Health Disparities and Cancer Risk: Population Perspectives

Cancer Risk & Prevention Symposium

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NCI Cancer Center

A Cancer Center Designated by the National Cancer Institute

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Disclosures

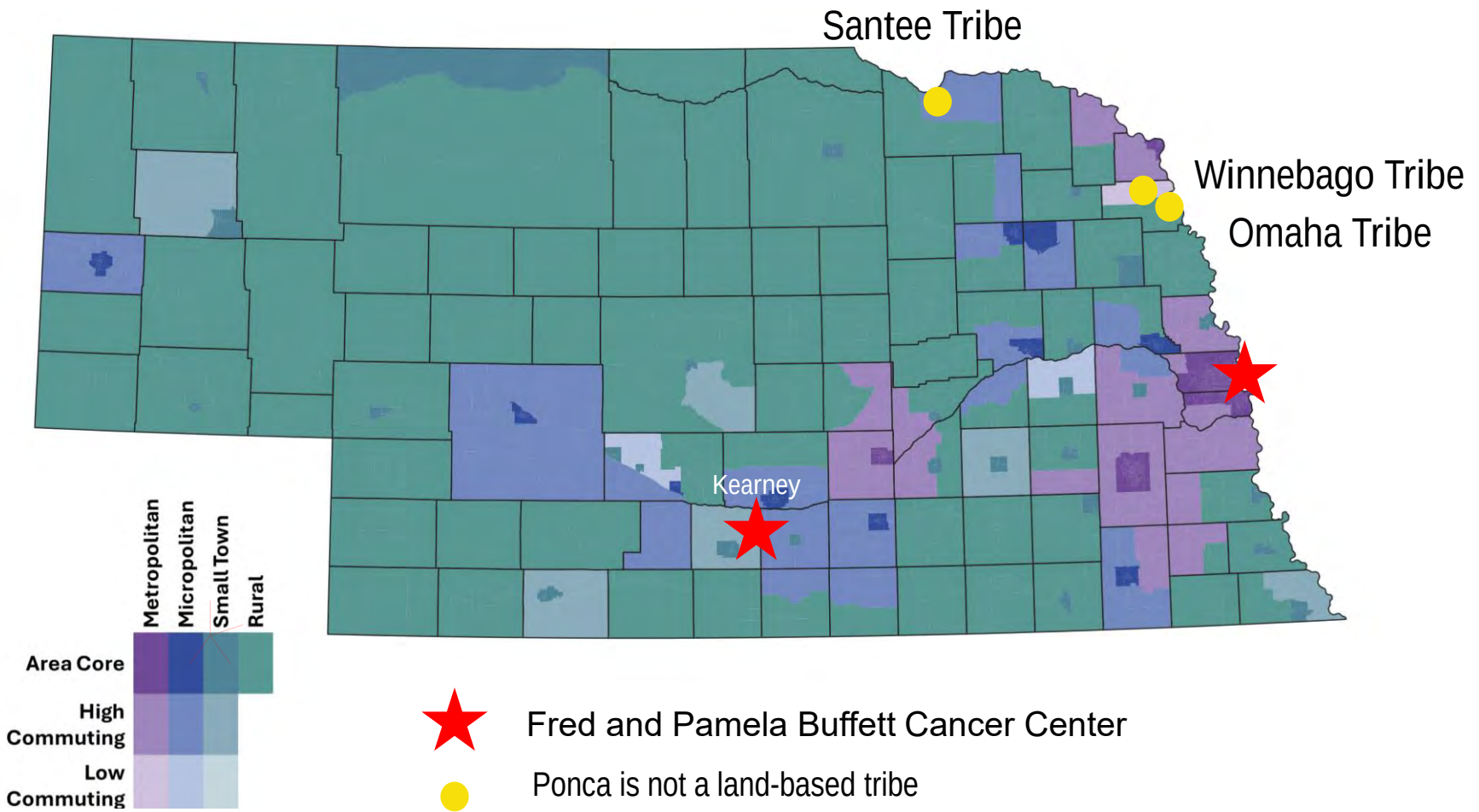
- I have no disclosures.

Hypothetical Scenario

- You are preparing a 5-year CDC grant proposal to secure funding for increasing lung and colorectal cancer screening in your catchment area. Given the limitations in available resources, it is essential to implement a strategic, data-driven approach to identify high-risk populations and prioritize interventions.
- For the purpose of this exercise, we use Nebraska as our catchment area.

Catchment Area Population

Nebraska as a ***rural*** state – 79 out of 93 counties in the state are rural



Rural classification based on RUCA 2010 using census tract level data

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How Would You Identify High Risk Populations?

- *Who are at risk for developing lung or colorectal cancer?*
- *What kind of information do we need to decide which geographic areas or population groups to focus on?*

Identifying High Risk Populations

- Risk stratification can be based on factors such as:
  - Age
  - Smoking history
  - Family history of cancer
  - Comorbidities
  - Socioeconomic status
  - Geographic barriers
  - ….
  - ….
  - ….

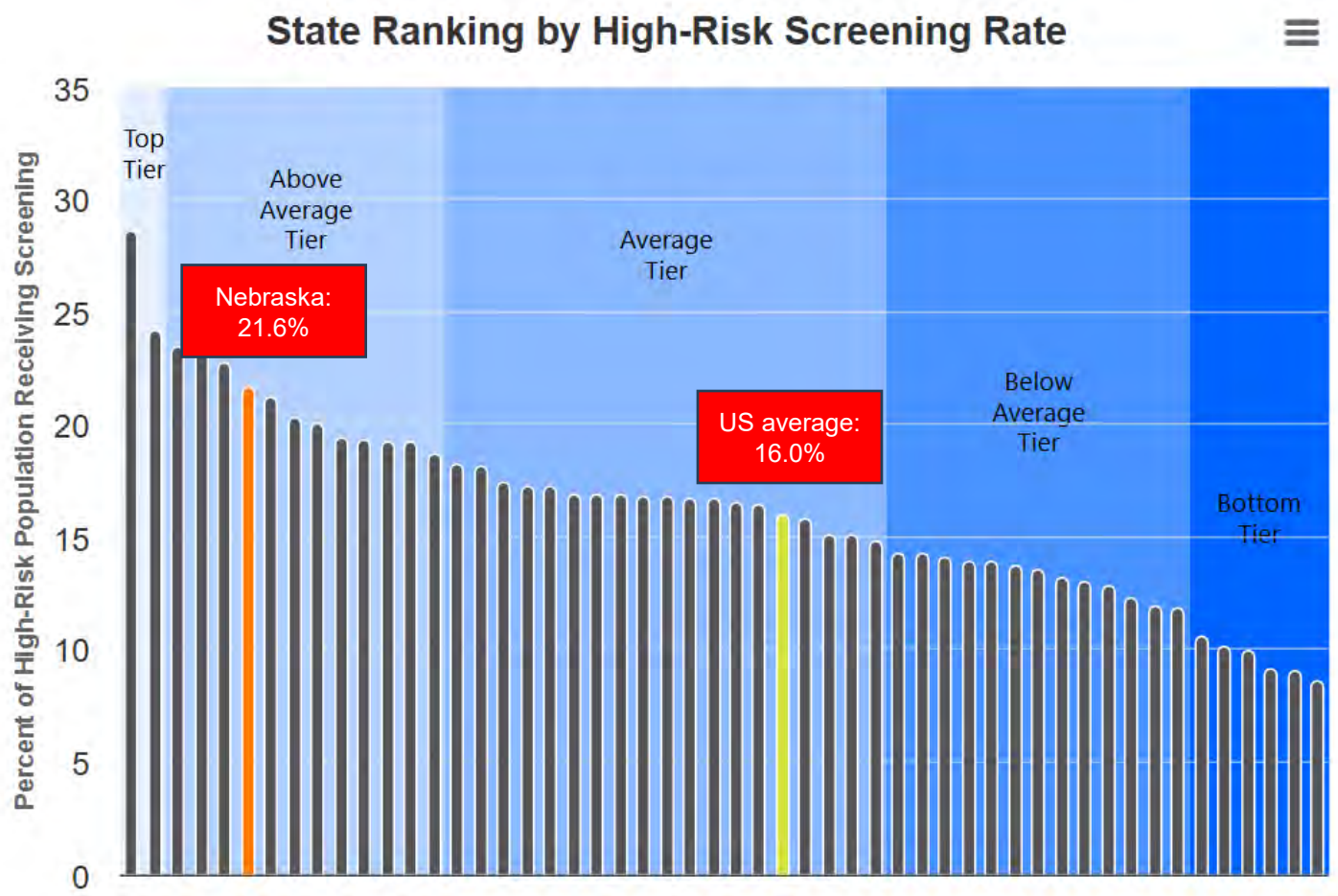
Assessment of Cancer Screening Needs

	Colorectal Cancer	Lung Cancer
Higher incidence rate	X	X
(Higher mortality rate)	X	X
Lower screening rate	X	X
Higher smoking rate		X
Limited access to screening facilities	X (?)	X
Higher proportion of Hispanic residents	X	
Higher proportion of Native American residents	X	X
Higher proportion of African American residents		X
Higher proportion under/un-insured individuals	X	X

What do you know about cancer screening rates among Nebraskans (compares to US average) for colorectal and lung cancers?

Which counties in Nebraska have lower screening rates?

Lung Cancer Screening Rate in Nebraska



Screening for High Risk:

- In Nebraska, **21.6%** of those at high risk were screened, which is not significantly different than the national rate of 16.0%.
- It ranks **6th** among all states, placing it in the **above average tier**.

https://www.lung.org/research/state-of-lung-cancer/states/nebraska

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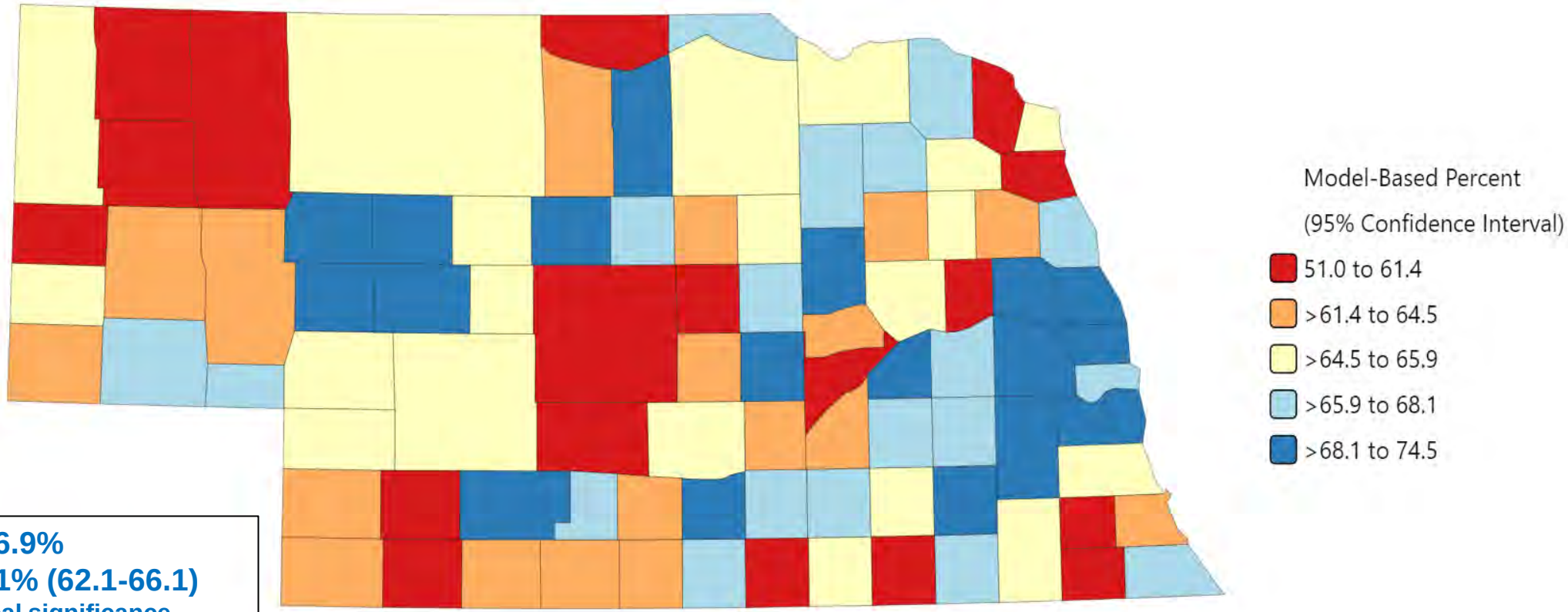
Colorectal Cancer Screening Up-To-Date (Ages 50-75): 2017-2019

76 rural and 4 urban NE counties have significantly lower rates than US average



U.S. Average: 66.9%
NE Average: 64.1% (62.1-66.1)
(There is no statistical significance difference at .05 level)

Source: NCI State Cancer Profile

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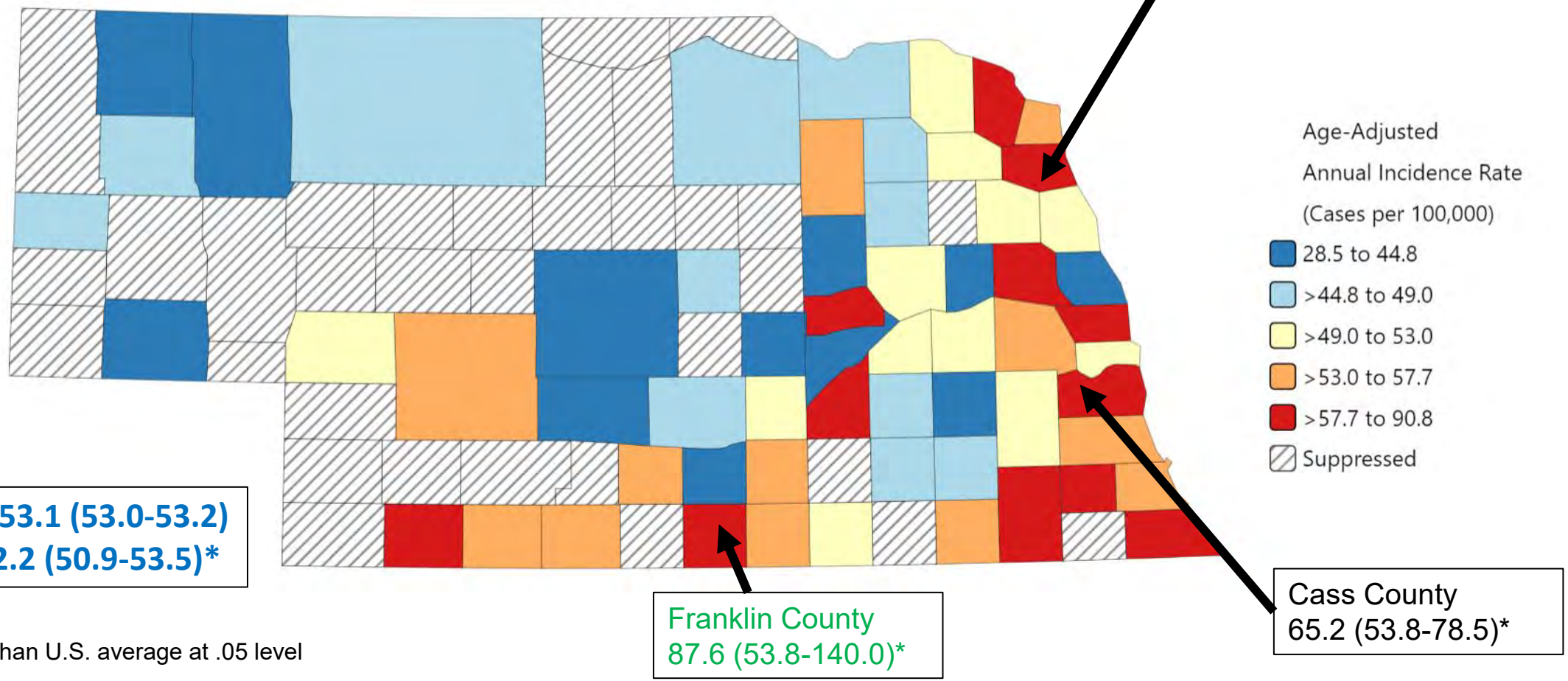
Which counties in Nebraska have higher incidence rates for lung and colorectal cancers?

Lung Cancer Incidence Rates Per 100,000: 2017-2021

NE average rate is higher than US average

2 rural and 1 urban NE counties have significantly higher rates than US average



U.S. Average: 53.1 (53.0-53.2)
NE Average: 52.2 (50.9-53.5)*

* Significantly higher than U.S. average at .05 level

Source: NCI State Cancer Profile Rural counties according to RUCC

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Colorectal Cancer Incidence Rates Per 100,000: 2017-2021

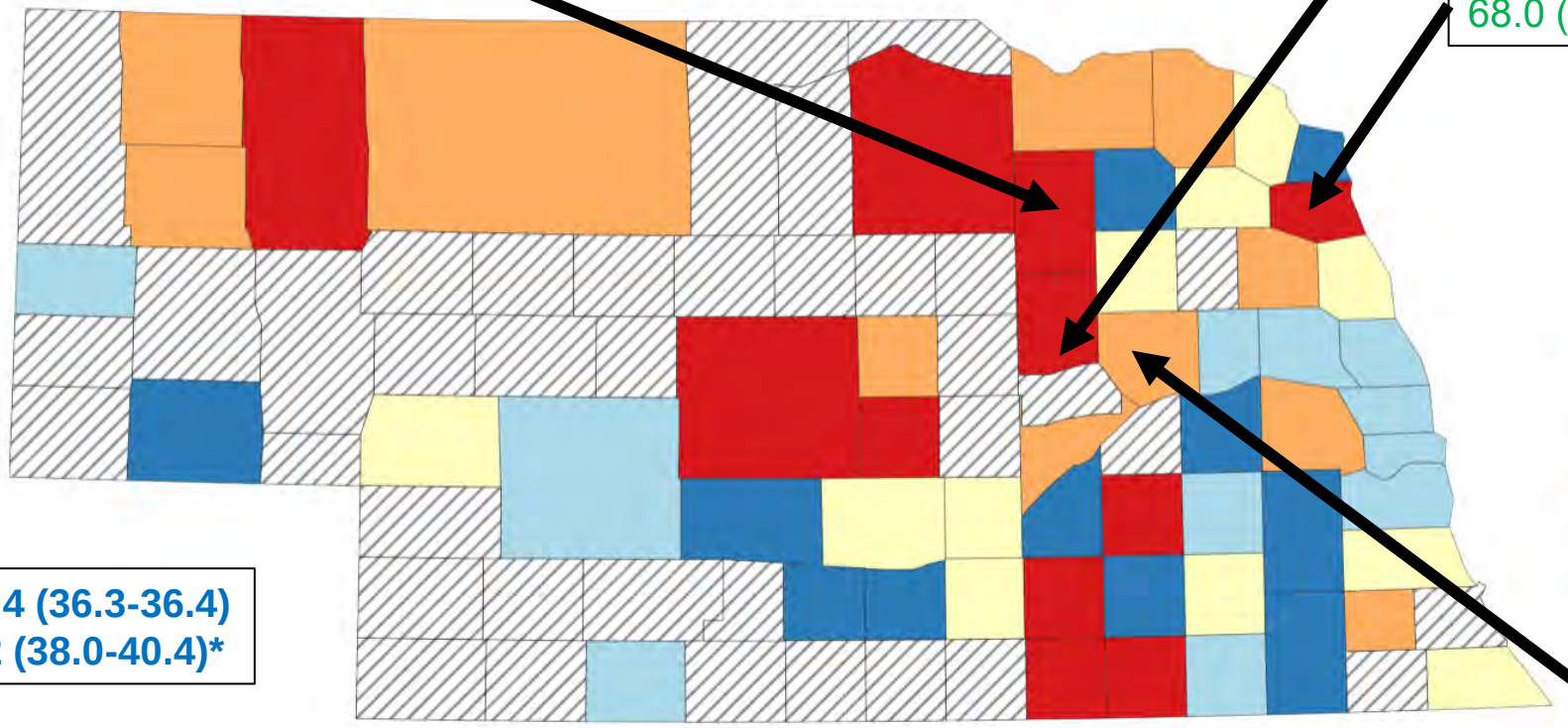
NE average rate is higher than US average

4 rural NE counties have significantly higher rates than US average

Antelope County
63.9 (42.8-93.3)*

Boone County
84.5 (57.2-121.9)*

Thurston County
68.0 (41.3-105.0)*



Platte County
50.6 (40.9-62.0)*

U.S. Average: 36.4 (36.3-36.4)
NE Average: 39.2 (38.0-40.4)*

*Statistically significantly different from US at .05 level

Source: NCI State Cancer Profile

Rural counties according to RUCC

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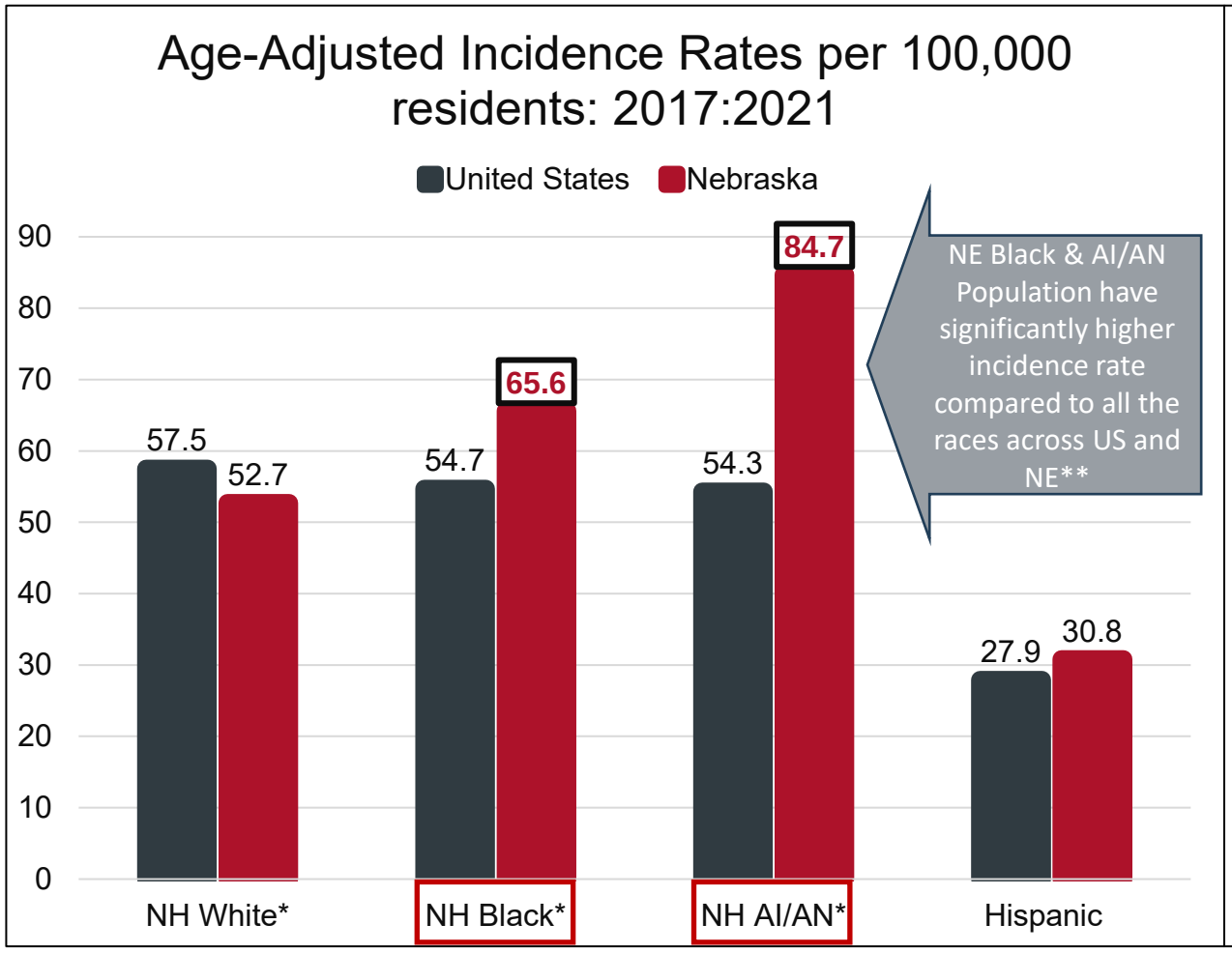
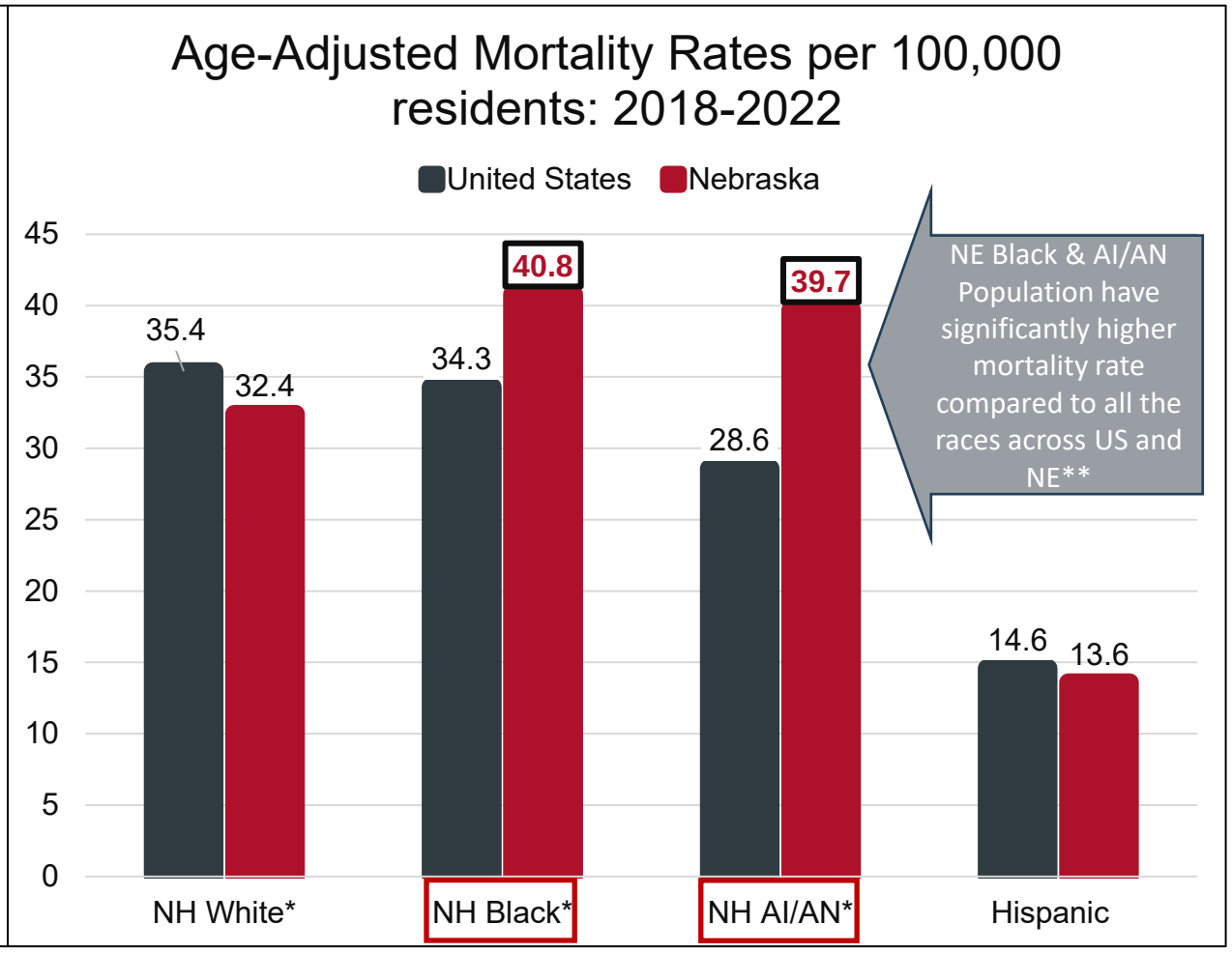
What other populations are at risk of developing lung or colorectal cancer?

Lung Cancer Incidence & Mortality Rates by Race/Ethnicity





* NH: Non-Hispanic; AI/AN: American Indian/Alaska Native
** Statistically significant differences at .05 level

Source: NCI State Cancer Profile

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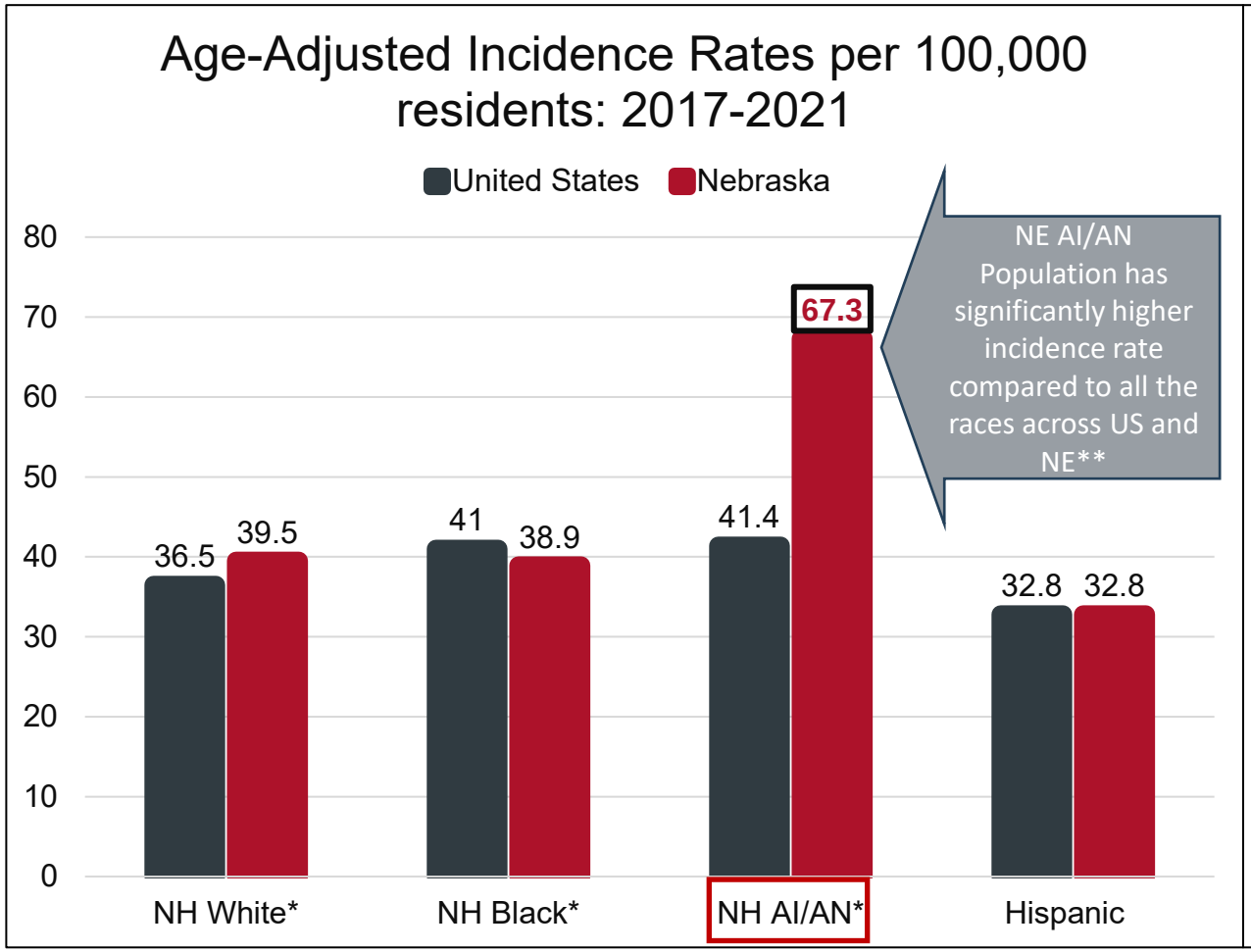
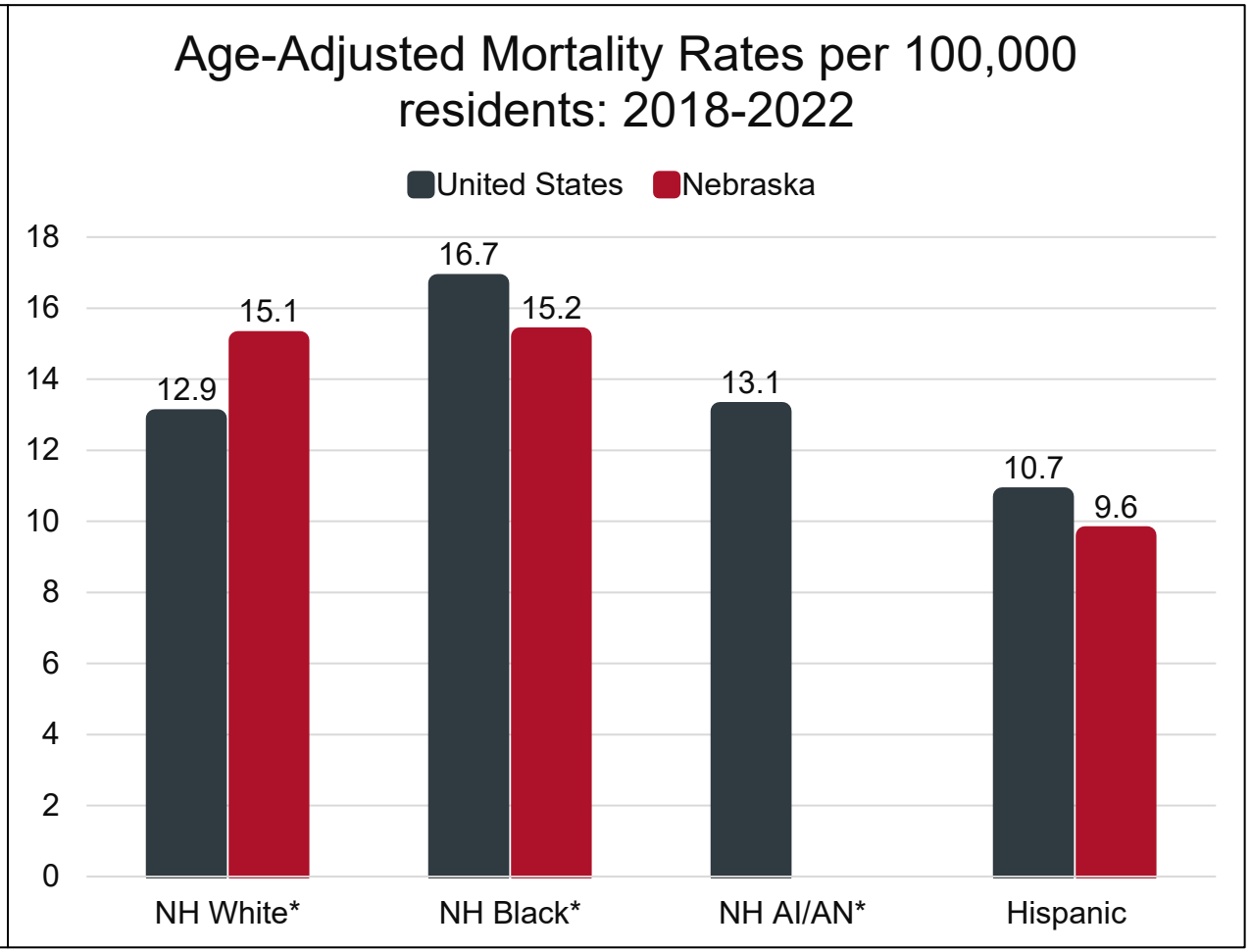
Colorectal Cancer Incidence & Mortality Rates





* NH: Non-Hispanic; AI/AN: American Indian/Alaska Native

** Statistically significant differences at .05 level

Source: NCI State Cancer Profile

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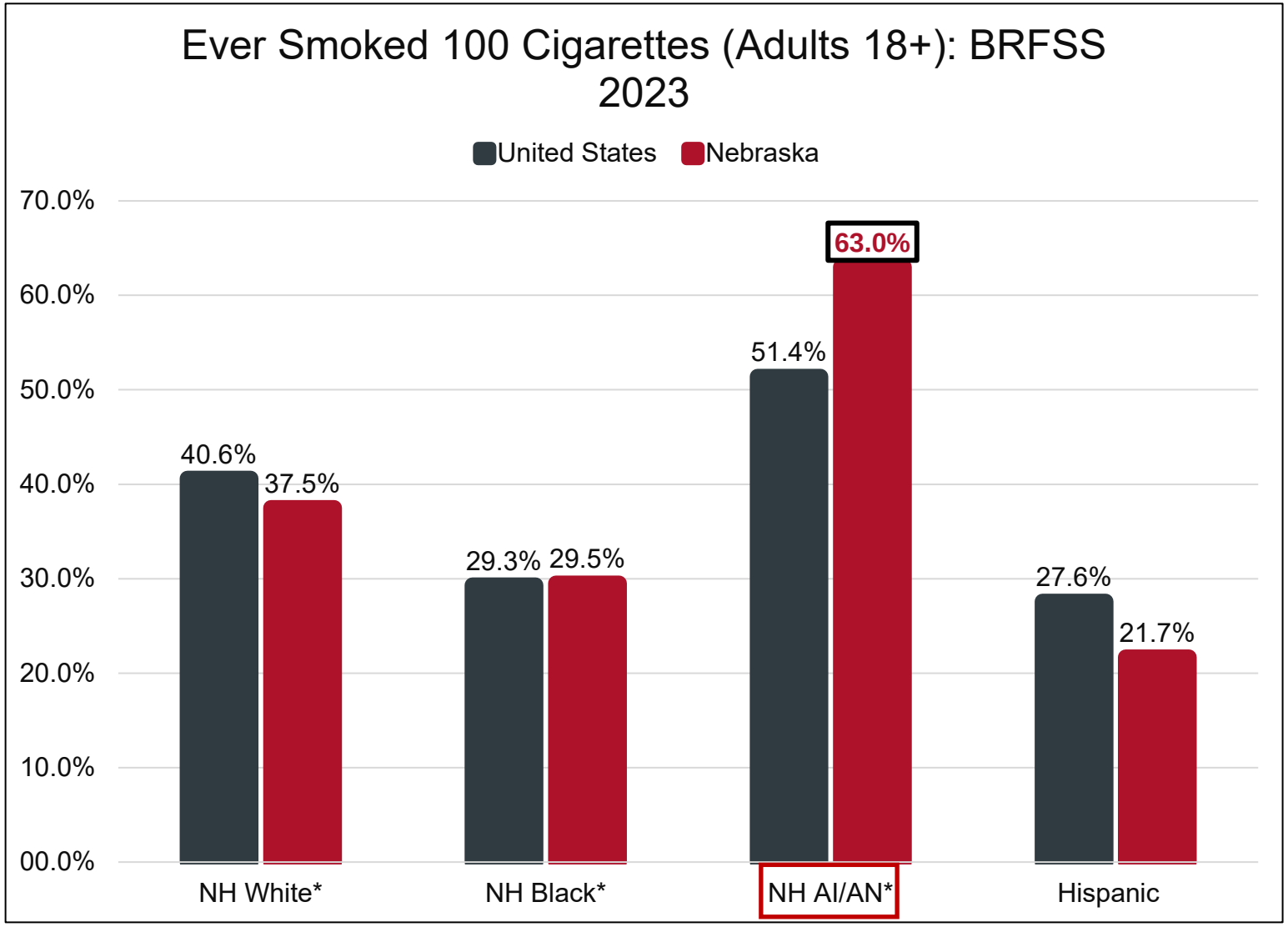
Risk Behavior: Smoking



Rate of ever smoker in the American Indian/Alaskan Native Population is higher than the US Average and any other races in the state**

Source: NCI State Cancer Profile

* NH: Non-Hispanic; AI/AN: American Indian/Alaska Native
** Statistically significant differences at .05 level

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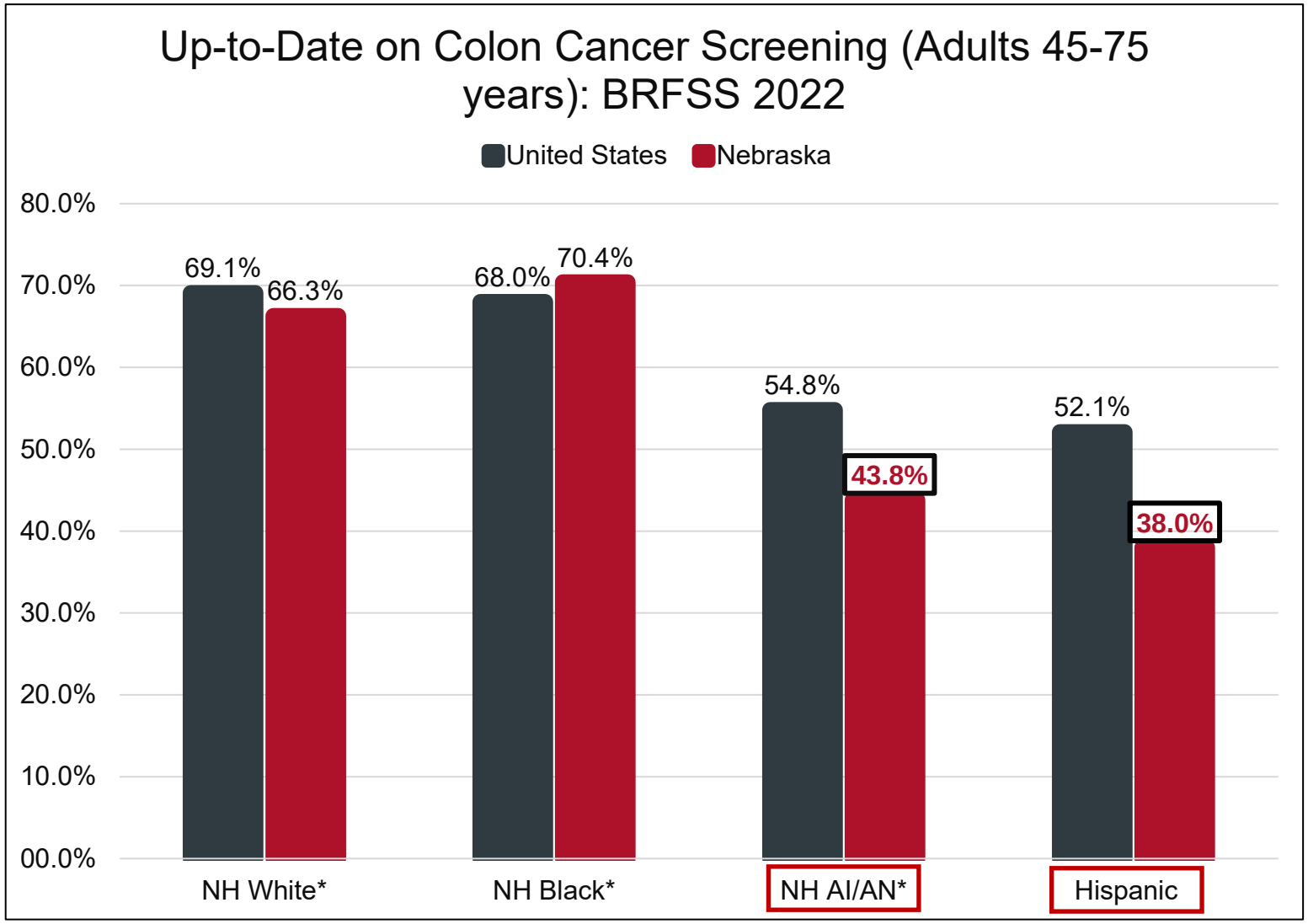
Screening: Colorectal Cancer



Colorectal Cancer Screening Rates are much lower in NE American Indian/ Alaskan Natives and Hispanics when compared to any other race and the US average**

Source: NCI State Cancer Profile

* NH: Non-Hispanic; AI/AN: American Indian/Alaska Native
** Statistically significant differences at .05 level

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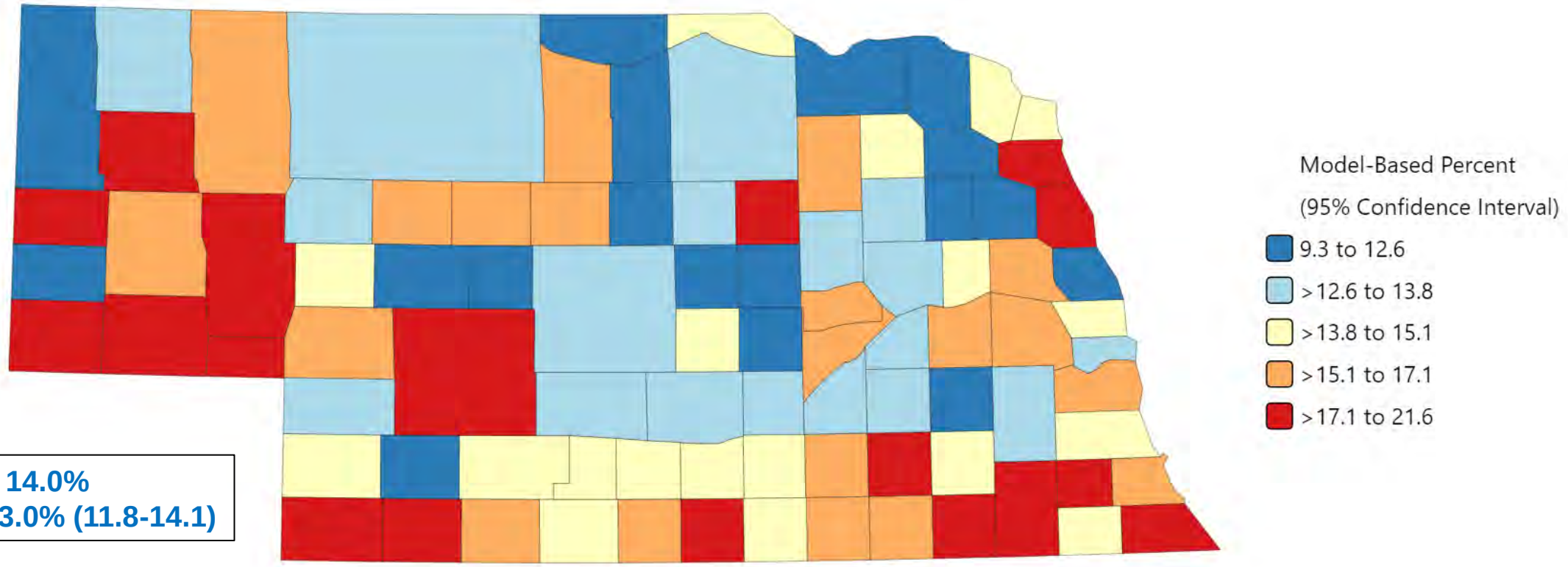
Current Smoker (Ages 18+): 2017-2019

28 rural and 2 urban NE counties have significantly higher rates than US average



U.S. Average: 14.0%
NE Average: 13.0% (11.8-14.1)

Source: NCI State Cancer Profile

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Hypothetical Scenario (continued)

- Thoughtful clinical and community collaborations will be key. You will want to engage healthcare systems, Federally Qualified Health Centers (FQHCs), rural hospitals, and primary care providers who serve historically underserved or low-screening populations.
- These partnerships will support screening infrastructure, patient navigation, data sharing, and sustainability.

Community Cancer Events

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How about Nebraska Medicine Patient Population?

If we are to risk stratify these patients, what kind of factors would you consider?

Conclusions

- Identifying high-risk population and communities which need screening services the most may be an efficient and effective way to address cancer screening disparities
- An effective partnership with local healthcare systems and community organizations may be a key for successful implementation of screening interventions

QUESTIONS