana was 248.0 per 100,000 population. This map illustrates the burden of heart disease by quintile among the 64 parishes in Louisiana. Also indicated on the map are the parishes above the 90th percentile for the state. These are all rural parishes with death rates above 330.6 per 100,000.

Louisiana Heart Disease Age-Adjusted Death Rates
2003-2007

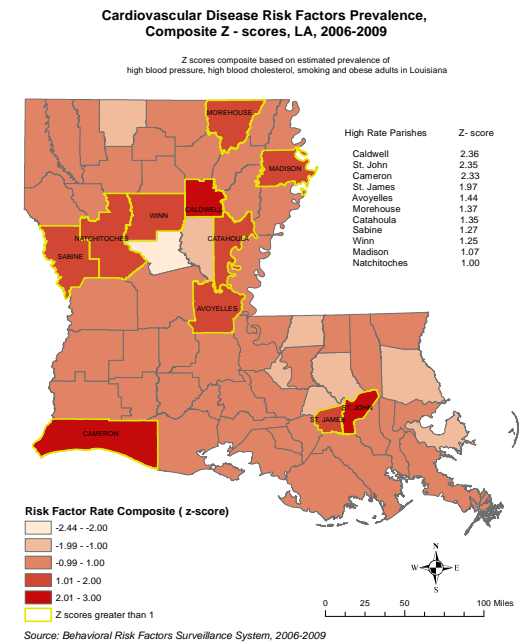


ICD-10 Codes: I00-I09, I11, I13, I20-I51
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, Compressed Mortality File

Inform Policy and Program:

Cardiovascular Disease Risk Factors Prevalence, Composite Z Scores by Parish in Louisiana, 2006-2009

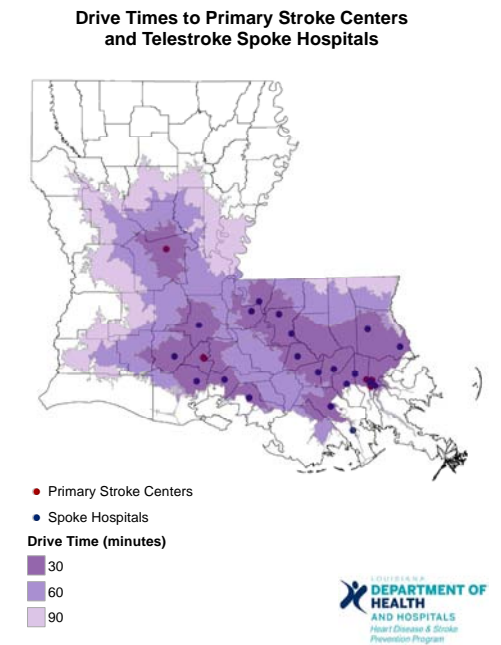
Heart Disease and Stroke are leading causes of death in Louisiana, killing more than 12,000 residents in 2007. There are multiple risk factors that contribute to the development of heart disease and stroke, such as high blood pressure, high blood cholesterol, smoking and obesity. This map consists of composite z-scores (Standard score) of various cardiovascular disease risk factors (high blood pressure, high blood cholesterol, smoking and obesity) among adults in Louisiana from 2006 to 2009. Higher z-scores indicate greater disparities in the population. The z-score values are greater in Caldwell, St. John & Cameron parishes, indicating large disparities in these populations in regards to cardiovascular disease risk factors. This map provides valuable information on various chronic disease risk factors. It not only provides a comparison of different parishes in regards to various risk factors but also helps in addressing disparities among different populations in the state. The Heart Disease & Stroke Program will collaborate with the Tobacco and Obesity programs in targeting specific regions or parishes with large disparities in rates in Louisiana. This map will also be used in carrying out various initiatives in addressing state priorities and policies for the Community Transformation Grant.



Enhance Partnerships:

Drive Times to Primary Stroke Centers and Telestroke Spoke Hospitals

Stroke is a leading cause of disability and the fourth leading cause of death among adults in Louisiana. Louisiana had the 9th highest mortality rate for stroke in the U.S. in 2007. Louisiana currently has seven Primary Stroke Centers and three telestroke systems. This map illustrates the drive times to Primary Stroke Centers and telestroke spoke hospitals. Analysis reveals approximately 79% of Louisiana residents have a drive time of 90 minutes or less to either a Primary Stroke Center or telestroke spoke hospital. It will be used by partners to identify gaps when planning expansion of telestroke services.



Maine: Using GIS to Address Existing Priorities

Document the Burden:

Chronic Hospitalization Rates by Public Health District, Maine

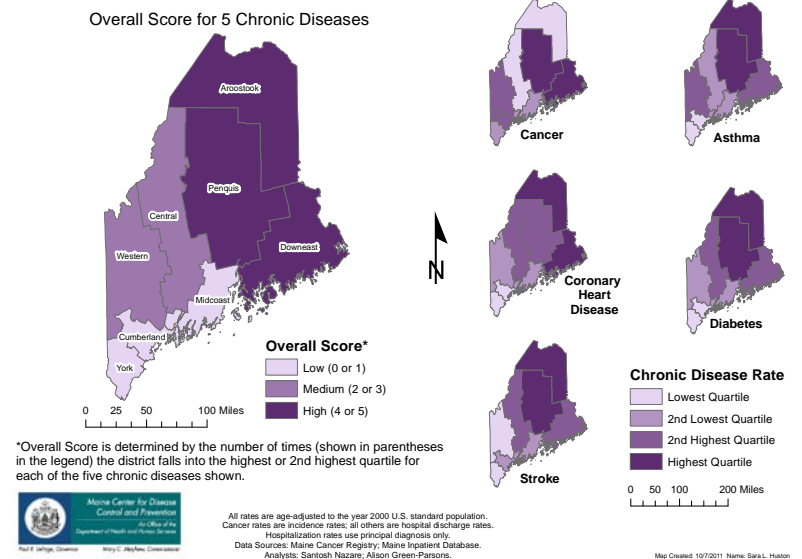
Chronic disease rates are too often examined in isolation, without also looking for common patterns across the diseases. While different chronic diseases do have somewhat different etiologies, there are also many common risk factors, and many people experience more than one chronic disease. This set of maps attempts to show both geographic patterns for specific chronic diseases and common geographic patterns across the diseases.

The small maps show hospitalization rates for five major chronic diseases – cancer, coronary heart disease, stroke, asthma, and diabetes – by Maine Public Health District. The geographic patterns for asthma, coronary heart disease, stroke, and diabetes hospitalizations are relatively similar, with high rates clustering in the north and east districts and the lowest rates in the more southern districts. The pattern of cancer rates is somewhat different, with high rates in the east, but the lowest rates in two of the more northern districts.

The larger map uses an overall chronic disease rate score, which is simply the number of times (0-5) the district falls into the highest or 2nd highest quartile for each of the five chronic diseases shown. Public health districts in the “Low” group are in the highest or 2nd highest quartile for none or only one of the five chronic diseases; those in the “Medium” group for two or three of the chronic diseases, and those in the “High” group for four or all five of the chronic diseases. There are three public health districts – Aroostook, Downeast, and Penquis – that have rates in the highest or 2nd highest quartile for four or five of these chronic diseases.

This set of maps was prepared for the Maine Division of Chronic Disease’s Integration Strategic Planning process, held October 24-26, 2011.

Chronic Hospitalization Rates by Public Health District, Maine

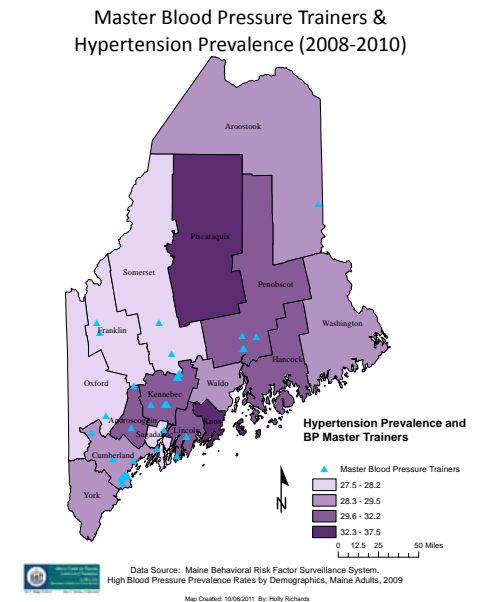


Inform Policy and Program:

Master Blood Pressure Trainers & County Level Hypertension Prevalence

The Maine Cardiovascular Health Program and Maine Cardiovascular Health Council collaborate to offer the Maine Master Blood Pressure Training. After completing the training, Master Trainers are able to train other health care professionals and laypersons in accurate blood pressure measurement.

This map displays the location of the Master Blood Pressure Trainers who were trained 2008-2010. The map also displays Hypertension Prevalence by Maine Counties for 2009. This map will be used to depict the gaps where trainers are needed in relation to the hypertension prevalence. It will help identify areas to recruit new master blood pressure trainers and identify training areas for the current Master Trainers to offer their trainings.



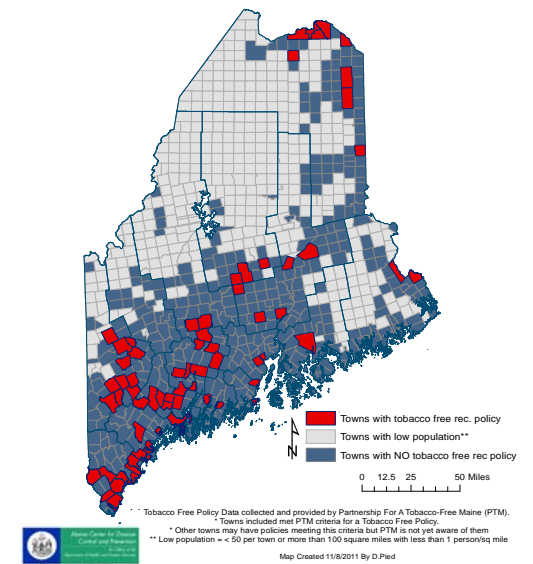
Enhance Partnerships:

Tobacco-Free Recreation Area Policies

The Partnership For A Tobacco-Free Maine (PTM) works with the Healthy Maine Partnerships (HMPs) and other partners throughout the state to help reduce tobacco use and tobacco related chronic disease. One way to achieve these goals is through the development of policies. This map highlights the towns that have tobacco-free recreation area policies in place. It also suggests opportunities for developing policies in towns that currently do not have a policy.

Partnership For A Tobacco-Free Maine plans to share this map with HMPs and other partners to help them identify opportunities for new initiatives. In addition, the map will be shared with youth groups who have participated in youth leadership training, many of which are actively involved in creating anti-tobacco environmental and policy changes in their communities.

Maine Towns with Tobacco-Free Recreation Area Policies *
November 2011

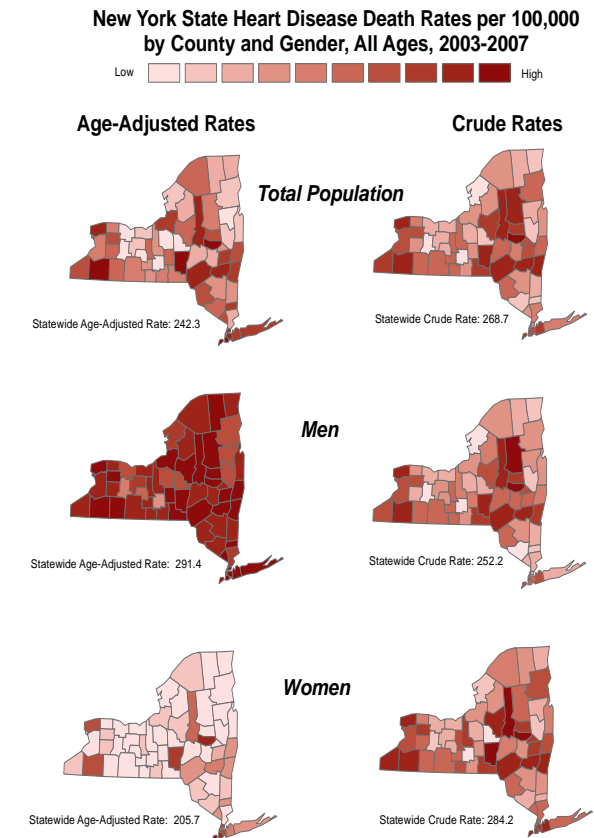


New York: Using GIS to Address Existing Priorities

Document the Burden:

New York State Heart Disease Death Rates per 100,000 by County and Gender, All Ages, 2003-2007

Heart disease is the leading cause of death in New York State. This six-panel map was developed to communicate the burden of heart disease mortality by gender at the county-level (DHDSP priority area 5). Both age-adjusted and crude death rates were calculated overall, and for men and women individually. Ten categories were defined according to county heart disease death rates for the total population in NYS. When the age-adjusted maps are considered, heart disease death rates are higher for men than women. When the crude maps are considered, the rates for men and women are more similar. Counties with relatively higher heart disease death rates among men also tend to have higher death rates among women. This map emphasizes that heart disease is a priority health condition for both men and women in New York State.



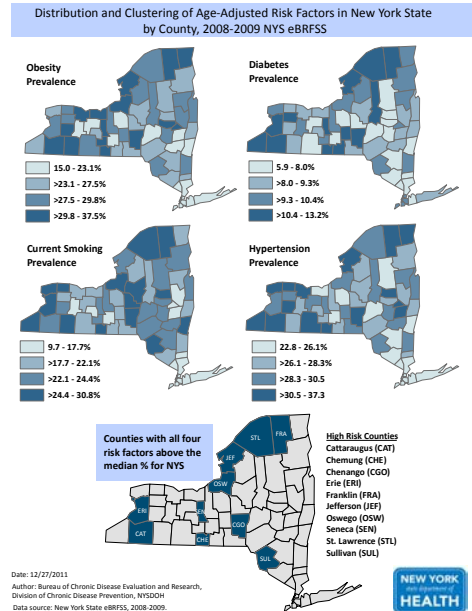
Date: 12/27/2011
Author: Bureau of Chronic Disease Evaluation and Research, Division of Chronic Disease Prevention, NYSDOH
Data Source: CDC, NCHS, Compressed Mortality File 1999-2007, CDC Wonder On-line Database. Deaths defined according to ICD-10 codes: I00-I02, I05-I09, I11.0, I11.9, I13.0, I13.1, I13.2, I13.9, I20-I25, I26-I28, I30-I151. Ten rate categories defined according to total population for NYS county heart disease death rates (crude and adjusted).



Inform Policy and Program:

Distribution and Clustering of Age-Adjusted Risk Factors in NYS by County, 2008-09 NYS eBRFSS

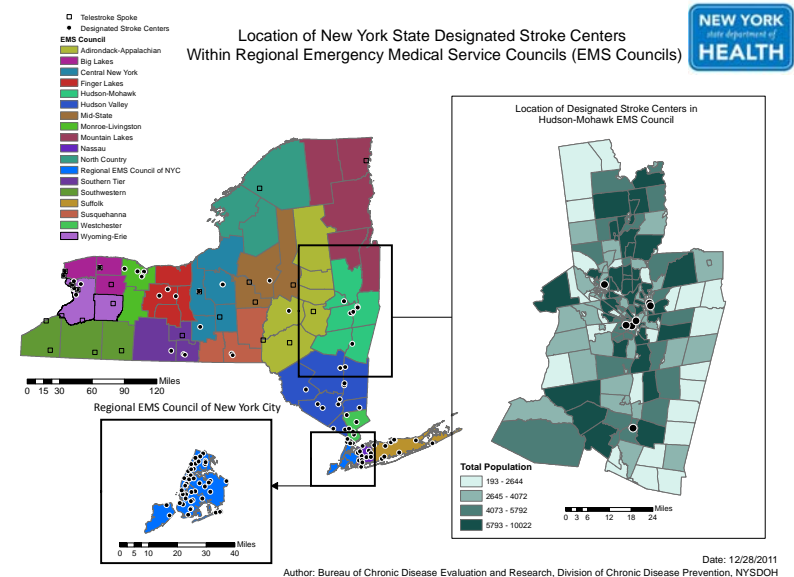
In 2008-2009, New York State completed an expanded Behavioral Risk Factor Surveillance Survey (eBRFSS) that produced county-level estimates on preventive health practices, risk behaviors, injuries and preventable chronic and infectious diseases for the 57 upstate counties and New York City as a whole. This map highlights the distribution and clustering of four key chronic disease risk factors and conditions- obesity, diagnosed diabetes, current smoking, and hypertension - in New York State by county. The first four panels show the burden of each individual indicator across the state while the fifth panel highlights counties that are above the median for all four indicators. This map can be used by diabetes, obesity, and heart disease and stroke program partners to plan chronic disease prevention activities in counties that are identified as having elevated need based on the prevalence of these key risk factors.



Enhance Partnerships:

Location of New York State Designated Stroke Centers within Regional Emergency Medical Service (EMS) Councils

The New York State Department of Health (NYSDOH) designates Stroke Centers statewide to improve the standard of quality and access to care for stroke patients. The NYSDOH also established a Telestroke initiative to extend the benefits of the program to regions that did not currently have a participating hospital. The Emergency Medical Services (EMS) community plays an important role in ensuring stroke centers achieve their mission of providing stroke patients quality timely care. This map shows the locations of Designated Stroke Centers (DSC) and Telestroke spokes in NYS by EMS Council. In contrast to New York City and other major metropolitan areas where there are a large number of stroke centers, the North Country region of the state has no designated centers and only two telestroke spokes. This map was shared with the Director of Regulatory Compliance for the Stroke Centers to support the Stroke Certification Program in New York State. The map is intended to be part of a series of maps used to enhance the ongoing partnership between Designated Stroke Centers and representatives from the EMS Councils.



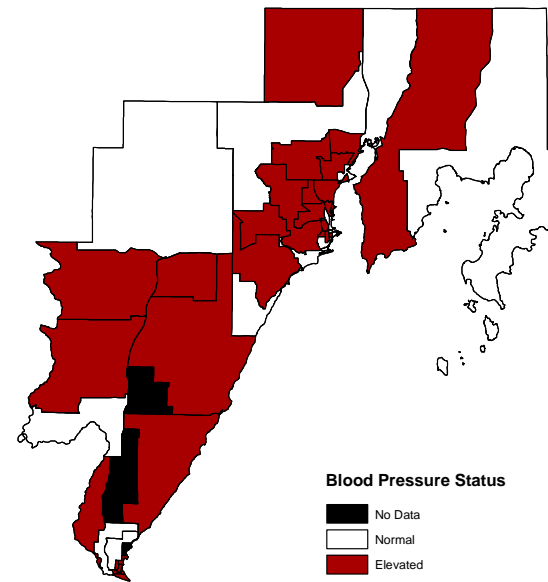
Delta & Menominee Counties in Michigan Upper Peninsula: Using GIS to Address Existing Priorities

Document the Burden:

Elevated Blood Pressure Among WISEWOMAN Participants

The WISEWOMAN Program works to better women's health by offering a variety of free screenings to empower qualifying women to live heart healthy lifestyles, including blood pressure screenings. This map shows client blood pressure averages by block group. The averages are categorized as being either elevated or normal. Clients were geocoded and blood pressures were averaged by block group to avoid displaying information protected by the Health Insurance Portability and Accountability Act.

Average Blood Pressure Measurements among WISEWOMAN Participants by Block Group in Northern Michigan (Menominee and Delta Counties)



Blood pressure data: PHDM WISEWOMAN caseload and screening data.

Base data: 2000 Census Block Groups

0 2.5 5 10 15 20 Miles

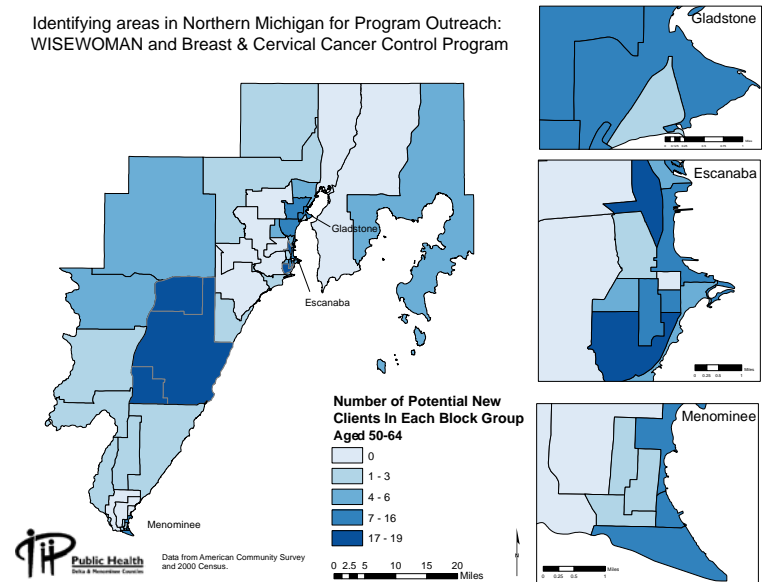


Inform Policy and Program:

Targeting Areas for Program Outreach

The Breast and Cervical Cancer Control Program and the WISEWOMAN Program provide chronic disease risk factor screening, lifestyle intervention, and referral services to qualifying women. These services include cancer screening. This map displays the areas in our two-county district where there are women who are potentially eligible to receive these free services but are not yet clients. All three major cities in the district display a need for continued new client outreach. Additionally a large number of potential new clients reside in rural Menominee County. This map will be used to target outreach to the areas that are underserved by our programs.

Identifying areas in Northern Michigan for Program Outreach: WISEWOMAN and Breast & Cervical Cancer Control Program



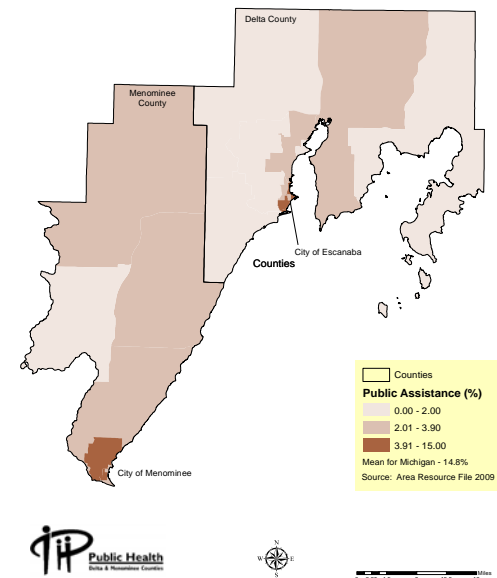
Enhance Partnerships:

Percentage Utilizing Public Assistance, Delta & Menominee Counties

Public Health, Delta & Menominee Counties (PHDM), serves a broad cross-section of the community. However, numerous programs are income-based or have fees which are income-based. Some of the programs administered by PHDM are a form of public assistance such as WIC (Women, Infants, and Children) which provides food assistance to low income pregnant women and parents of young children.

As demonstrated in the Percentage Utilizing Public Assistance, Delta and Menominee Counties map, the distribution of public assistance recipients is not random. In Delta and Menominee counties, those relying on public assistance are concentrated in the City of Menominee and the City of Escanaba. PHDM offices are located in these two cities allowing our clients to access PHDM services easily.

Percentage Utilizing Public Assistance
Delta and Menominee Counties, Michigan



RiverStone: Using GIS to Address Existing Priorities

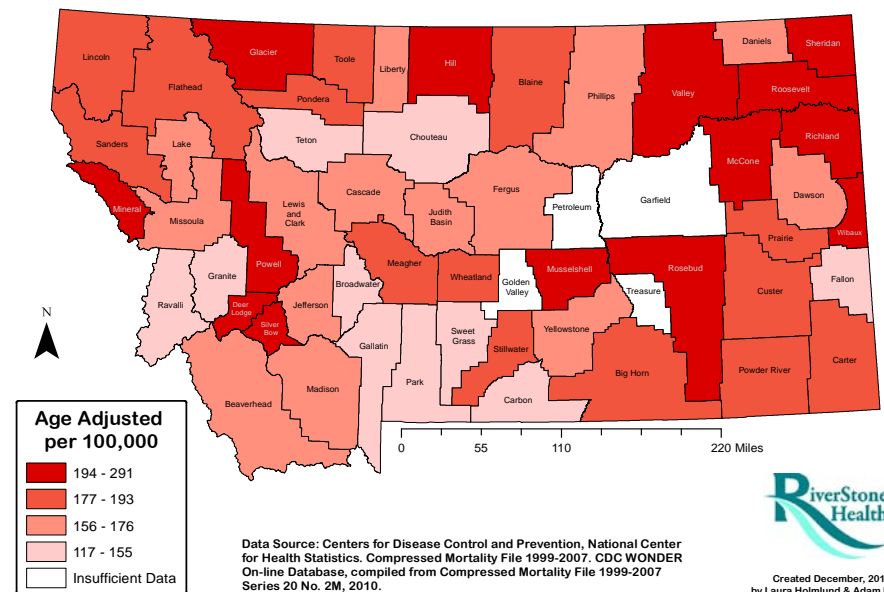
Document the Burden:

Montana heart disease death rates

Among the counties in Montana, heart disease death rates ranged from 117 to 291 per 100,000 for the years 2003-2007 combined. Counties with heart disease death rates that were in the highest quartile (194 – 291 per 100,000) were located primarily in the northeast corner of Montana and parts of the northwest corner. Counties in the lowest quartile of heart disease death rates (117 – 155 per 100,000) were found largely in the center of the state along the southern border with Wyoming.

The service area for RiverStone Health includes the following seven counties: Sweet Grass, Stillwater, Carbon, Yellowstone, Musselshell, Treasure and Big Horn. The population in Treasure County is not large enough to generate a stable heart disease death rate. Among the other counties there is a range in heart disease death rates, with each of the 4 quartiles being represented within the Riverstone Health service area.

Montana heart disease death rates



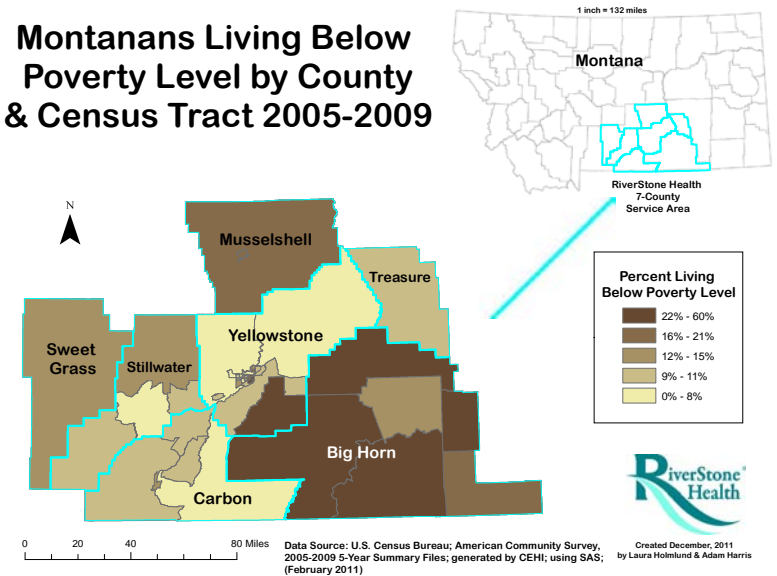
Inform Policy and Program:

Montanans living below poverty

From 2005 to 2009 Montana's poverty rate varied from an initial high of 14.6% in 2005 to a low of 14.1% in 2008 to a new high of 15.1% in 2009. This map shows that, for the years 2005-2009 combined, several of the census tracts in the RiverStone Health service area were in the top two quartiles of poverty rates for the state. A few census tracts were in the lowest quartile for poverty rates in the state.

The RiverStone Health Special Supplemental Nutrition for Women, Infants and Children (WIC) program serves a five county region including Sweet Grass, Stillwater, Carbon, Yellowstone and Musselshell Counties. This map of the percent living below poverty level by census tract will be compared with a map of public assistance usage rates. The WIC staff will be able to identify counties with high qualification rates but low participation rates, and will then be able to focus their outreach efforts in census tracts with the greatest populations in need.

Montanans Living Below Poverty Level by County & Census Tract 2005-2009



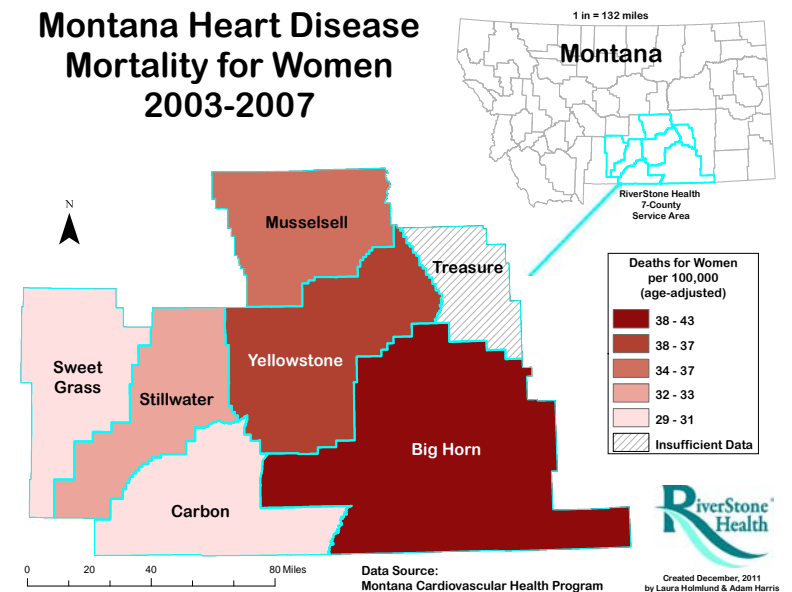
Enhance Partnerships:

Comprehensive Cancer Control Program and Nutrition and Physical Activity Program

This map displays the pattern of heart disease death rates among women for the combined years of 2003-2007, and indicates that the highest rates were observed in Big Horn County. RiverStone Health serves Big Horn County through the Comprehensive Cancer Control Program and the Nutrition and Physical Activity Program contracts with the Montana Department of Public Health and Human Services. Therefore, this map series was shared with these programs to enhance cross program collaboration.

While the Comprehensive Cancer Control Program does not address heart disease specifically, it does provide access to health screenings. Improved access and utilization of health screenings could facilitate women getting established with primary care physicians, thereby enhancing the possibility of having any risk for heart disease detected at an earlier stage. Outreach through the Nutrition and Physical Activity Program is just beginning in Big Horn County. Discussing these maps with decision makers in Big Horn County could provide opportunities to enhance the healthy food environments in the county.

Montana Heart Disease Mortality for Women 2003-2007



Facilitating Collaboration

The GIS State Surveillance Training Program was intentionally designed to develop a GIS infrastructure that would facilitate collaboration among an array of chronic disease units within each state health department, yet with a focus on heart disease and stroke. To that end, the four staff members from each state health department that participated in the training represented different chronic disease units. Each state health department was led by a member of the heart disease and stroke unit; here are the chronic disease units that were represented in each of the participating state and local health departments:

Idaho Department of Health and Welfare

<u>Name</u>	<u>Chronic Disease Unit</u>
Joe Pollard	Bureau of Community and Environmental Health
Robert Graff	Chronic Disease, Environmental Health, Injury Epidemiologist
Andy Bourne	Bureau of Vital Records and Health Statistics
John Cramer	Bureau of Emergency Medical Services



Indiana State Department of Health

<u>Name</u>	<u>Chronic Disease Unit</u>
Steve Clarke	Cardiovascular Health Program
Peter Fritz	Division of Nutrition and Physical Activity
Champ Thomaskutty	Diabetes Program and Cardiovascular Health Program
Anita Gupta	Division of Nutrition and Physical Activity



Louisiana Department of Health and Hospitals

<u>Name</u>	<u>Chronic Disease Unit</u>
Alok Bhoi	Heart Disease and Stroke Prevention Program
Todd Griffin	BRFSS Coordinator
Sara Perry	Asthma Management and Prevention Program
Marisa Marino	Heart Disease and Stroke Prevention Program



Maine Center for Disease Control and Prevention

Name

David Pied
Sara Huston
Nathan Morse
Holly Richards

Chronic Disease Unit

Maine CDC Cardiovascular Health Program
Maine CDC and Prevention
Maine CDC Diabetes Prevention and Control Program
Maine CDC Cardiovascular Health Program



New York State Department of Health

Name

Ian Brissette
Bonnie Eisenberg
Rachael Ruberto
Ann Lowenfels

Chronic Disease Unit

Chronic Disease and Risk Factor Surveillance
Cardiovascular Disease Surveillance and Evaluation
Surveillance and Evaluation for Diabetes and Obesity Prevention
Bureau of Chronic Disease Epidemiology & Surveillance



Public Health, Delta & Menominee Counties, Michigan

Name

Shanna Hammond
Lori Schultz
Casey Young

Chronic Disease Unit

Community Health Promotion
Environmental Health
Community Health Promotion



RiverStone Health, Montana

Name

Laura Holmlund
Hillary Harris
Adam Harris

Chronic Disease Unit

Yellowstone City County Health Department
Population Health Services
Environmental Health Services Division of Public Health





E-mail: cehi.snre@umich.edu
<http://cehi.snre.umich.edu>

MSNRE
UNIVERSITY OF MICHIGAN
SCHOOL OF NATURAL RESOURCES AND ENVIRONMENT