



knowledge changing life

CANCER DISPARITIES IN WISCONSIN: TRENDS AND SPATIAL PATTERNS

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Sima Namin, PhD, Postdoctoral Fellow, Medical College of Wisconsin
Wei Xu, PhD Candidate, University of Wisconsin-Milwaukee*

November 15 2018

OVERVIEW

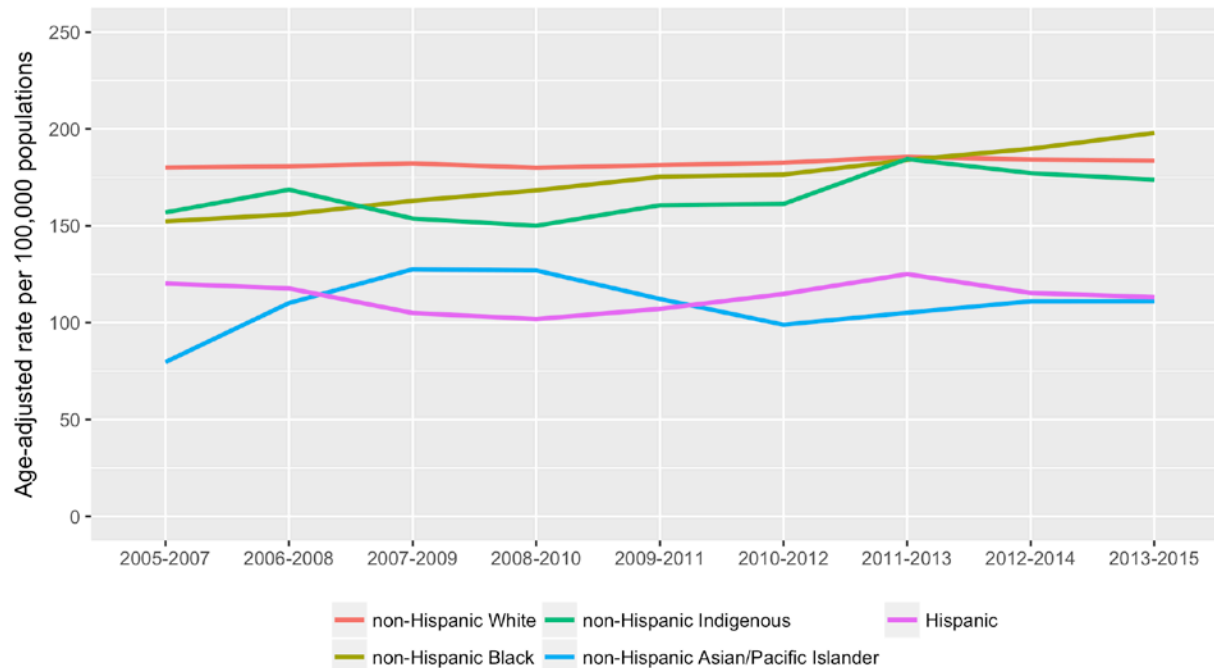
- Breast Cancer in Wisconsin
 - Disparities over time
 - Spatial patterns (incidence, late-stage incidence, mortality)
- Lung Cancer in Wisconsin
 - Disparities over time
 - Spatial patterns (incidence, mortality, including by sex)
- Southeastern Wisconsin
 - Racial segregation and SES
 - Breast, Lung, Colorectal, Prostate incidence, late-stage incidence, and mortality

A photograph of a female doctor in a white lab coat smiling warmly. She is holding a stethoscope to her chest. In the foreground, the back of a patient's head is visible, looking towards the doctor. The background shows a clinical setting with framed pictures on the wall. The entire image has a dark blue overlay.

BREAST CANCER IN WISCONSIN

TRENDS IN FEMALE BREAST CANCER INCIDENCE RATES IN WI, BY RACE/ETHNICITY

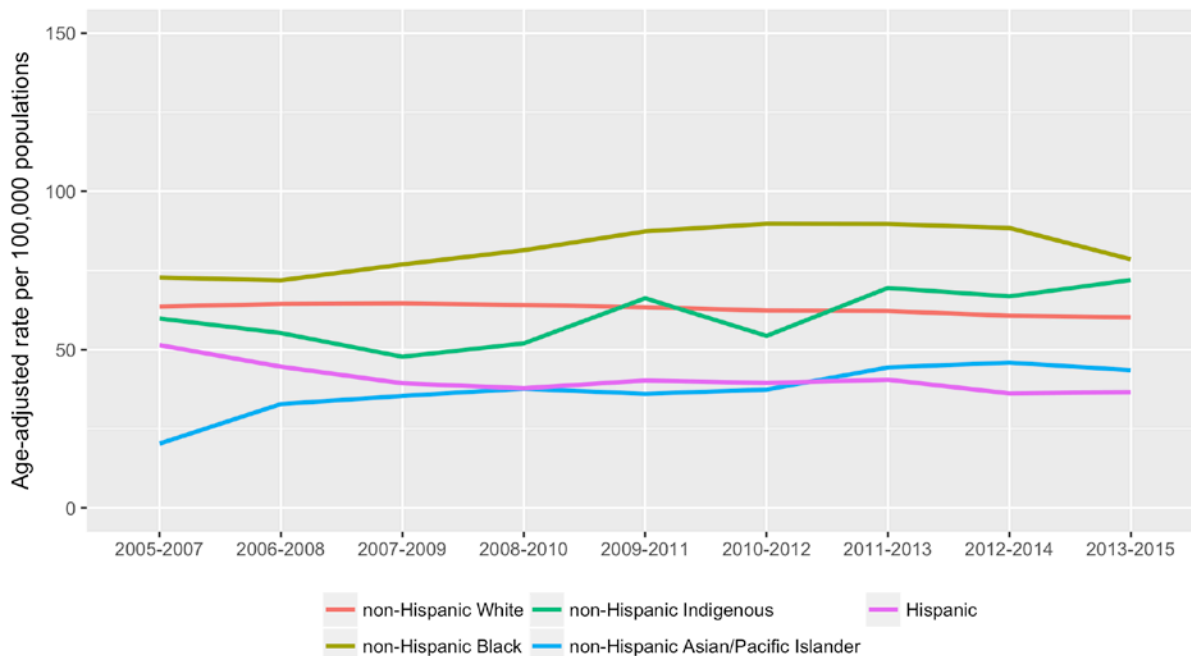
Trend in female breast cancer incidence rates in WI, by race/ethnicity
(aged 20+ excl. 11 counties)



Data Source:
Wisconsin Cancer Reporting System, 2005-2015
WISH Population Module, WI Department of Health Services, 2003-2015

TRENDS IN FEMALE BREAST CANCER LATE-STAGE INCIDENCE RATES IN WI, BY RACE/ETHNICITY

Trend in female late stage breast cancer incidence rates in WI, by race/ethnicity
(aged 20=+ excl. 11 counties)



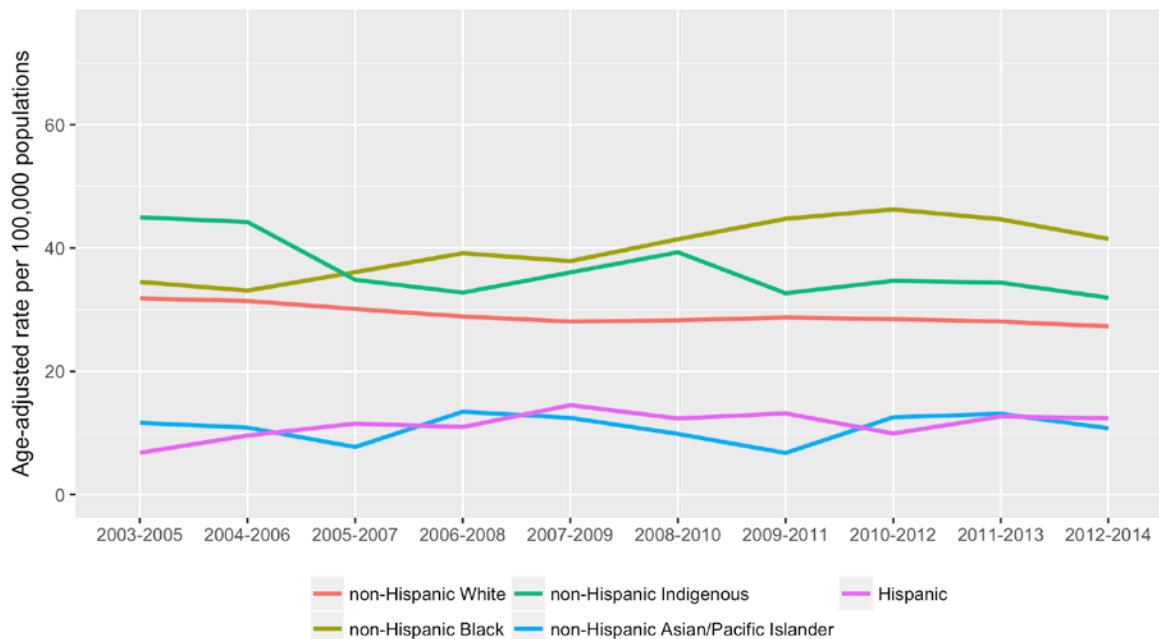
Data Source:

Wisconsin Cancer Reporting System, 2005-2015

WISH Population Module, WI Department of Health Services, 2003-2015

TRENDS IN FEMALE BREAST CANCER MORTALITY RATES IN WI, BY RACE/ETHNICITY

Trend in female breast cancer mortality rates in WI, by race/ethnicity (aged 20=+)

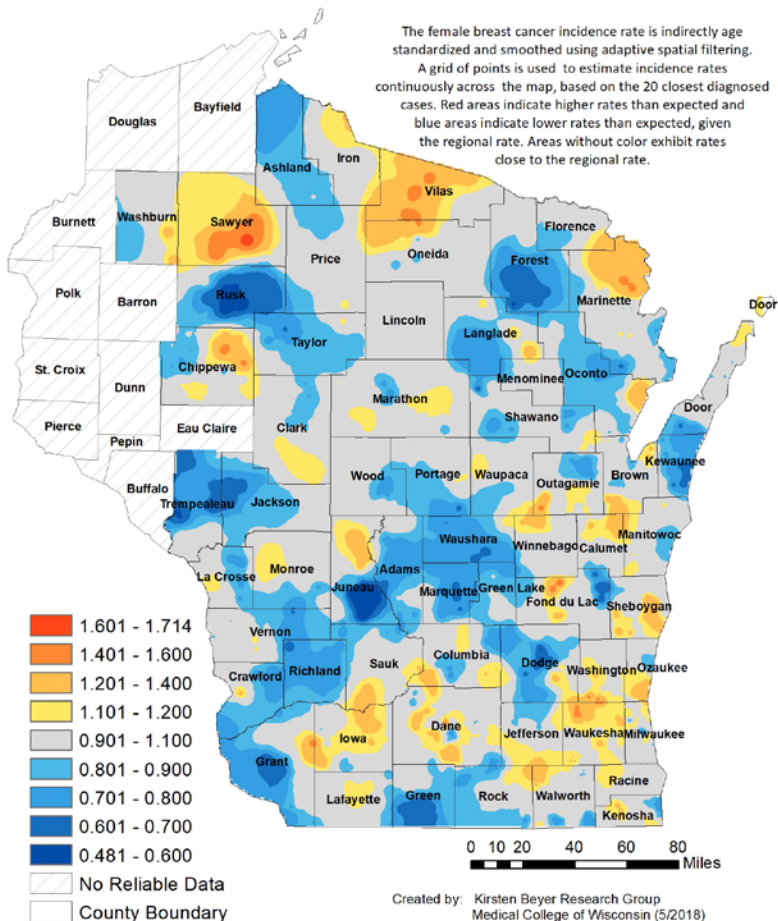


Data Source:

State Vital Records Office, WI Department of Health Services, 2003-2014
WISH Population Module, WI Department of Health Services, 2003-2015

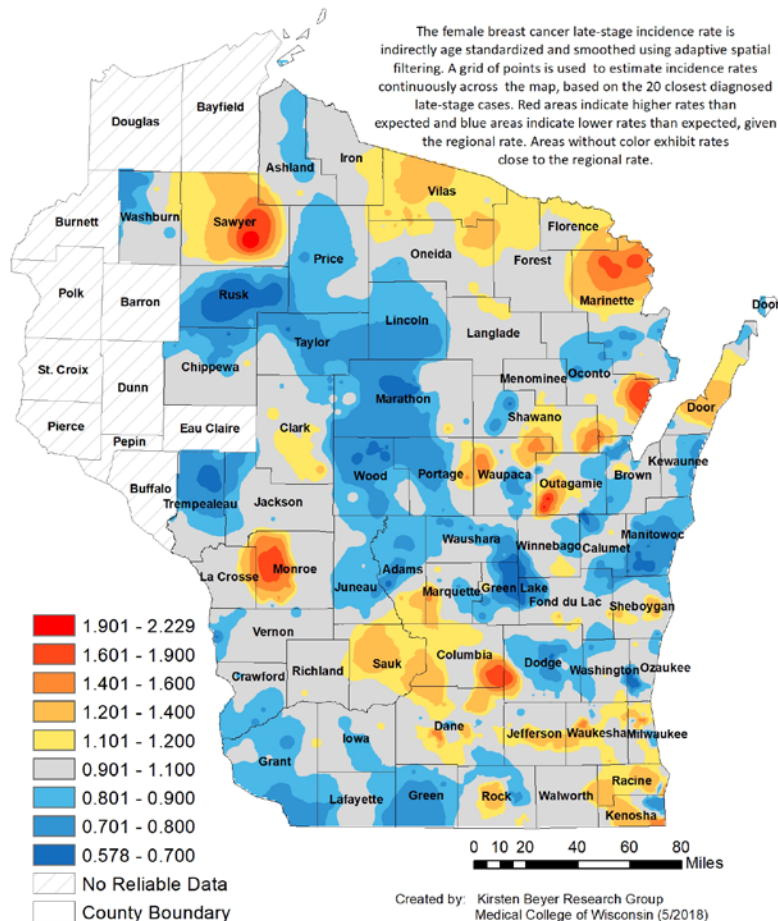
Female Breast Cancer Incidence Rate Wisconsin, 2010-2015

The female breast cancer incidence rate is indirectly age standardized and smoothed using adaptive spatial filtering. A grid of points is used to estimate incidence rates continuously across the map, based on the 20 closest diagnosed cases. Red areas indicate higher rates than expected and blue areas indicate lower rates than expected, given the regional rate. Areas without color exhibit rates close to the regional rate.



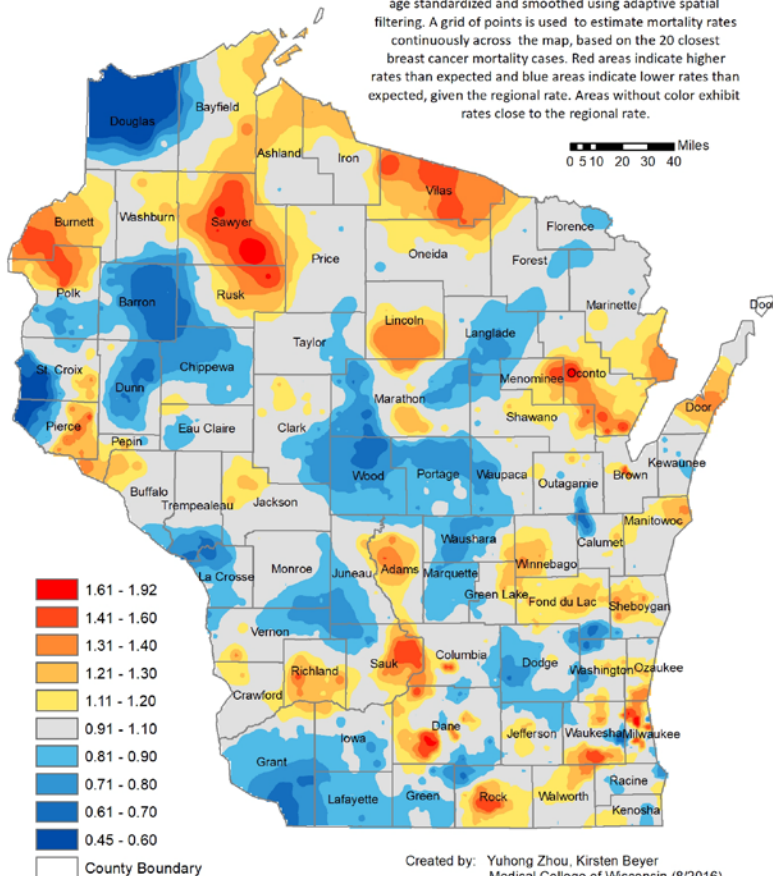
Female Breast Cancer Late-Stage Incidence Rate Wisconsin, 2010-2015

The female breast cancer late-stage incidence rate is indirectly age standardized and smoothed using adaptive spatial filtering. A grid of points is used to estimate incidence rates continuously across the map, based on the 20 closest diagnosed late-stage cases. Red areas indicate higher rates than expected and blue areas indicate lower rates than expected, given the regional rate. Areas without color exhibit rates close to the regional rate.



Female Breast Cancer Mortality Rate Wisconsin, 2008-2013

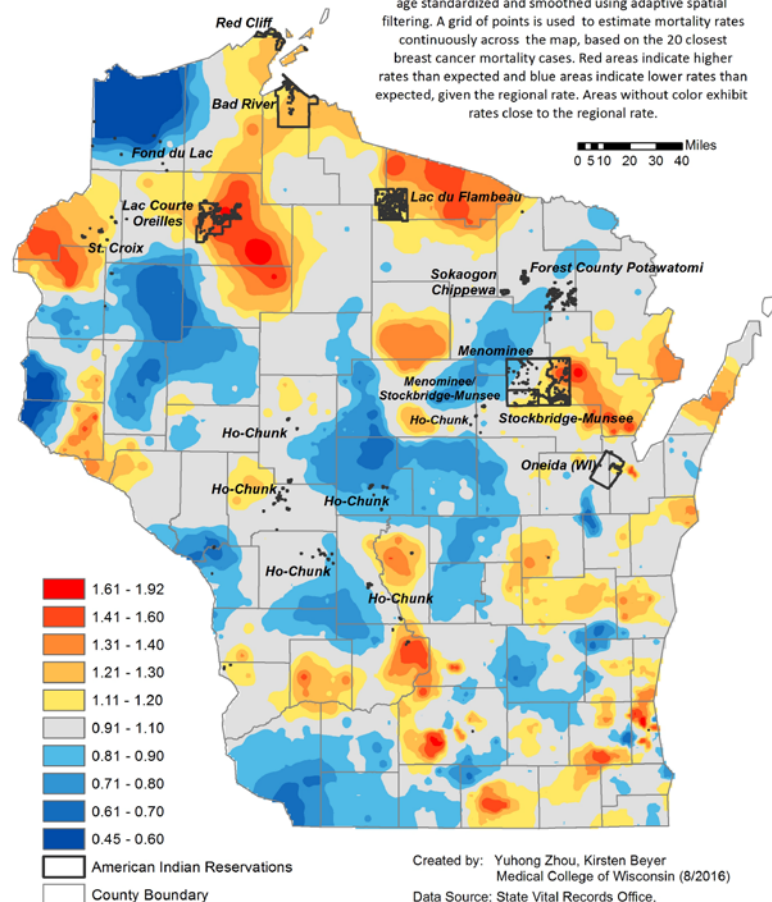
The female, breast cancer mortality rate is indirectly age standardized and smoothed using adaptive spatial filtering. A grid of points is used to estimate mortality rates continuously across the map, based on the 20 closest breast cancer mortality cases. Red areas indicate higher rates than expected and blue areas indicate lower rates than expected, given the regional rate. Areas without color exhibit rates close to the regional rate.



Created by: Yuhong Zhou, Kirsten Beyer
Medical College of Wisconsin (8/2016)
Data Source: State Vital Records Office,
Department of Health Services 2008-2013

Female Breast Cancer Mortality Rate Wisconsin, 2008-2013

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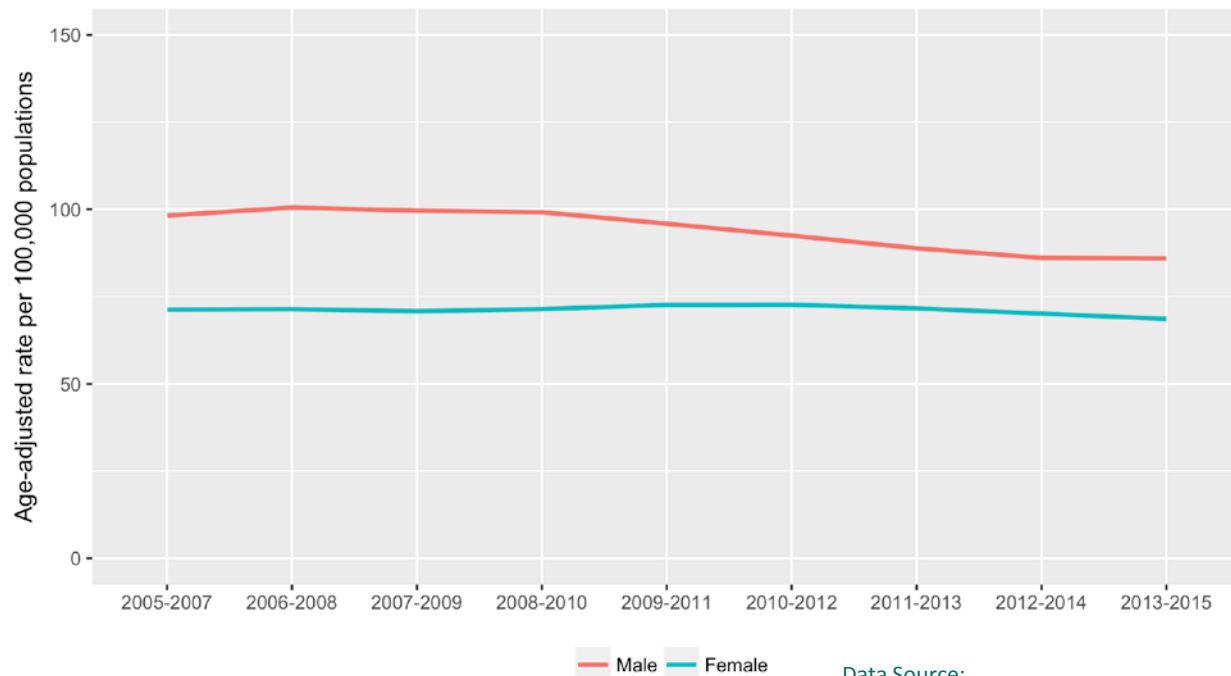
Created by: Yuhong Zhou, Kirsten Beyer
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Data Source: State Vital Records Office,
Department of Health Services 2008-2013

A photograph of a doctor and a nurse in a hospital setting. The doctor, an older man with white hair, is wearing a white lab coat and has his hand on the head of a patient lying in a hospital bed. The nurse, a woman with dark hair, is also wearing a white lab coat and is looking down at the patient. The background is slightly blurred, showing other hospital equipment and a clean, clinical environment. The overall tone is professional and caring.

LUNG CANCER IN WISCONSIN

TRENDS IN LUNG CANCER INCIDENCE RATES IN WI, BY SEX

Trend in lung cancer incidence rate in WI, by sex
(aged 20+= excl. 11 counties)

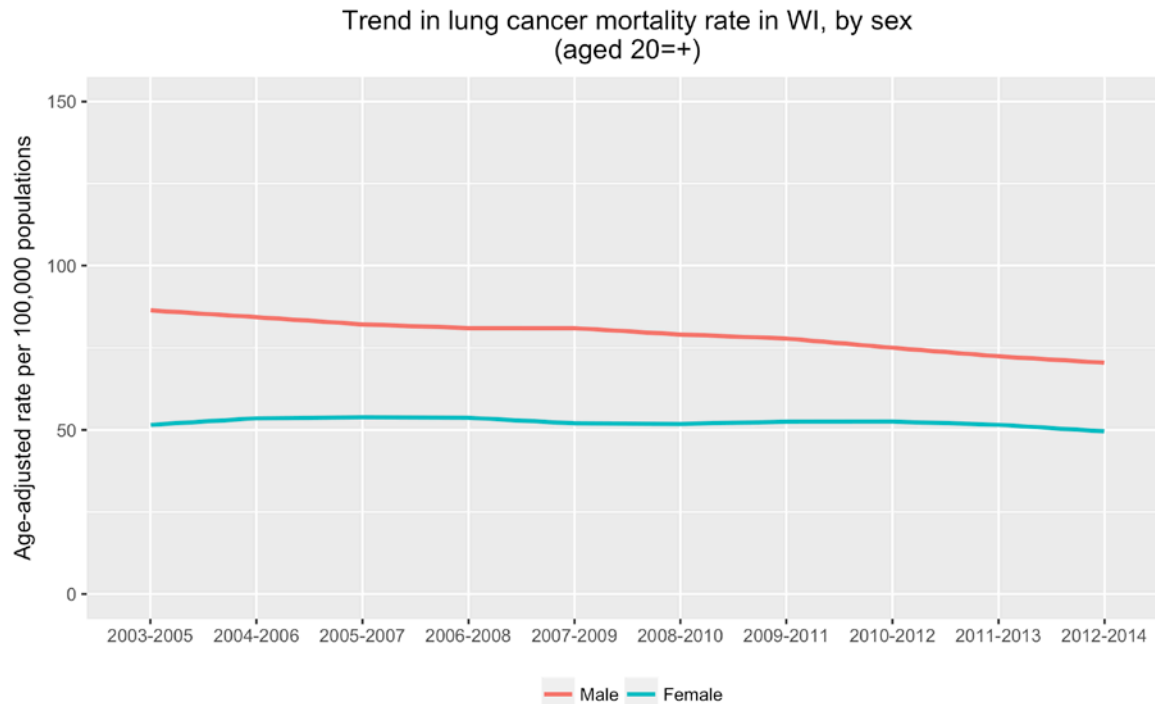


Data Source:

Wisconsin Cancer Reporting System, 2005-2015

WISH Population Module, WI Department of Health Services, 2003-2015

TRENDS IN LUNG CANCER MORTALITY RATES IN WI, BY SEX

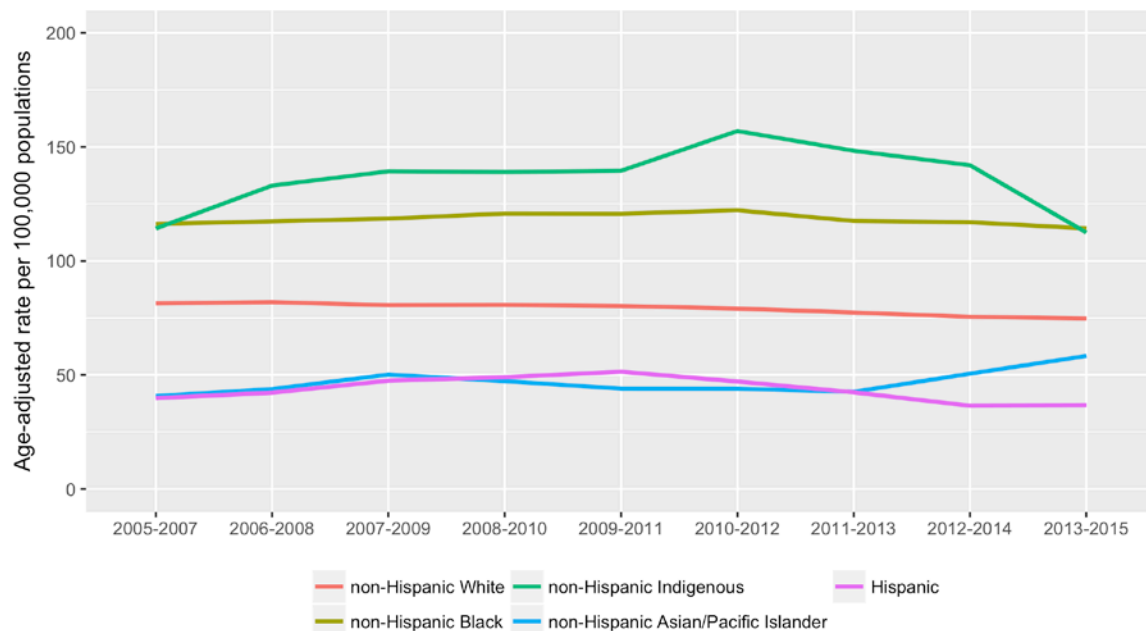


Data Source:

State Vital Records Office, WI Department of Health Services, 2003-2014
WISH Population Module, WI Department of Health Services, 2003-2015

TRENDS IN LUNG CANCER INCIDENCE RATES IN WI, BY RACE/ETHNICITY

Trend in lung cancer incidence rates in WI, by race/ethnicity
(aged 20+= excl. 11 counties)



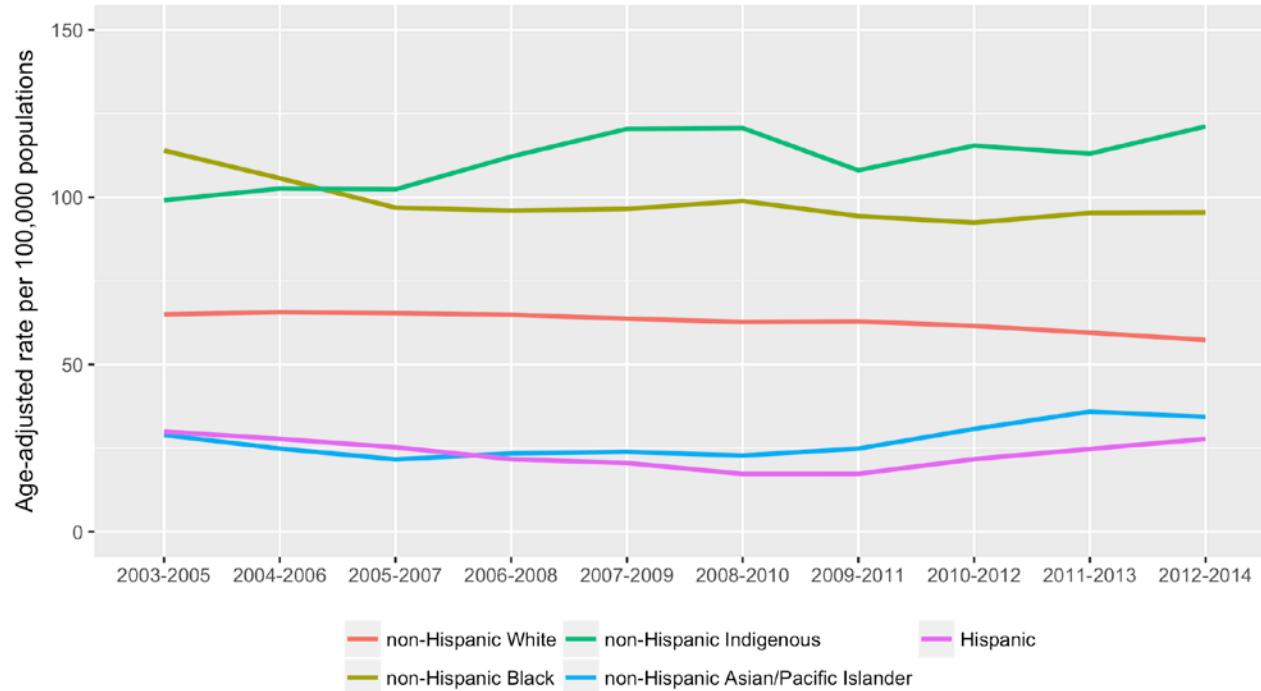
Data Source:

Wisconsin Cancer Reporting System, 2005-2015

WISH Population Module, WI Department of Health Services, 2003-2015

TRENDS IN LUNG CANCER MORTALITY RATES IN WI, BY RACE/ETHNICITY

Trend in lung cancer mortality rates in WI, by race/ethnicity
(aged 20=+)



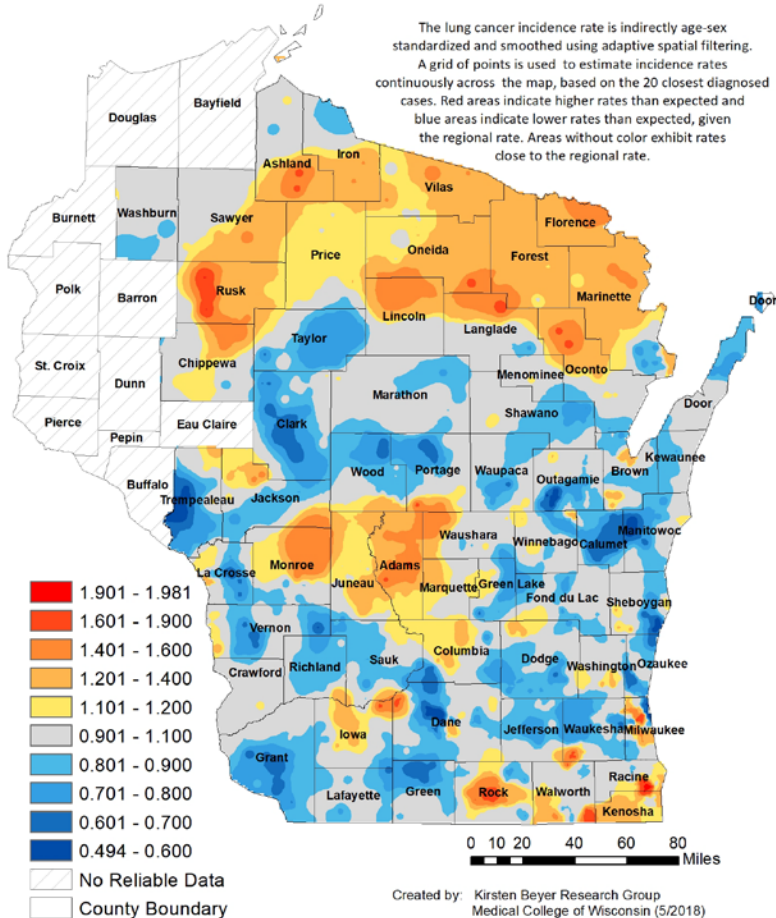
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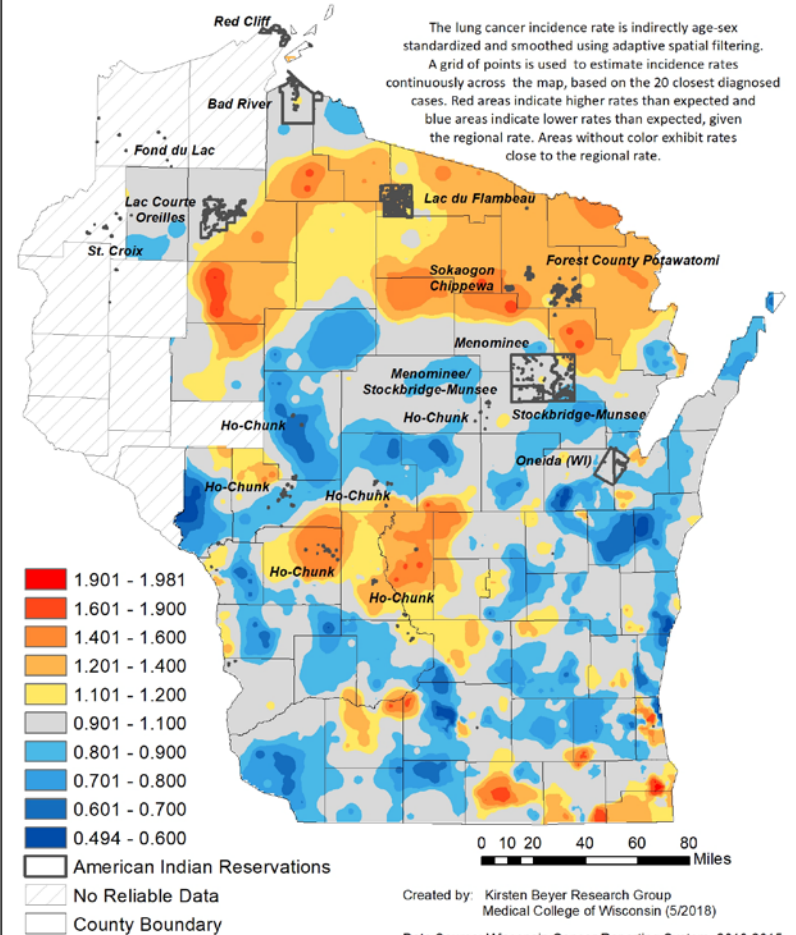
Lung Cancer Incidence Rate Wisconsin, 2010-2015

The lung cancer incidence rate is indirectly age-sex standardized and smoothed using adaptive spatial filtering. A grid of points is used to estimate incidence rates continuously across the map, based on the 20 closest diagnosed cases. Red areas indicate higher rates than expected and blue areas indicate lower rates than expected, given the regional rate. Areas without color exhibit rates close to the regional rate.



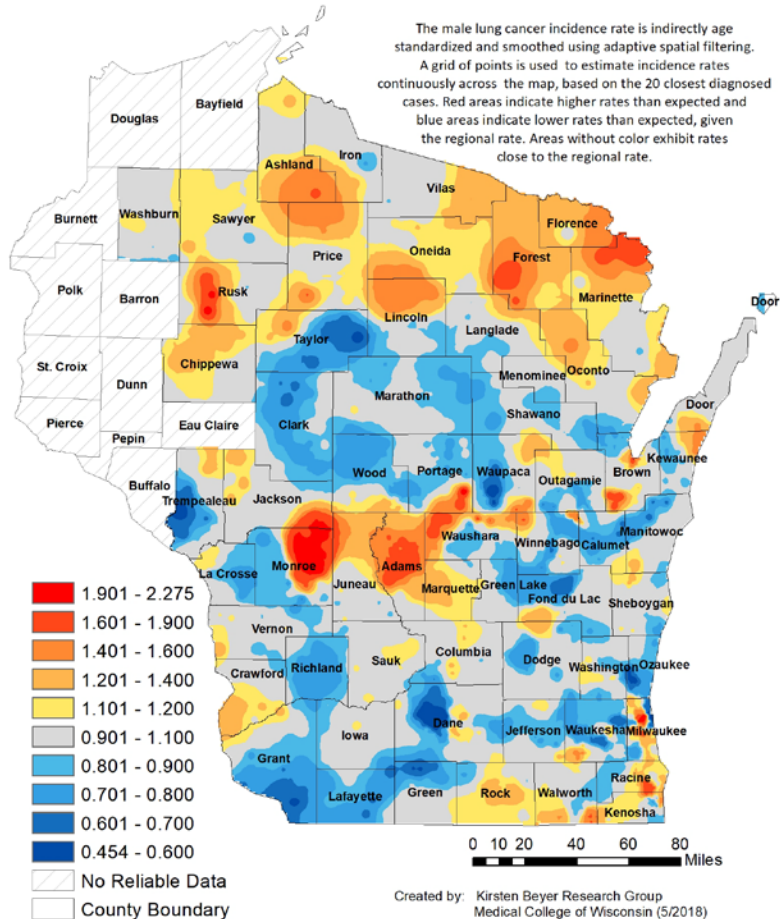
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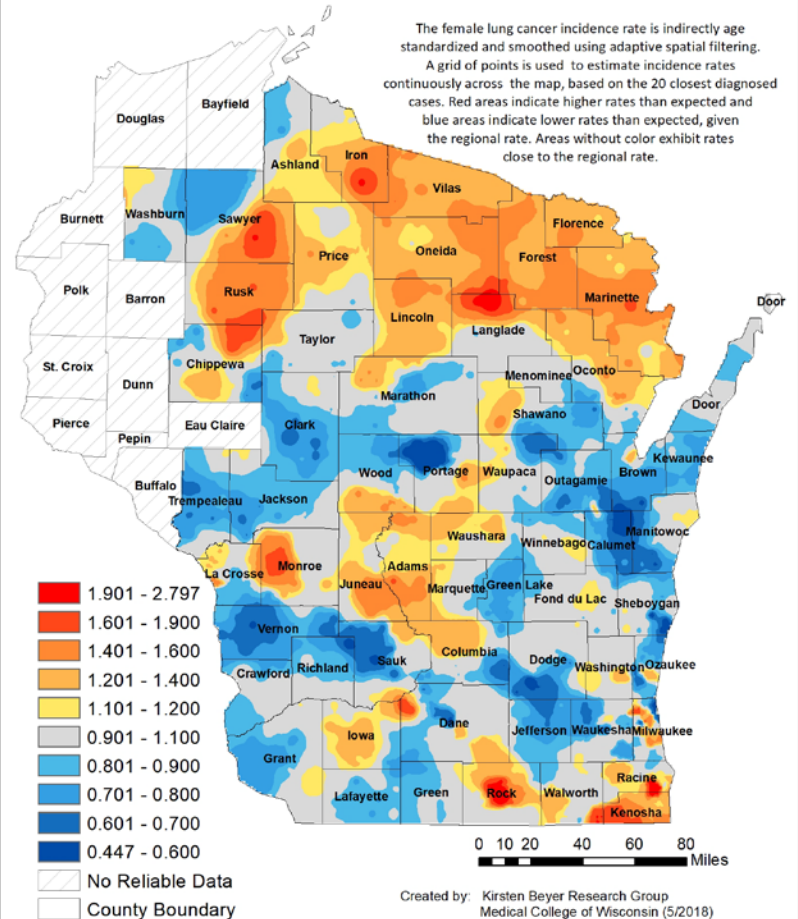
Male Lung Cancer Incidence Rate Wisconsin, 2010-2015

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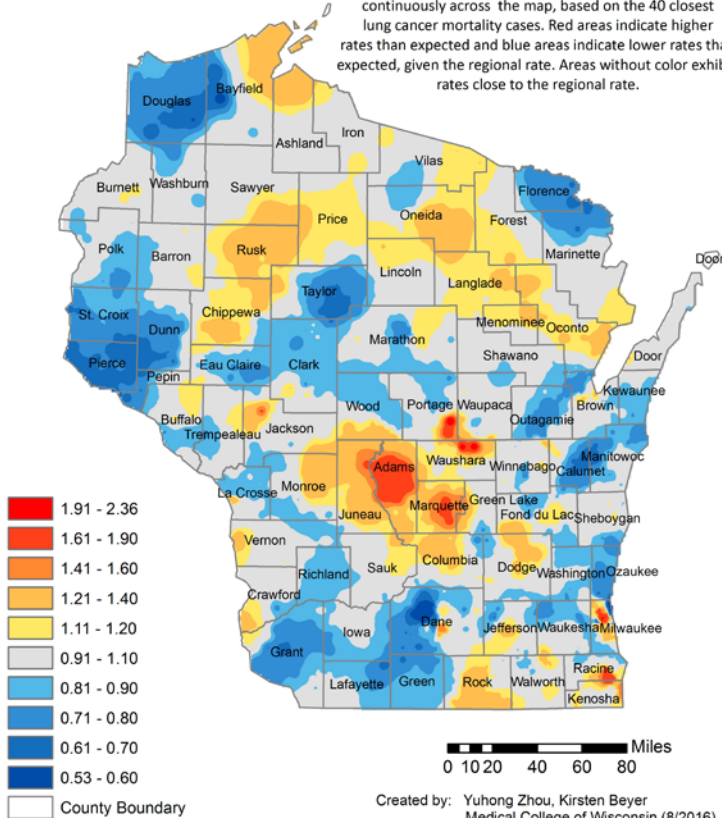
Female Lung Cancer Incidence Rate Wisconsin, 2010-2015

The female lung cancer incidence rate is indirectly age standardized and smoothed using adaptive spatial filtering. A grid of points is used to estimate incidence rates continuously across the map, based on the 20 closest diagnosed cases. Red areas indicate higher rates than expected and blue areas indicate lower rates than expected, given the regional rate. Areas without color exhibit rates close to the regional rate.



Lung Cancer Mortality Rate Wisconsin, 2008-2013

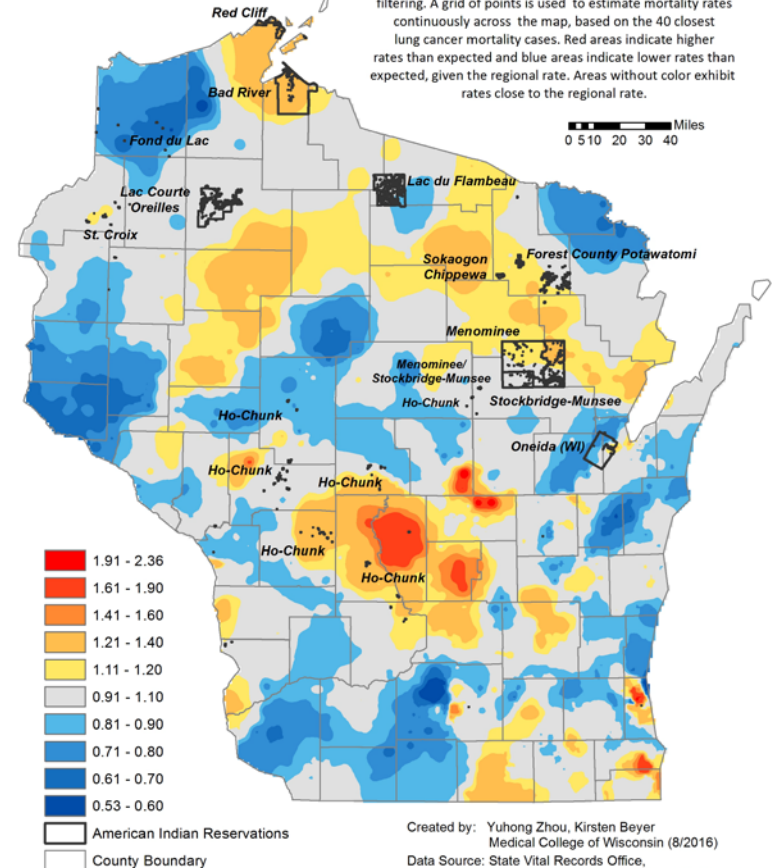
The lung cancer mortality rate is indirectly age-sex standardized and smoothed using adaptive spatial filtering. A grid of points is used to estimate mortality rates continuously across the map, based on the 40 closest lung cancer mortality cases. Red areas indicate higher rates than expected and blue areas indicate lower rates than expected, given the regional rate. Areas without color exhibit rates close to the regional rate.



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Data Source: State Vital Records Office,
Department of Health Services 2008-2013

Lung Cancer Mortality Rate Wisconsin, 2008-2013

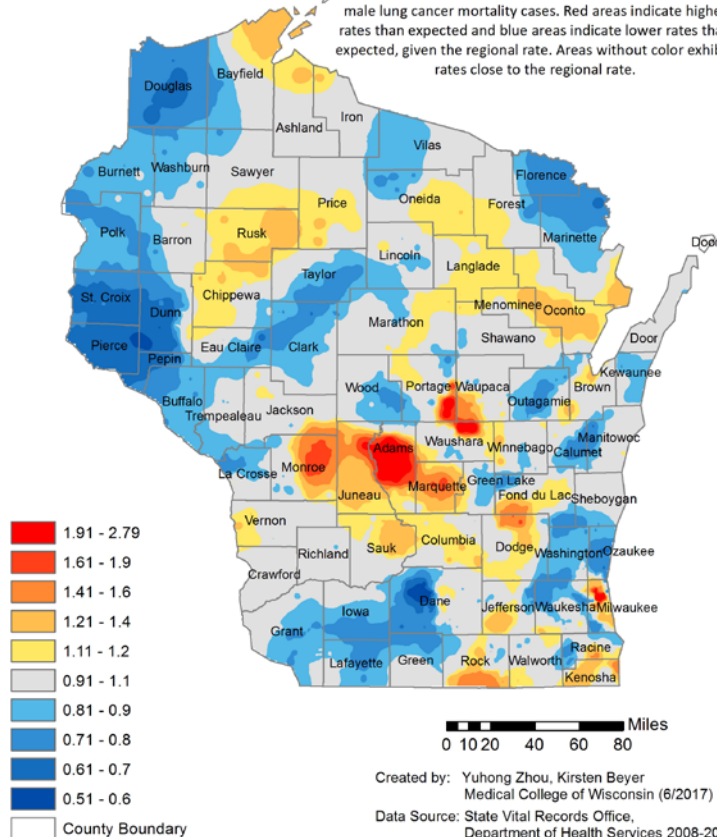
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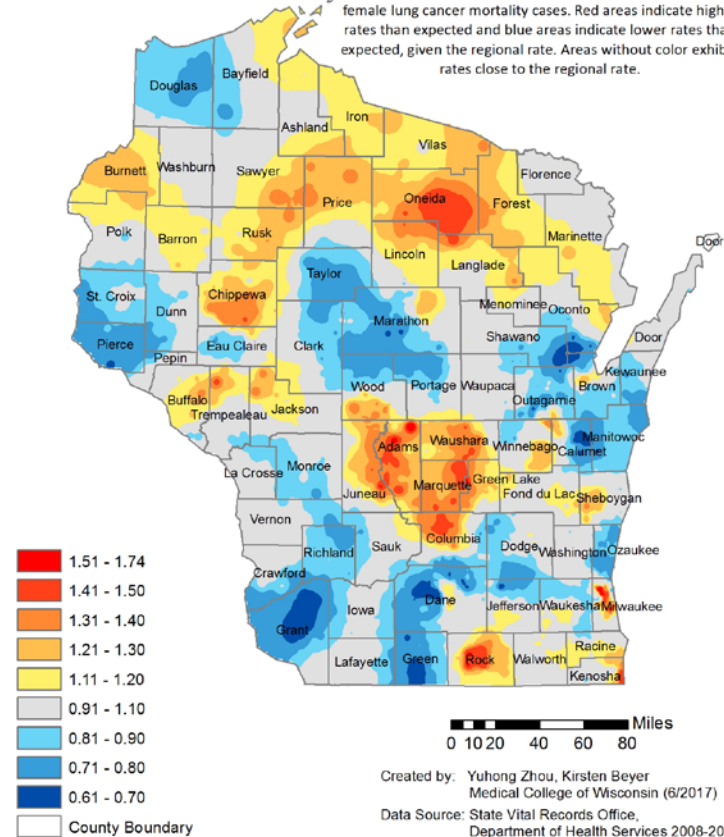
Lung Male Cancer Mortality Rate Wisconsin, 2008-2013

The male lung cancer mortality rate is indirectly age standardized and smoothed using adaptive spatial filtering. A grid of points is used to estimate mortality rates continuously across the map, based on the 40 closest male lung cancer mortality cases. Red areas indicate higher rates than expected and blue areas indicate lower rates than expected, given the regional rate. Areas without color exhibit rates close to the regional rate.



Lung Female Cancer Mortality Rate Wisconsin, 2008-2013

The female lung cancer mortality rate is indirectly age standardized and smoothed using adaptive spatial filtering. A grid of points is used to estimate mortality rates continuously across the map, based on the 40 closest female lung cancer mortality cases. Red areas indicate higher rates than expected and blue areas indicate lower rates than expected, given the regional rate. Areas without color exhibit rates close to the regional rate.

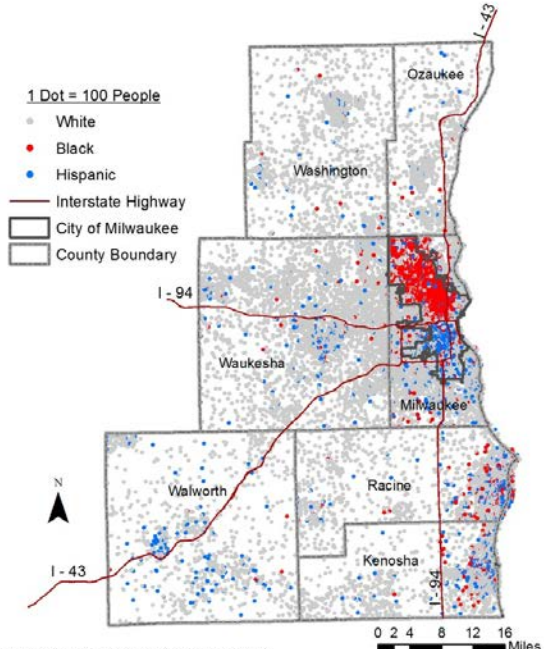




SOUTHEASTERN WISCONSIN

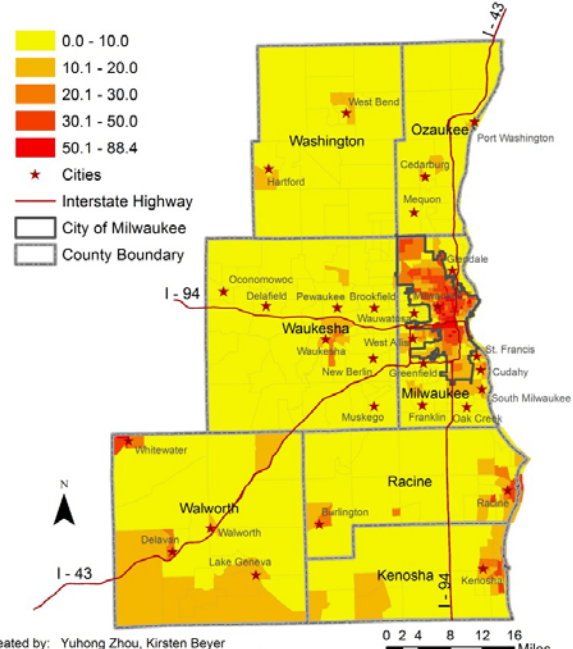
THE MILWAUKEE METRO AREA

Population by Race/Ethnicity by Census Tract,
MCW Cancer Center Catchment Area
2009 - 2013



Created by: Yuhong Zhou, Kirsten Beyer (3/2016)
Data Source: 2009-2013 American Community Survey 5-Year Estimates by US Census Bureau

Percentage of the Population with Income
Below the Poverty Level by Census Tract,
MCW Cancer Center Catchment Area 2009-2013



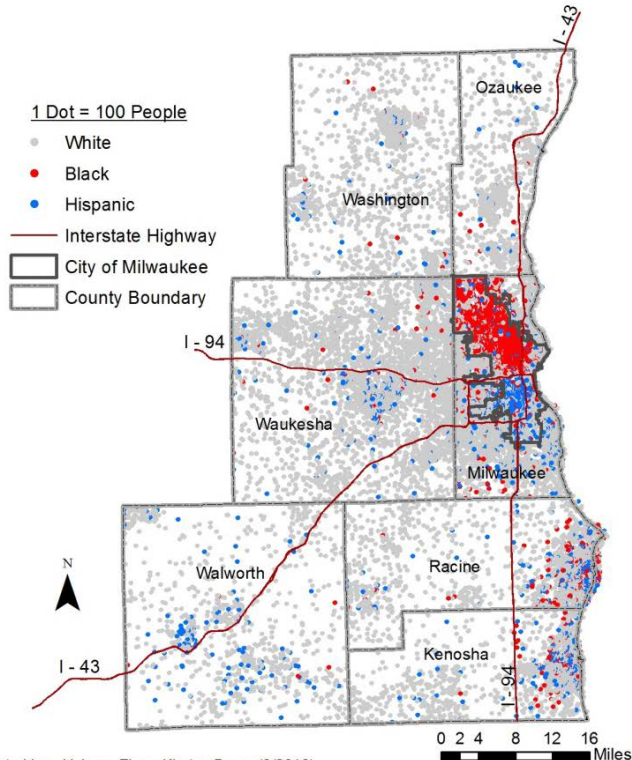
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“Back in time 60 years’: America’s most segregated city”

Toronto Star, Jan 25, 2016

Employment Rate	
Black	58%
White	88%
Poverty rate	
Black	39%
White	8%
Residents living in extreme-poverty neighborhoods	
Black	32.9%
White	1.6%
Adult male incarceration rate	
Black	11.9%
White	0.9%
Median household income	
Black	\$26,036
White	\$62,100
Average poverty rate of school attended by a student who is...	
Black	78.1%
White	24.2%

Population by Race/Ethnicity by Census Tract, MCW Cancer Center Catchment Area 2009 - 2013

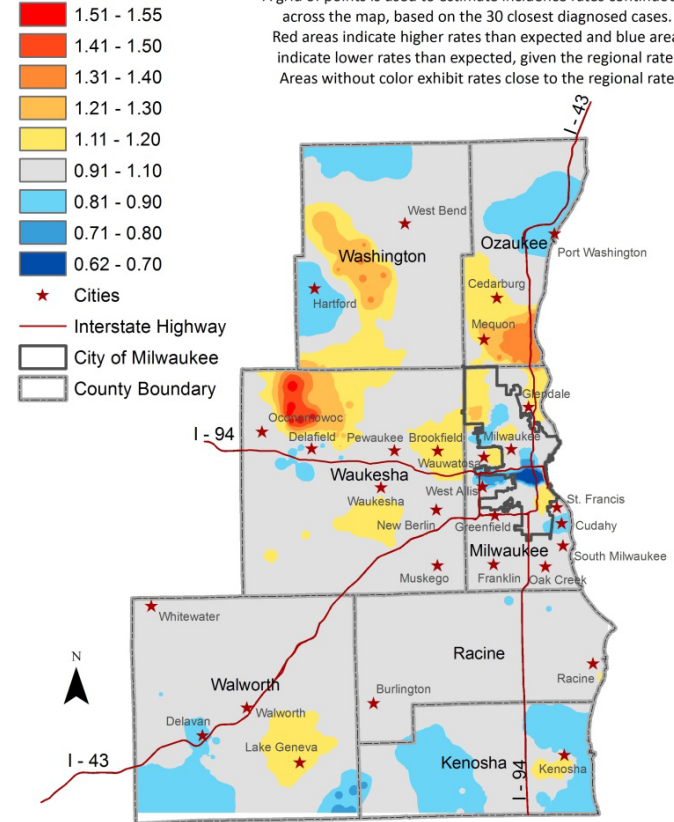


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Female Breast Cancer Incidence Rate MCW Cancer Center Catchment Area 2008-2013

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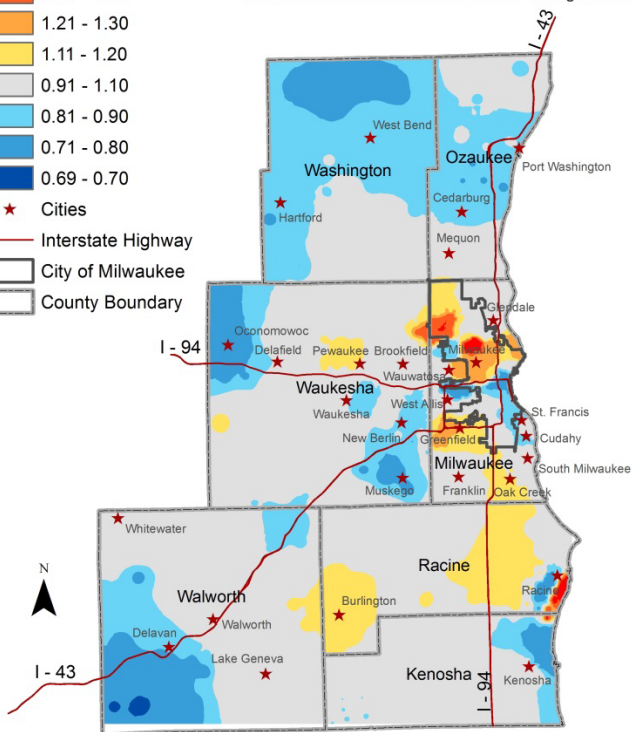
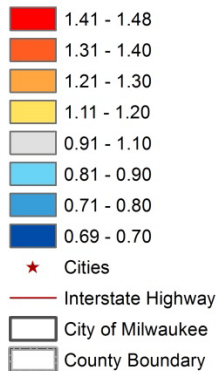


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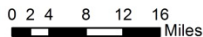
Female Breast Cancer Late-Stage Incidence Rate MCW Cancer Center Catchment Area 2008-2013

The female, invasive breast cancer late-stage incidence rate is indirectly age standardized and smoothed using adaptive spatial filtering. A grid of points is used to estimate incidence rates continuously across the map, based on the 30 closest diagnosed late-stage cases. Red areas indicate higher rates than expected and blue areas indicate lower rates than expected, given the regional rate. Areas without color exhibit rates close to the regional rate.



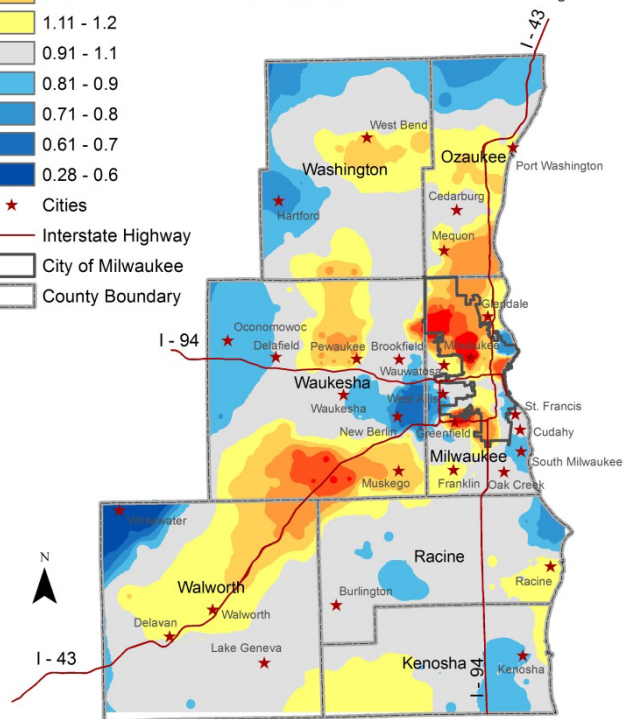
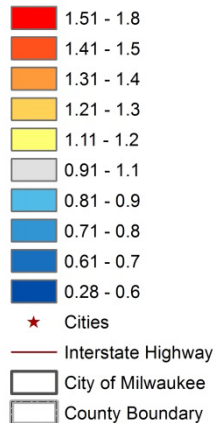
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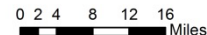
Female Breast Cancer Mortality Rate MCW Cancer Center Catchment Area 2008-2013

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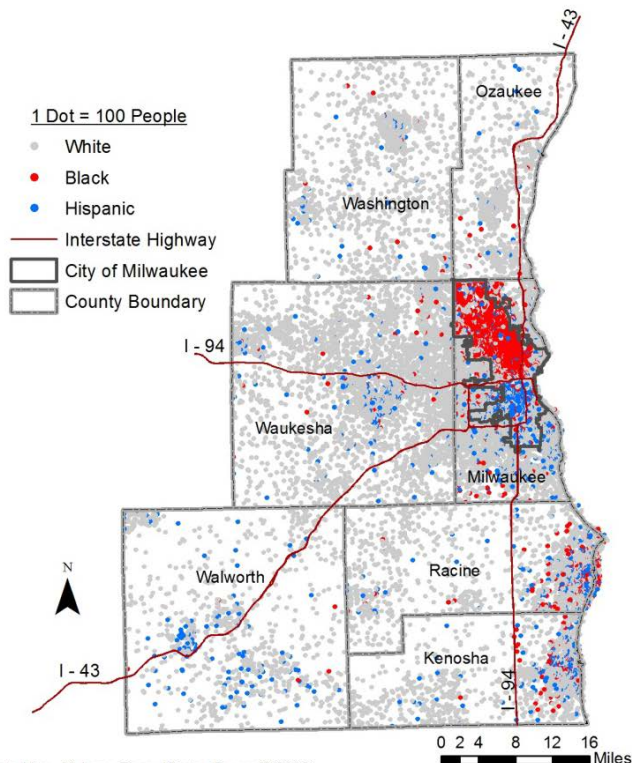


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Data Source: State Vital Records Office,
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Population by Race/Ethnicity by Census Tract, MCW Cancer Center Catchment Area 2009 - 2013

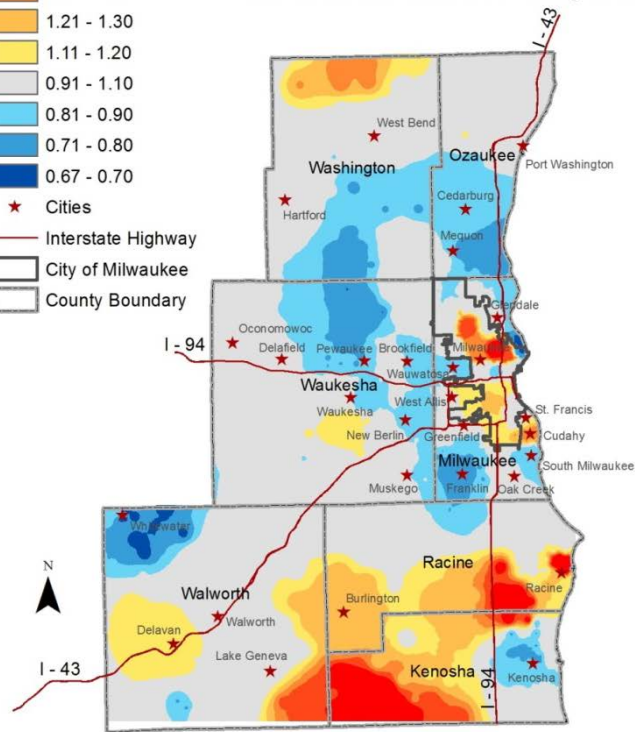
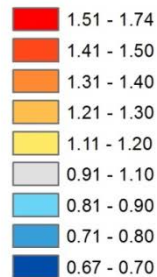


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Data Source: 2009-2013 American Community Survey 5-Year Estimates by US Census Bureau

Colorectal Cancer Incidence Rate MCW Cancer Center Catchment Area 2008-2013

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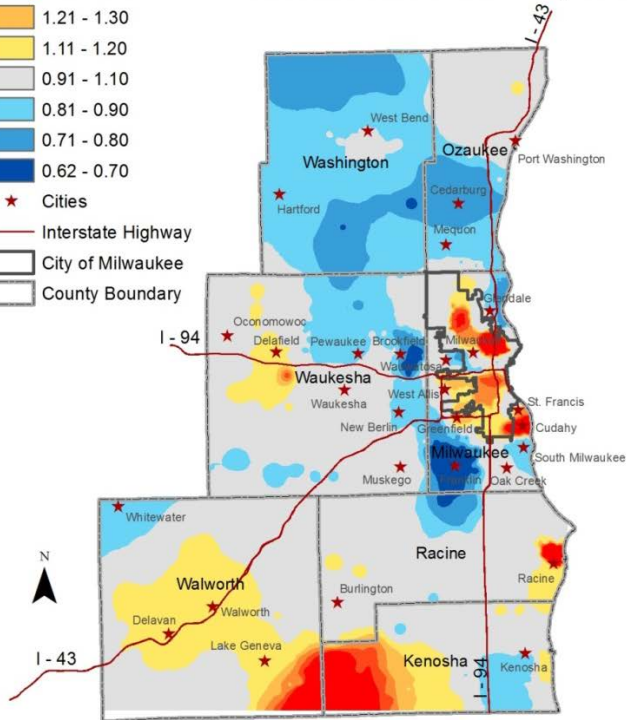
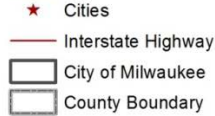
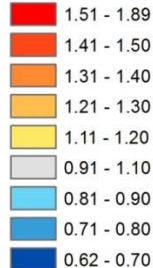


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Data Source: Wisconsin Cancer Reporting System, 2008-2013

Colorectal Cancer Late-Stage Incidence Rate MCW Cancer Center Catchment Area 2008-2013

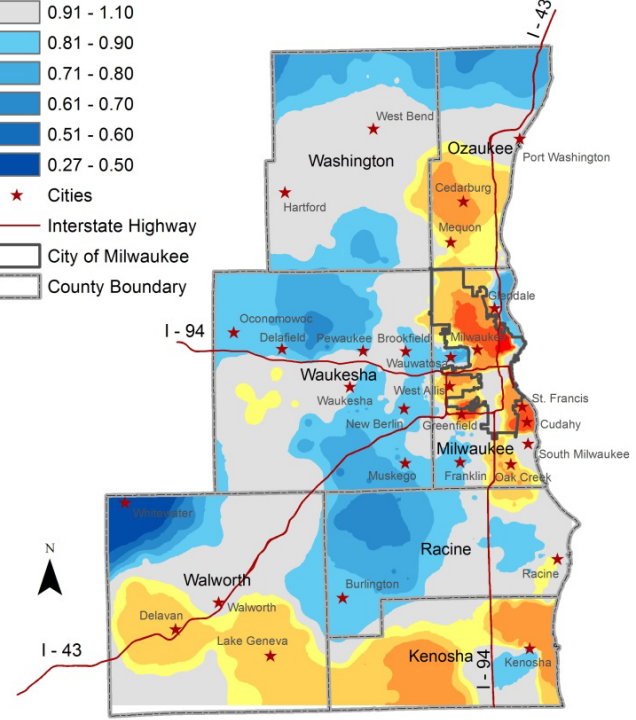
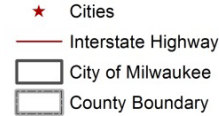
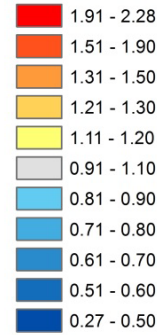
The invasive colorectal cancer late-stage incidence rate is indirectly age-sex standardized and smoothed using adaptive spatial filtering. A grid of points is used to estimate incidence rates continuously across the map, based on the 30 closest diagnosed late-stage cases. Red areas indicate higher rates than expected and blue areas indicate lower rates than expected, given the regional rate. Areas without color exhibit rates close to the regional rate.



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Data Source: Wisconsin Cancer Reporting System, 2008-2013

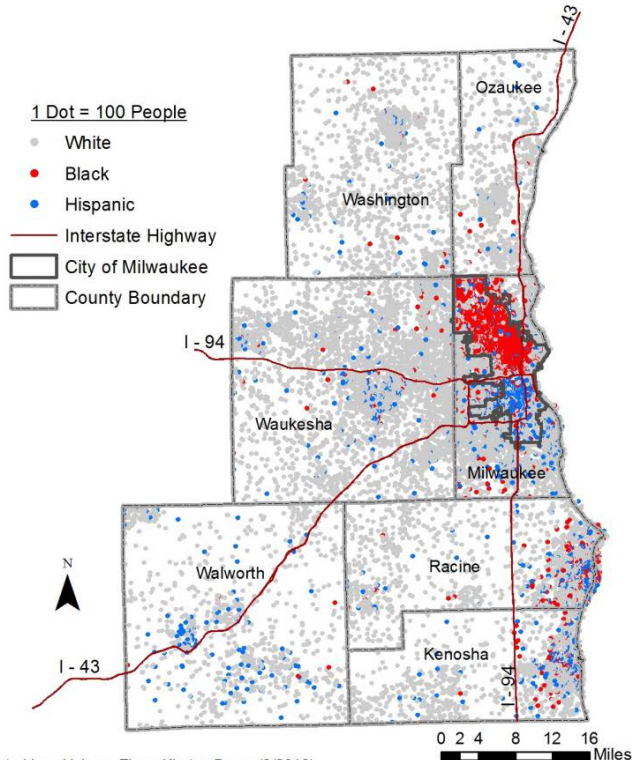
Colorectal Cancer Mortality Rate MCW Cancer Center Catchment Area 2008-2013

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Population by Race/Ethnicity by Census Tract, MCW Cancer Center Catchment Area 2009 - 2013

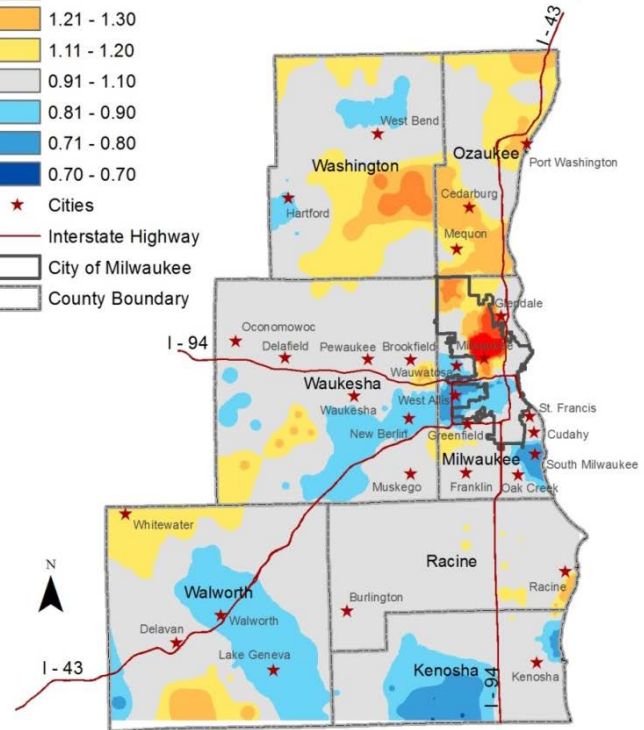


Created by: Yuhong Zhou, Kirsten Beyer (3/2016)

Data Source: 2009-2013 American Community Survey 5-Year Estimates by US Census Bureau

Prostate Cancer Incidence Rate MCW Cancer Center Catchment Area 2008-2013

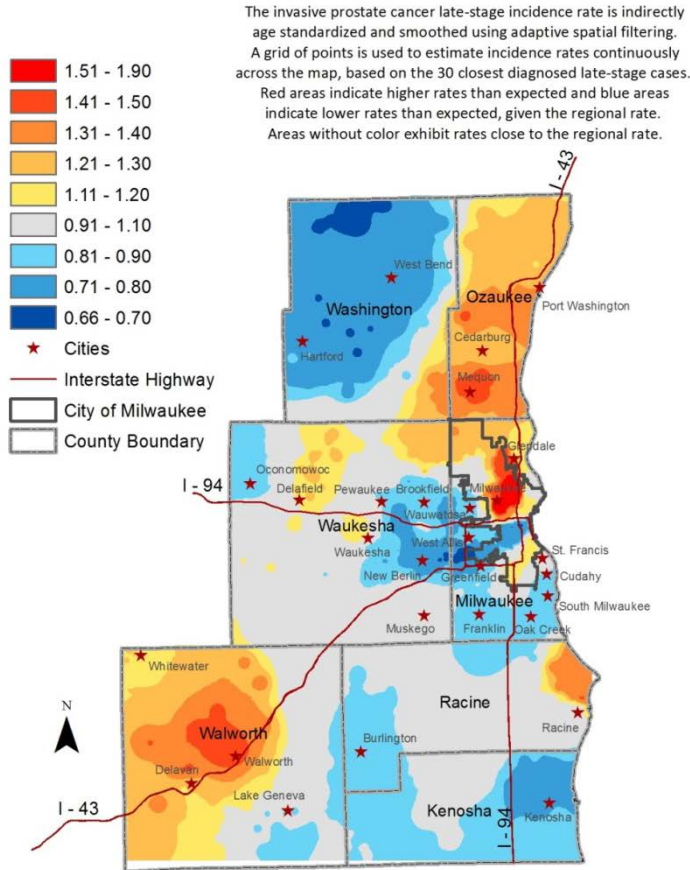
The invasive prostate cancer incidence rate is indirectly age standardized and smoothed using adaptive spatial filtering. A grid of points is used to estimate incidence rates continuously across the map, based on the 30 closest diagnosed cases. Red areas indicate higher rates than expected and blue areas indicate lower rates than expected, given the regional rate. Areas without color exhibit rates close to the regional rate.



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Data Source: Wisconsin Cancer Reporting System, 2008-2013

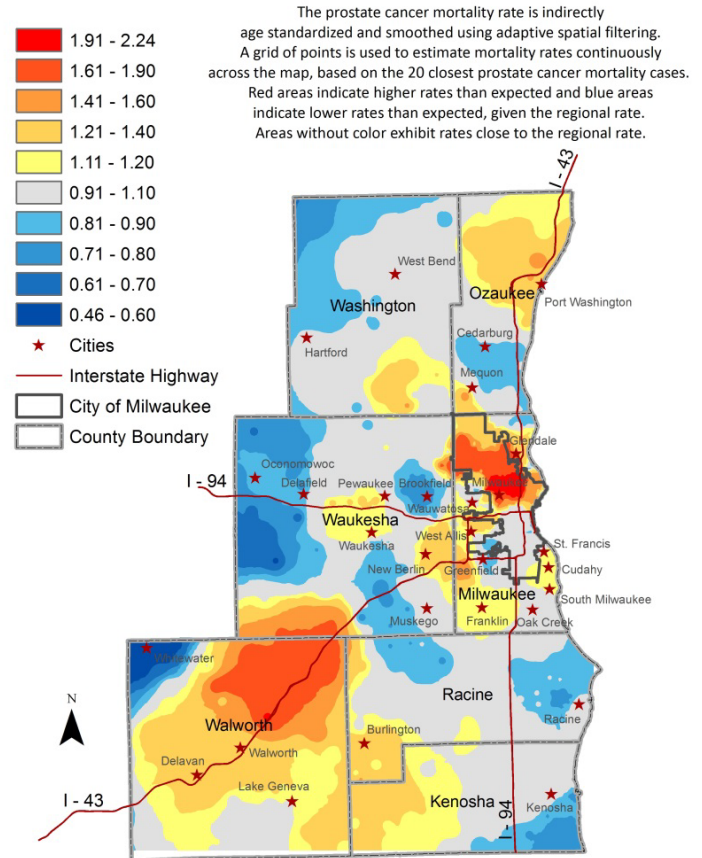
Prostate Cancer Late-Stage Incidence Rate MCW Cancer Center Catchment Area 2008-2013



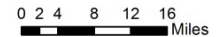
Created by: Yuhong Zhou, Kirsten Beyer (3/2016)
Data Source: Wisconsin Cancer Reporting System, 2008-2013



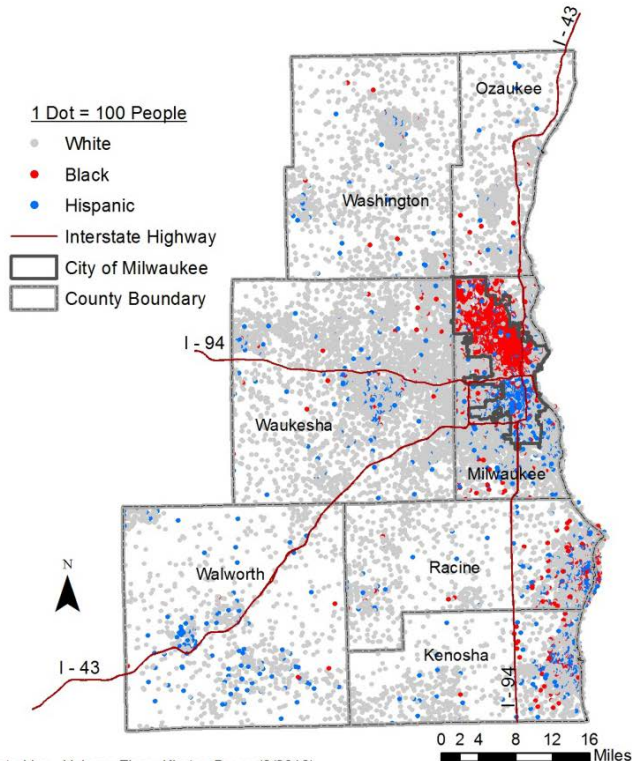
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Population by Race/Ethnicity by Census Tract, MCW Cancer Center Catchment Area 2009 - 2013

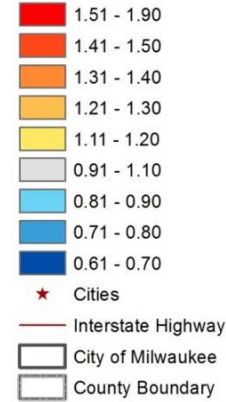


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Data Source: 2009-2013 American Community Survey 5-Year Estimates by US Census Bureau

Lung Cancer Incidence Rate MCW Cancer Center Catchment Area 2008-2013

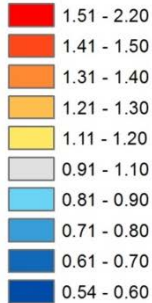
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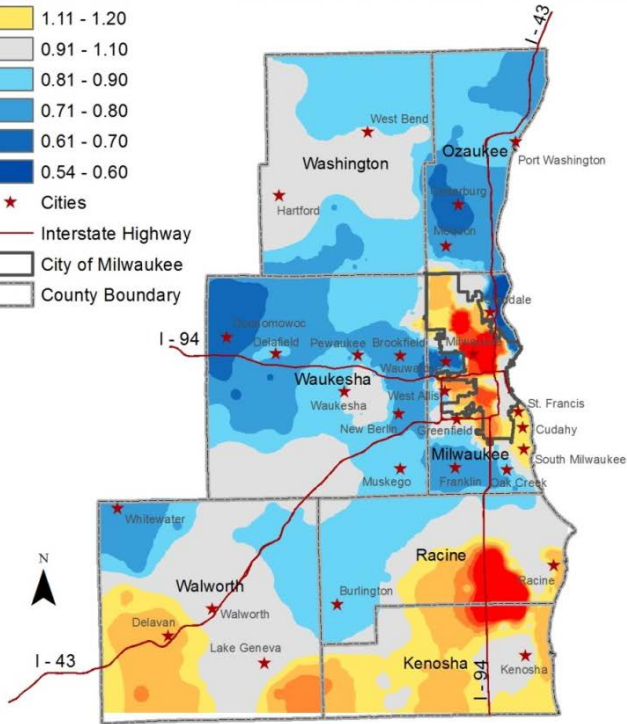
Data Source: Wisconsin Cancer Reporting System, 2008-2013

Lung Cancer Late-Stage Incidence Rate MCW Cancer Center Catchment Area 2008-2013



- ★ Cities
- Interstate Highway
- City of Milwaukee
- County Boundary

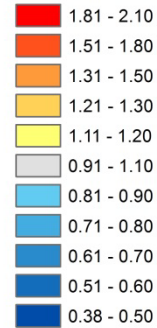
The invasive lung cancer late-stage incidence rate is indirectly age-sex standardized and smoothed using adaptive spatial filtering. A grid of points is used to estimate incidence rates continuously across the map, based on the 30 closest diagnosed late-stage cases. Red areas indicate higher rates than expected and blue areas indicate lower rates than expected, given the regional rate. Areas without color exhibit rates close to the regional rate.



Created by: Yuhong Zhou, Kirsten Beyer (3/2016)
Data Source: Wisconsin Cancer Reporting System, 2008-2013

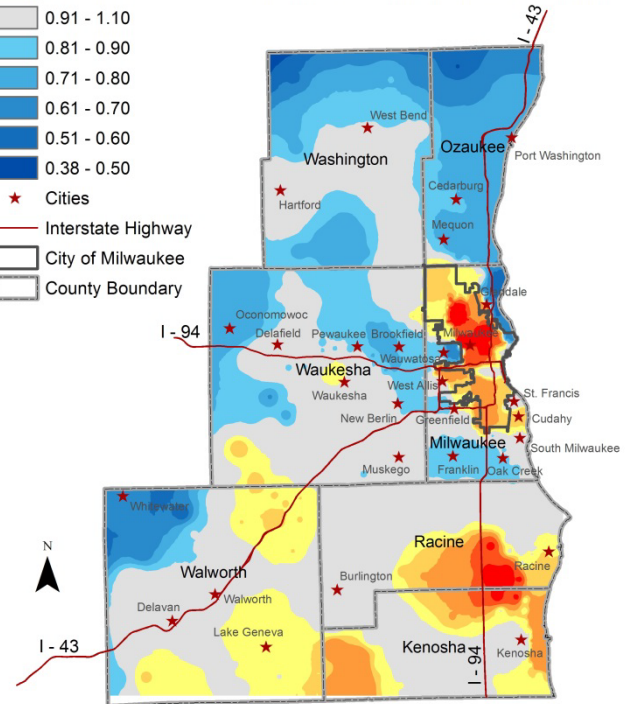


Lung Cancer Mortality Rate MCW Cancer Center Catchment Area 2008-2013

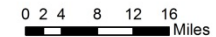


- ★ Cities
- Interstate Highway
- City of Milwaukee
- County Boundary

The lung cancer mortality rate is indirectly age-sex standardized and smoothed using adaptive spatial filtering. A grid of points is used to estimate mortality rates continuously across the map, based on the 20 closest lung cancer mortality cases. Red areas indicate higher rates than expected and blue areas indicate lower rates than expected, given the regional rate. Areas without color exhibit rates close to the regional rate.



Created by: Yuhong Zhou, Kirsten Beyer
Medical College of Wisconsin (7/2016)
Data Source: State Vital Records Office,
Department of Health Services 2008-2013



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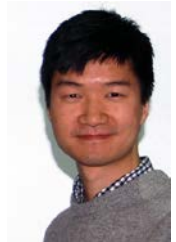
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Questions?

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