

# In Health Matters, Place Matters - The Health Opportunity Index (HOI)

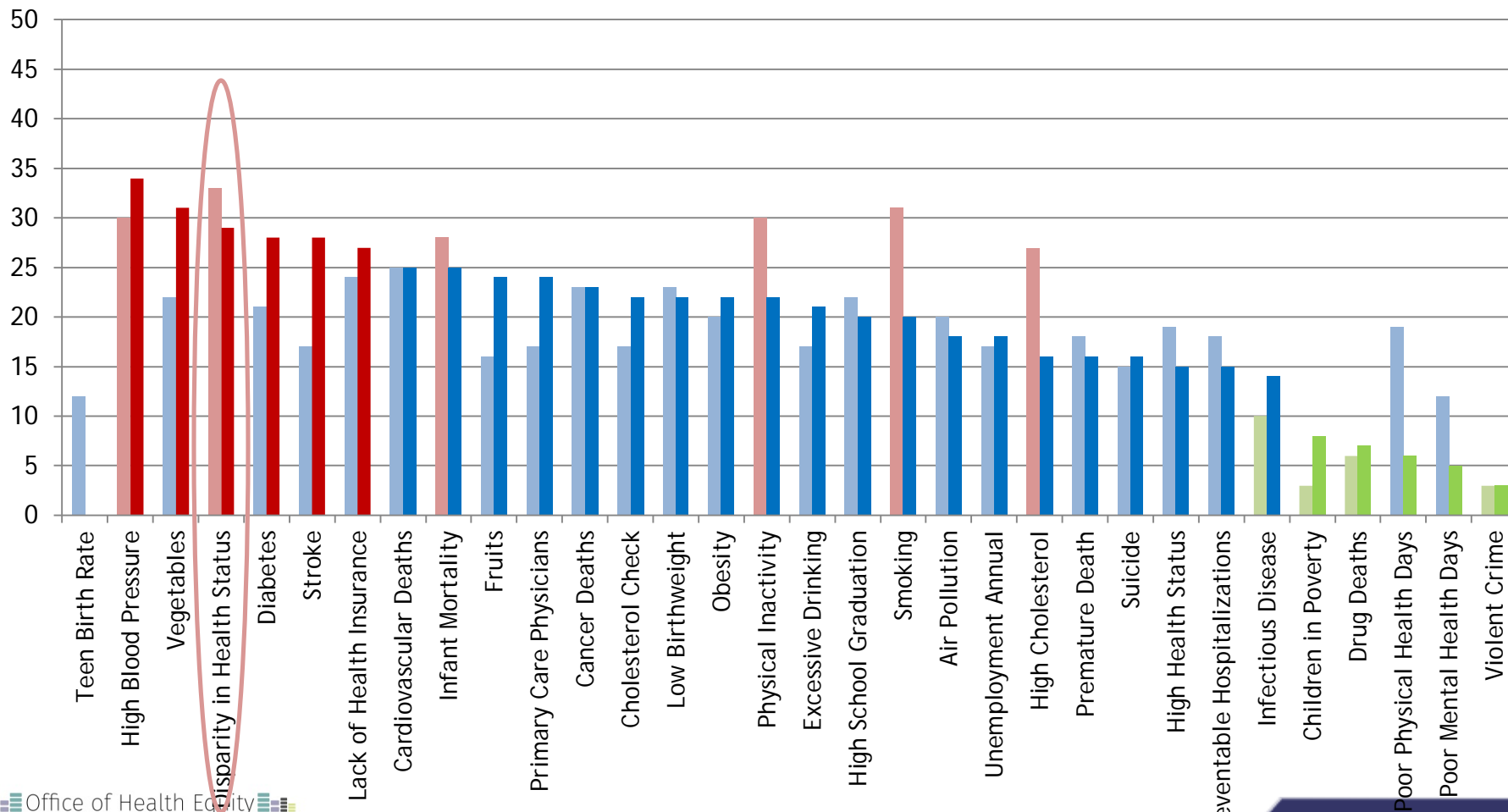
Virginia Department of Health  
Office of Health Equity

# Identifying the Problem

# America's Health Rankings

United Health Foundation Scorecard

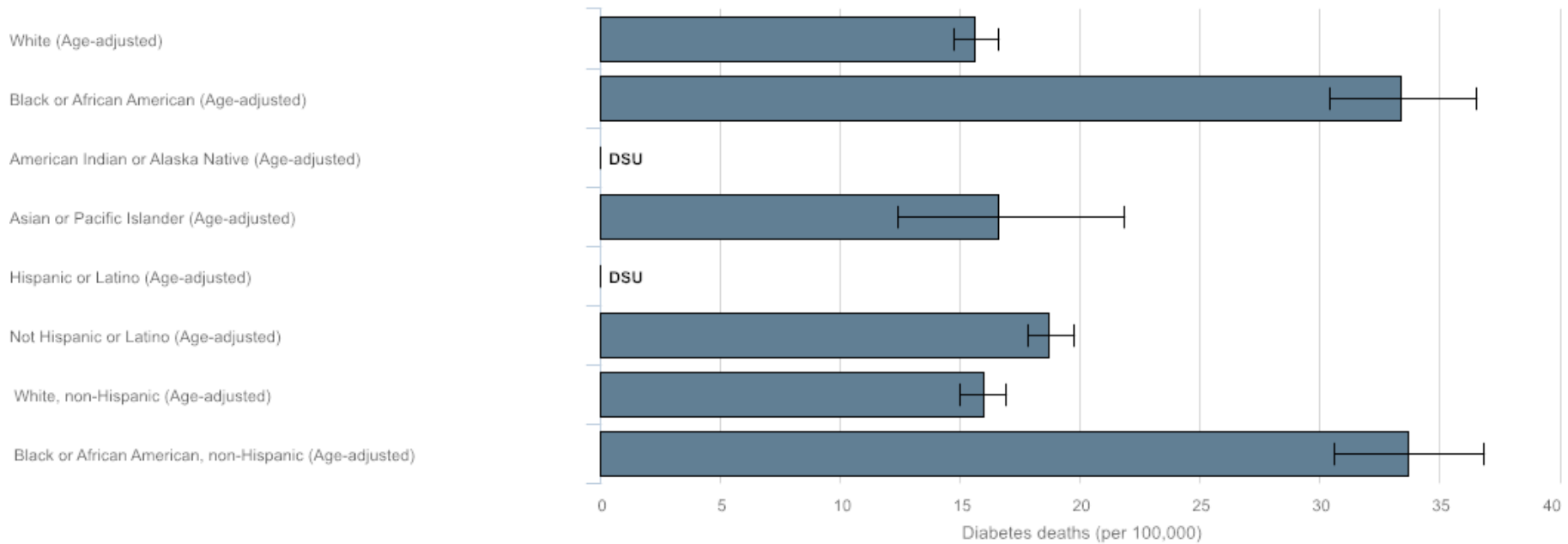
Overall Ranking = 19<sup>th</sup>



# HEALTH OUTPUT - RACIAL/ETHNIC

## Diabetes deaths (per 100,000)

2013 | Virginia | Race/Ethnicity

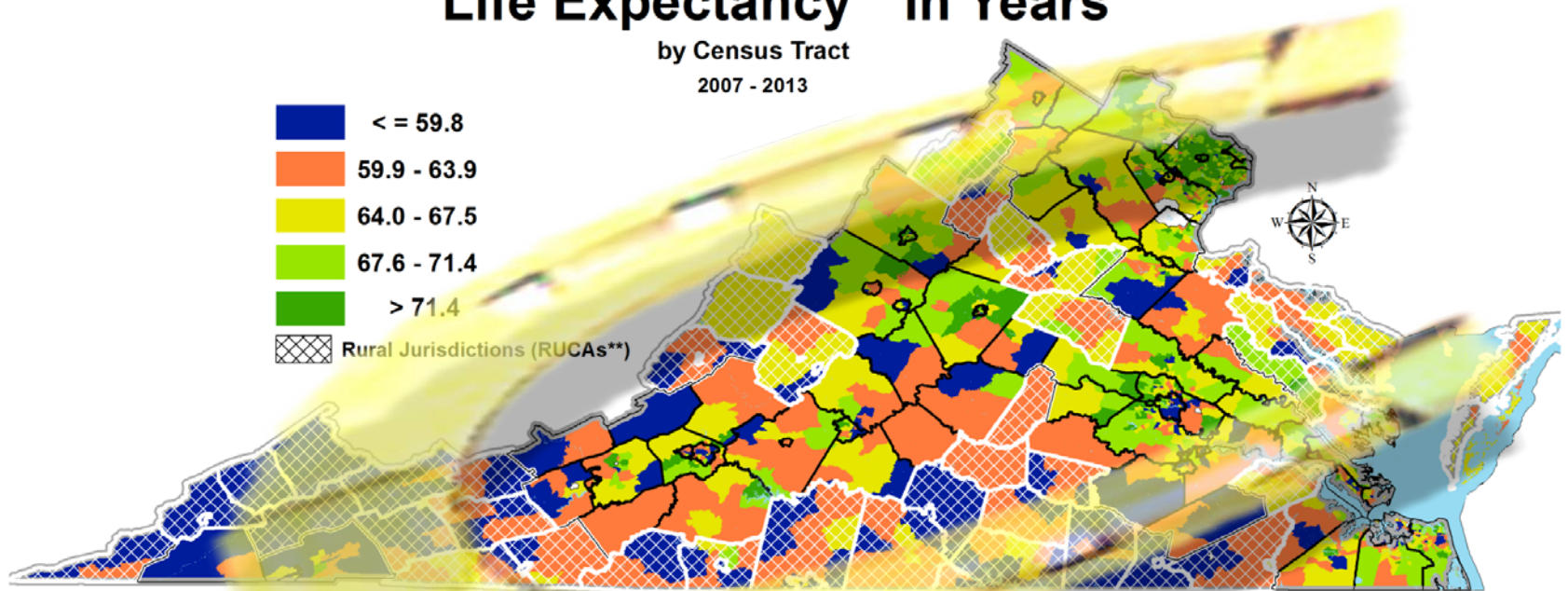
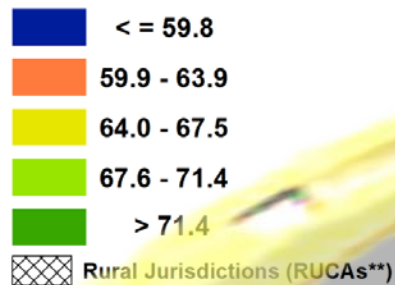


Data Source: NVSS-M (CDC/NCHS) ; Bridged-Race Population Estimates for Census 2000 and 2010 (CDC, Census, CDC/NCHS and Census, CDC/NCHS) Centers for Disease Control and Prevention. National Center for Health Statistics. Health Indicators Warehouse. [www.healthindicators.gov](http://www.healthindicators.gov), Date accessed: April 20, 2016

# The State of Population Health

## Virginia Disease-Free Life Expectancy \* in Years

by Census Tract  
2007 - 2013



\* Data Sources: Virginia Health Statistics

\*\* The rural-urban commuting area (RUCA) codes classify U.S. census tracts using measures of population density, urbanization, and daily commuting



## Communities of Opportunity

- Parks & trails
- Grocery stores
- Thriving small businesses and entrepreneurs
- Financial institutions
- Better performing schools
- Good transportation options and infrastructure
- Sufficient healthy housing
- Home ownership
- Social inclusion
- IT connectivity
- Strong local governance

Good Health Status

Poor Health Status  
**Contributes to health disparities:**

- Obesity
- Diabetes
- Cancer
- Asthma
- Injury

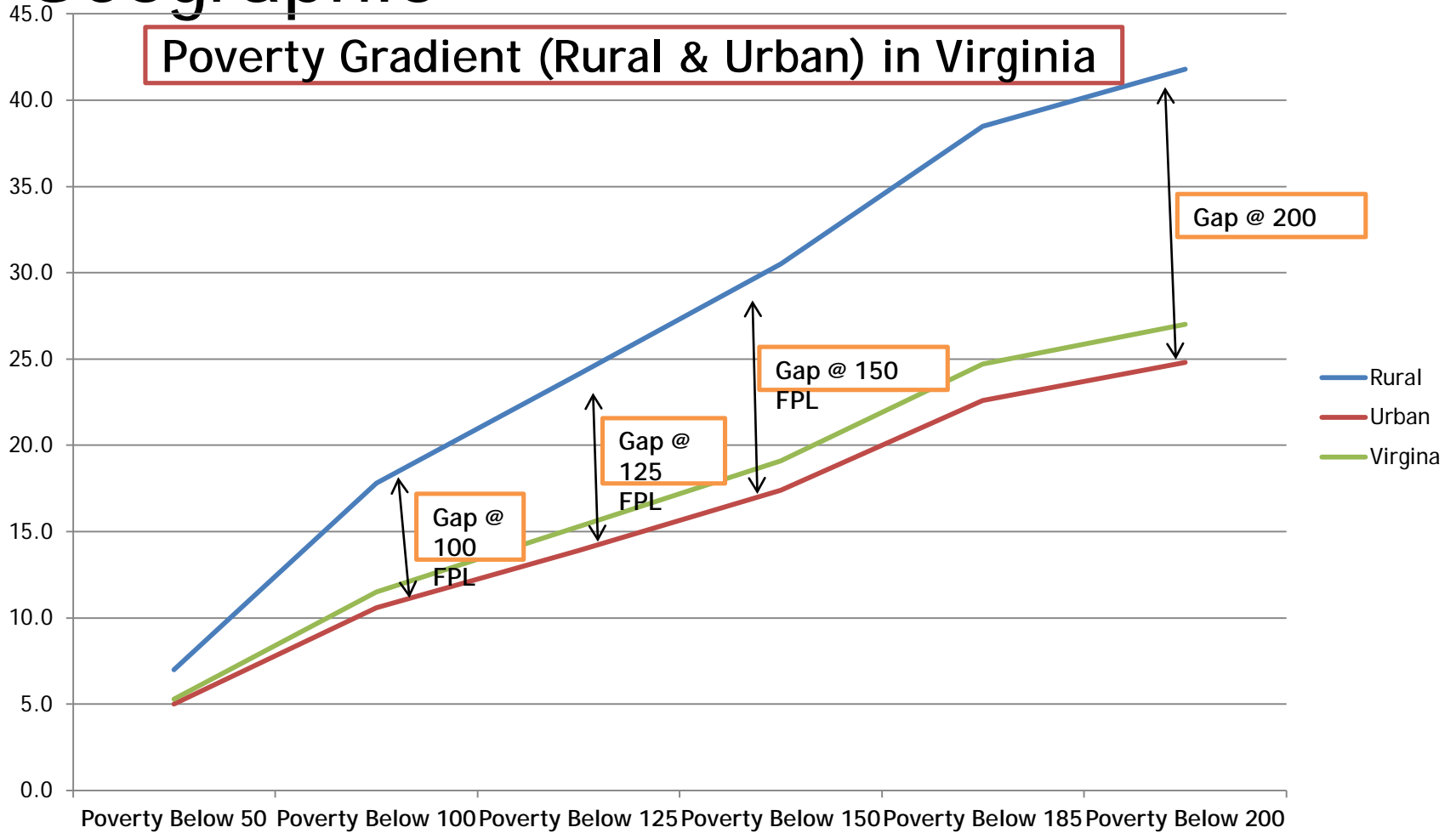
## Low-Opportunity Communities

- Unsafe/limited parks
- Fast food restaurants
- Payday lenders
- Few small businesses
- Poor performing schools
- Increased pollution and contaminated drinking water
- Few transportation options
- Poor and limited housing stock
- Rental housing/foreclosure
- Social exclusion
- Limited IT connections
- Weak local governance



Source: Dr. Edward Ehlinger, Minnesota Commissioner of Health  
2016 President's Challenge for the Association of State and Territorial Health Officials (ASTHO)

# Opportunity Differences Geographic



# Opportunity Differences Racial/Ethnic

	All	White	Black	Hispanic or Latino Origin	Asian	American Indian and Alaska Native	Native Hawaiian and Other Pacific Islander
Unemployment Rate (2015 Q3)	4.5%	3.4%	8.3%	5.2%	NR	NR	NR
Education: On-Time Graduation Rate (2015)	90.5%	92.9%	86.3%	84%	95.6%	87.9%	94.4%
Poverty: Less than 50% FPL	5.2%	4.2%	9.2%	6.4%	3.8%	7%	7.4%
Poverty: Less than 100% FPL	11.4%	9.2%	20.1%	15.8%	8.3%	13.9%	11%
Poverty: Less than 125% FPL	15.2%	12.3%	25.7%	21.4%	11.3%	18.7%	13.6%

Source: EPI analysis of Bureau of Labor Statistics Local Area Unemployment Statistics (LAUS) data and Current Population Survey (CPS) data; Virginia Department of Education State-level Cohort Report, Class of 2015; U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates.

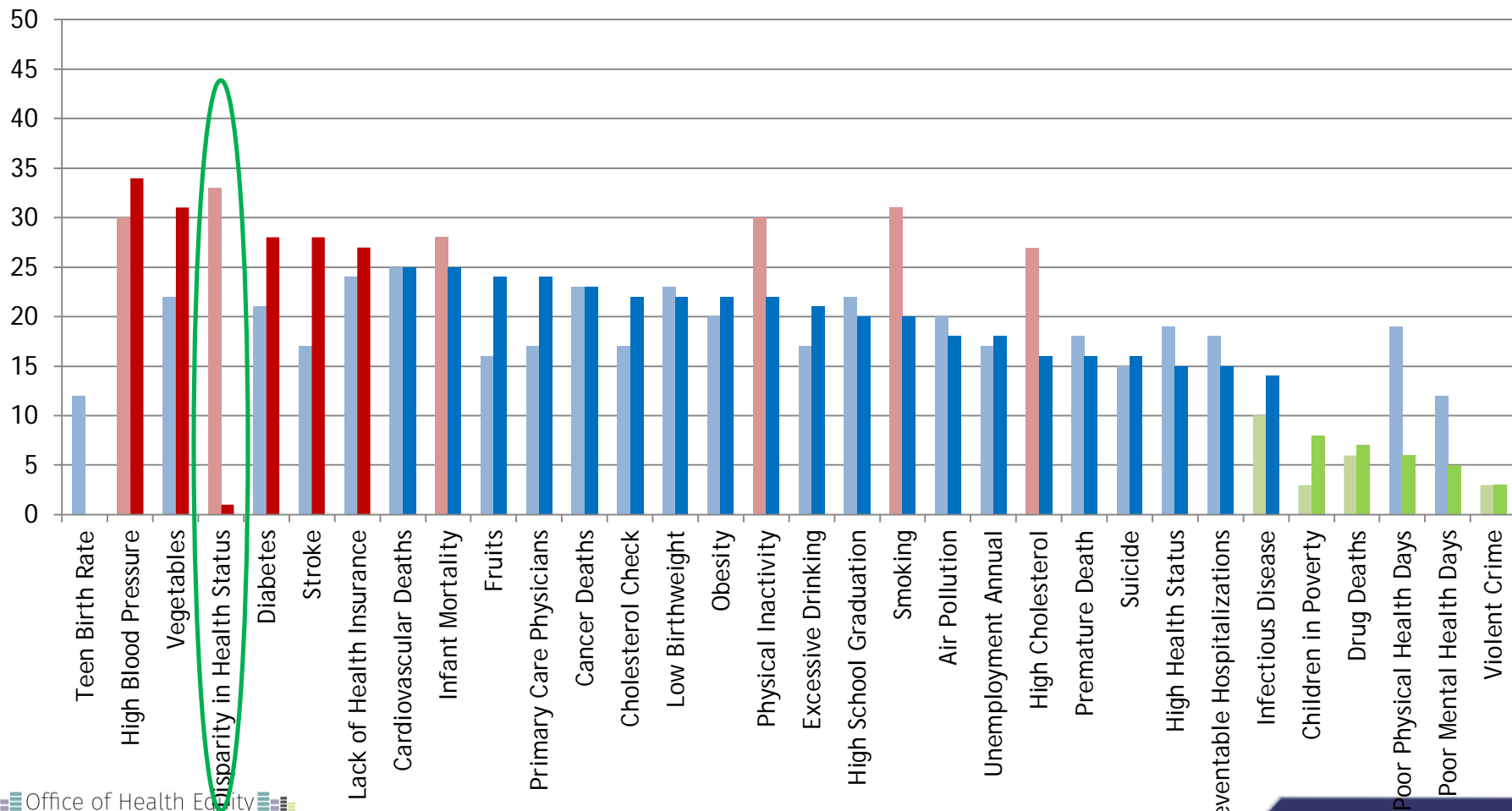


# Identifying the Means to a Solution

# America's Health Rankings

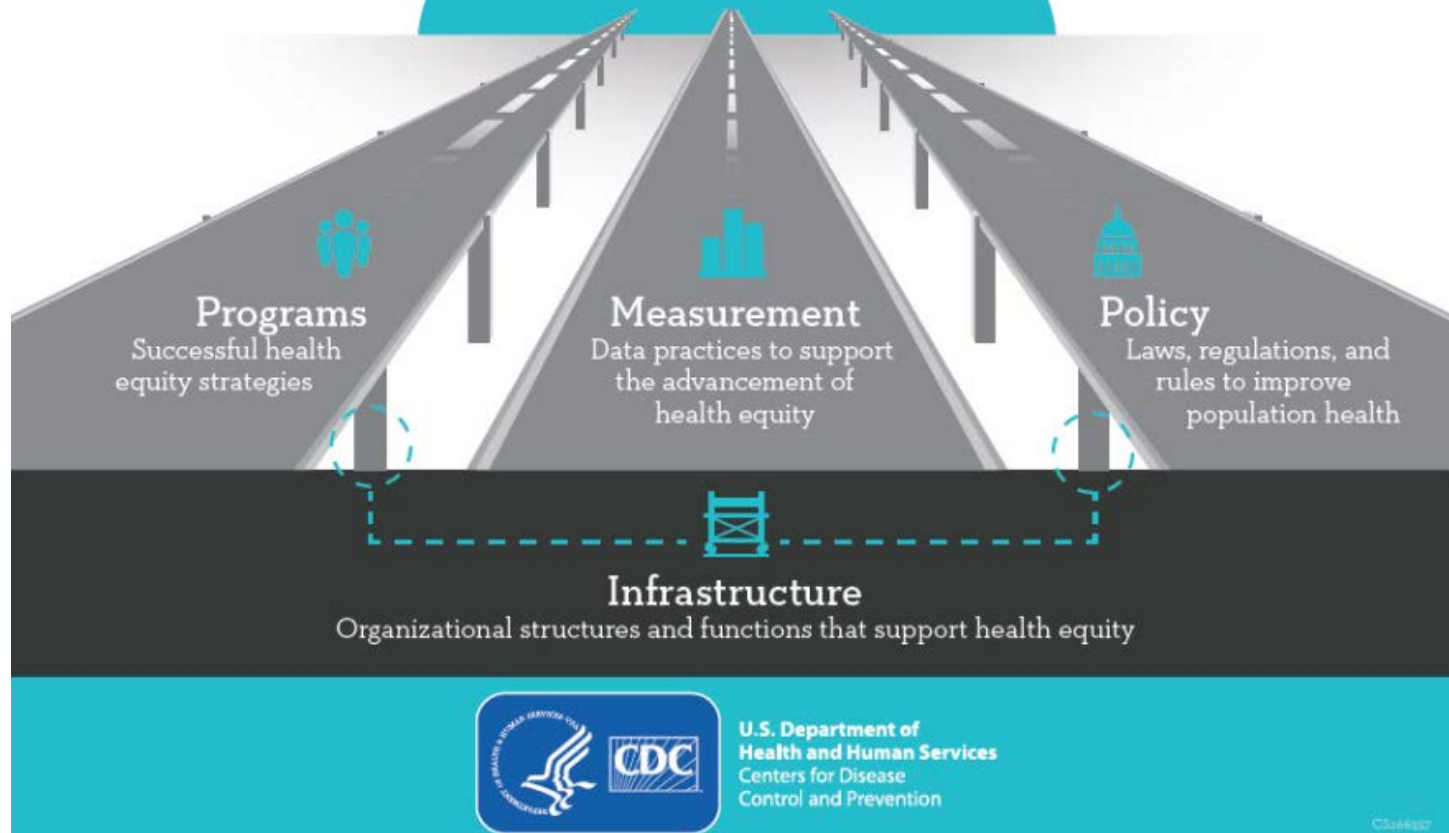
United Health Foundation Scorecard

Overall Ranking = 1<sup>st</sup>



# PAVING THE ROAD TO HEALTH EQUITY

**Health Equity**  
is when everyone has the opportunity  
to be as healthy as possible



CS249827



# Virginia's Plan For Well-Being

2016-2020

## VIRGINIA STATE HEALTH IMPROVEMENT PLAN





- Affordable, safe, quality housing
- Access to parks and natural resources
- Equity in county practices
- Access to affordable, healthy, local food
- Equitable law and justice system
- Community and public safety
- Access to safe and efficient transportation
- Quality education
- Healthy built and natural environments
- Family wage jobs and job training
- Early childhood development
- Strong, vibrant neighborhoods
- Economic development
- Access to health and human services

# DETERMINANTS OF EQUITY

Source: King County (WA) Equity and Social Justice Annual Report December 2015

# DESIGN AND METHODS

# Health Opportunity Index

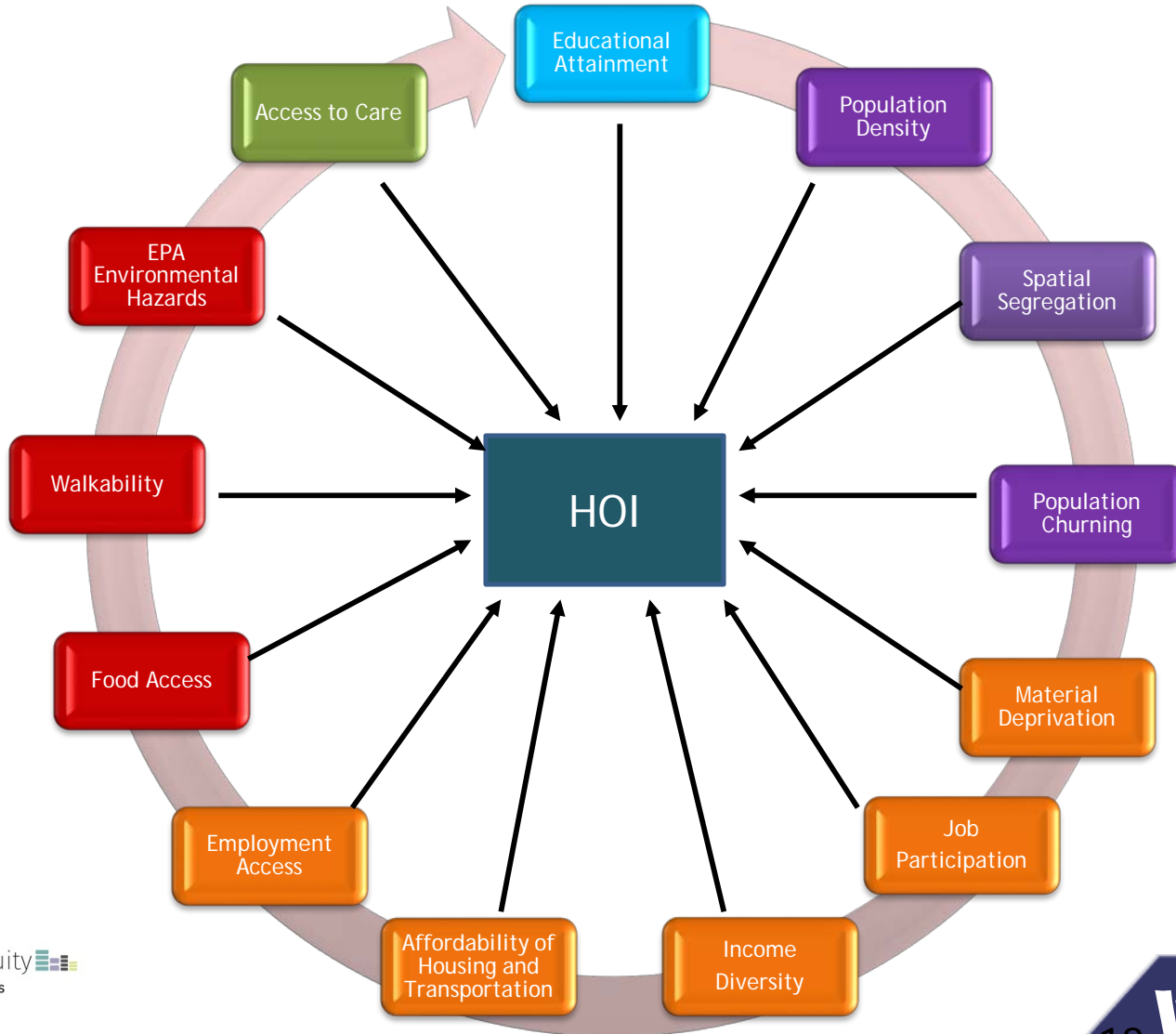
Identifies areas and populations that are most vulnerable to adverse health outcomes based on the Social Determinants of Health



# Healthy People 2020: Five Elements of SDOH

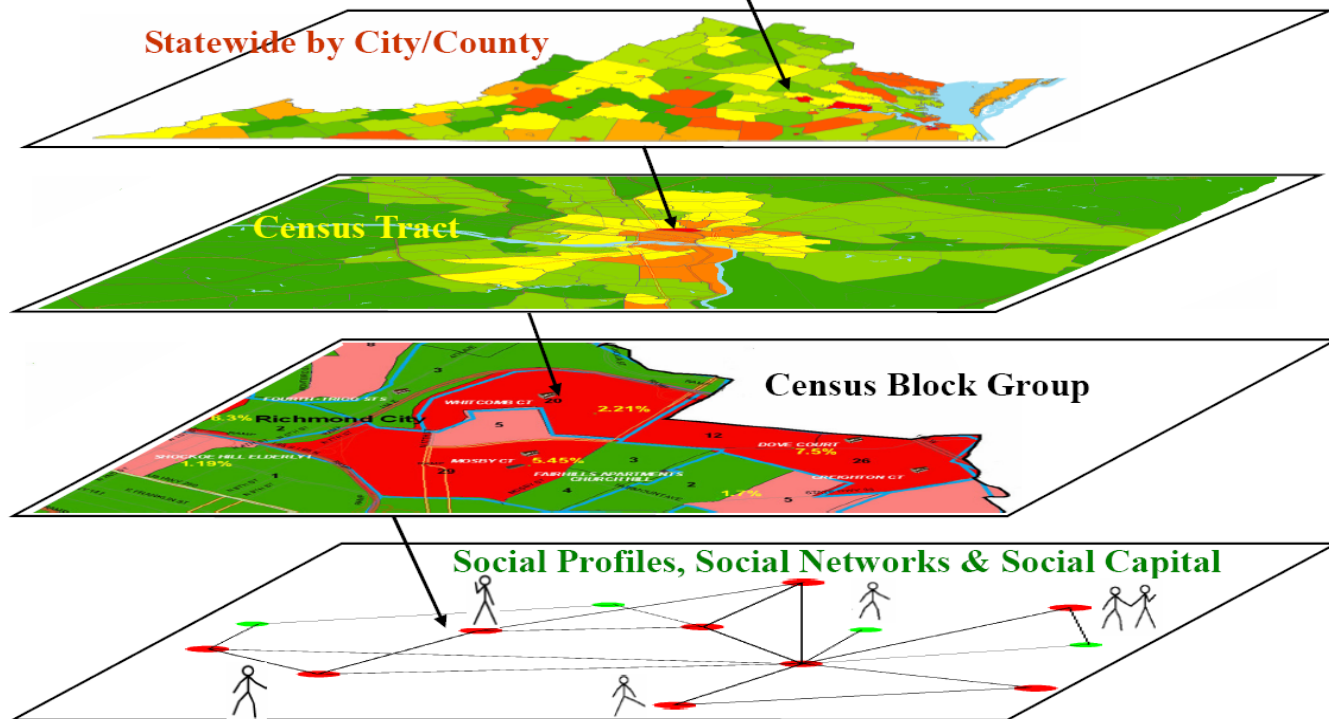


# Health Opportunity Index



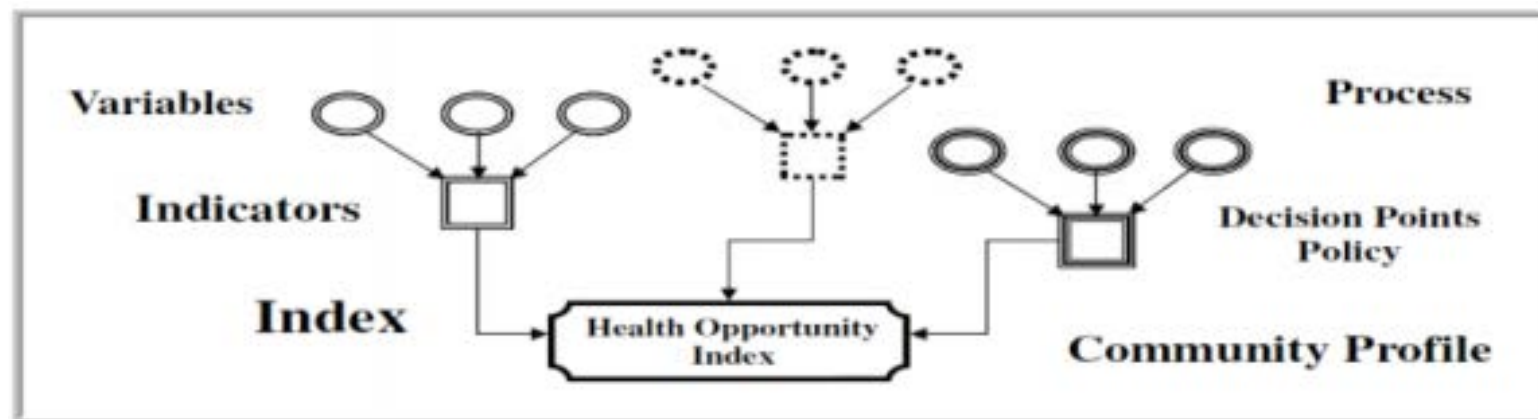
# Geographic Level Can Mask Detail

## Multilevel Spatial Analysis of Fundamental Causes & the Social Determinants of Health



# Structure

30+ Variables  
13 Indicators  
4 Profiles  
1 Health Opportunity Index



# Selecting Indicators

1. Identified by Local Health Departments & Stakeholders as important.
2. Linked to health outcomes in academic literature.
3. “Actionable” (e.g., segregation vs race)
4. Consistent, quality data for all Census Tracts in Virginia.

# Health Opportunity Index

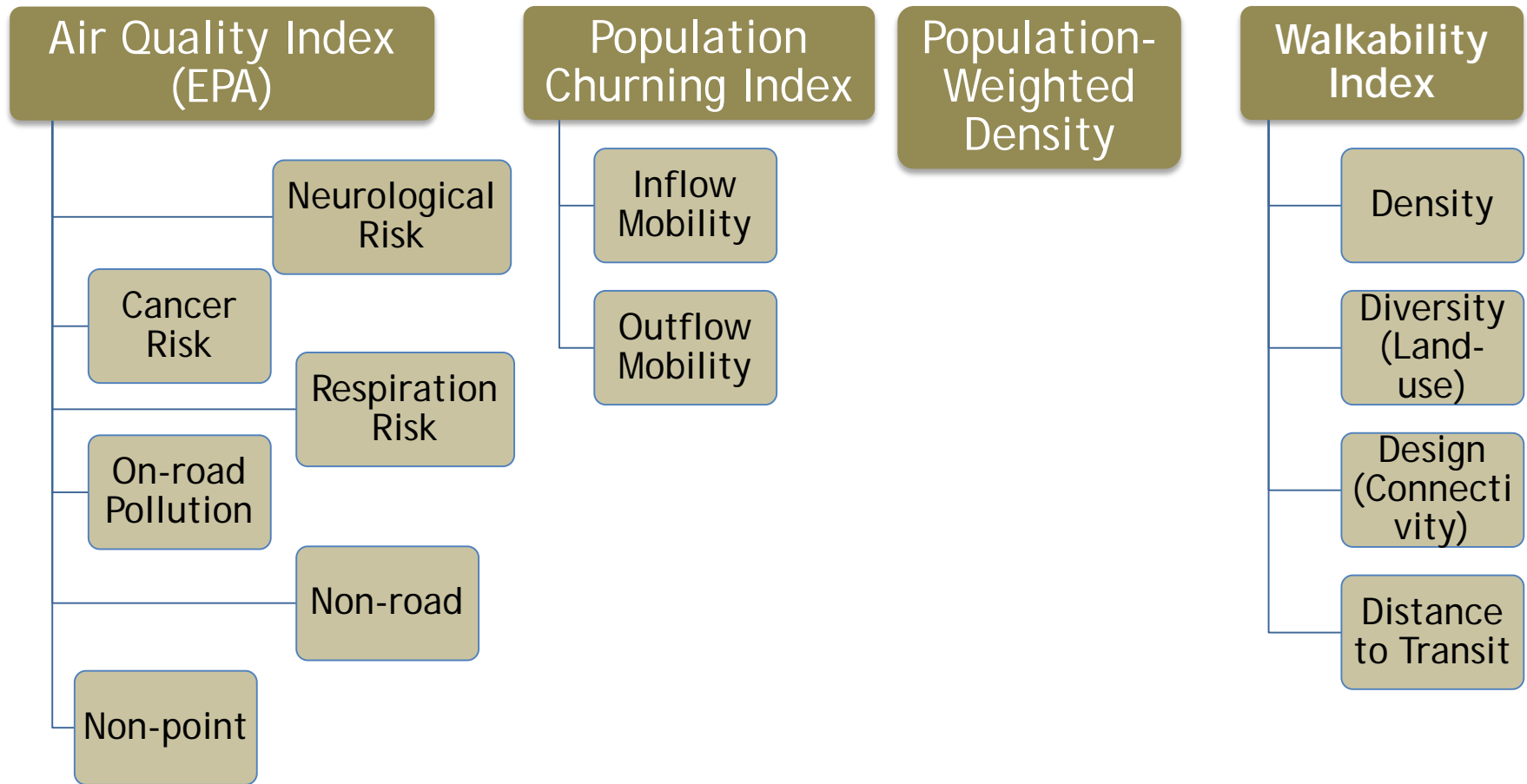
Community  
Environmental Profile

Consumer  
Opportunity Profile

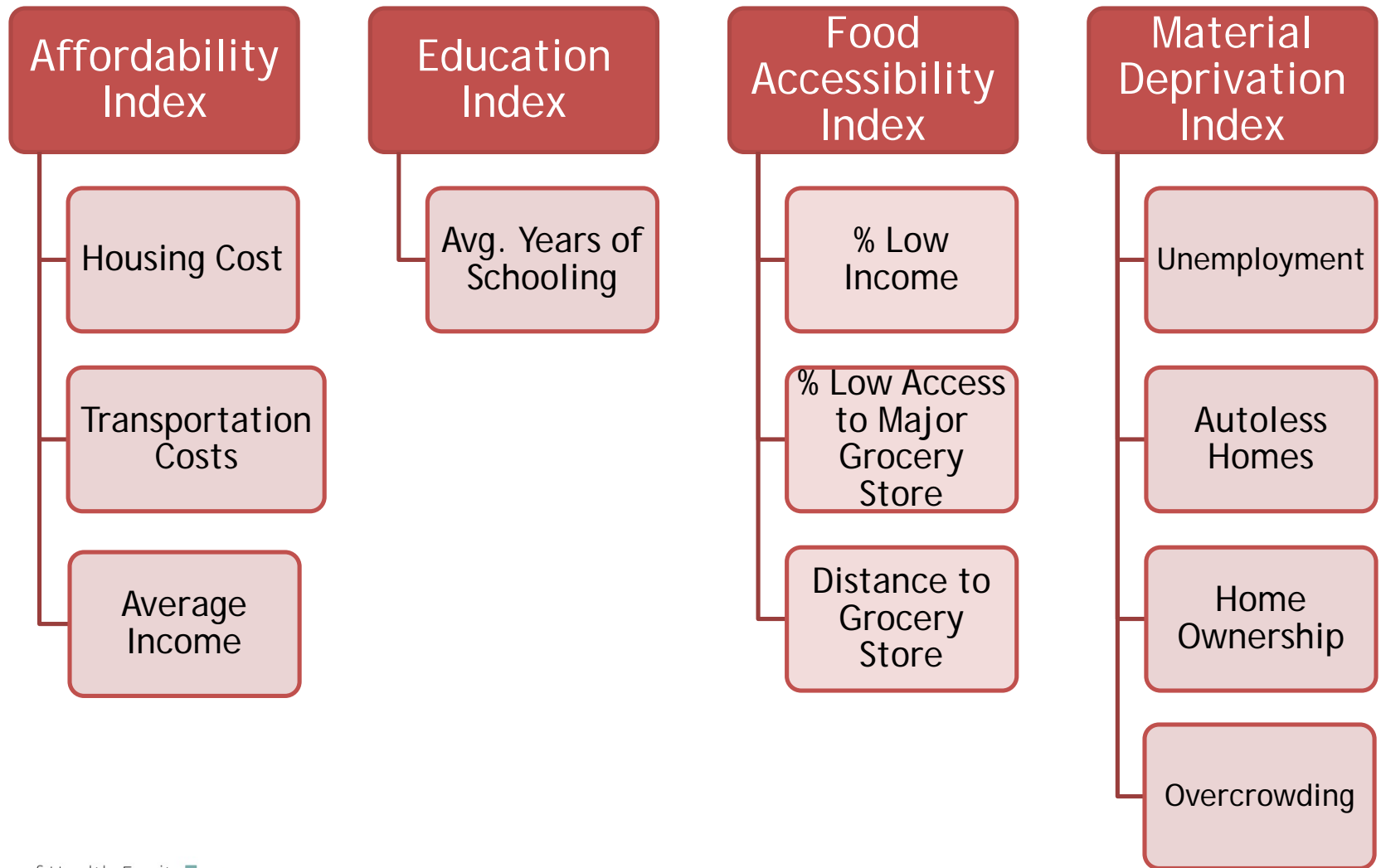
Economic  
Opportunity Profile

Wellness Disparity  
Profile

# Community Environmental Profile

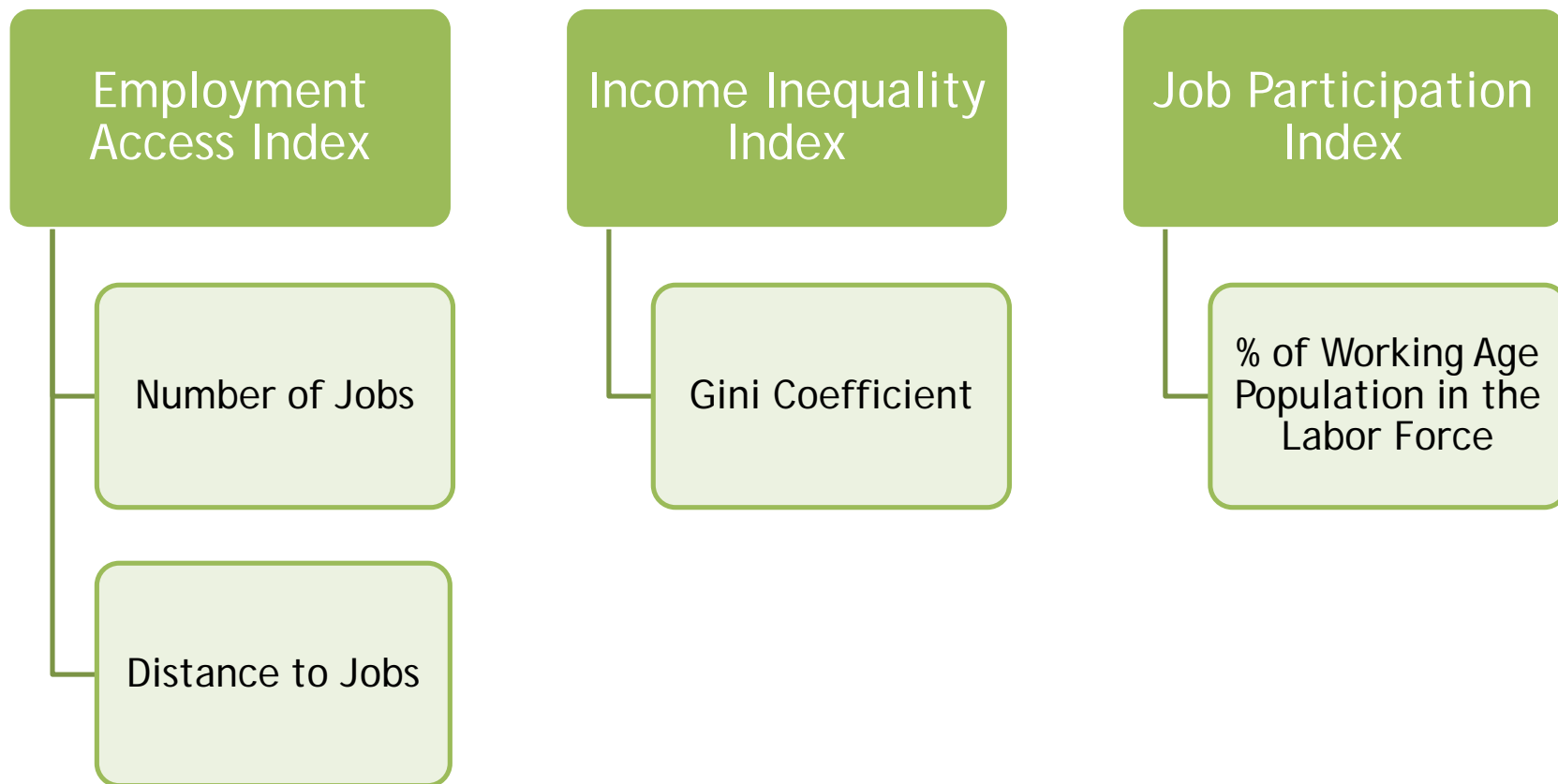


# Consumer Opportunity Profile

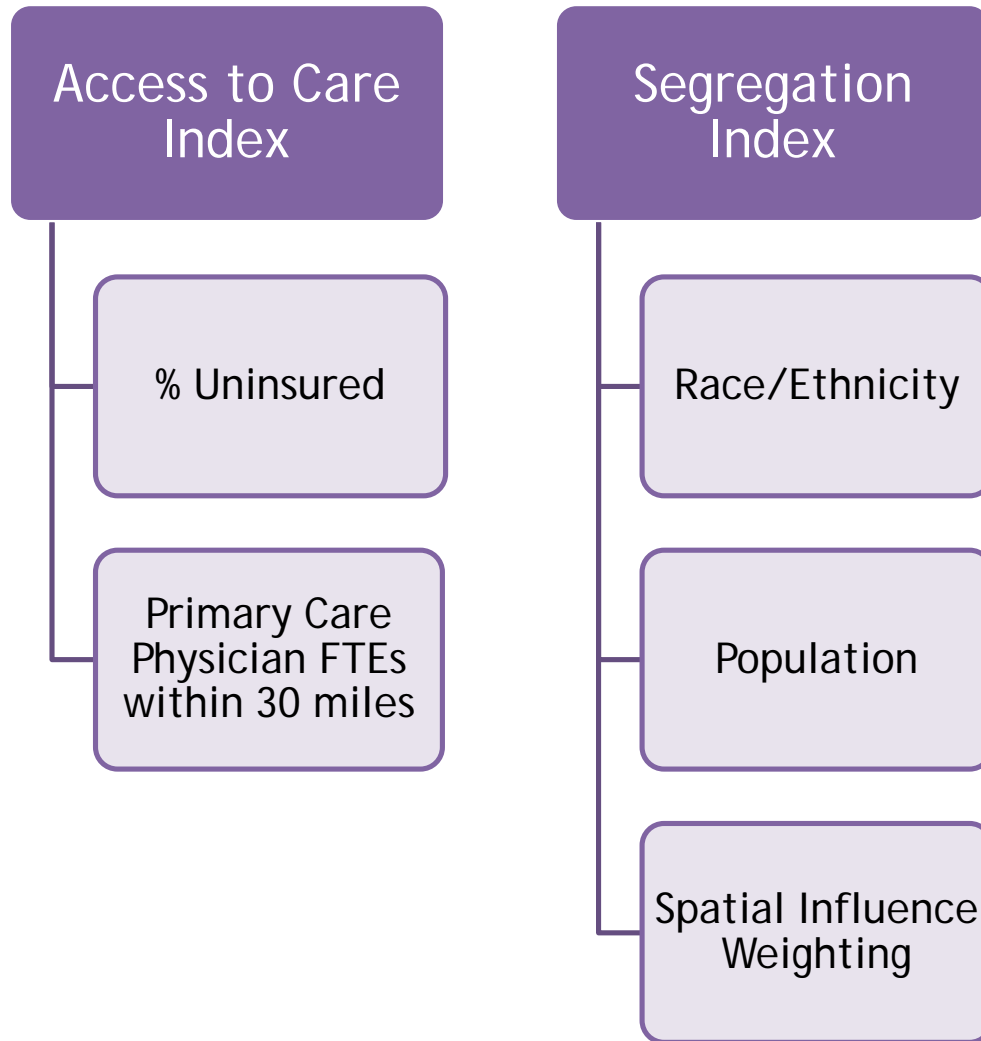




# Economic Opportunity Profile



# Wellness Disparity Profile



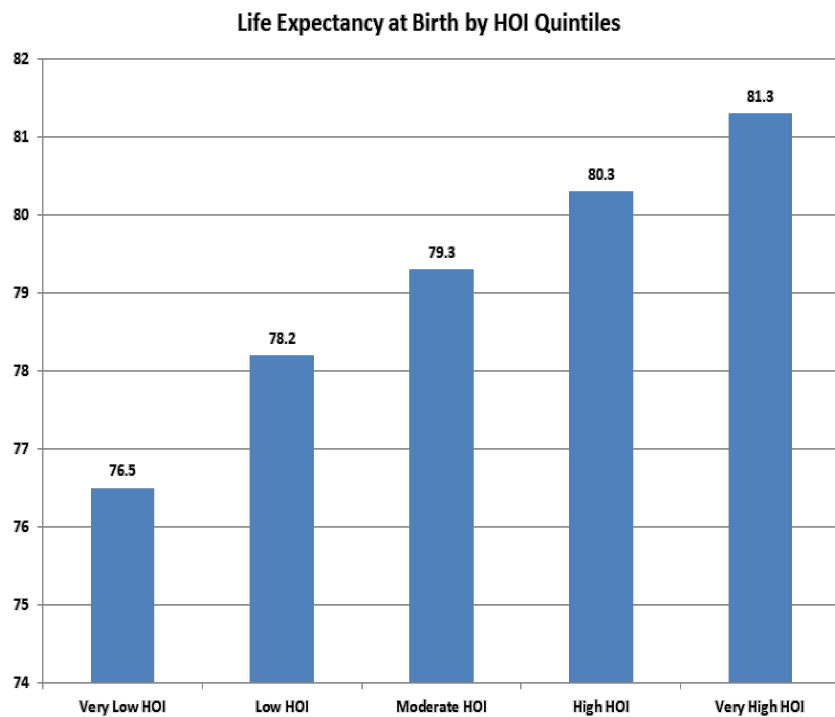
# Uses of the HOI

- To show that place matters when it comes to health
- To identify the impact of social determinants of health on statewide health landscape
- To identify HOI indicators that are most influential on local health
- To learn from communities with good health despite adverse HOI indicators
- To build collaboration across all sectors to promote health equity

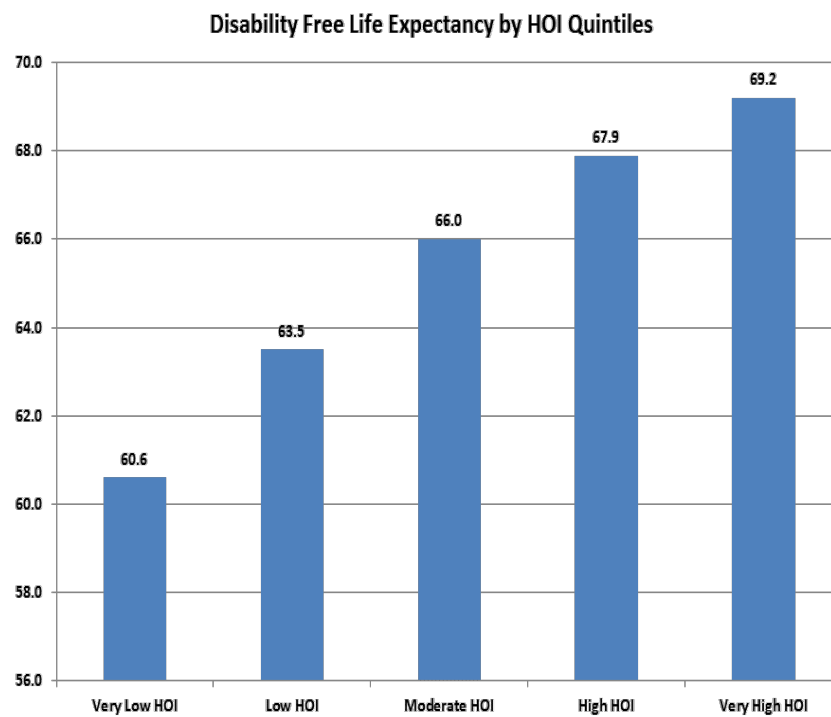
# DISPARITIES & THE HOI

# Monotonicity of HOI

## Life Expectancy at Birth

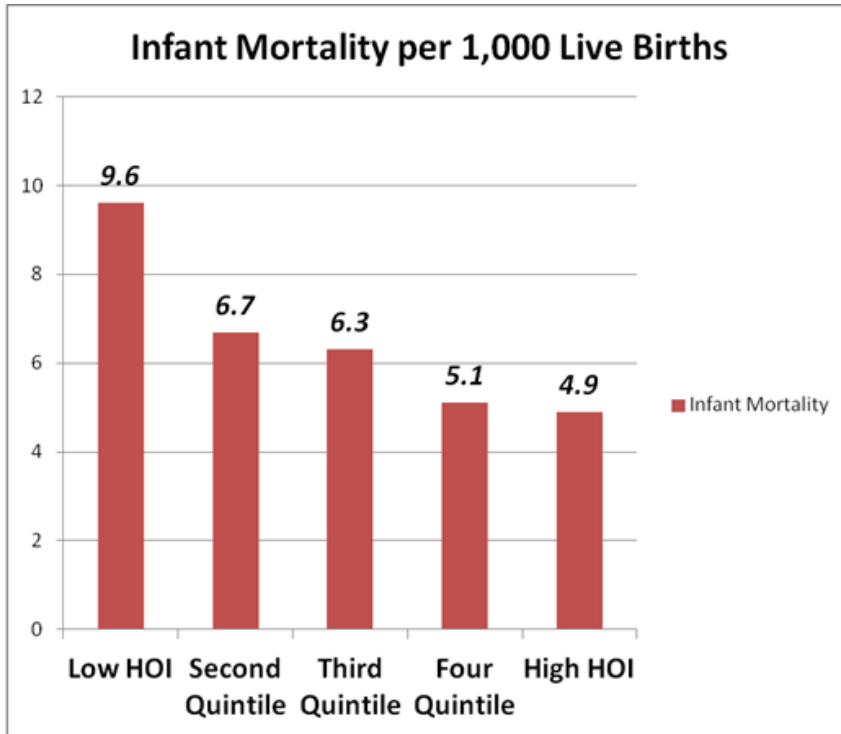


## Disability Free Life Expectancy

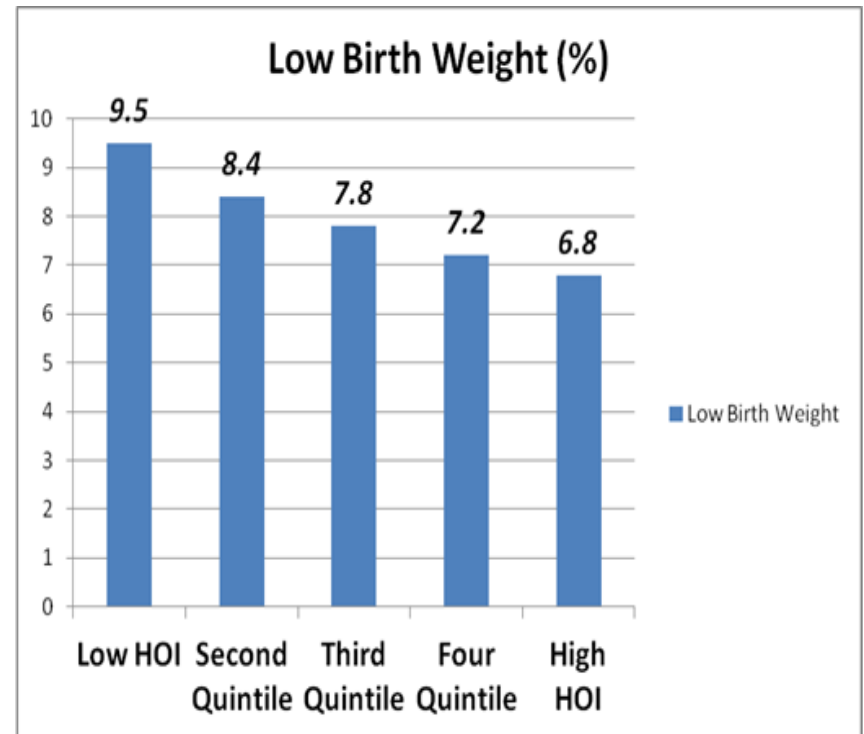


# Monotonicity of HOI

## Infant Mortality

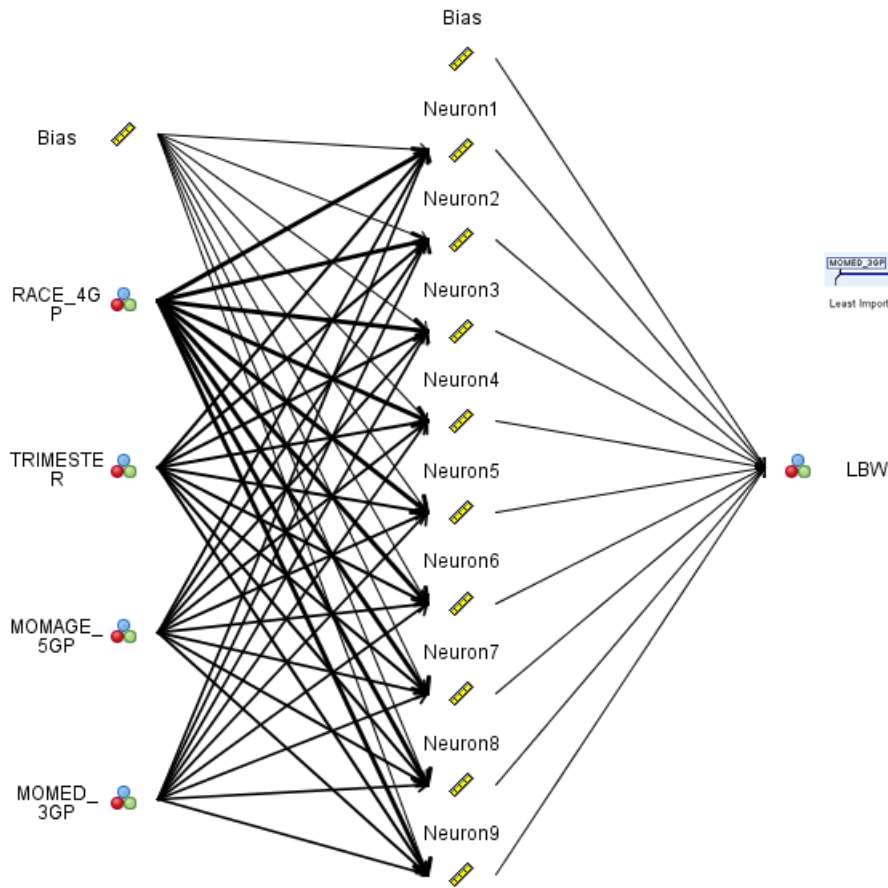


## Low Birth Weight



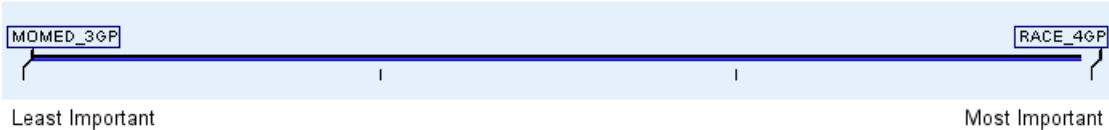
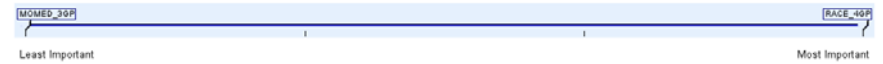
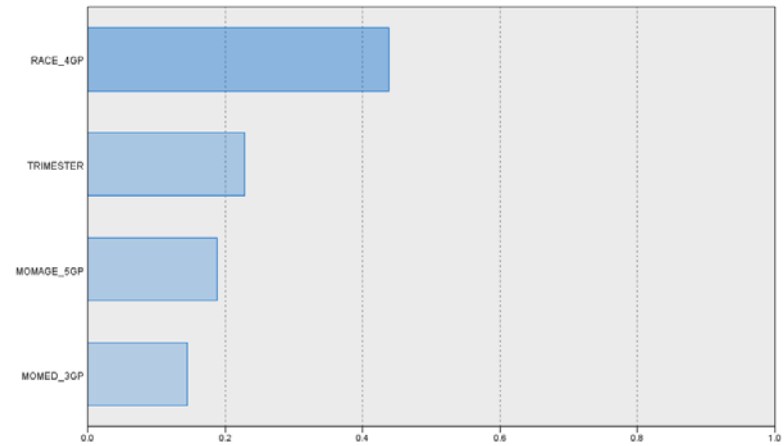
# Predictive Analytics for Low Birth Weight (Low HOI)

Network



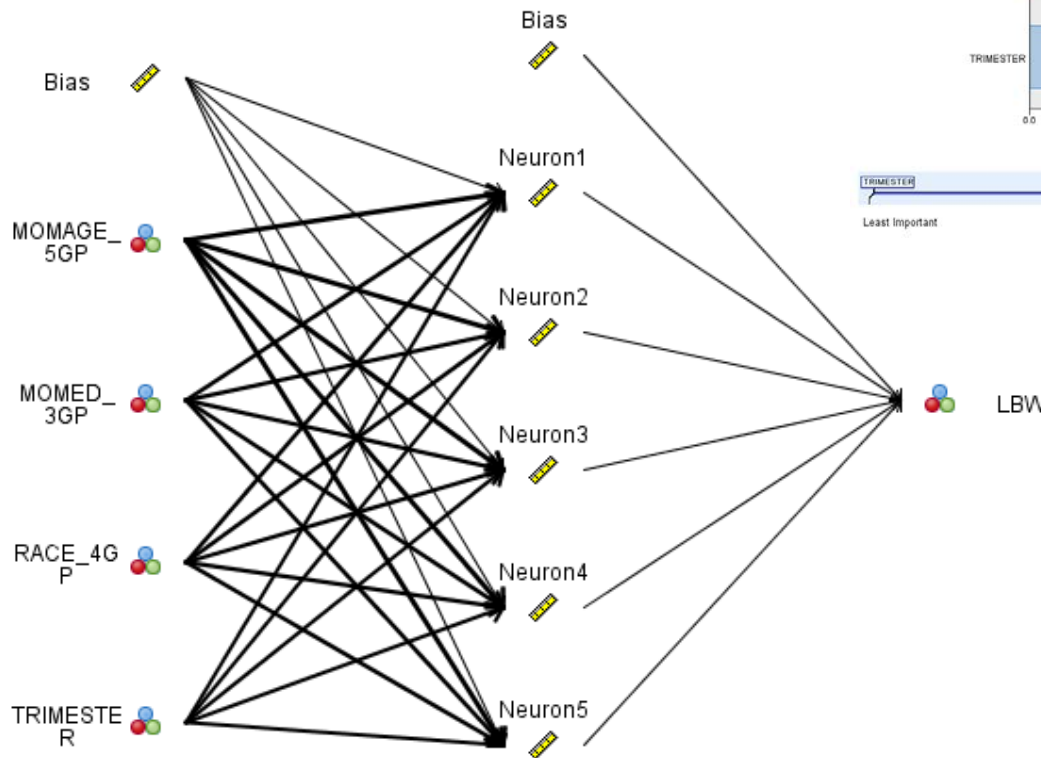
Predictor Importance

Target: LBW

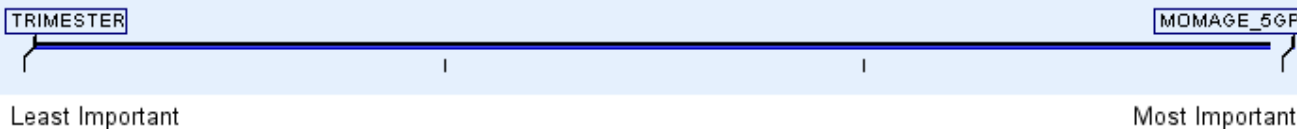
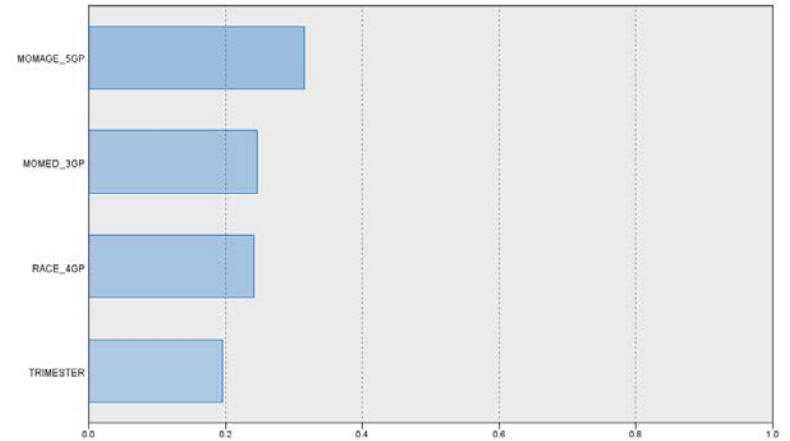


# Predictive Analytics for Low Birth Weight (High HOI)

Network

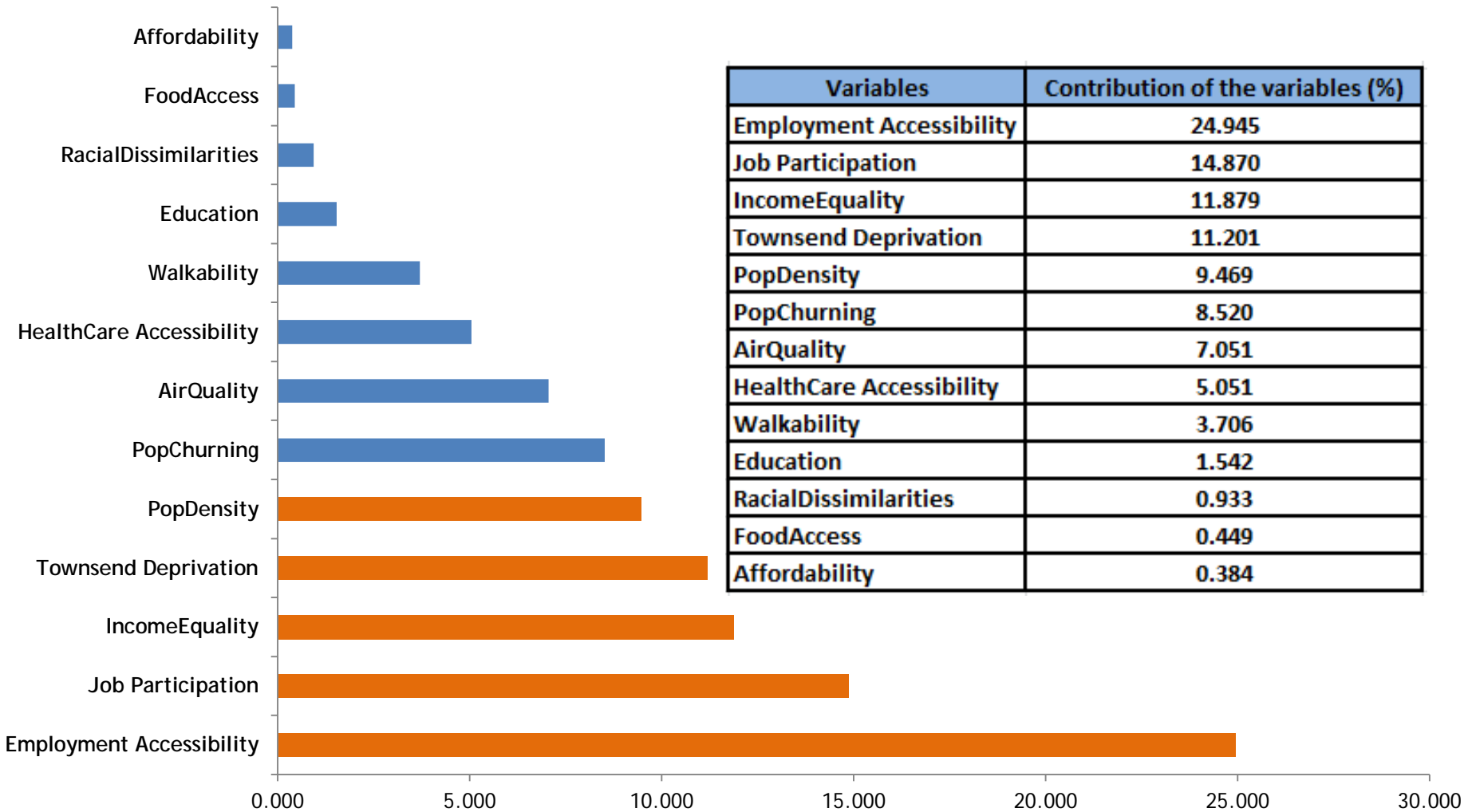


Predictor Importance  
Target: LBW





# Three River Health District HOI

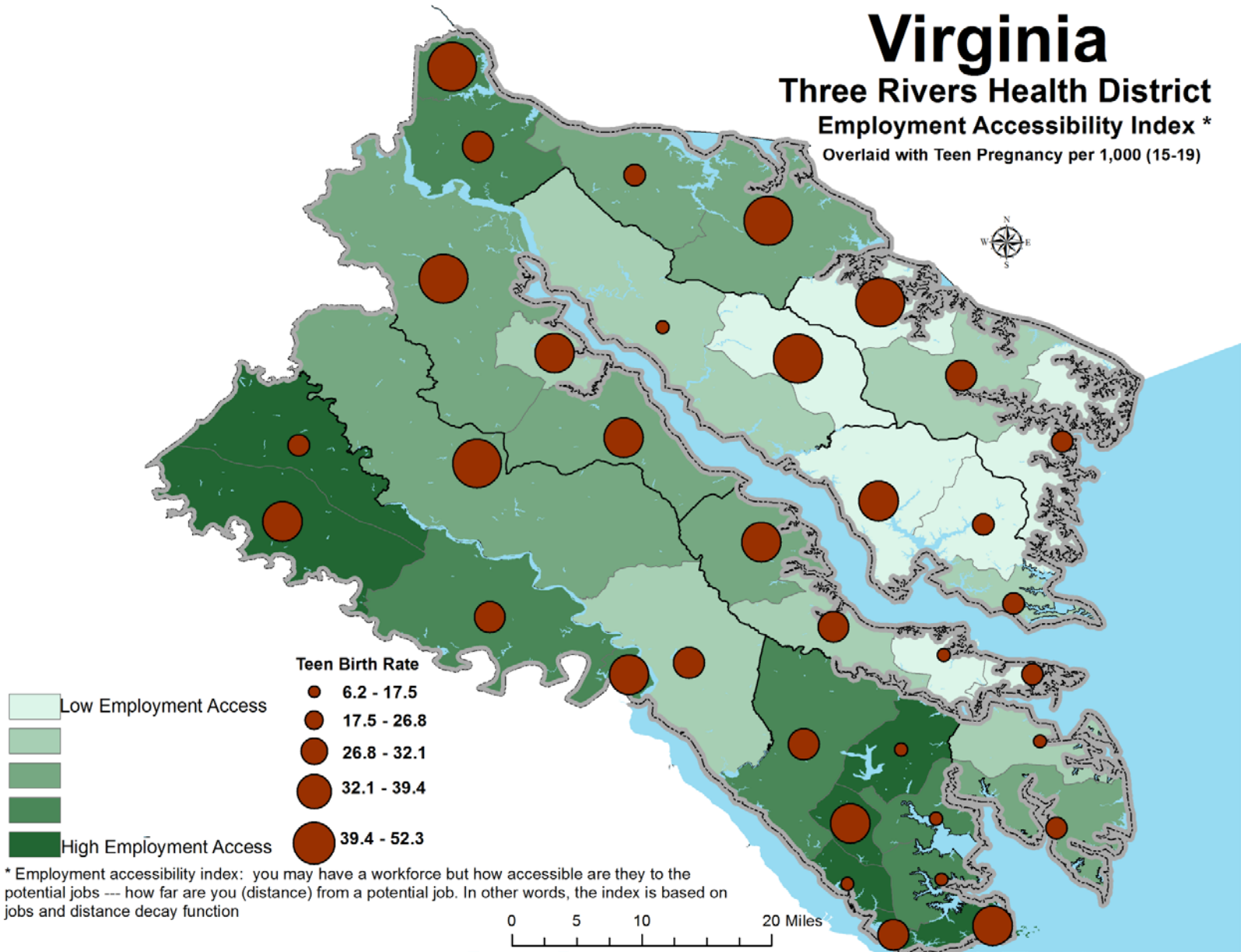


# Virginia

## Three Rivers Health District

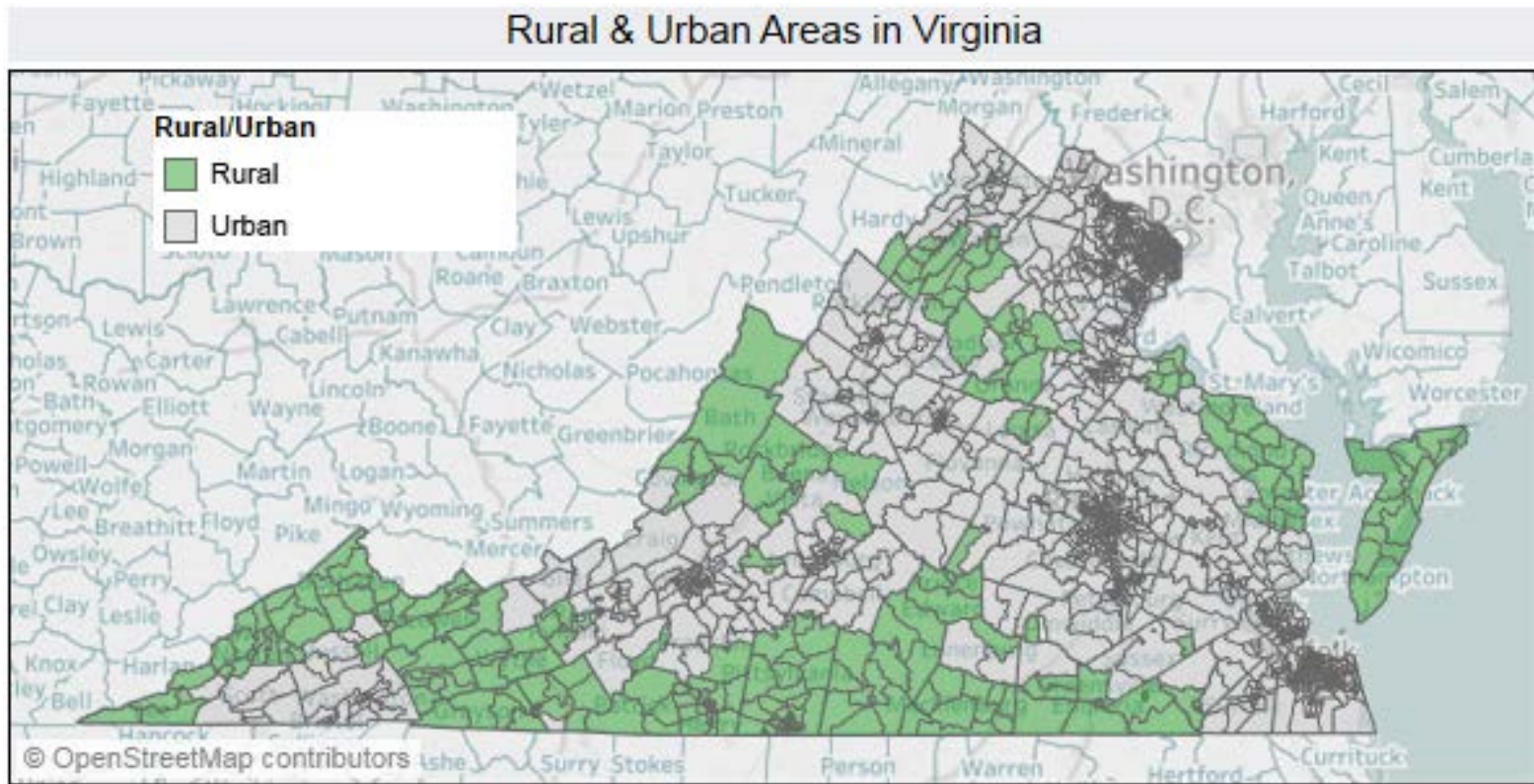
### Employment Accessibility Index \*

Overlaid with Teen Pregnancy per 1,000 (15-19)



\* Employment accessibility index: you may have a workforce but how accessible are they to the potential jobs --- how far are you (distance) from a potential job. In other words, the index is based on jobs and distance decay function

# Rural/Urban Disparities



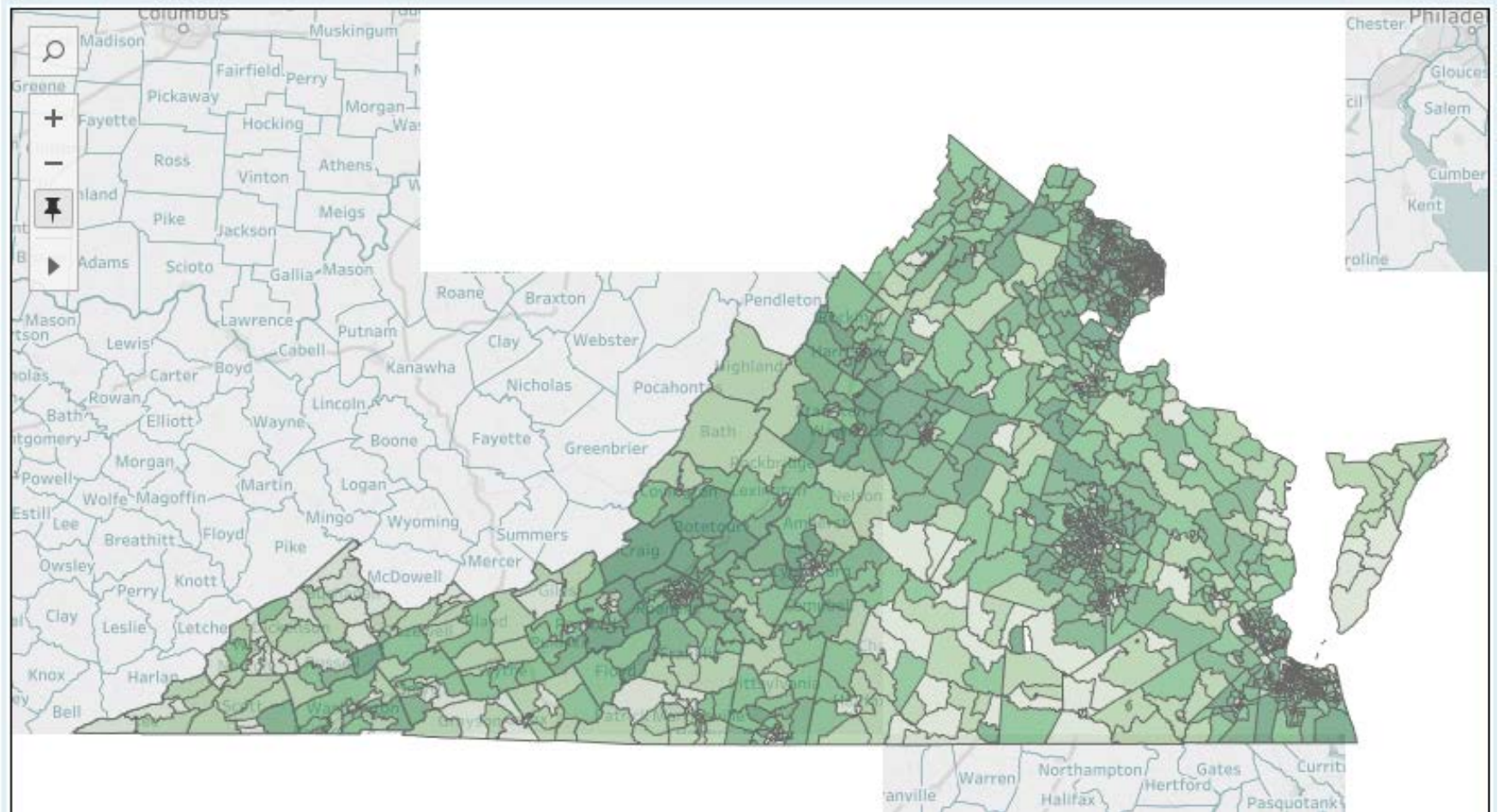
## Rural-Urban Commuting Areas

**Opportunity Level**

- Very Low
- Low
- Average
- High
- Very High

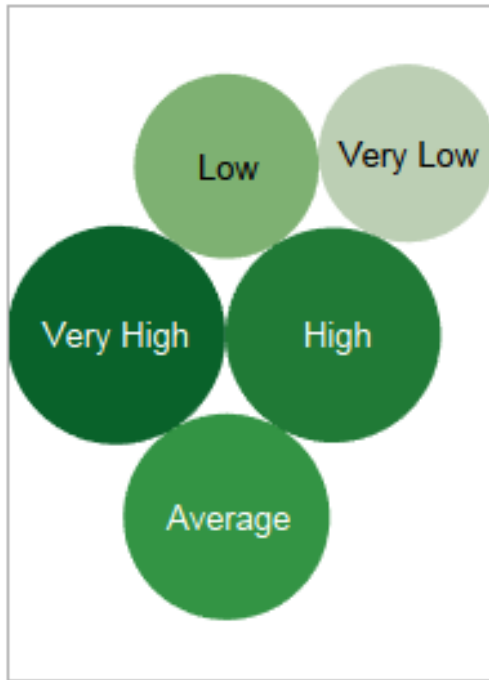


Promoting & Protecting the Health of All Virginians  
[www.vdh.virginia.gov](http://www.vdh.virginia.gov)

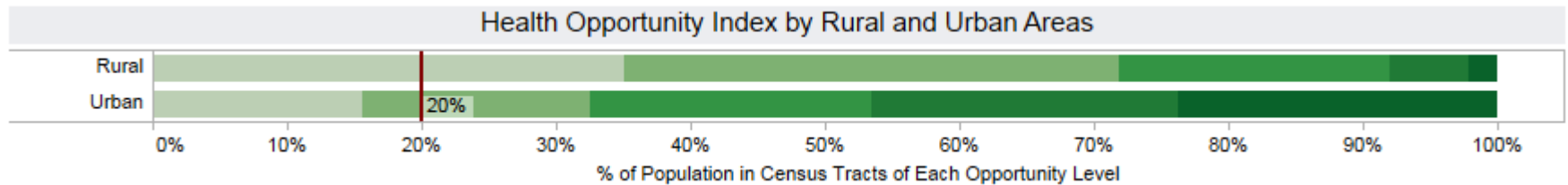
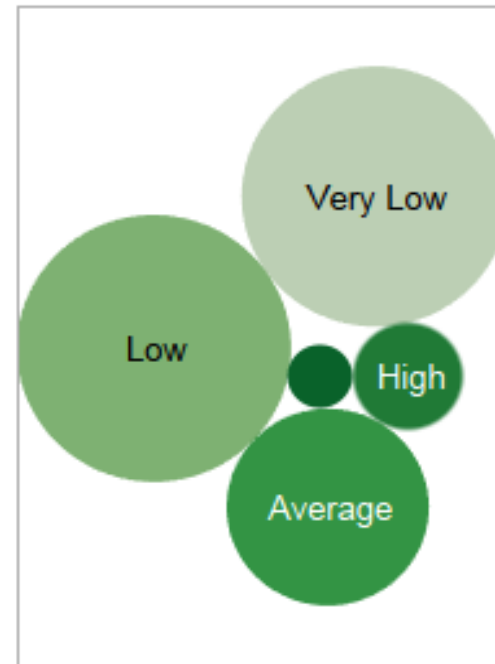


# Health Opportunity Index

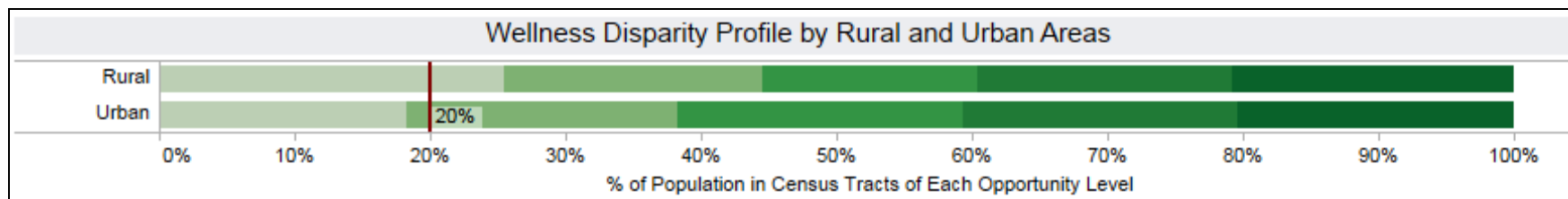
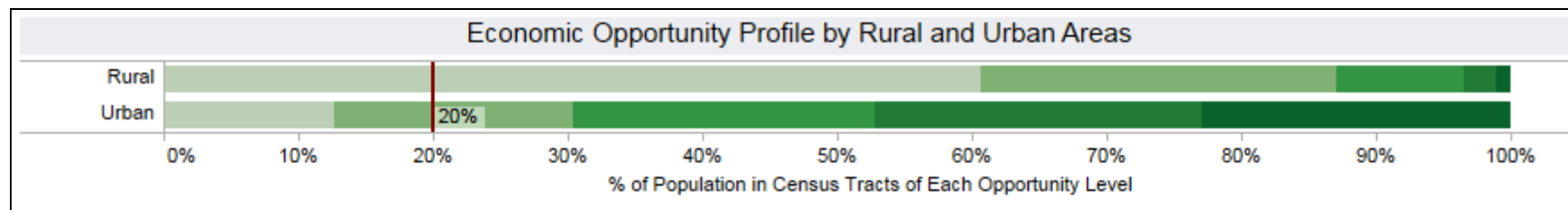
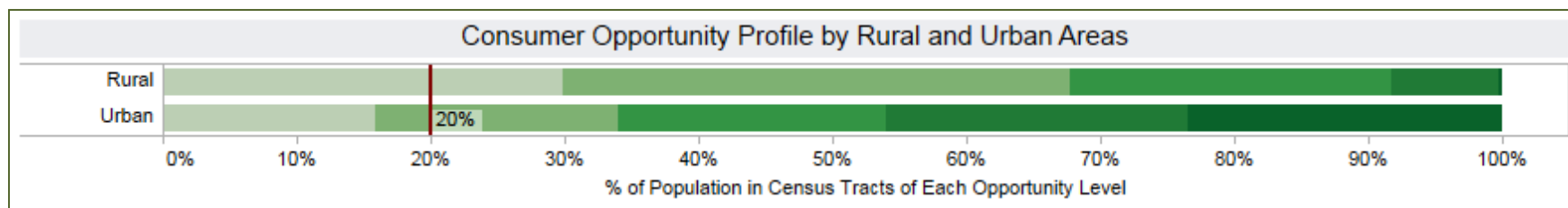
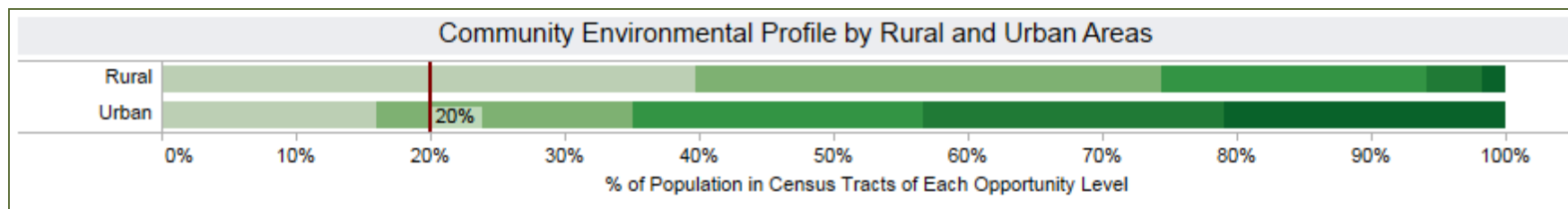
Urban Areas



Rural Areas



# Profiles



*For more information  
please contact:*

Adrienne McFadden, MD, JD

[Adrienne.mcfadden@vdh.virginia.gov](mailto:Adrienne.mcfadden@vdh.virginia.gov)

Justin Crow, MPA

[Justin.crow@vdh.virginia.gov](mailto:Justin.crow@vdh.virginia.gov)

Rexford Anson-Dwamena, MPH

[Rexford.Dwamena@vdh.virginia.gov](mailto:Rexford.Dwamena@vdh.virginia.gov)