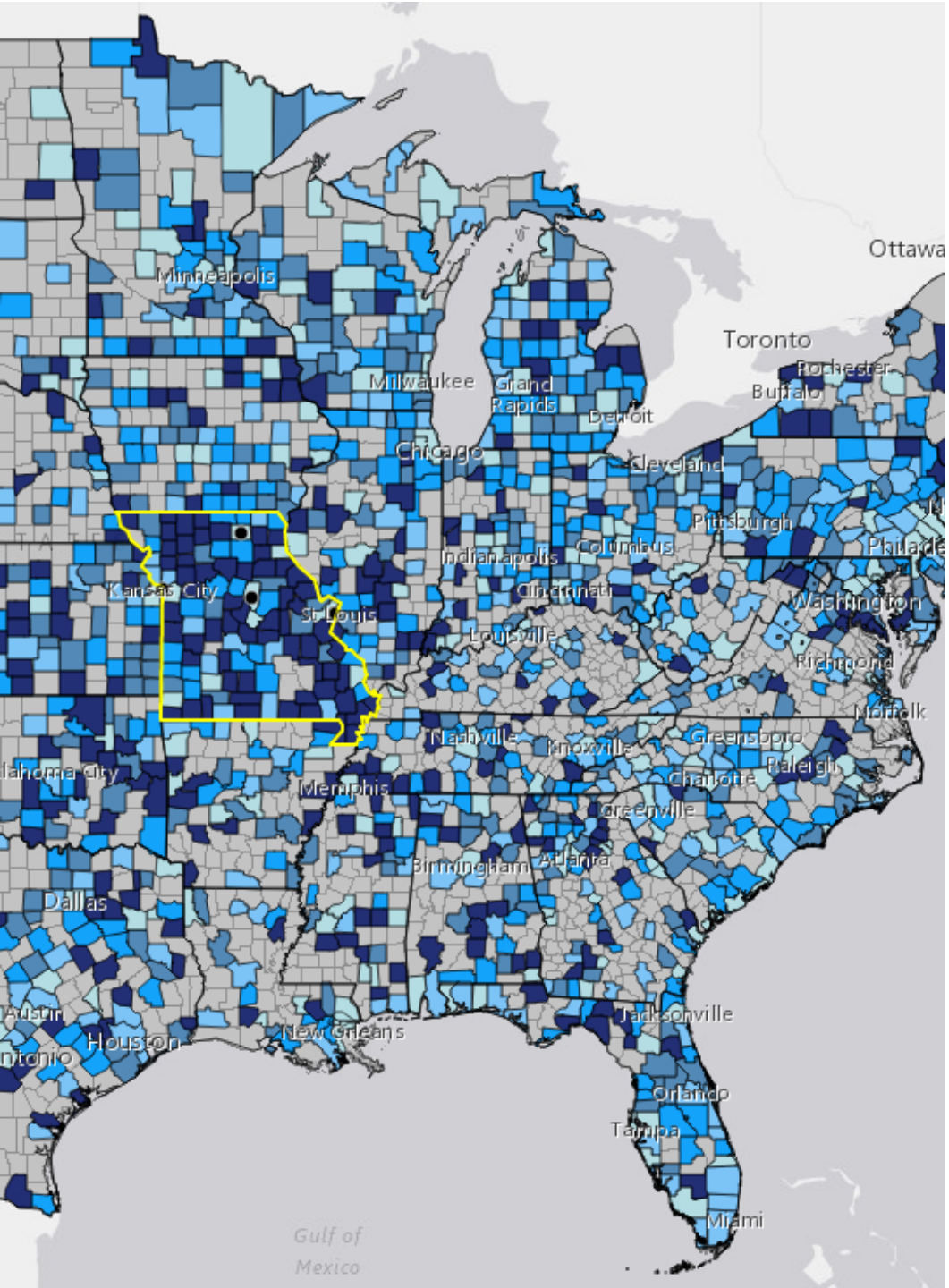

WHAATtheAHEC – Where Are the Areas that the AHECs should serve?

HealthLandscape℠

HealthLandscape is part of the Robert Graham Center for Policy Studies in Family Medicine at the American Academy of Family Physicians (AAFP)

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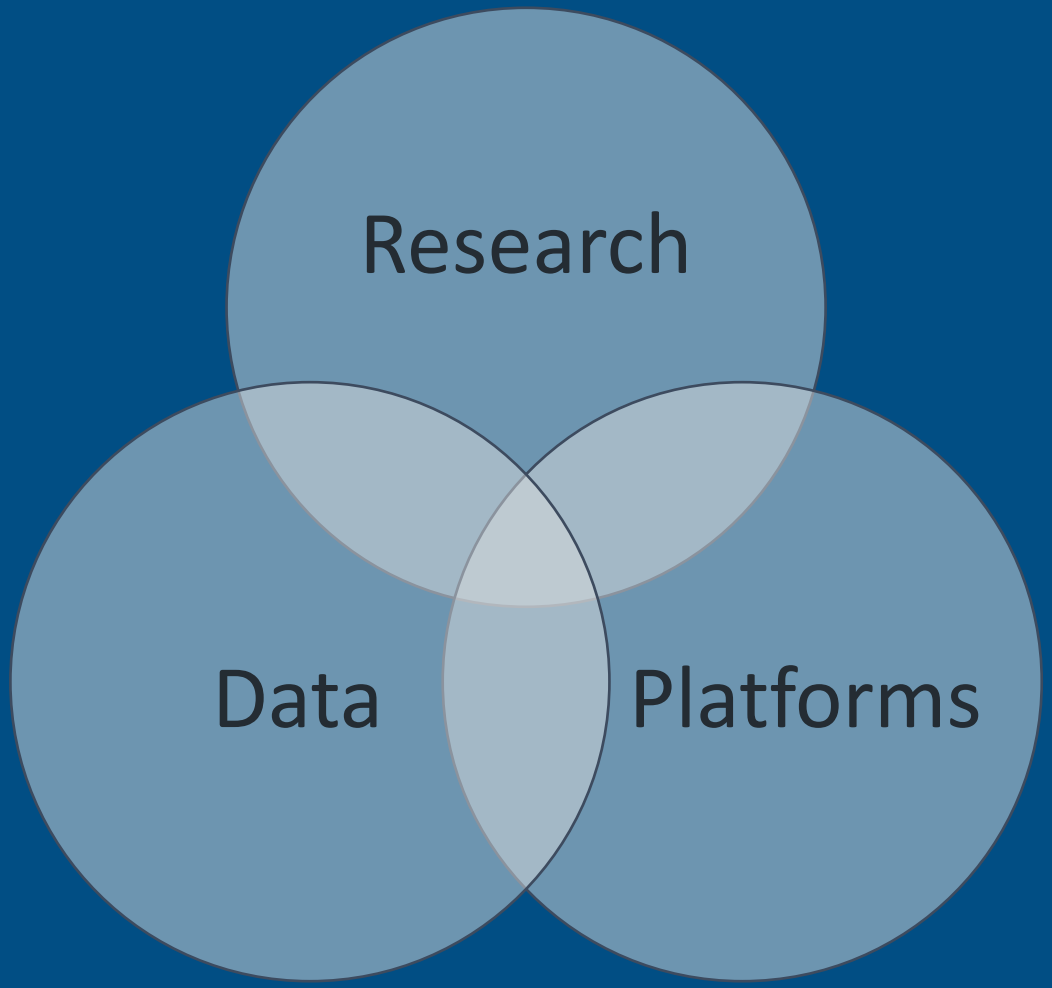
HealthLandscape works with internal and external clients according to their needs



Overview

- Robert Wood Johnson RFP
  - Visualizing the Impact of Structural Racism on Health

- How, and where, does structural racism depress the development of a diverse primary care physician workforce?

- To fully understand how structural racism impacts health outcomes, it is important to start with how structural racism impacts the workforce that is delivering healthcare.

Overview

- This project is a collaborative effort of the AAFP and our community partner, the Area Health Education Consortium (AHEC) to create an intuitive, interactive data visualization tool named WHAATtheAHEC? – “Where Are the Areas That the AHECs should serve”.

- The WHAATtheAHEC tool allows AHECs, policymakers and planners to harness the power of geographic information systems (GIS) technology to target programs towards under-represented communities to achieve the goal of improving racial diversity in the physician workforce.

Background and Definitions - WHAATtheAHEC

- What are AHECs
  - AHEC stands for Area Health Education Center. They are funded by HRSA and committed to expanding a *diverse health care workforce* through training placements that put students in real-world settings, such as migrant, urban, and rural community health clinics and health departments.
- Physician Production, what it is and why it matters
  - The primary care workforce is not growing fast enough to meet population needs. Historically, areas (counties) in the US produce physicians a varying rates – measured by number of physicians resulting from live births.
- Structural Racism
  - **How can historical structural racism and physician production be used to direct AHEC efforts?**

About the Data

- Physician Production, by county
  - Calculated as the number of live births in a county, that eventually become practicing physicians (in any location).
    - Birth counts, by county, from NCHS birth statistics
    - Physician births, from AMA master file

About the Data

- Structural Racism
  - ICE White/Black Education. The Index of Concentration at the Extremes, measures structural racism by comparing the number well-educated whites and poorly educated blacks in an area such a census tract. ICE values closer to 1.0 show a preponderance of well-educated whites, while ICE closer to -1.0 shows a high prevalence of poor-educated blacks.
  - We also included black/white rate ratios for less than high school education, home renting, single headed households, non-employment, and poverty (components of the RGC Social Deprivation Index)
- Childhood development community assets such as bookstores, schools, colleges and universities, libraries, and museums

About the Analysis

- Calculating "What If". We regressed county-level physician production rates on structural racism measures and childhood community asset measures.

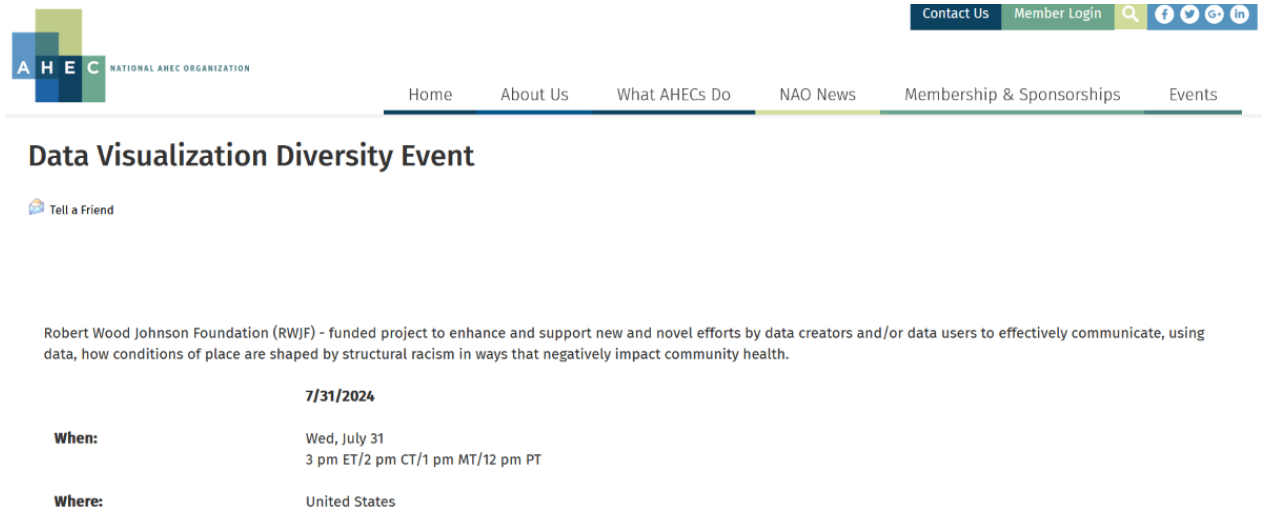
- Underproducing Counties.
  - Defined as those counties with historically high structural racism, and low physician production.

Visualization Design & Stakeholder Input

- Design by Protype
  - Design, build, test, stakeholder review, rinse & repeat

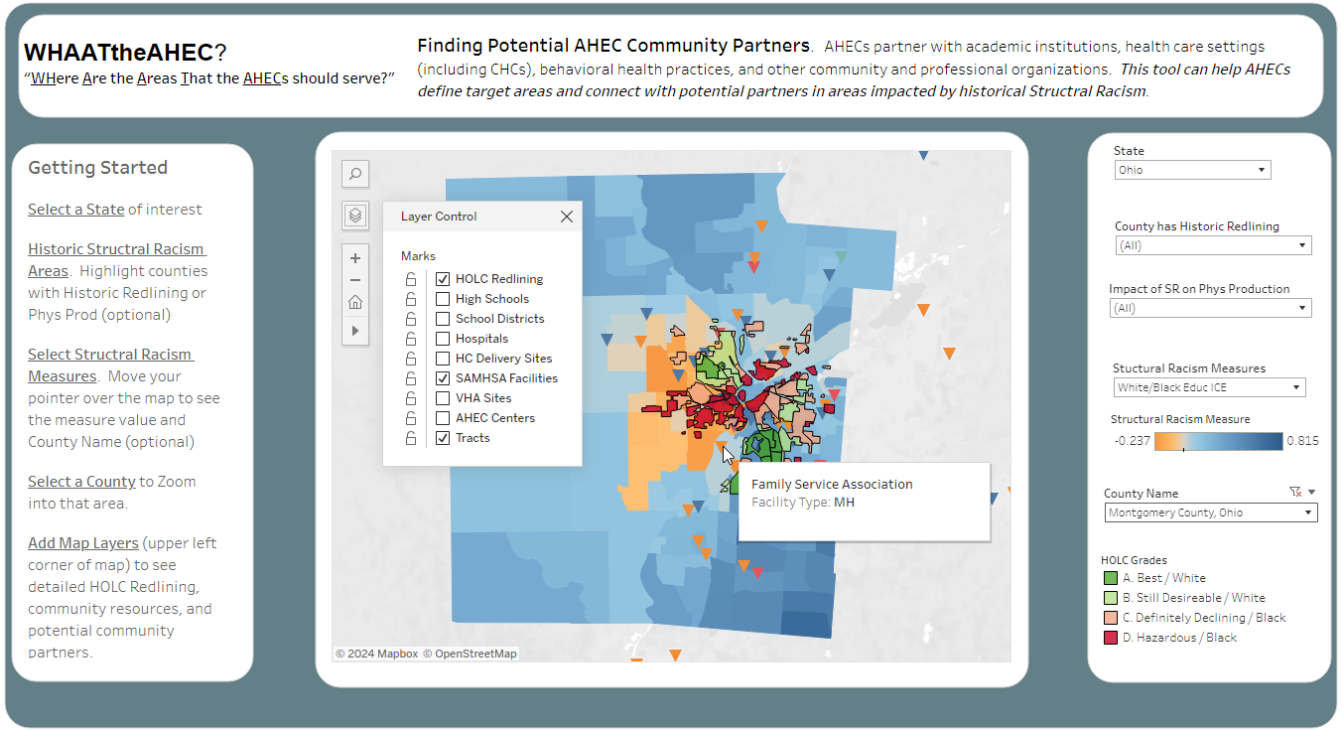
- Feedback from individual AHECs
  - “Local” AHECs
    - Eastern Indiana (rural)
    - Cincinnati (Urban)
    - Eastern Ohio (suburban)
  - Other AHECs
    - Arizona
    - Maryland / DC

- National AHEC Organization
  - Executive Committee (three staff)
  - Diversity Committee (45 members/orgs, 26 states)



The Visualizations

- Interactive Visualizations
  - "What If"
  - "Finding Potential AHEC Community Partners"
  - "Exploring your AHEC Community Profile"
- Static Maps
  - State maps designed through stakeholder input



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WHAATtheAHEC?

"WHere Are the Areas That the AHECs should serve?"

What If. Of the 32,772,125 infants born between 1980 and 1989, 99,033 became physicians. How did structural racism and unequal access to economic and social resources in their place of birth impact chances of becoming a physician? *This tool can help AHECs understand the impact of childhood opportunity on physician production.*

In the 1980's about 30 infants per 10,000 live births became physicians, with considerable variation by community. Areas with a high proportion of high educated whites, were much more likely to produce future physians.

What if all areas of the US, regardless of race, had the same historical advantages, educational resources, and social networks available to high education white communities . How would that have impacted the number of future phsycians?

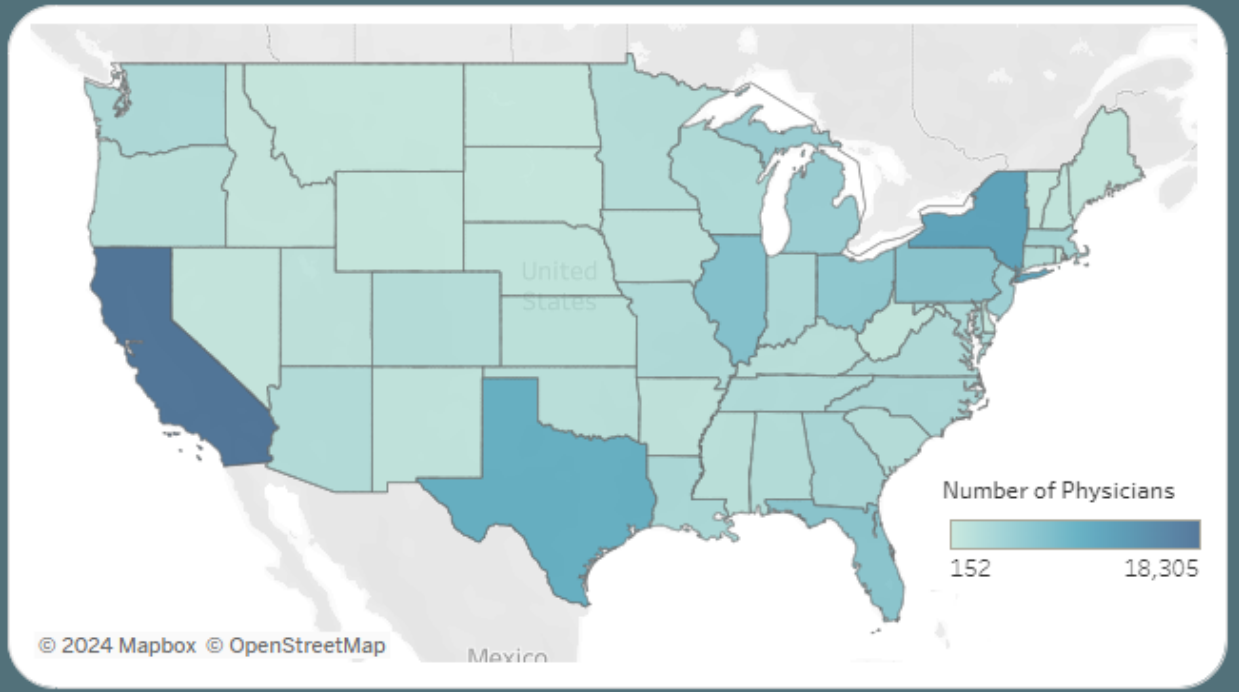
Use the slider below to show how the US would have gained (or lost) physicians under varying scenarios.

What would happen is every county in the US had access to the same social and economic capital as . . .

0.42

. . . Low Education Black Areas

. . . High Education White Areas



How Many Doctors?

99,033

What if all areas had equal opportunities?

124,468

Physicians Gained / Lost

25,435

Calculating "What If". *Physician Gained / Lost* is based on a simple linear regression model. We regressed county-level physician production on structural racism and childhood community asset measures. Physician Production was calculated as the number of live births in a county that eventually become a practicing physicians in any location. We measure Structural Racism using the Index of Concentration at the Extremes (ICE) White/Black Education. ICE measures structural racism by comparing the number high-educated whites and low-educated blacks in an area - values closer to 1.0 indicate more high-educated whites, while values closer to -1.0 indicate more low-educated blacks. We also included black/white rate ratios for education, income, and housing measures and childhood community assets such as bookstores, schools, colleges and universities, libraries, and museums. Sources: National Center for Health Statistics. Birth Data Files, 1980 to 1989; American Medical Association Physician Masterfile, 2023 ; 1980 Census of Population and Housing, Summary File 3

WHAATtheAHEC?

"WHere Are the Areas That the AHECs should serve?"

Finding Potential AHEC Community Partners. AHECs partner with academic institutions, health care settings (including CHCs), behavioral health practices, and other community and professional organizations. *This tool can help AHECs define target areas and connect with potential partners in areas impacted by historical Structural Racism.*

Getting Started

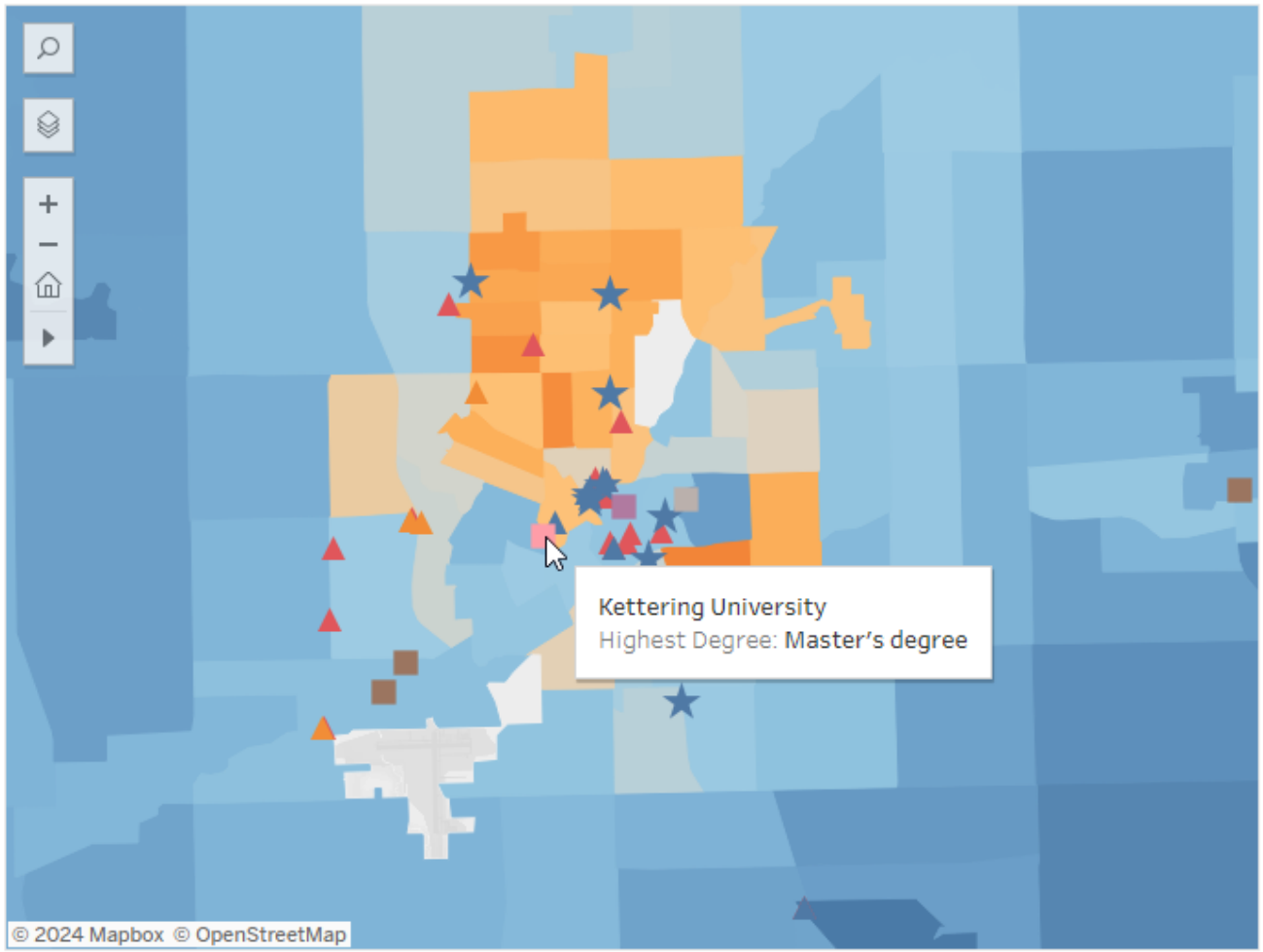
Select a State

Filter to Historic Structural Racism Areas. Highlight counties with Historic Redlining or Phys Prod (optional)

Explore Structural Racism Measures. Select alternate measures of Structural Racism. Move your pointer over the map to see the measure value and County Name (optional)

Select a County to Zoom into that area.

Add Map Layers (upper left corner of map) to see detailed HOLC Redlining, community resources, and potential community partners.



State
Michigan

County has Historic Redlining
(All)

Areas of SR AND Phys Production
(All)

Metro / Non-Metro Counties
(All)

Stuctural Racism Measures
White/Black Educ ICE

Structural Racism Measure
-0.2531 0.6641

County
Genesee County, Michigan

HOLC Grades
- A. Best / White
- B. Still Desireable / White
- C. Definitely Declining / Black
- D. Hazardous / Black

WHAATtheAHEC?

"WHere Are the Areas That the AHECs should serve?"

Exploring your AHEC Community Profile. AHECs recruit, train and retain a health workforce committed to address local community health needs and creatively help address local and regional healthcare issues. *This tool helps explore local healthcare workforce and health outcomes to define current and future need.*

State: Ohio

County: (All)

Areas of SR AND Phys Production: (All)

County has Historic Redlining: Yes

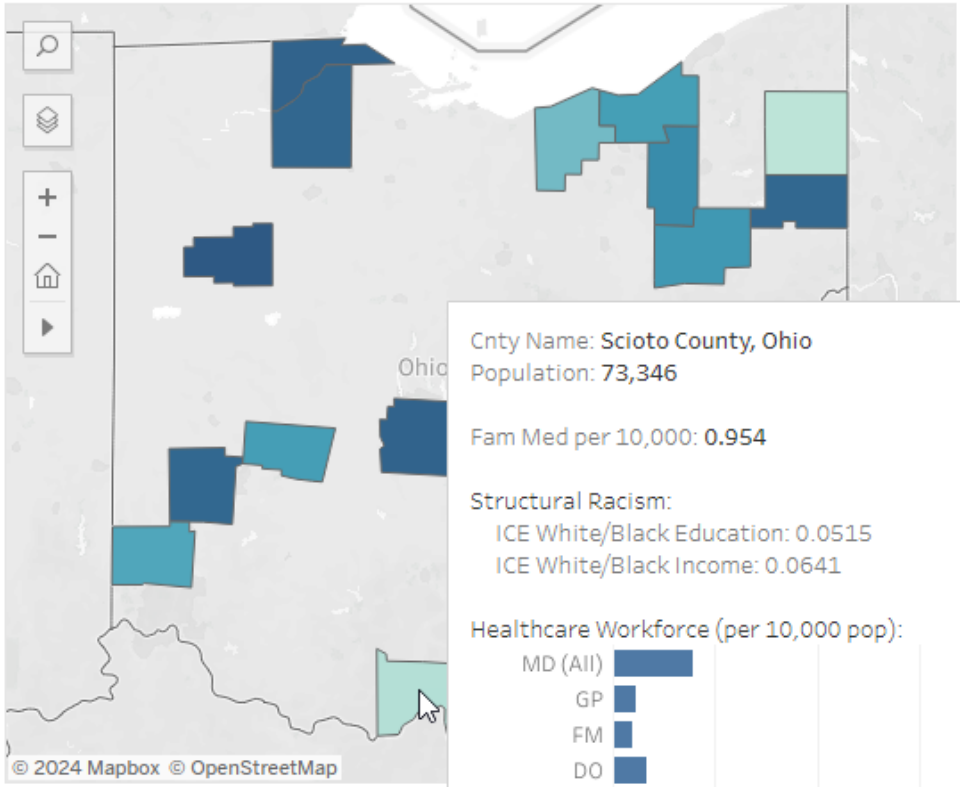
Metro / Non-Metro Counties: (All)

Getting Started

Select a State

Select counties (optional). Select your real or potiential AHEC service area, or filter by historical structural racism or rurality.

Select Community Characteristics. Select and explore measures of healthcare workforce, structural racism, and health for US counties.

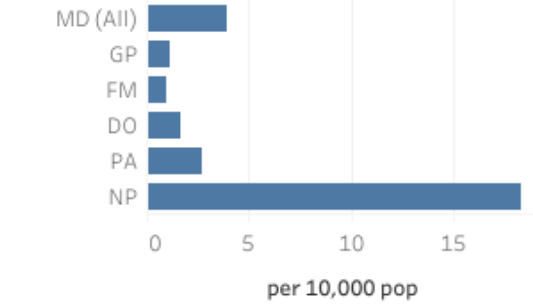


Cnty Name: **Scioto County, Ohio**
Population: **73,346**

Fam Med per 10,000: **0.954**

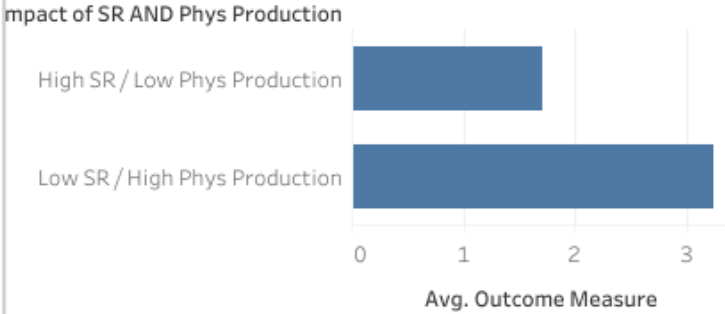
Structural Racism:
ICE White/Black Education: 0.0515
ICE White/Black Income: 0.0641

Healthcare Workforce (per 10,000 pop):



Select Community Characteristic: Fam Med per 10,000

Number of Family Physicians per 10,000 population. Source: 2023 Area Health Resource File



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