

Greater Sullivan Public Health Region Date Presentation

Benjamin P. Chan, MD, MPH
NH Division of Public Health Services
May 12, 2015

Purpose for Today's Presentation

- Introduction: Population Health
- Orient you to tools available to help you describe and measure different aspects of health in your community
- Provide preliminary high-level data to begin evaluating population health
- Help you interpret data using general statistical concepts

What is Health?

A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

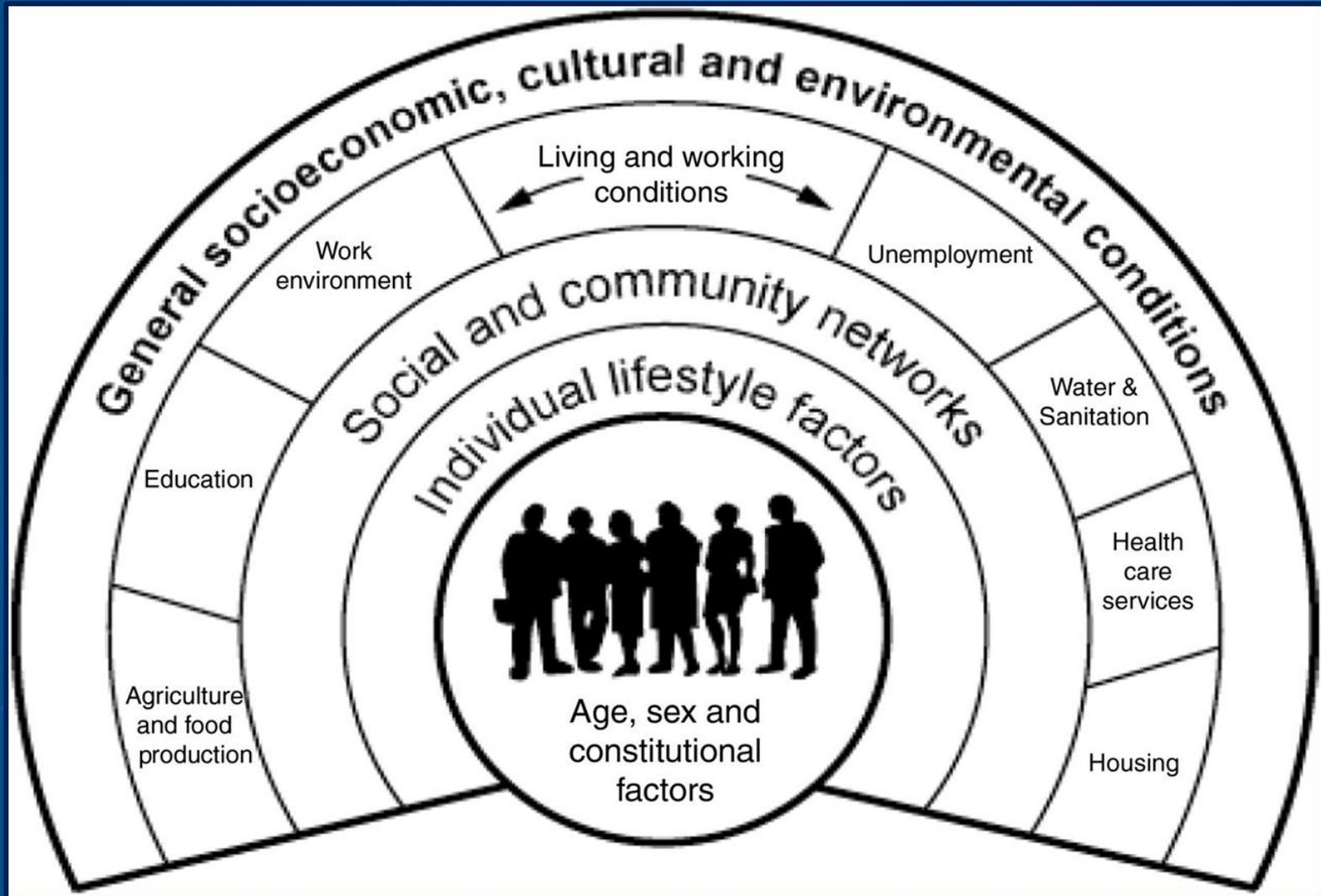
What is Public Health?

All organized measures (whether public or private) to prevent disease, promote health, and prolong life among the population as a whole.

What is Population Health?

- “the health outcomes of a group of individuals, including the distribution of such outcomes within the group”
- Populations include:
 - Geographic communities (Public Health Region)
 - Ethnic groups
 - Employees
 - Vulnerable persons (disabled, young/elderly, pregnant women, etc)

The Main Determinants of Health



Determinants do not act alone or in “simple additive fashion”, but rather in concert with one another in complex, interdependent, bidirectional relationships.

Improving Population Health

- All improvement involves change
- Not all change is improvement

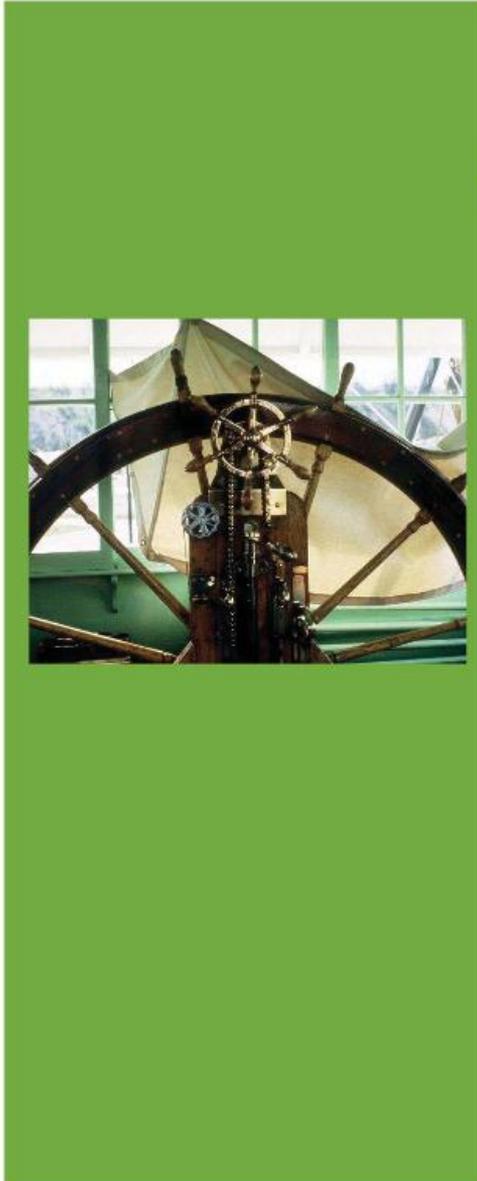
- How do we ensure the changes we're making are an improvement?

Measure

Steps to Begin Evaluating and Improving Population Health

- 
- 
- Describe and understand your population
 - Describe and understand the processes and systems of health or healthcare delivery
 - Define the problem(s)
 - Define your goal/aim for improvement
 - Set Objectives

State Health Improvement Plan



New Hampshire State Health Improvement Plan

2013-2020

*Charting a Course
to Improve the Health
of New Hampshire*



NH State Health Improvement Plan Priority Areas

TOBACCO

Tobacco use is the single most preventable cause of death, disease, and disability.

- Reduce adult cigarette smoking
- Reduce the initiation of tobacco use in children
- Reduce tobacco use by adolescents
- Reduce smoking during pregnancy
- Reduce exposure to indoor tobacco smoke

OBESITY/DIABETES

Obesity is a complex health concern that impacts 26% of our adults and 18% of children, and increases the risk for many chronic diseases. Diabetes is the seventh leading cause of death in New Hampshire, affecting about 8.7% of our adults.

- Reduce adult obesity
- Reduce childhood obesity
- Decrease emergency department visits for diabetes
- Decrease hospitalizations for diabetes

HEART DISEASE AND STROKE

Heart disease is the second leading cause of death in New Hampshire; stroke is the fifth leading cause.

- Reduce high blood cholesterol in adults
- Reduce high blood pressure in adults
- Reduce coronary heart disease deaths
- Reduce stroke deaths

ASTHMA

Asthma is a chronic lung disease that inflames and narrows the airways causing difficulty breathing. New Hampshire's asthma rate is among the highest in the nation.

- Increase asthma control in adults
- Increase asthma control in children

INJURY PREVENTION

Unintentional injuries are the leading cause of death for all New Hampshire residents between age 1 and 44.

- Reduce unintentional poisoning deaths
- Reduce falls-related deaths in older adults
- Reduce motor vehicle crash injuries in teens
- Reduce suicide deaths for all persons
- Reduce suicide attempts by adolescents

INFECTIOUS DISEASE

Preventive health services such as immunizations and prompt diagnosis and treatment prevent infectious diseases and improve health outcomes. In 2012, over 3,500 cases of infectious disease were reported in New Hampshire.

- Increase childhood vaccinations
- Reduce healthcare associated infections
- Increase timeliness of foodborne illness investigations
- Enhance food safety
- Increase seasonal influenza vaccination

HEALTHY MOTHERS AND BABIES

Strategies to promote a healthy start to life may have the greatest potential to reduce health disparities across the life course.

- Reduce preterm births
- Reduce unintended teen births
- Increase screening for Autism Spectrum Disorder (ASD) and other developmental delays
- Reduce childhood dental caries

CANCER PREVENTION

Cancer has overtaken heart disease as the leading cause of death in New Hampshire.

- Increase colorectal cancer screening
- Increase mammogram screening for breast cancer
- Reduce melanoma deaths
- Reduce deaths from lung cancer

EMERGENCY PREPAREDNESS

The threat of an emergency or disaster is always present. Prepared responders and resilient communities ensure a rapid and effective response to any emergency.

- Increase community engagement in public health emergency activities
- Strengthen the capacity to respond to public health emergencies in a timely manner
- Strengthen the capacity to maintain situational awareness of health threats
- Increase the State's ability to dispense emergency countermeasures to the public

MISUSE OF ALCOHOL AND DRUGS

Substance abuse impacts individuals, families, and communities, significantly contributing to social, physical, mental, and public health problems.

- Reduce binge drinking
- Reduce marijuana use in youth
- Reduce the non-medical use of pain relievers
- Reduce drug-related overdose deaths

Measuring & Understanding the Population/Community

- WISDOM: Web-based Interactive System for Decision and Outcome Monitoring
- In-house data-system built to track health indicators
- Multiple “modules” of WISDOM both for external & internal use

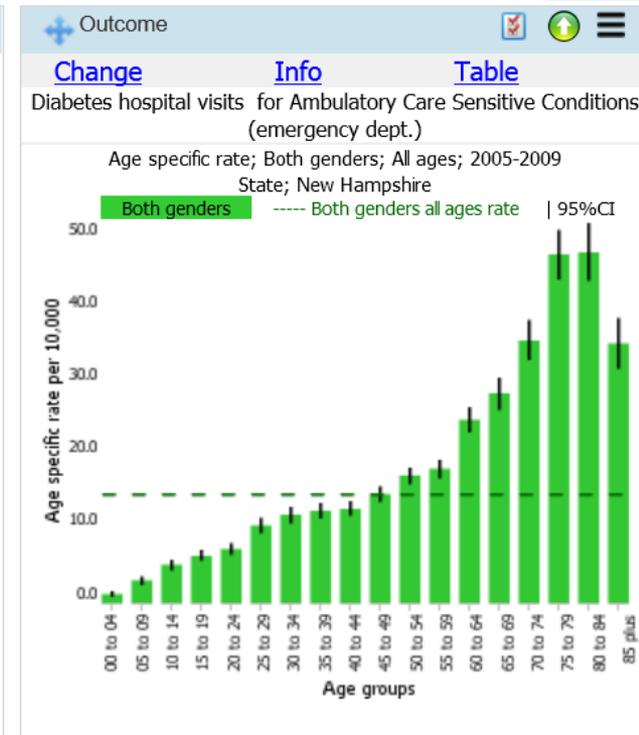
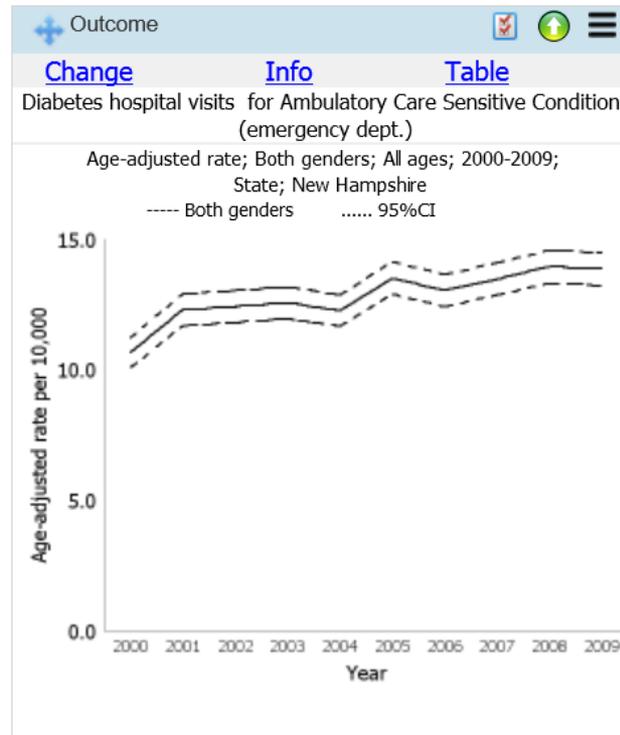
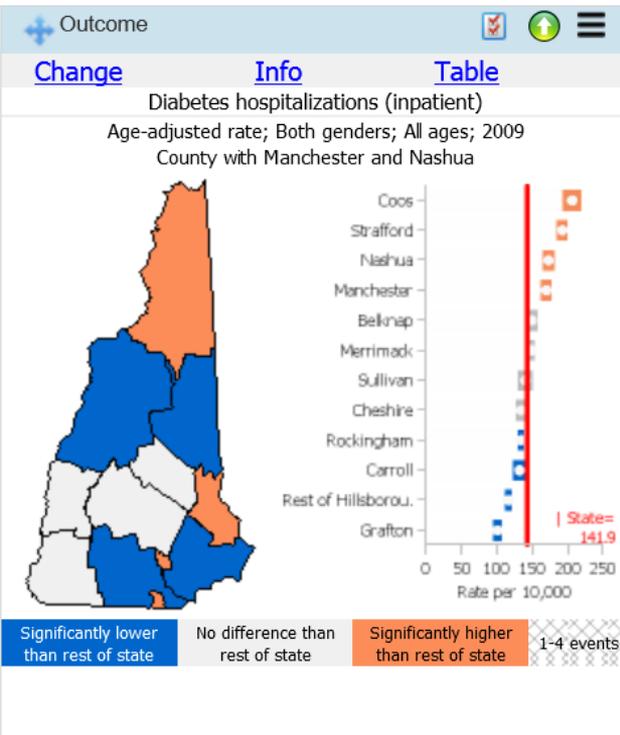
Components (Modules) of WISDOM

- Public Health Topic Dashboards
- Community Profiles
- Social Vulnerability data



Public Health Priorities

State Health Improvement Plan Priority Areas



Asthma
[Asthma prevalence & control](#)
[Asthma risk factors & co-morbidity](#)



Cancer prevention
[Breast cancer](#)
[Colorectal cancer](#)
[Melanoma of skin](#)



Diabetes community profile

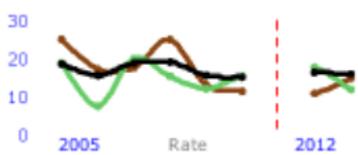
Long description goes here. Soon this area will allow for addition of pictures, links, and even embedded videos.

— Merrimack — Hillsborough — NH

See info button ⓘ for color definition.

Merrimack **Hillsborough** **NH**

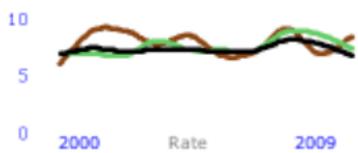
Coronary heart disease in adults with diabetes



Age	Merrimack	Hillsborough
Both genders	8.6	0.8
18 to 49	15.2	12.5
50 to 64	17.5	15.2

15.0% (2012) 1,445 adults	12.0% (2012) 3,351 adults	16.1% (2012) 15,819 adults
--	--	---

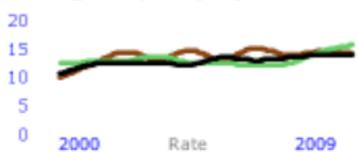
Diabetes hospital visits for Ambulatory Care Sensitive Conditions (inpatient)



Age	Merrimack		Hillsborough	
	Female	Male	Female	Male
00 to 17	2.5	3.9	4.0	4.4
18 to 49	7.8	6.3	7.1	8.0
50 to 64	6.5	13.8	7.1	10.7
65 plus	15.4	18.5	14.9	17.4

8.5 Per 10K people (2009) 135 cases	7.4 Per 10K people (2009) 304 cases	6.8 Per 10K people (2009) 944 cases
---	---	---

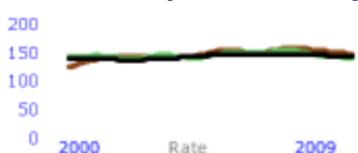
Diabetes hospital visits for Ambulatory Care Sensitive Conditions (emergency dept.)



Age	Merrimack		Hillsborough	
	Female	Male	Female	Male
00 to 17	3.5	6.1	4.1	3.6
18 to 49	12.2	12.7	9.8	13.8
50 to 64	21.3	19.1	17.8	19.3
65 plus	31.0	35.9	31.1	36.7

14.1 Per 10K people (2009) 226 cases	15.7 Per 10K people (2009) 651 cases	13.9 Per 10K people (2009) 1,955 cases
--	--	--

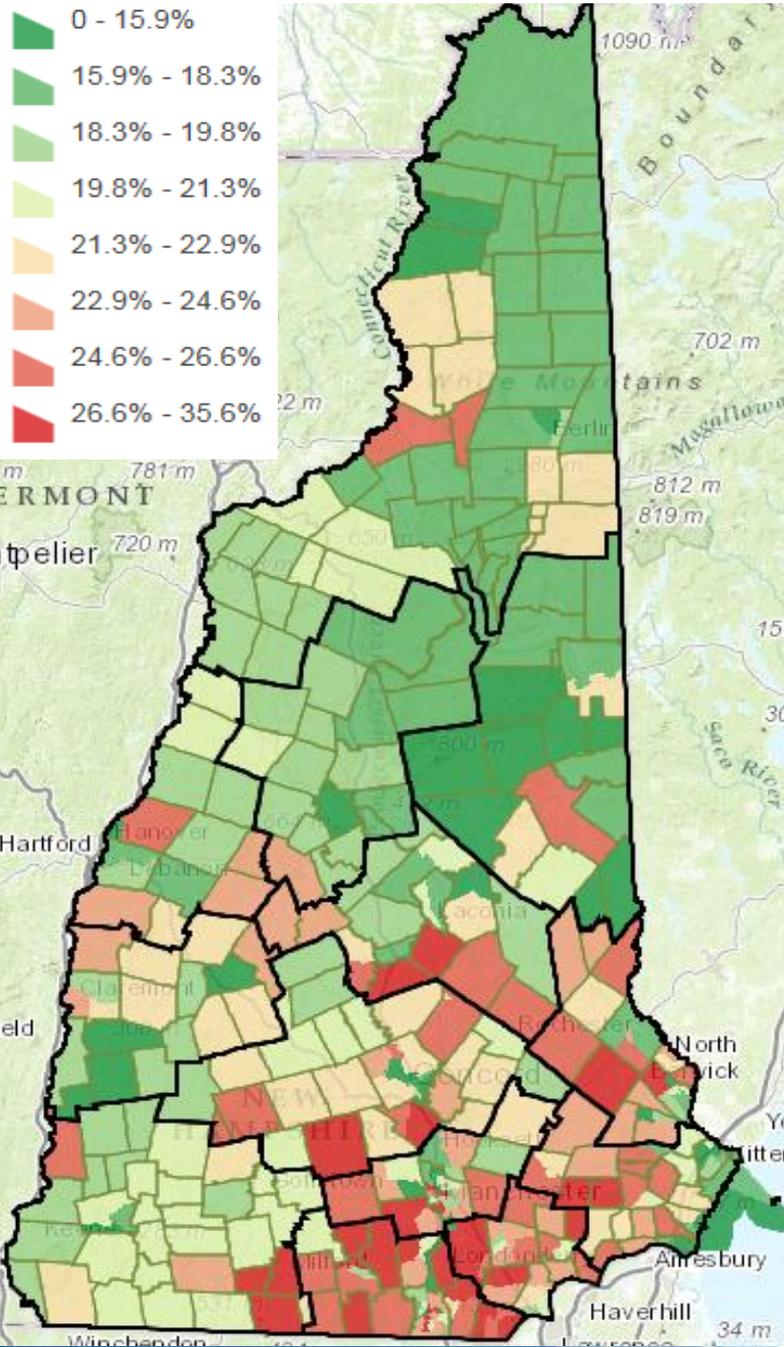
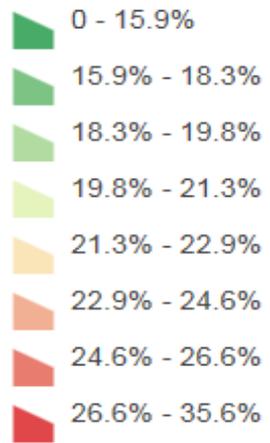
Diabetes hospitalizations (inpatient)



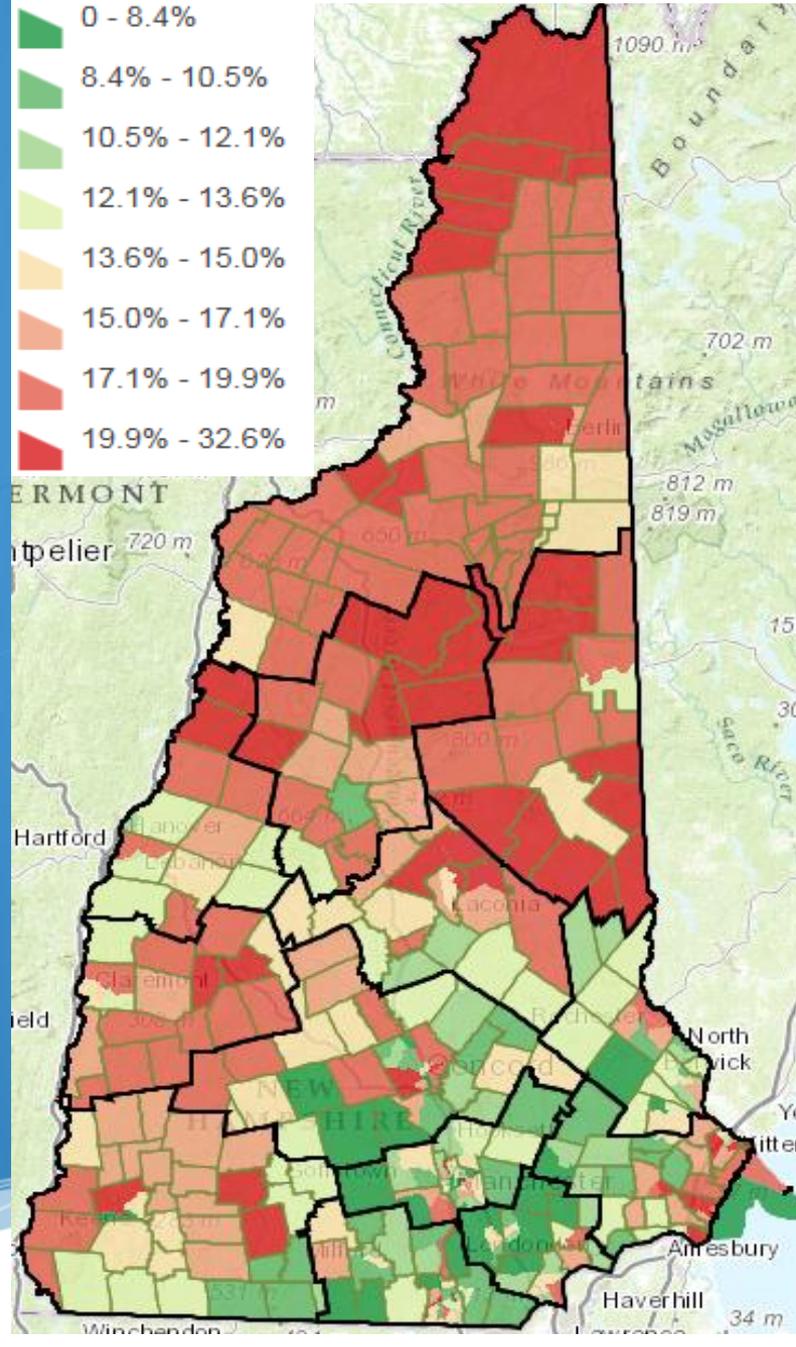
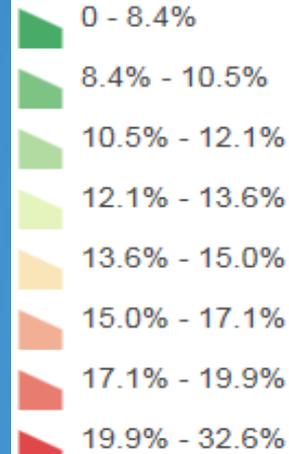
Age	Merrimack		Hillsborough	
	Female	Male	Female	Male
00 to 17	2.9	4.4	5.3	5.5
18 to 49	54.3	46.5	54.6	48.8
50 to 64	216.2	256.4	214.1	237.9
65 plus	677.9	831.3	659.9	771.0

147.5 Per 10K people (2009) 2,443 cases	140.9 Per 10K people (2009) 5,898 cases	141.9 Per 10K people (2009) 20,919 cases
---	---	--

Children: % of Population



Elderly: % of Population



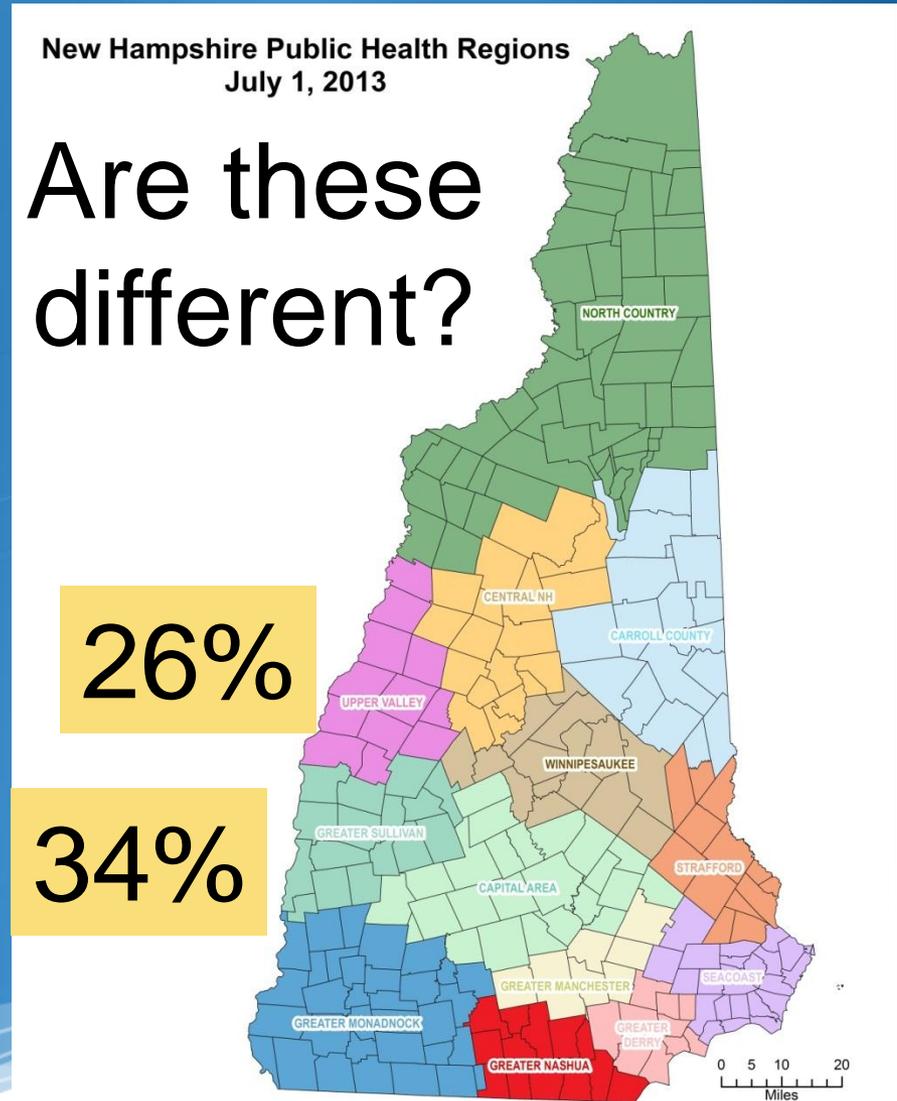
On-line Demonstration

- Social Vulnerability Data:
 - <http://nhdphs.maps.arcgis.com/home/>
- MapNH: future health projections
 - <http://www.mapnhhealth.org/>
- WISDOM:
 - <http://wisdom.dhhs.nh.gov/wisdom/>

Statistics 101

Comparing “Greater Sullivan” to “Upper Valley”

- Do the two different public health regions have the same prevalence of high blood pressure?
- How do you know?



Statistics 101

- Point estimate: Best estimate (based on a sample) of the true “effect size” (Ex: “34% have hypertension”)
- Confidence Interval (CI): How sure we are of that estimate.
 - 95% CI’s: 95% chance that the range includes the “true effect” size
 - Large CI’s – estimate is not that precise
 - Sample size affects our CIs
 - Large sample of the population: more sure of your estimate, hence CI’s are smaller
 - Small sample of the population: less sure of your estimate, hence CI’s are larger

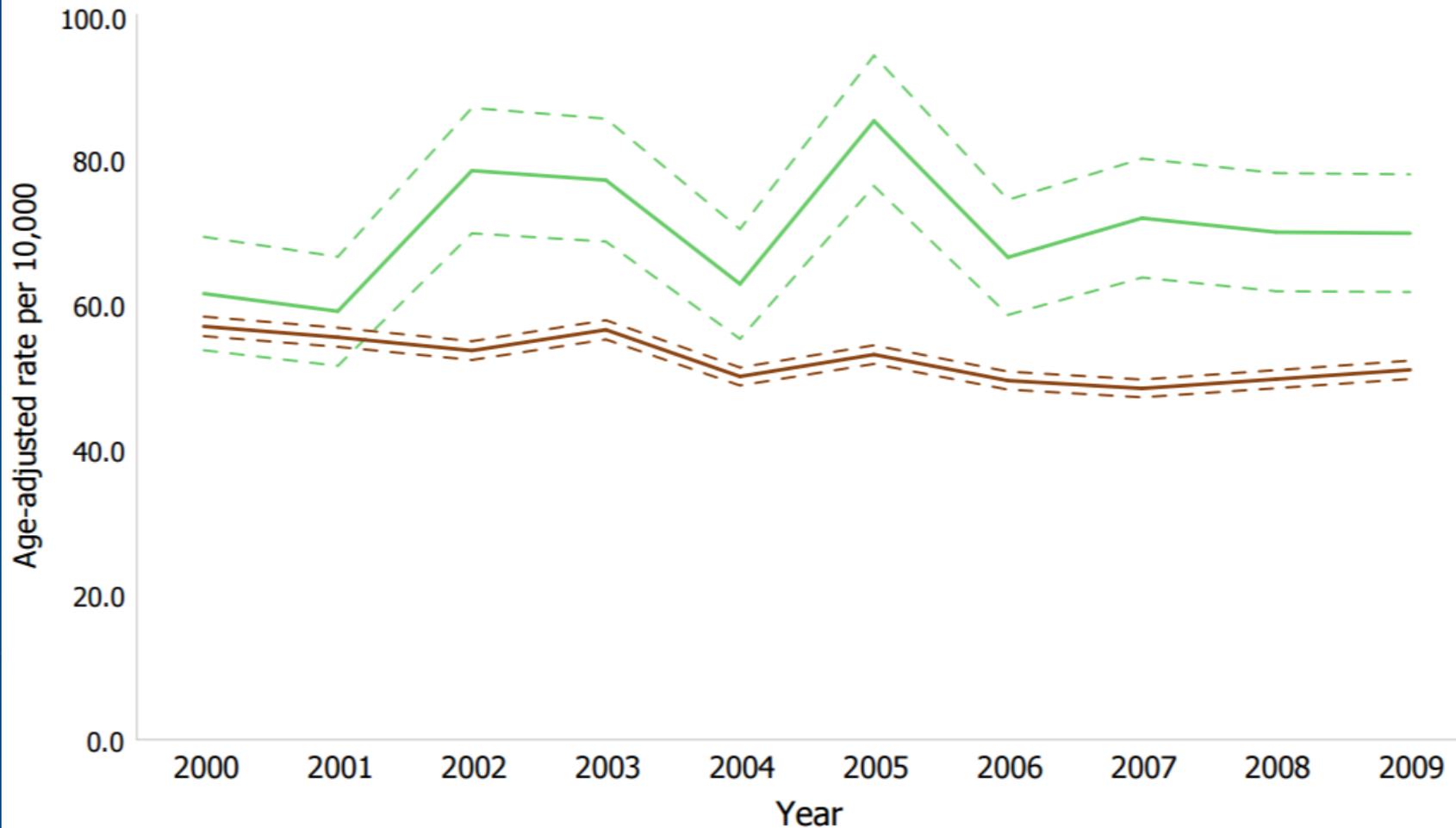
Asthma hospitalizations (emergency dept. and observation)

Age-adjusted rate; Both genders; All ages; 2000-2009;

State; New Hampshire

Public Health Region; Greater Sullivan

..... 95%CI



“Statistical Significance”

- CI's contain information about “statistical significance”
- If a value falls outside of the 95% confidence interval, we say there is less than a 5% chance (1 in 20) that the value is due to chance alone or random variation ($p\text{-value} < 0.05$)

Comparing populations

- You can also compare 2 different populations with 2 different point estimates and 2 different CI's
- These 2 point estimates are said to be “statistically significant” if their 95% CI's don't overlap
- Caution when comparing “Greater Sullivan” public health region estimates to “State” estimates:
 - Ideally you compare Greater Sullivan to “rest of state”
 - Majority of time-trend graphs compare Greater Sullivan to “Whole State” (including the Greater Sullivan region)
 - Color-coded maps compare Greater Sullivan to “Rest of State”

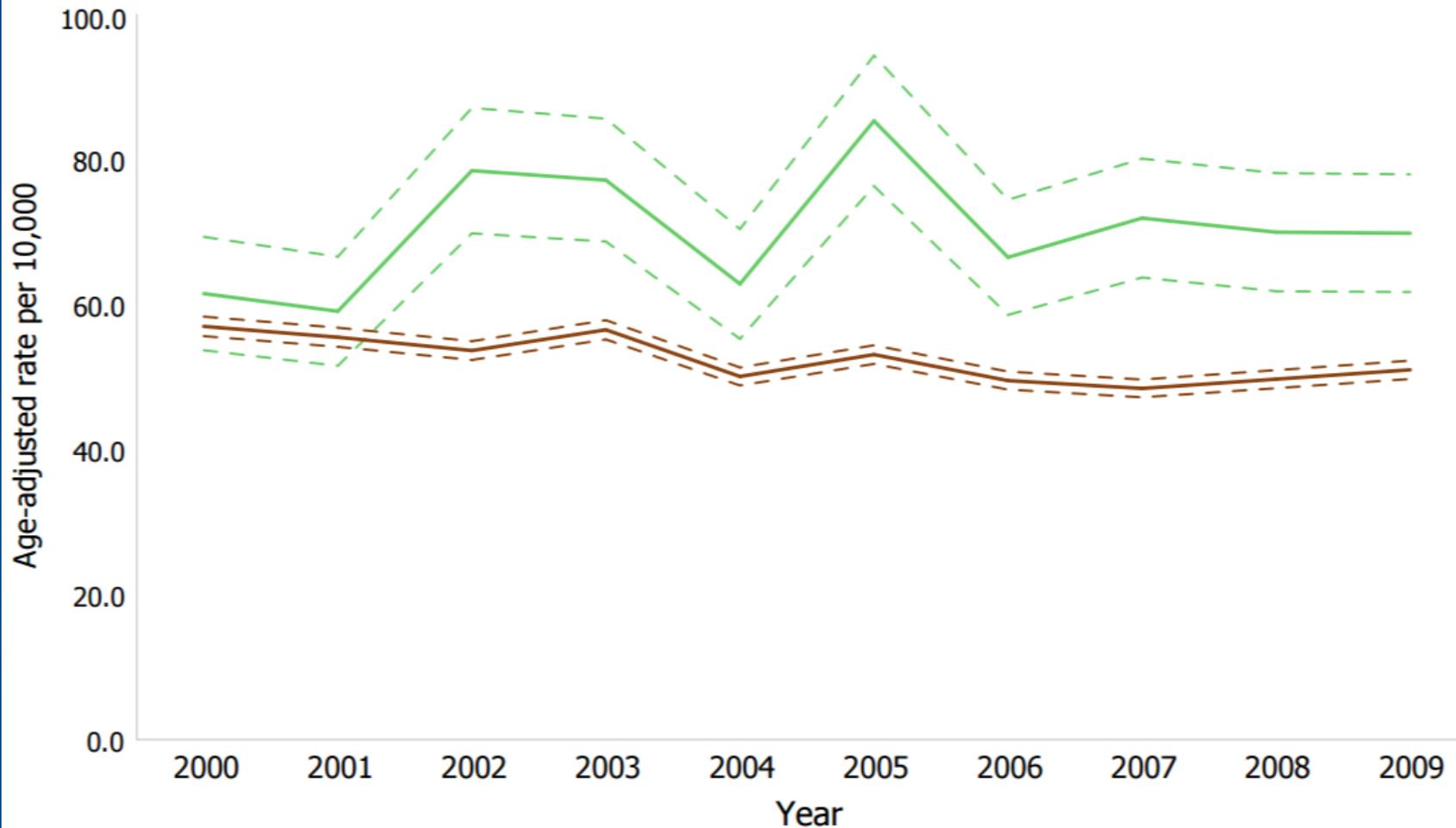
Asthma hospitalizations (emergency dept. and observation)

Age-adjusted rate; Both genders; All ages; 2000-2009;

State; New Hampshire

Public Health Region; Greater Sullivan

..... 95%CI



Combining data

- When you combine data and group years together, you increase the sample size & CI's shrink... and you may see statistical differences where they weren't there looking at year by year data.

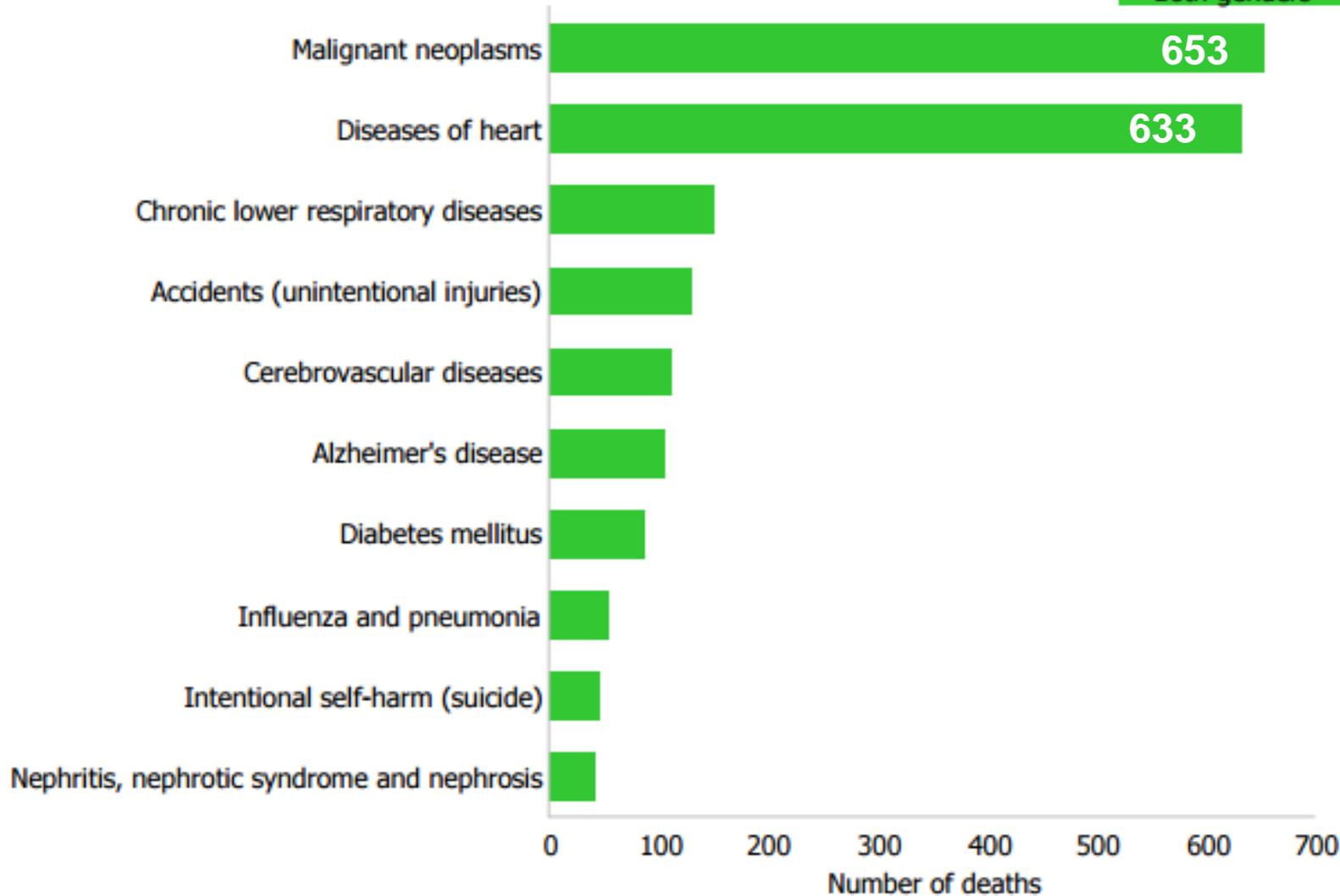
Age-Adjusted Rates

- Rate: # per population size (expressed as # per 10,000 persons)
- Age-Adjusted rates take the “crude rate” and control for the effects of age to allow for comparison.
- Example: mortality is a rate, older people die more frequently.
- If you’re comparing 2 different populations and one population is older, the “crude” death rate will be higher in the older population. So you age-adjust the rates.

Death: Leading causes (all ages)

Both genders; All ages; 2008-2013
Public Health Region; Greater Sullivan

Both genders



Cardiovascular Disease & Stroke

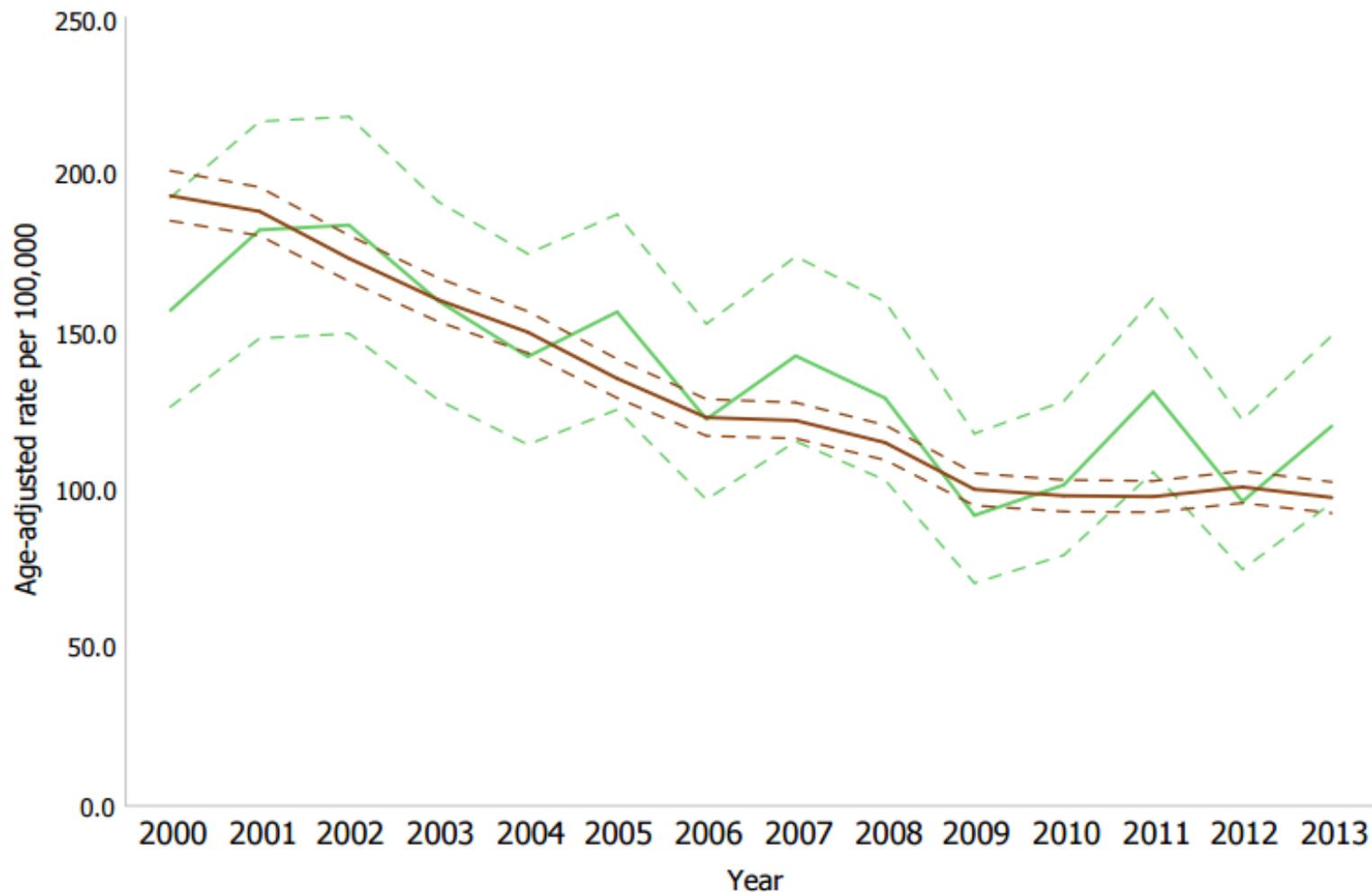
Coronary Heart Disease mortality

Age-adjusted rate; Both genders; All ages; 2000-2013

State; New Hampshire

Public Health Region; Greater Sullivan

..... 95%CI



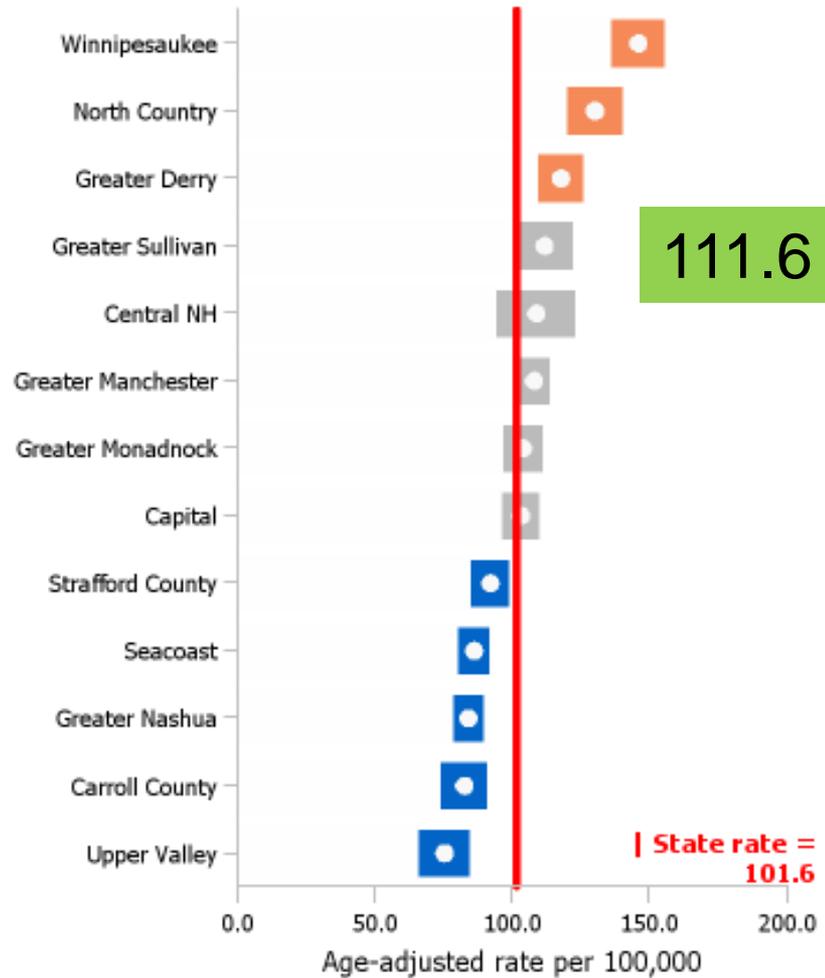
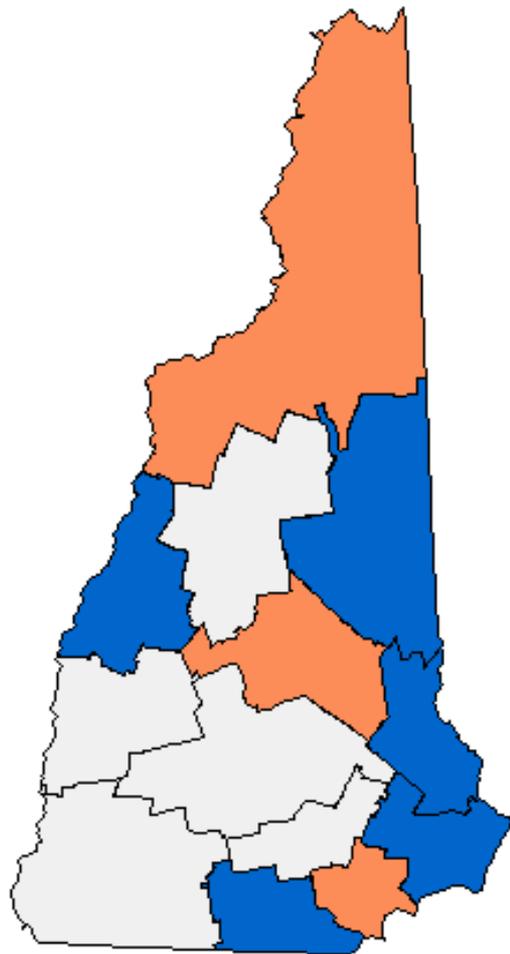
120.3

97.7

Coronary Heart Disease mortality

Age-adjusted rate; Both genders; All ages; 2008-2013

Public Health Region



Significantly lower than rest of state

No difference than rest of state

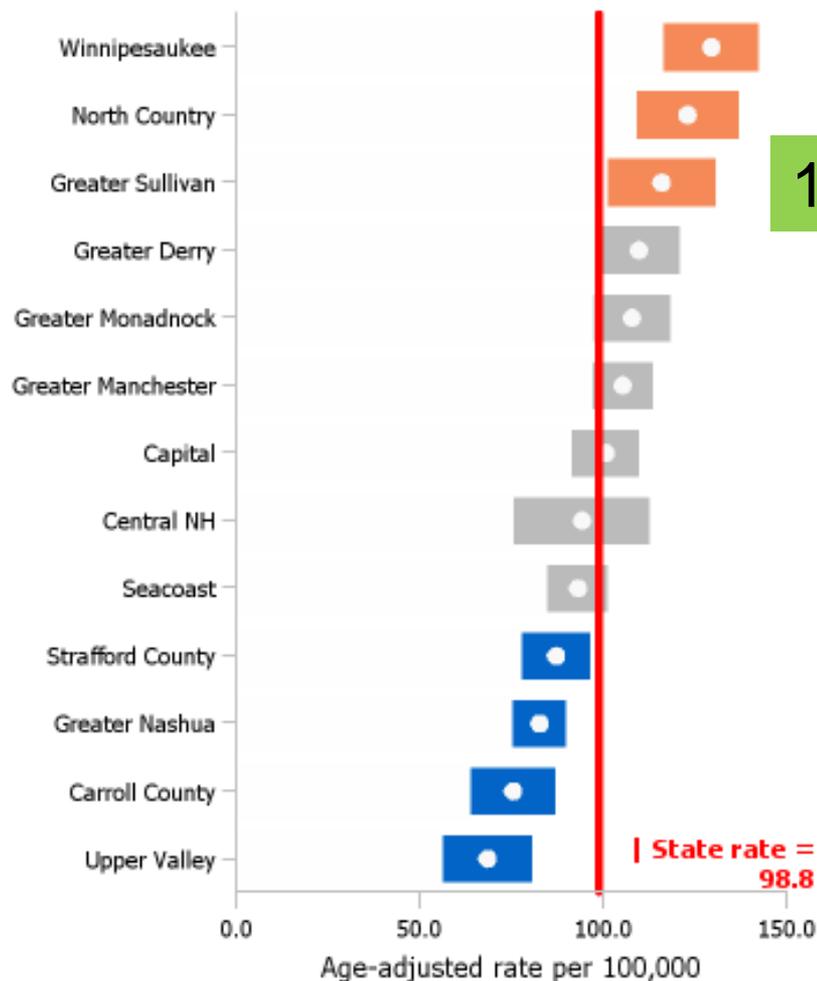
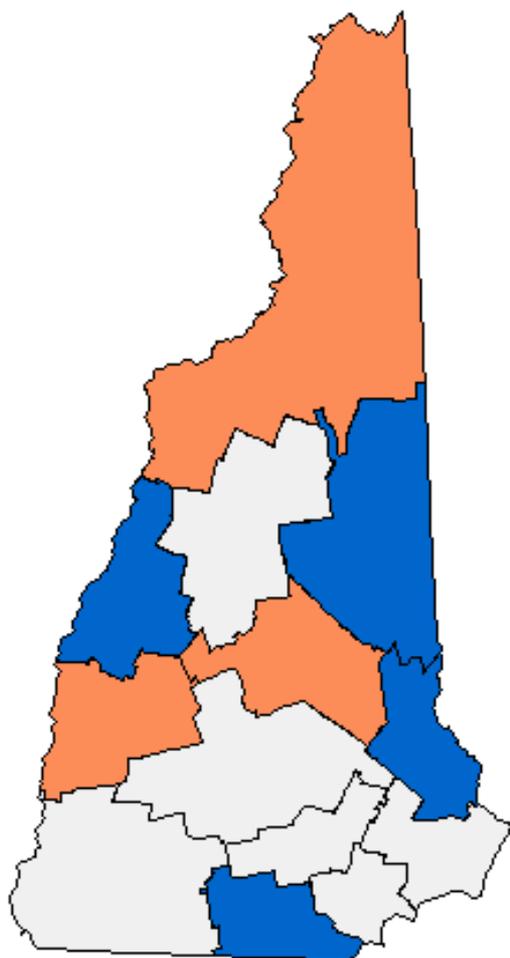
Significantly higher than rest of state

1-4 events

Coronary Heart Disease mortality

Age-adjusted rate; Both genders; All ages; 2011-2013

Public Health Region



115.9

Significantly lower than rest of state | No difference than rest of state | Significantly higher than rest of state | 1-4 events

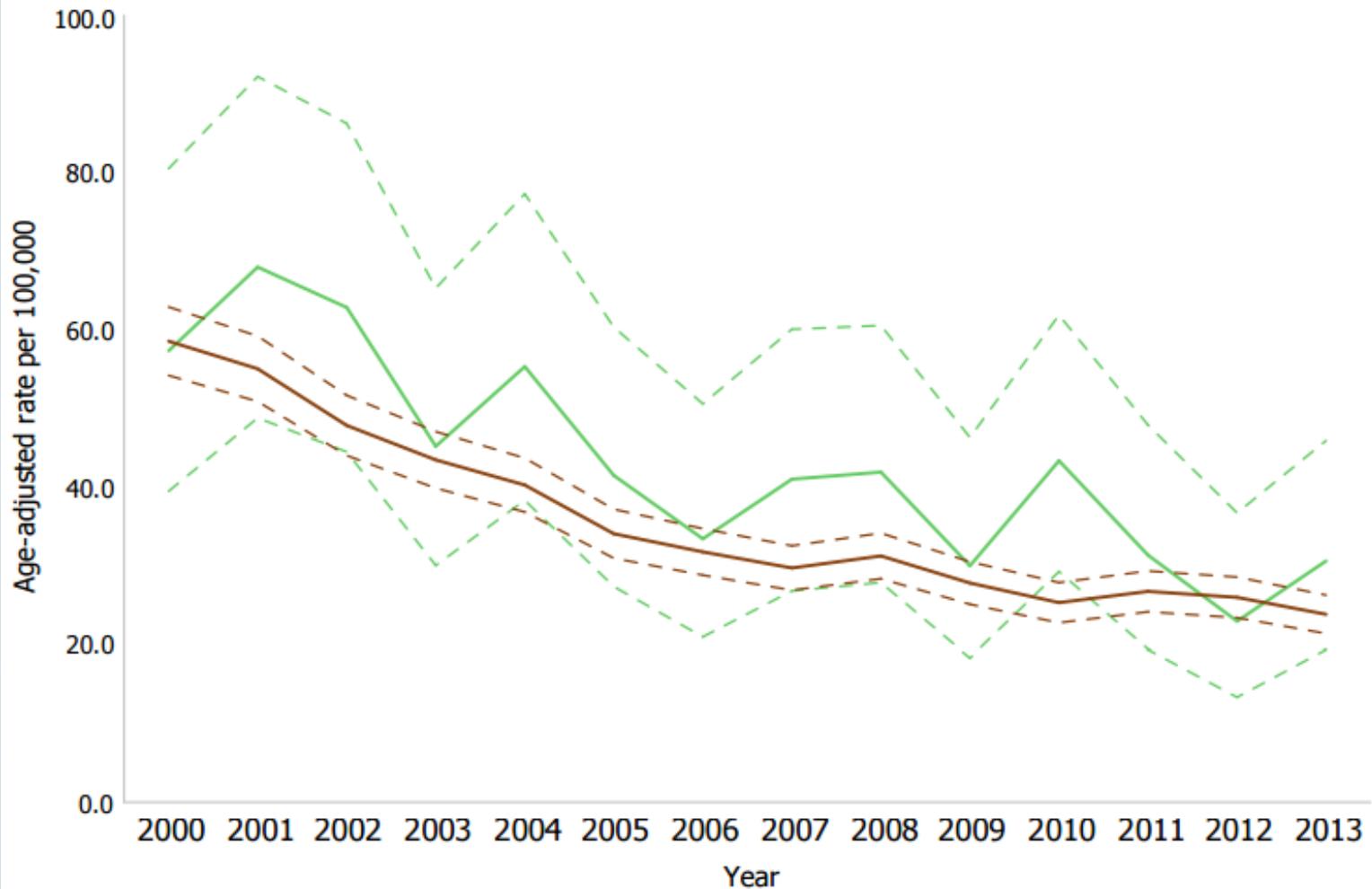
Heart attack mortality

Age-adjusted rate; Both genders; All ages; 2000-2013

State; New Hampshire

Public Health Region; Greater Sullivan

..... 95%CI



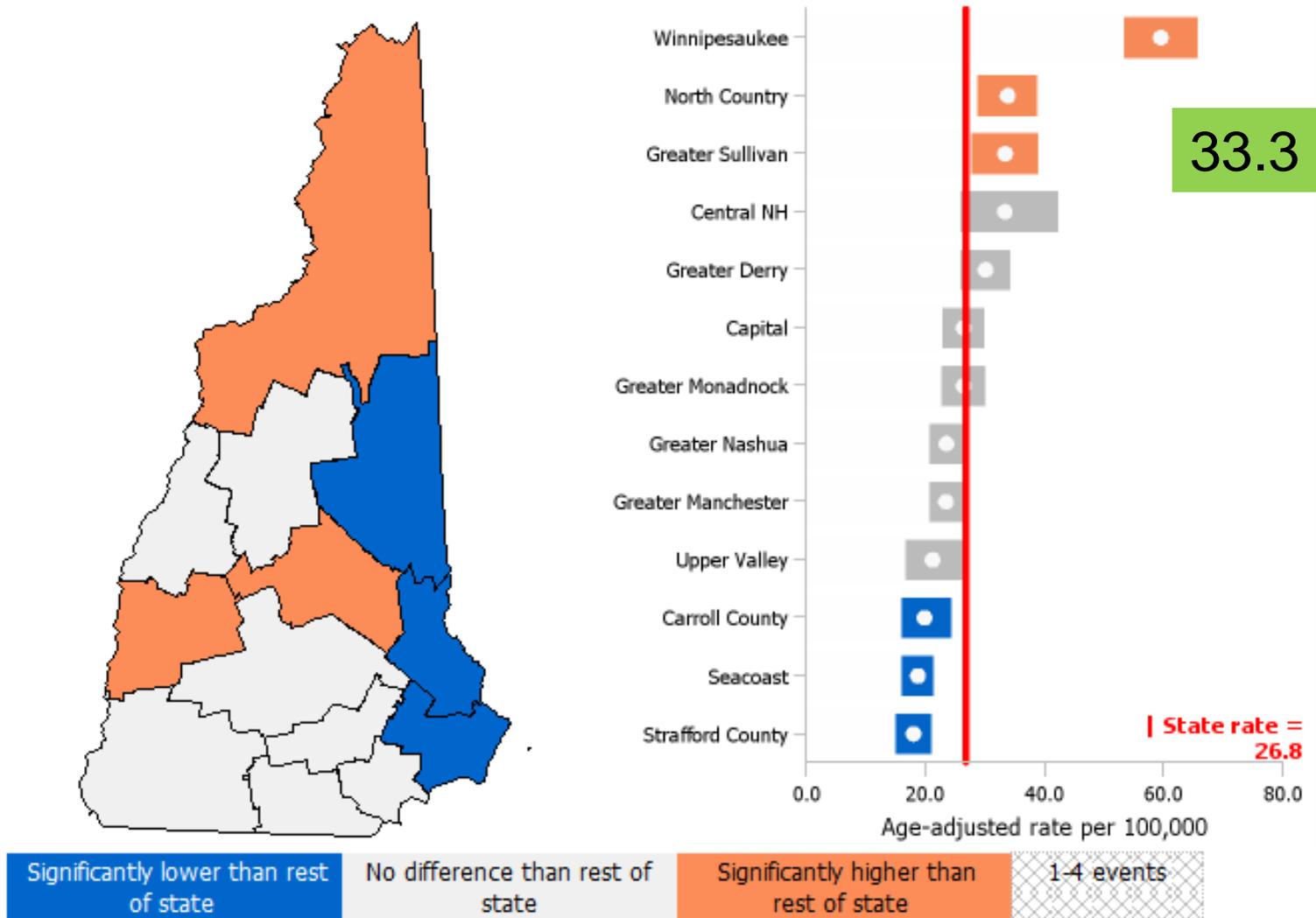
30.6

23.8

Heart attack mortality

Age-adjusted rate; Both genders; All ages; 2008-2013

Public Health Region



Heart attack hospitalizations (inpatient)

Age-adjusted rate; Both genders; All ages; 2000-2009;

State; New Hampshire

Public Health Region; Greater Sullivan

..... 95%CI



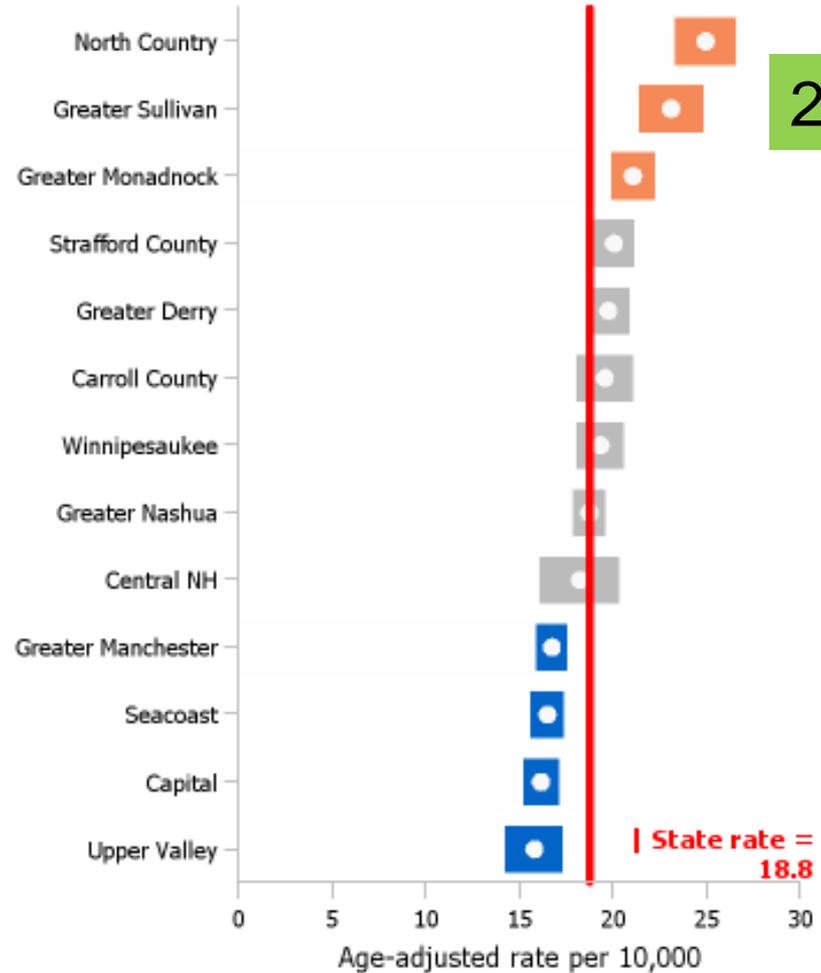
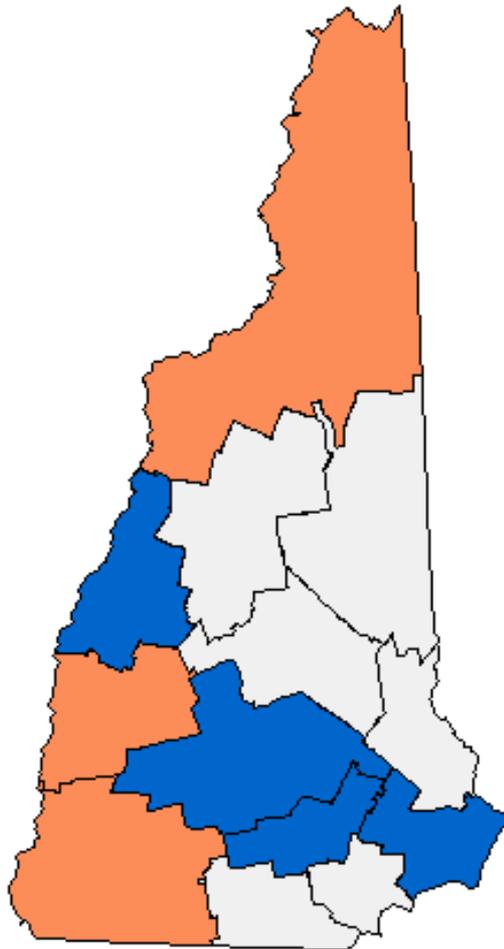
18.0

17.1

Heart attack hospitalizations (inpatient)

Age-adjusted rate; Both genders; All ages; 2005-2009

Public Health Region



Significantly lower than rest of state

No difference than rest of state

Significantly higher than rest of state

1-4 events

23.1

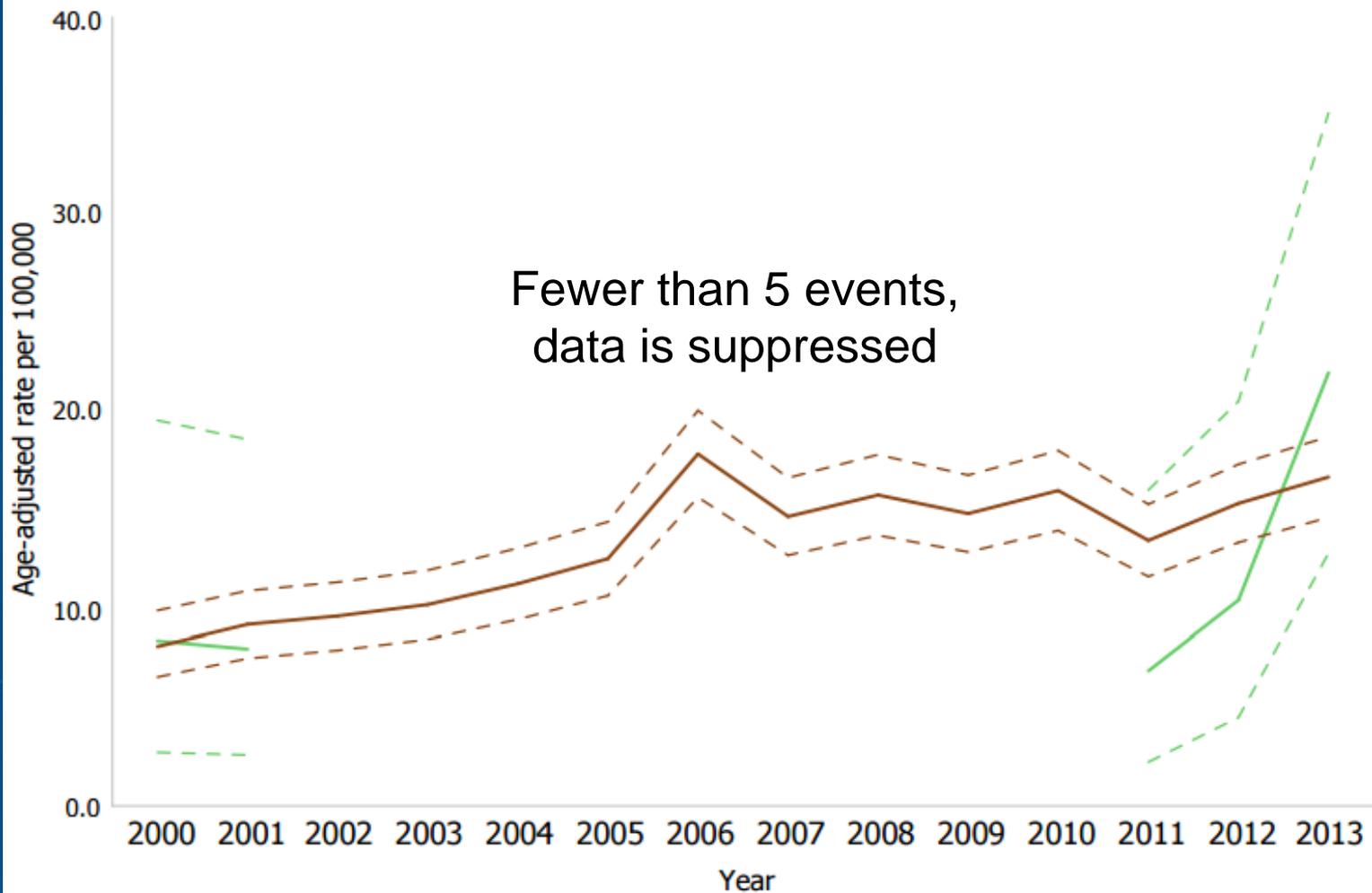
Congestive Heart Failure mortality

Age-adjusted rate; Both genders; All ages; 2000-2013

State; New Hampshire

Public Health Region; Greater Sullivan

..... 95%CI



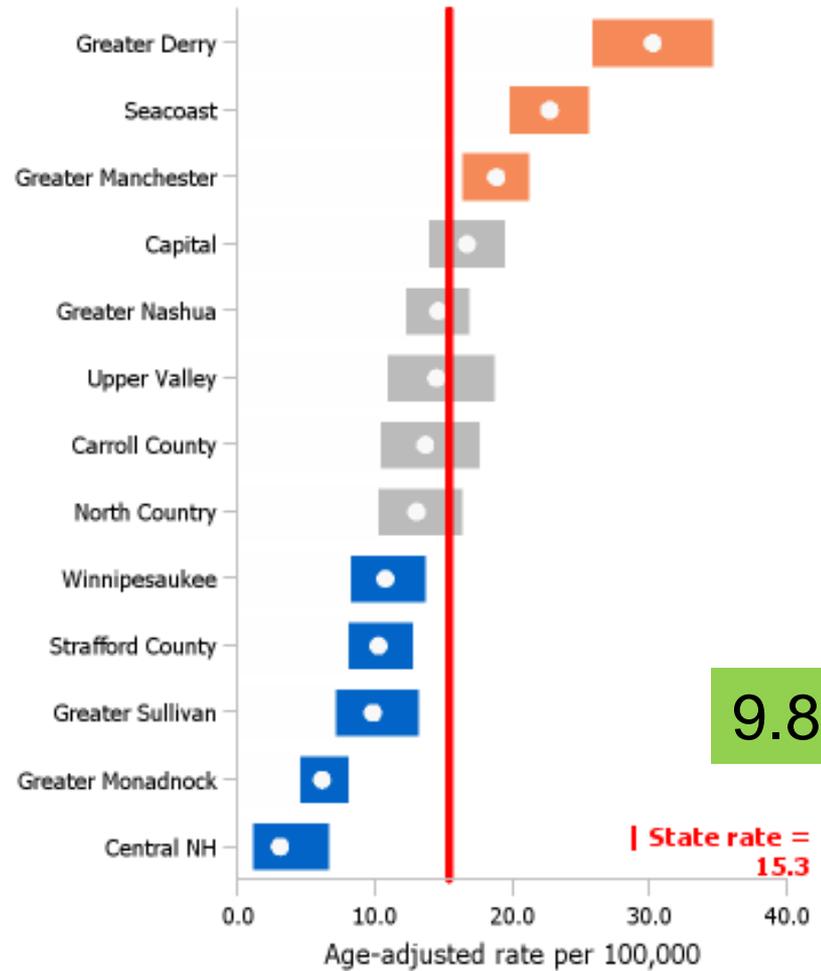
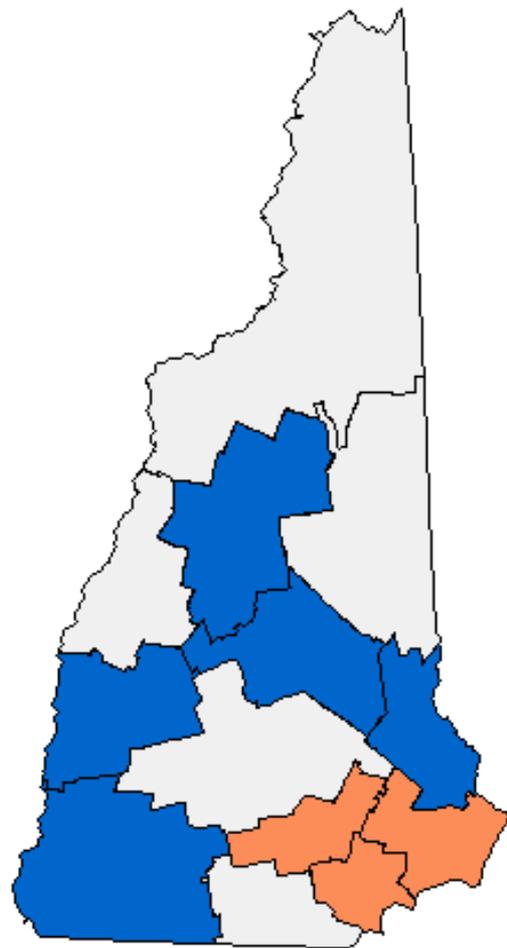
21.9

16.7

Congestive Heart Failure mortality

Age-adjusted rate; Both genders; All ages; 2008-2013

Public Health Region



Significantly lower than rest of state

No difference than rest of state

Significantly higher than rest of state

1-4 events

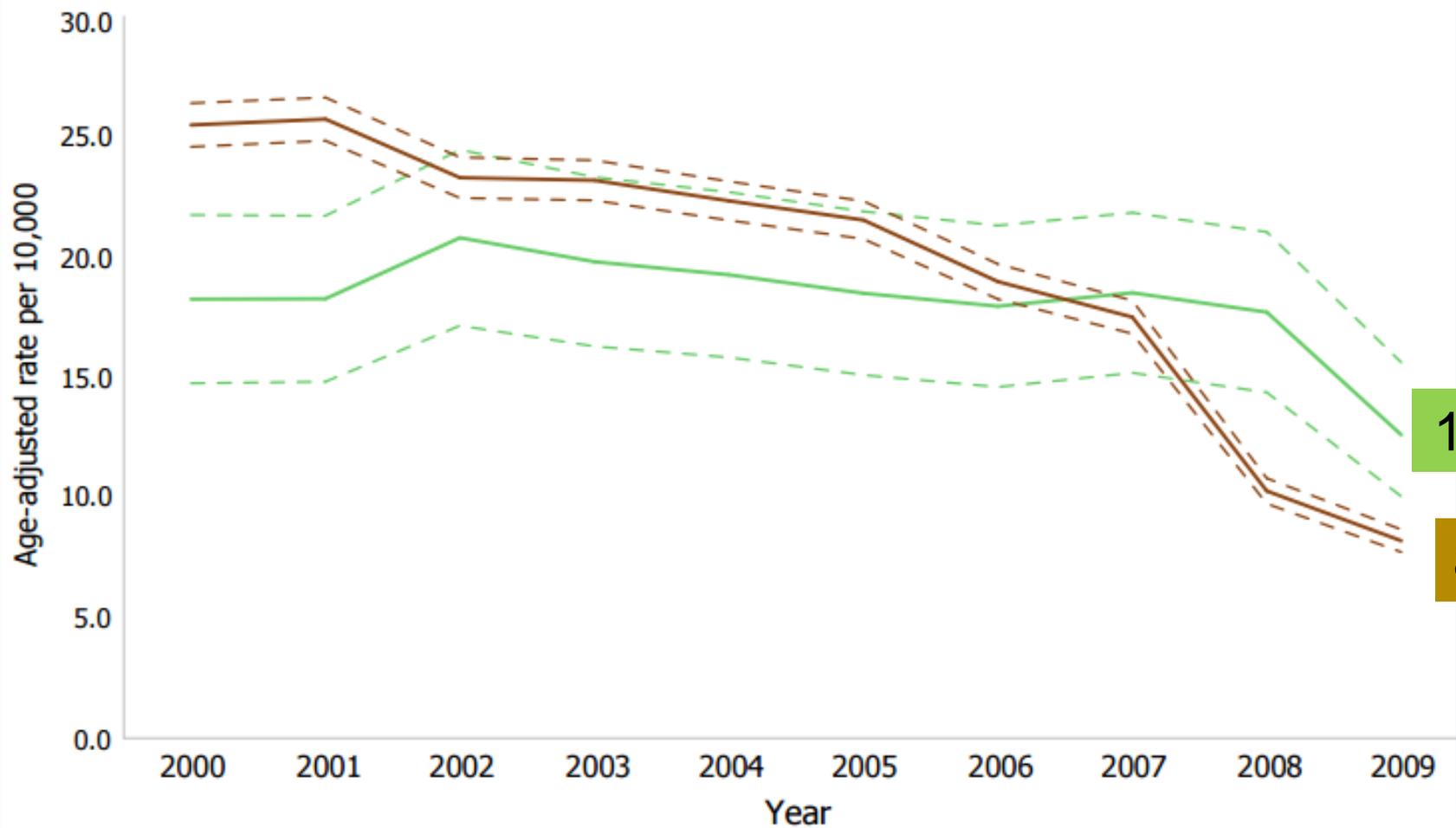
Congestive heart failure hospitalizations (inpatient)

Age-adjusted rate; Both genders; All ages; 2000-2009;

State; New Hampshire

Public Health Region; Greater Sullivan

..... 95%CI



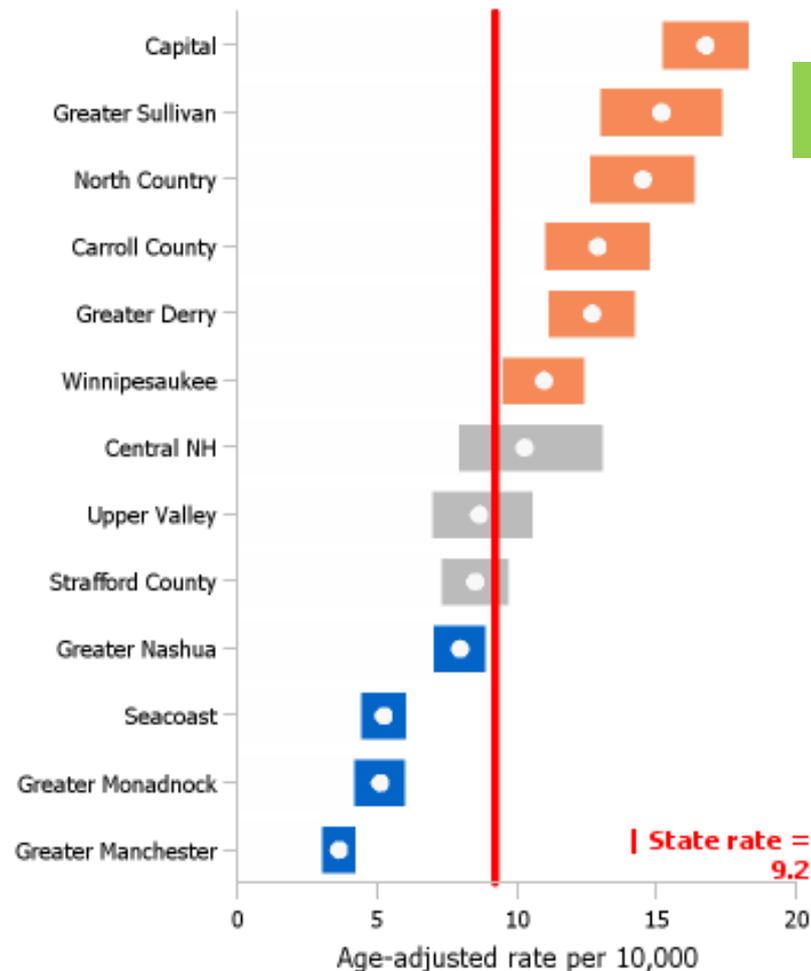
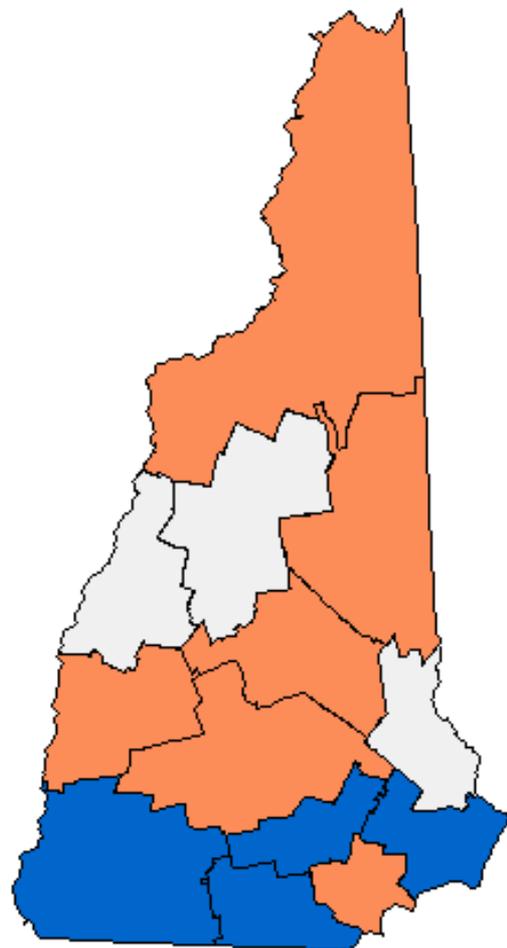
12.6

8.2

Congestive heart failure hospitalizations (inpatient)

Age-adjusted rate; Both genders; All ages; 2008-2009

Public Health Region



Significantly lower than rest of state

No difference than rest of state

Significantly higher than rest of state

1-4 events

15.2

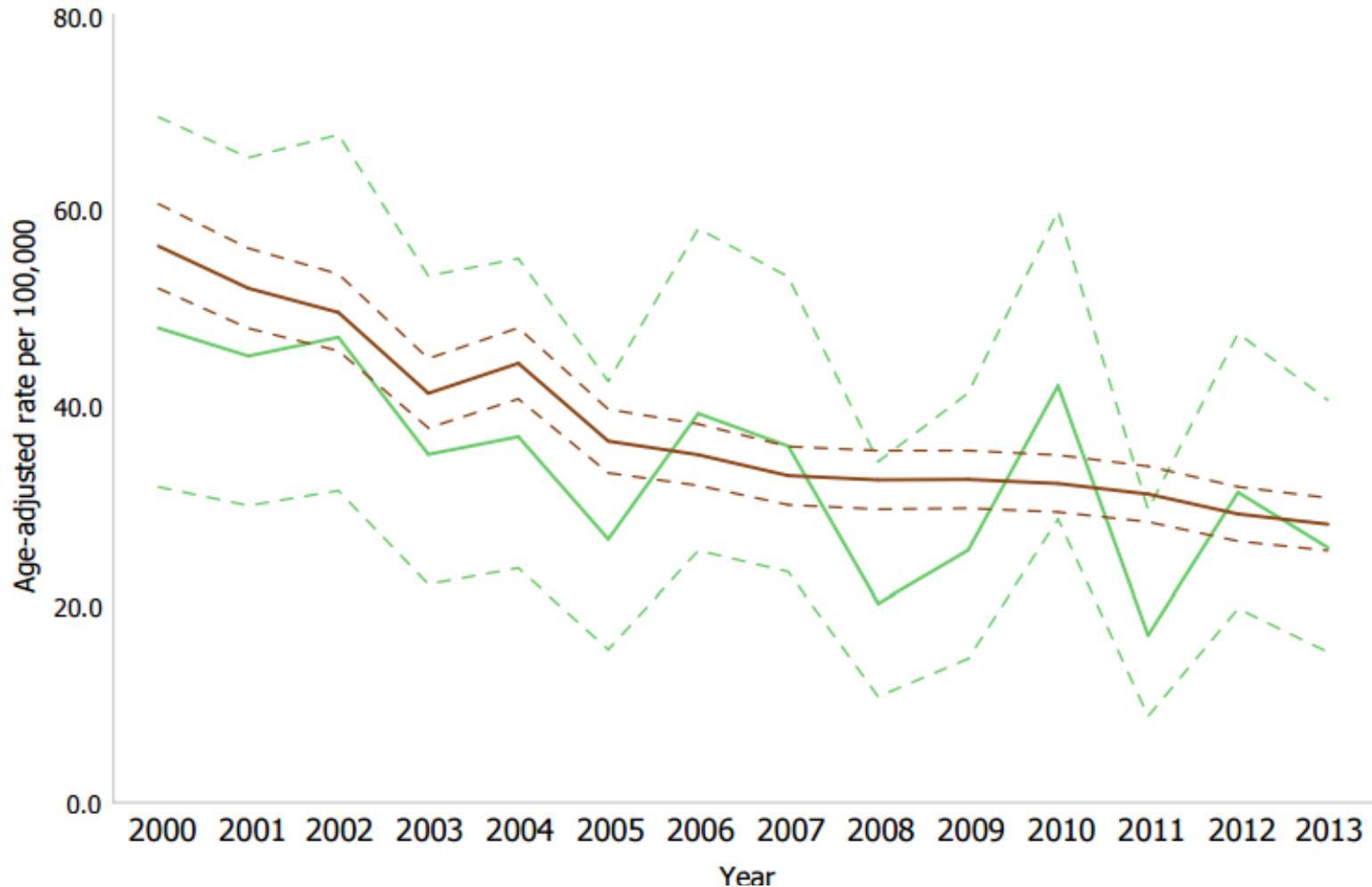
Stroke (cerebrovascular disease) mortality

Age-adjusted rate; Both genders; All ages; 2000-2013

State; New Hampshire

Public Health Region; Greater Sullivan

..... 95%CI



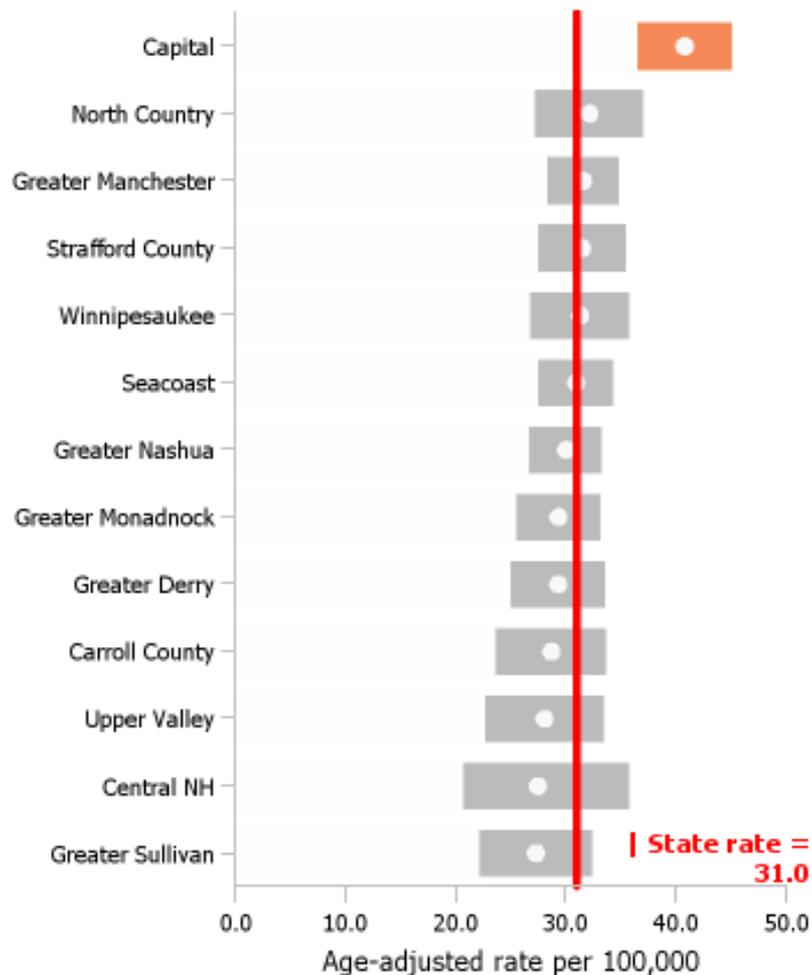
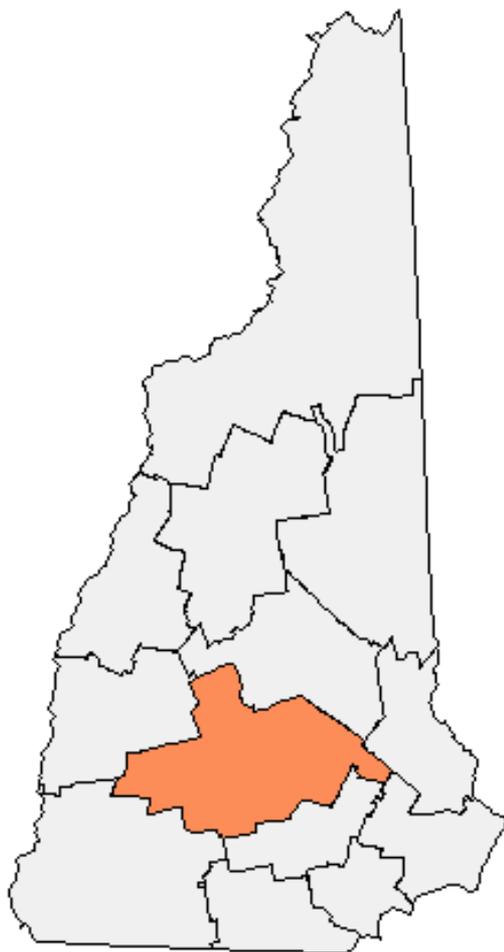
28.2

25.8

Stroke (cerebrovascular disease) mortality

Age-adjusted rate; Both genders; All ages; 2008-2013

Public Health Region



Significantly lower than rest of state	No difference than rest of state	Significantly higher than rest of state	1-4 events
--	----------------------------------	---	------------

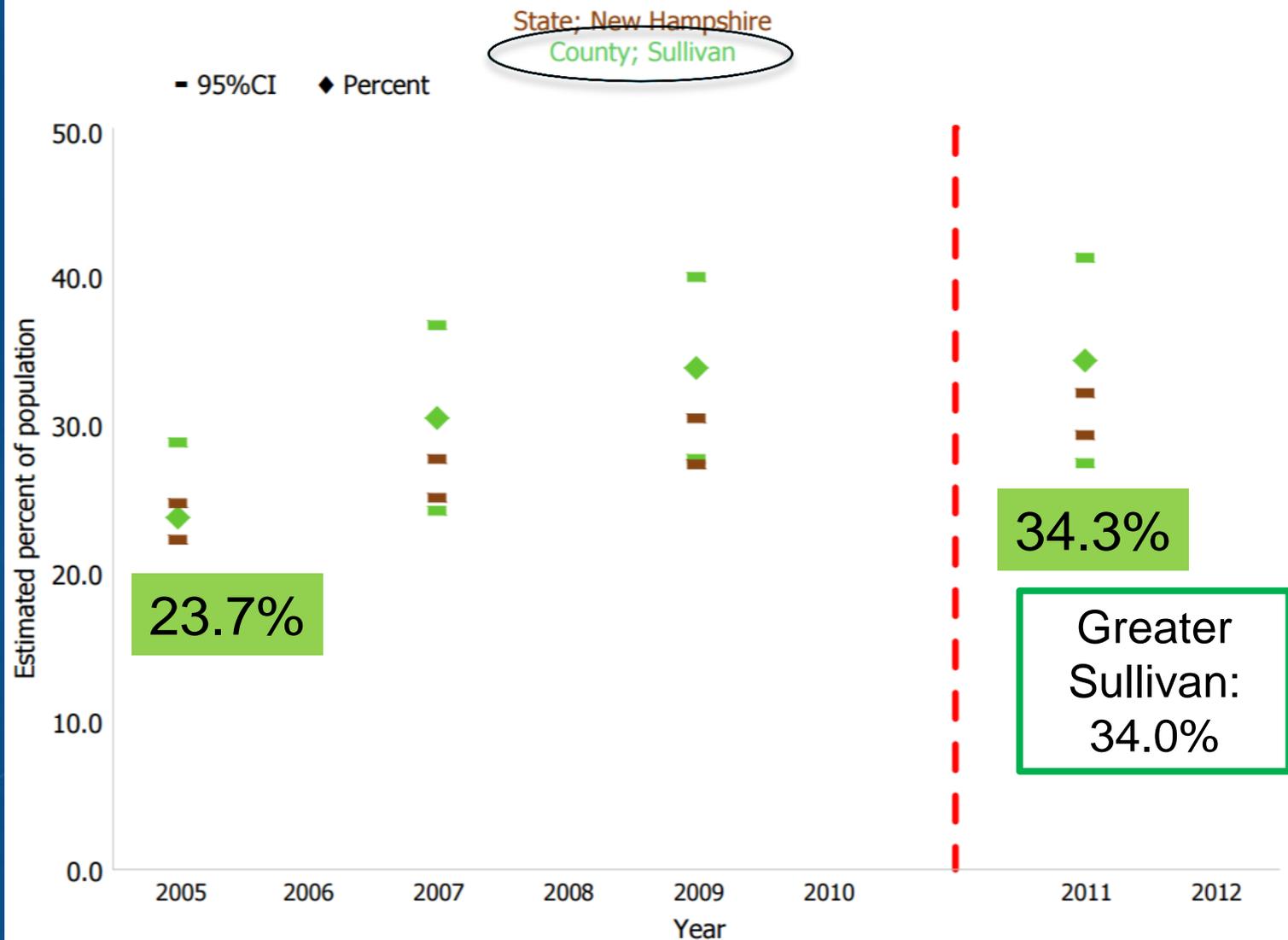
Summary: Greater Sullivan Compared to State

- Overall decreasing rates of death from coronary heart disease (CHD) and heart attacks.
- Higher CHD and heart attack mortality in last few years compared to rest of NH
- Greater Sullivan has one of the highest rates of heart attack hospitalizations in the state
- One of the highest rates of congestive heart failure (CHF) hospitalization in the state with increasing CHF mortality
- There is no difference in stroke death rates.

Risk Factors for Cardiovascular Disease & Stroke

High Blood Pressure Awareness (adults)

Percent of adults who have high blood pressure; Both genders



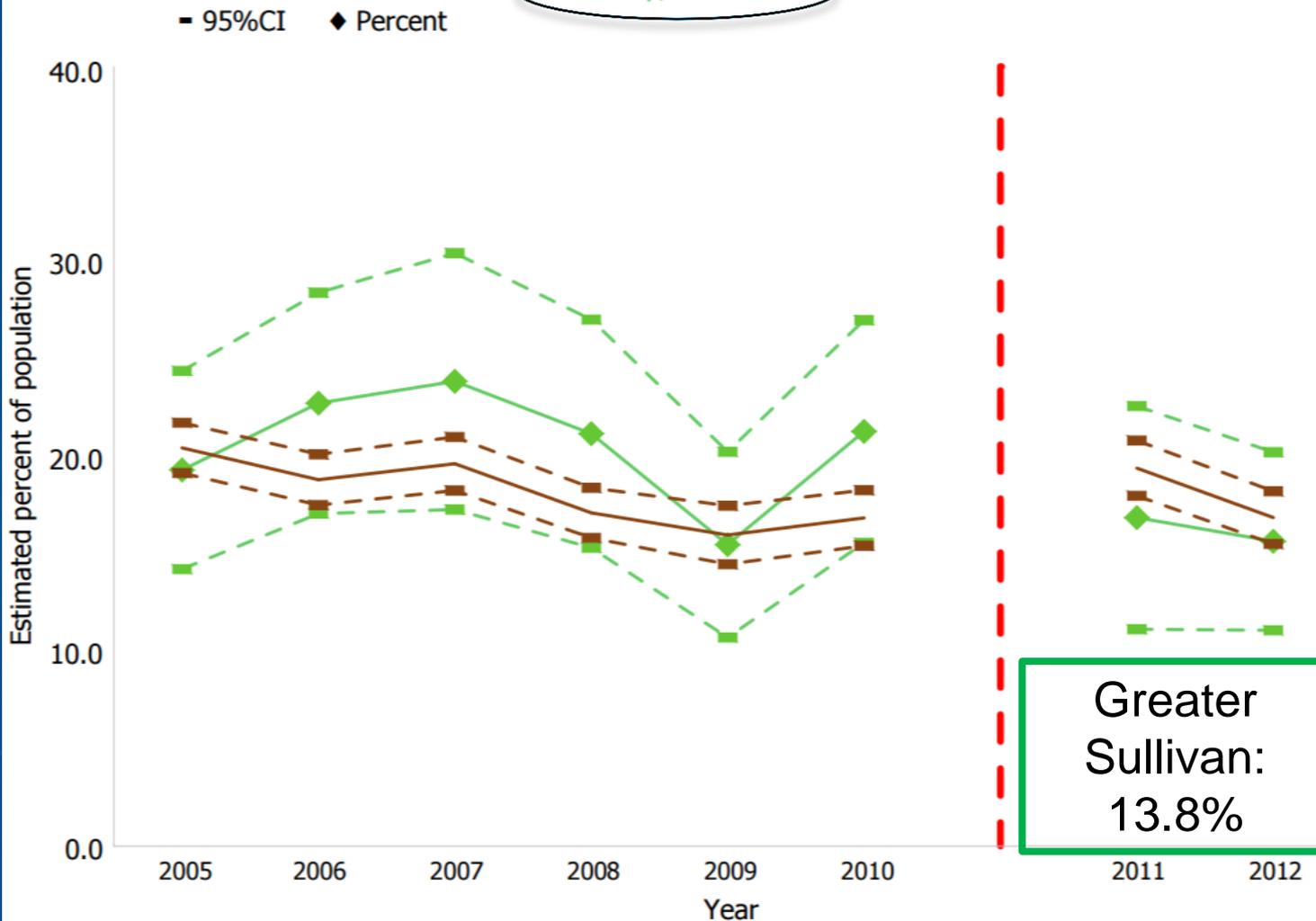
BRFSS survey methodology changed in 2011.

Smoking prevalence (adults)

Percent of adults who smoke tobacco currently; Both genders

State; New Hampshire

County; Sullivan



BRFSS survey methodology changed in 2011.

16.9%

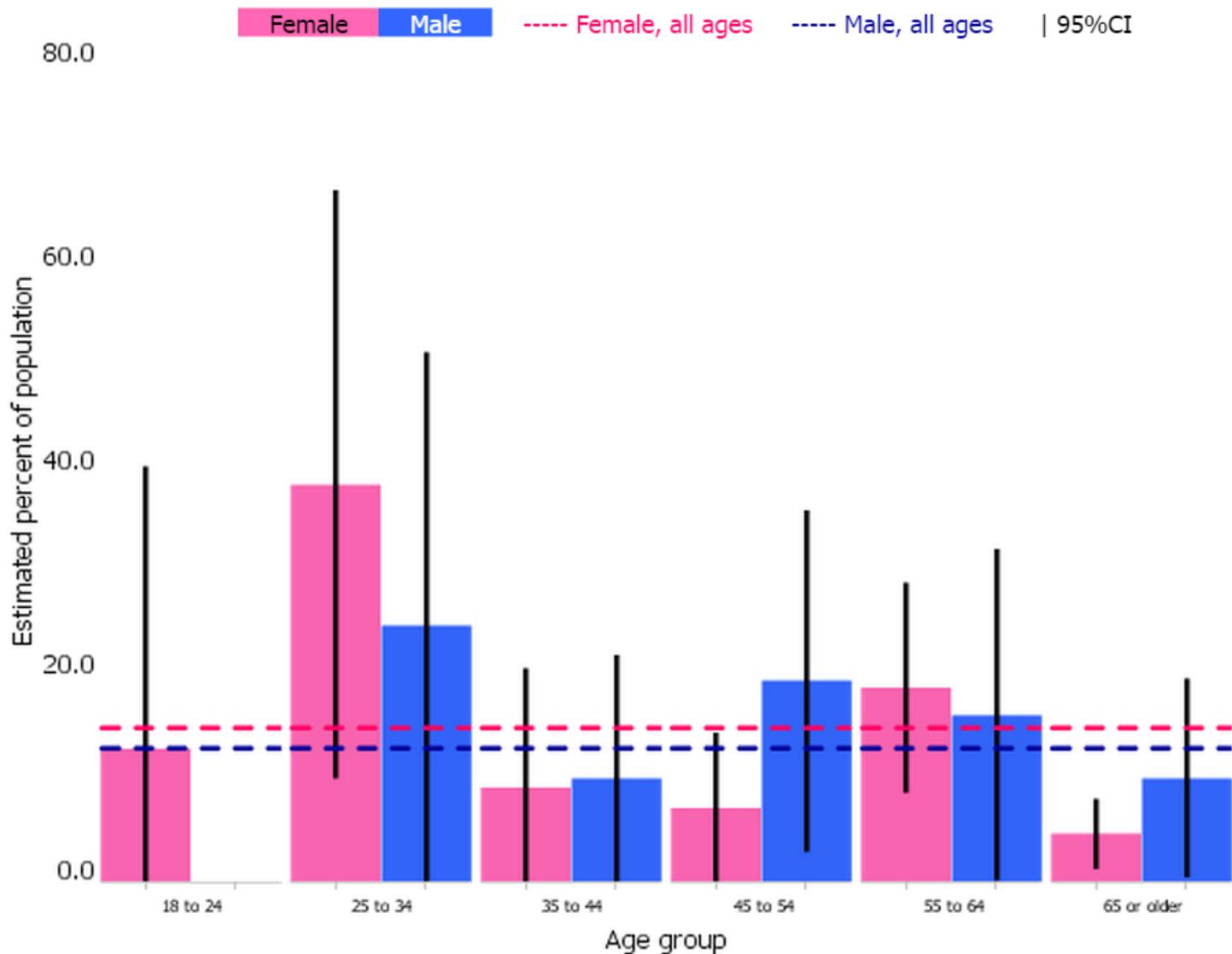
15.6%

Greater Sullivan:
13.8%

Smoking prevalence (adults)

Percent of adults who smoke tobacco currently

Public Health Region; Greater Sullivan; 2012

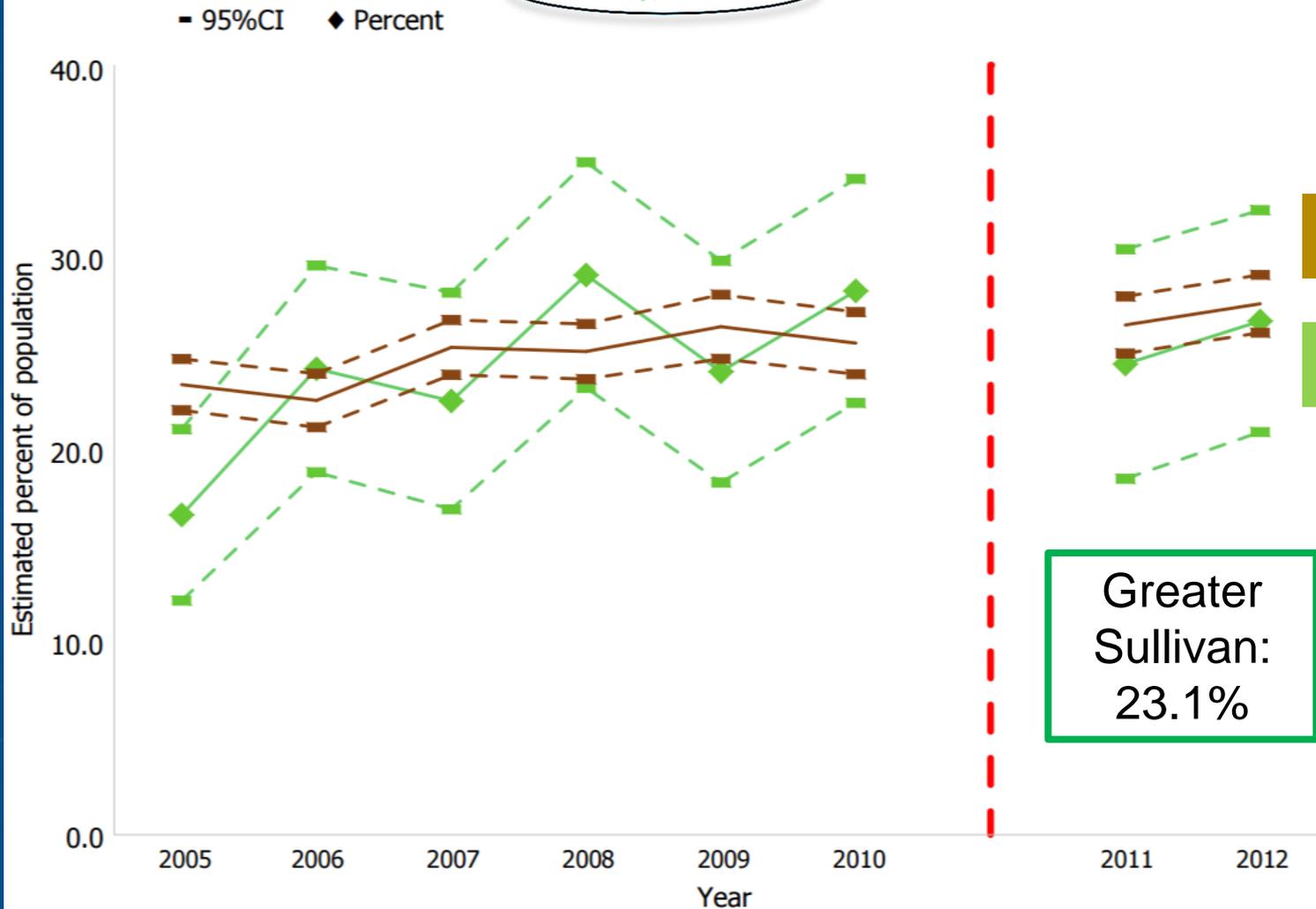


Obesity among adults

Percent of adults who are obese; Both genders

State; New Hampshire

County; Sullivan



BRFSS survey methodology changed in 2011.

Greater Sullivan:
23.1%

27.6%

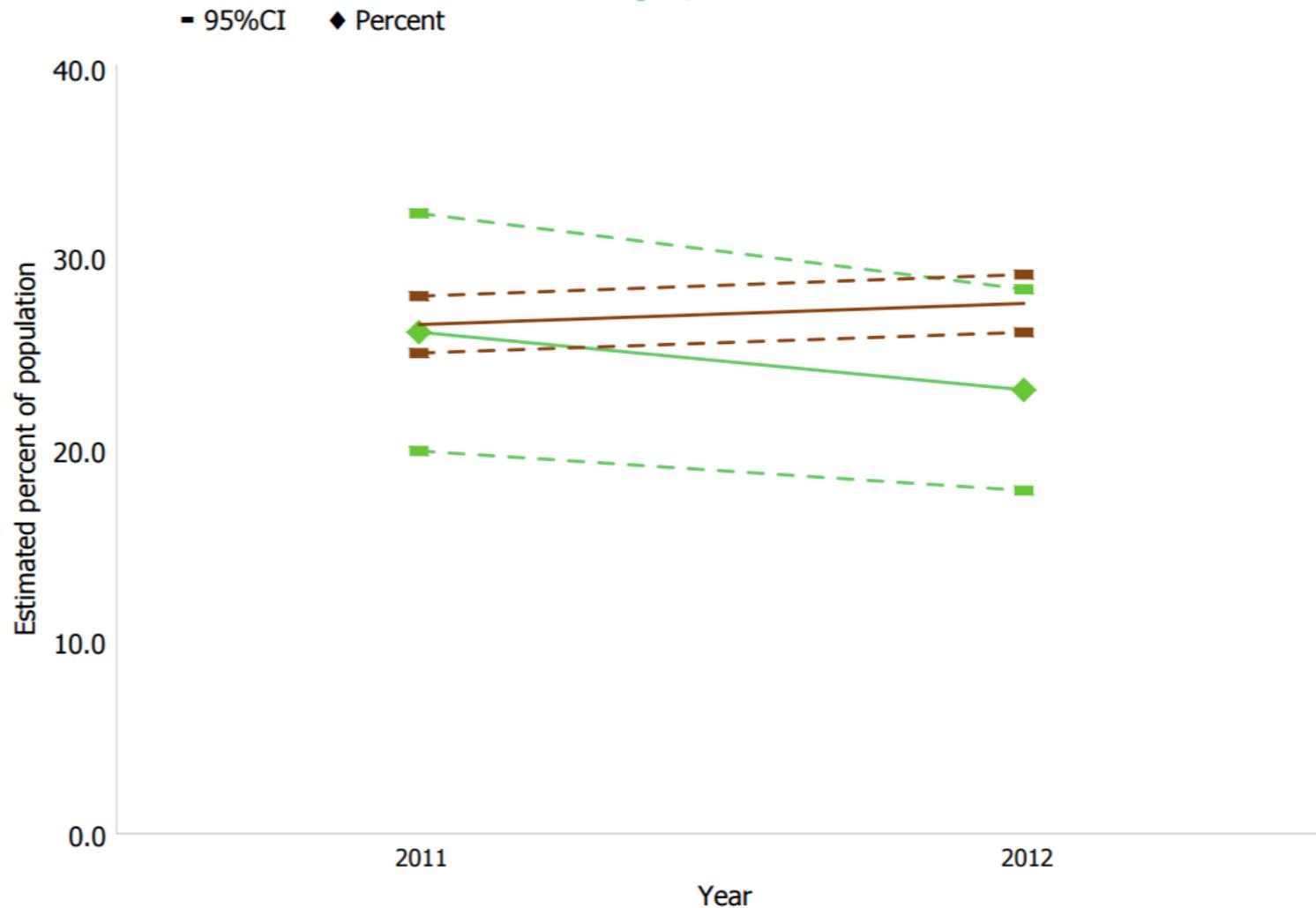
26.7%

Obesity among adults

Percent of adults who are obese; Both genders

State; New Hampshire

Public Health Region; Greater Sullivan

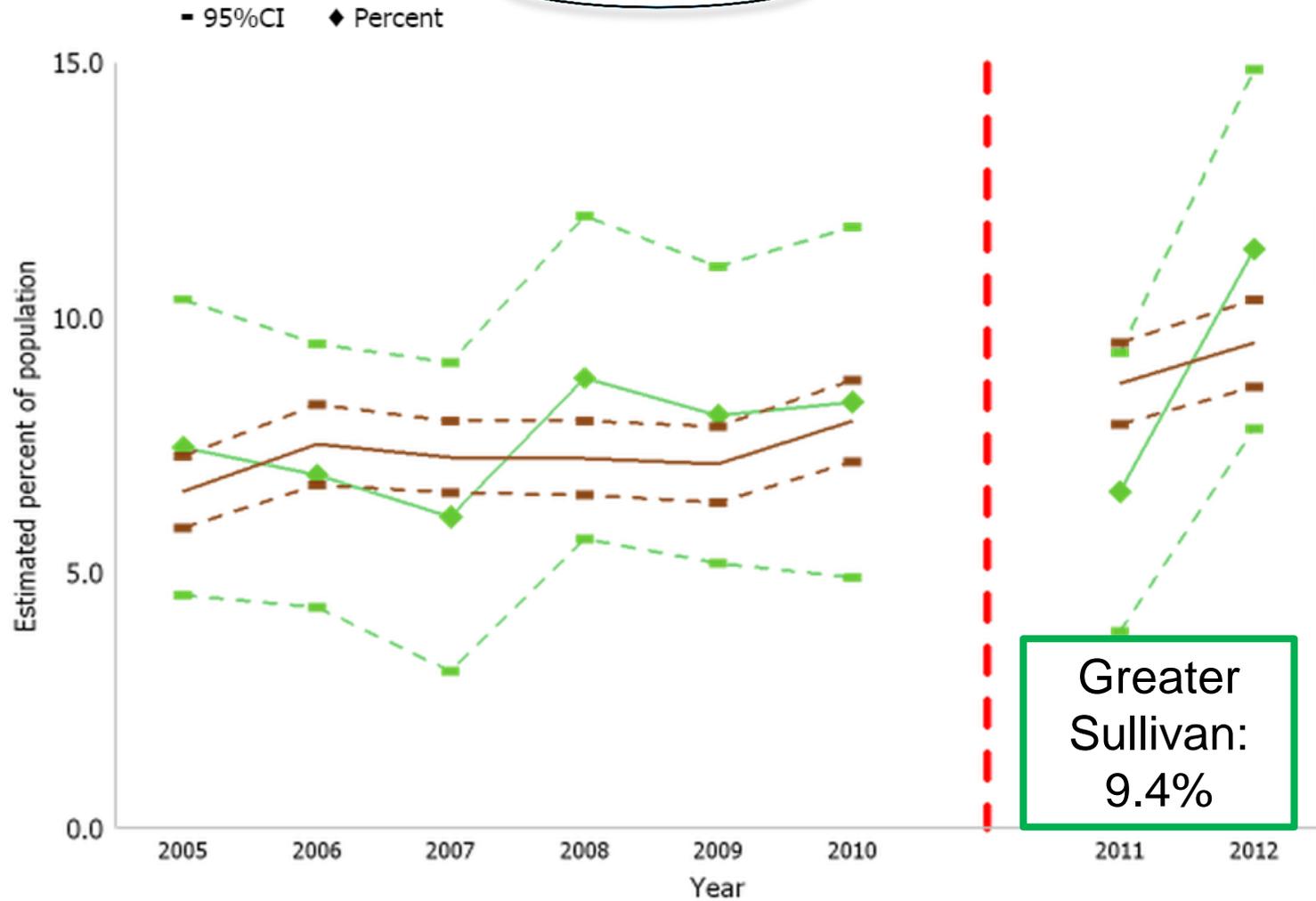


Data for Public Health Regions is available in 2011 and after.

Diabetes prevalence (adults)

Percent of adults who have diabetes; Both genders

State; New Hampshire
County; Sullivan



11.4%

9.5%

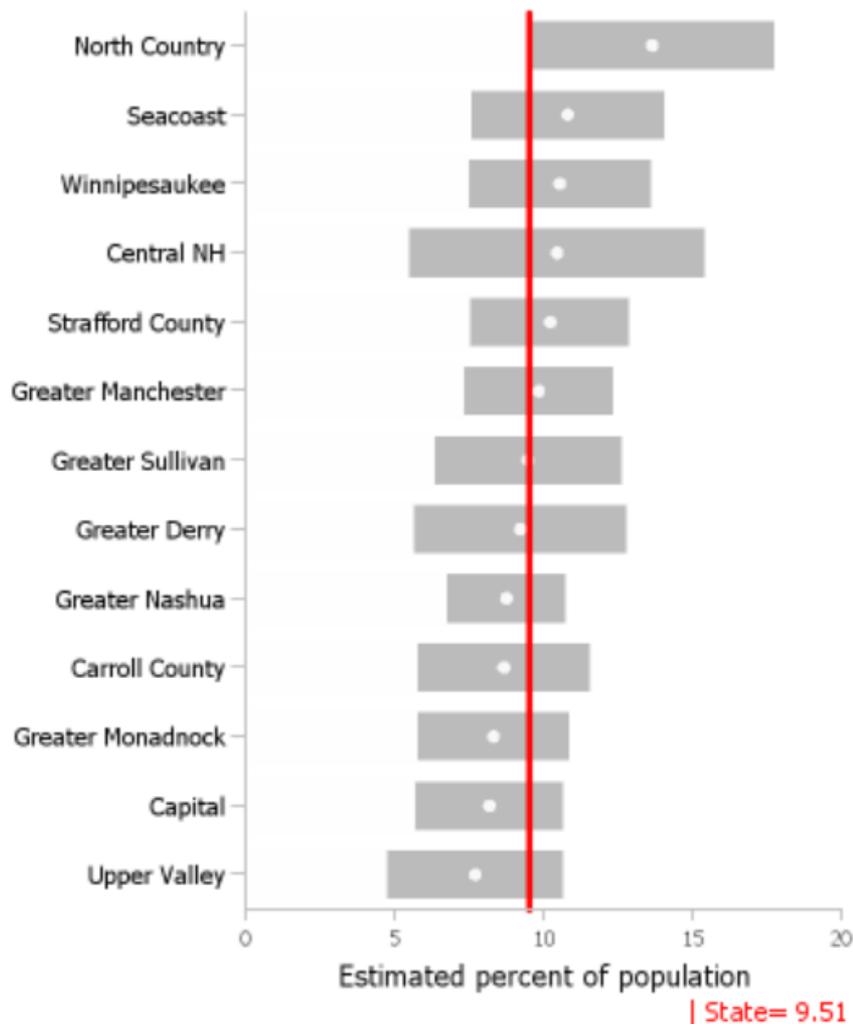
Greater Sullivan:
9.4%

BRFSS survey methodology changed in 2011.

Diabetes prevalence (adults)

Percent of adults who have diabetes; Both genders

Public Health Region; 2012



Significantly lower than state

No difference than state

Significantly higher than state

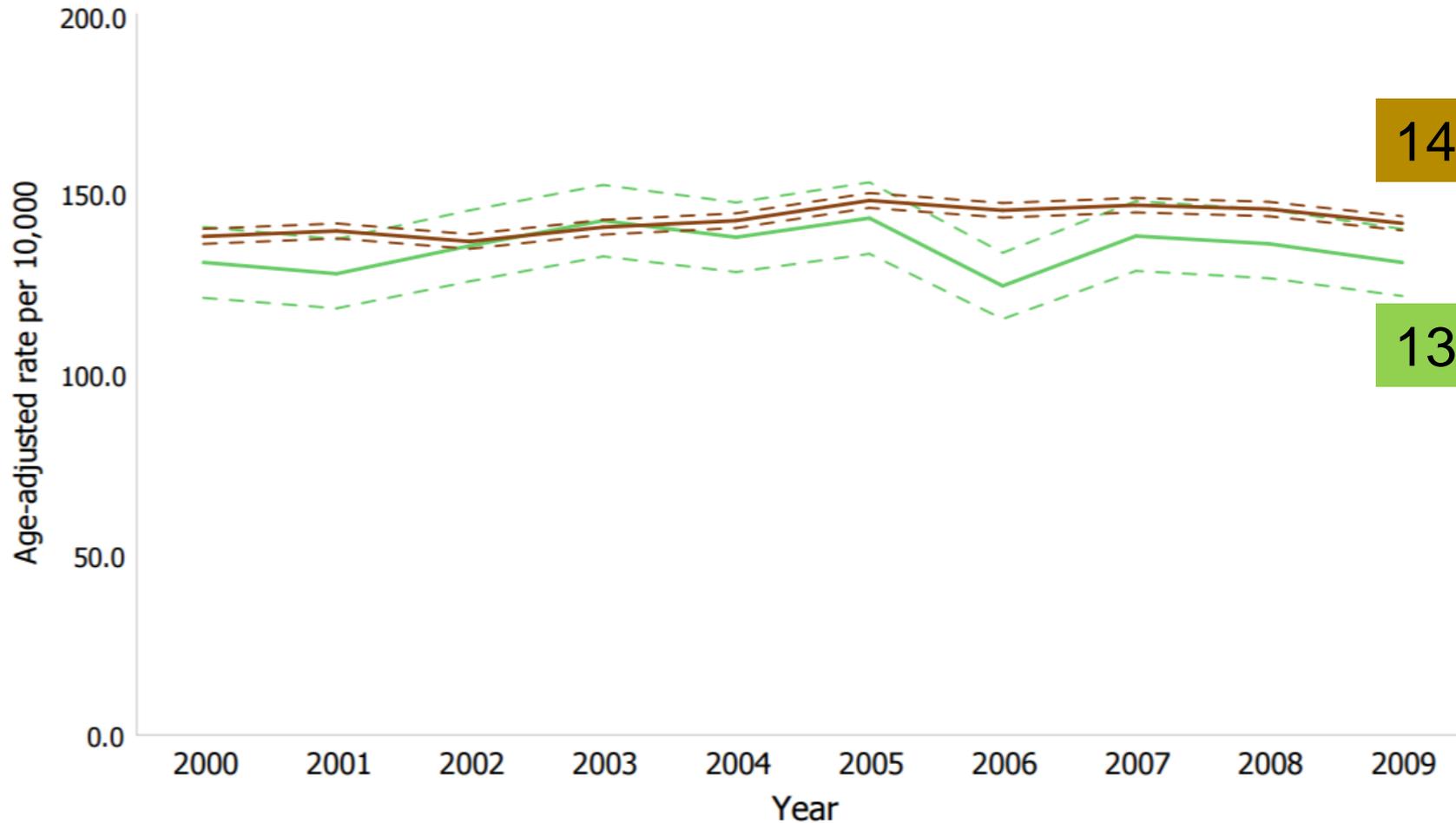
Diabetes hospitalizations (inpatient)

Age-adjusted rate; Both genders; All ages; 2000-2009;

State; New Hampshire

Public Health Region; Greater Sullivan

..... 95%CI



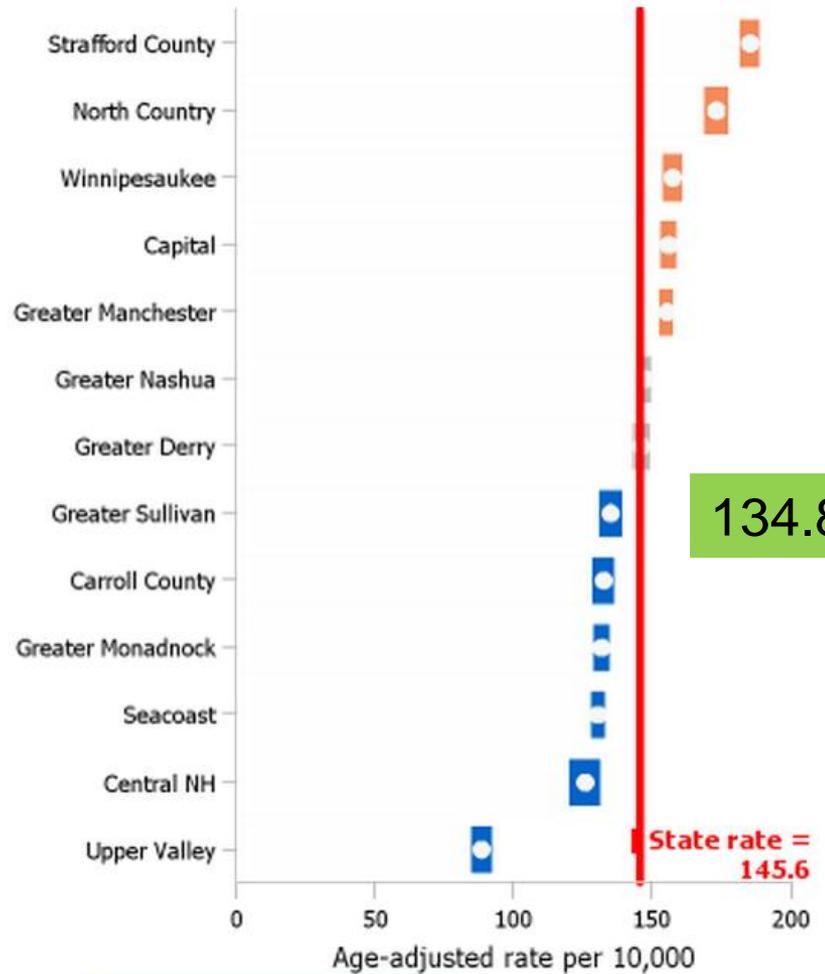
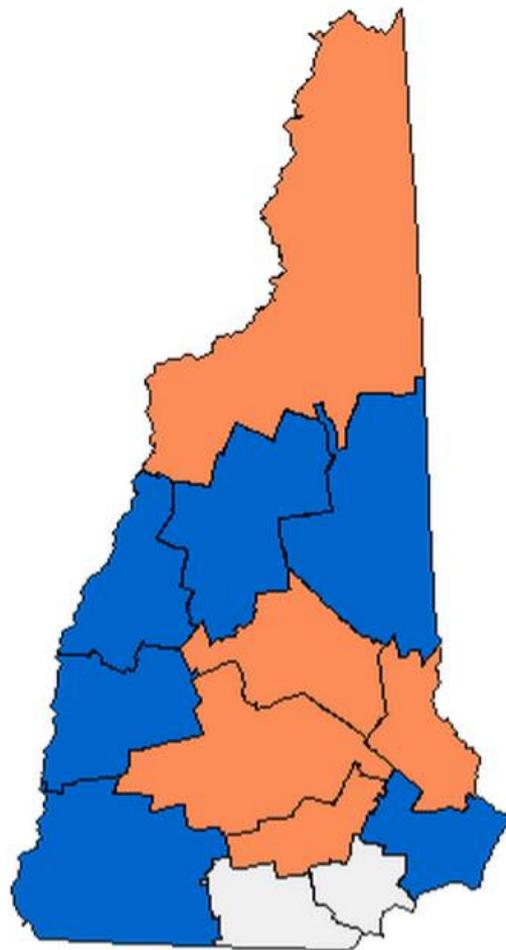
141.9

131.0

Diabetes hospitalizations (inpatient)

Age-adjusted rate; Both genders; All ages; 2005-2009

Public Health Region



Significantly lower than rest of state
No difference than rest of state
Significantly higher than rest of state
1-4 events

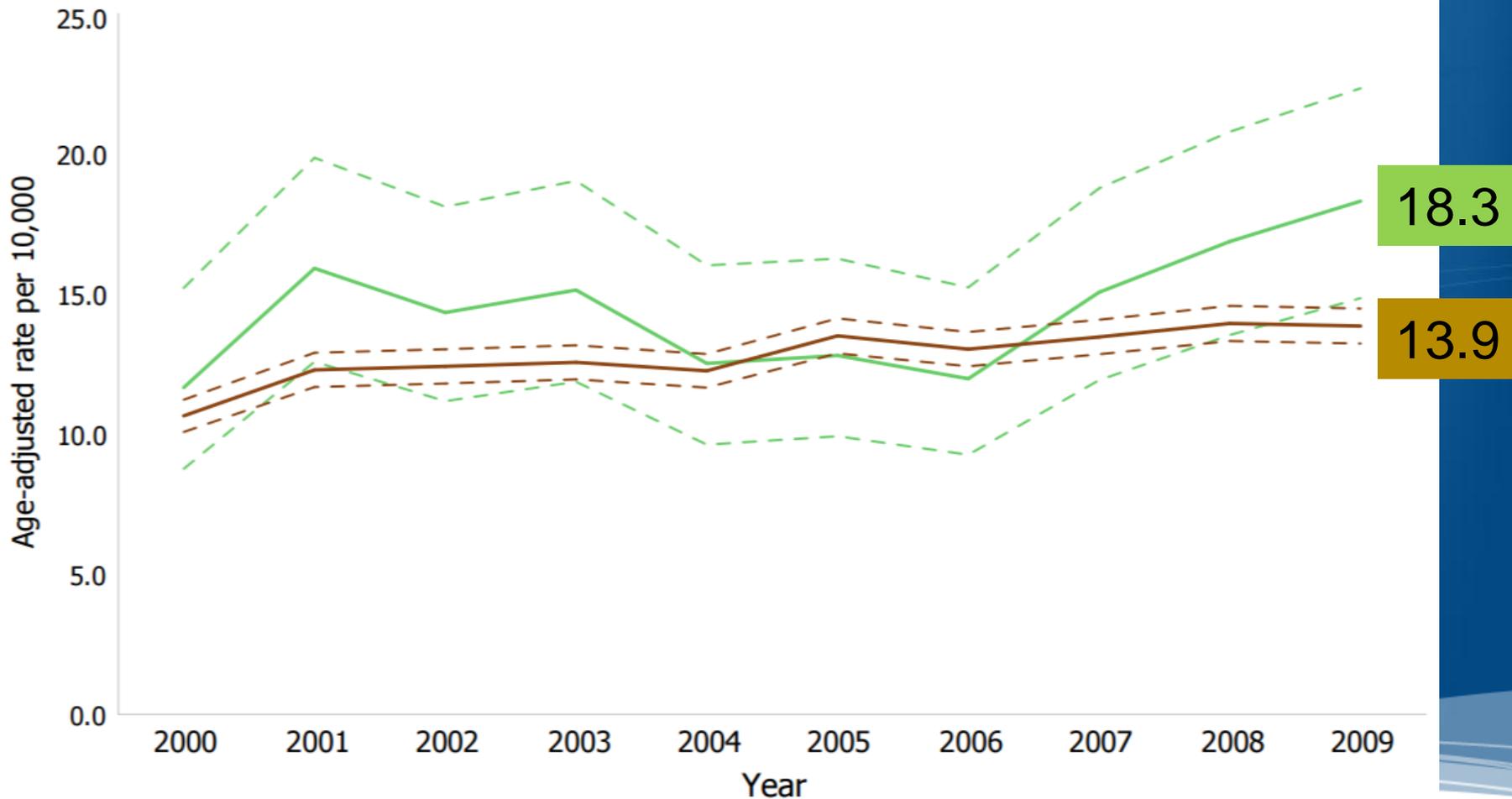
Diabetes hospital visits for Ambulatory Care Sensitive Conditions (emergency dept.)

Age-adjusted rate; Both genders; All ages; 2000-2009;

State; New Hampshire

Public Health Region; Greater Sullivan

..... 95%CI



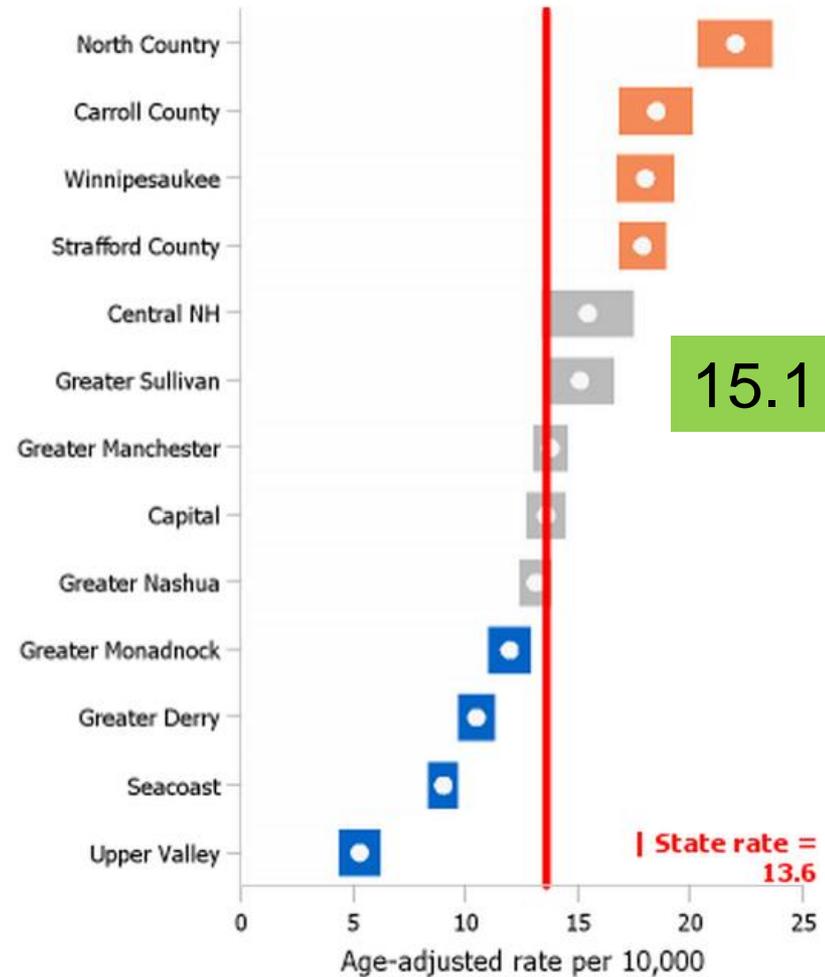
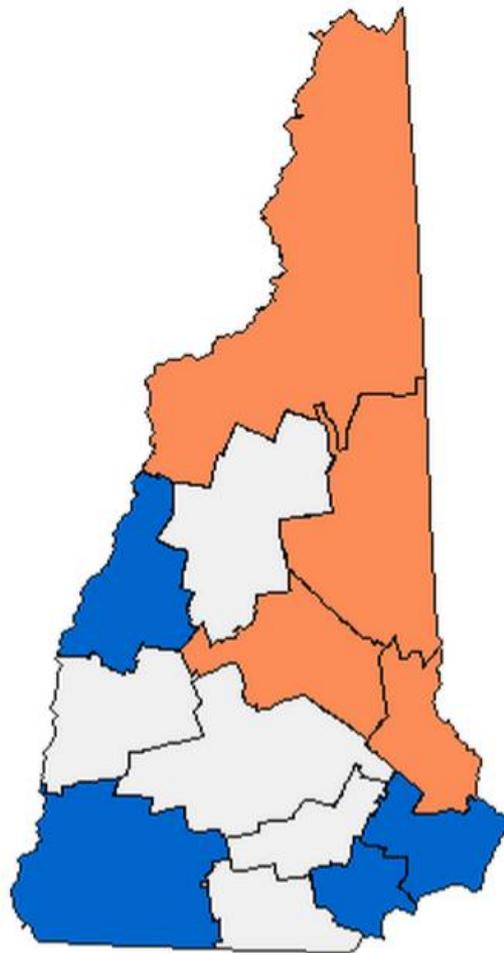
18.3

13.9

Diabetes hospital visits for Ambulatory Care Sensitive Conditions (emergency dept.)

Age-adjusted rate; Both genders; All ages; 2005-2009

Public Health Region

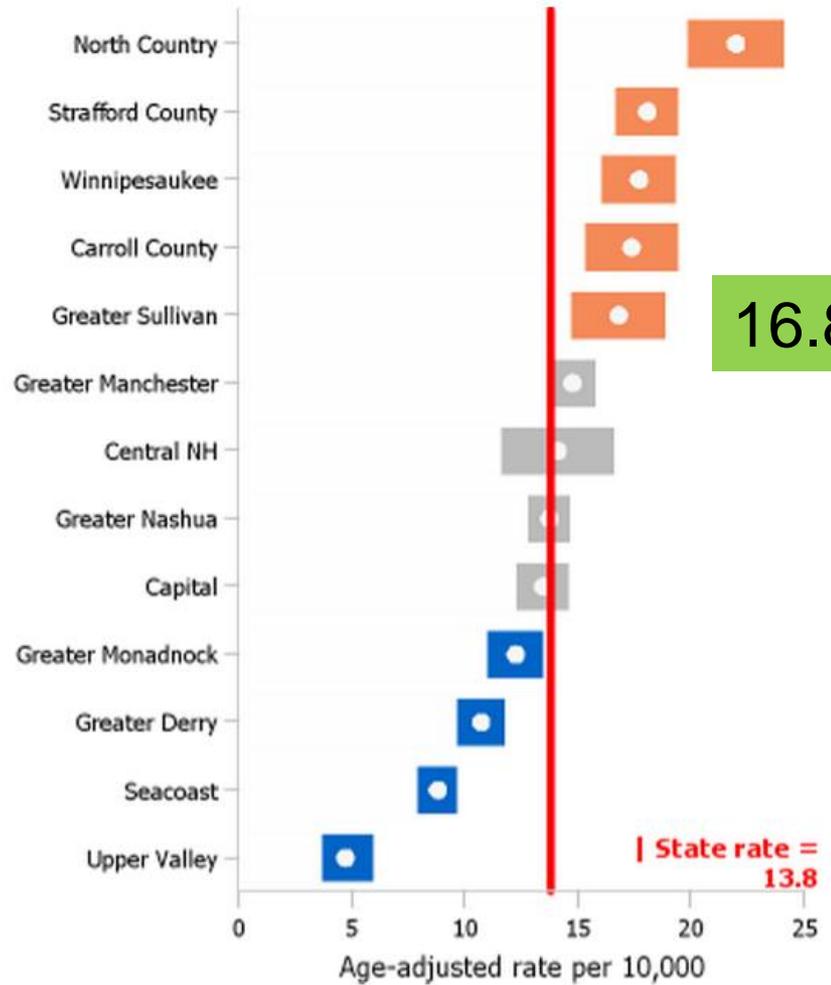
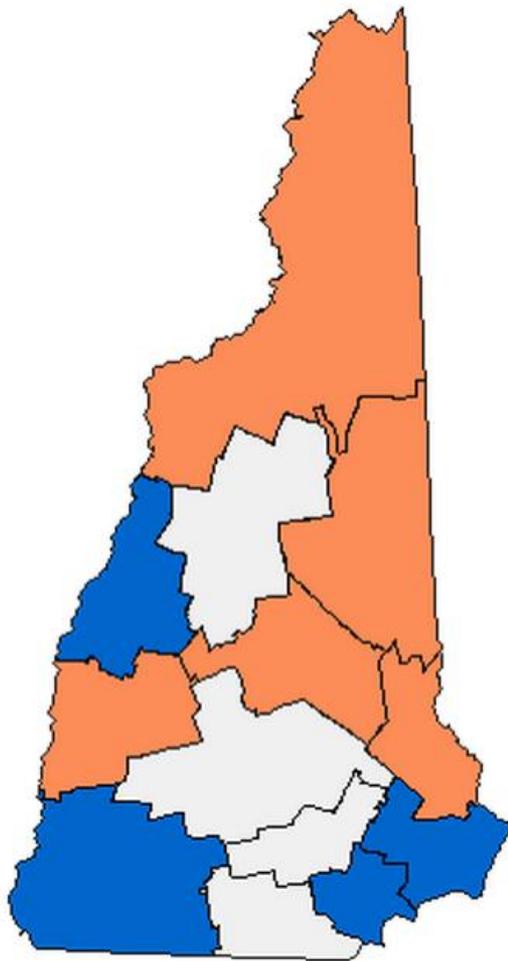


Significantly lower than rest of state
No difference than rest of state
Significantly higher than rest of state
1-4 events

Diabetes hospital visits for Ambulatory Care Sensitive Conditions (emergency dept.)

Age-adjusted rate; Both genders; All ages; 2007-2009

Public Health Region



Significantly lower than rest of state
No difference than rest of state
Significantly higher than rest of state
1-4 events

Summary: Greater Sullivan Compared to State

- More than 1/3 of adults report hypertension
- 14% of adults report smoking, with highest prevalence in the 25-35 y.o. population
- Almost 1/4 of adults are obese
- ~10% of adults report diabetes (similar to state), but Greater Sullivan has decreased rates of hospitalization for diabetes compared to rest of state
- Data show increasing/higher rates of ER visits for diabetes related issues compared to rest of state

Cancer

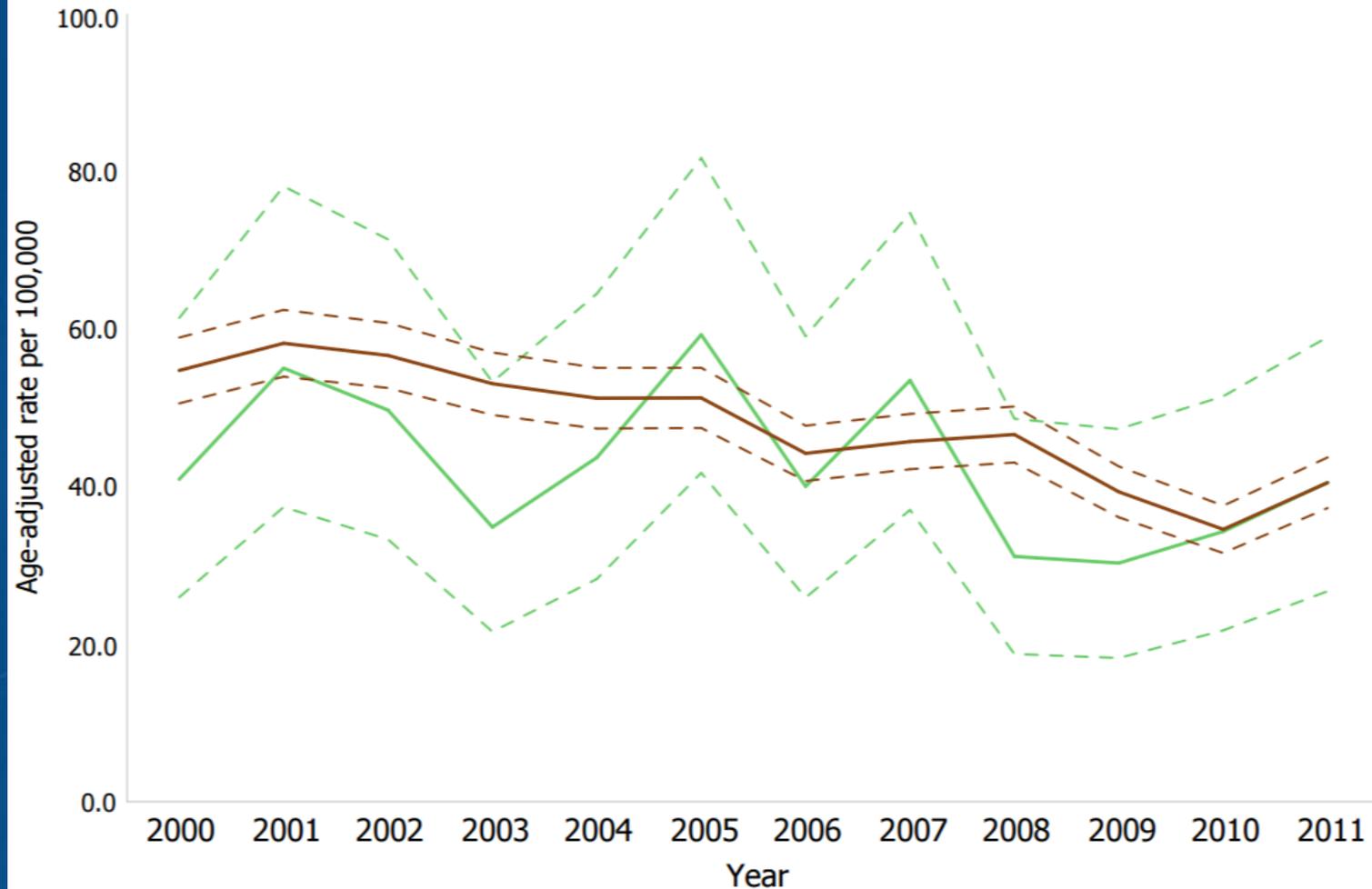
Cancer incidence (Colorectal)

Age-adjusted rate; Both genders; All ages; 2000-2011

State; New Hampshire

Public Health Region; Greater Sullivan

..... 95%CI



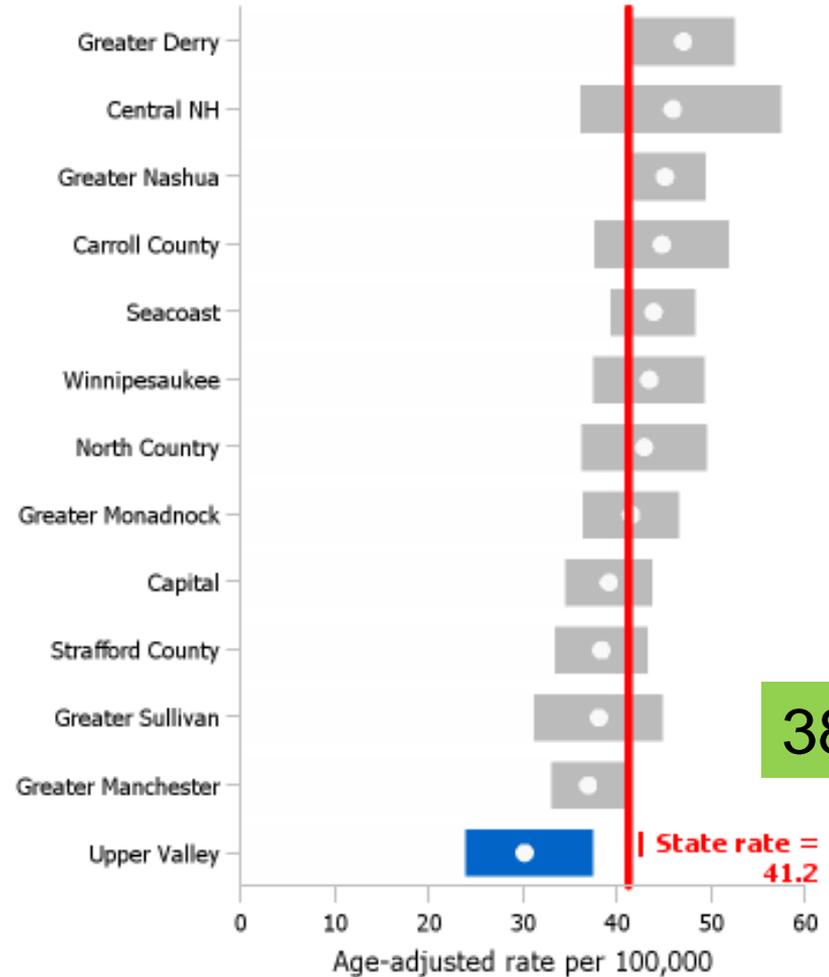
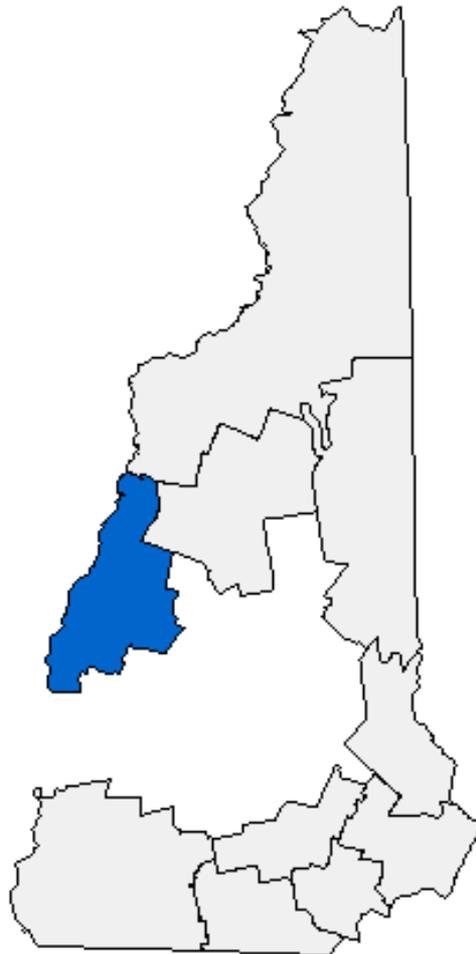
40.6

40.5

Cancer incidence (Colorectal)

Age-adjusted rate; Both genders; All ages; 2007-2011

Public Health Region



Significantly lower than rest of state

No difference than rest of state

Significantly higher than rest of state

1-9 events

38.0

State rate = 41.2

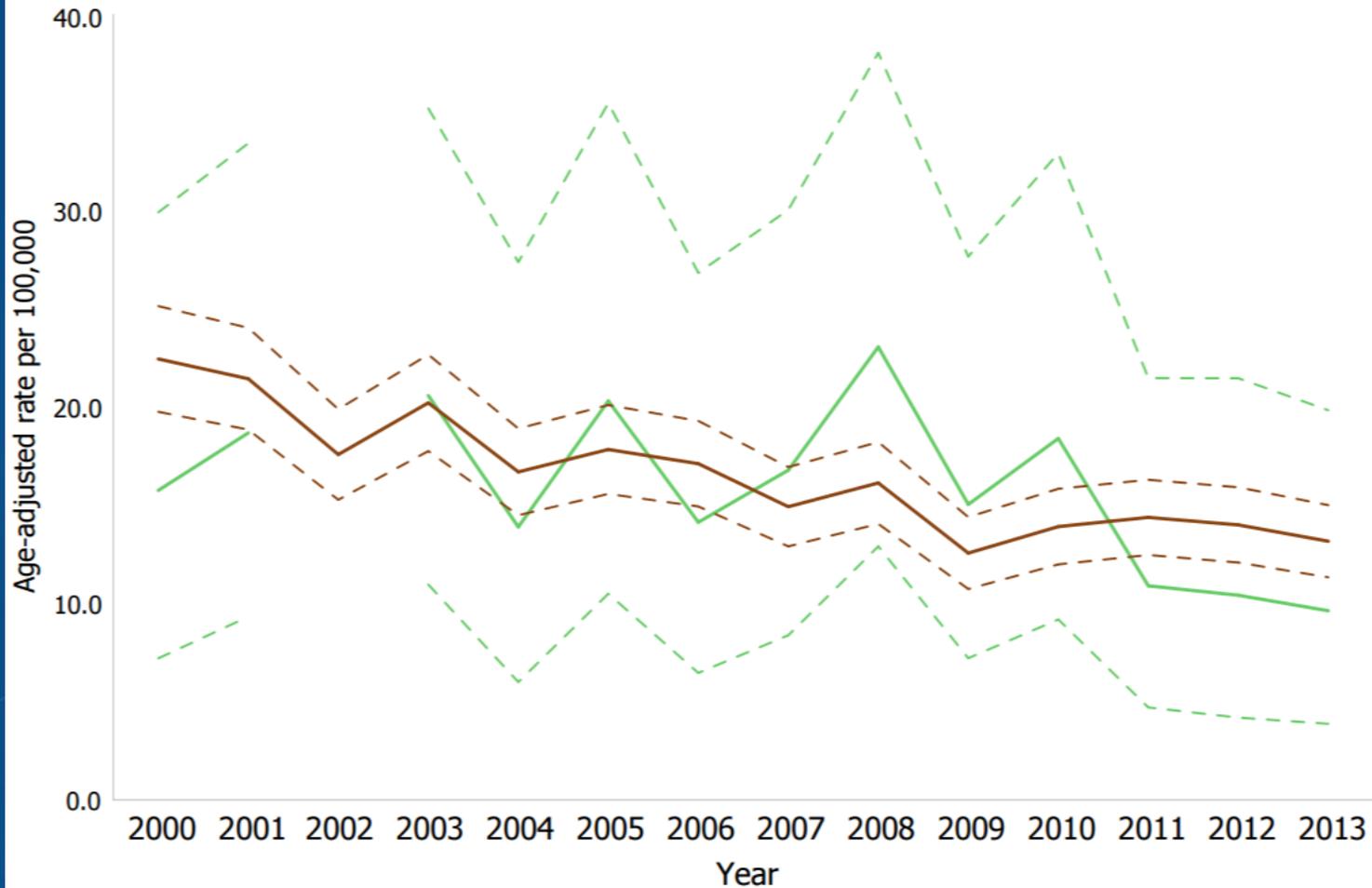
Cancer mortality (Colorectal)

Age-adjusted rate; Both genders; All ages; 2000-2013

State; New Hampshire

Public Health Region; Greater Sullivan

..... 95%CI



13.2

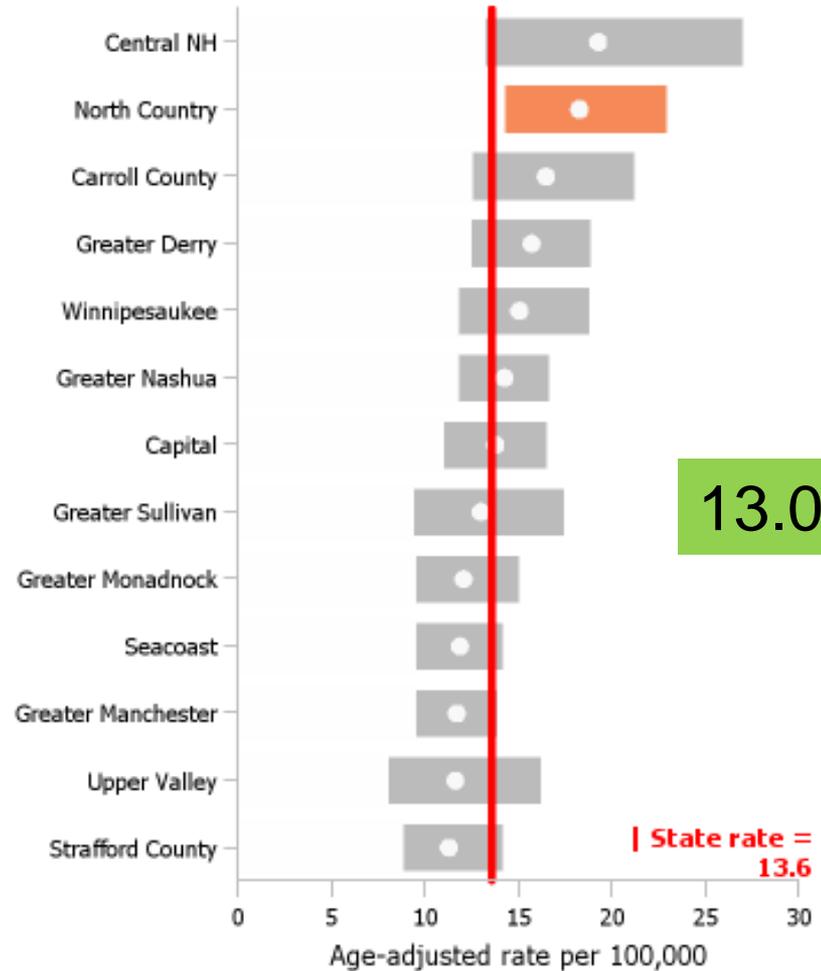
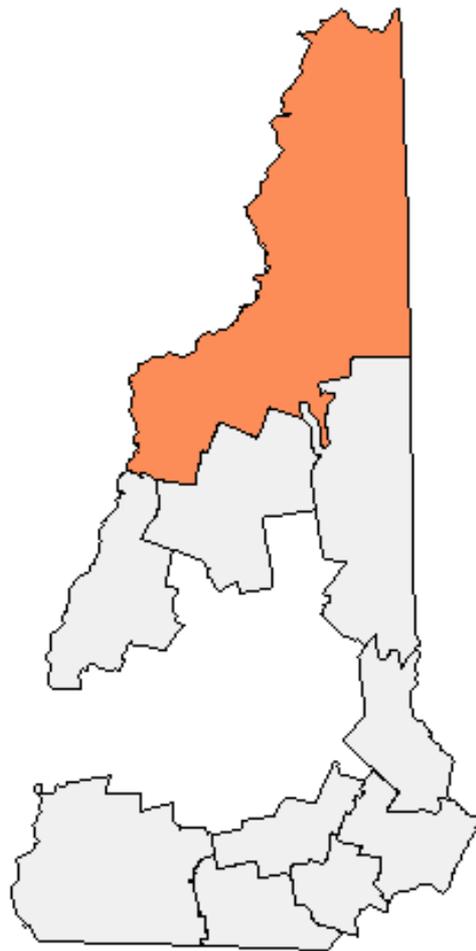
9.6

* Rates and counts are not displayed if fewer than 5 events are reported.

Cancer mortality (Colorectal)

Age-adjusted rate; Both genders; All ages; 2009-2013

Public Health Region



Significantly lower than rest of state

No difference than rest of state

Significantly higher than rest of state

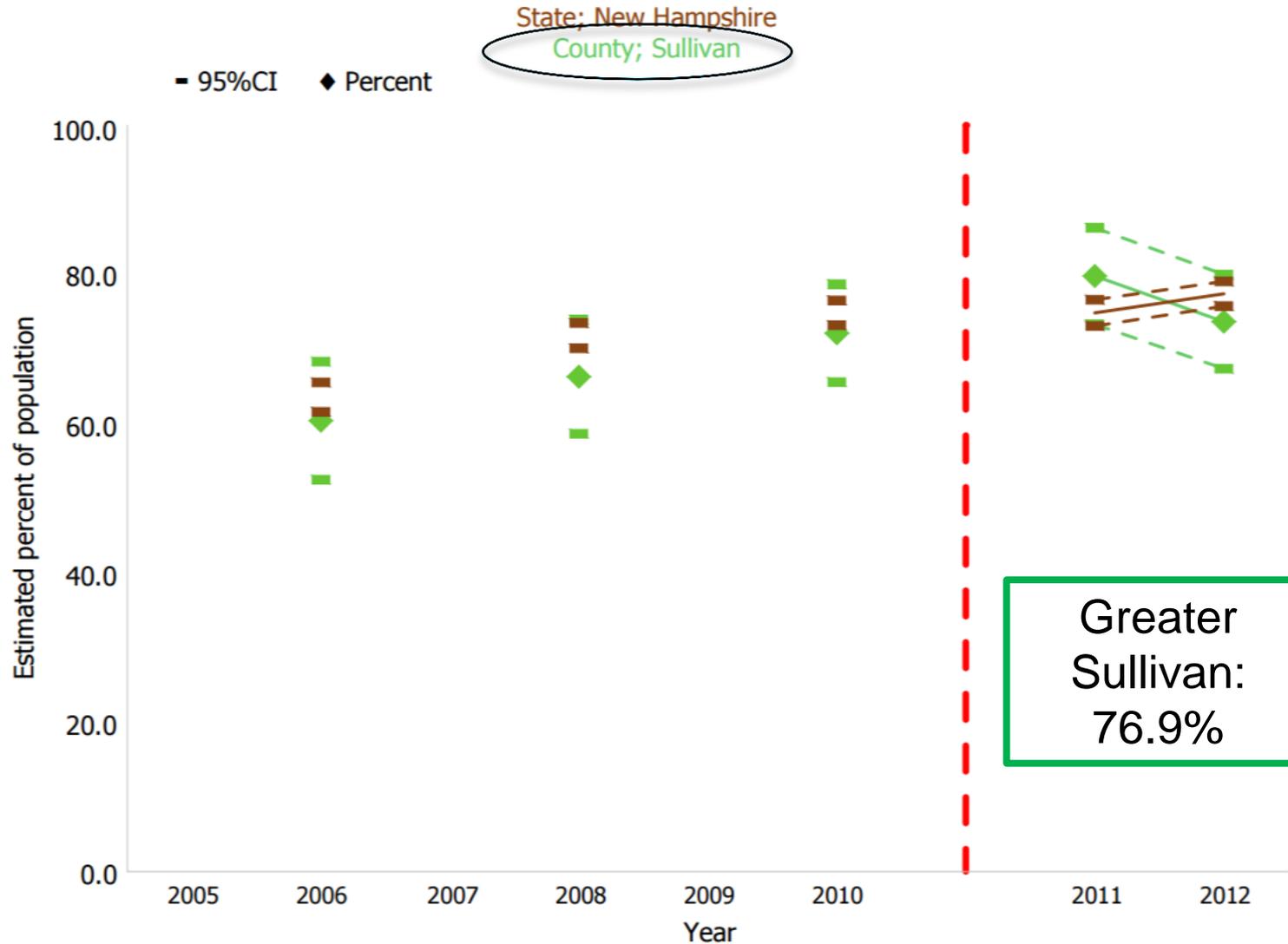
1-4 events

13.0

State rate = 13.6

Colorectal cancer screening

Percent of adults who are aged 50+ that have ever had a sigmoidoscopy or a colonoscopy exam; Both genders



BRFSS survey methodology changed in 2011.

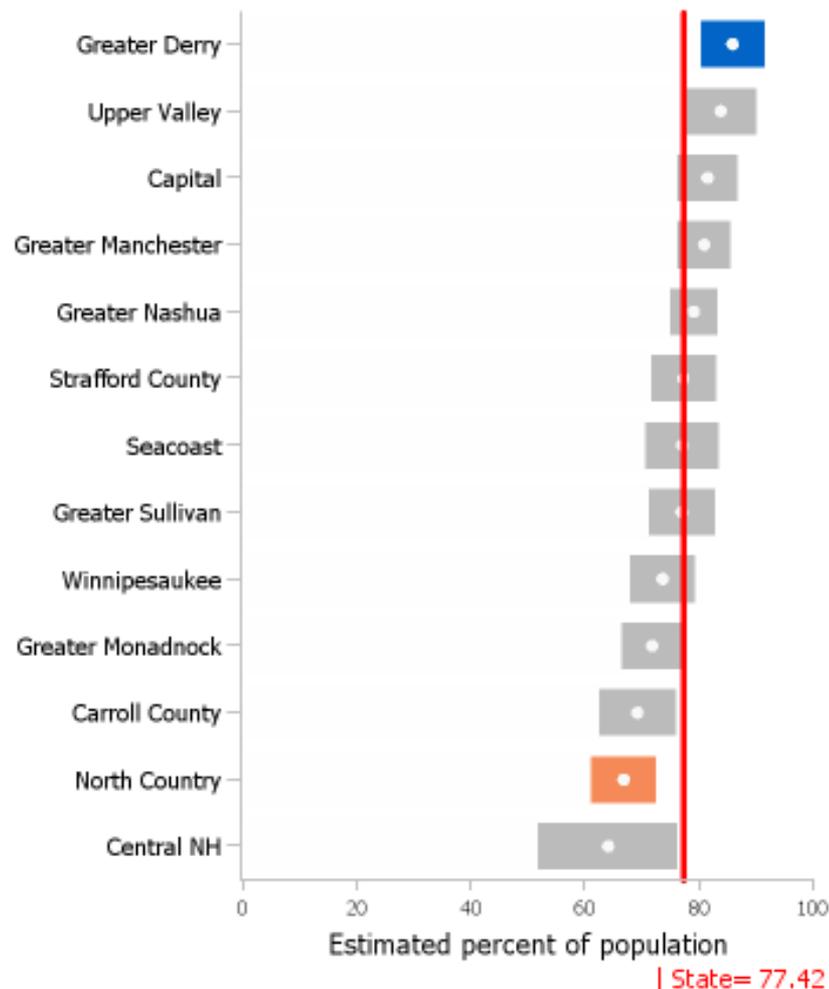
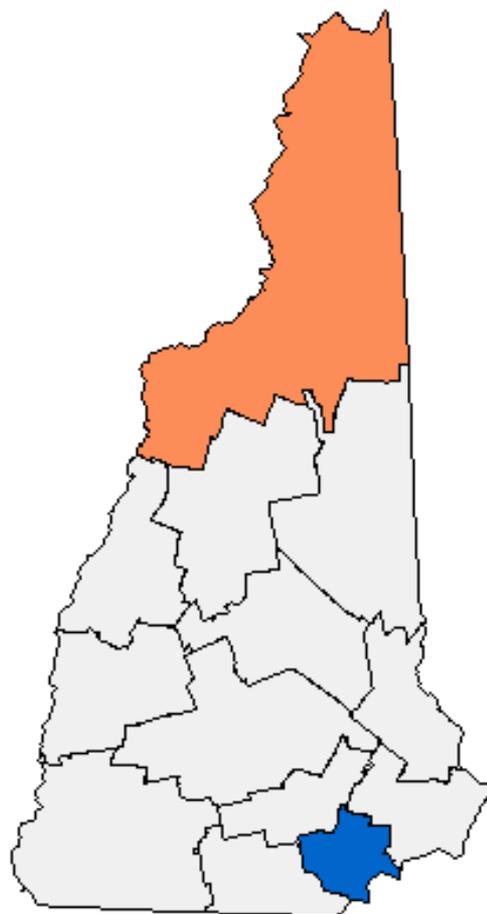
77.4%
73.7%

Greater Sullivan:
76.9%

Colorectal cancer screening

Percent of adults who are aged 50+ that have ever had a sigmoidoscopy or a colonoscopy exam; Both genders

Public Health Region; 2012



Significantly lower than state

No difference than state

Significantly higher than state

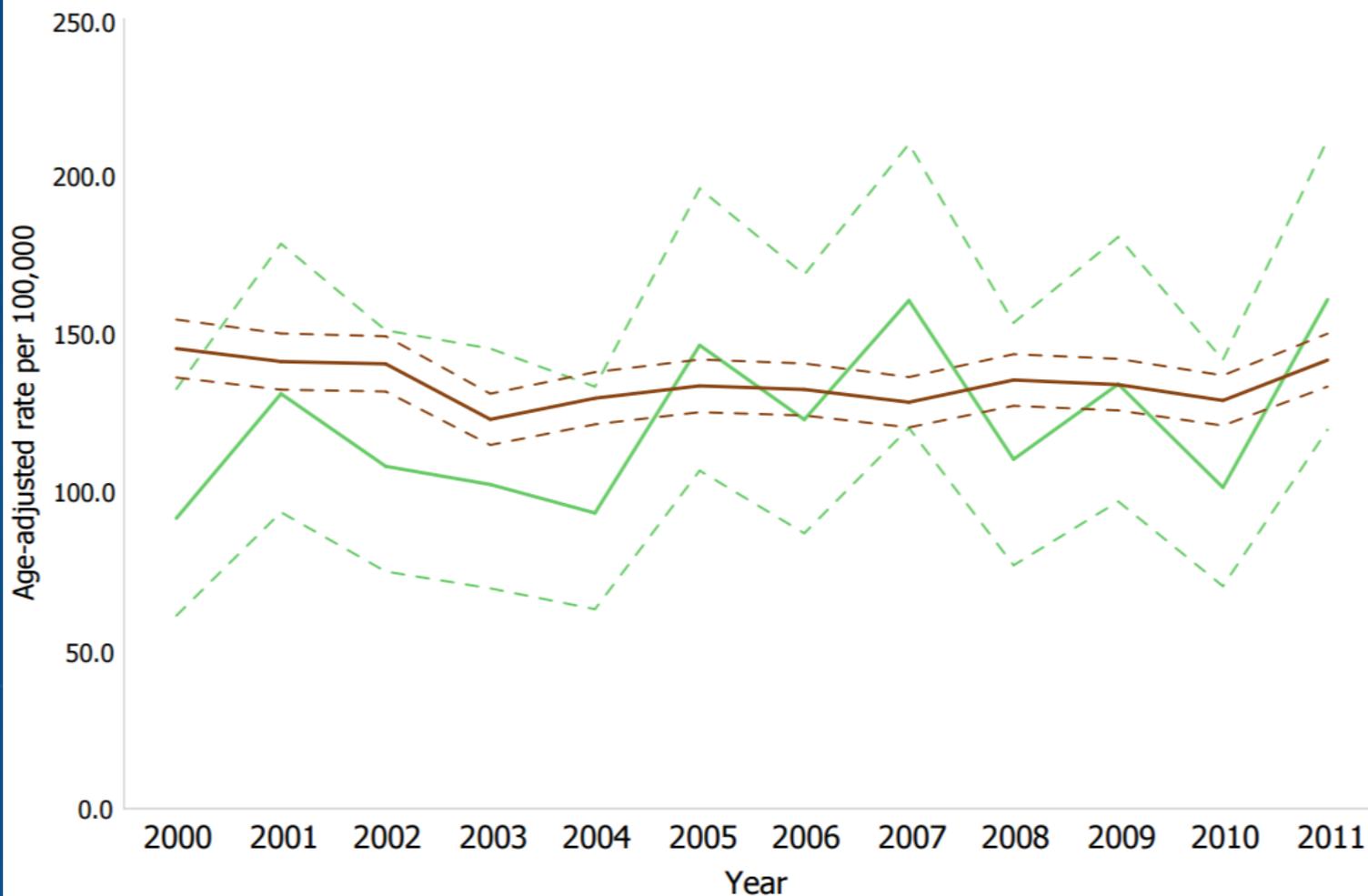
Cancer incidence (Breast (Female))

Age-adjusted rate; Female; All ages; 2000-2011;

State; New Hampshire

Public Health Region (comp); Greater Sullivan

..... 95%CI



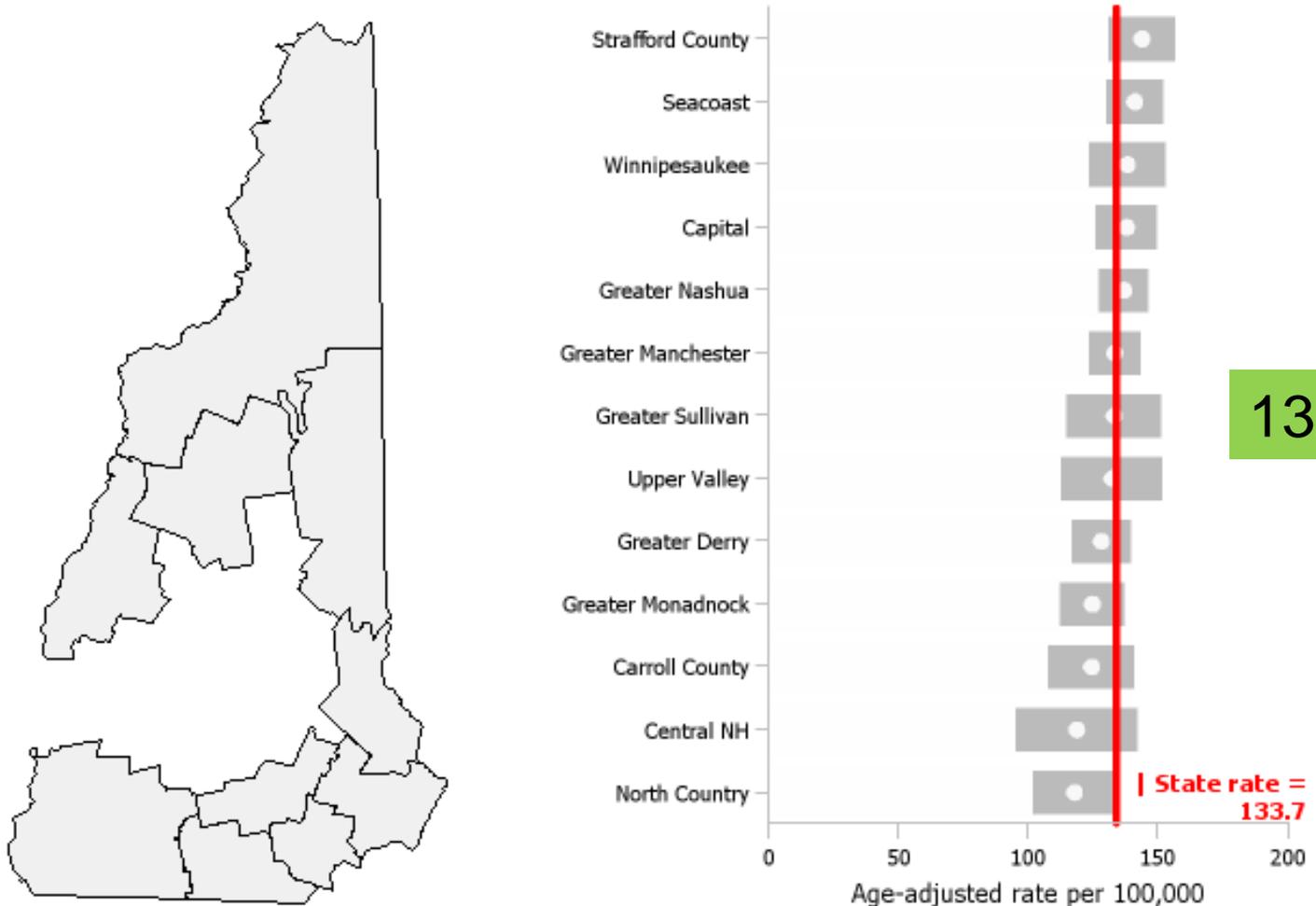
161.1

141.9

Cancer incidence (Breast (Female))

Age-adjusted rate; Female; All ages; 2007-2011

Public Health Region



Significantly lower than rest of state | No difference than rest of state | Significantly higher than rest of state | 1-9 events

132.9

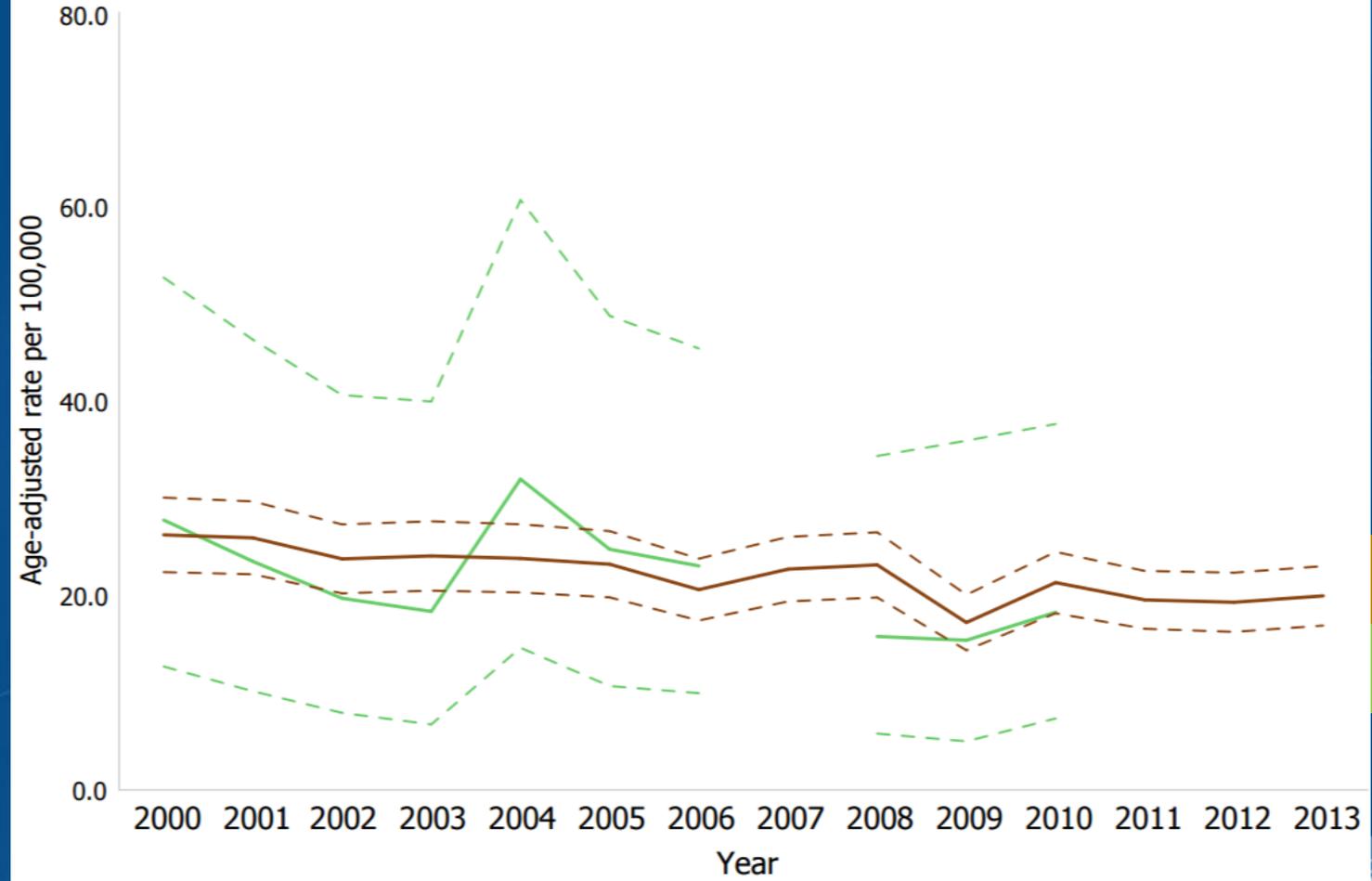
Cancer mortality (Breast (Female))

Age-adjusted rate; Female; All ages; 2000-2013

State; New Hampshire

Public Health Region; Greater Sullivan

..... 95%CI



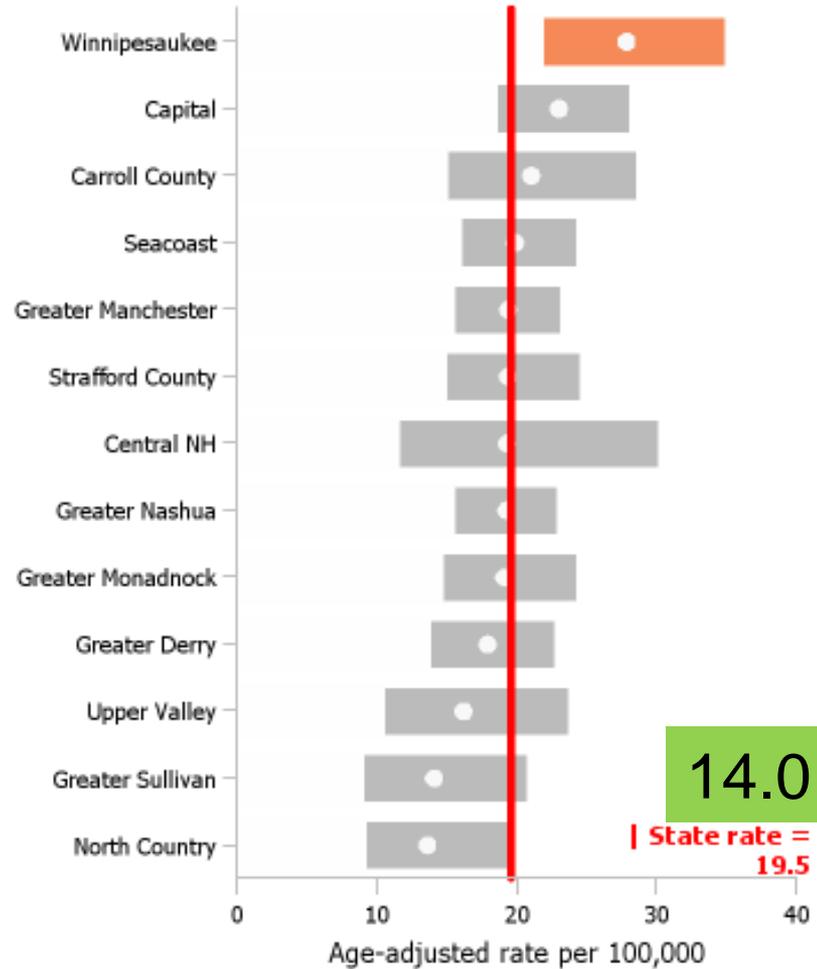
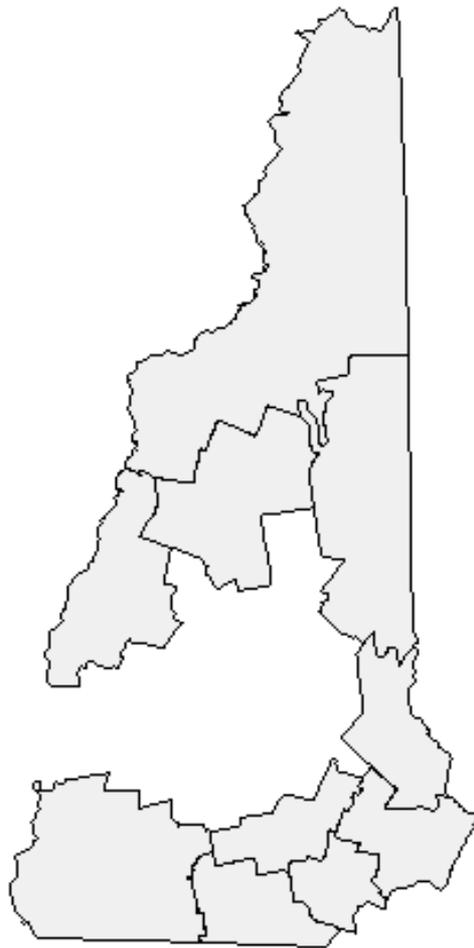
20.0
19.8

* Rates and counts are not displayed if fewer than 5 events are reported.

Cancer mortality (Breast (Female))

Age-adjusted rate; Female; All ages; 2009-2013

Public Health Region



Significantly lower than rest of state

No difference than rest of state

Significantly higher than rest of state

1-4 events

14.0

State rate = 19.5

Breast (Female) Cancer Screening

Percent of female who are aged 50+ that have had a mammogram in the past two years; Female



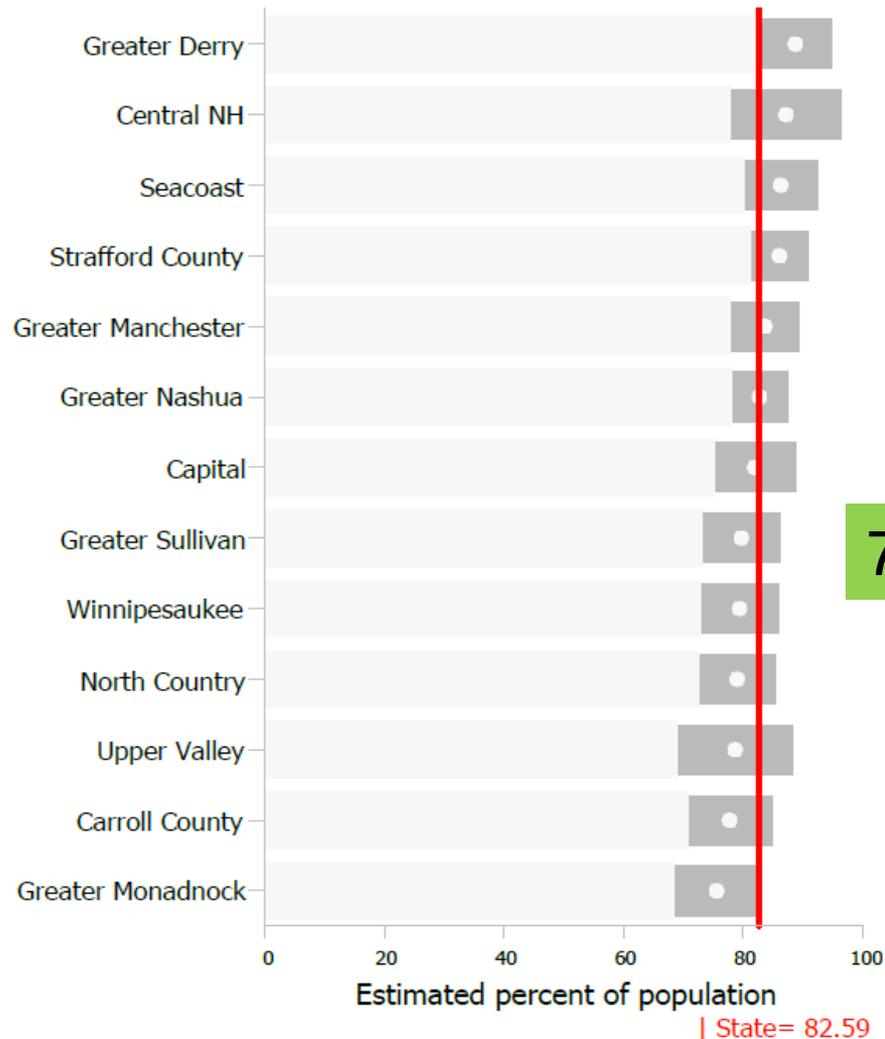
BRFSS survey methodology changed in 2011.

NH Health WISDOM. New Hampshire Department of Health and Human Services, Division of Public Health Services. Accessed May 2015, at <http://wisdom.dhhs.nh.gov>.

Breast (Female) Cancer Screening

Percent of female who are aged 50+ that have had a mammogram in the past two years

Public Health Region; 2012



79.7%

Significantly lower than state

No difference than state

Significantly higher than state

Summary: Greater Sullivan Compared to State

- Rates of colorectal cancer incidence and mortality are similar
- ~77% of adults aged 50+ have ever had colorectal cancer screening by sigmoidoscopy or colonoscopy
- Rates of breast cancer incidence and mortality are similar
- ~80% of females aged 50+ have had a mammogram in the last 2 years

Misuse of Drugs and Alcohol

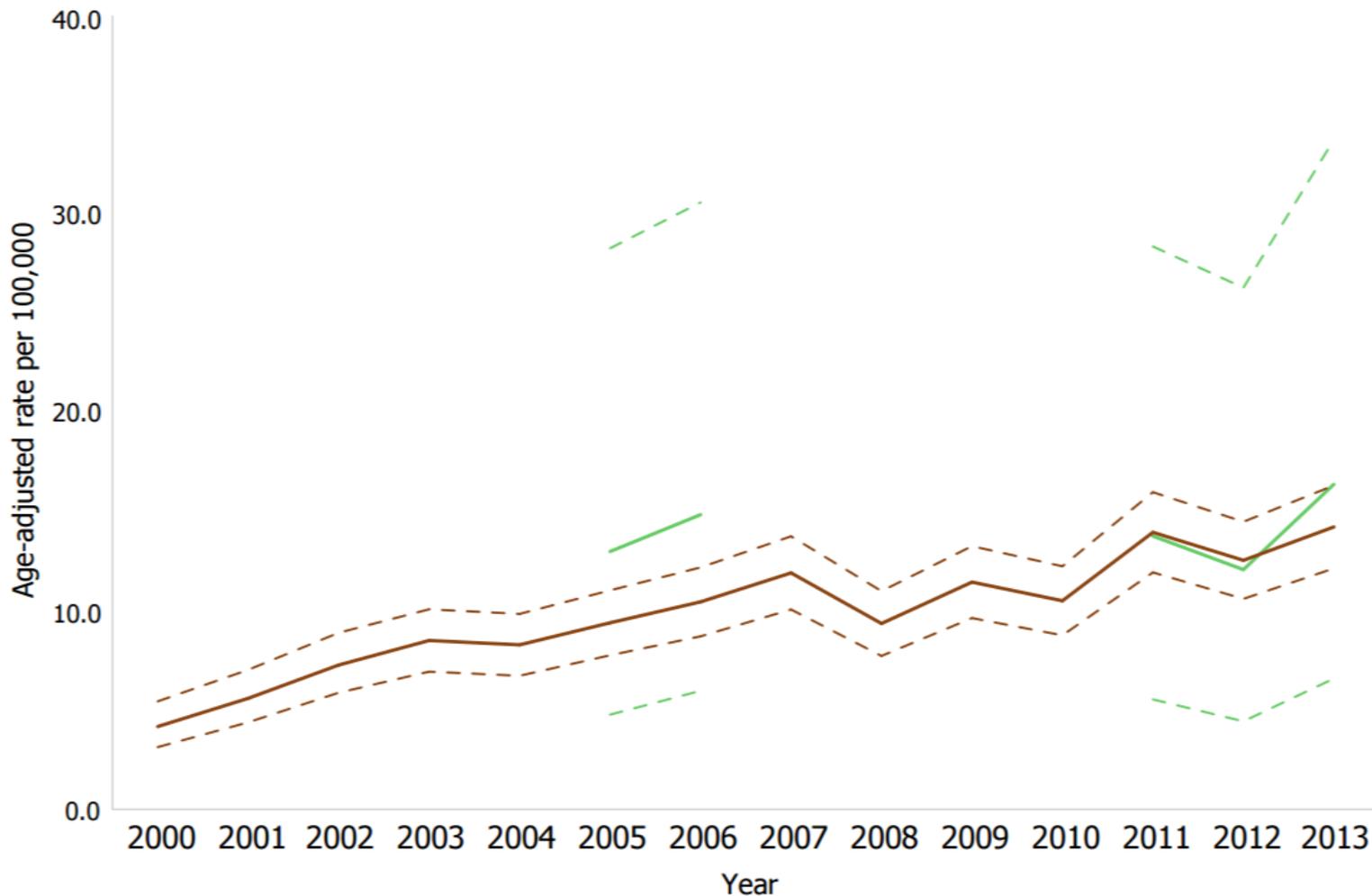
All drug overdose deaths (prescription, illicit, other & unspecified drugs)

Age-adjusted rate; Both genders; All ages; 2000-2013

State; New Hampshire

Public Health Region; Greater Sullivan

..... 95%CI



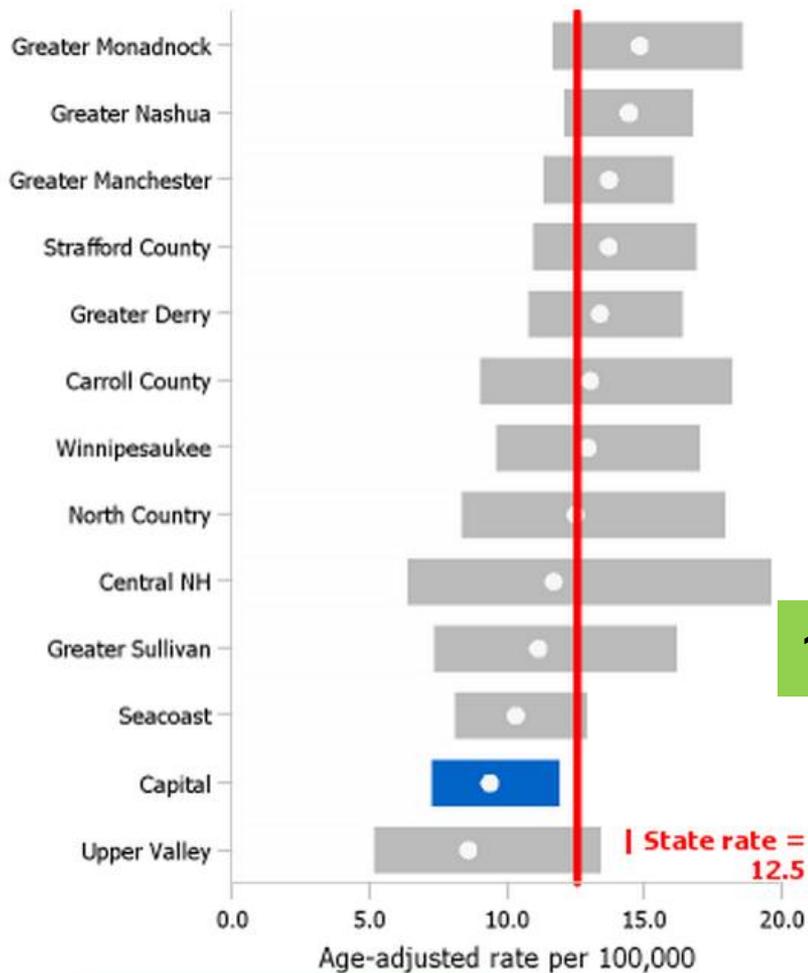
16.4

14.2

All drug overdose deaths (prescription , illicit, other & unspecified drugs)

Age-adjusted rate; Both genders; All ages; 2009-2013

Public Health Region



Significantly lower than rest of state

No difference than rest of state

Significantly higher than rest of state

1-4 events

11.1

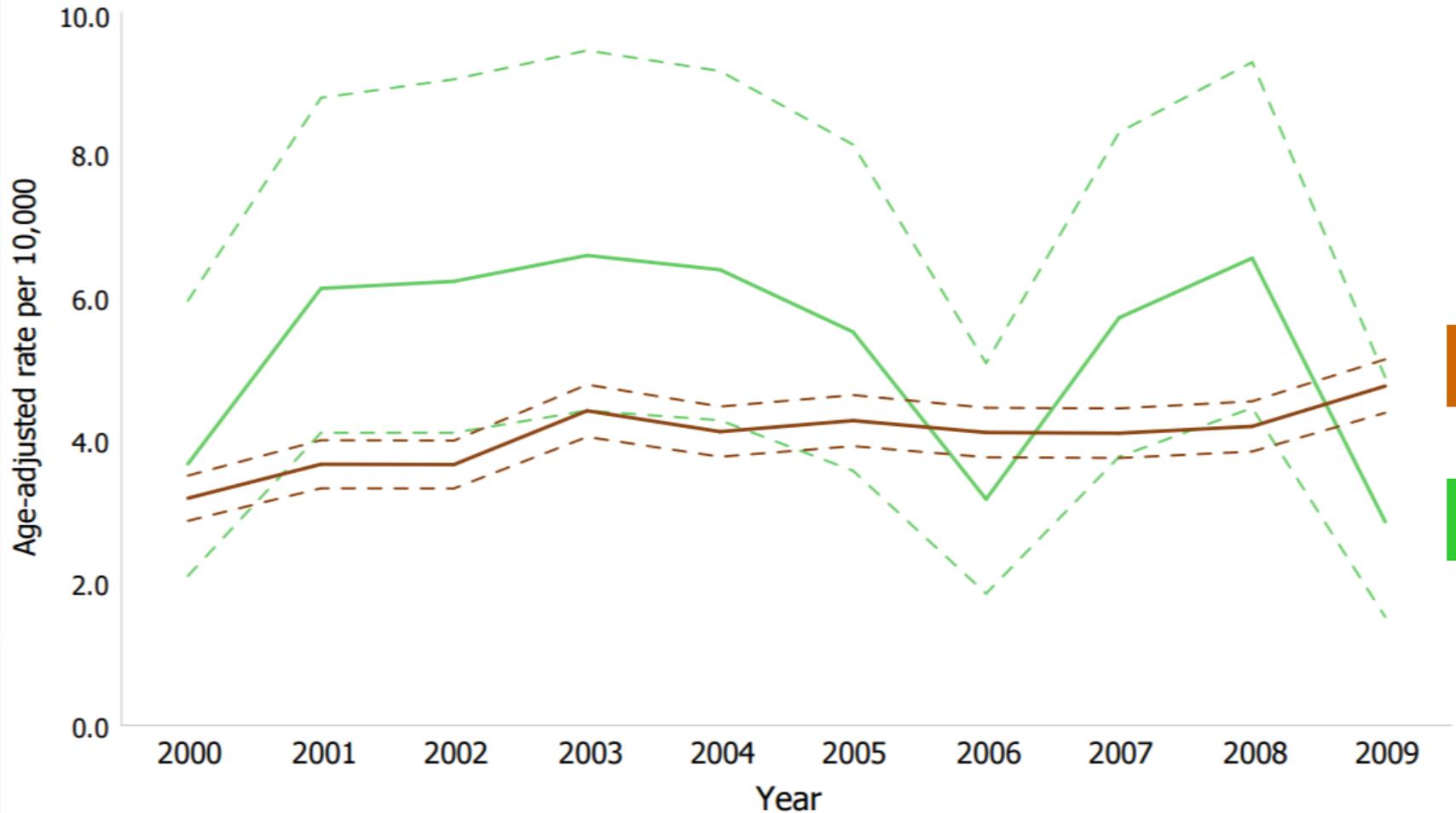
Opioid-related emergency department use and observation stays

Age-adjusted rate; Both genders; All ages; 2000-2009;

State; New Hampshire

Public Health Region; Greater Sullivan

..... 95%CI



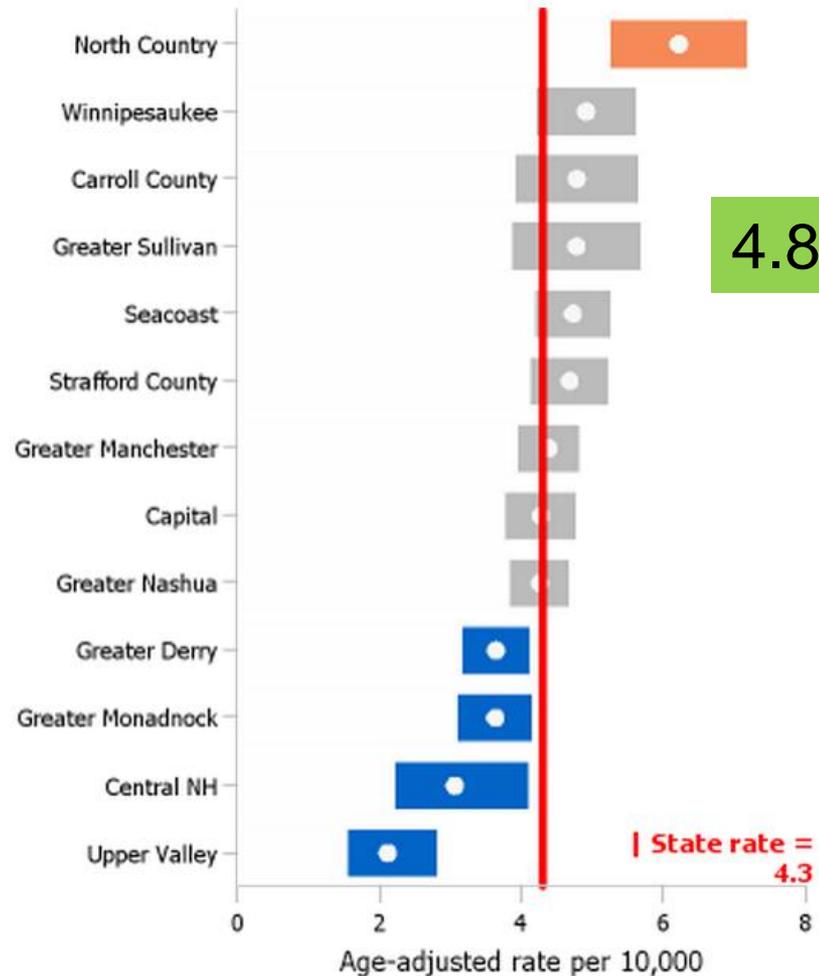
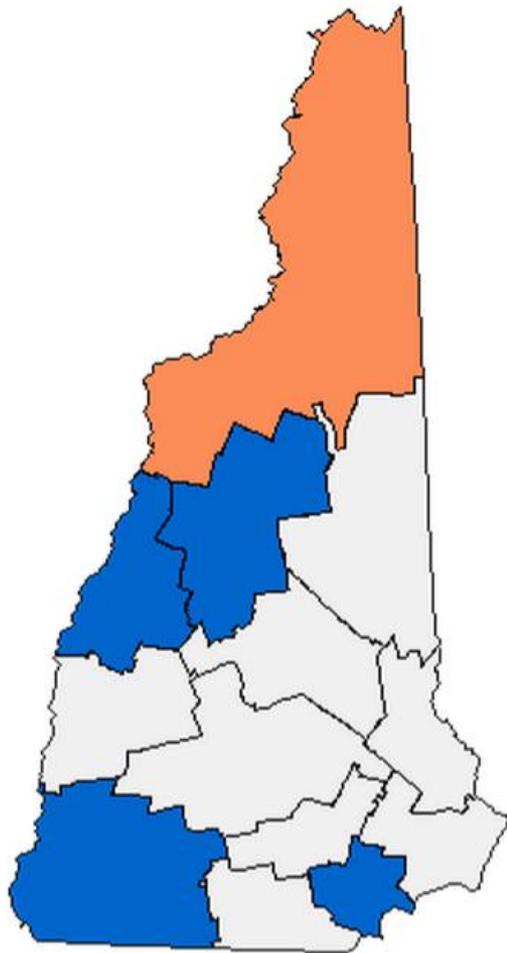
4.8

2.9

Opioid-related emergency department use and observation stays

Age-adjusted rate; Both genders; All ages; 2005-2009

Public Health Region

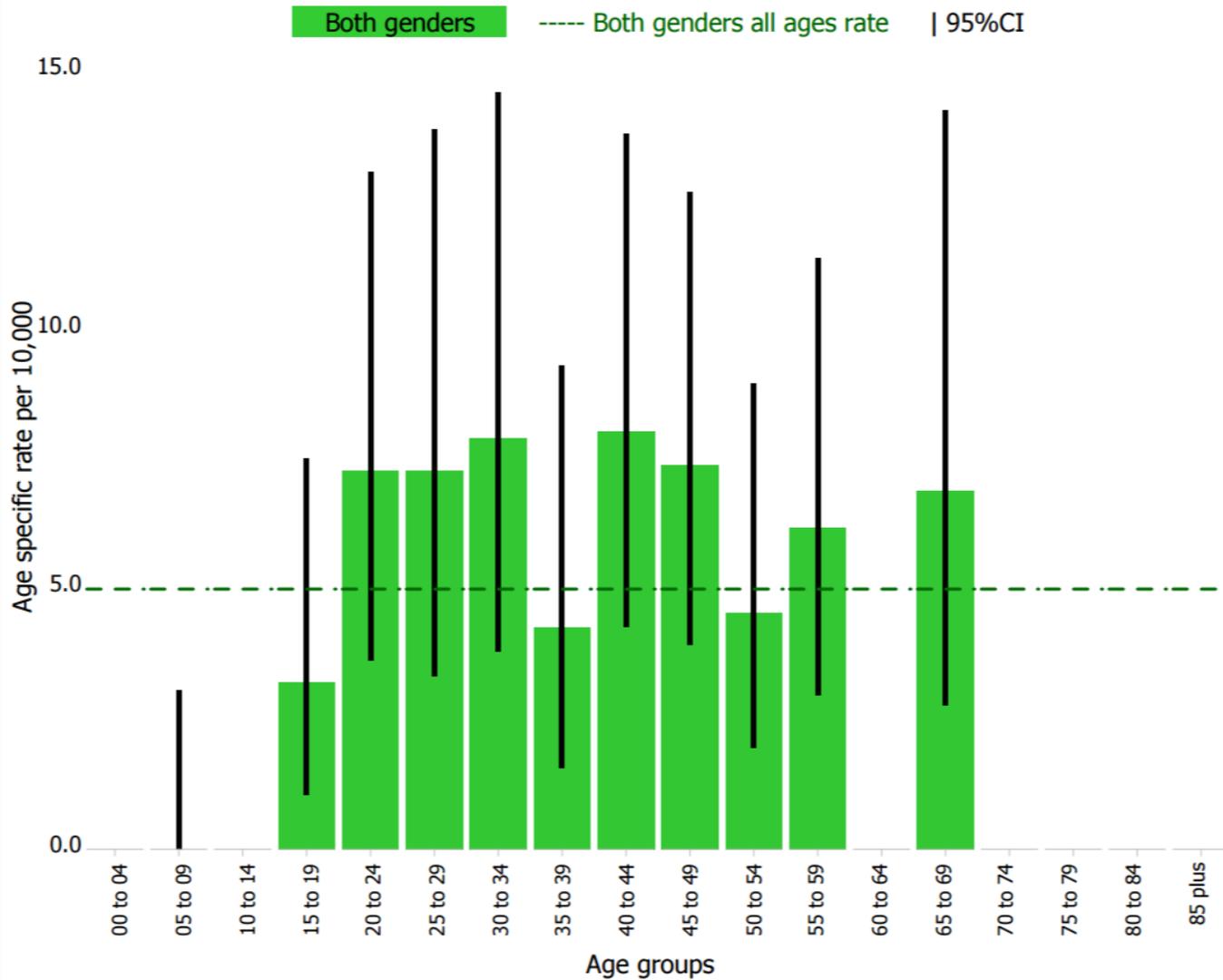


Significantly lower than rest of state
No difference than rest of state
Significantly higher than rest of state
1-4 events

Opioid-related emergency department use and observation stays

Age specific rate; Both genders; All ages; 2005-2009

Public Health Region; Greater Sullivan



All drug overdose deaths involving opioids

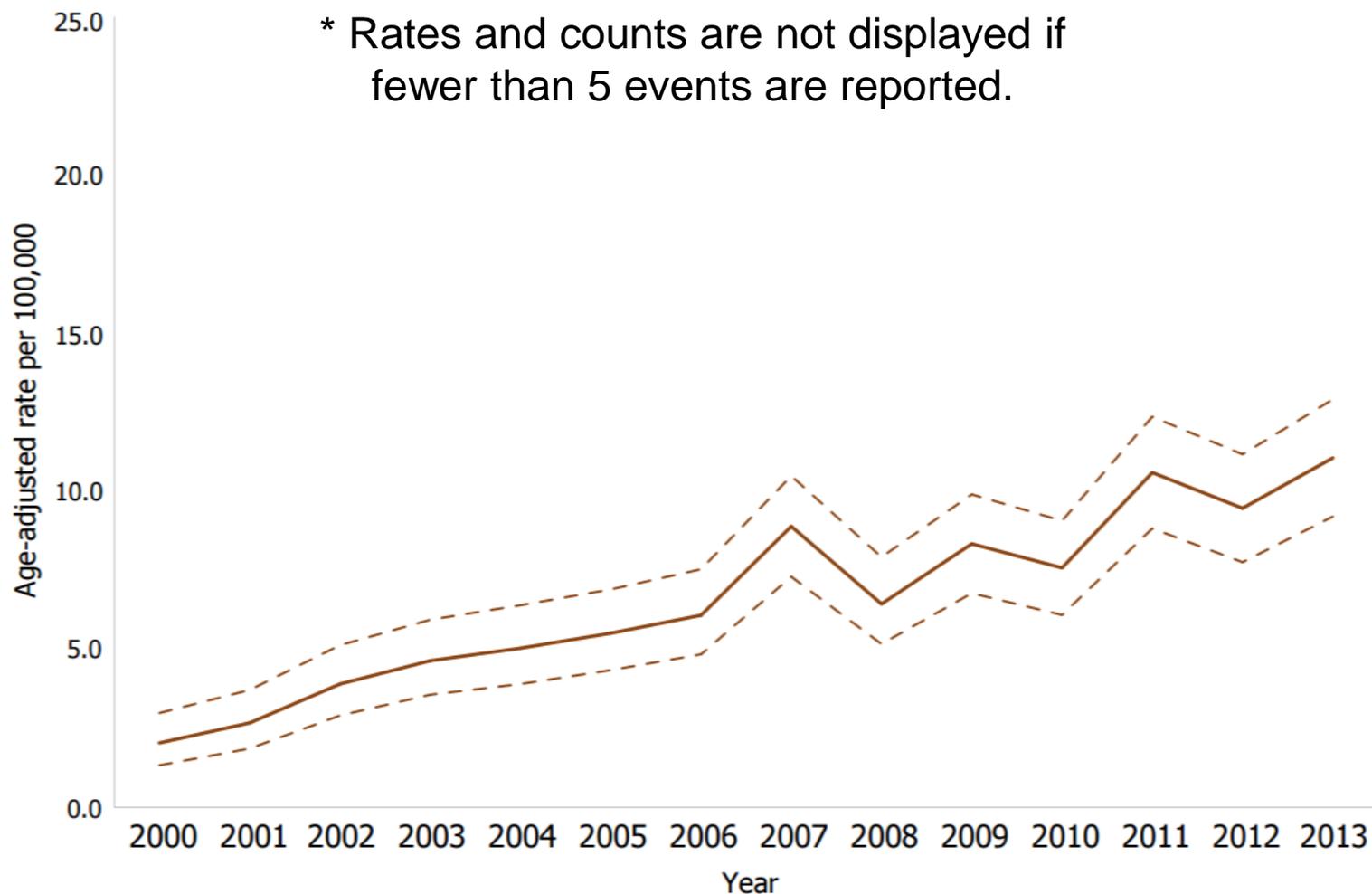
Age-adjusted rate; Both genders; All ages; 2000-2013

State; New Hampshire

Public Health Region; Greater Sullivan

..... 95%CI

* Rates and counts are not displayed if fewer than 5 events are reported.



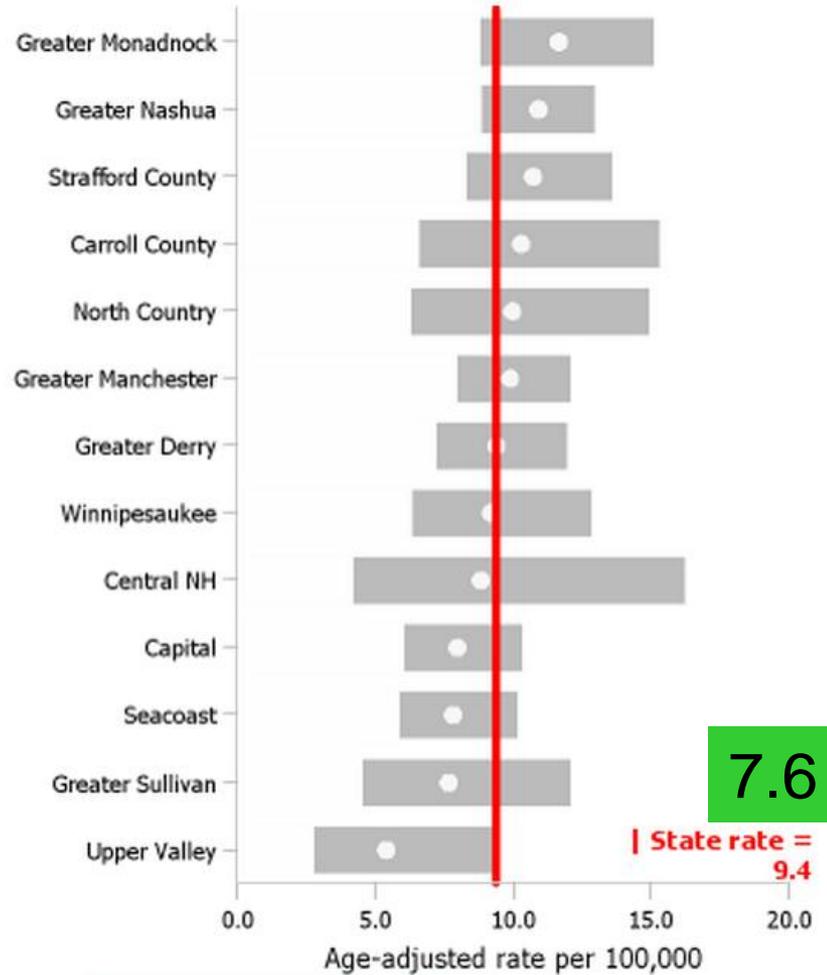
11.1

??

All drug overdose deaths involving opioids

Age-adjusted rate; Both genders; All ages; 2009-2013

Public Health Region



Significantly lower than rest of state

No difference than rest of state

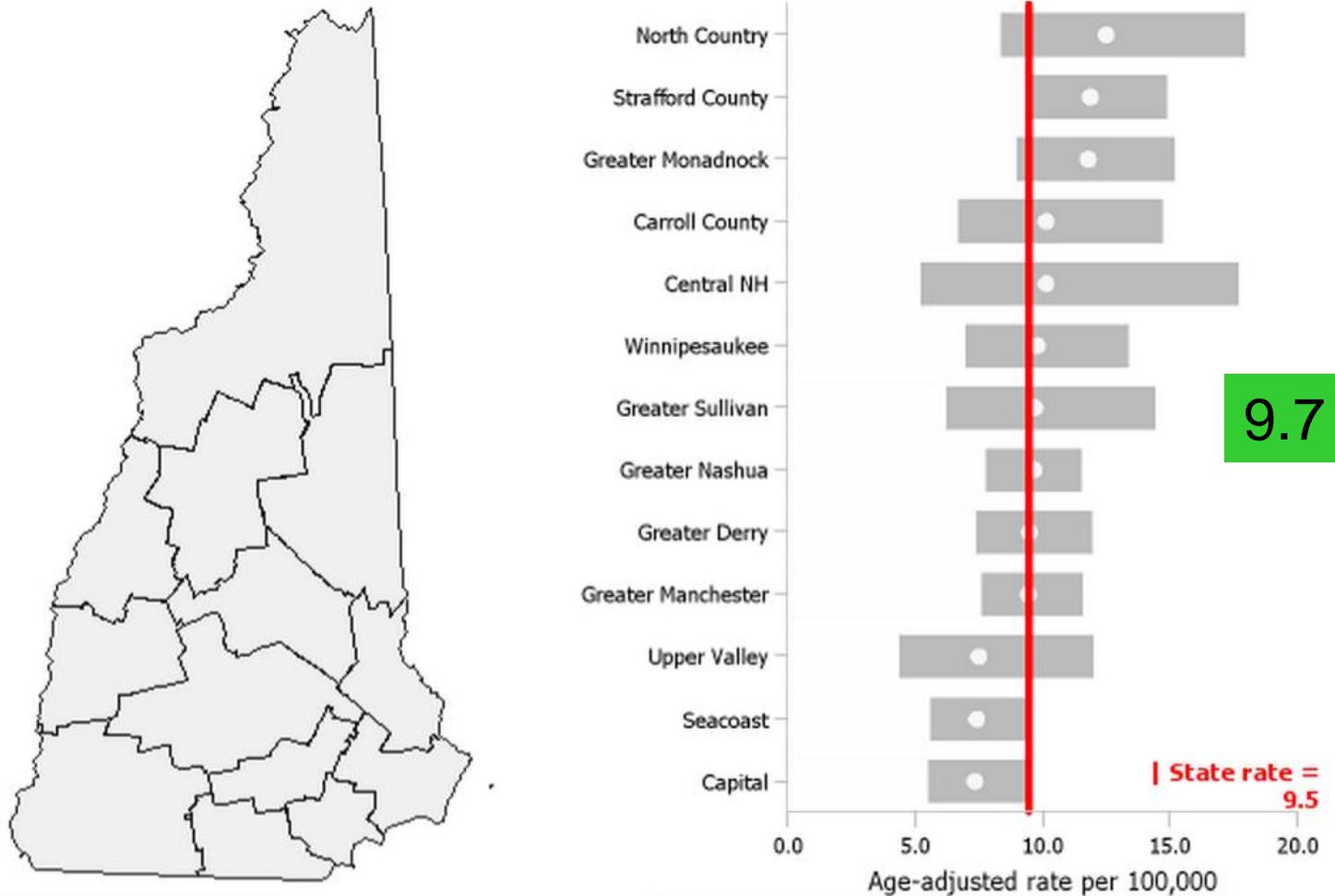
Significantly higher than rest of state

1-4 events

All drug overdose deaths involving one or more prescription drugs

Age-adjusted rate; Both genders; All ages; 2009-2013

Public Health Region



Significantly lower than rest of state

No difference than rest of state

Significantly higher than rest of state

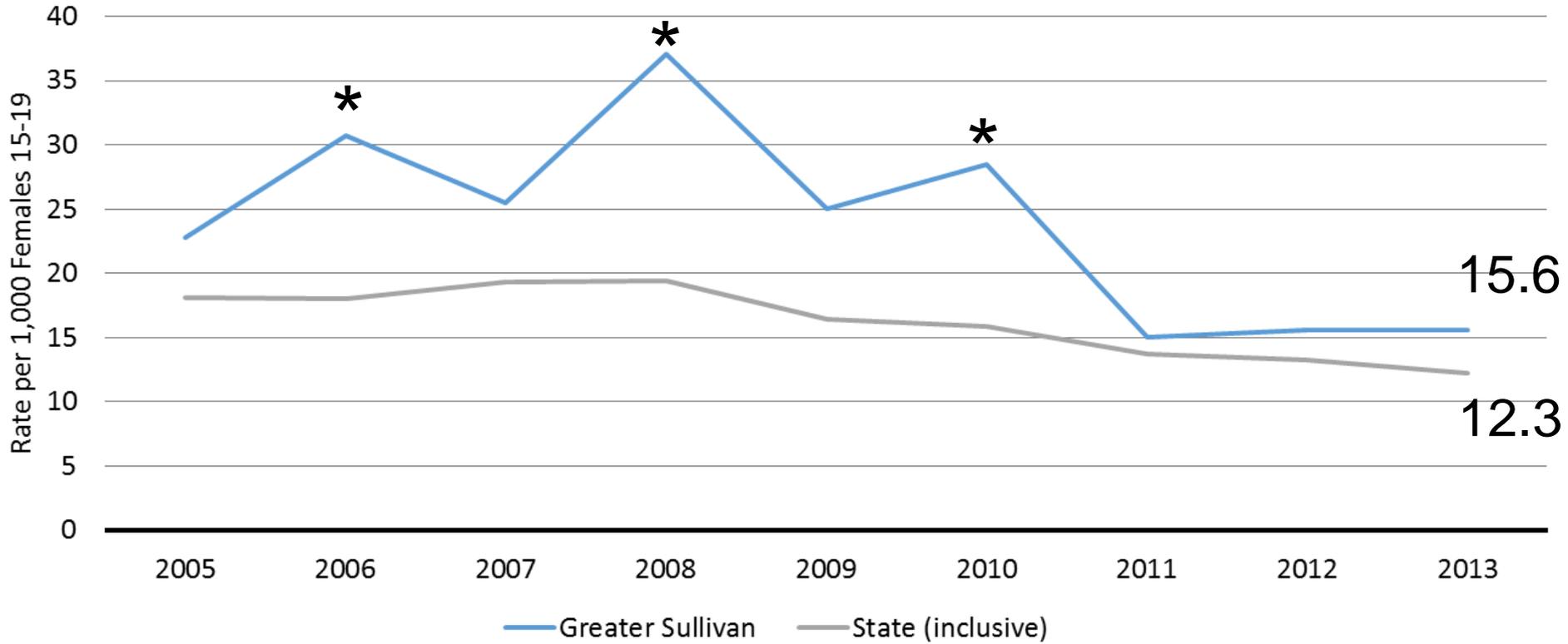
1-4 events

Summary: Greater Sullivan Compared to State

- All drug overdose deaths not significantly different compared to rest of state
- Opioid overdose deaths not significantly different compared to rest of state
- Prescription drug overdose deaths not significantly different compared to rest of state
- Opioid related ED visits trend higher compared to the rest of the state, but not significantly different over the last 5 years of data

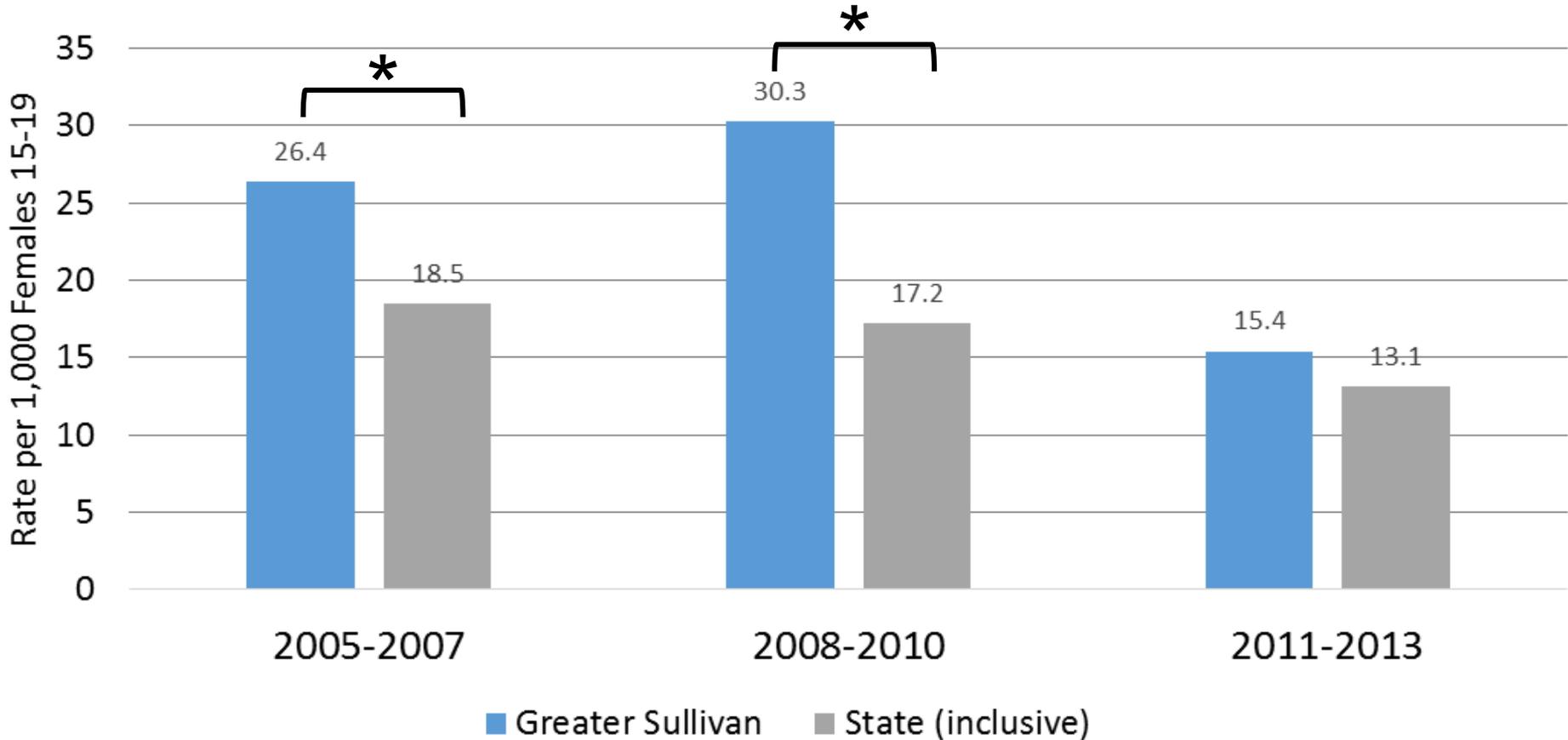
Maternal & Child Health

Teen (Age 15-19) Birth Rate NH Resident Births



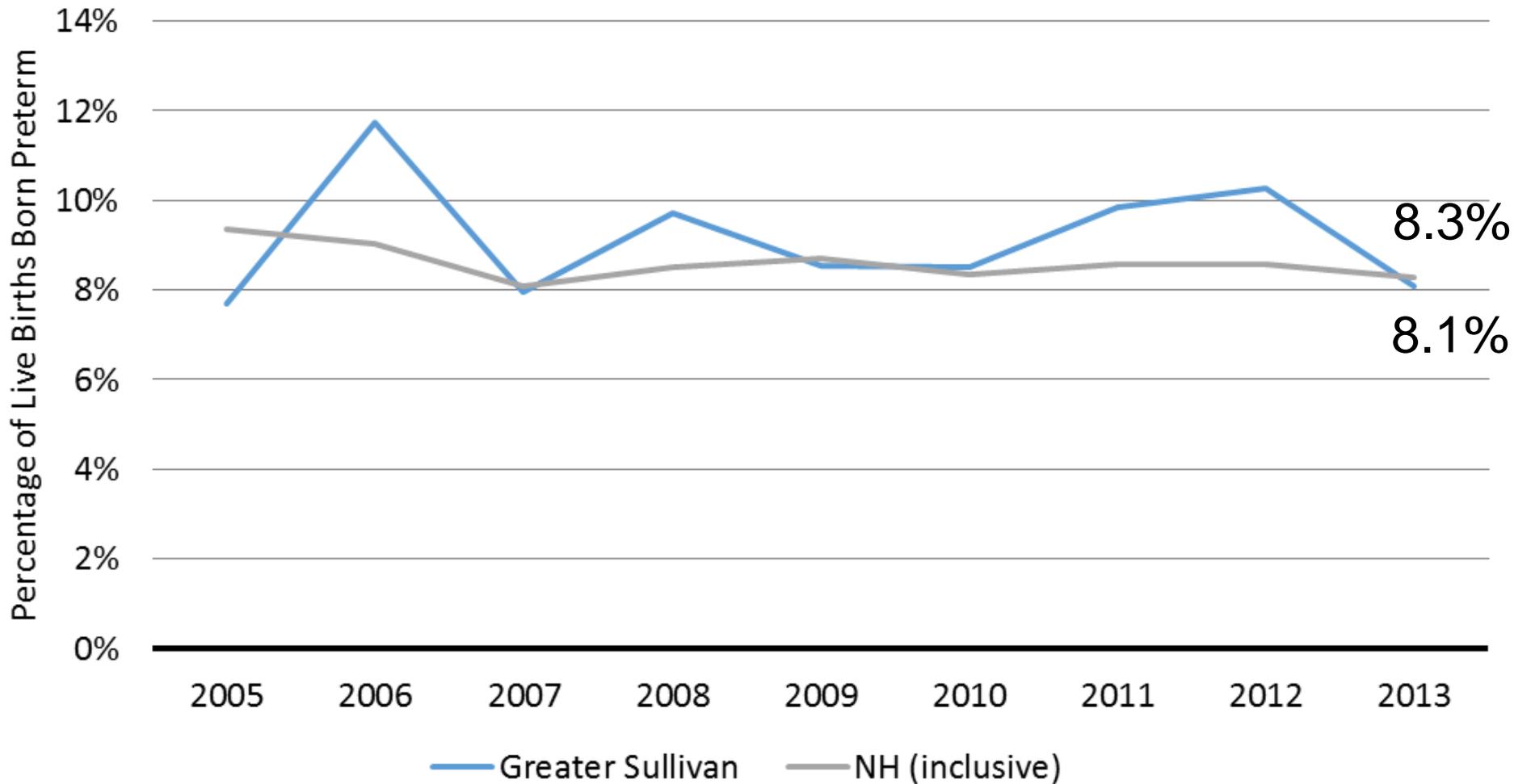
* Indicates statistically significant difference between State and Greater Sullivan rates

Teen (Age 15-19) Birth Rate NH Resident Births



* Indicates statistically significant difference between State and Greater Sullivan rates

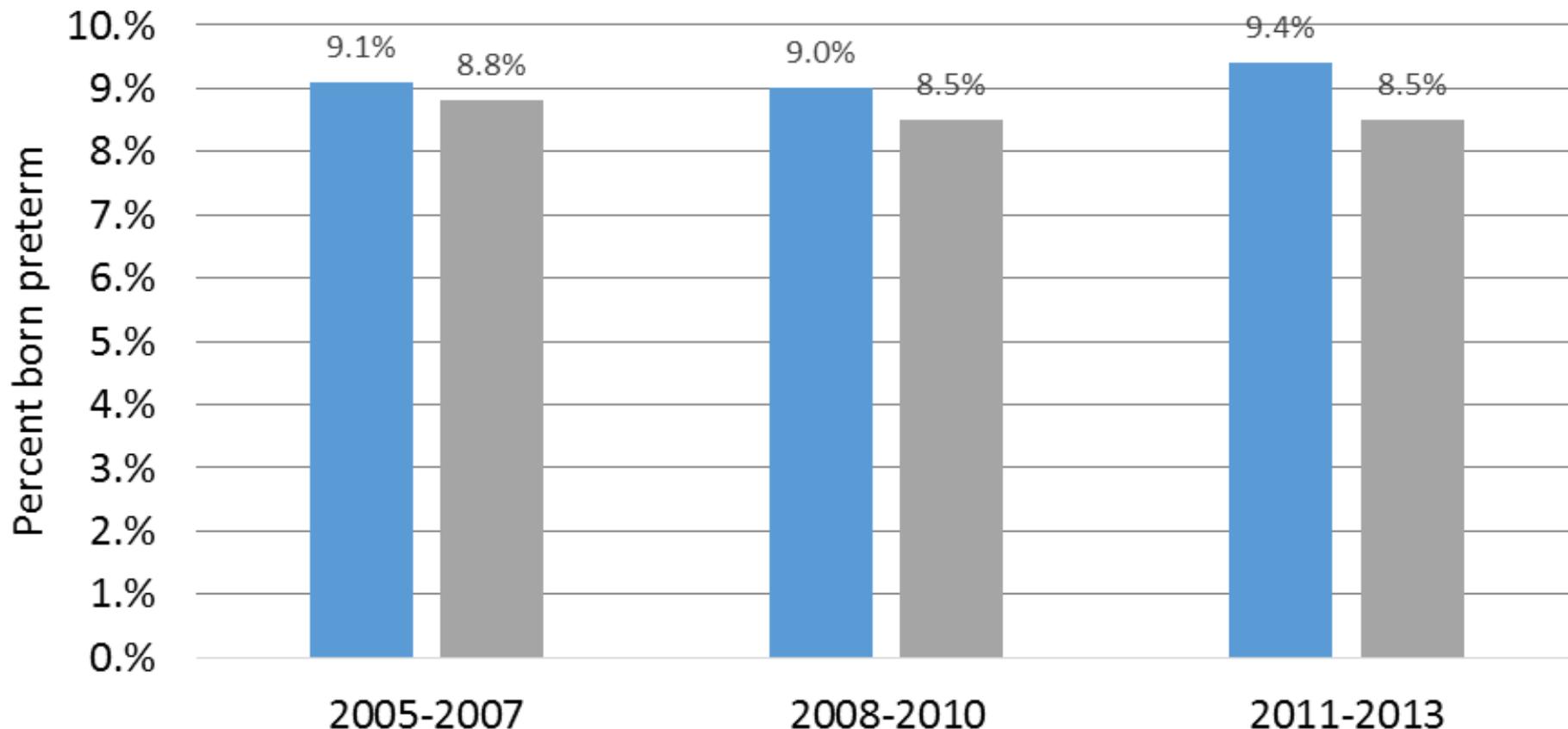
Preterm Birth (<37 Weeks) NH Resident Births



No CI's, unable to determine statistical significance from this data due to data limitations.

Preterm Birth (<37 weeks) All Resident Births

■ Greater Sullivan ■ NH (inclusive)



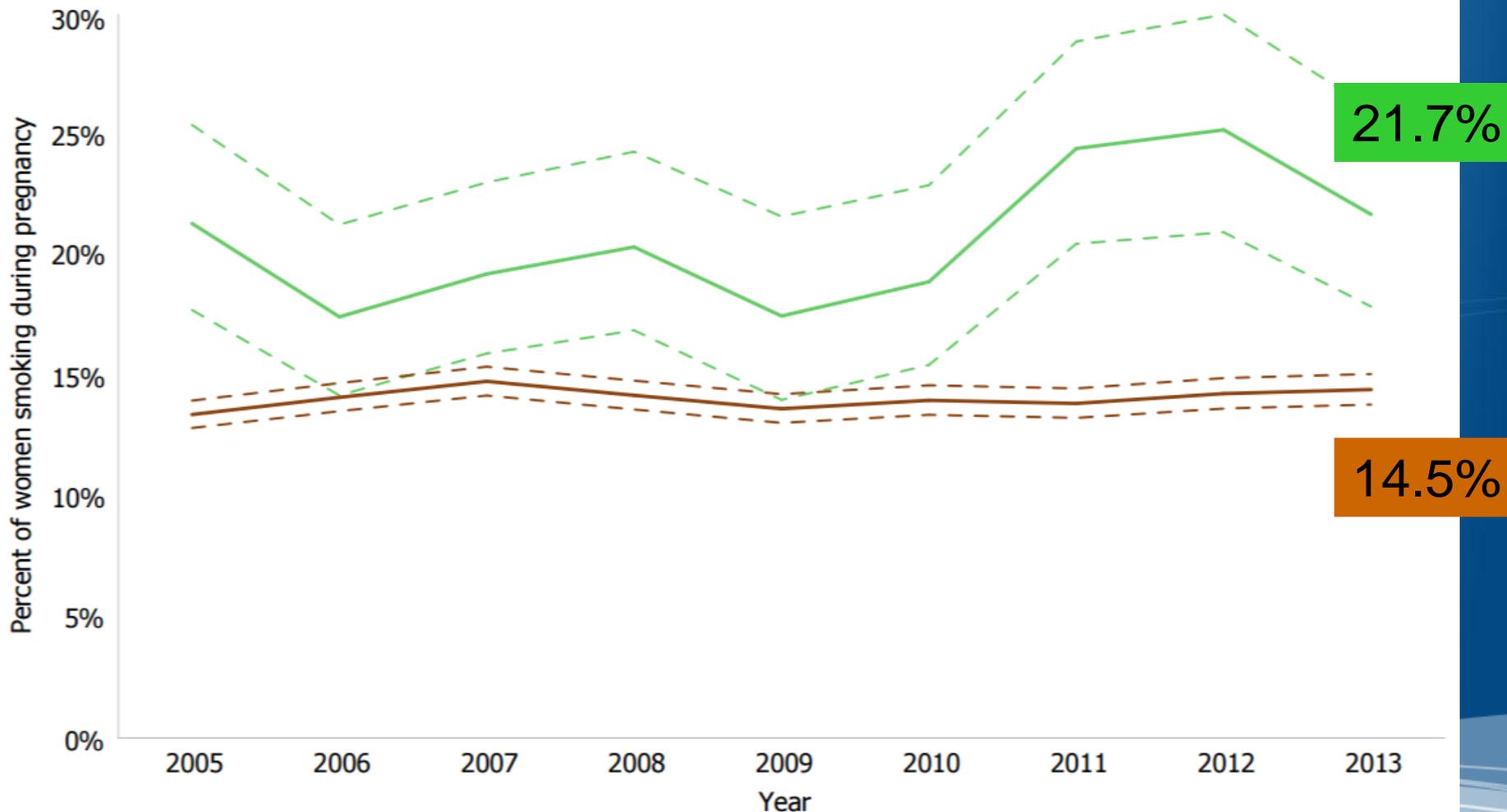
No CI's, unable to determine statistical significance from this data due to data limitations.

Smoking during pregnancy

Percent; 2005-2013; mother in all ages; all live births

State; New Hampshire

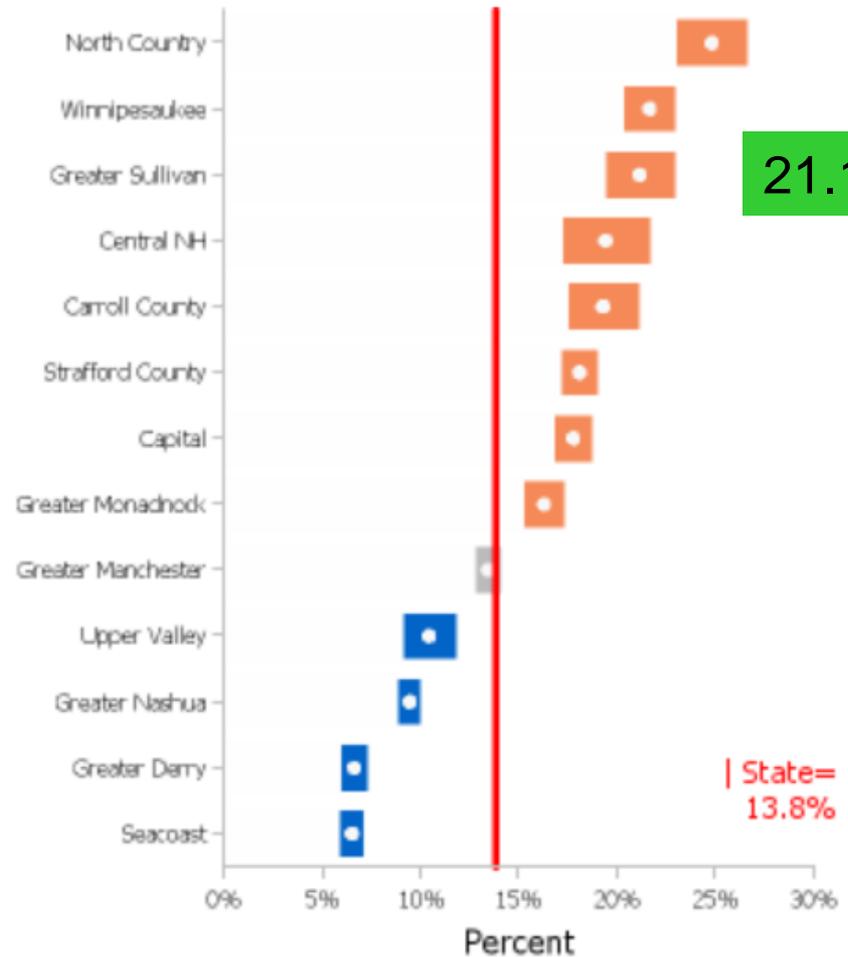
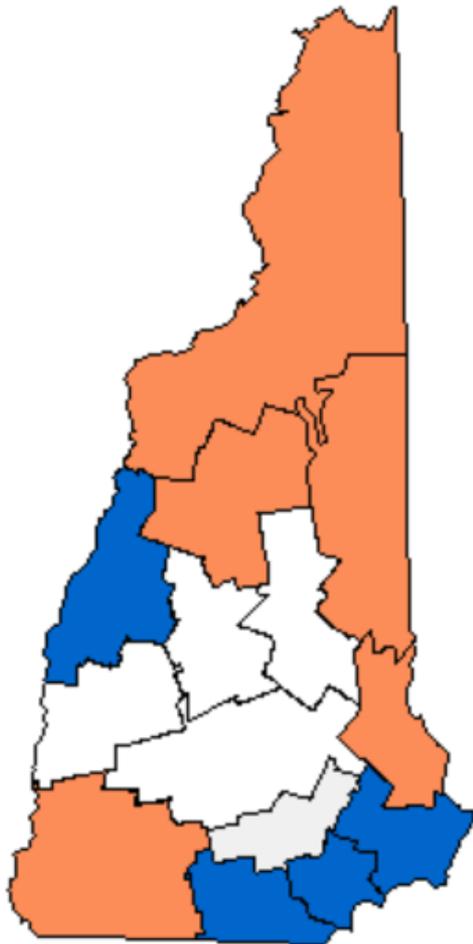
Public Health Region (comp); Greater Sullivan



Smoking during pregnancy

Percent; 2009-2013; mother in all ages; all live births

Public Health Region

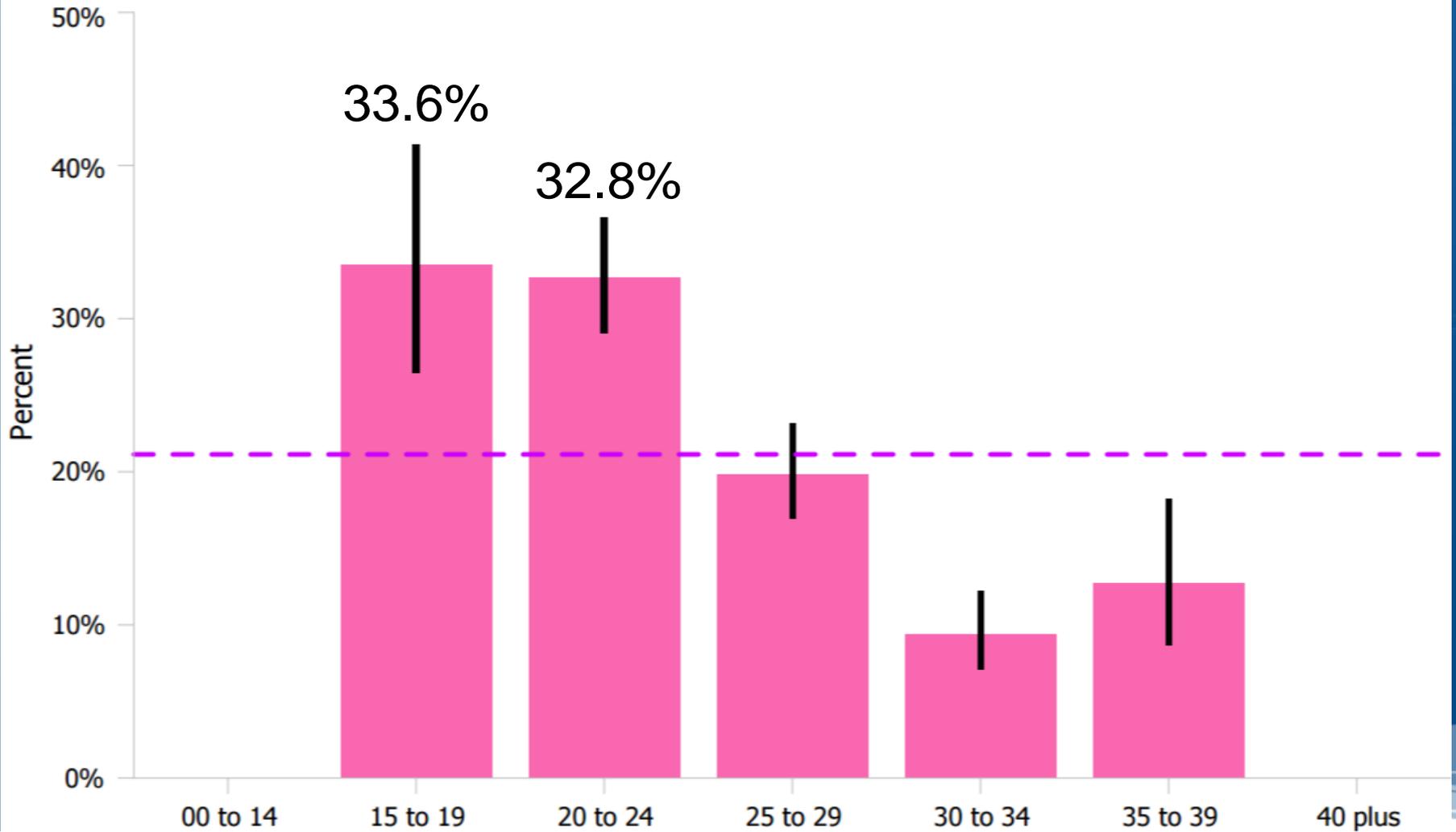


Significantly lower than rest of state No difference than rest of state Significantly higher than rest of state 1-4 events

Smoking during pregnancy

Percent; 2009-2013; All live births
Public Health Region; Greater Sullivan

----- All ages percentage | 95%CI



Summary: Greater Sullivan Compared to State

- Teen birth rate (Age 15-19) is decreasing, now similar to state rate
- ~8% of births are preterm, stable
- Significantly higher rates of smoking during pregnancy
- More than 20% of mothers smoke during pregnancy
- ~ 1/3 of mothers aged 15-25 smoke during pregnancy

Injury Prevention

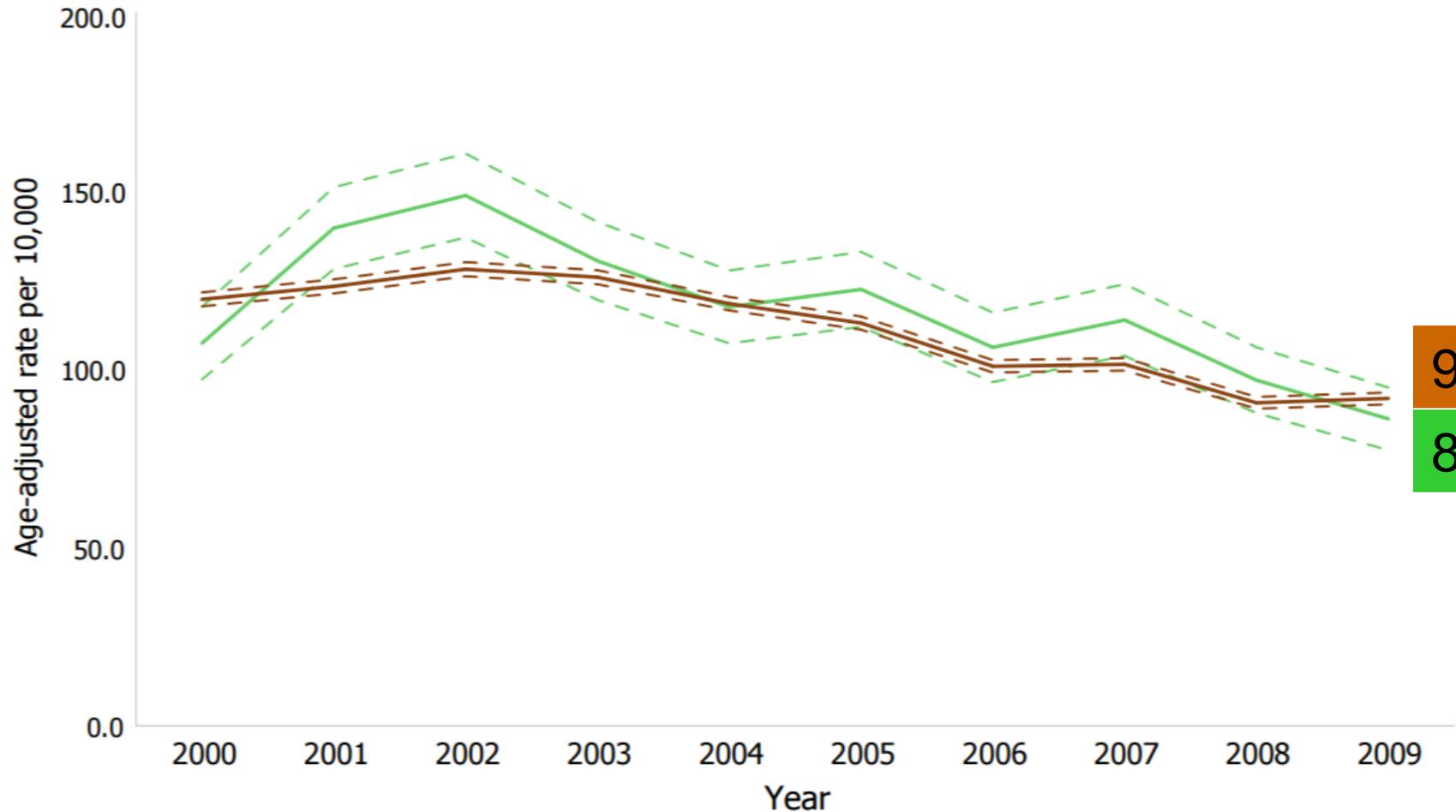
Motor vehicle crash hospital visits (emergency dept.)

Age-adjusted rate; Both genders; All ages; 2000-2009;

State; New Hampshire

Public Health Region; Greater Sullivan

..... 95%CI



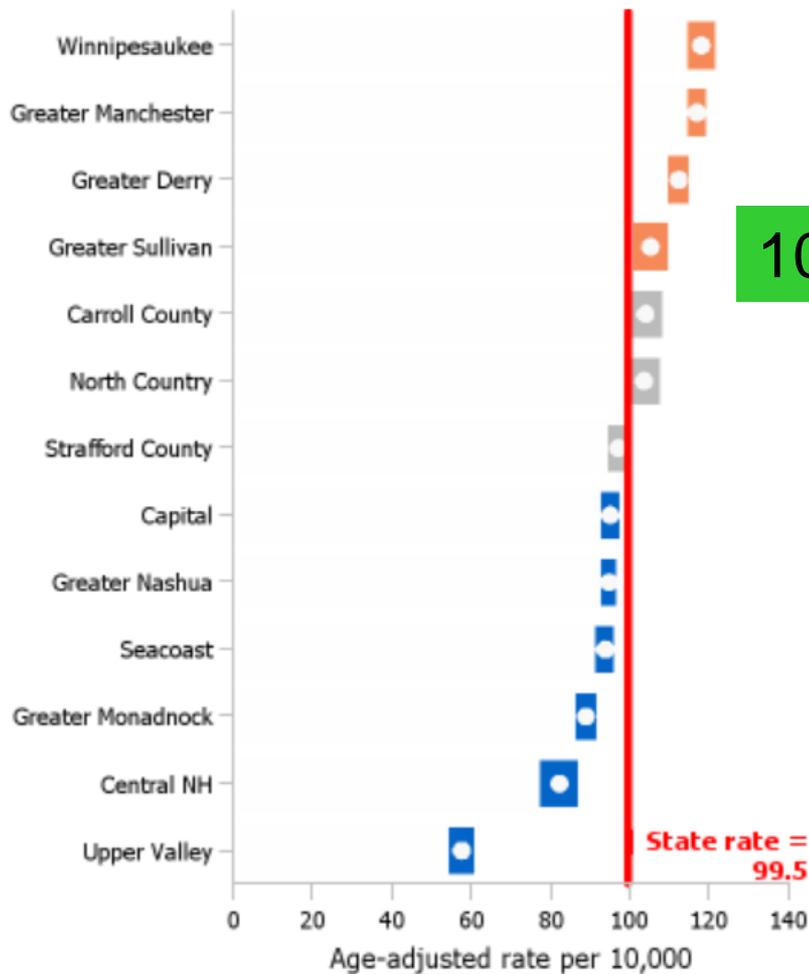
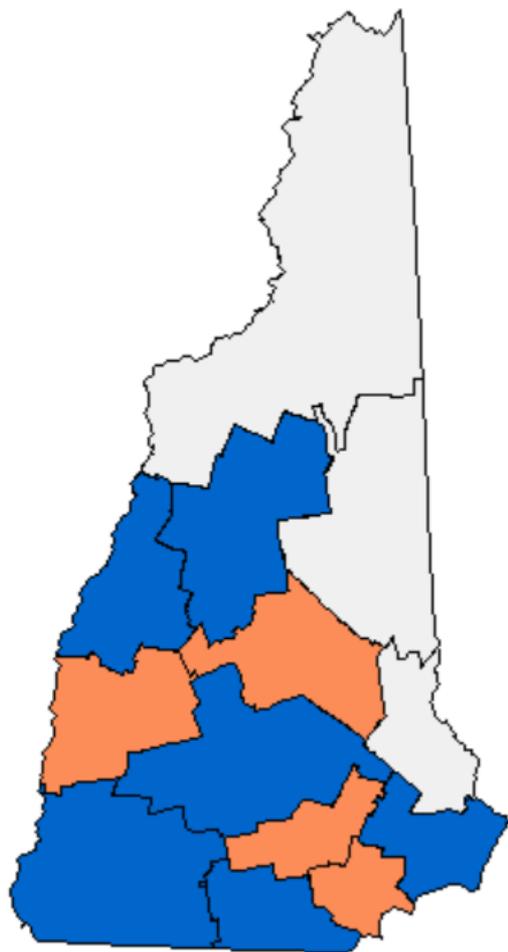
91.8

86.1

Motor vehicle crash hospital visits (emergency dept.)

Age-adjusted rate; Both genders; All ages; 2005-2009

Public Health Region



Significantly lower than rest of state
No difference than rest of state
Significantly higher than rest of state
1-4 events

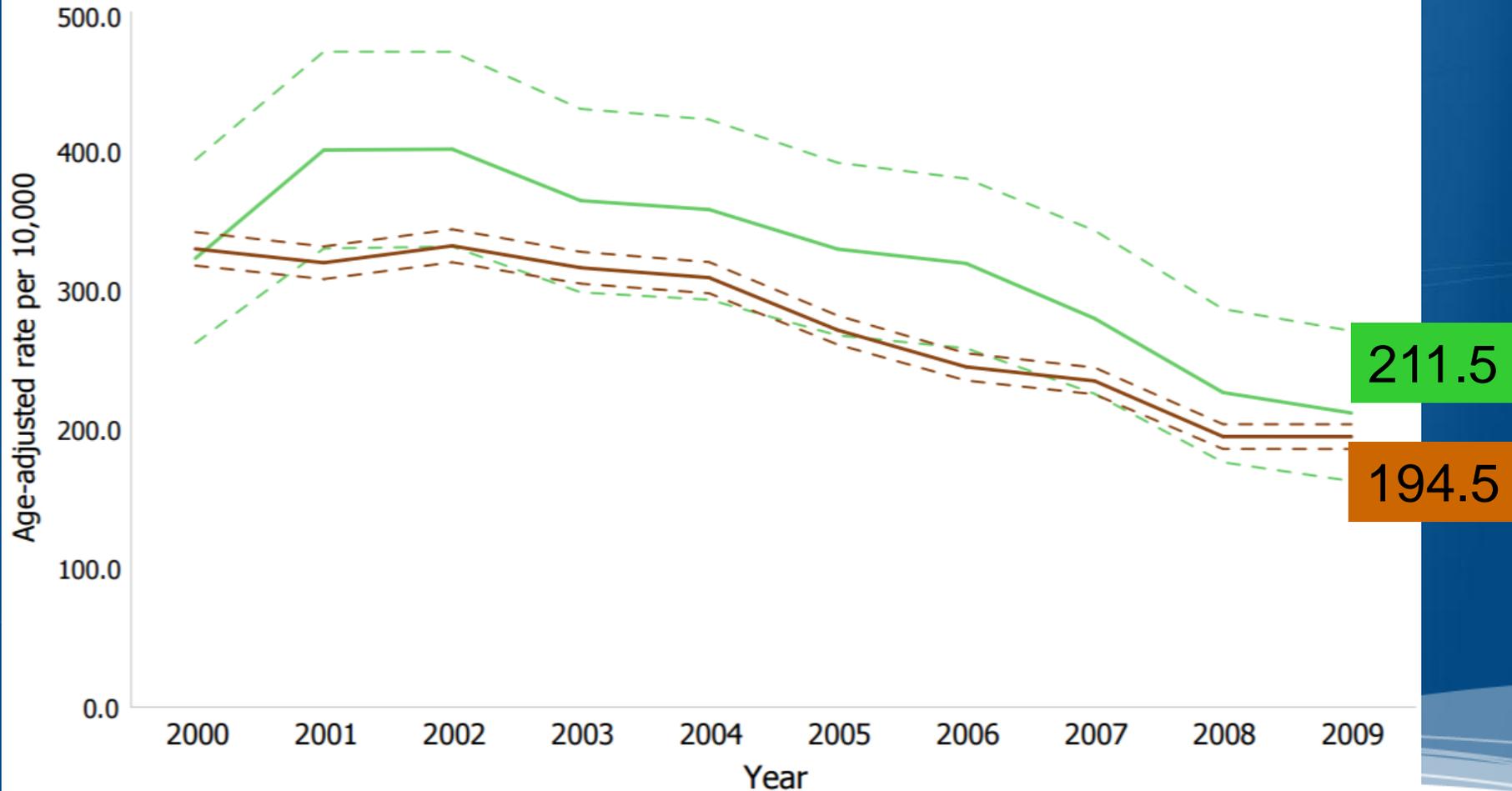
Motor vehicle crash hospital visits (emergency dept.)

Age-adjusted rate; Both genders; 15 to 19; 2000-2009;

State; New Hampshire

Public Health Region; Greater Sullivan

..... 95%CI



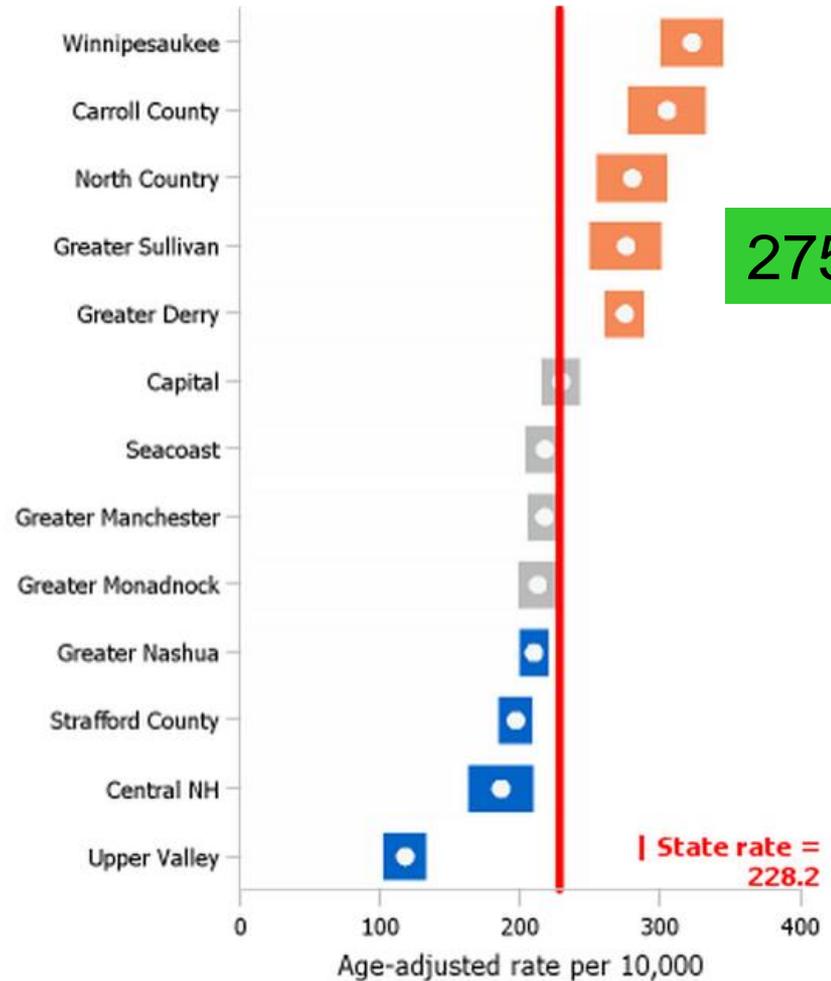
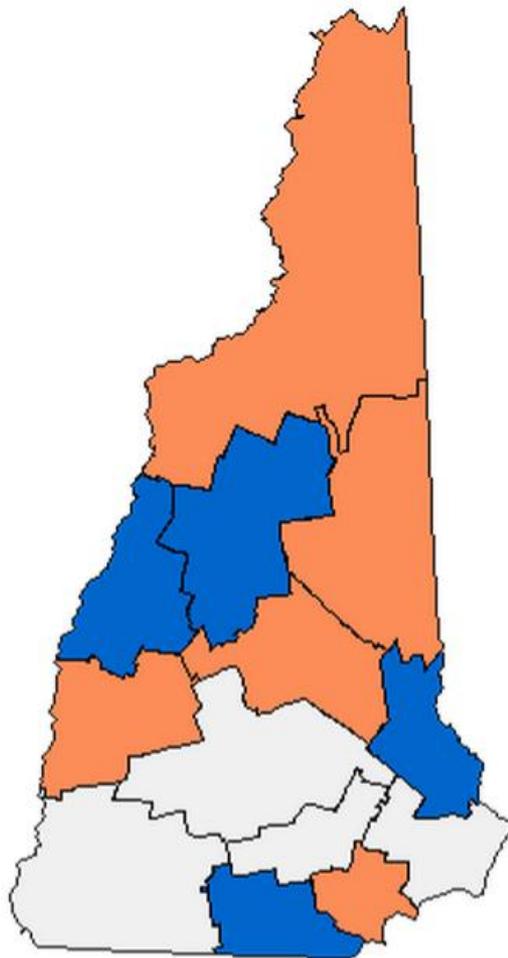
211.5

194.5

Motor vehicle crash hospital visits (emergency dept.)

Age-adjusted rate; Both genders; 15 to 19; 2005-2009

Public Health Region



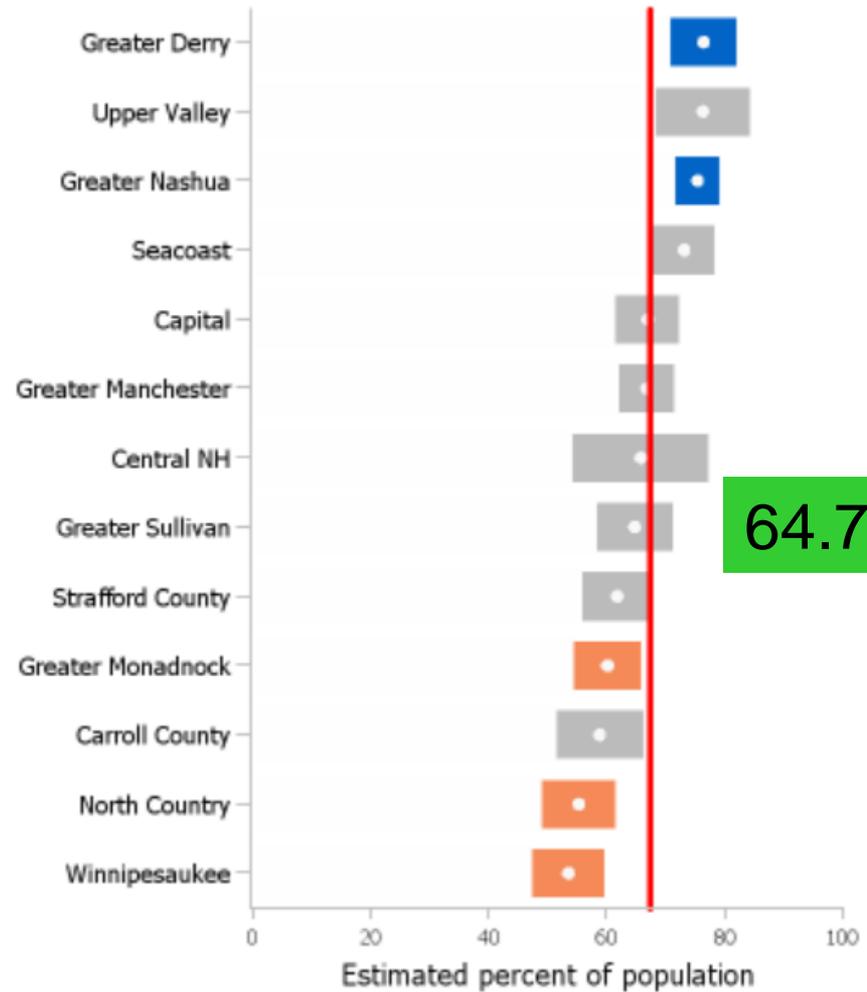
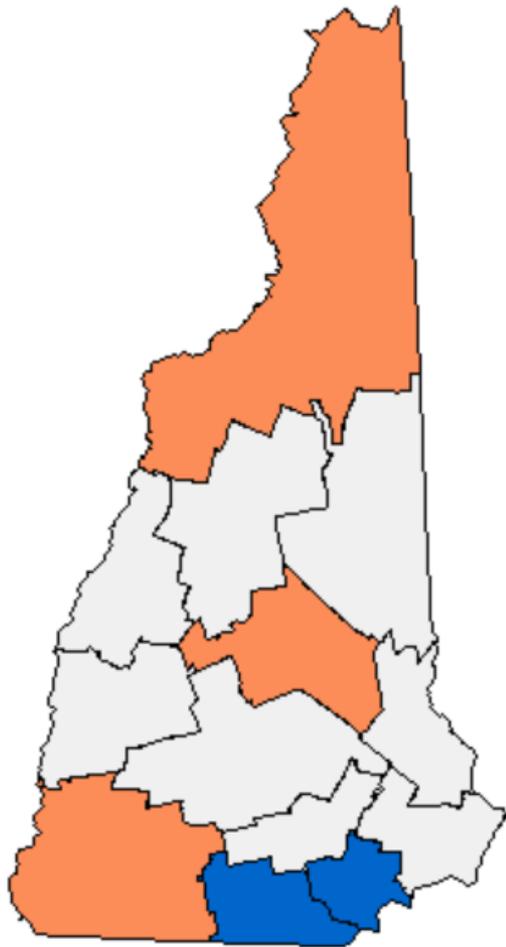
Significantly lower than rest of state
No difference than rest of state
Significantly higher than rest of state
1-4 events

275.1

Seatbelt use among adults

Percent of adults who always wear seatbelts; Both genders

Public Health Region; 2012



64.7%

| State= 67.34

Significantly lower than state

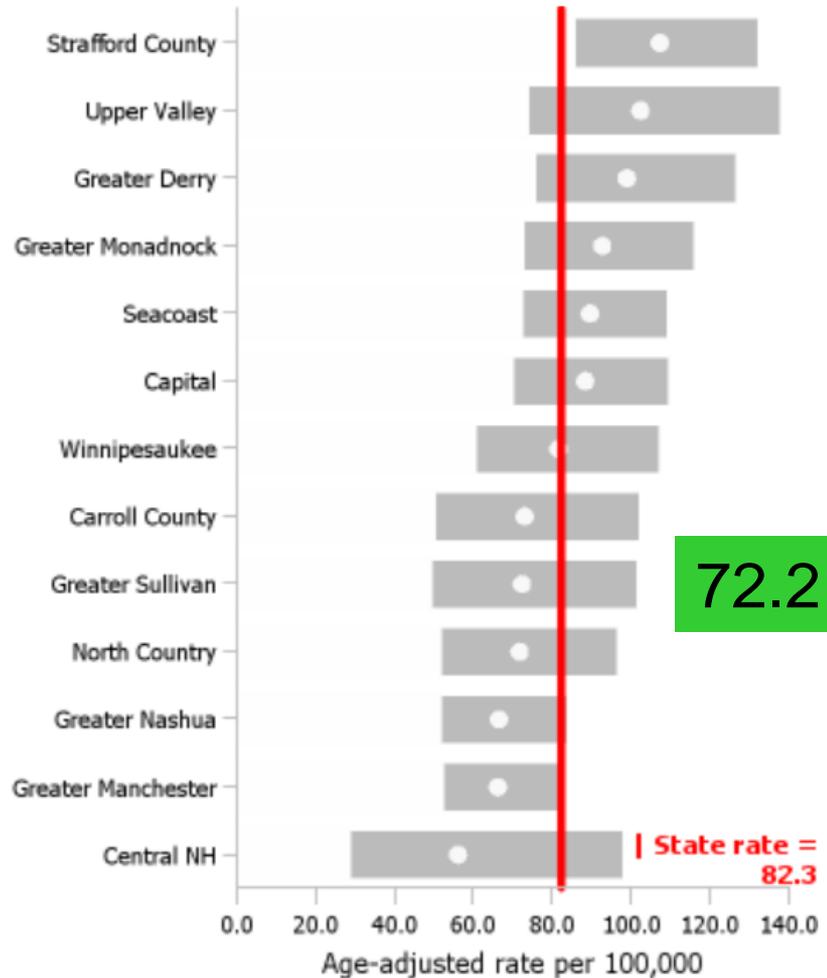
No difference than state

Significantly higher than state

Fall related deaths (age 65 and over)

Age-adjusted rate; Both genders; 65 and over; 2009-2013

Public Health Region



Significantly lower than rest of state

No difference than rest of state

Significantly higher than rest of state

1-4 events

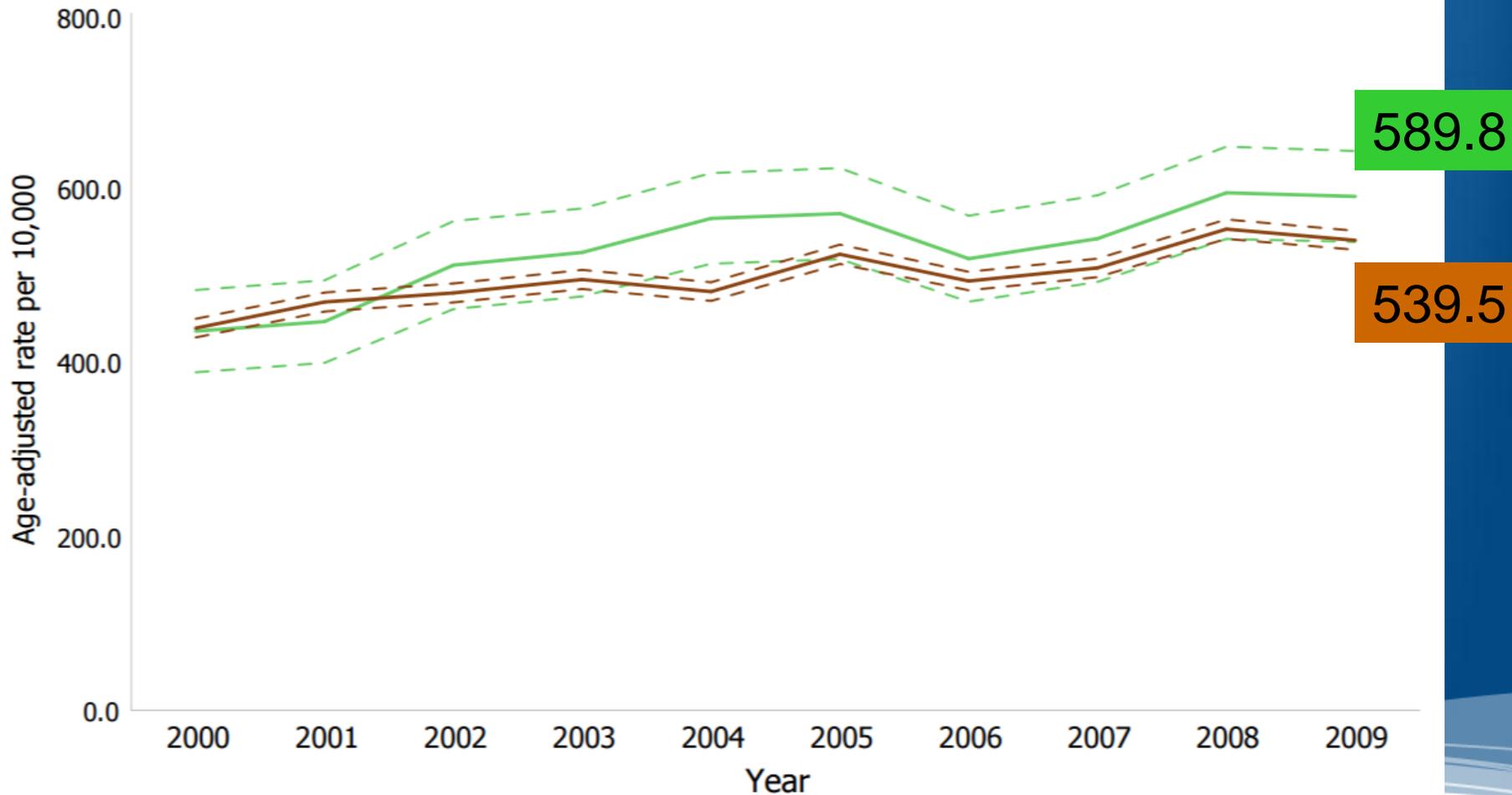
Fall related hospital visits (age 65 and over -emergency dept.)

Age-adjusted rate; Both genders; 65 and over; 2000-2009;

State; New Hampshire

Public Health Region; Greater Sullivan

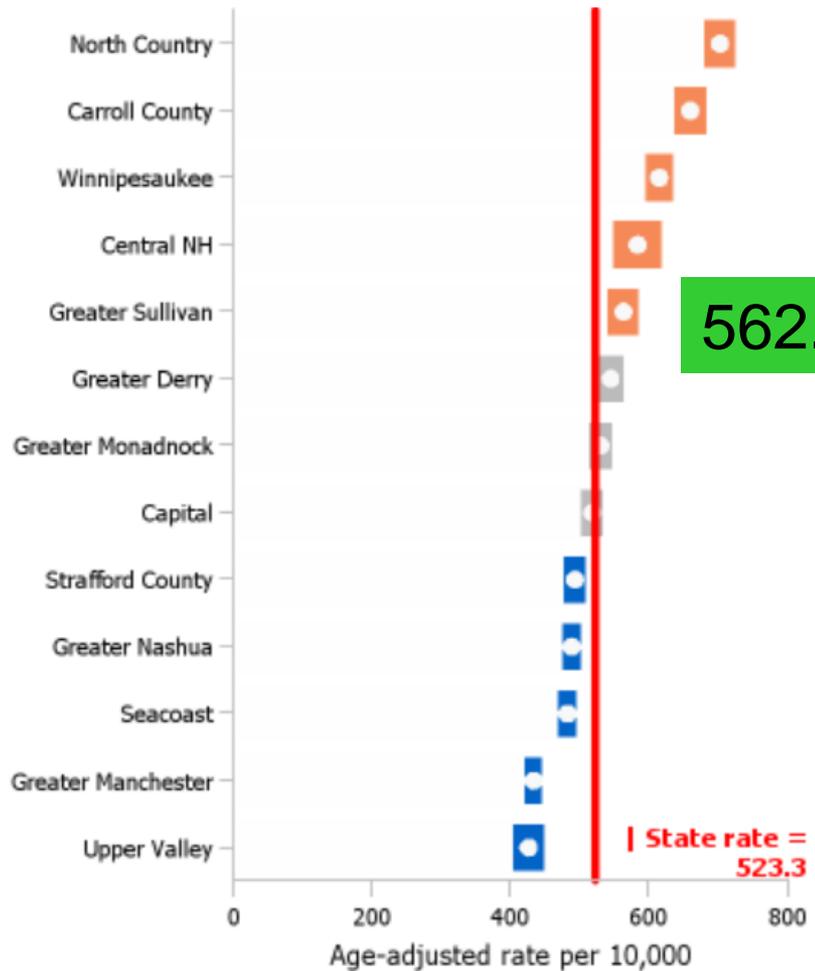
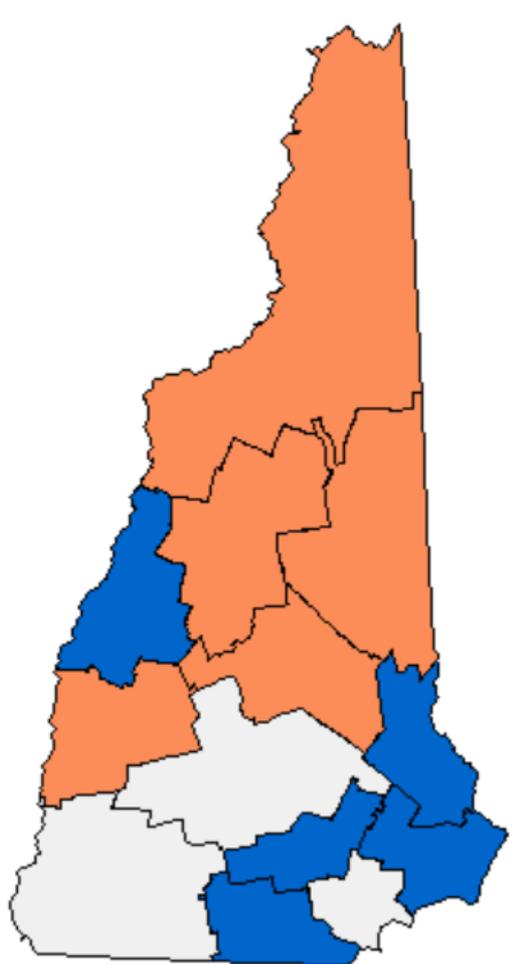
..... 95%CI



Fall related hospital visits (age 65 and over -emergency dept.)

Age-adjusted rate; Both genders; 65 and over; 2005-2009

Public Health Region



Significantly lower than rest of state	No difference than rest of state	Significantly higher than rest of state	1-4 events
--	----------------------------------	---	------------

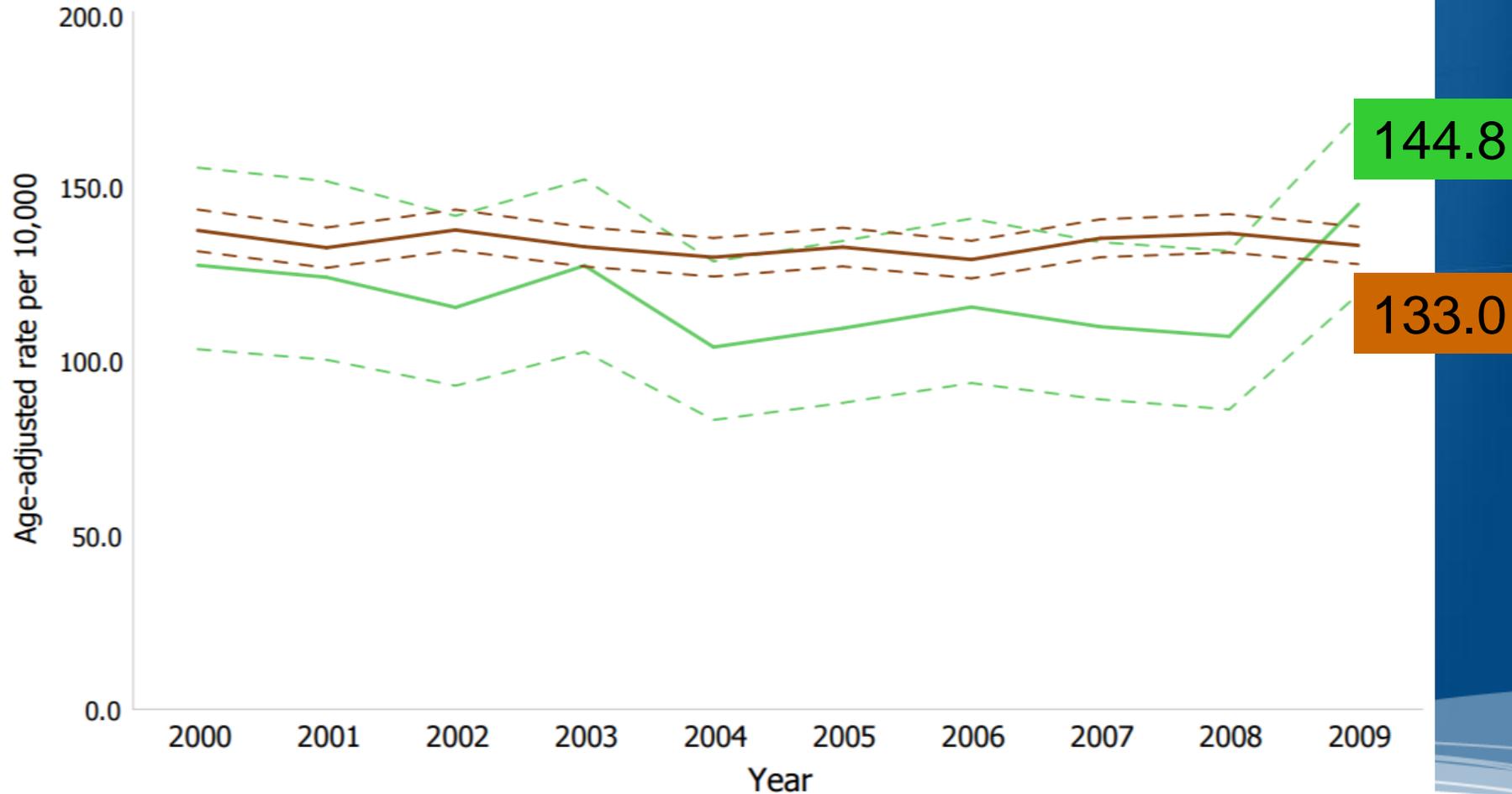
Fall related hospitalizations (age 65 and over -inpatient)

Age-adjusted rate; Both genders; 65 and over; 2000-2009;

State; New Hampshire

Public Health Region; Greater Sullivan

..... 95%CI



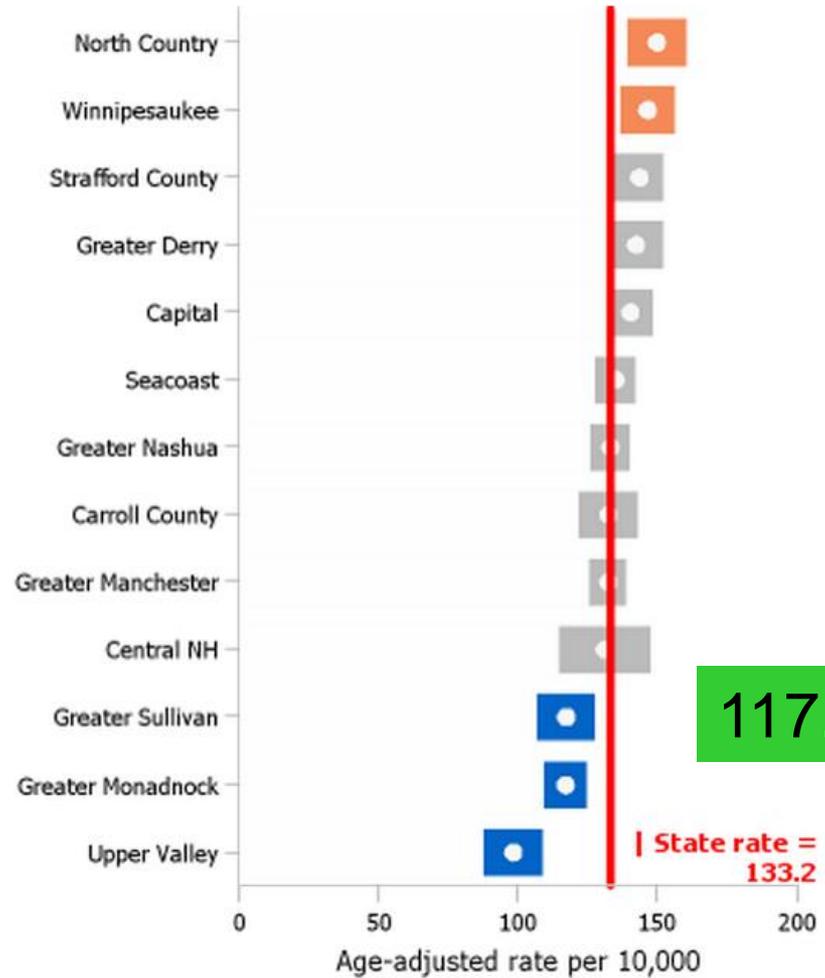
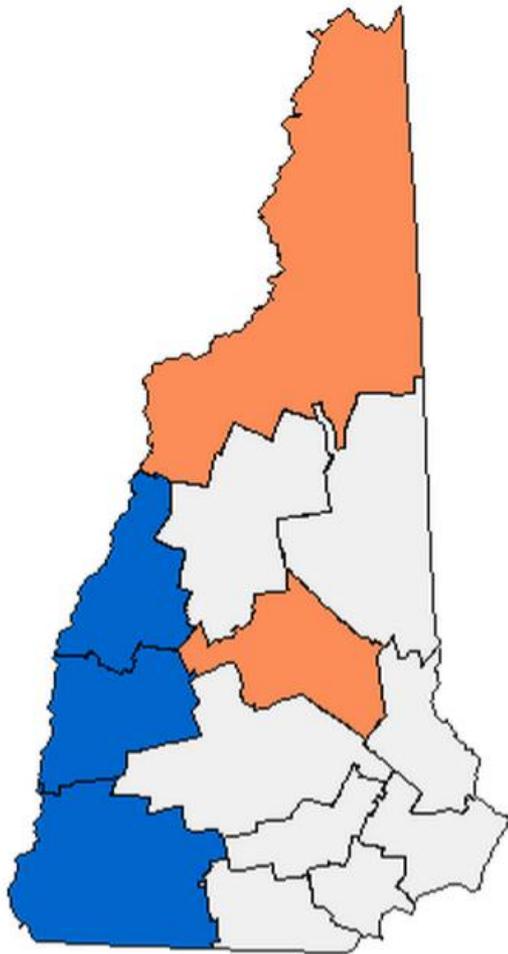
144.8

133.0

Fall related hospitalizations (age 65 and over -inpatient)

Age-adjusted rate; Both genders; 65 and over; 2005-2009

Public Health Region



117.0

State rate = 133.2

Significantly lower than rest of state

No difference than rest of state

Significantly higher than rest of state

1-4 events

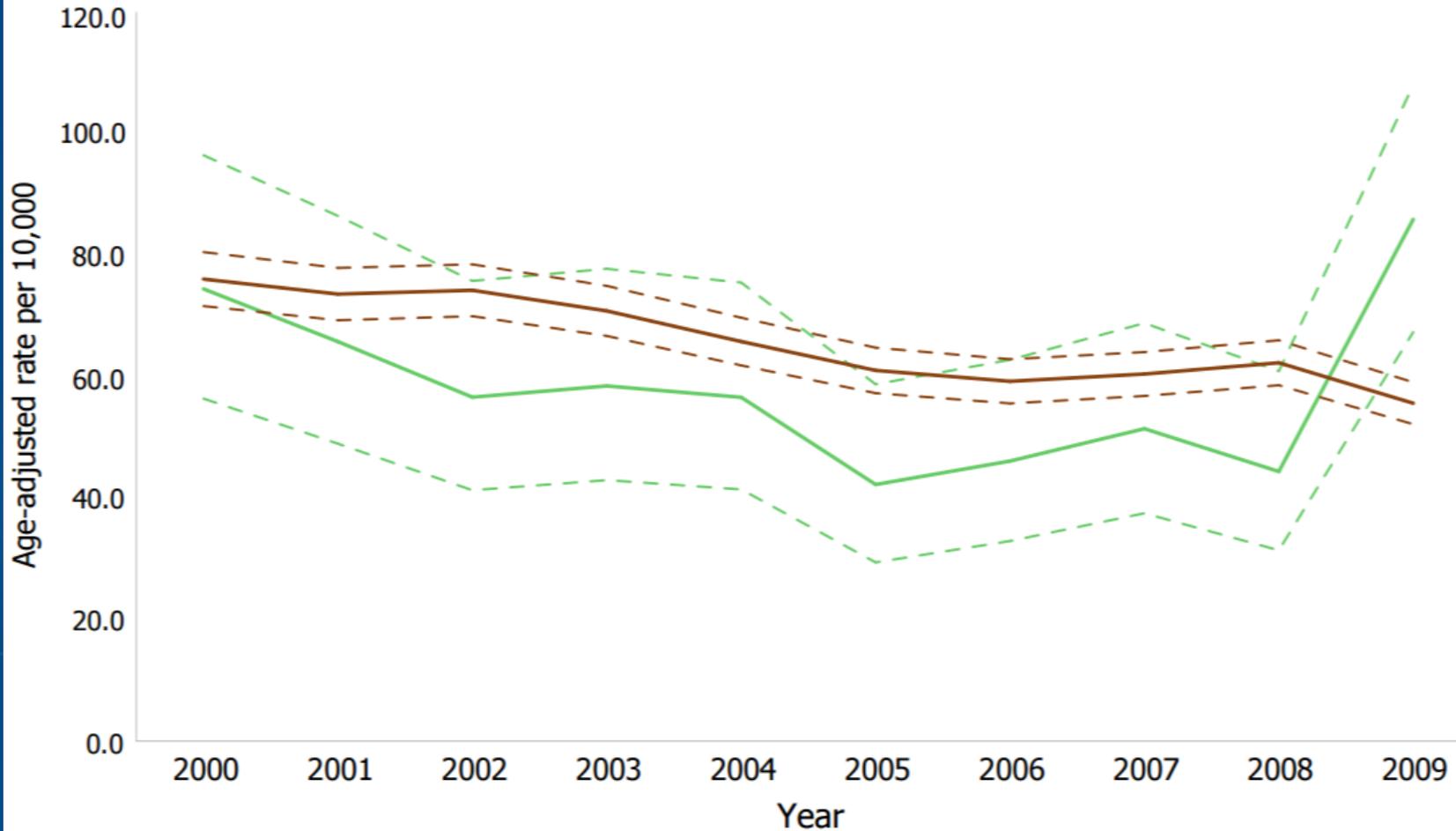
Falls: Hip fracture hospitalizations due to a fall (inpatient)

Age-adjusted rate; Both genders; 65 and over; 2000-2009;

State; New Hampshire

Public Health Region; Greater Sullivan

..... 95%CI



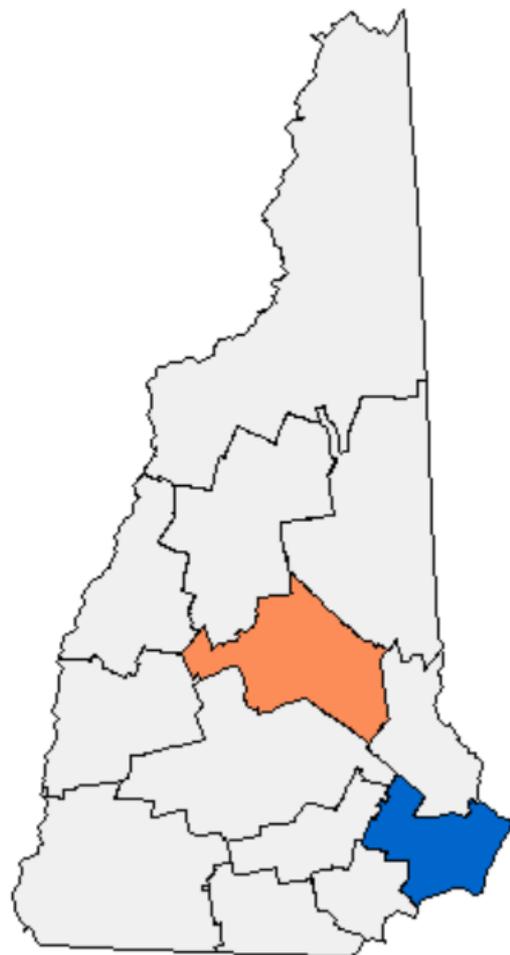
85.9

55.6

Falls: Hip fracture hospitalizations due to a fall (inpatient)

Age-adjusted rate; Both genders; 65 and over; 2005-2009

Public Health Region



Significantly lower than rest of state

No difference than rest of state

Significantly higher than rest of state

1-4 events

54.0

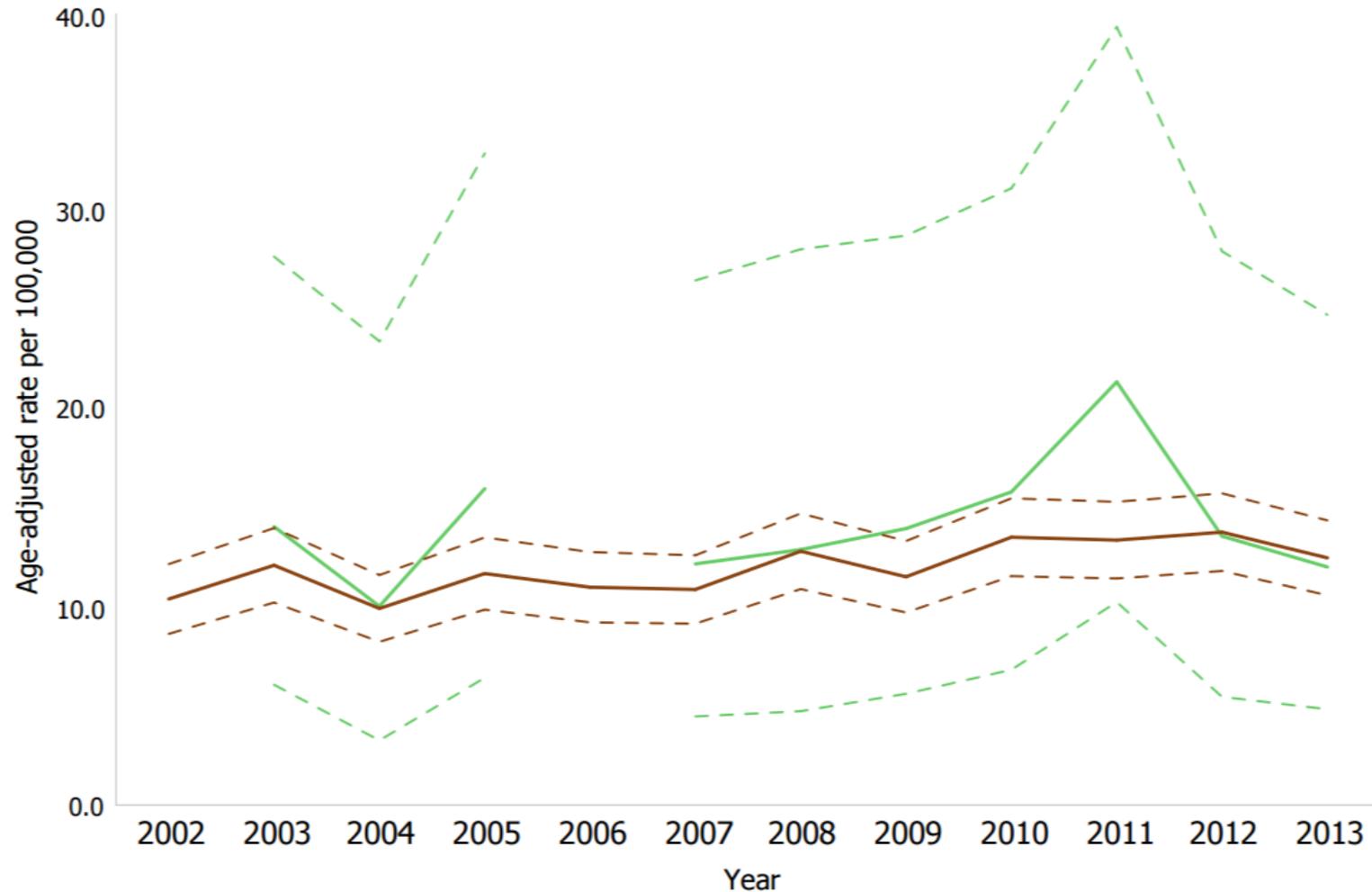
Suicide mortality

Age-adjusted rate; Both genders; All ages; 2002-2013

State; New Hampshire

Public Health Region; Greater Sullivan

..... 95%CI



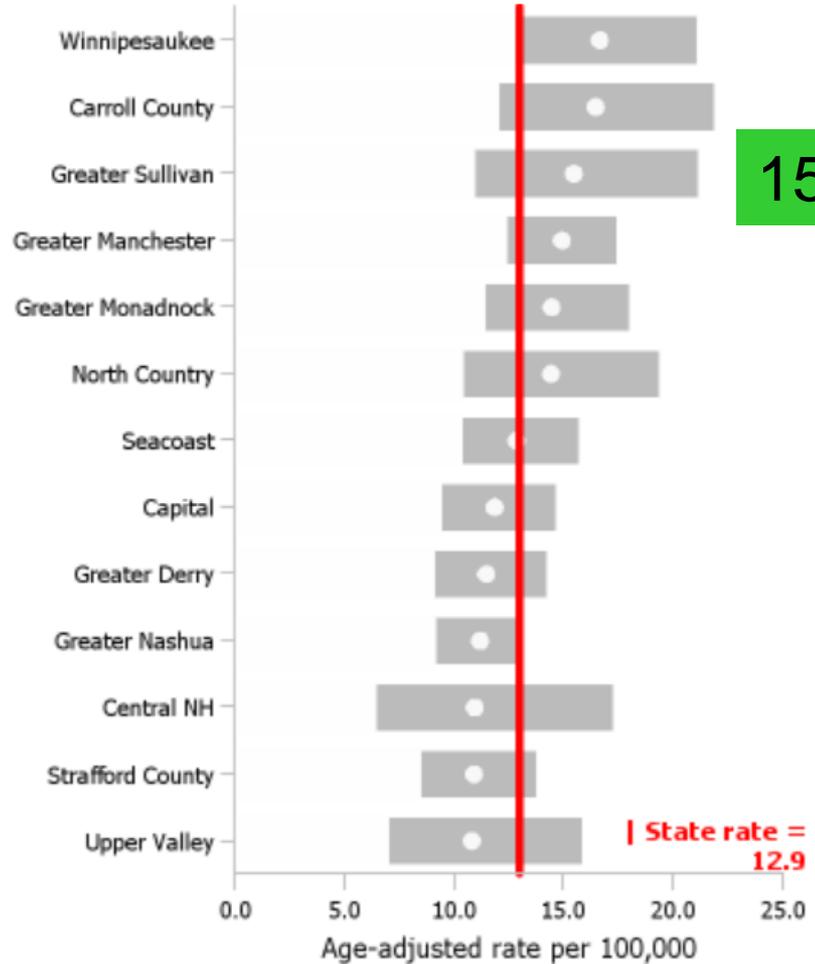
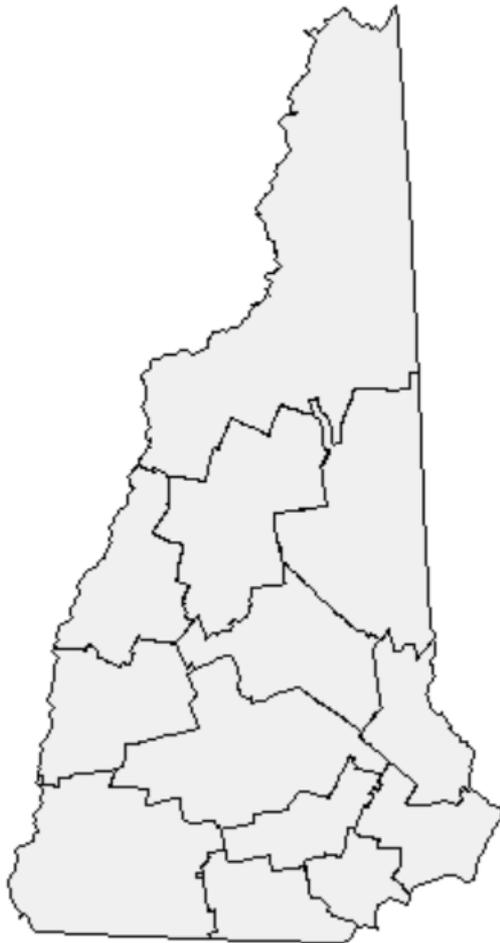
12.5

12.0

Suicide mortality

Age-adjusted rate; Both genders; All ages; 2009-2013

Public Health Region



15.4

Significantly lower than rest of state

No difference than rest of state

Significantly higher than rest of state

1-4 events

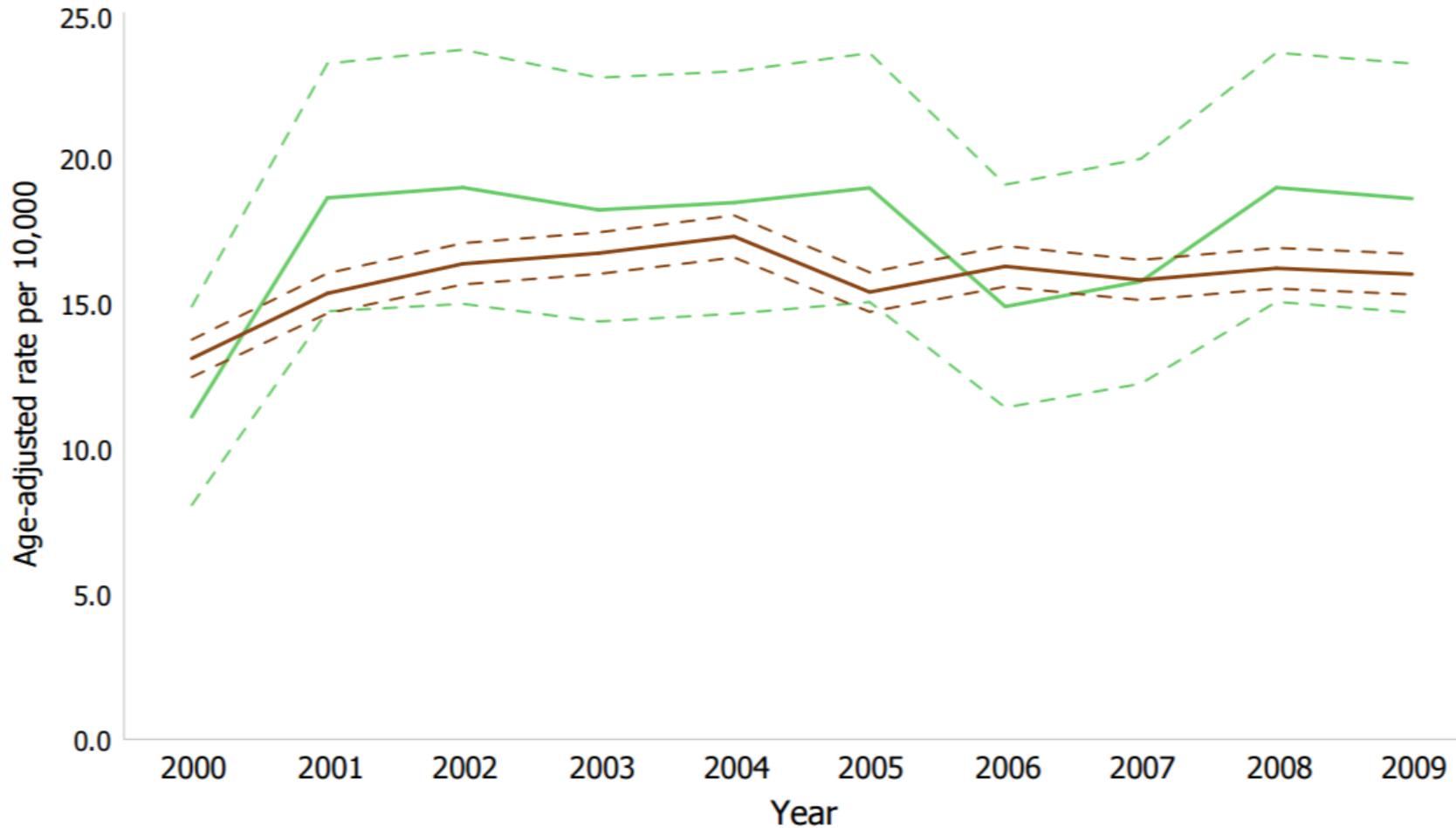
Suicide or self harm related hospital visits (emergency dept.)

Age-adjusted rate; Both genders; All ages; 2000-2009;

State; New Hampshire

Public Health Region; Greater Sullivan

..... 95%CI



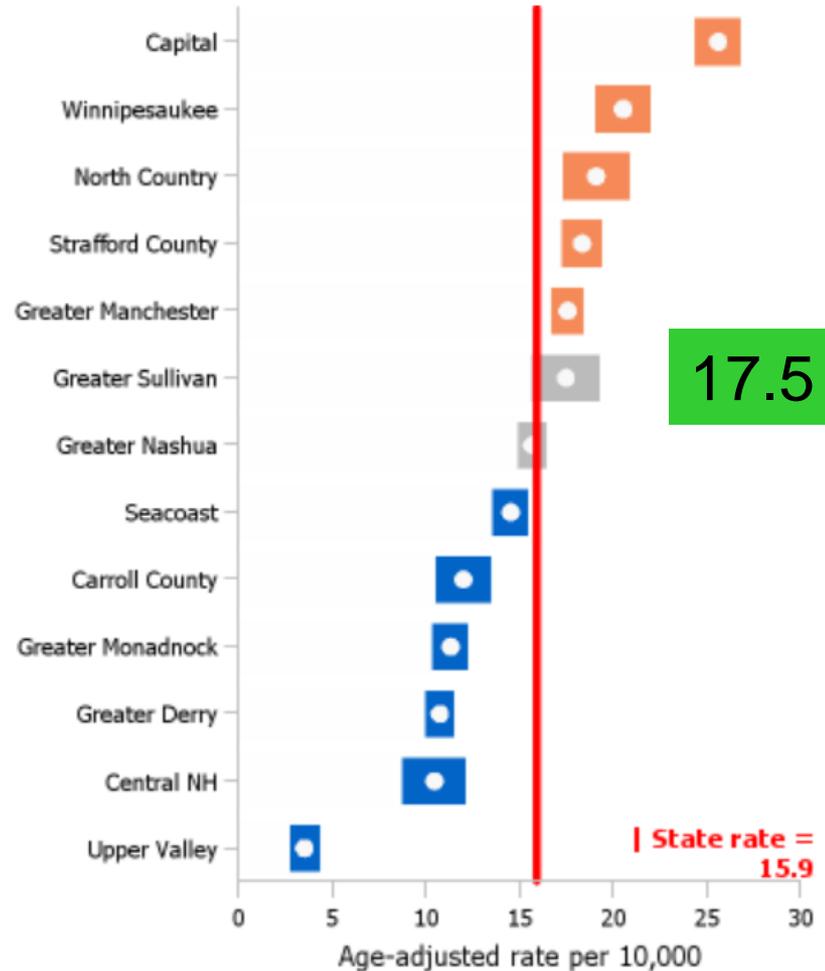
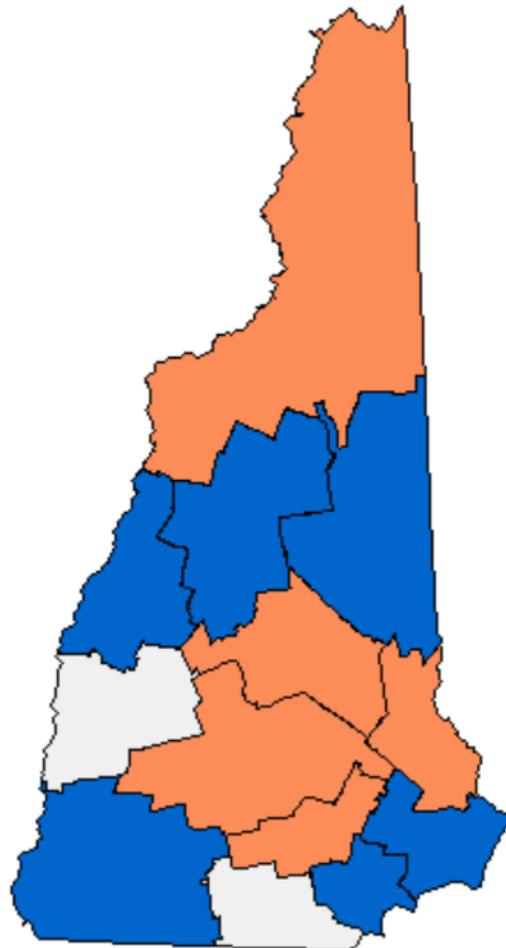
18.6

16.0

Suicide or self harm related hospital visits (emergency dept.)

Age-adjusted rate; Both genders; All ages; 2005-2009

Public Health Region



Significantly lower than rest of state
No difference than rest of state
Significantly higher than rest of state
1-4 events

Summary: Greater Sullivan Compared to State

- Decreasing rates of ER visits for motor vehicle crashes (all ages), but 5 years combined data show higher rates compared to rest of state
- Rates of ED visits for motor vehicle crashes in the 15-19 age group is decreasing, but still double the overall Greater Sullivan average & significantly higher compared to rest of state
- 65% of adults report seat belt use

Summary: Greater Sullivan Compared to State

- No difference in fall related deaths for the 65+ age group
- Higher rates of ED visits for falls in the 65+ age group
- Overall lower rates of hospitalization for falls in the 65+ age group, but 2009 showed a sharp increase in rates
- Overall lower rates of hip fracture hospitalizations due to falls in the 65+ age group, but 2009 showed a significant increase in rates

Summary: Greater Sullivan Compared to State

- No difference in suicide mortality rate
- Trend towards higher rates of ED visits for suicide or self-harm, borderline statistically different

Asthma

Asthma prevalence (adults)

Percent of adults who currently have asthma; Both genders



10.1%
9.0%

Greater Sullivan:
7.8%

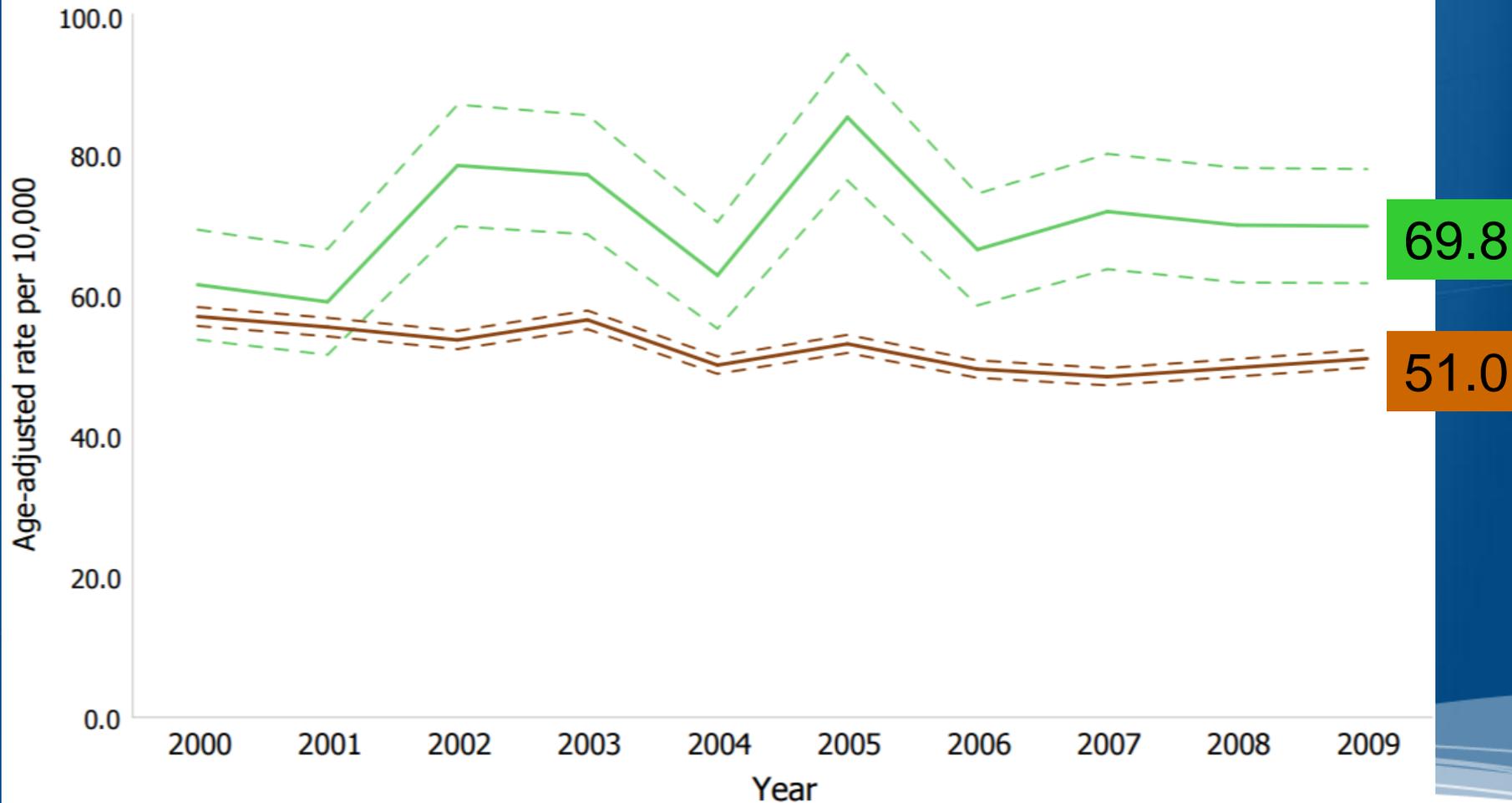
Asthma hospitalizations (emergency dept. and observation)

Age-adjusted rate; Both genders; All ages; 2000-2009;

State; New Hampshire

Public Health Region; Greater Sullivan

..... 95%CI



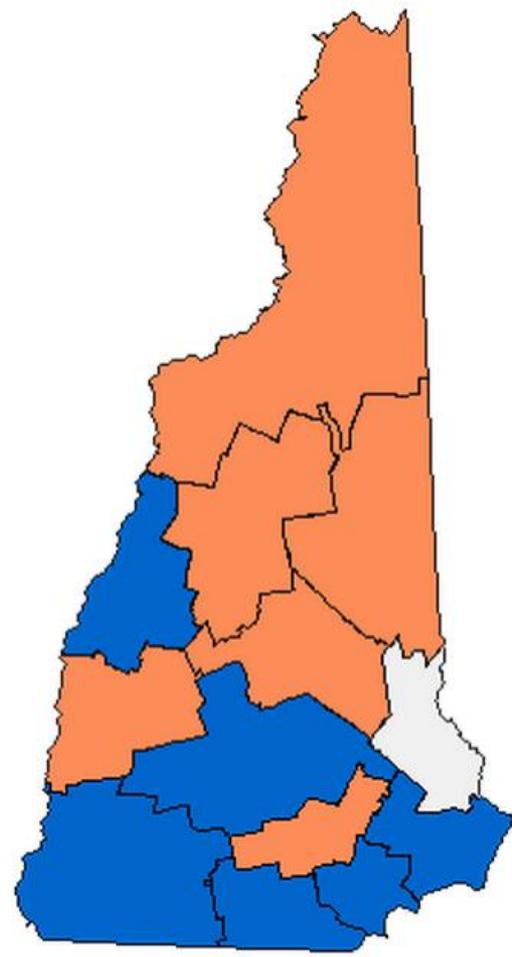
69.8

51.0

Asthma hospitalizations (emergency dept. and observation)

Age-adjusted rate; Both genders; All ages; 2005-2009

Public Health Region

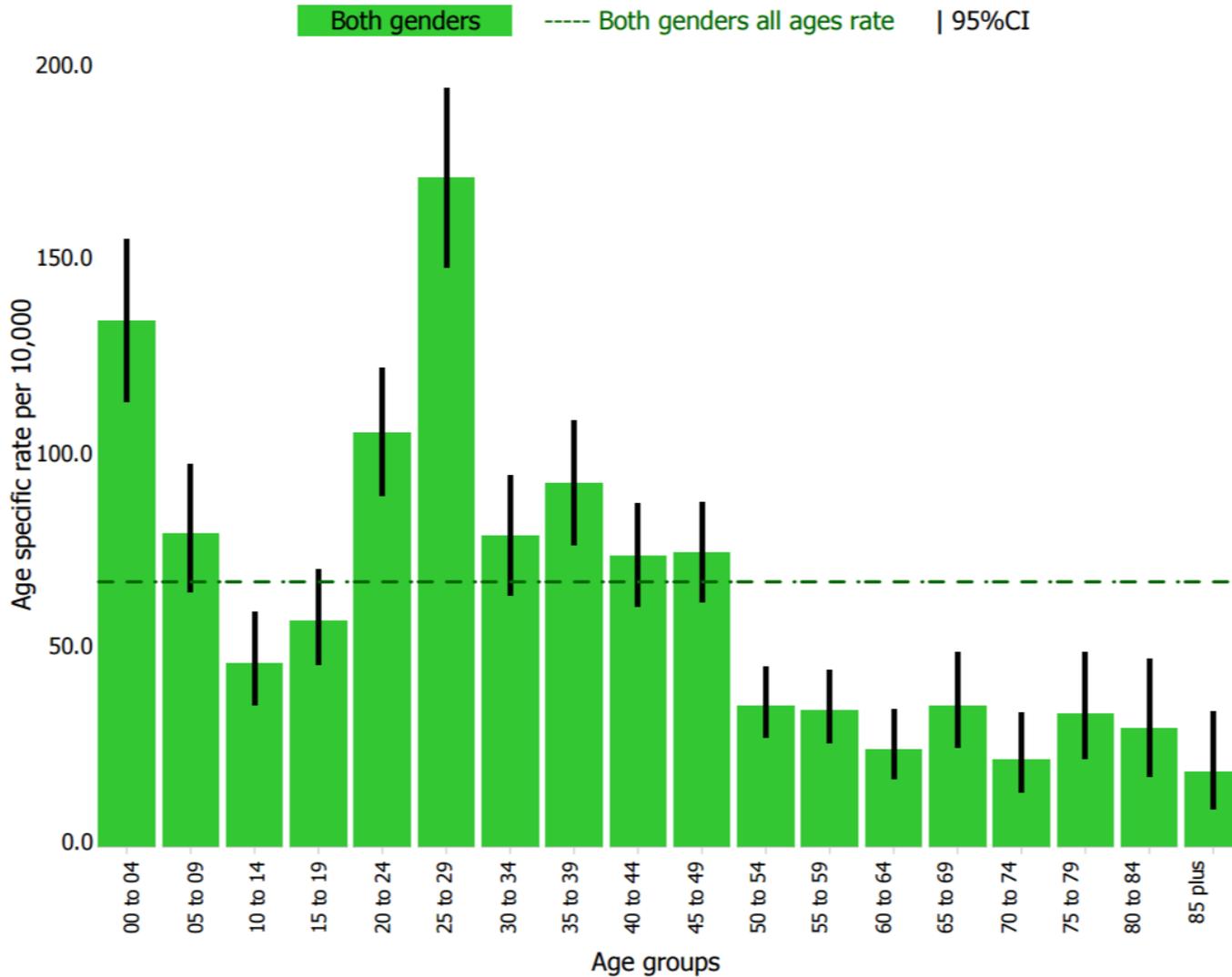


Significantly lower than rest of state
No difference than rest of state
Significantly higher than rest of state
1-4 events

Asthma hospitalizations (emergency dept. and observation)

Age specific rate; Both genders; All ages; 2005-2009

Public Health Region; Greater Sullivan



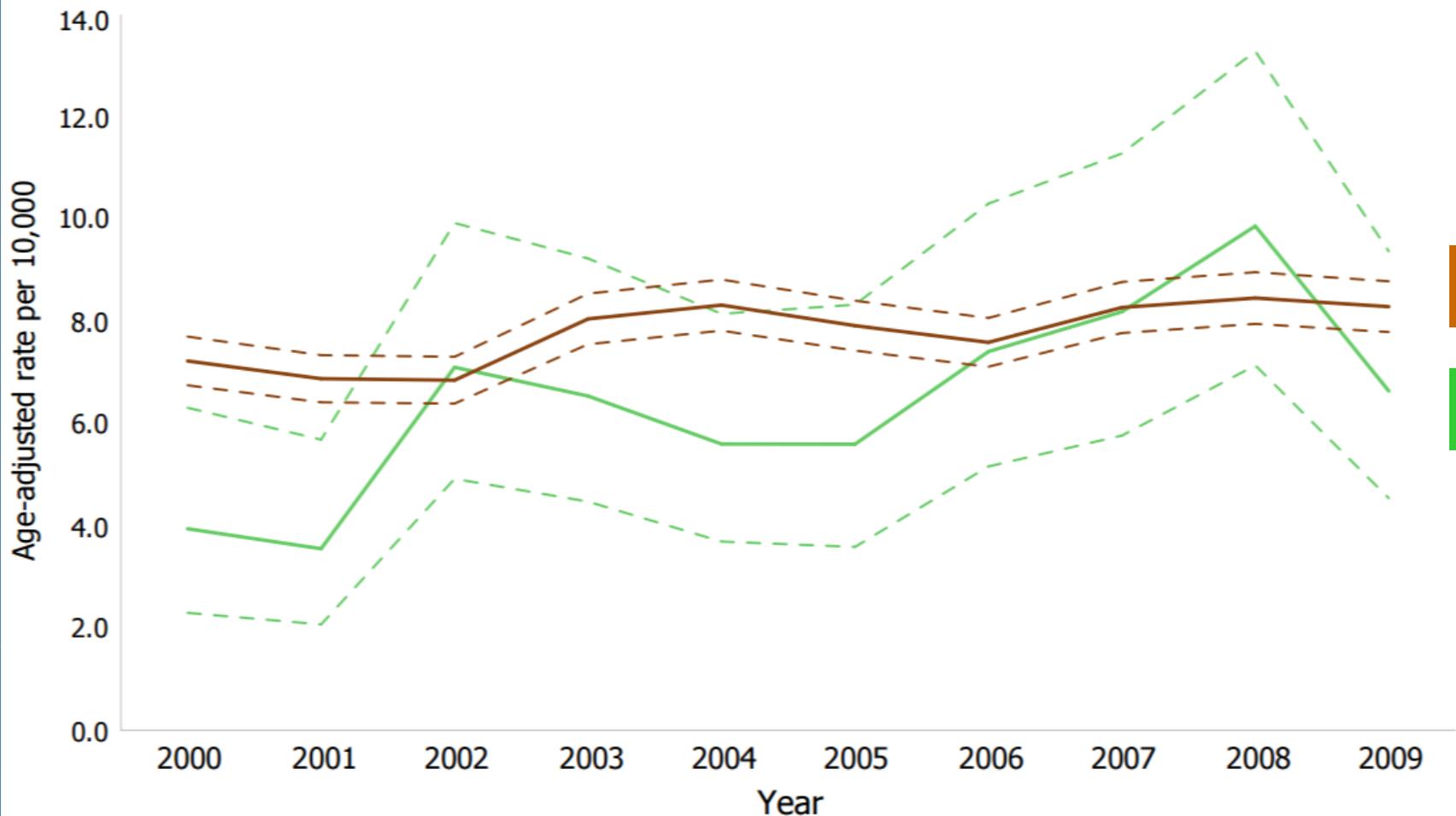
Asthma hospitalizations (inpatient)

Age-adjusted rate; Both genders; All ages; 2000-2009;

State; New Hampshire

Public Health Region; Greater Sullivan

..... 95%CI



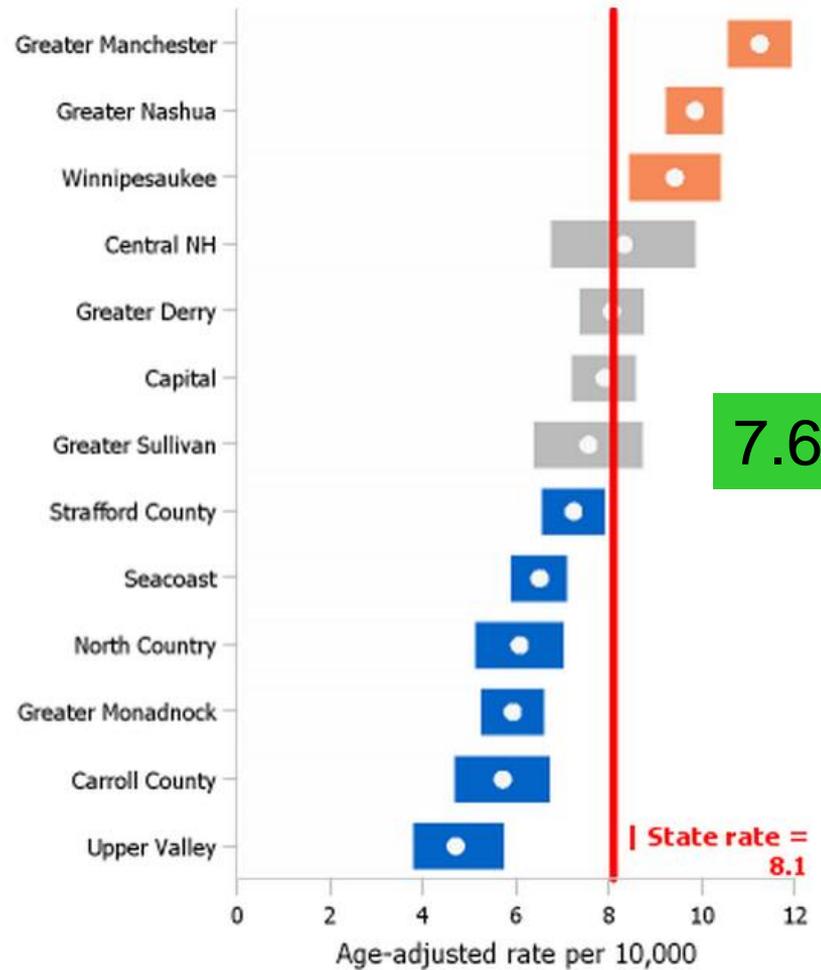
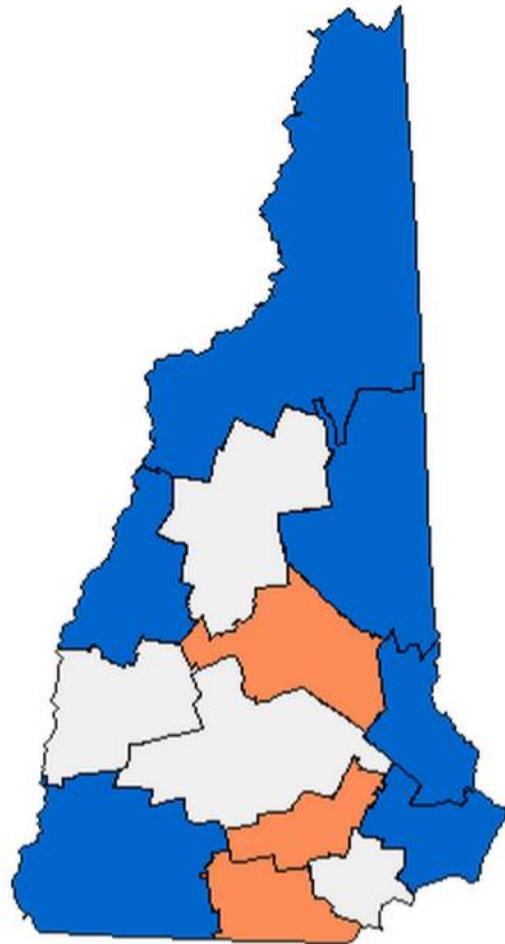
8.3

6.6

Asthma hospitalizations (inpatient)

Age-adjusted rate; Both genders; All ages; 2005-2009

Public Health Region



Significantly lower than rest of state
No difference than rest of state
Significantly higher than rest of state
1-4 events

Summary: Greater Sullivan Compared to State

- ~8% of adults report asthma
- ER visits for asthma are significantly higher compared to rest of state
- Inpatient hospitalization rates for asthma are no different

Whew!

- Data is useful for describing the baseline health status of the community and for measuring change
- Also need to describe the population factors (determinants of health) in the community
- Investigate differences
- Try to describe & define how the system and the various population factors contribute to the health outcomes
- What is most important or highest priority to change or impact?

5 Suggested Topic Areas to Focus

- High smoking during pregnancy (risk of placental problems, miscarriage, preterm birth, low birth weight, SIDS, birth defects)
- Outpatient Asthma management (due to high ED visits for asthma)
- Outpatient diabetes management (due to increasing ER management of diabetes)
- CHD & CHF prevention & management (higher hospitalization rates & mortality)
- Monitor fall related hospitalizations and hip fracture hospitalizations to see if upward trend continues

Steps to Assessing and Improving Population Health

- 
- 
- Describe and understand your population
 - Describe and understand the processes and systems of health or healthcare delivery
 - Define the problem(s)
 - Define your goal/aim for improvement
 - Set Objectives

Thank You

Questions?