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Hilton San Francisco Union Square



Disparities in Screening, Prevention, and Management of Cardiovascular Disease in Rural and Urban Primary Care

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Disclosures

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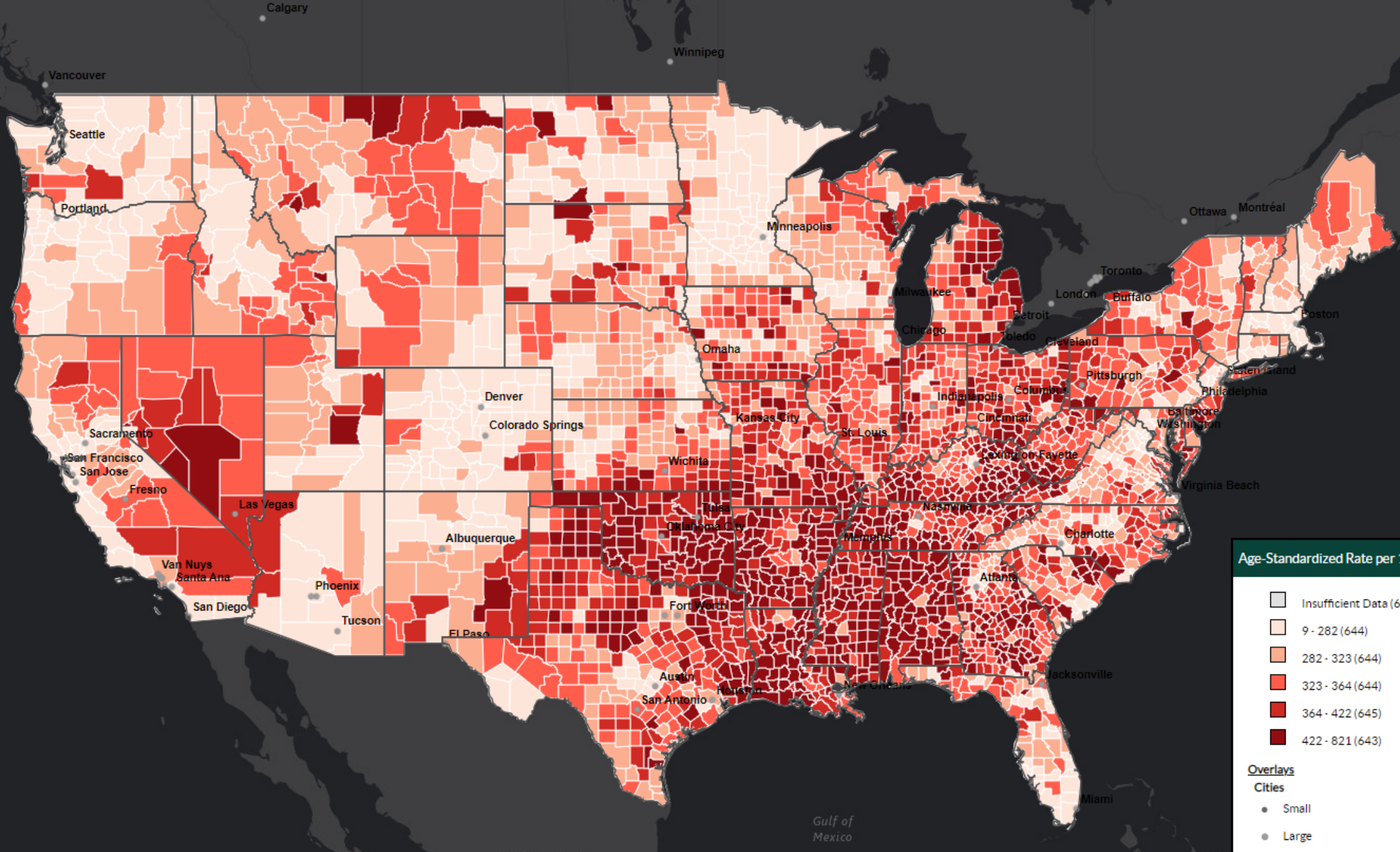


**Rural & Underserved
Health Research Center**

Disclosures

- Both Dr. Peterson and Mr. Morgan are employees of the ABFM.





Age-Standardized Rate per 100,000 ✕

	Insufficient Data (6)
	9 - 282 (644)
	282 - 323 (644)
	323 - 364 (644)
	364 - 422 (645)
	422 - 821 (643)

Overlays

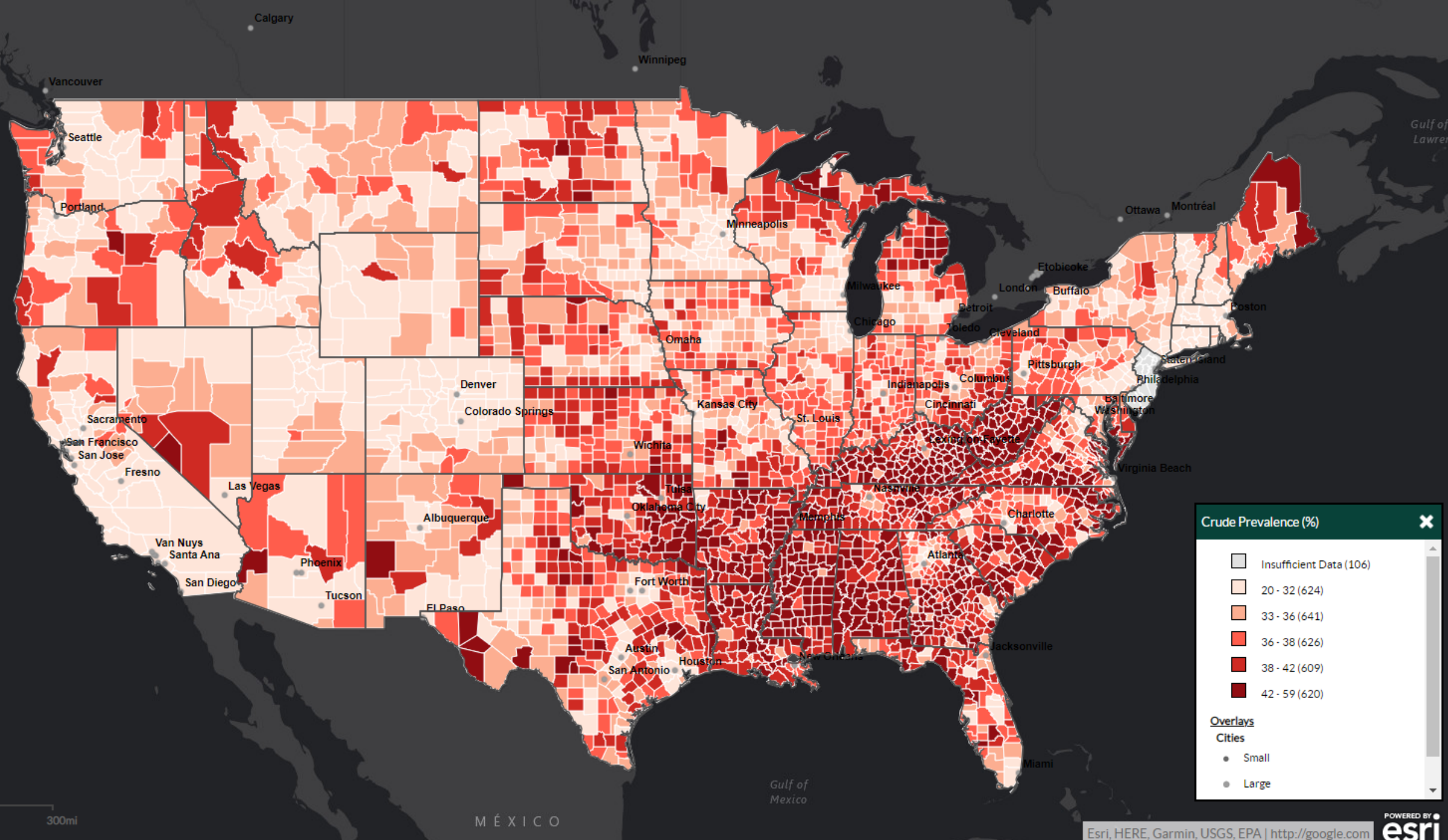
Cities

- Small
- Large

300mi

MÉXICO

Gulf of Mexico



Crude Prevalence (%)

- Insufficient Data (106)
- 20 - 32 (624)
- 33 - 36 (641)
- 36 - 38 (626)
- 38 - 42 (609)
- 42 - 59 (620)

Overlays

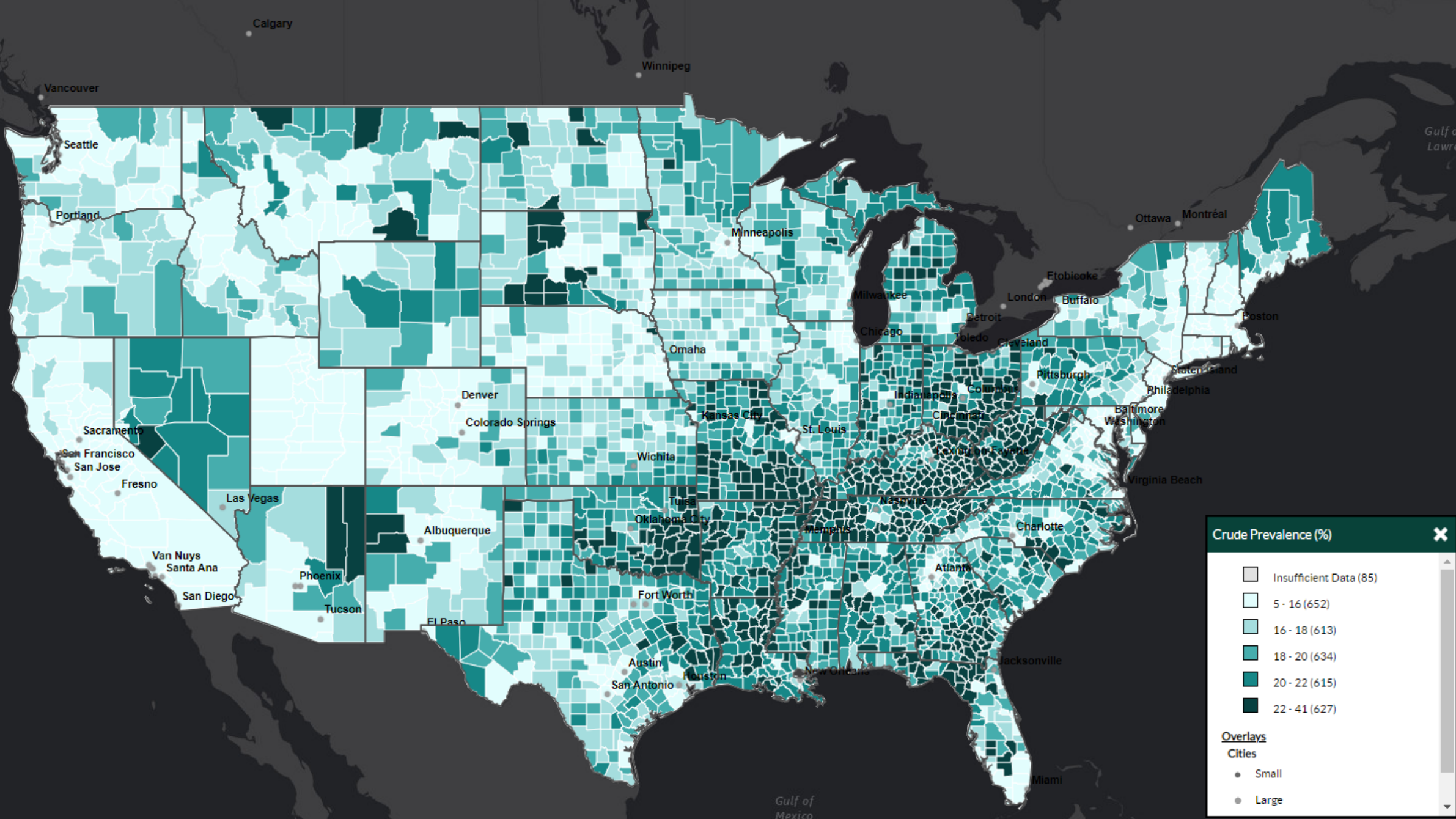
Cities

- Small
- Large

300mi

MÉXICO

Gulf of Mexico



Crude Prevalence (%)

	Insufficient Data (85)
	5 - 16 (652)
	16 - 18 (613)
	18 - 20 (634)
	20 - 22 (615)
	22 - 41 (627)

Overlays

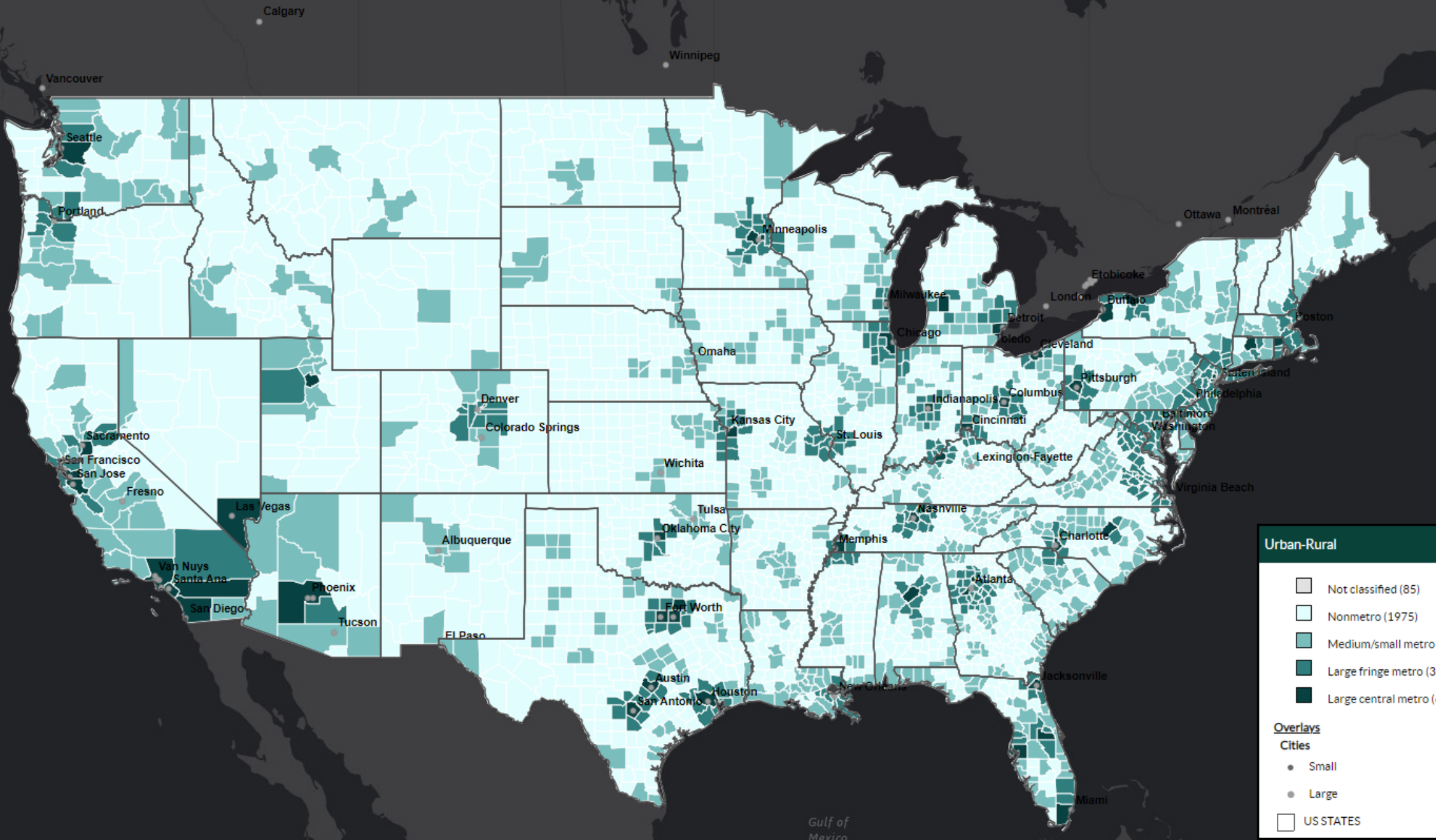
Cities

- Small
- Large

300mi

MÉXICO

Gulf of Mexico



Urban-Rural [X]

	Not classified (85)
	Nonmetro (1975)
	Medium/small metro (730)
	Large fringe metro (368)
	Large central metro (68)

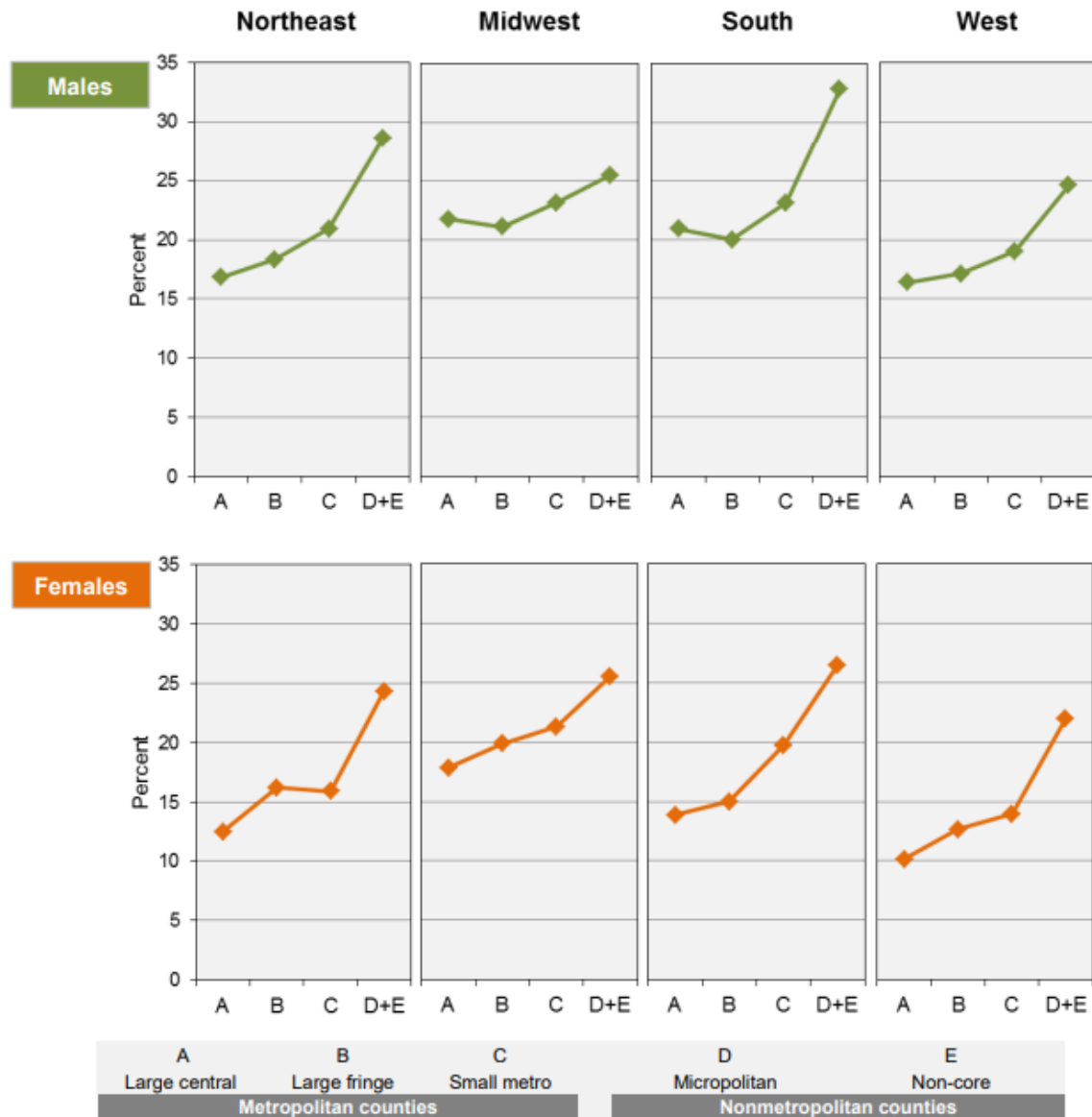
Overlays

Cities

- Small
- Large

US STATES

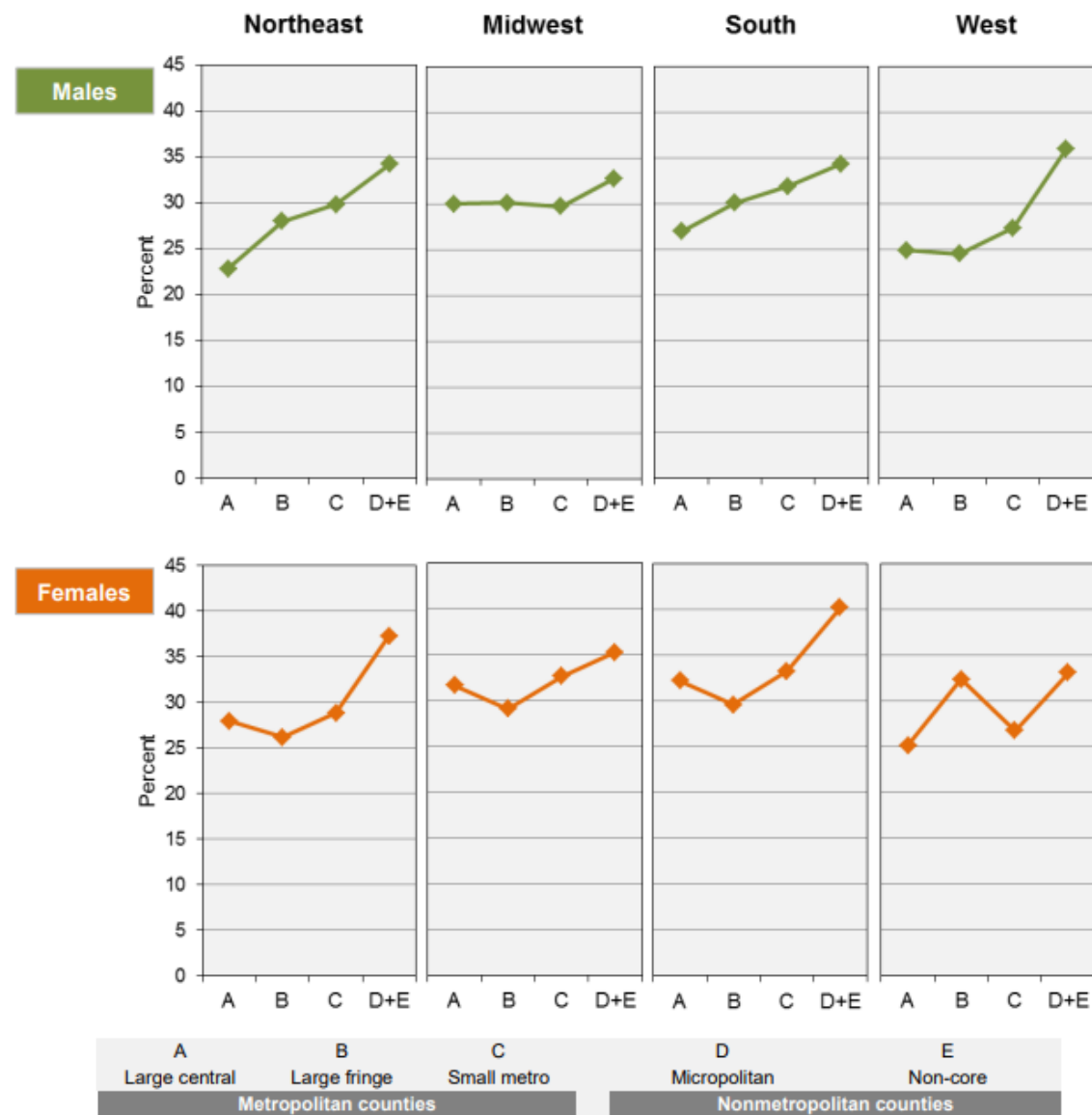
Figure 7(b). Cigarette smoking among persons 18 years of age and older by sex, region, and urbanization level: United States, 2010-2011



NOTES: Percentages are age adjusted. See Technical Notes for a description of age-adjustment method and urbanization levels. See Data Table 7 for data points graphed.

SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey.

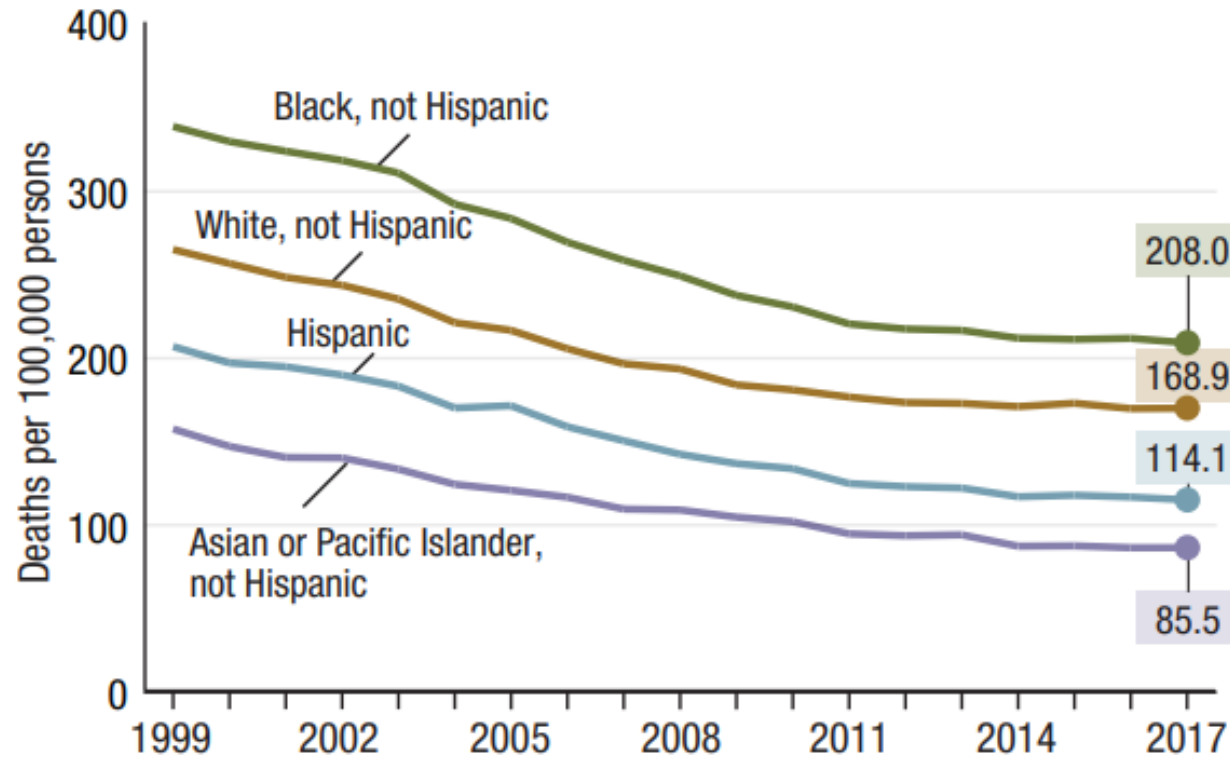
Figure 9(b). Obesity among persons 18 years of age and older by sex, region, and urbanization level: United States, 2010-2011



NOTES: Obesity is defined as body mass index ≥ 30 based on self-reported height and weight. Percentages are age adjusted. See Technical Notes for a description of age-adjustment method, urbanization levels, and obesity data. See Data Table 9 for data points graphed.

SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey.

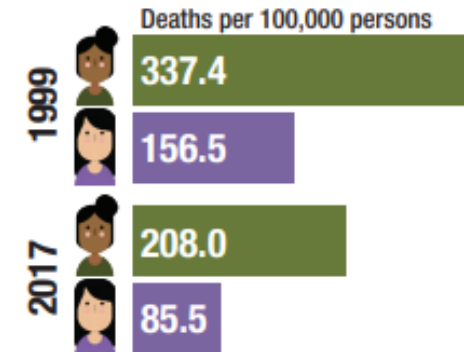
Age-adjusted death rates for heart disease, by race and Hispanic origin: 1999–2017



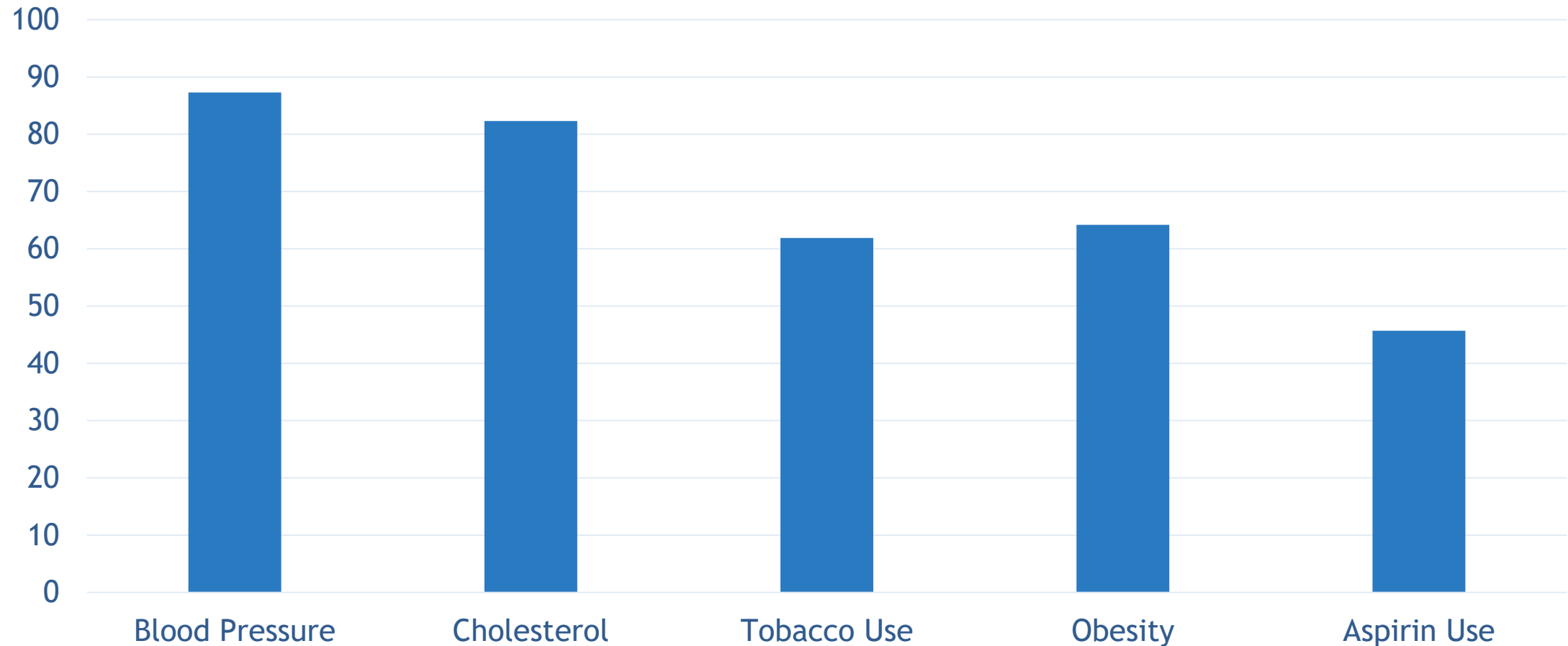
From 1999 through 2017, death rates for heart disease **decreased for all racial and ethnic groups**.

The rate of decrease for each group **slowed in recent years**.

Non-Hispanic black persons were **MORE THAN TWICE** as likely as non-Hispanic Asian or Pacific Islander persons to die of heart disease in 1999 and 2017.



Percentages of US adults 35+ receiving individual high-priority, appropriate clinical preventive services, 2015



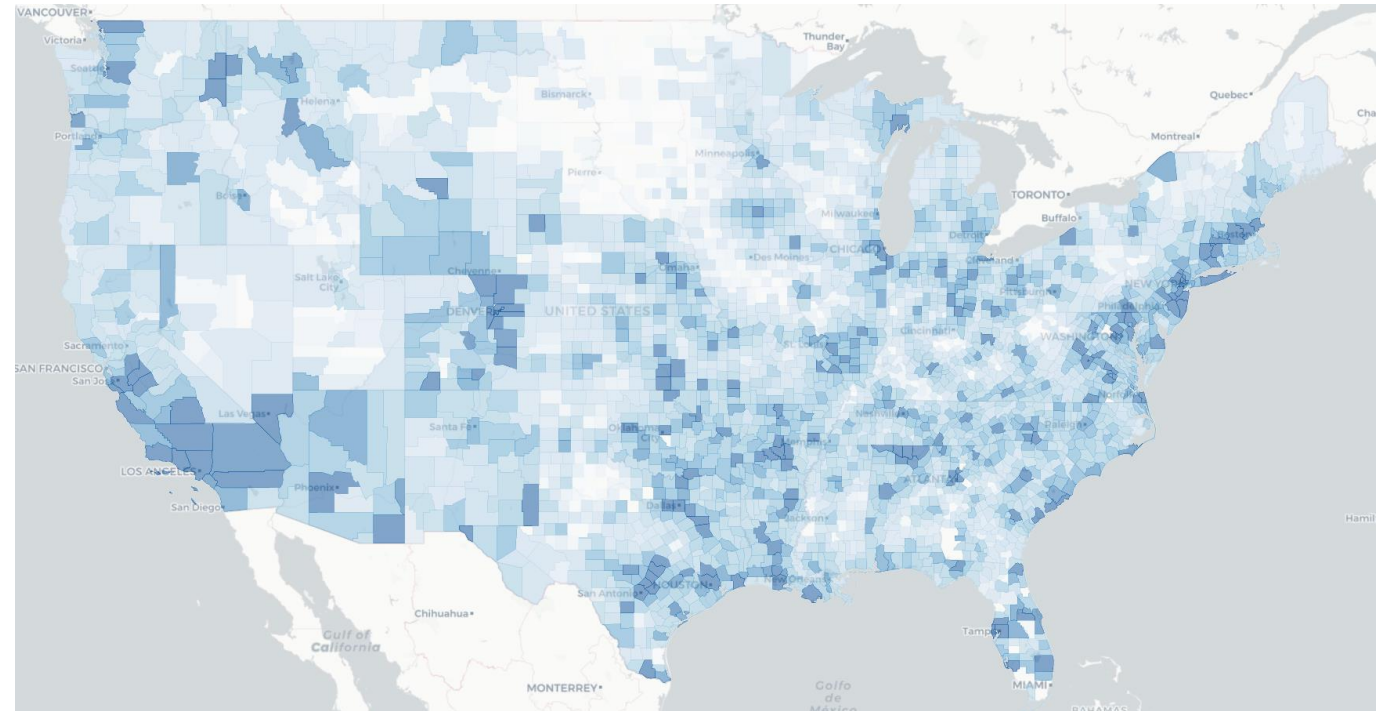
Borsky et al, *Health Affairs*. 2018;37(6):925-928.

Objective

- Compare management of CVD risk factors between rural and urban practices in a large national primary care registry.
- We also assess for disparities by the composition of patients in the practice who are racial or ethnic minorities or who live in socioeconomically deprived areas.

PRIME Registry / American Family Cohort

- CMS-certified Qualified Clinical Data Registry open to all primary care clinicians
- Used quarterly practice-level quality measure data



<https://primeregistry.org/>

Methods

- Sample
 - All practices with continuous data from January 2016 to December 2020
- Measures
 - Mean patient Social Deprivation Index (SDI)
 - Percentage of minority patients
 - Percentage of children in the practice
 - Practice rurality (OMB - metropolitan, micropolitan, non-core non-metropolitan “rural”)

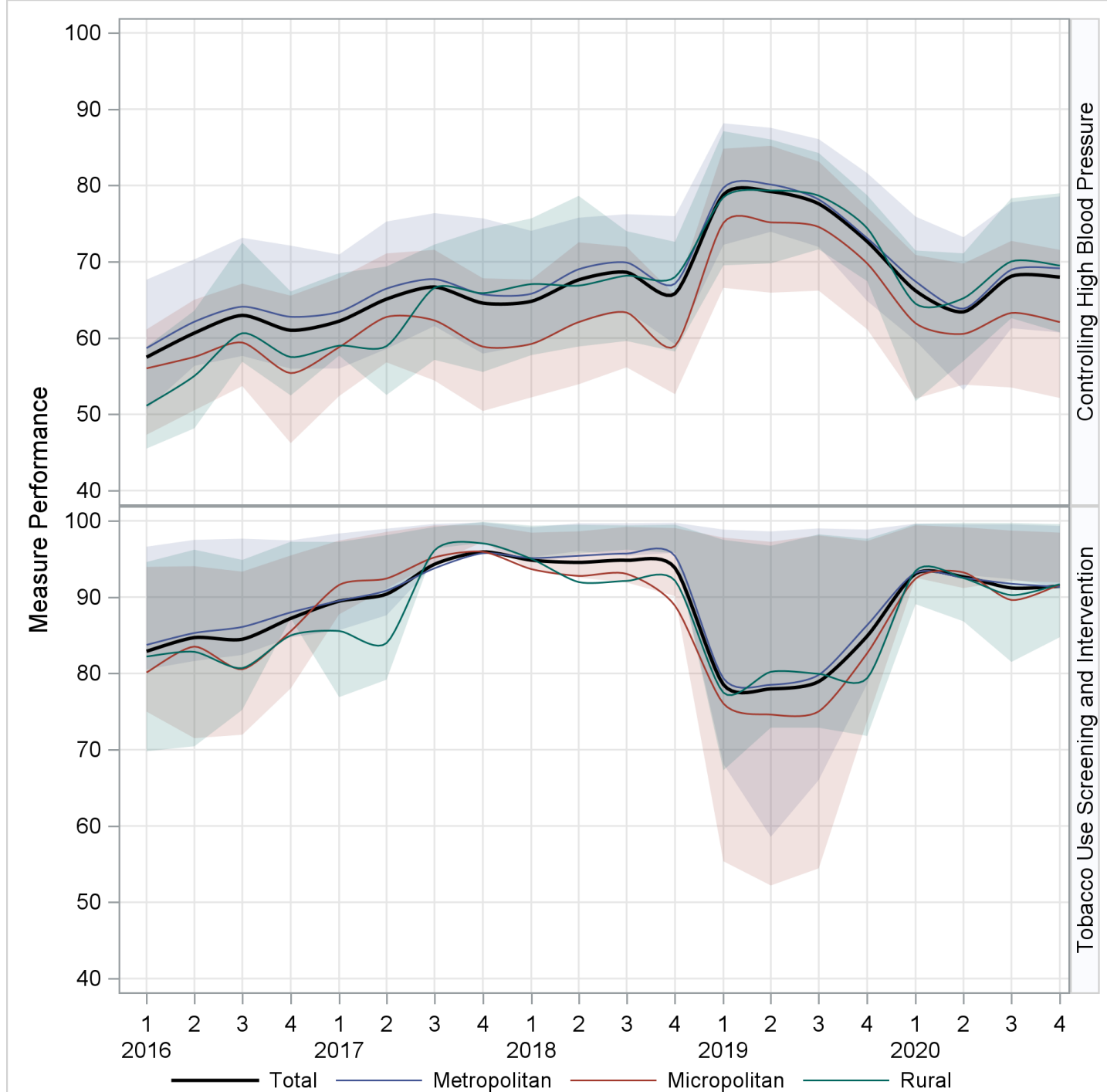
Quality Measures

- PRIME 36 “Controlling High Blood Pressure”
 - Percentage of patients 18-85 years of age who had a diagnosis of hypertension and whose blood pressure was adequately controlled (<140/90mmHg) during the measurement period.
- PRIME 39 “Tobacco Use: Screening and Cessation Intervention”
 - Percentage of patients aged 18 years and older who were screened for tobacco use one or more times within 24 months AND who received cessation counseling intervention if identified as a tobacco user.

Tobacco Use Screening and Cessation Intervention				
	Metropolitan	Micropolitan	Non-Core Non-Metropolitan	Total
	N=103	N=27	N=16	N=146
Mean (SD) Percentage of Patients 40 years of age or older	65.1 (16.7)	64.7 (19.4)	60.1 (11.9)	64.5 (16.8)
Mean (SD) Percentage of Minority Patients	28.1 (28.4)	13.5 (21.3)	9.2 (9.9)	23.3 (26.8)
Mean (SD) patient SDI score	47.0 (18.2)	52.9 (14.3)	46.0 (16.6)	48.0 (17.4)
Mean (SD) Percentage of Patients Screened for Tobacco Use	88.7 (11.2)	86.9 (9.5)	86.5 (13.2)	88.1 (11.1)
Controlling High Blood Pressure				
	Metropolitan	Micropolitan	Non-Core Non-Metropolitan	Total
	N=134	N=31	N=18	N=183
Mean (SD) Percentage of Patients 40 years of age or older	67.6 (14.1)	66.1 (18.5)	64.7 (16.2)	67.1 (15.0)
Mean (SD) Percentage of Minority Patients	27.0 (26.5)	13.7 (21.2)	8.9 (9.6)	23.0 (25.3)
Mean (SD) patient SDI score	46.1 (18.0)	54.3 (14.0)	50.1 (17.4)	47.9 (17.5)
Mean (SD) Percentage of Patients with Controlled High Blood Pressure	68.2 (10.9)	62.8 (10.0)	66.1 (9.5)	67.1 (10.8)

Practice Characteristics and Measure Performance by Rurality Among PRIME Registry Practices, 2016 to 2020 for Those Reporting Quality of Care for Tobacco Use Screening and Cessation and Management of High Blood Pressure

Quarterly Quality of Care Measure Performance by PRIME Registry Practices by Rurality, 2016 to 2020



	Odd Ratio (95% CI)
Percentage of Patients 40 years of age or older (10% increase)	0.95 (0.89 - 1.05)
Percentage of Minority Patients (10% increase)	1.05 (0.97 - 1.14)
Mean Patient SDI score (10-unit increase)*	1.17 (1.03 - 1.32)
Rurality	
Metropolitan	Reference
Micropolitan	1.37 (0.84 - 2.23)
Non-Core Non-Metropolitan	1.65 (0.92 - 2.96)
Year	
2016	Reference
2017*	0.42 (0.31 - 0.56)
2018*	0.28 (0.18 - 0.41)
2019	1.36 (0.96 - 1.93)
2020*	0.33 (0.21 - 0.52)
Quarter	
First (January to March)	Reference
Second (April to June)	0.93 (0.81 - 1.07)
Third (July to September)*	0.80 (0.67- 0.94)
Fourth (October to December)*	0.66 (0.56 - 0.79)

Adjusted Association of Low Performance on Tobacco Use Screening and Intervention

Adjusted Associations between Practice Characteristics and Blood Pressure Management

	Expected Change in Percentage of Patients with Controlled Blood Pressure (Standard Error)
Percentage of Patients 40 years of age or older (10% increase)*	1.15 (0.35)
Percentage of Minority Patients (10% increase)	0.14 (0.26)
Mean Patient SDI score (10-unit increase)	-0.69 (0.36)
Rurality	
Metropolitan	Reference
Micropolitan*	-4.24 (1.51)
Non-Core Non-Metropolitan	-2.41 (1.85)
Year	
2016	Reference
2017*	2.55 (0.69)
2018*	3.85 (0.90)
2019*	17.46 (1.04)
2020*	10.37 (1.21)
Quarter	
First (January to March)	Reference
Second (April to June)*	1.58 (0.23)
Third (July to September)*	2.74 (0.29)
Fourth (October to December)	0.47 (0.32)

Conclusion

- Rates of blood pressure control and tobacco screening and intervention increased from 2016 to 2020.
- Rural and micropolitan primary care practices largely had comparable quality of care with urban located practices
- Practices with more patients in marginalized neighborhoods had lower odds of tobacco screening
- No association with percent of minority patients and performance

Thanks!

- Questions
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