



# **Mapping Heart Disease, Stroke and Other Chronic Diseases: A Program to Enhance GIS Capacity within Health Departments**

Map Highlights from State Health Departments: Hawaii, Maryland, Minnesota, and New York;  
and Thematic Training: Arkansas, California, Minnesota, and 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, Rice University, February 2018

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# TABLE OF CONTENTS

<b>Standard Training: GIS Surveillance Training Project .....</b>	<b>1</b>
Maps from the Participating State Health Departments	
Hawaii .....	2
Maryland .....	6
Minnesota .....	10
New York .....	14
<b>Advanced Training: Using GIS to Enhance Blood Pressure Medication Adherence .....</b>	<b>18</b>
Maps from the Participating State Health Departments	
Arkansas.....	19
California.....	20
Minnesota .....	21
Montana .....	22
<b>Facilitating Collaboration Within State Health Departments .....</b>	<b>23</b>

# GIS SURVEILLANCE TRAINING PROJECT

Geographic Information Systems (GIS) offer powerful tools for enhancing the ability of health departments to address the public health burden of heart disease, stroke, and other chronic diseases. In order to build the capacity of 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 (NACDD), and The Children's Environmental Health Initiative (CEHI). The central objective of this GIS Surveillance Training Project is to enhance the ability of 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 health departments receive training regarding the use of GIS surveillance and mapping to address four major purposes:

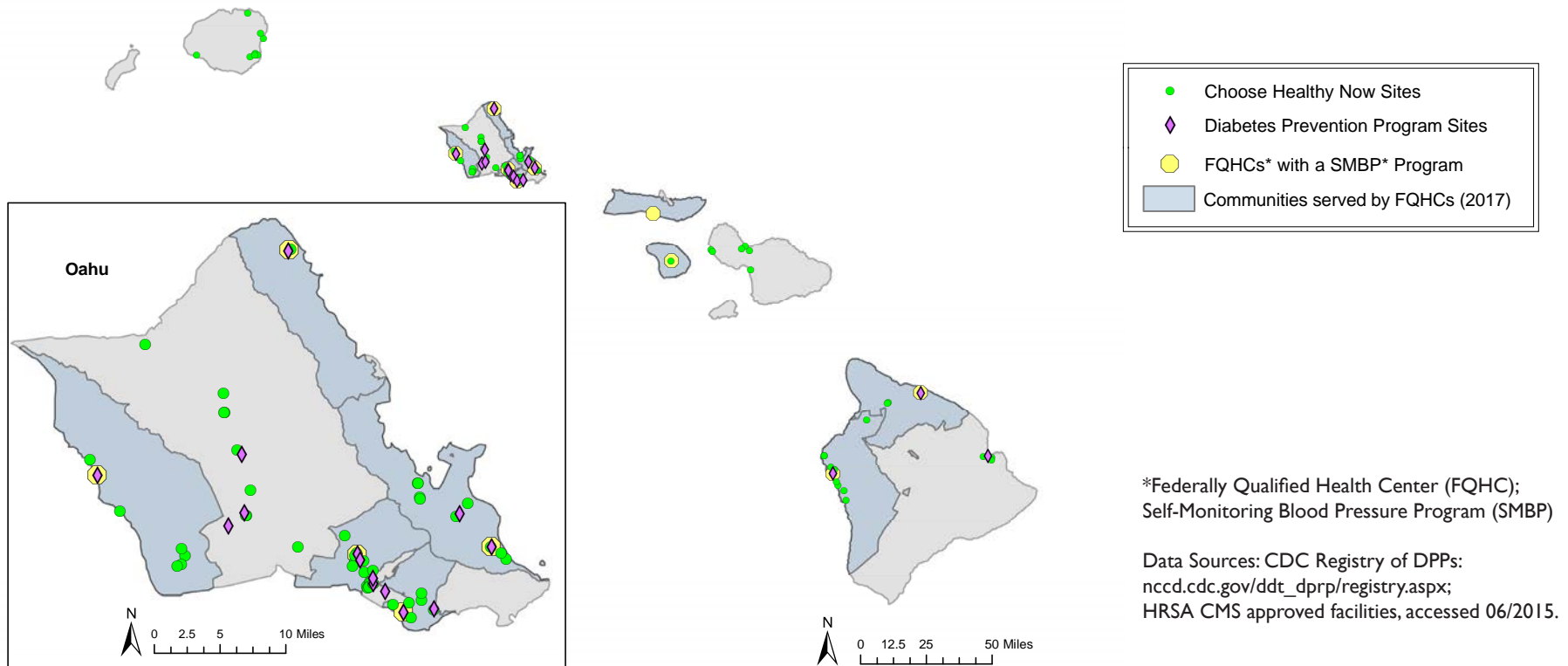
- Documenting geographic disparities
- Informing policy and program decisions
- Enhancing partnerships with external agencies
- Facilitating collaboration within agencies

In 2017, the following state health departments were competitively selected to participate in this GIS Surveillance Training Project:  
State Health Departments: Hawaii, Maryland, Minnesota, New York.

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 following 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.

# HAWAII

## Locations of Chronic Disease Prevention Programs in Communities Served by Federally Qualified Health Centers

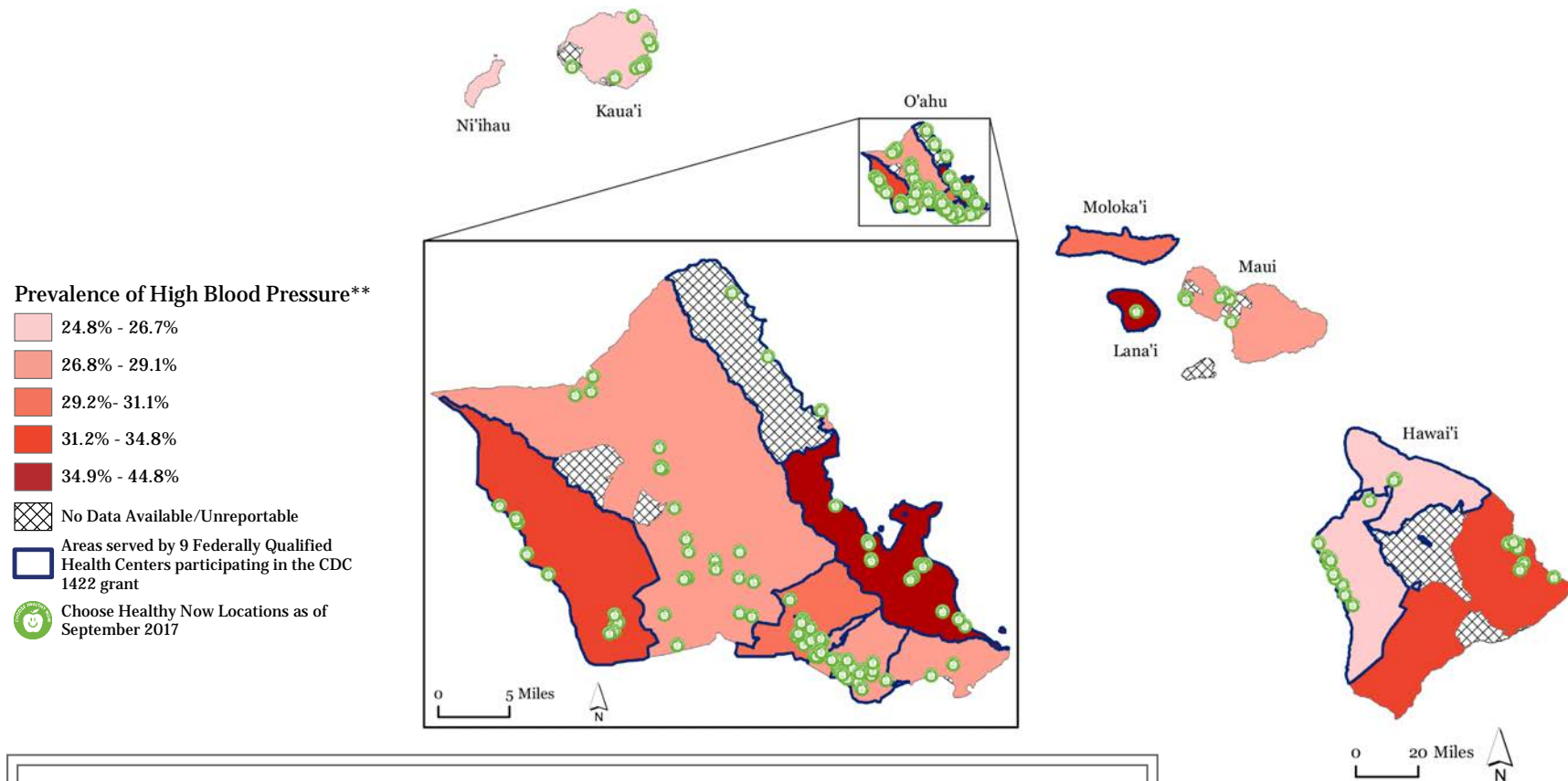


### Key Points

- Through the Centers for Disease Control's Cooperative Agreements, 1305 and 1422, the Hawai'i State Department of Health (DOH) has developed the Choose Healthy Now (CHN) program, which aims to increase awareness and availability of healthier food and beverages across the state.
- Additionally, the 1422 Cooperative Agreement supports efforts to increase the availability of chronic disease prevention and self-management programs, such as the Diabetes Prevention Program (DPP) and Self-Measured Blood Pressure Monitoring (SMBPM), in nine communities across the state.
- To promote mutual reinforcement across strategies in 1422, it is necessary to intentionally reinforce lifestyle change and support healthy eating behaviors among patients enrolled in Diabetes Prevention Programs (DPP) and Self-Monitoring Blood Pressure Programs with healthy food environments. This map can help guide Choose Healthy Now programmatic efforts, by identifying areas of need for additional implementation.

# HAWAII

## High Blood Pressure among Hawai'i's Priority Populations\* and Choose Healthy Now Locations



### Key Points

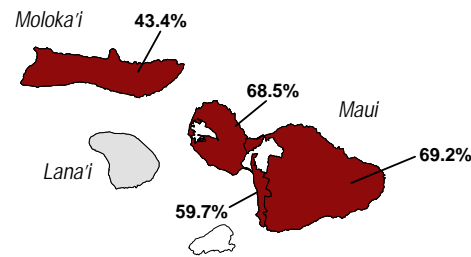
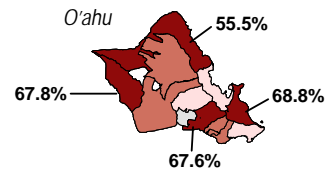
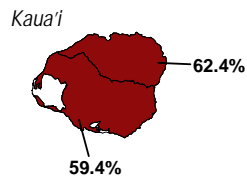
- Hawai'i's priority populations for CDC's 1422 Cooperative Agreement are Native Hawaiians, Filipinos, other Pacific Islanders, and/or low income adults.
- Through the 1422 grant, Hawai'i is working to identify adults with undiagnosed high blood pressure in the priority populations and to increase access to healthy foods, through the Choose Healthy Now (CHN) project, in nine target communities throughout the state.
- This map shows both the progress Hawai'i has achieved and the areas where additional CHN locations are needed to support adults in the target communities with self-reported high blood pressure.

\*Native Hawaiians, other Pacific Islanders, Filipinos, and/or low income adults  
 \*\*Crude prevalence of self reported high blood pressure

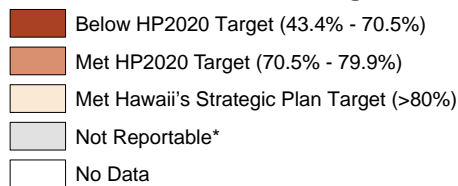
Data Source: Hawai'i Health Data Warehouse, Hawai'i Department of Health, Behavioral Risk Factor Surveillance System (BRFSS), [2011, 2013, 2015].

# HAWAII

## Baseline Colorectal Cancer Screening Rates by Community for the Hawai'i Cancer Program's 2016-2020 Strategic Plan

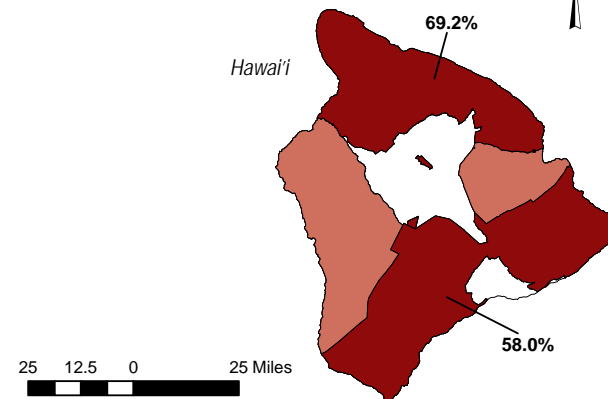


### Colorectal Cancer Screening Rates, Ages 50-75



### Key Points

- The US Preventive Services Task Force (USPSTF) recommends all adults between 50-75 years of age be screened for colorectal cancer. Healthy People 2020 (HP2020) set a national colorectal cancer screening target of 70.5%.
- In 2015, Hawai'i reached the 70.5% statewide target for colorectal cancer screening rates, and increased its statewide 2020 target to 80.0%.
- This map examines colorectal cancer screening rates by community, illuminating several communities with disproportionately low screening rates, particularly on neighbor islands, Kaua'i and Moloka'i.
- This map is being used to inform the Hawai'i House Concurrent Resolution (HCR) 129 workgroup about the geographic distribution and extent of disparities in colorectal cancer screening in Hawai'i. This map will help focus resources and future interventions on areas with low screening rates.

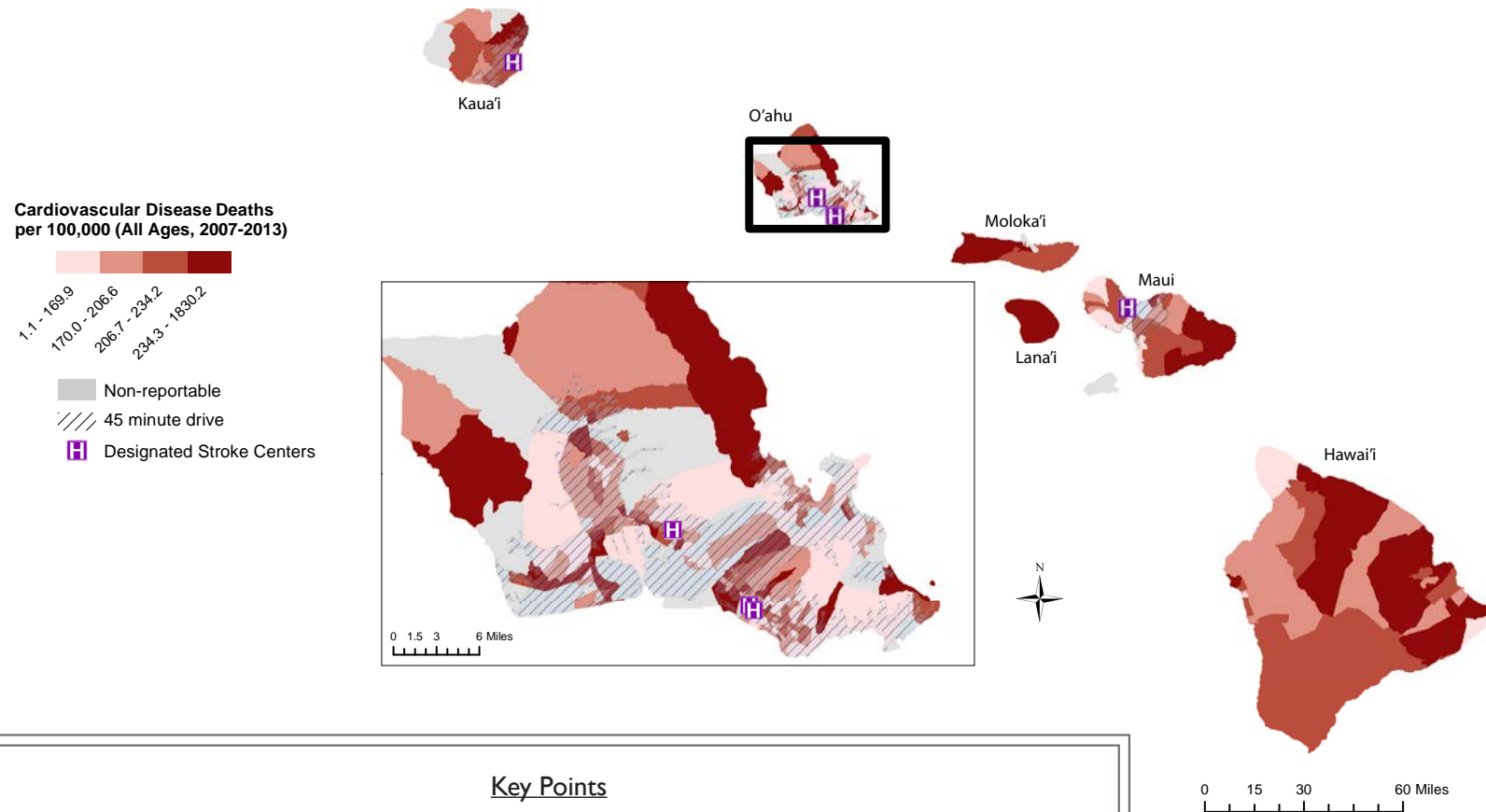


\*Data is not reportable if the unweighted total responses for a community is <50 or if the relative standard error is >0.3.

Data Source: Hawaii Health Data Warehouse. Hawai'i State Department of Health. Behavioral Risk Factor Surveillance System (BRFSS) 2015.

# HAWAII

## Cardiovascular Disease Mortality Rates and 45-minute Drive Times to Stroke Center Hospitals



### Key Points

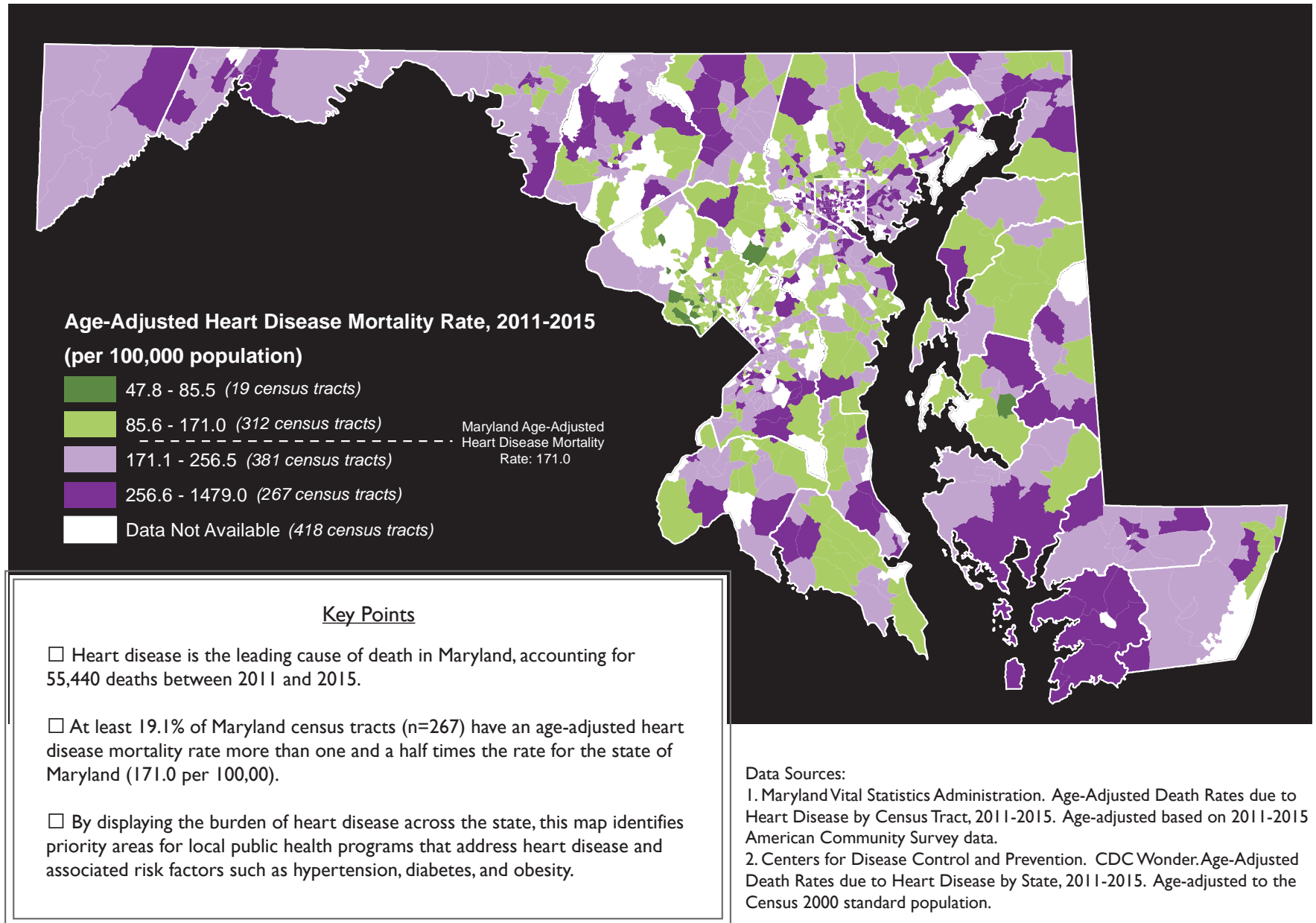
- This map examines cardiovascular disease mortality rates by census tract and identifies locations of designated primary and comprehensive stroke centers. Drive time analysis was conducted to show regions that fall within a 45-minute drive time to a stroke center.
- Several census tracts in the highest quintile of cardiovascular disease mortality rates are located on neighbor islands (Hawai'i (Big Island), Moloka'i, and Lana'i) with no access to a stroke center. Even on Oahu with three designated stroke centers, there are several census tracts with high mortality rates that fall outside the 45-minute drive time range.
- This map will be useful to identify areas that are lacking resources to properly treat persons who have had a stroke.

Data Sources: Hawaii Health Data Warehouse, Hawaii State Department of Health, Office of Health Status Monitoring, Vital Statistics and United States Census Bureau, American Community Survey



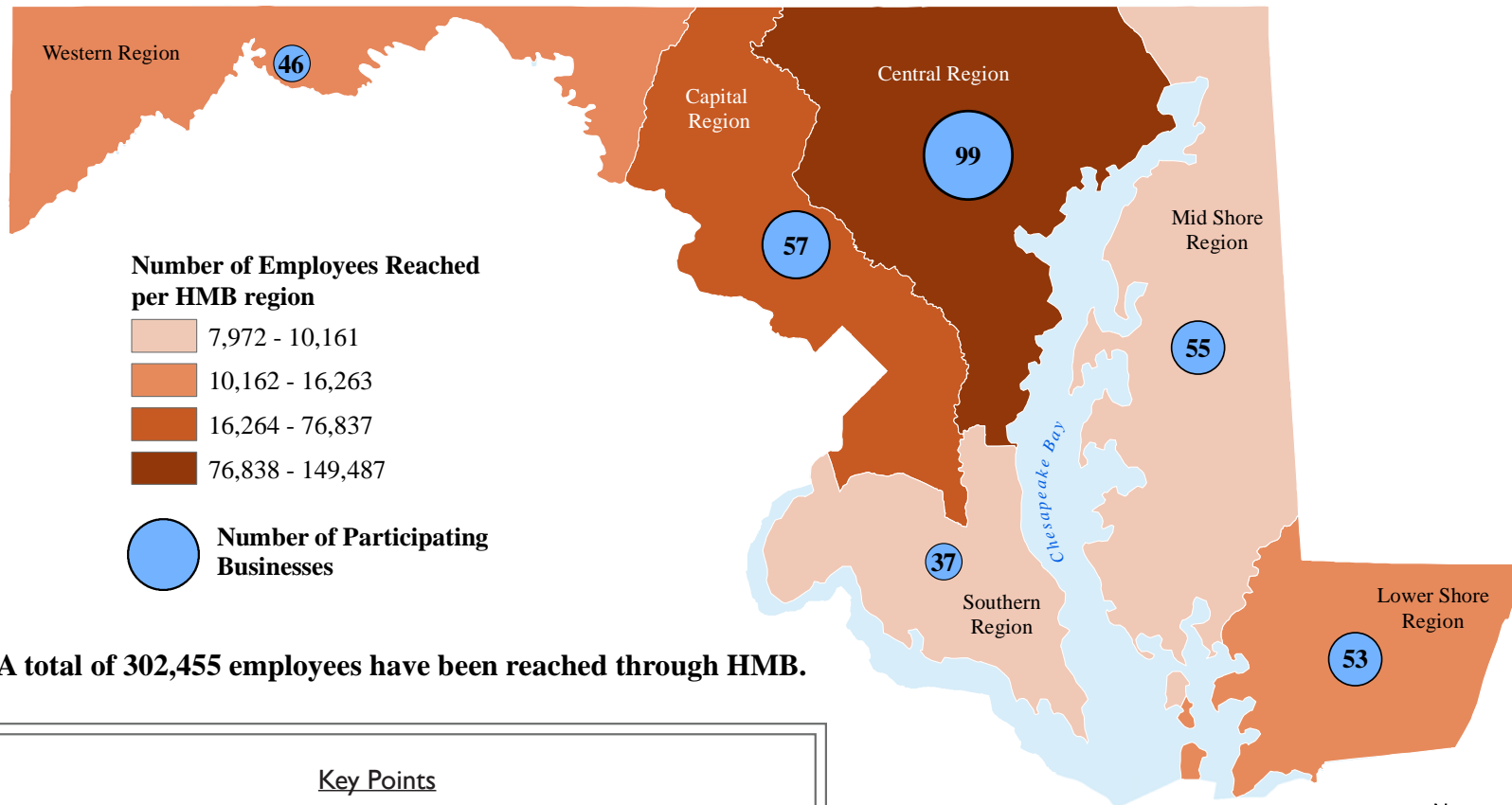
# MARYLAND

## Heart Disease Mortality by Census Tract



# MARYLAND

## Maryland Employees Reached through Participation in Healthiest Maryland Businesses (HMB)



**A total of 302,455 employees have been reached through HMB.**

### Key Points

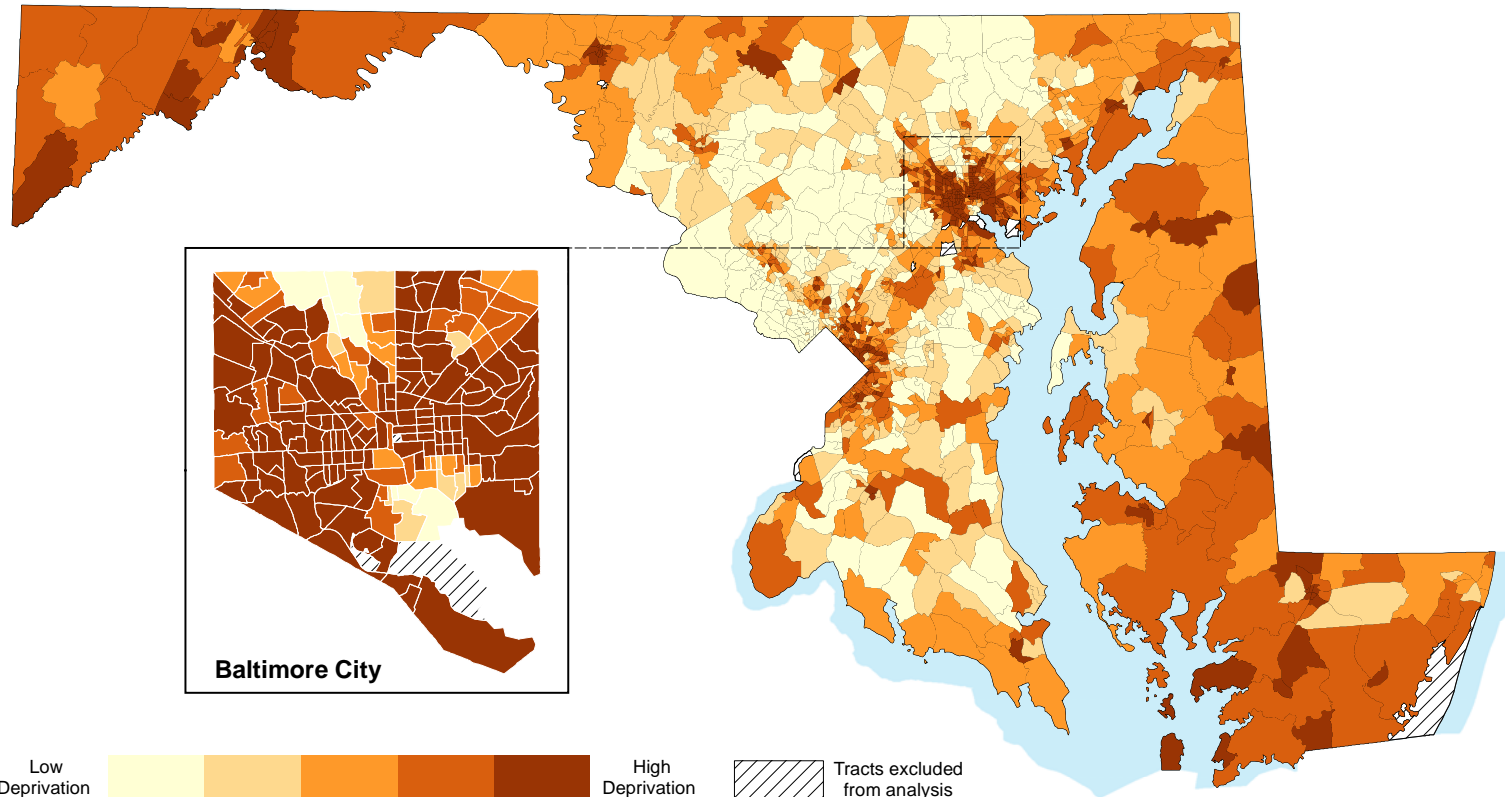
- Workplaces provide a valuable opportunity to promote healthy behavior; in 2015, the average employed American ages 25 to 54 with children spent 8.8 hours per work day at work or performing work-related activities.
- This map shows the number of HMB participating businesses and employees that have completed the CDC Worksite Health ScoreCard at least once between 2012 and 2017. The ScoreCard is a tool designed to assess whether a worksite has implemented health promotion strategies to prevent heart disease, stroke, and related conditions.
- This map will help the HMB program understand regional differences in employer participation and identify areas where further outreach may be needed to increase participation.

Note: Information available for 348 businesses that participated in HMB as of 2/28/2017; About half of all businesses participating in HMB (53%) have less than 100 employees, 35% have between 100 and 1,000 employees and 12% have more than 1,000 employees.

Data Source: Maryland Department of Health, Center for Chronic Disease Prevention and Control Worksite Health Score Card, Healthiest Maryland Businesses Program.

# MARYLAND

## Using the Neighborhood Socioeconomic Status Index (NSES) to Identify Census Tracts in Maryland with High Deprivation



### Key Points

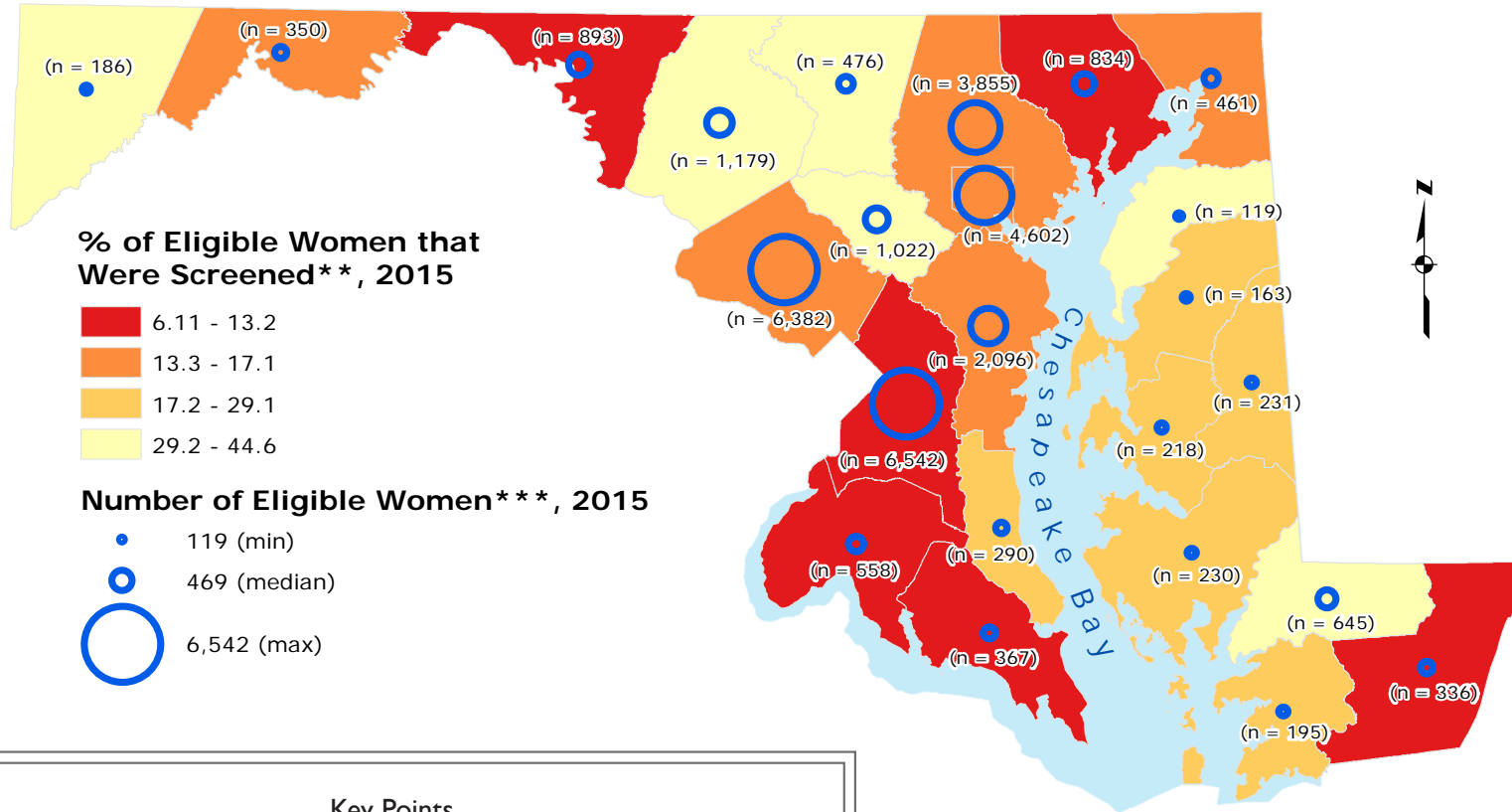
- Living in high neighborhood deprivation can decrease the quality and quantity of available community-based public health interventions, the availability of health care services and resources, and access to healthy food and physical activity (Shaw et al., *Prev Chronic Dis* 2016)
- Tracts were categorized into subgroups based on quantile, with the darkest graded colored representing the highest neighborhood deprivation across the six measures. There are high concentrations of poverty in East and West Baltimore City, as well as parts of Western Maryland and the lower Eastern shore.
- This analysis provides important insight into the location of vulnerable populations.

Data Source: 2012 American Community Survey

Neighborhood deprivation in Maryland was assessed using the Neighborhood Socioeconomic Status Index (NSES) (Dubowitz et al., 2011), a validated aggregate of census tract-level indicators. NSES is a composite of six indicators obtained from the American Community Survey for each tract: a) percent of adults 25 years and over with less than a high school education; b) percent of unemployed males; c) percent of households with income below poverty level in the past year; d) percent of households receiving public assistance; e) percent of households with children that are headed by an unmarried female; and f) median household income in the past year.

# MARYLAND

## Percent of Eligible Women that were Screened for Breast and Cervical Cancer by Jurisdiction\*



### Key Points

- Maryland's Breast and Cervical Cancer Screening Program (BCCP) provides breast and cervical cancer screening, diagnosis, and patient navigation services to women across the state. Uninsured women between 40 and 64 years of age who are at or below 250% of poverty are eligible for BCCP-funded screening and diagnosis services.
- The percent of uninsured women reached by the BCCP did not exceed 44.6% in any jurisdiction, with a majority of jurisdictions serving 30% or less of their uninsured women.
- This map will inform leadership in the health department, policy makers, and other stakeholders on how well the BCCP and its screening services are reaching their target population in each of the jurisdictions.

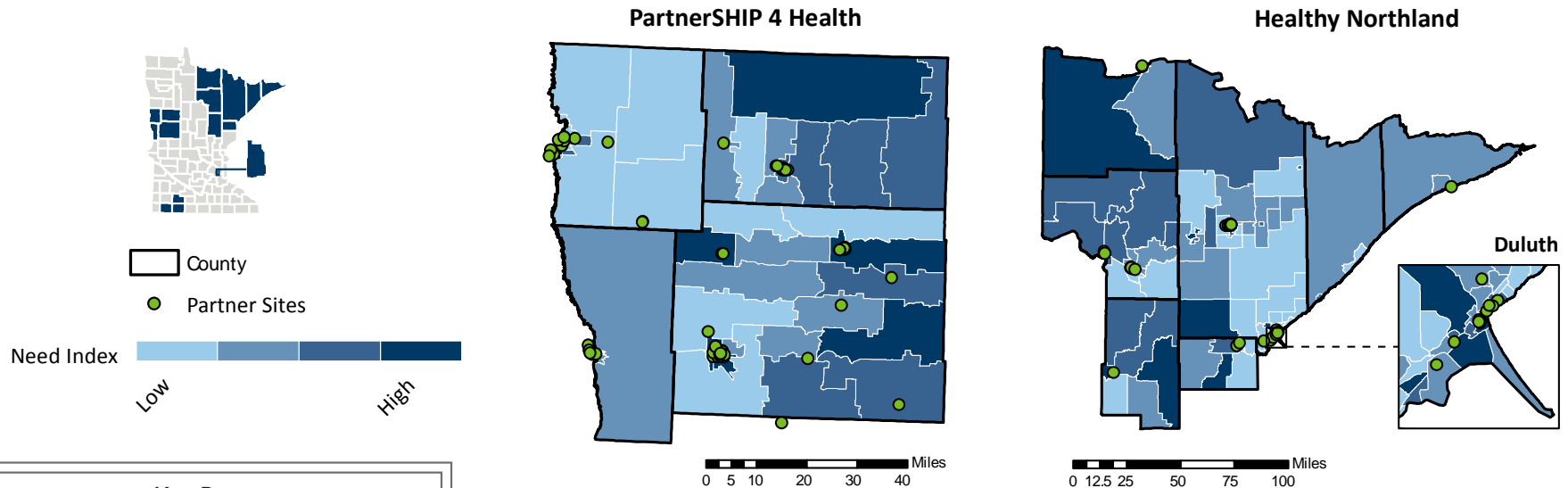
0 20 40 80 Miles

\*Maryland's 23 counties and Baltimore City  
 \*\*Women served include those who use BCCP services for screening and/or diagnosis.  
 \*\*\*Women age 40-64 are eligible for BCCP-funded screening if they are uninsured and at or below 250% of federal poverty level.

Data Source: Small Area Health Insurance Estimates, 2015; Breast and Cervical Cancer Screening Program, 2015.

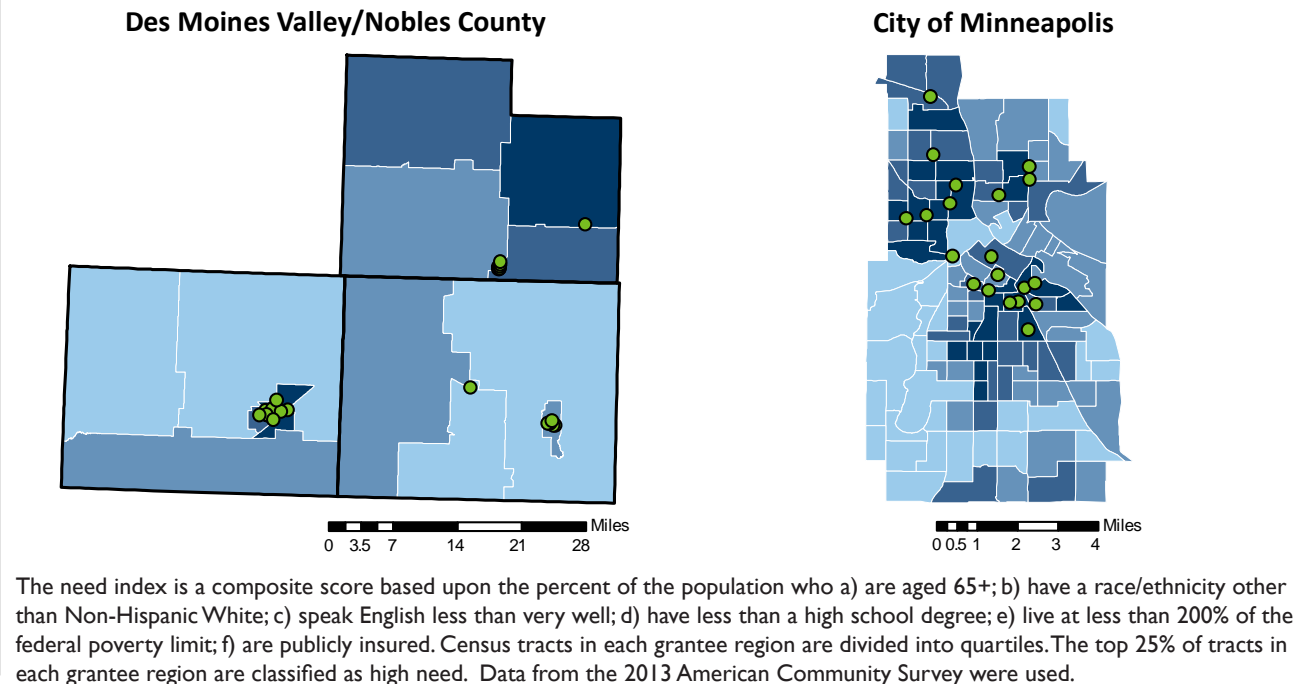
# MINNESOTA

## Minnesota Community Wellness Grant: Targeting Interventions to High Need Populations



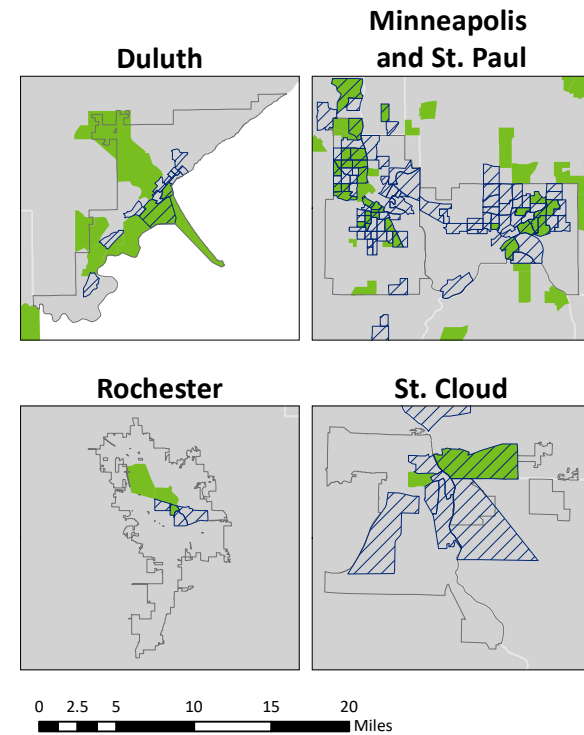
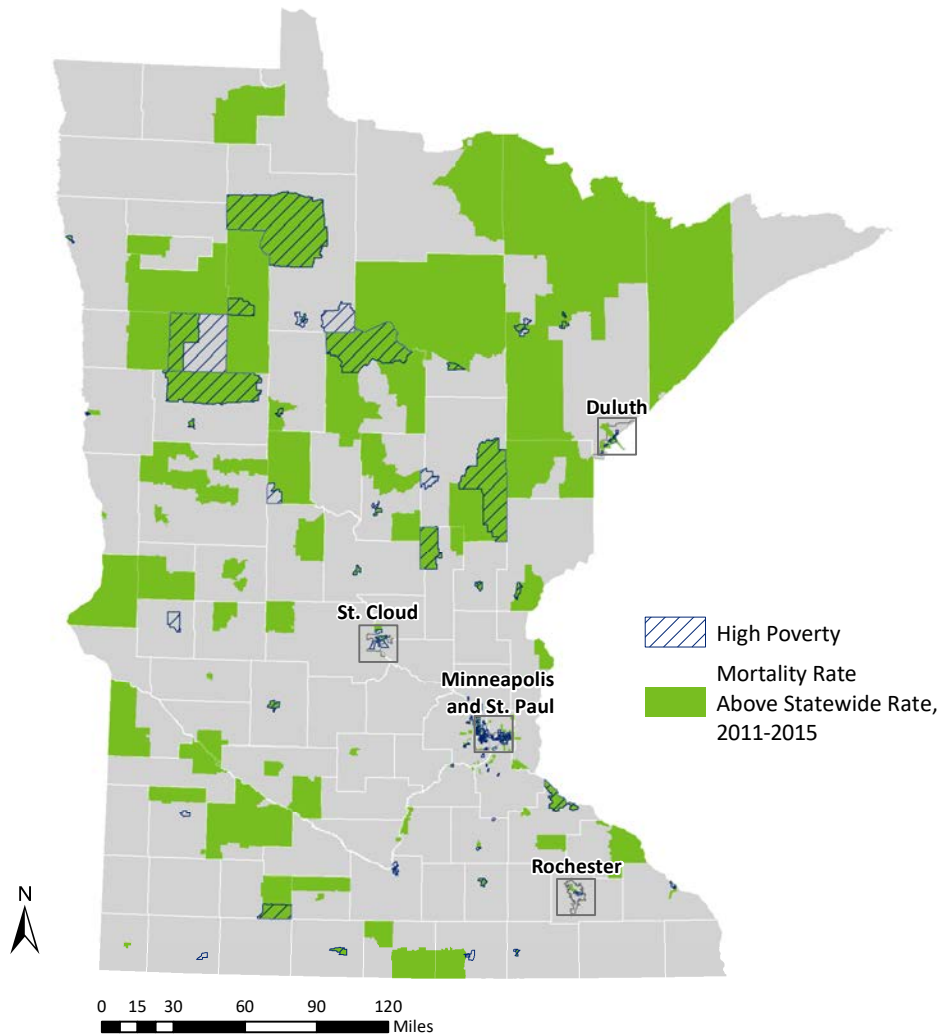
### Key Points

- In the first year of the Community Wellness Grant (Minnesota's brand for CDC's 1422 grant program), local public health subawardees conducted needs assessments to identify high need communities in which to target interventions.
- In the third year of the grant, ~50% of partner sites were located in high need census tracts and more than 75% of partner sites were located in census tracts with a need index in the 50th percentile.
- This map will be used to evaluate how well grantees have targeted priority populations and to assist grantees in identifying gaps to focus their work in the final year of the grant.



# MINNESOTA

## High Poverty and High Heart Disease and Stroke Mortality Rates Under Age 75



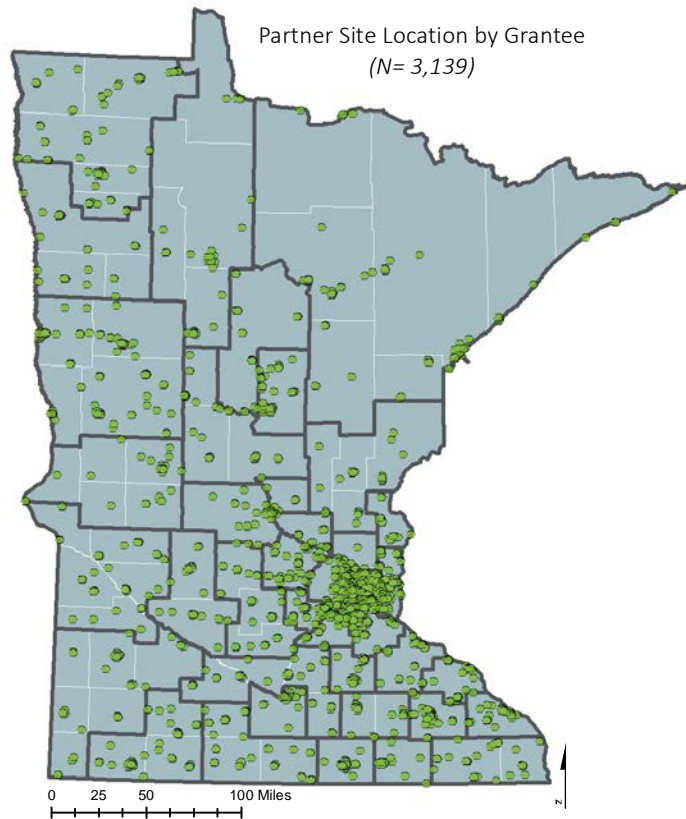
### Key Points

- This map indicates that many high poverty areas of Minnesota also have high rates of premature mortality (death under age 75) from heart disease and stroke.
- Additional analysis shows that adjusted premature mortality rates in high poverty areas from these conditions are about twice as high (199%; CI 183%, 215%) relative to other areas of the state.
- Mapping premature mortality provides a geographic focus for targeting preventive measures and public health interventions, and identifying barriers to timely and effective health care.

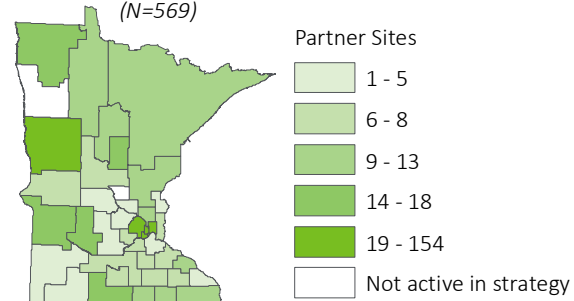
Source: Minnesota Department of Health analysis of data from the Minnesota Mortality Registry and population data from the U.S. Census Bureau American Community Survey 2011-2015. **The underlying causes of death** are coronary heart disease and stroke (ICD-10-CM I20-I25 and I60-69) under age 75. Census tracts with rates significantly higher than the statewide rate at the 95% percentile are highlighted. **High poverty** is defined as census tracts where 40% or more of the population lives with incomes at or below 185% of the federal poverty guidelines.

# MINNESOTA

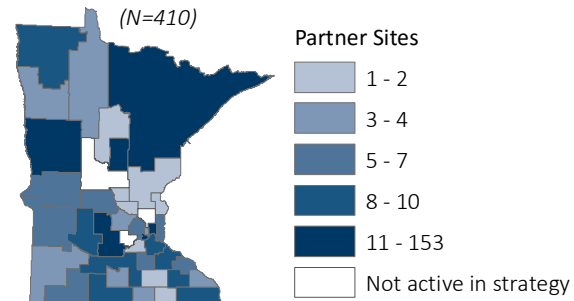
## Statewide Health Improvement Partnership (SHIP): 2017 Partner Sites



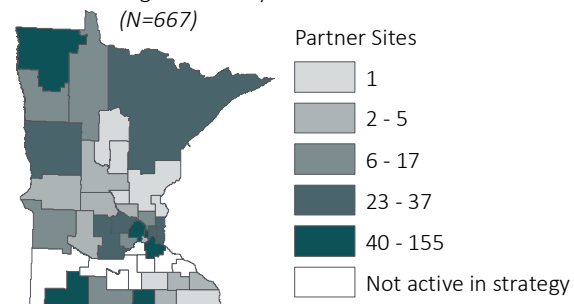
Healthy Eating Community Partners  
(N=569)



Active Living Community Partners  
(N=410)



Tobacco-Free Living Community Partners  
(N=667)



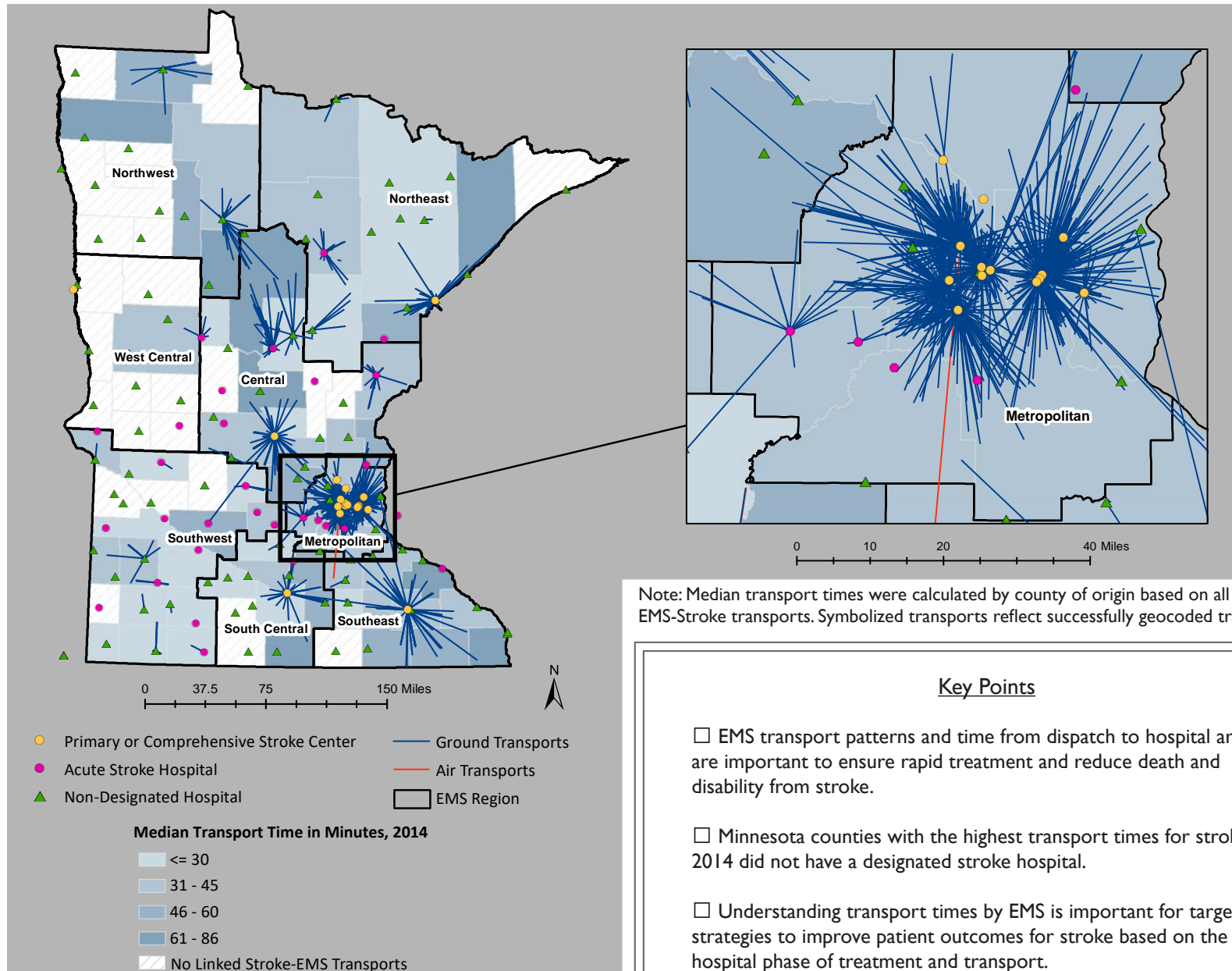
### Key Points

- The Statewide Health Improvement Partnership (SHIP) is an innovative effort to reduce the risk factors that lead to chronic disease through locally-driven changes to policies, systems and the environment.
- This map represents the locations of SHIP's three-thousand partner sites that are working across the state to improve local access to healthy foods, increase opportunities for physical activity, and create tobacco-free environments.
- The map series will be used to communicate the reach of SHIP work, and to inform local and state level planning and technical assistance provision.

Data represent SHIP partner sites by grantee and partner site density for each community-level SHIP strategy. Partner sites depicted here were active October 2016 to March 2017. Grantees provide information about their partner sites to MDH semi-annually using the SHIP monitoring system REDCap.

# MINNESOTA

## Emergency Medical Services (EMS) Stroke Transports to Hospital Destination



Data Source: Minnesota Stroke Registry and MNSTAR ambulance data, 2014.

Note: Median transport times were calculated by county of origin based on all linked EMS-Stroke transports. Symbolized transports reflect successfully geocoded transports.

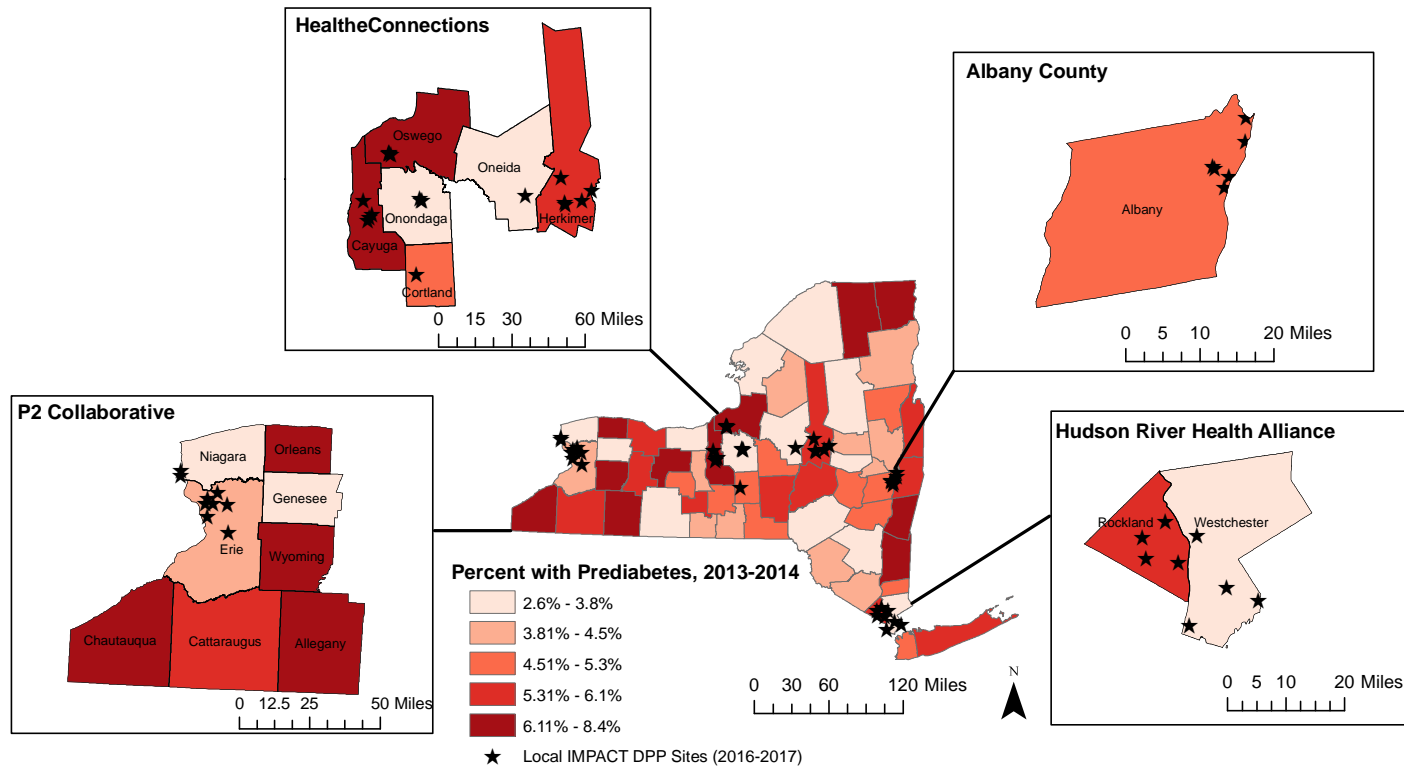
### Key Points

- EMS transport patterns and time from dispatch to hospital arrival are important to ensure rapid treatment and reduce death and disability from stroke.
- Minnesota counties with the highest transport times for stroke in 2014 did not have a designated stroke hospital.
- Understanding transport times by EMS is important for targeting strategies to improve patient outcomes for stroke based on the pre-hospital phase of treatment and transport.



# NEW YORK

## Prediabetes Prevalence by County, and Location of Local IMPACT Diabetes Prevention Program (DPP) Sites, New York State



### Key Points

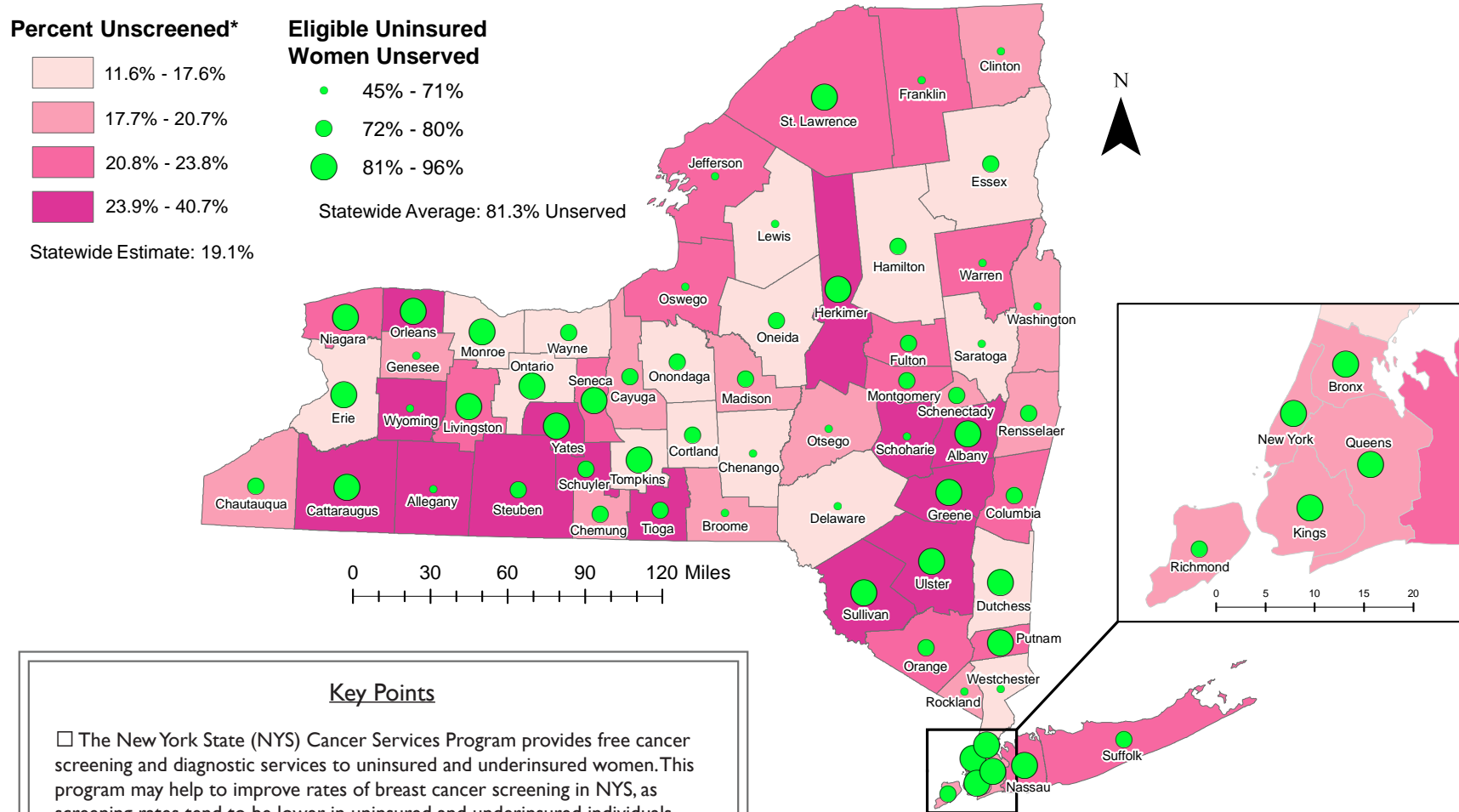
- Prediabetes, a condition where blood sugar levels are higher than normal, but not high enough for a diagnosis of diabetes, puts one at high risk for diabetes. Participation in the evidence based Diabetes Prevention Program can help to reduce the risk of developing diabetes.
- This map depicts prediabetes prevalence in New York State by county with insets of the four Local Initiative for Multi-sector Public Health Action (IMPACT) regions. In each region, stars indicate the location of sites working towards or already enrolling participants in a Diabetes Prevention Program (DPP).
- Identifying areas where prediabetes prevalence is high and where services are limited can help partnerships prioritize and plan for new services and engaging community partners around the need for diabetes prevention in their locales.

Note: Age adjusted percentage of prediabetes by county for New York State and location of Local IMPACT sites submitted as working to enroll or able to enroll participants in the Diabetes Prevention Program.

Data Sources: County-level data from the 2013-14 expanded BRFSS - "Percentage of adults with physician diagnosed prediabetes". Site level data for March 2016 - March 2017 from Catalyst, web-based data collection system.

# NEW YORK

## Percentage of Women Not Screened for Breast Cancer and Proportion of Uninsured Women Not Served by the Cancer Services Program by County, 2013-2014



\*Crude percentage of women aged 50-74 not up-to-date with breast cancer screening based on current guidelines.

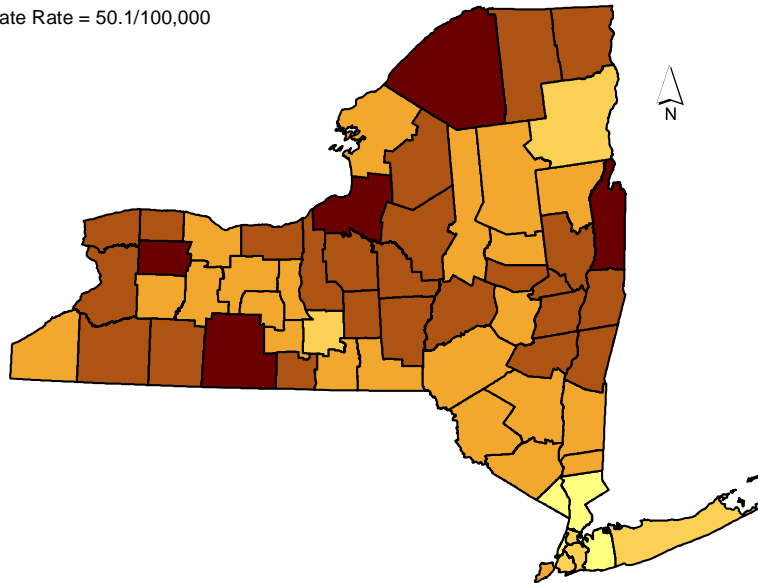
Data sources: Screening rates are from the Expanded Behavioral Risk Factor Surveillance System, 2013-14. New York City was sampled as a single area, resulting in identical estimates for Bronx, Queens, Kings, New York, and Richmond counties. The estimates are weighted to more accurately represent the adult population living in each county. The proportion of eligible uninsured women unserved is calculated as 1 minus the number of women who received at least one Cancer Services Program-funded service in the 2013-14 program year divided by the estimated number of uninsured women ages 50-64 who were at or below 250% of the Federal Poverty Limit based on Small Area Health Insurance Estimates (SAHIE) for 2013.

# NEW YORK

## Lung Cancer Mortality by County, for Men and Women

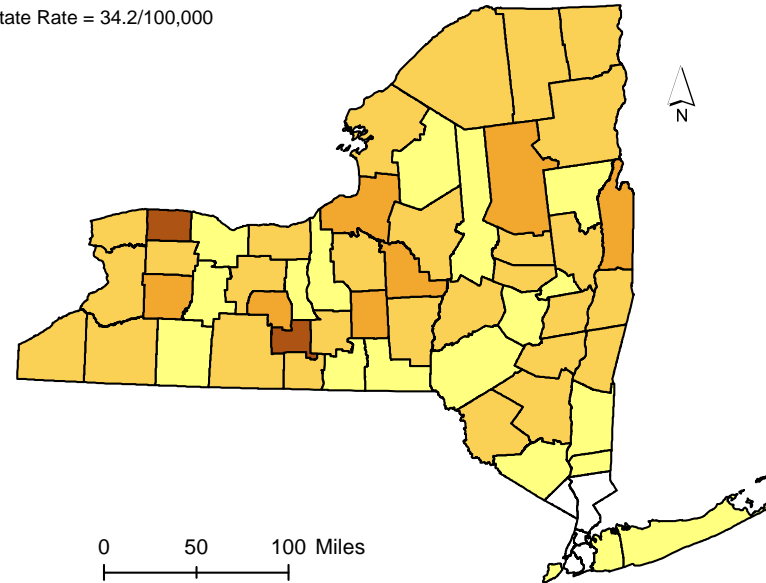
Men

State Rate = 50.1/100,000



Women

State Rate = 34.2/100,000



0 50 100 Miles

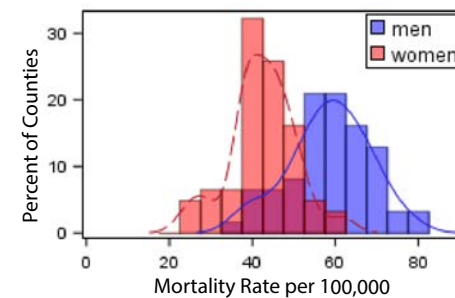
### Average Annual Age Adjusted Rate per 100,000 Population, 2009-2013



### Key Points

- Lung cancer is the second highest cause of death for adults in New York State following deaths due to cardiovascular diseases. According to the 2014 Surgeon General Report, 87% of lung cancer deaths are attributed to smoking.
- Lung cancer death rates are significantly higher for men than women. Lower lung cancer death rates are observed among the downstate regions of New York City and Long Island where rates of current smoking are lower\*.
- New York State Tobacco Control Program community partners and stakeholders can visually identify counties of concern and compare regions of the state that may be of significant interest.

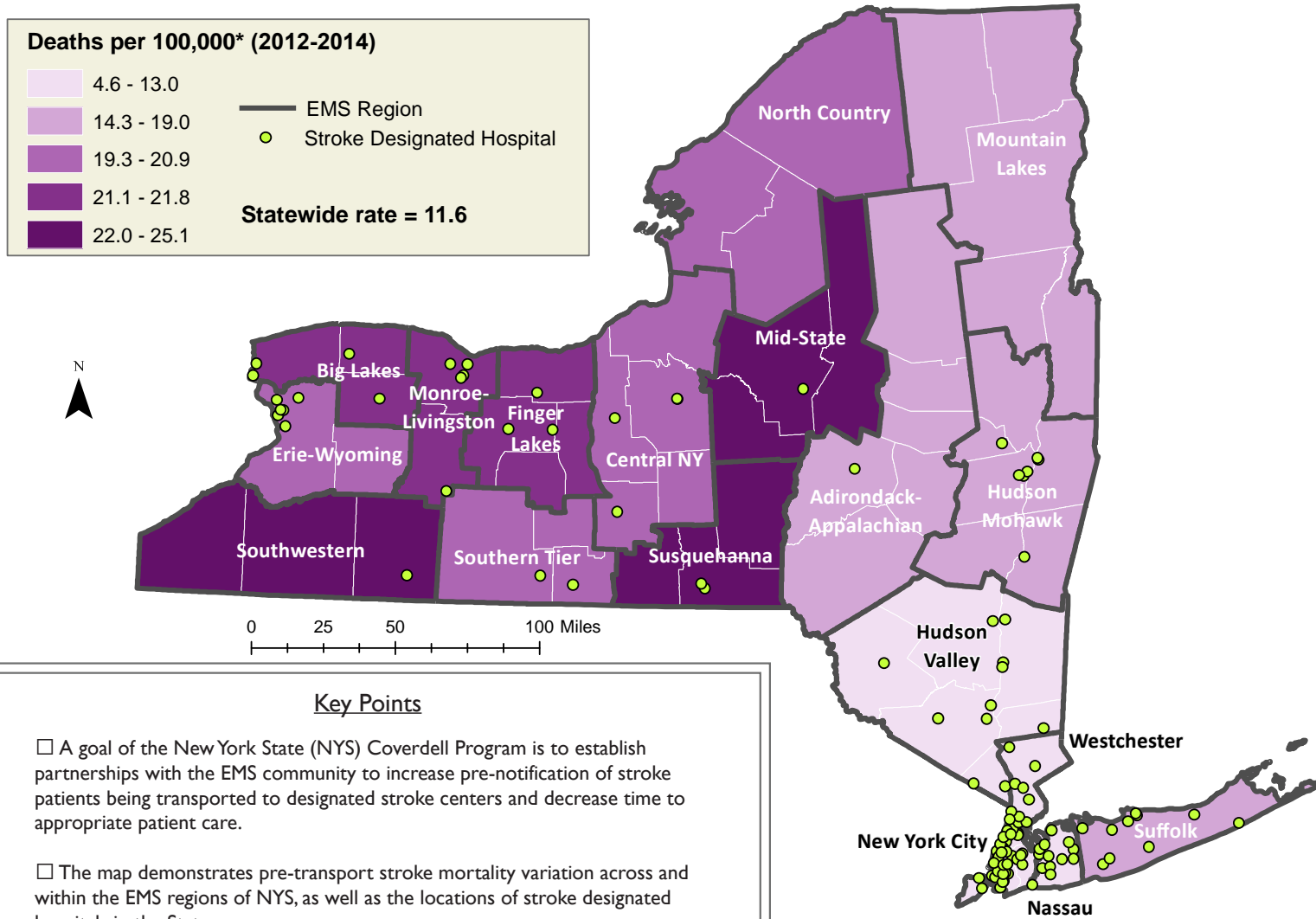
### Rate distribution by county and gender



Data Source: New York State Cancer Registry  
 \* New York State Department of Health Bureau of Cancer Epidemiology. Tobacco-related Cancers in New York State. Available at: [http://www.health.ny.gov/statistics/diseases/cancer/docs/tobacco\\_related\\_cancers\\_report.pdf](http://www.health.ny.gov/statistics/diseases/cancer/docs/tobacco_related_cancers_report.pdf)

# NEW YORK

## Pre-Transport Stroke Death Rates by EMS Region and Location of Stroke Designated Hospitals, New York State



Data Source: New York State Vital Statistics. The number of deaths due to stroke that occurred any place other than a hospital, clinic, or medical center; defined by ICD-10 codes I00-I99.  
 \*Death rates are not age-standardized.

## USING GIS TO ADDRESS BLOOD PRESSURE MEDICATION ADHERENCE

In order to further build the capacity of 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 advanced thematic training project with the National Association of Chronic Disease Directors (NACDD), and The Children's Environmental Health Initiative (CEHI). The central objective of this training project is to enhance the ability of health departments to apply GIS to address a single public health theme. Staff members from health departments receive training regarding the use of GIS surveillance and mapping to address four major purposes as they relate to the training theme:

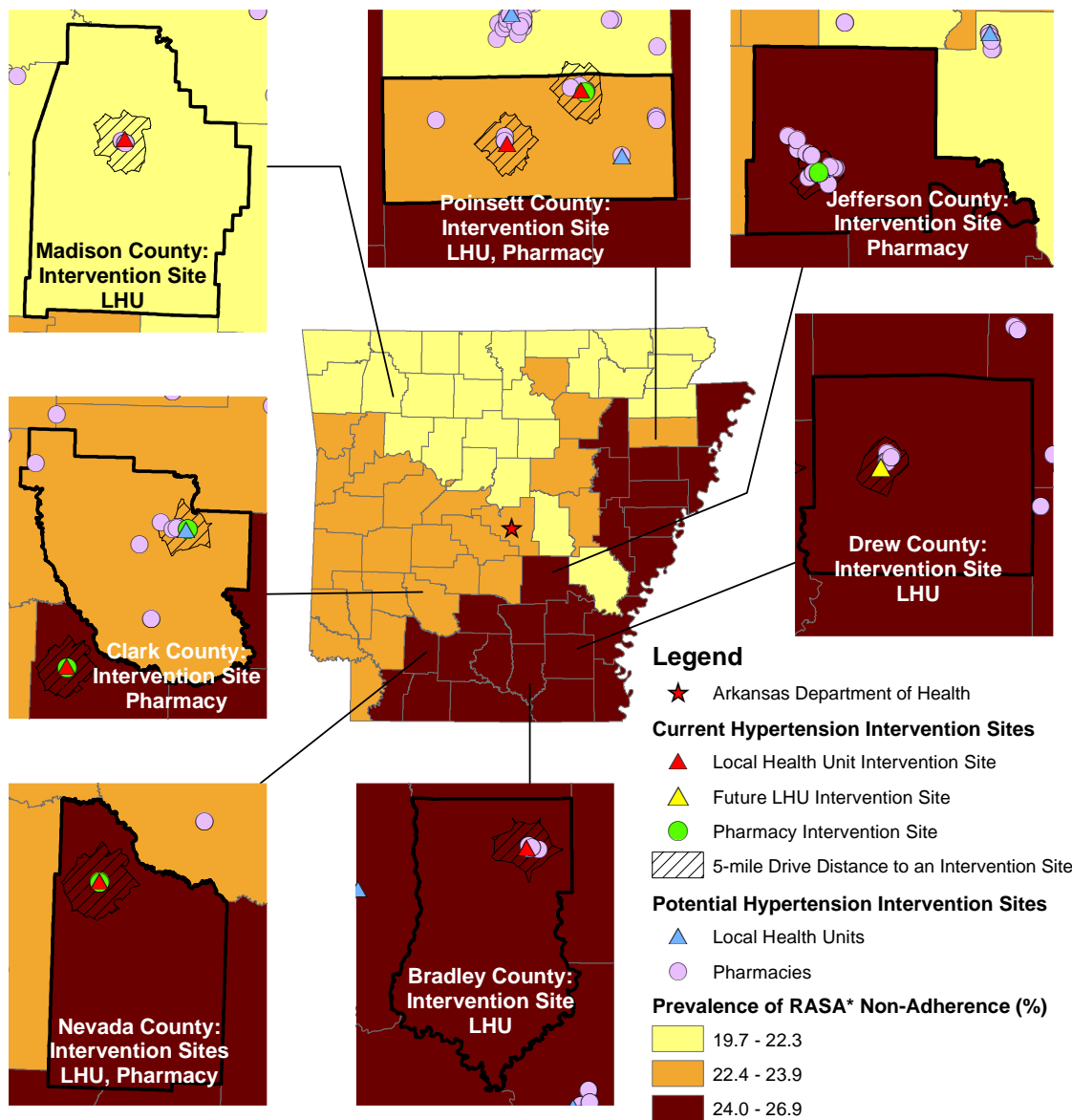
- Documenting geographic disparities
- Informing policy and program decisions
- Enhancing partnerships with external agencies
- Facilitating collaboration within agencies

In 2017, the theme for the training was “Using GIS to Address Blood Pressure Medication Adherence”. The following state health departments were competitively selected to participate in this Advanced Thematic GIS Training Project: Arkansas, California, Minnesota, Montana.

The following maps displayed in this document highlight examples of how each participating health department produced maps addressing the blood pressure medication adherence needs in their respective communities 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.

# ARKANSAS

## Prevalence of Nonadherence and 5-Mile Driving Distances from Arkansas's Hypertension Team-Based Care and Pharmacy Intervention Sites



### Key Points

□ Since 2015, the Arkansas Department of Health (ADH) has implemented hypertension team-based care at Local Health Units (LHUs) in five counties and a Screening and Behavioral Intervention at four pharmacies.

□ Four of the five LHU intervention sites shown as red triangles, and all the pharmacy intervention sites shown as pink circles were located in counties with medication nonadherence  $\geq 22.4\%$ .

□ This map and the techniques applied here will help the ADH scale up its hypertension and diabetes prevention and control efforts in Arkansas to reduce mortality, emergency room visits, and hospitalization rates due to these conditions.

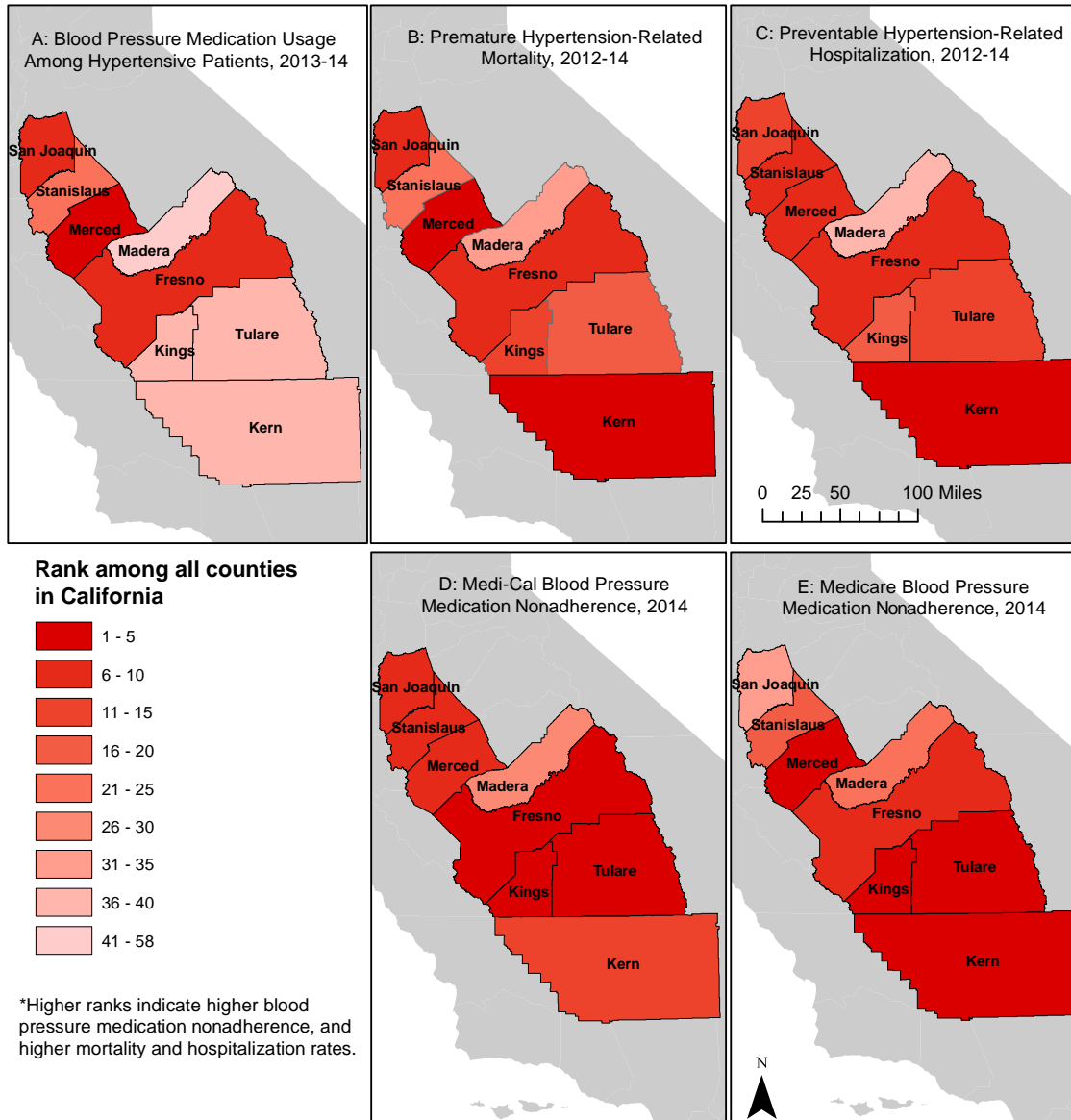
\*Renin-Angiotensin System Angiotensin

Note: Arkansas Department of Health (ADH) is the grantee for the ASTHO Million Hearts Initiative and the hub for the state's hypertension team-based care program located in the ADH Local Health Units (LHU).

Data Source: Centers for Disease Control and Prevention Heart Disease and Stroke Atlas (% Nonadherence among Medicare Part D participants); Centers for Medicare and Medicaid Services National Plan and Provider Enumeration System (Pharmacy Locations); Arkansas Department of Health (LHU Locations)

# CALIFORNIA

## High Blood Pressure Indicators: Medication Usage, Mortality, Hospitalization, and Medication Adherence in Central Valley, California



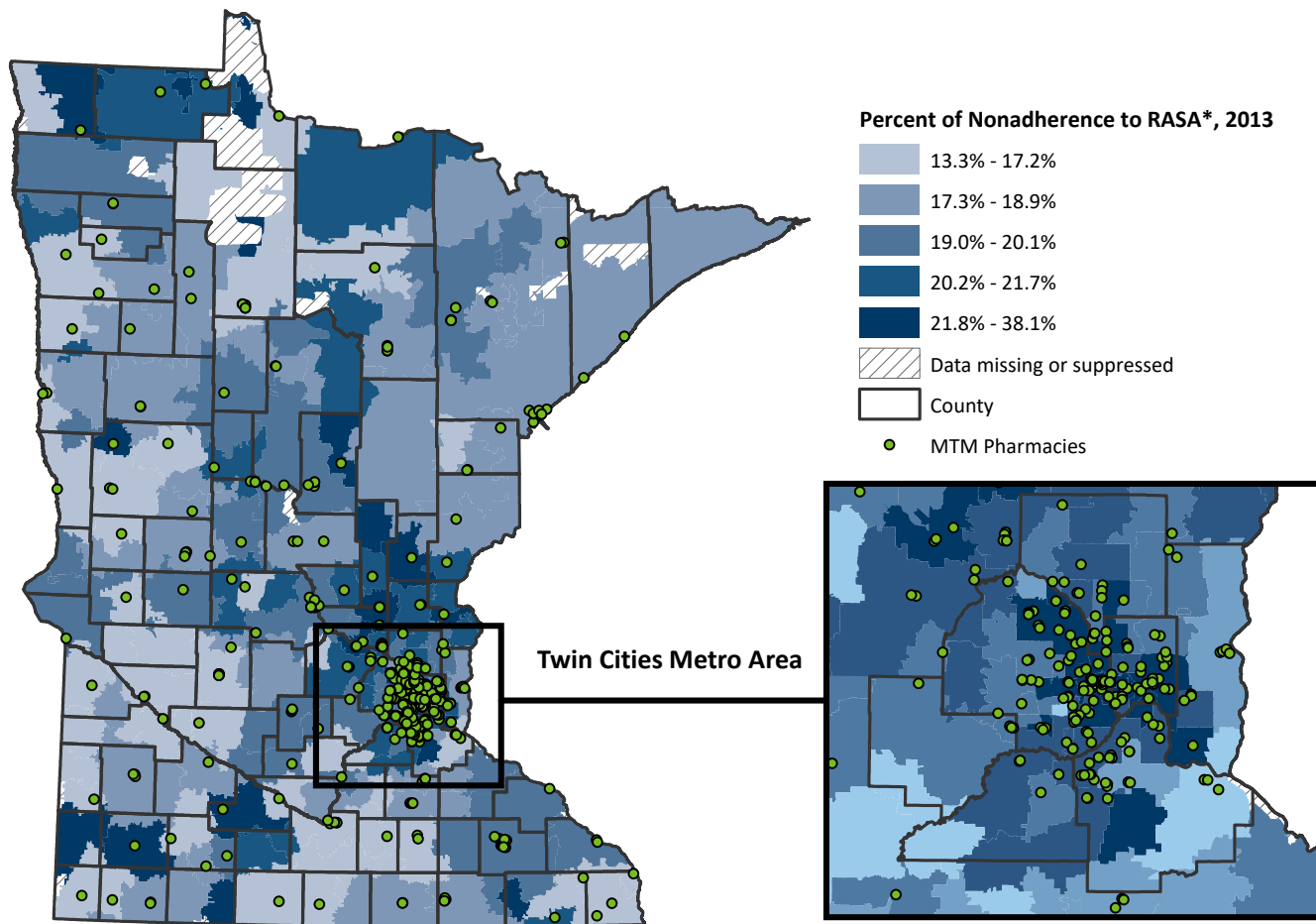
### Key Points

- Poor blood pressure medication adherence can lead to poor control of high blood pressure and increases the likelihood of hospitalization and premature death.
- Counties in the Central Valley tend to have higher blood pressure medication nonadherence compared to other counties in California.
- This map is a call to action to Central Valley health systems to address poor blood pressure control through improved care to reduce hospitalizations and premature mortality.

Data Sources: Blood Pressure Medication Usage Among Hypertensive Patients, California Health Interview Survey, 2013-14; Premature Hypertension-Related Mortality, California Death Statistical Master File (DSM), 2012-14; Preventable Hypertension-Related Hospitalization, Patient Discharge Data (PDD), California Office of Statewide Health Planning and Development (OSHPD), 2012-14; Medi-Cal Blood Pressure Medication Adherence, 2014; Medicare Blood Pressure Medication Adherence, CDC Interactive Atlas of Heart Disease and Stroke, 2014.

# MINNESOTA

## Blood Pressure Medication Nonadherence and Proximity to Medication Therapy Management (MTM) Services, Aged 65+



### Key Points

- Minnesota's All Payer Claims Database covers approximately 89% of Minnesotans so is highly representative of billable service provision in the state.
- Wide variation in Renin-Angiotensin System Antagonist (RASA) nonadherence by Primary Care Service Area, with highest nonadherence in inner Twin Cities and scattered rural areas, especially north of the Twin Cities.
- Wide distribution of pharmacists credentialed to provide medication therapy management (MTM) services.
- First in a series of maps to communicate with health systems and pharmacists on pockets of high blood pressure medication nonadherence where additional services might be best. Part of a planned issue brief on the importance of high blood pressure control.

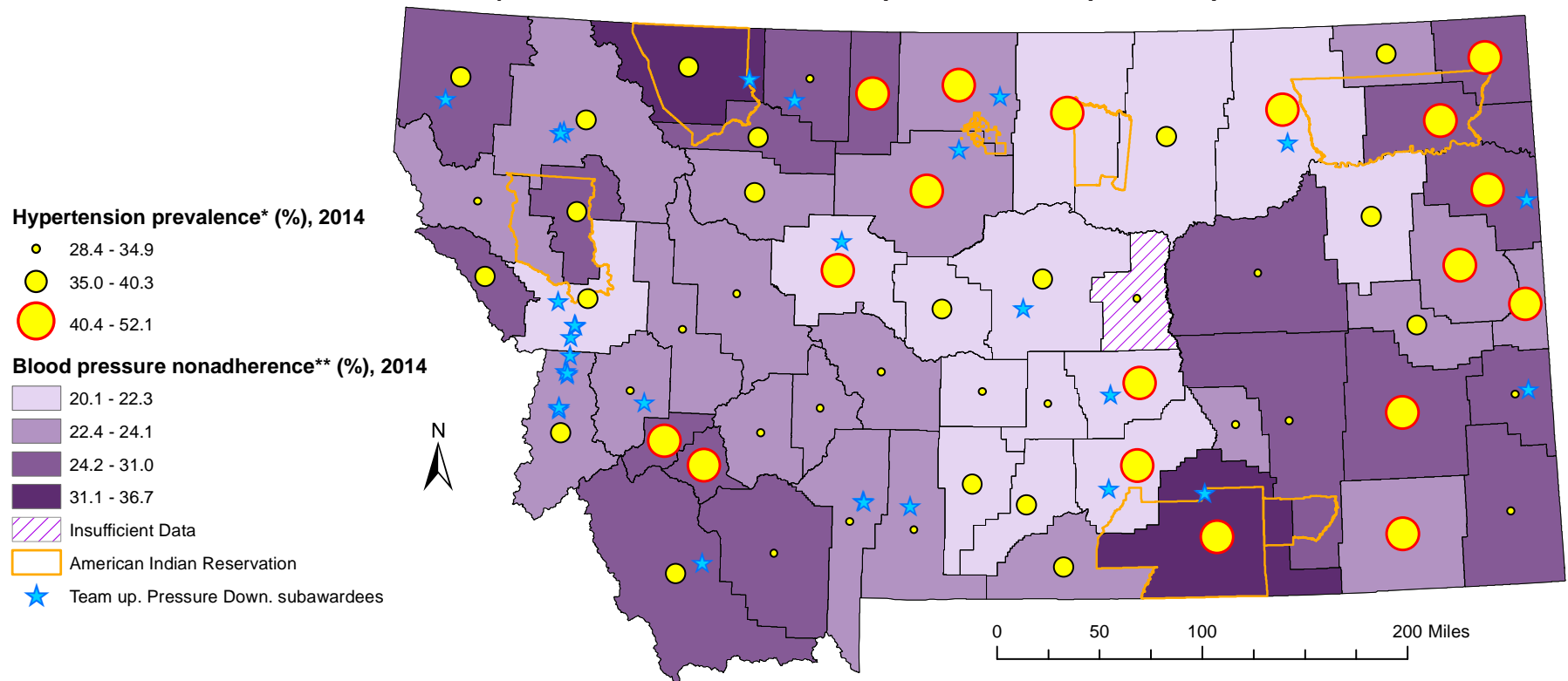
\*Renin Angiotensin System Antagonists (RASA)

Data Source: Minnesota All Payer Claims Database, Pharmacy Claims Data 2013 by Primary Care Service Areas;  
Data suppressed in all areas with <11 in denominator; Minnesota Board of Pharmacy Licensed Pharmacies as of Dec 2016



# MONTANA

## Antihypertensive Medication Nonadherence and Hypertension Prevalence with Team Up. Pressure Down. Pharmacy Locations, by County,



### Key Points

- Montana's Team Up. Pressure Down. Project evaluated blood pressure medication adherence in Montana community pharmacies after an intervention involving the Million Hearts Initiative's Team Up. Pressure Down. educational materials and pharmacist consults (Oser, Fogle, and Bennett, *Prev Chronic Dis* 2017).
- The highest rates of BP medication nonadherence (>31%) are noted in two counties with a large area covered by three of Montana's American Indian reservations. Counties with the highest hypertension prevalences (>40%) are scattered throughout the state, and concentrated somewhat in the eastern part of the state.
- This map will be used to help identify community pharmacies in counties with high blood pressure nonadherence rates and/or high hypertension prevalence.

\*among Medicare Part D Beneficiaries Aged 65 years and Older

\*\*Nonadherence is defined as patients not following their healthcare professional's instructions concerning taking their prescribed medication. Beneficiaries were considered nonadherent if they had access to anti-hypertensive medication for <80% of the days from the first fill date through end of 2014 or until their death in 2014.

Data source: Montana Cardiovascular Health Program listing of Team Up. Pressure Down. subawardees (2013-2016).

Reference: **Antihypertensive Medication Nonadherence** - Interactive Atlas for Heart Disease and Stroke at <https://www.cdc.gov/dhdsp/maps/atlas/>; **Hypertension Prevalence** - Medicare Chronic Conditions Dashboard: County Level (2015) at [https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Dashboard/chronic-conditions-county/cc\\_county\\_dashboard.html](https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Dashboard/chronic-conditions-county/cc_county_dashboard.html)

# Facilitating Collaboration Within State Health Departments

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

## Hawai'i State Department of Health



### Name

Alexis Barnett-Sherrill  
 Toby Beckelman  
 Amber Bowie  
 Vanessa Buchthal  
 Lance Ching  
 Julia Chosy  
 Lehua Choy  
 Joshua Holmes  
 Meghan McGurk  
 Blythe Nett  
 Danielle Schaeffner  
**Ranjani Starr**  
 Leslie Yap  
 Kendall Zukeran

### Chronic Disease Unit

Chronic Disease Management Branch  
 Primary Prevention Branch  
 Surveillance, Evaluation, and Epidemiology Office  
 Chronic Disease Prevention and Health Promotion Division  
 Surveillance, Evaluation, and Epidemiology Office  
 Hawai'i Health Data Warehouse  
 Chronic Disease Prevention and Health Promotion Division  
 Surveillance, Evaluation, and Epidemiology Office  
 Chronic Disease Prevention and Health Promotion Division  
 Chronic Disease Management Branch  
 Primary Prevention Branch  
**Surveillance, Evaluation, and Epidemiology Office**  
 Primary Prevention Branch  
 Health Policy, Communications, and Planning Office



## Maryland Department of Health

### Name

Alicia Vooris  
 Elizabeth Funsch  
**Erica Smith**  
 Lisa Gardner

### Chronic Disease Unit

Center for Chronic Disease Prevention and Control  
 Center for Chronic Disease Prevention and Control  
 Center for Chronic Disease Prevention and Control  
 Center for Cancer Prevention and Control

# Facilitating Collaboration Within State Health Departments

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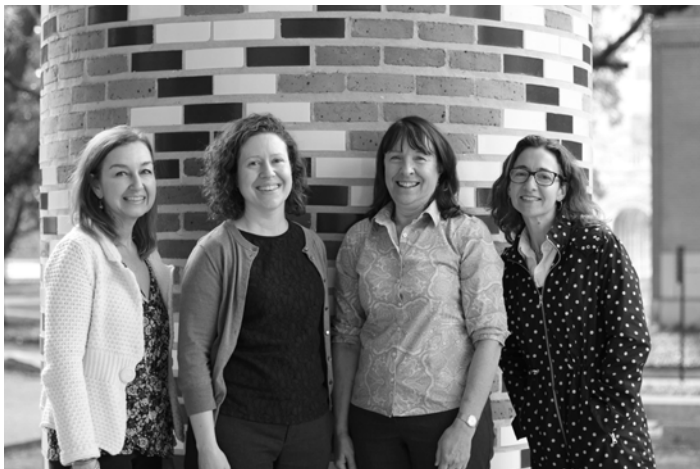
## Minnesota Department of Health

### Name

Nate Hierlmaier  
Cate Bosserman  
**Emily Styles**  
Julie Hoffer

### Chronic Disease Unit

Health Economics Program  
Office of Statewide Health Improvement Initiative  
**Cardiovascular Health Unit**  
Cardiovascular Health Unit



## New York State Department of Health

### Name

**Kathy Wales**  
Maggie Gates  
Theresa Juster  
Lara Kaye

### Chronic Disease Unit

**Bureau of Chronic Disease Evaluation and Research**  
Bureau of Chronic Disease Evaluation and Research  
Bureau of Chronic Disease Evaluation and Research  
Bureau of Chronic Disease Evaluation and Research

# Facilitating Collaboration Within State Health Departments

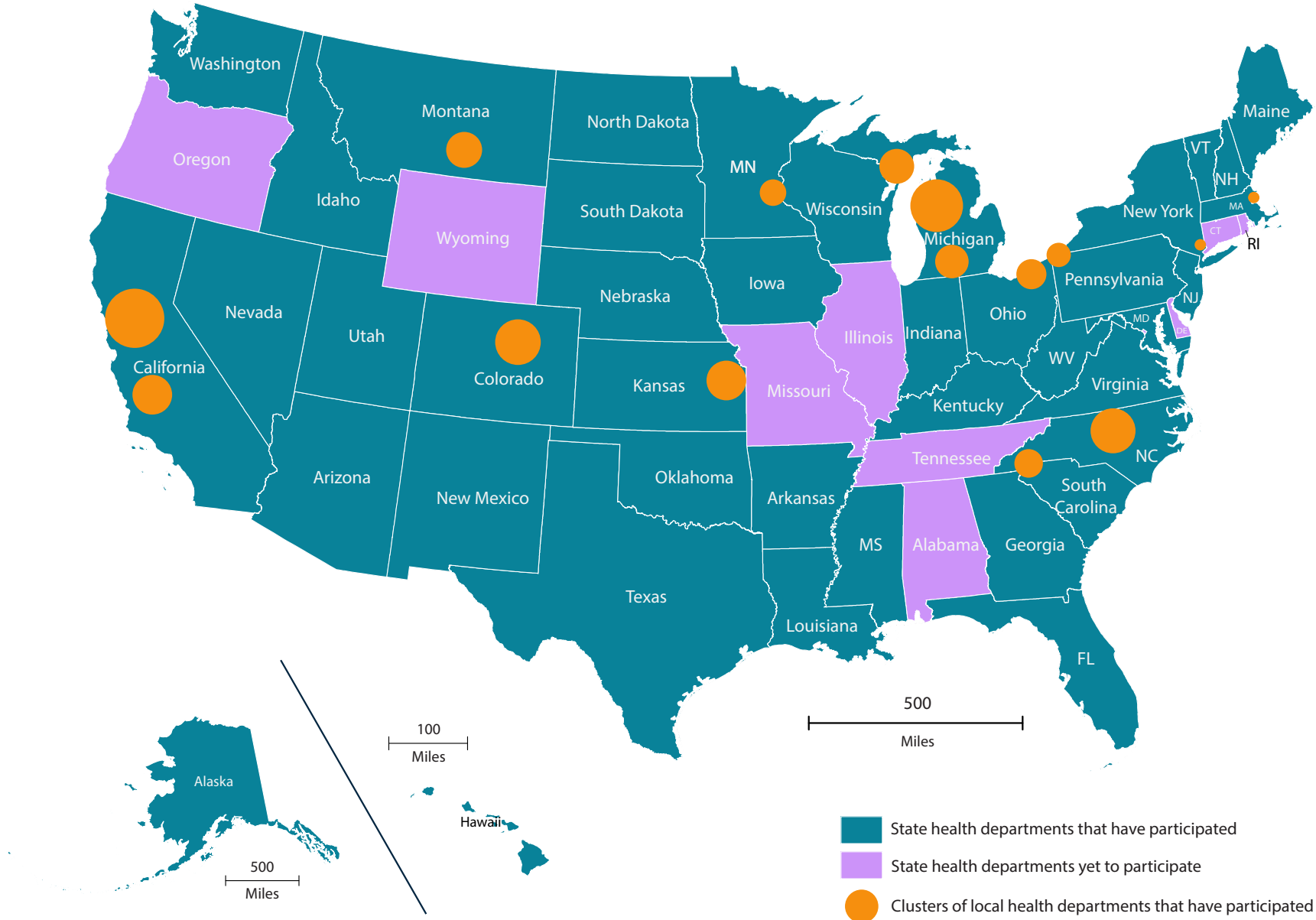
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## Advanced Thematic GIS Training - Blood Pressure Medication Adherence

<u>Name</u>	<u>State</u>	<u>Chronic Disease Unit</u>
Brandy Sutphin	AR	Chronic Disease Prevention and Control Branch
Alexandria Simpson	CA	Cardiovascular Disease Prevention Program
Jim Peacock	MN	Cardiovascular Health Unit
Claire Fleming	MN	Cardiovascular Health Unit
Brendan Darsie	CA	Chronic Disease Control Branch
Lucy Im	AR	Chronic Disease Prevention and Control Branch
Carrie Oser	MT	Cardiovascular Health Program
Dorota Carpenedo	MT	Diabetes and Asthma Programs

# PARTICIPATING HEALTH DEPARTMENTS TO DATE

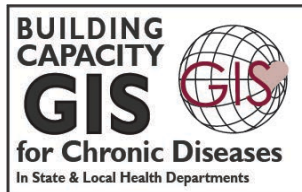


# NOTES

# USING GIS AND MAPS FOR HEART DISEASE AND STROKE SURVEILLANCE

The CDC Division for Heart Disease and Stroke Prevention provides a number of useful tools and resources for using maps and GIS to address geographic disparities in heart disease and stroke. Learn more about this work here: <https://www.cdc.gov/dhdsp/maps/>.

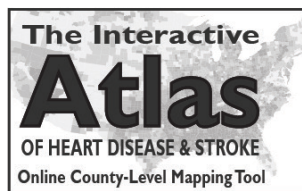
## BUILDING GIS CAPACITY FOR CHRONIC DISEASES



[https://www.cdc.gov/dhdsp/programs/gis\\_training/](https://www.cdc.gov/dhdsp/programs/gis_training/)

This project builds GIS capacity within state and local health departments for the surveillance and prevention of heart disease, stroke and other chronic diseases.

## THE INTERACTIVE ATLAS OF HEART DISEASE & STROKE



<https://www.cdc.gov/dhdsp/maps/atlas>

An online mapping tool that allows users to create and customize county-level maps of heart disease and stroke, along social and economic factors and health services.

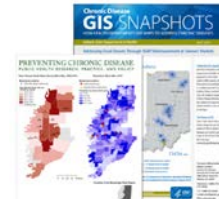
## CHRONIC DISEASE GIS EXCHANGE



<https://www.cdc.gov/dhdsp/maps/gisx/>

An online community forum for public health professionals and community leaders to learn and share techniques for using GIS to enhance chronic disease prevention and treatment.

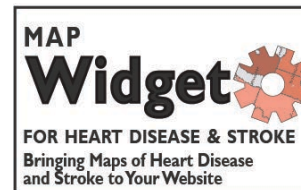
## GIS SNAPSHOTS



[https://www.cdc.gov/pcd/issues/gis\\_toc.htm](https://www.cdc.gov/pcd/issues/gis_toc.htm)

Maps from many participants have been published as GIS Snapshots in CDC's Preventing Chronic Disease Journal. Several one page fact sheets were also disseminated.

## MAP WIDGET FOR HEART DISEASE & STROKE



<https://www.cdc.gov/dhdsp/maps/hds-widget.htm>

The new Map Widget allows state and local health departments and other organizations to easily display state- and county-level maps of heart disease and stroke mortality on their web sites.



<https://cehi.rice.edu>

