

In Health Matters, Place Matters: Integrating Equity into Community Health Evaluations

VDH & DBHDS Offices of Health Equity
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DBHDS Office of Health Equity

- Began in April of 2018
 - Expansion of CLC efforts
- Increasing need to understand Health Equity and Inequities
 - Grants require cultural competency or disparity impact statements
- What would our work look like if we framed it through a health equity lens?



Goals

- **Workforce Development:** provide staff with opportunities for education and trainings to enhance understanding of health equity and related issues.
- **Measurement:** determine what behavioral health inequities exist across Virginia and track them.
- **Policies and Programming:** support, enhance and develop programs & policies that target health inequities and promote health equity.
- **CLAS standards:** work to educate, promote and implement the standards across Virginia.
- **CLC:** serve as a liaison to and in an organizational capacity for the Cultural and Linguistic Competence Committee.

Health Equity

Health Equity happens when every person has the opportunity to "attain his or her full health potential" and no one is "disadvantaged from achieving this potential because of social position or other socially determined circumstances (CDC)

Equality



Equity



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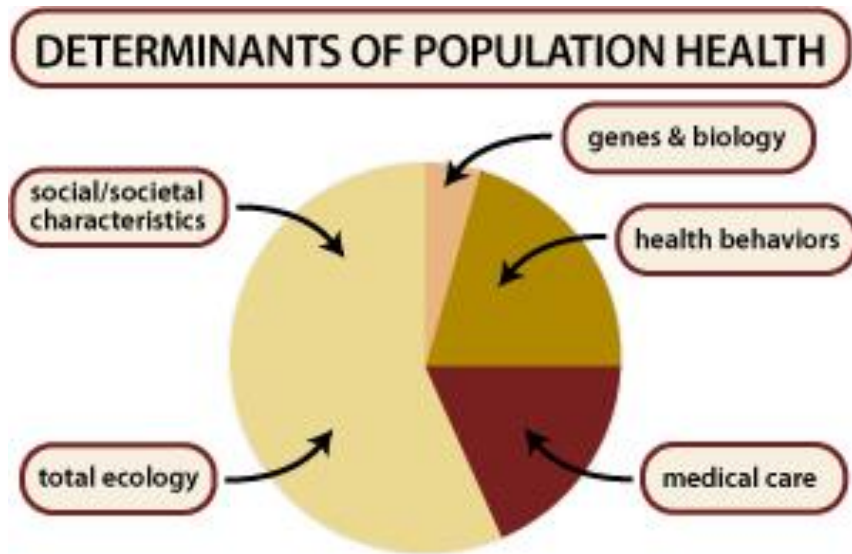
[RWJF](#)

Social Determinants of Health

The Social Determinants of Health are the aspects of the environment in which people are born, grow up, live, work, and age, as well as the systems put in place to deal with illness. These aspects are shaped by a wider set of forces (CDC)



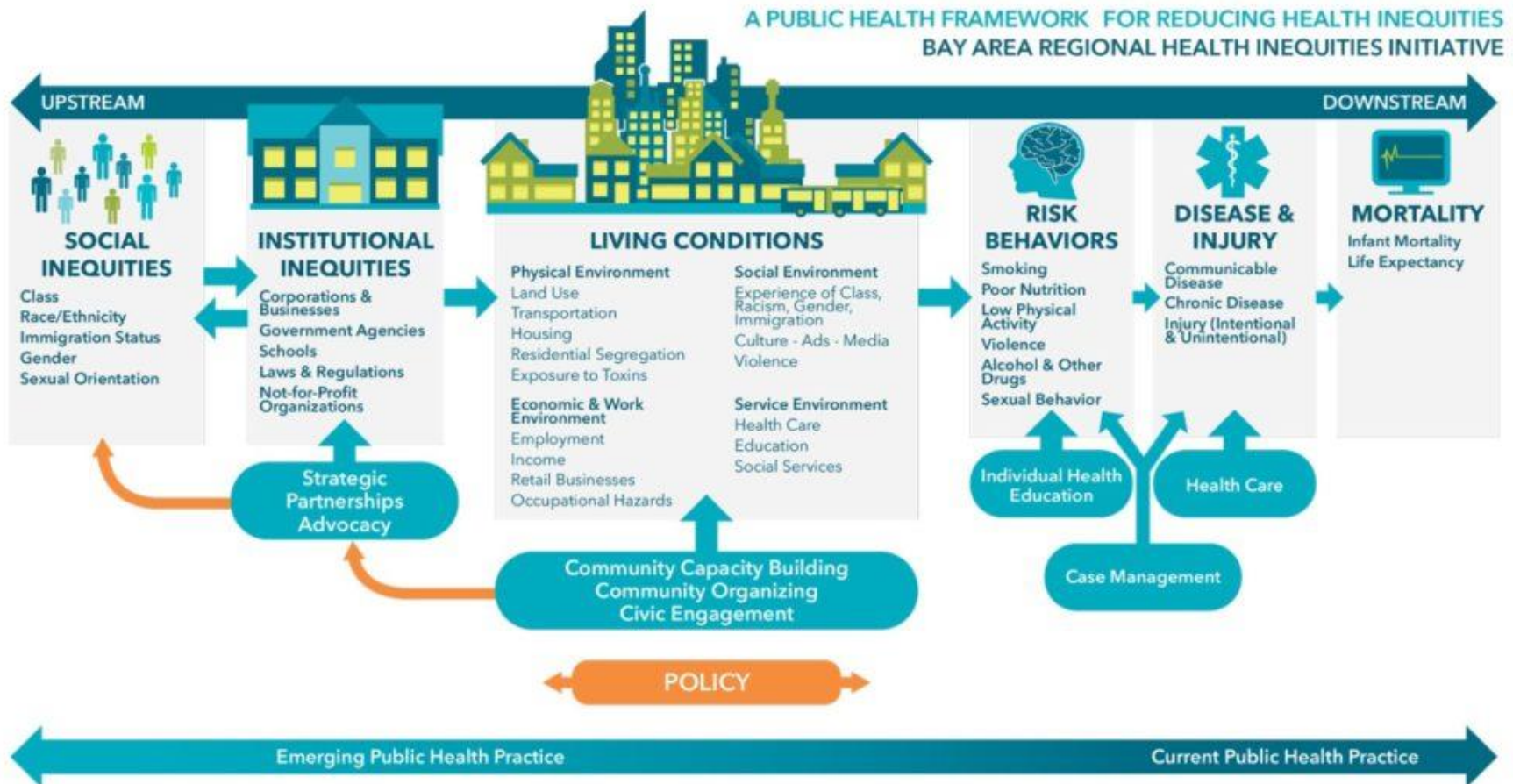
SDOH Impact on a Community



- Societal Characteristics: 55%
- Medical Care: 20%
- Health Behaviors: 20%
- Genes/Biology: 5%

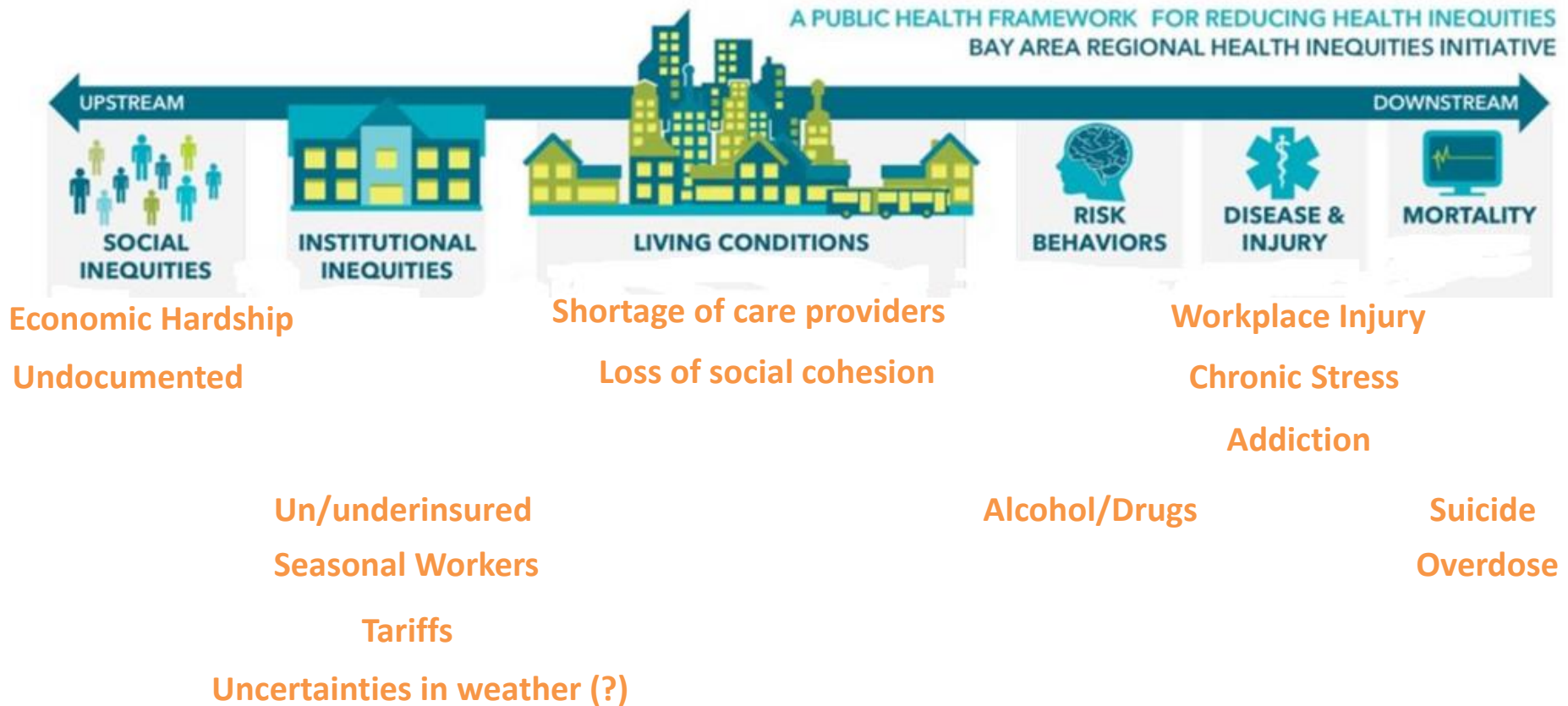
SDOH Impact on a Community

- Structural & upstream
- Policy, systems and environmental change



Example: Agricultural Workers & Suicide

Agricultural workers have the highest rates of suicide in the country



Health Disparities & Inequities

- **Health Disparity:** Differences in health outcomes among groups of people.
- **Health Inequity:** Differences in health that are avoidable, unfair, and unjust. Health inequities are affected by social, economic, and environmental conditions. [Health Equity Institute](#)



Health Disparities & Inequities

- Factors:
 - Socioeconomic
 - Racial/ethnic
 - Gender
 - Age
 - Mental health
 - Cognitive, sensory or physical disability
 - Physical disability
 - Sexual orientation or gender identity
 - Geographic location
 - Characteristics historically linked to discrimination or exclusion

Health Inequities, Social Determinants, and **Intersectionality**



"Intersectionality health equity lenses help us understand that every person's experience is **fundamentally different than than the experience of others...** More than just a theory or framework, it is a commitment to developing a relentlessly critical and self-reflective lens that begins with the premise that race, class, gender, and other axes of social identities are intertwined and mutually constitutive, and that such lens can help advance health disparities research, practice, and leadership by making the **invisible visible.**"

A National Academy of Medicine Discussion Paper
nam.edu/Perspectives

 @theNAMedicine

[National Academy Of Medicine](http://NationalAcademyOfMedicine)

Slide 10

The LARGEST Health Disparity

- Is behavioral health. Larger than race, ethnicity, geography or socioeconomic status
- Americans with serious mental illnesses **die 15 to 30 years younger** than those without mental illness
- Most die of natural causes
 - Heart disease
 - Cancer
 - Respiratory
 - Lung diseases.

MENTAL HEALTH AND SUBSTANCE USE CONDITIONS ARE COMMON



[The Largest Health Disparity We Don't Talk About](#)

[MHIA](#)

Biopsychosocial: Individuals in Context

Patients with mental illness:

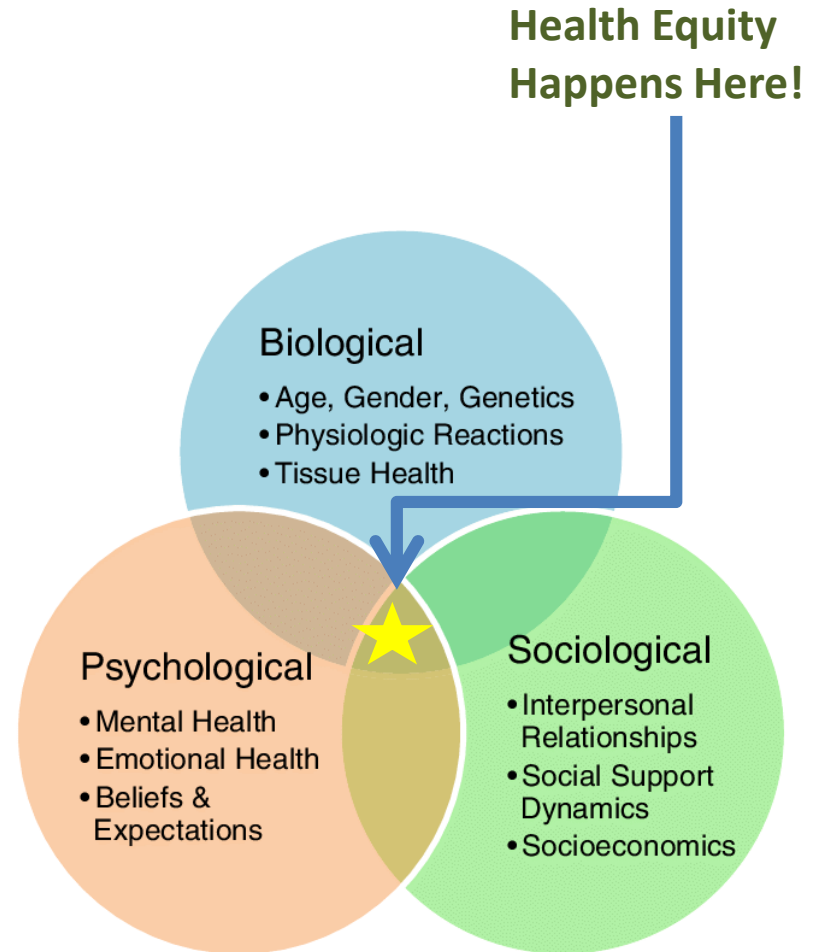
- Higher rates of obesity, physical inactivity and tobacco use
- Less likely to get standard diabetes care
- Less likely to be screened and treated for cancer

[Prev Chronic Dis.](#)

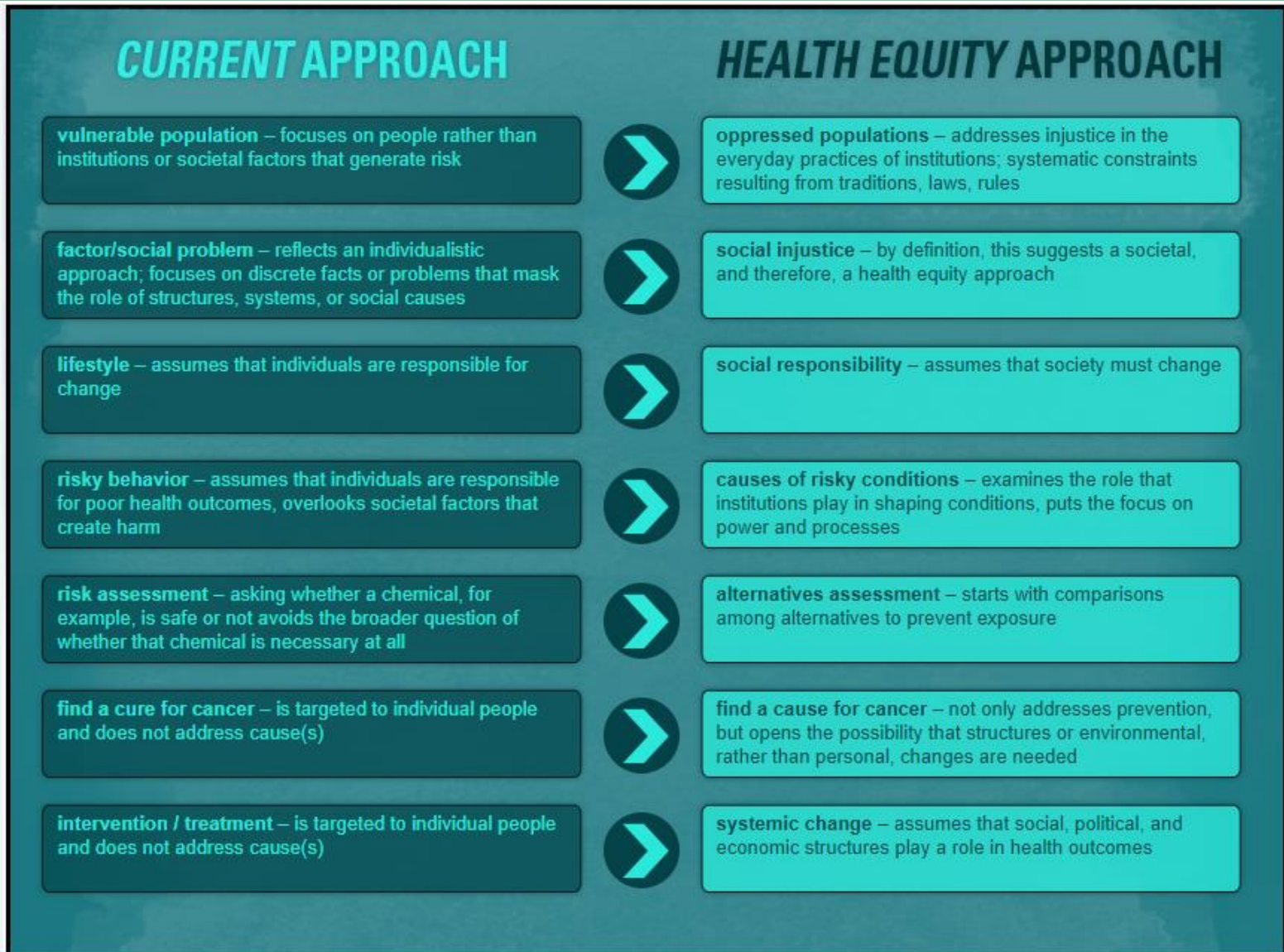
Why:

- More likely to engage in risky health behaviors
- High rates of comorbidity
- Less likely to receive primary care
- Stigma
- Therapeutic pessimism
- Diagnostic overshadowing

[The National Council](#)



Reframing our Approach



VDH Office of Health Equity

Mission:

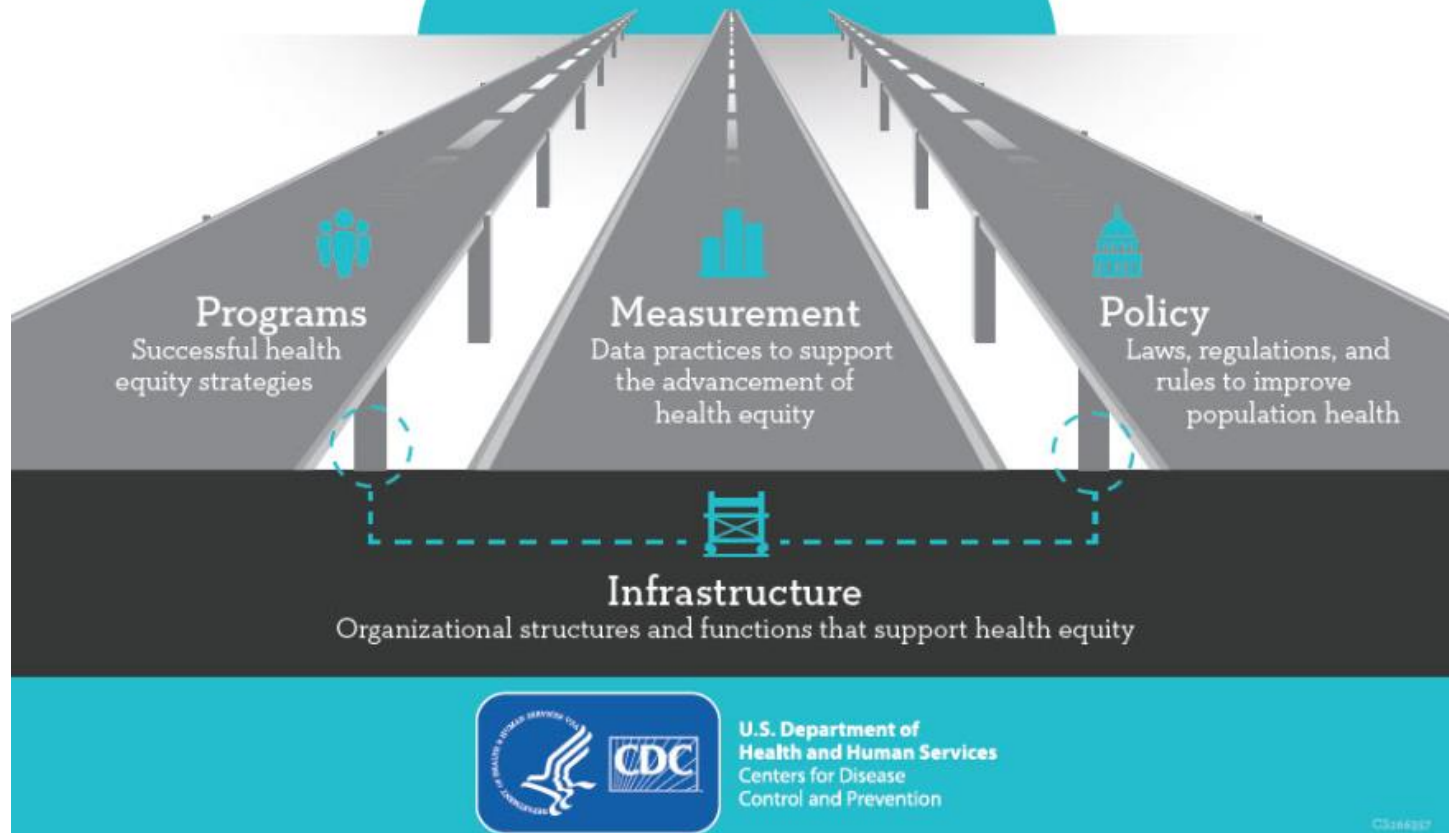
To identify health inequities and their root causes and promote equitable opportunities to be healthy.

- State Office of Rural Health
- State Primary Care Office
- Office of Multicultural Health & Community Engagement
- Division of Social Epidemiology

<http://www.vdh.virginia.gov/health-equity/>

PAVING THE ROAD TO HEALTH EQUITY

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



CS164237

Division of Social Epi

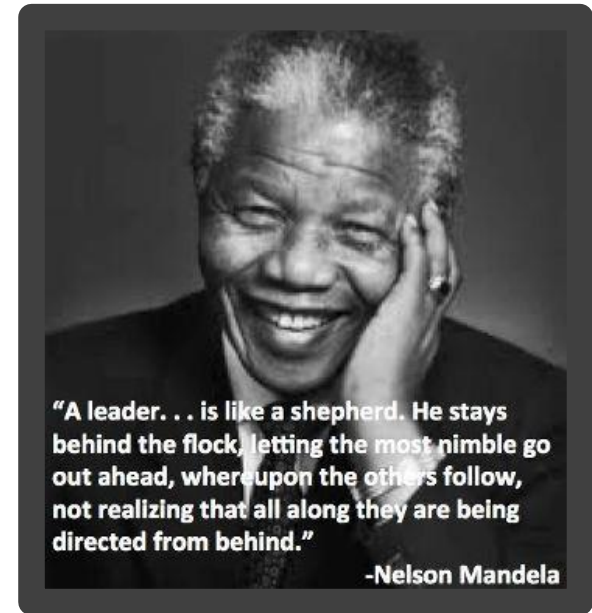
Leading with Data

Vision

Information with Impact.

Mission

To provide information and insight to the public, stakeholders and policy-makers that inspires them to take actions that improve the lives of vulnerable Virginians



Strategic Priorities

- Engage stakeholders, policymakers and the public with actionable information.
- Cultivate a stable workforce with diverse academic backgrounds, experiences and skills.
- Develop high quality data products and continuously improve existing products.
- Translate social epidemiology research to the Commonwealth.

<http://www.vdh.virginia.gov/health-equity/division-of-social-epidemiology/>

Barriers to Well-being

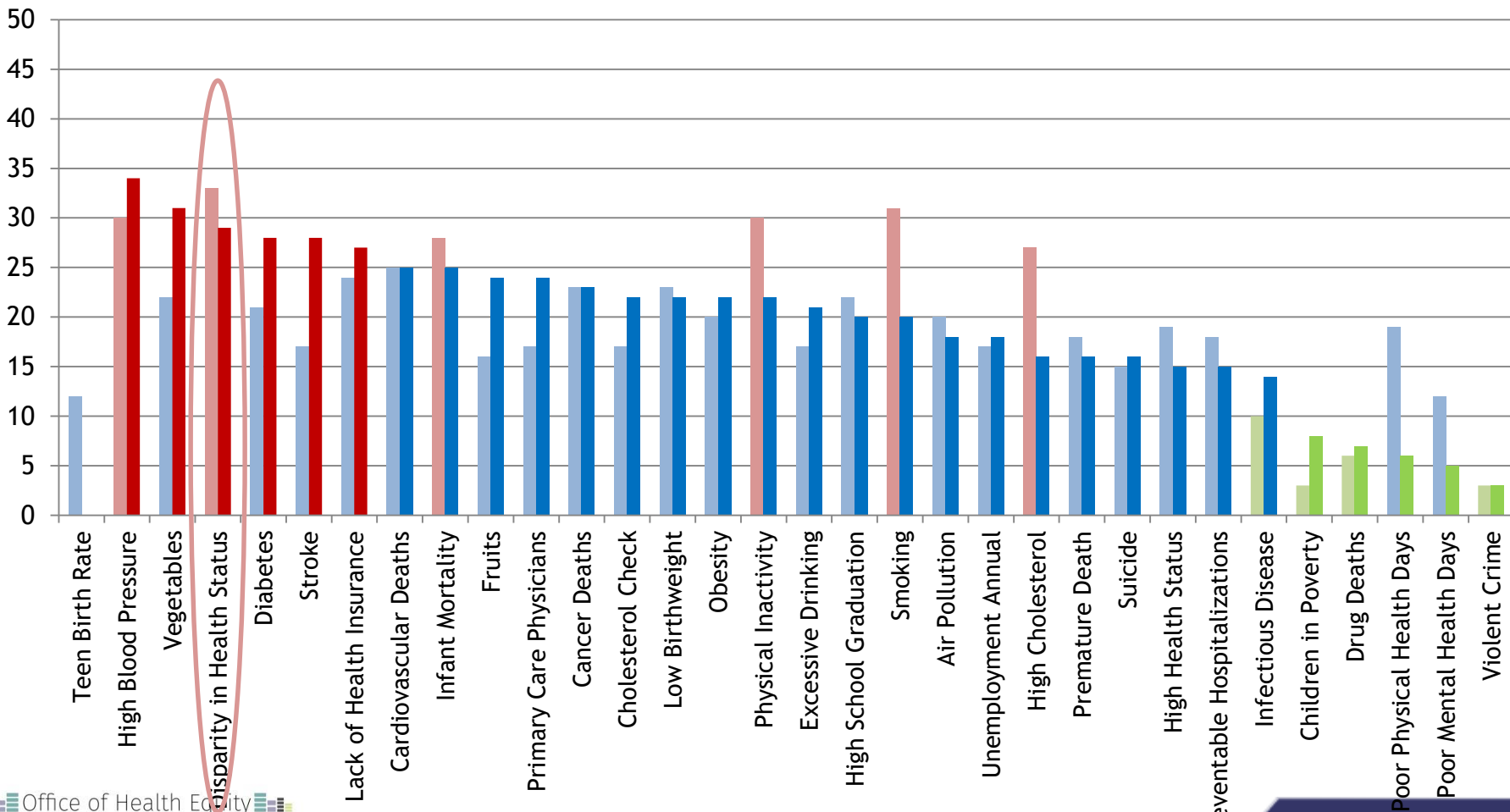


Photo Credit: Dan Hutcheson. Creative Commons, Attribution-NonCommercial 2.0 Generic.
<https://www.flickr.com/photos/wildphotons/2682928904/in/photostream/>

America's Health Rankings

United Health Foundation Scorecard

Overall Ranking = 19th

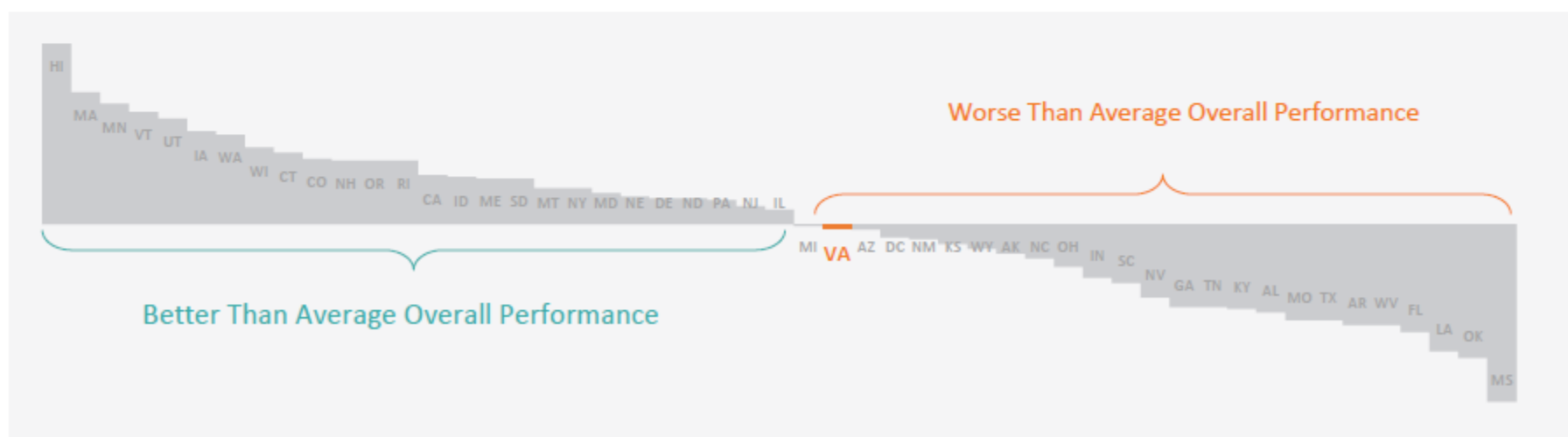
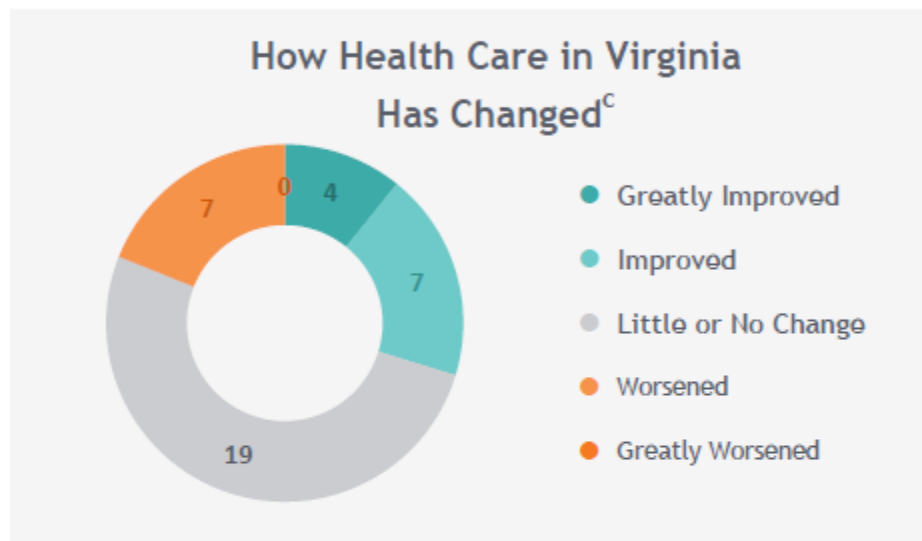


Virginia

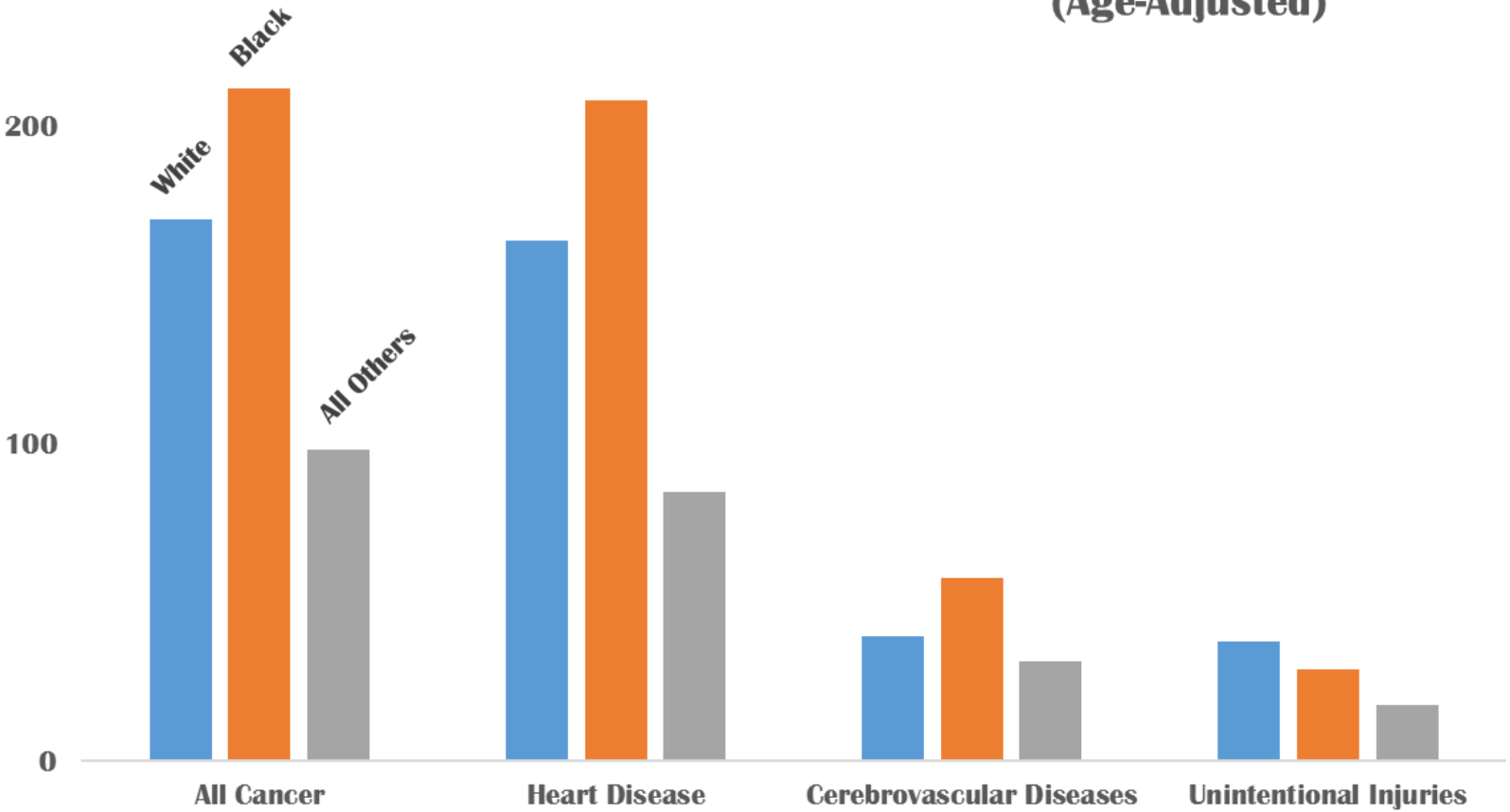


Ranking Highlights

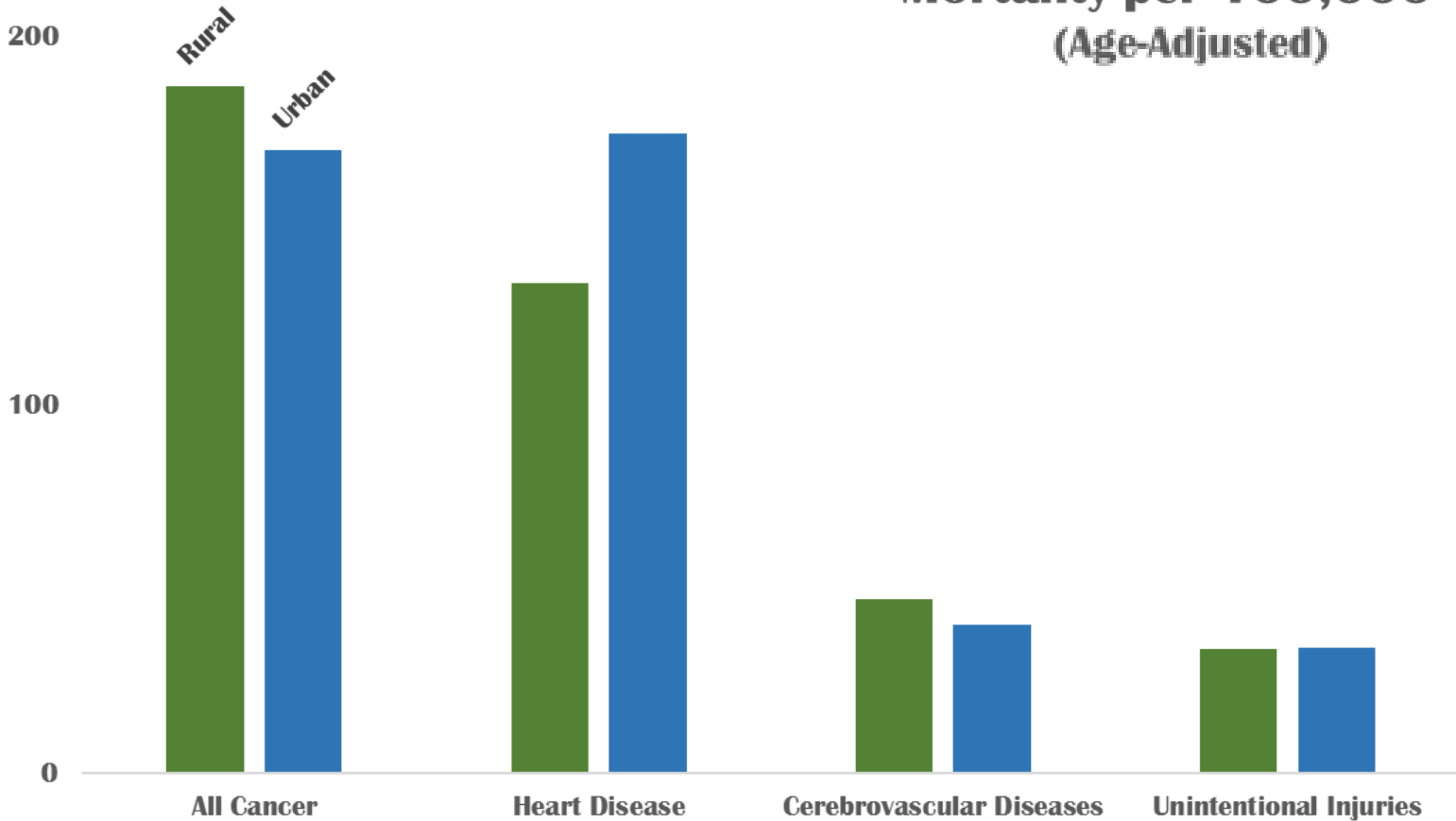
	2018 Rank ^a	Change ^b
Overall	28	-2
Access & Affordability	29	-14
Prevention & Treatment	18	-1
Avoidable Use & Cost	25	+6
Healthy Lives	19	-1
Disparity	44	-2



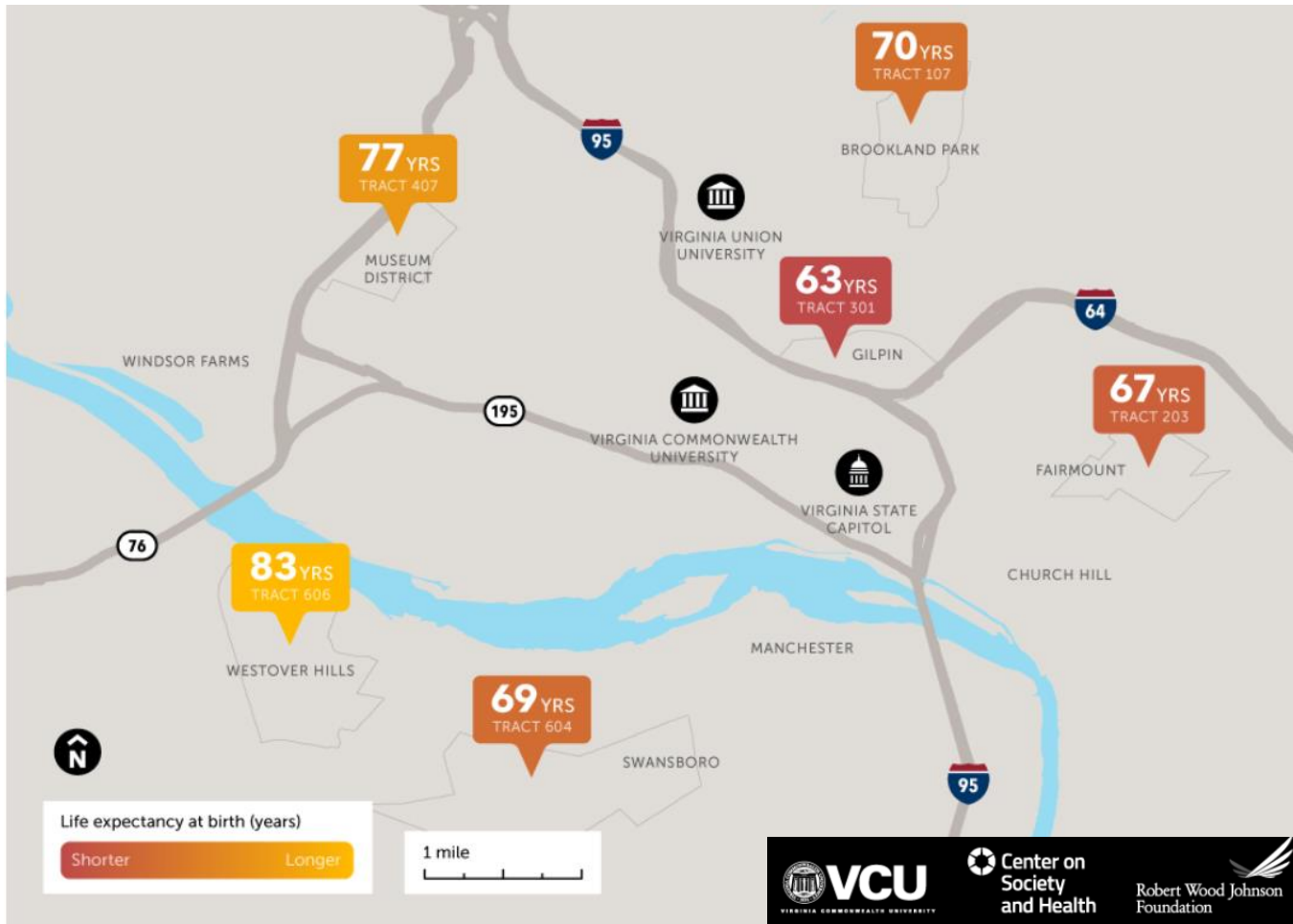
Racial Disparities Mortality per 100,000 (Age-Adjusted)



Rural-Urban Disparities Mortality per 100,000 (Age-Adjusted)



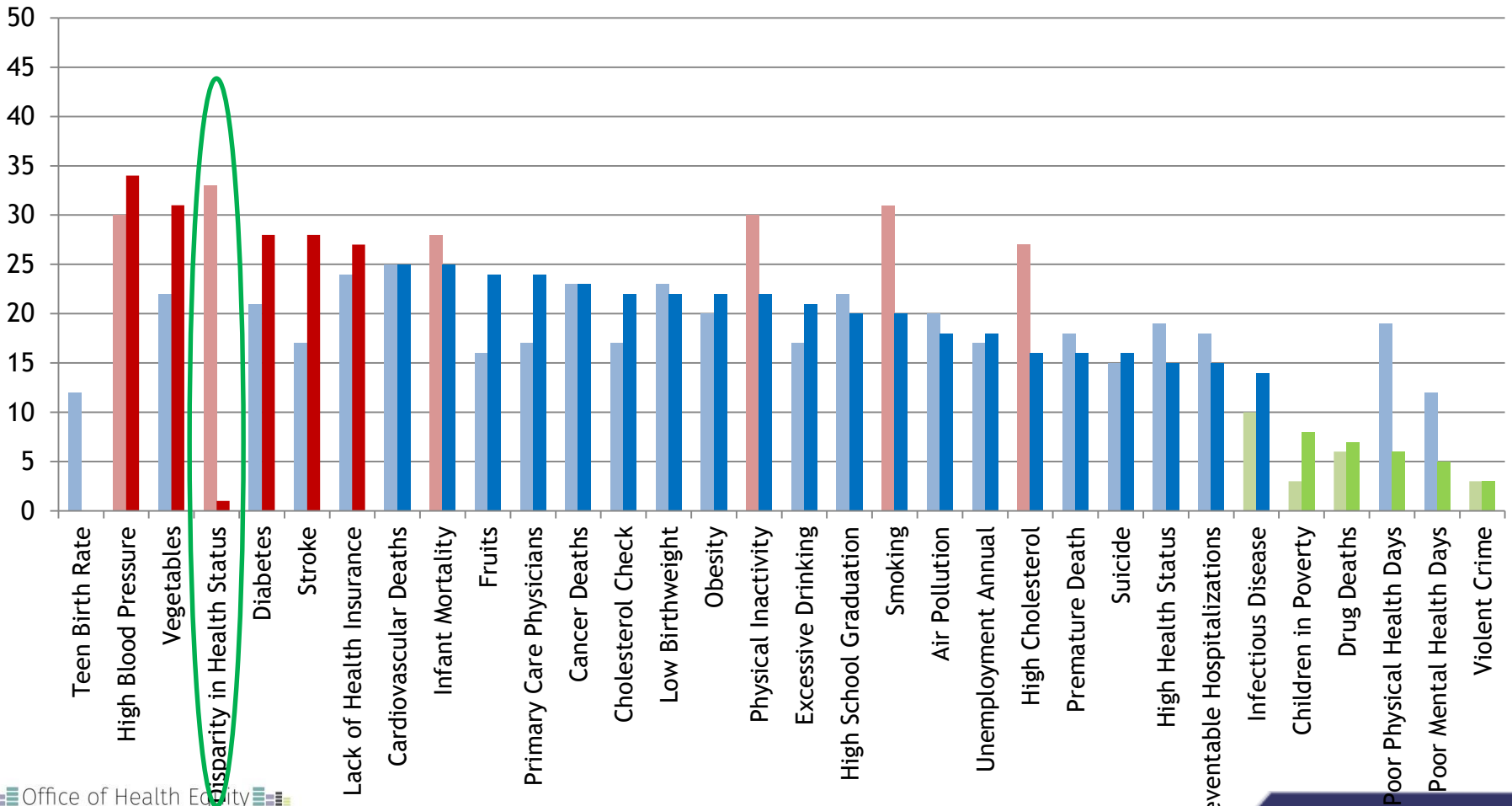
Life Expectancy in Richmond, Va



America's Health Rankings

United Health Foundation Scorecard

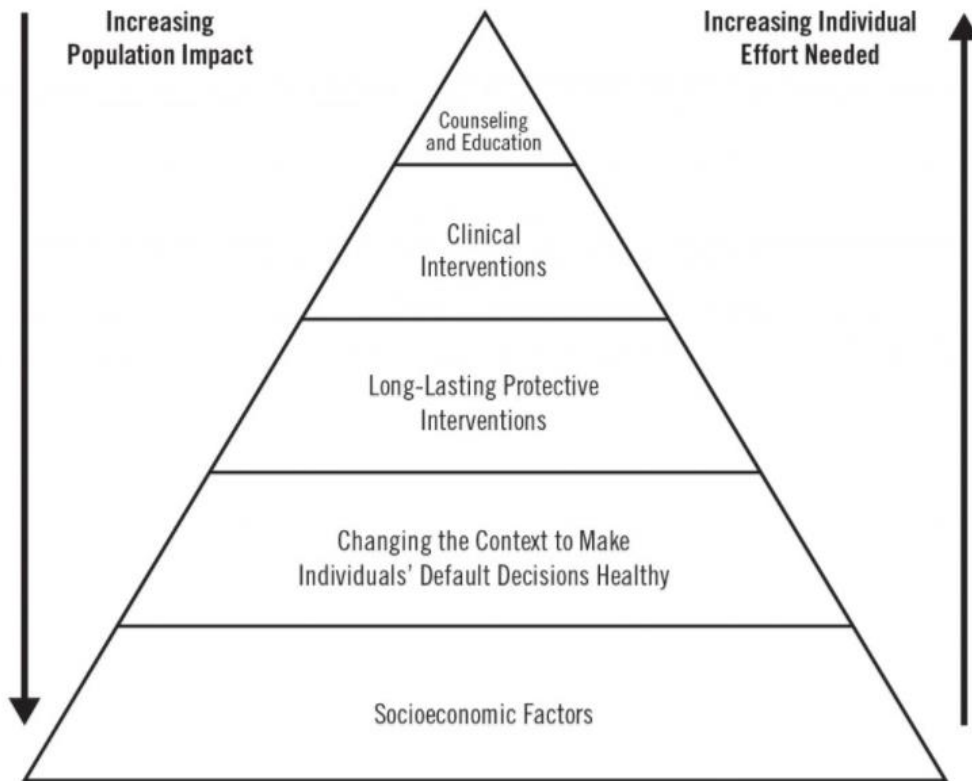
Overall Ranking = 1st



Measurement: Finding the Path



Photo Credit: U.S. Air Force photo/Master Sgt. Jeremy T. Lock. DoDLive
<http://www.dodlive.mil/2013/03/23/herding-health/>



For single mothers with less than 12 years of education, every \$1,000 increase in the earned income tax credit (EITC) is associated with a 6.7% to 10.8% reduction in the low-birth weight rate.

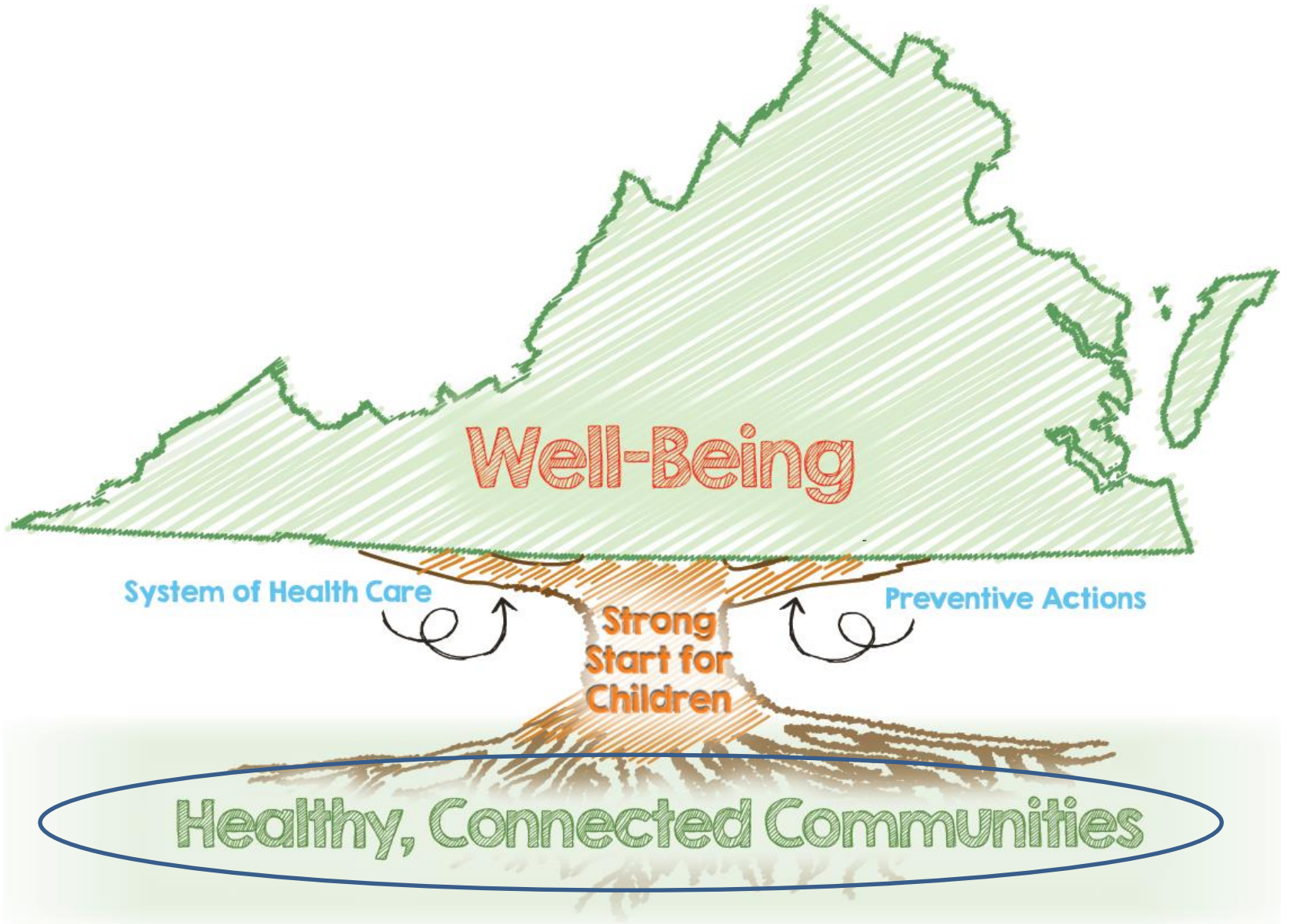
*CDC:
<https://www.cdc.gov/policy/hst/hi5/taxcredits/index.html>

Source: Frieden TR. *Am J Public Health* 2010;100(4):590-5



VIRGINIA STATE HEALTH IMPROVEMENT PLAN

<https://viriniawellbeing.com/>



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

astho™

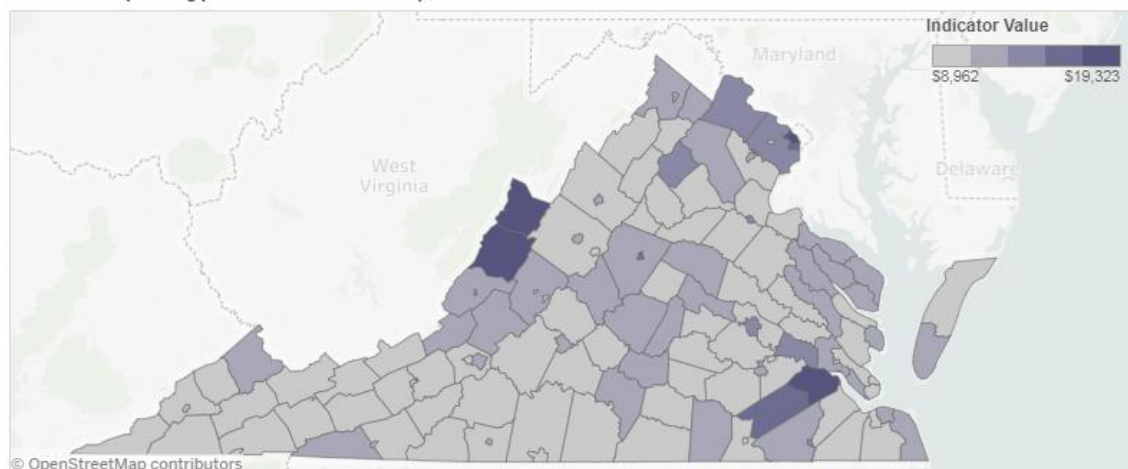
Source: Dr. Edward Ehlinger, Minnesota Commissioner of Health
2016 President's Challenge for the Association of State and Territorial Health Officials (ASTHO)

Social Determinants of Health Dashboard

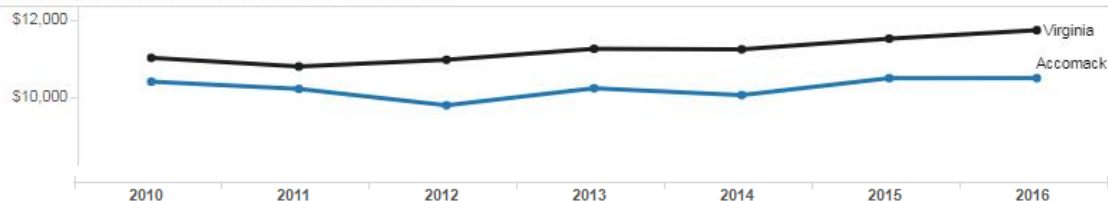
Social Determinants of Health, Annual Indicators	Social Determinants of Health, Annual Economic Indicators	Social Determinants of Health, 5-Year Indicators	Virginia County/Independent City Table	Local Health District Table
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Social Determinants of Health Indicators by Locality

Please select a locality from the map to view the trendline below
Educational Spending per Student Indicator Map, 2016



Educational Spending per Student Trend - Accomack



<http://www.vdh.virginia.gov/data/social-determinants-of-health/>

Indicators:

- Poverty
- Child Poverty
- Unemployment
- Uninsurance
- Uninsured Children
- Educational Spending
- Per Capita Income
- Per Capita Income Maintenance Benefits
- Income per Job
- Cost-burdened Households
- Home Ownership
- Working Age Population
- Working Age Education
- Limited English Proficiency
- Voter Turnout

Geography Level

Metro/Micropolitan Designation

Annual Estimates: 2016

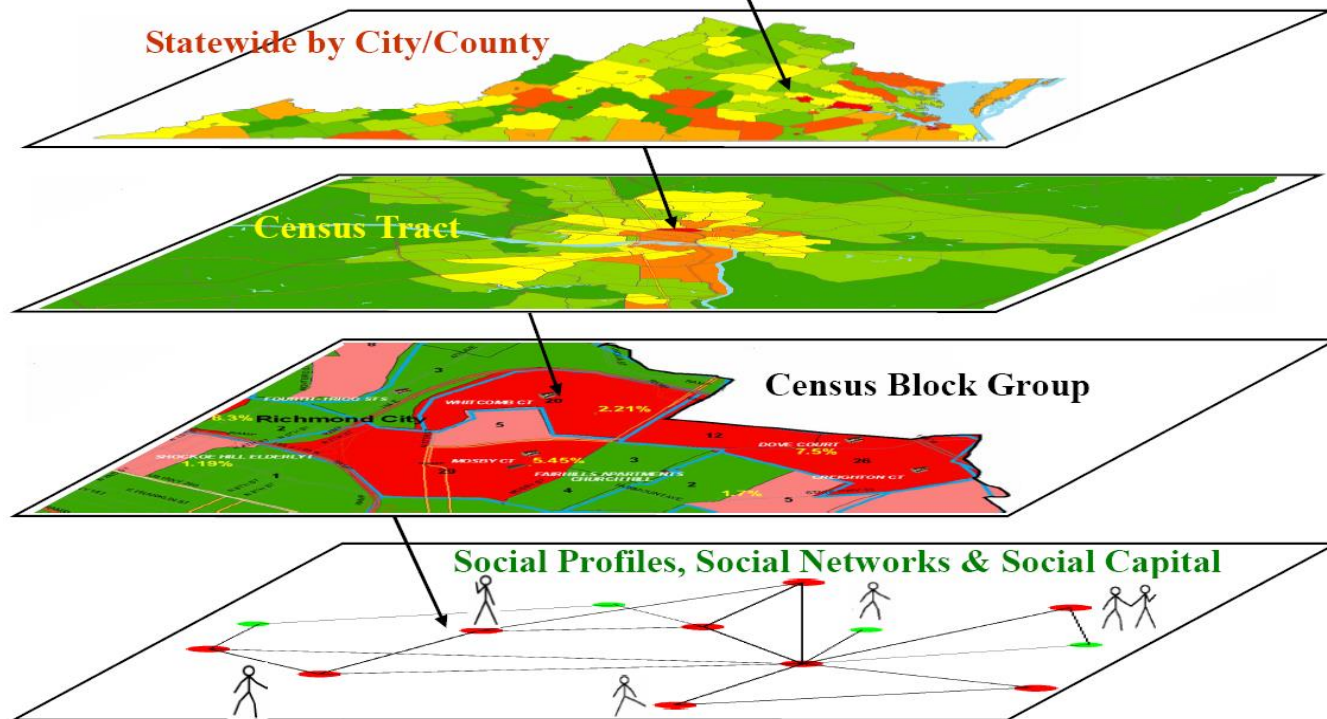
	Metropolitan Statistical Area	Micropolitan Statistical Area	Non-metro
Education Spending per Student	\$11,905	\$9,821	\$10,782
Per Capita Income	\$55,309	\$33,889	\$37,286
Per Capita Income Maintenance Benefits	\$572	\$1,197	\$917
Per Job Income	\$62,225	\$39,719	\$40,912
Children in Poverty	13%	28%	23%
Population in Poverty	10%	19%	16%
Unemployment Rate	4%	6%	5%
Uninsured Children	5%	4%	6%
Uninsured Population	10%	12%	12%
Voter Turnout	66%	55%	57%

Five Year Estimates (American Community Survey): 2012-2016

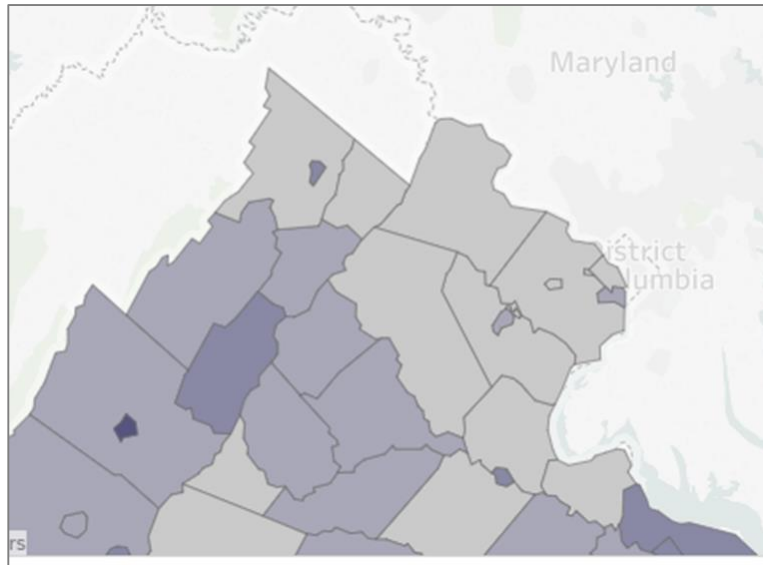
	Metropolitan Statistical Area	Micropolitan Statistical Area	Non-metro
Cost Burdened Households	34%	27%	28%
Home Ownership Rate	66%	70%	74%
Working Age Population	65%	61%	61%
Working Age Population w/o a HS Diploma	9%	18%	16%
Working Age Population w/ a Bachelor Degree	40%	15%	17%
Limited English Proficient Population	6%	2%	2%

Geographic Level Can Mask Detail

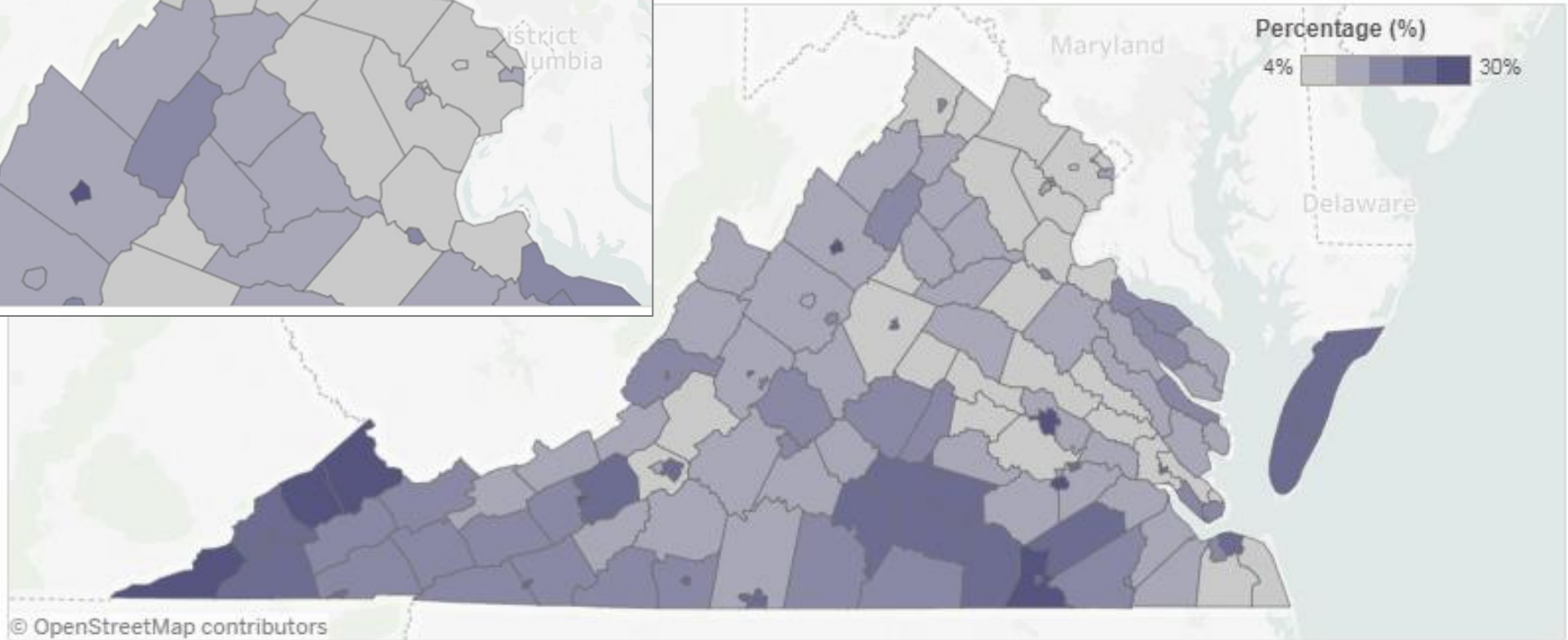
Multilevel Spatial Analysis of Fundamental Causes & the Social Determinants of Health



Social Determinants of Health Dashboard



Population in Poverty, 2016



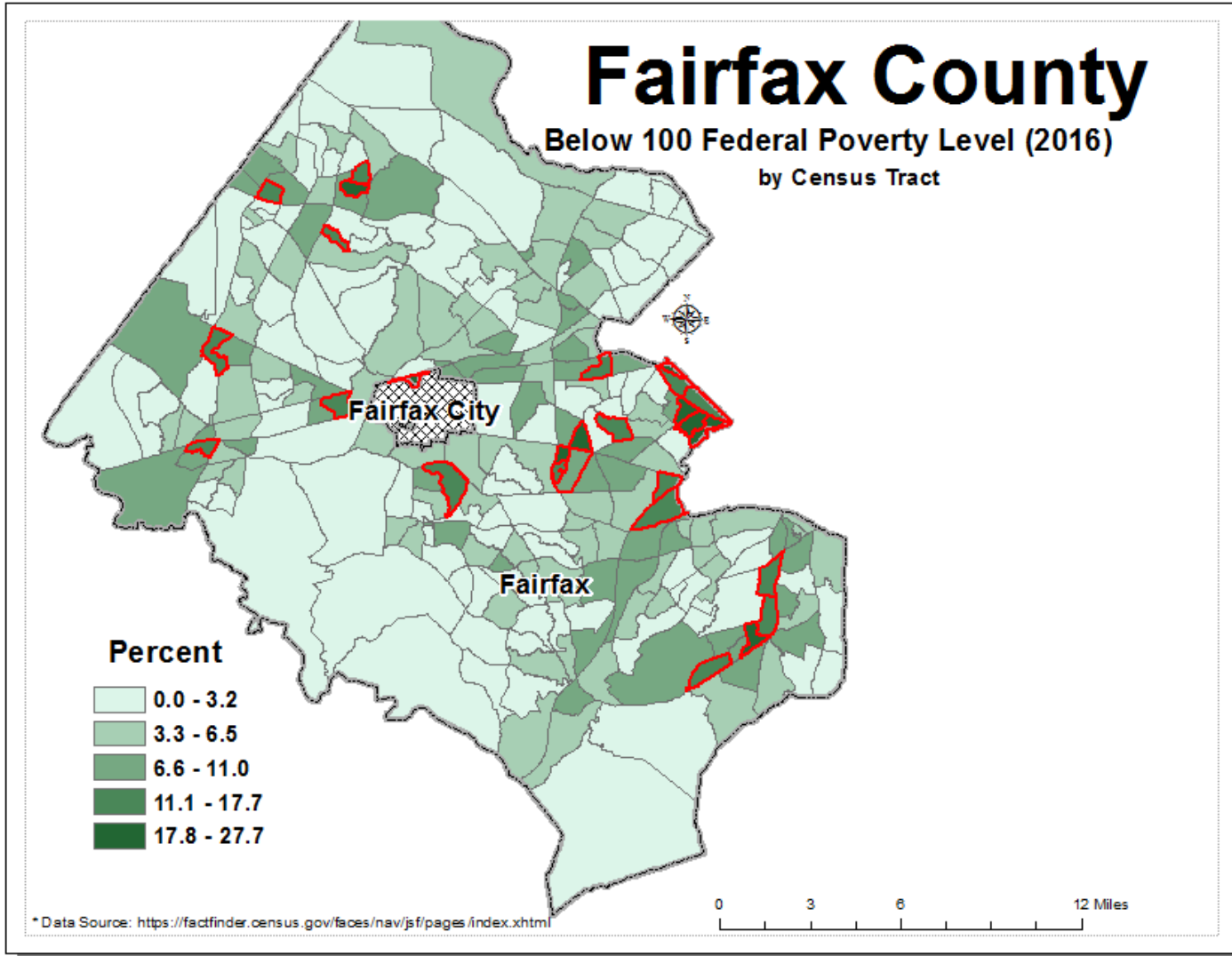
All Ages in Poverty

Year	ID	Name	Poverty Universe	Number in Poverty ↕	90% Confidence Interval	Percent in Poverty	90% Confidence Interval
2016	00000	United States	315,165,470	44,268,996	44,022,086 to 44,515,906	14.0	13.9 to 14.1
2016	51000	Virginia	8,158,203	897,244	877,329 to 917,159	11.0	10.8 to 11.2
2016	51059	Fairfax County (VA)	1,126,204	67,736	60,393 to 75,079	6.0	5.3 to 6.7
2016	51760	Richmond city (VA)	210,366	55,862	50,374 to 59,750	26.2	24.0 to 28.4
2016	51710	Norfolk city (VA)	212,078	45,219	39,250 to 51,188	21.3	18.5 to 24.1
2016	51810	Virginia Beach city (VA)	442,150	36,494	31,361 to 41,627	8.3	7.1 to 9.5
2016	51153	Prince William County (VA)	450,623	33,308	29,209 to 37,407	7.4	6.5 to 8.3
2016	51087	Henrico County (VA)	323,260	29,583	25,350 to 33,816	9.2	7.9 to 10.5
2016	51700	Newport News city (VA)	173,205	25,395	21,202 to 29,588	14.7	12.3 to 17.1
2016	51041	Chesterfield County (VA)	333,875	23,468	20,044 to 26,892	7.0	6.0 to 8.0
2016	51770	Roanoke city (VA)	98,006	21,886	19,119 to 24,653	22.3	19.5 to 25.1
2016	51650	Hampton city (VA)	130,575	21,458	18,572 to 24,344	16.4	14.2 to 18.6

<https://www.census.gov/programs-surveys/saipe.html>

Fairfax County

Below 100 Federal Poverty Level (2016)
by Census Tract



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

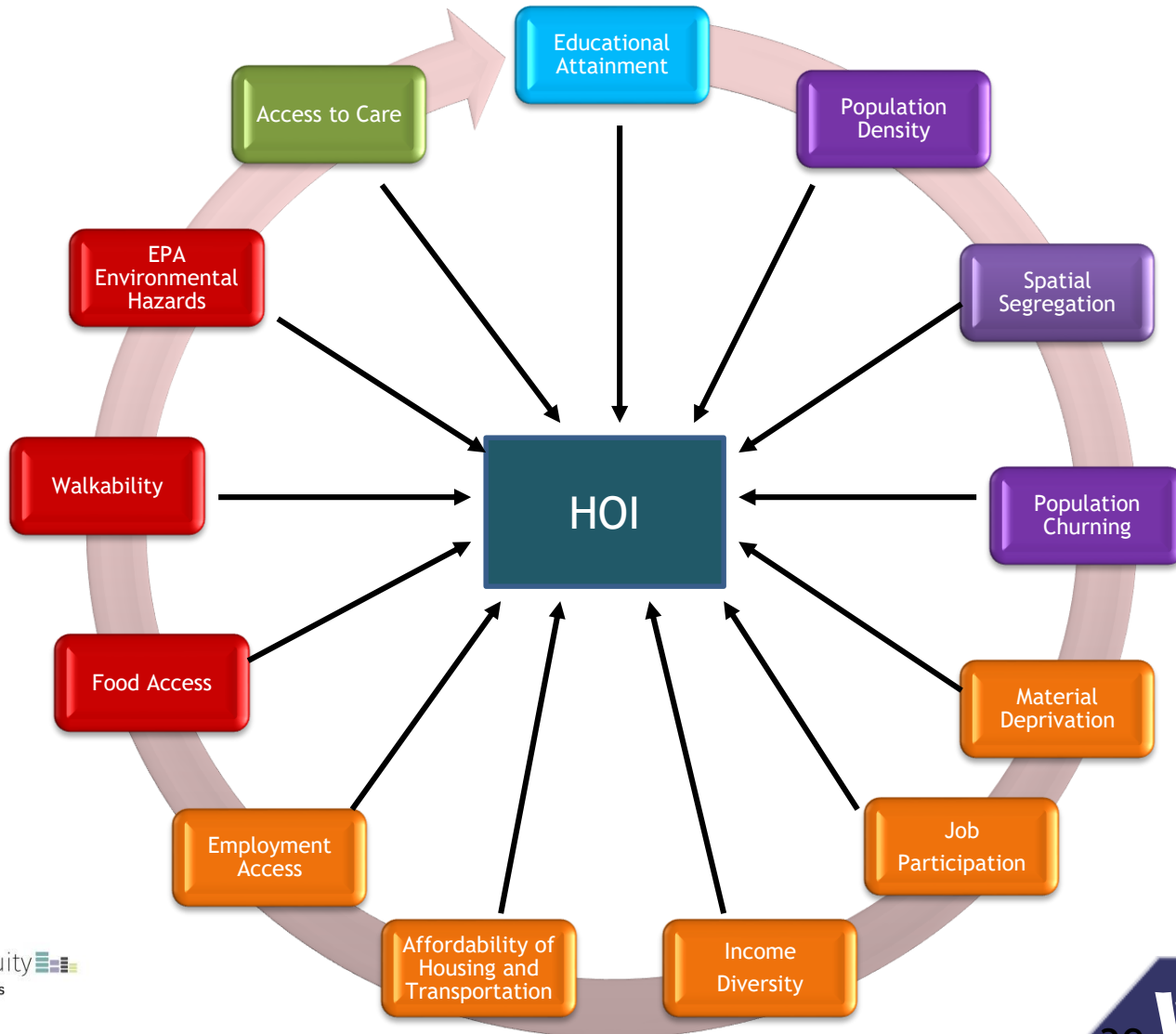
Healthy People 2020: Five Elements of SDOH



Selecting Indicators

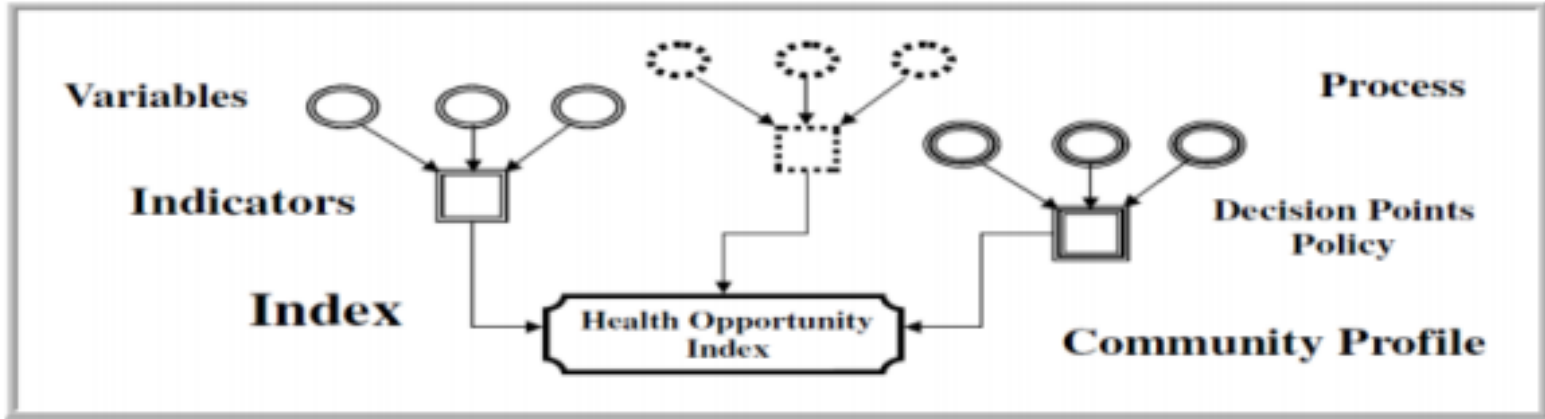
1. Identified by Local Health Departments & Stakeholders as important.
2. Linked to health outcomes in academic literature.
3. “Actionable” (e.g., segregation vs race)
4. Consistent, quality data for all Census Tracts in Virginia.

Health Opportunity Index



Structure

30+ Variables
13 Indicators
4 Profiles
1 Health Opportunity Index



Health Opportunity Index

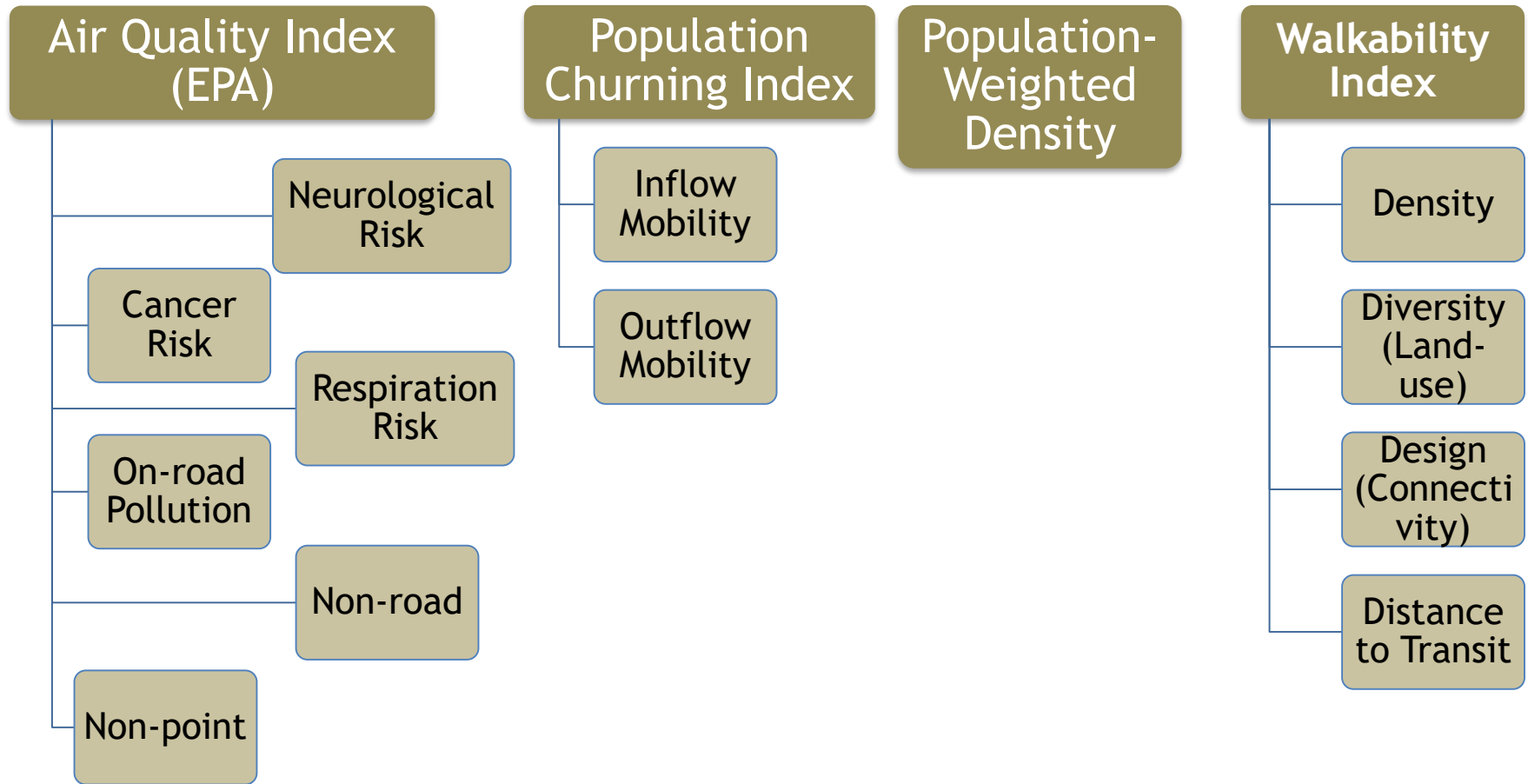
Community
Environmental Profile

Consumer
Opportunity Profile

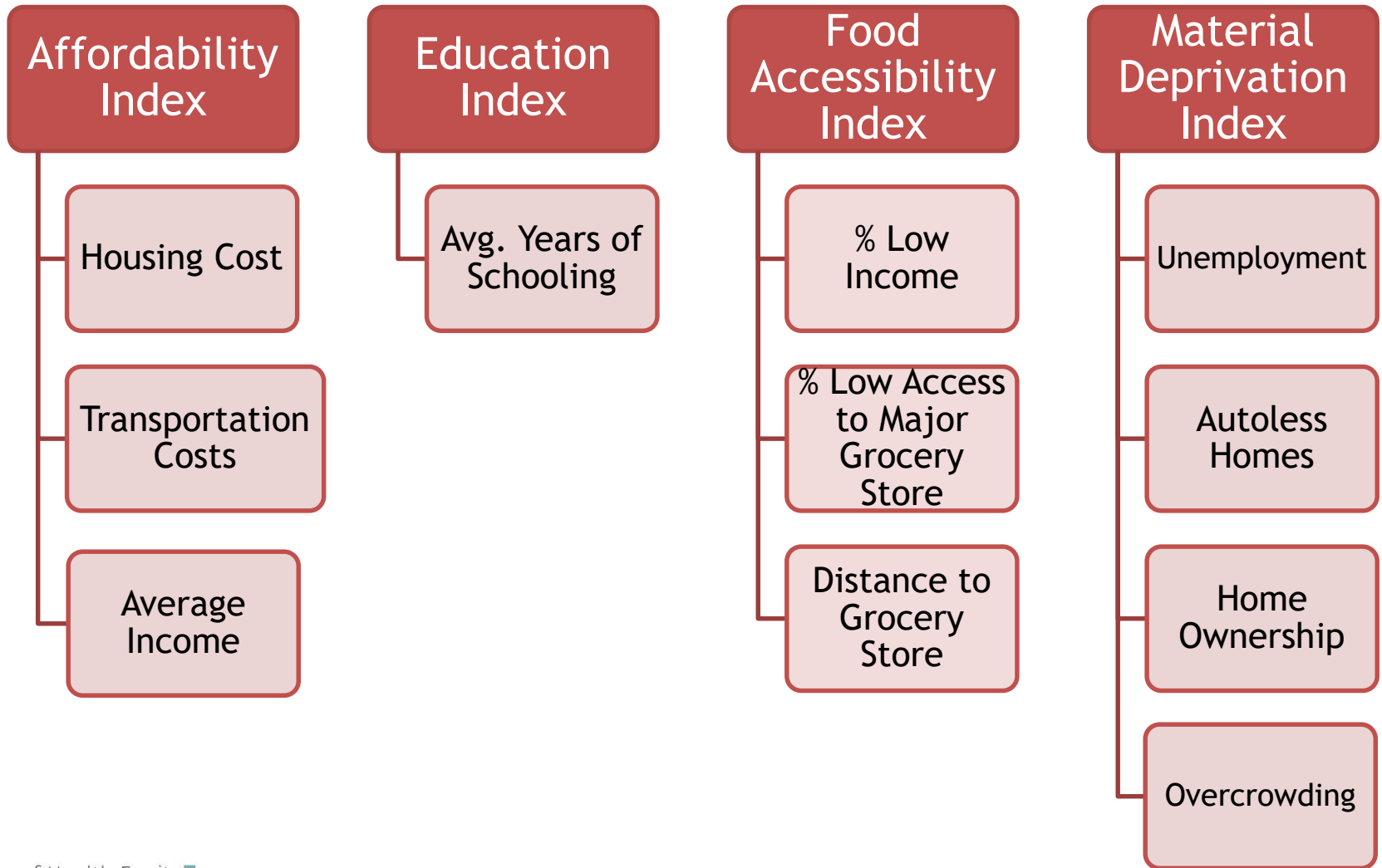
Economic
Opportunity Profile

Wellness Disparity
Profile

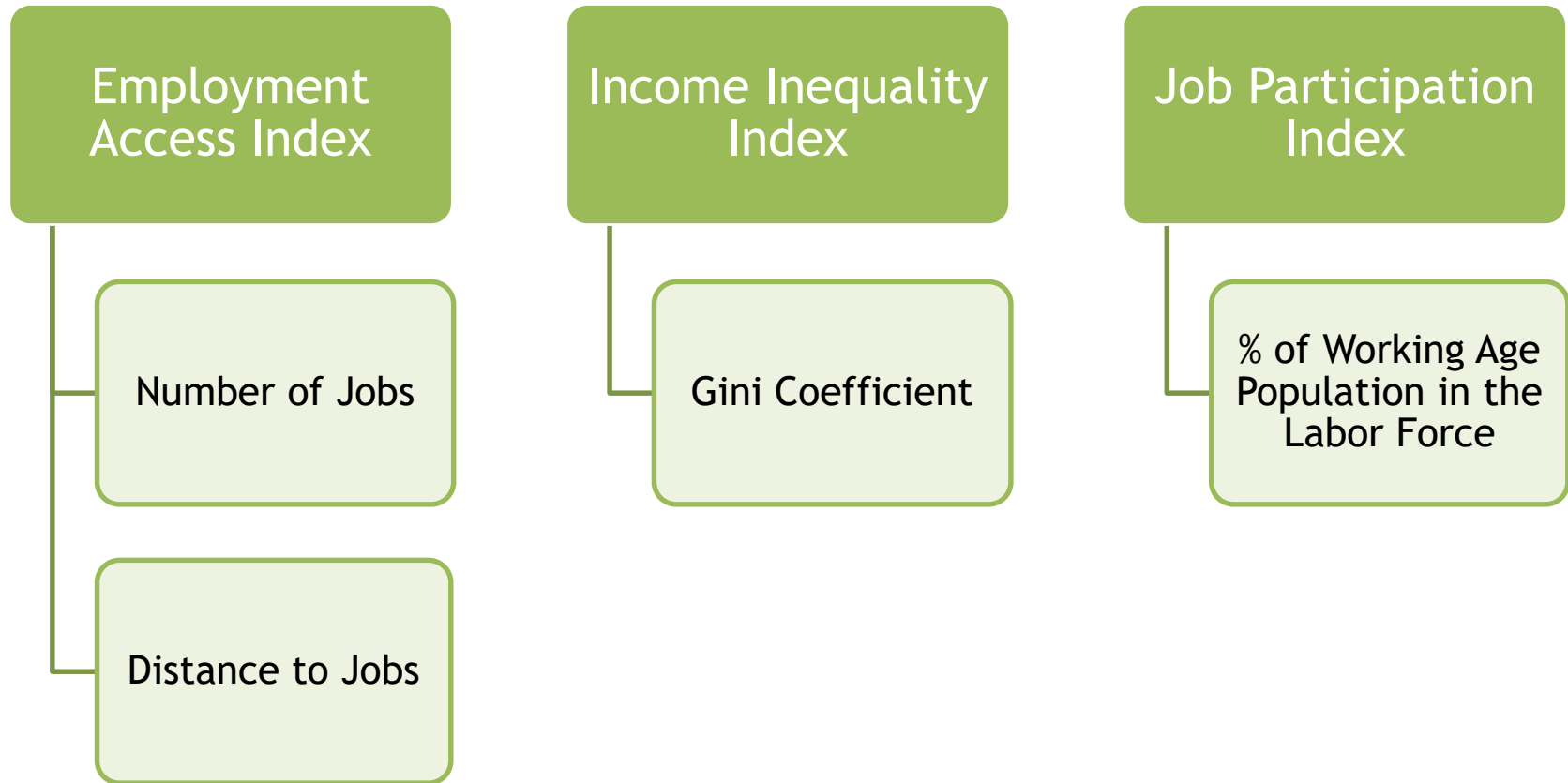
Community Environmental Profile



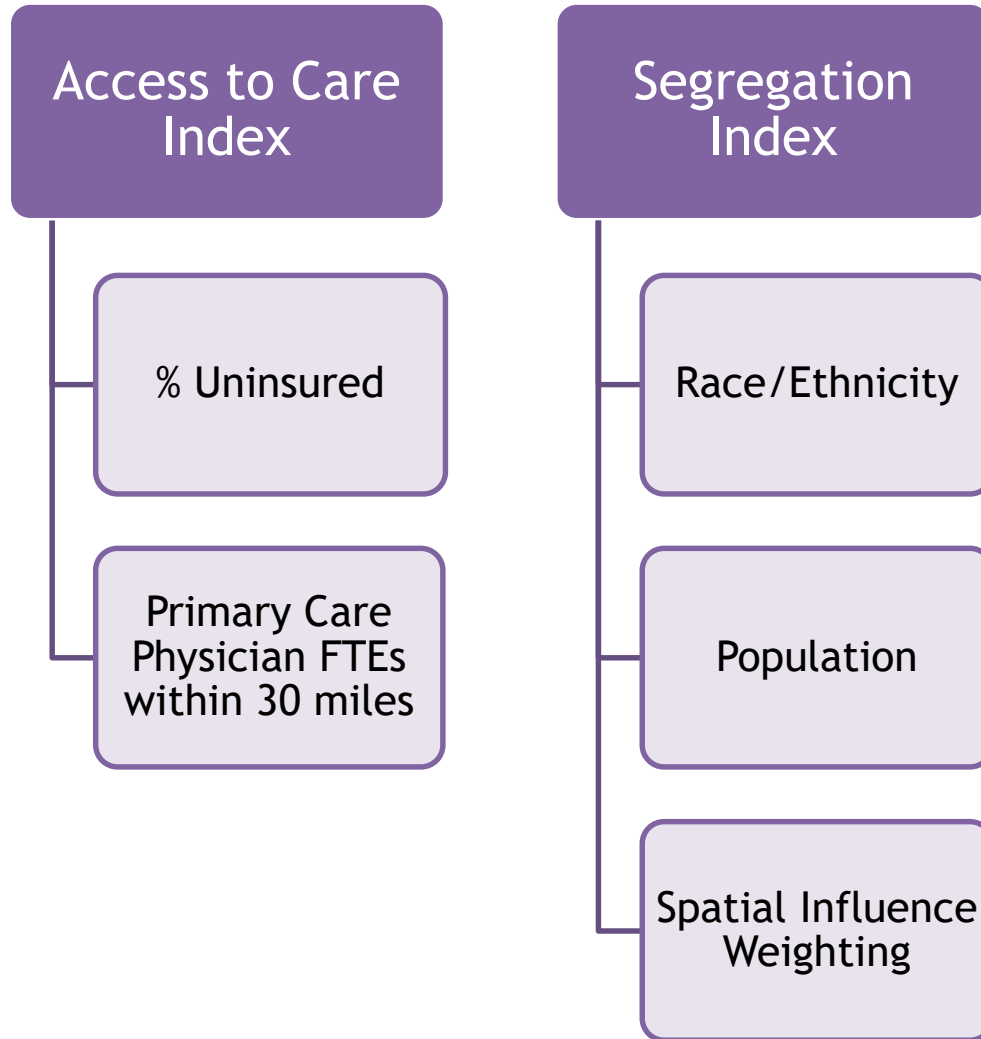
Consumer Opportunity Profile



Economic Opportunity Profile



Wellness Disparity Profile

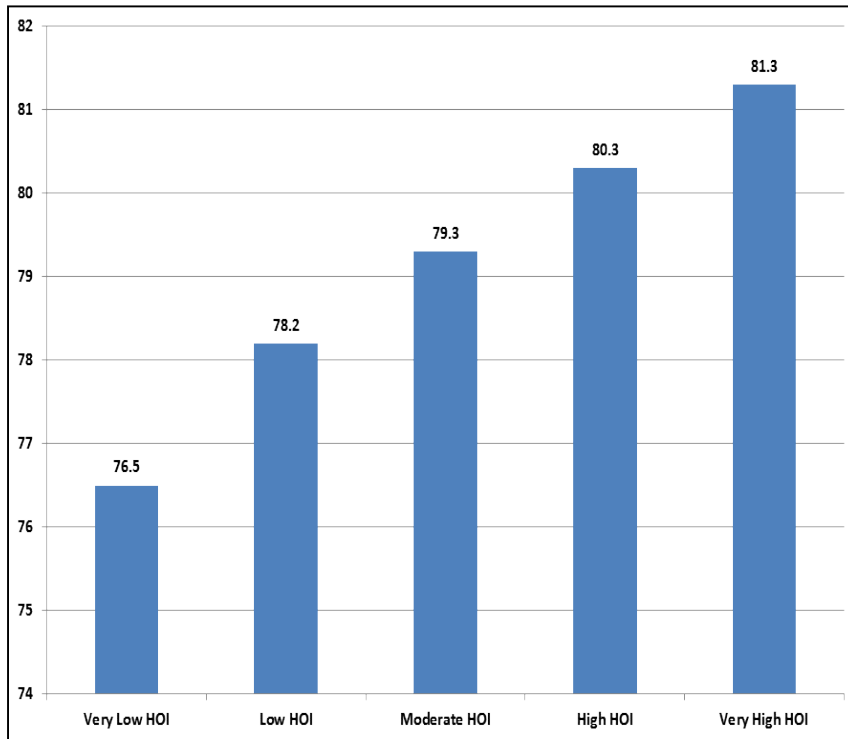




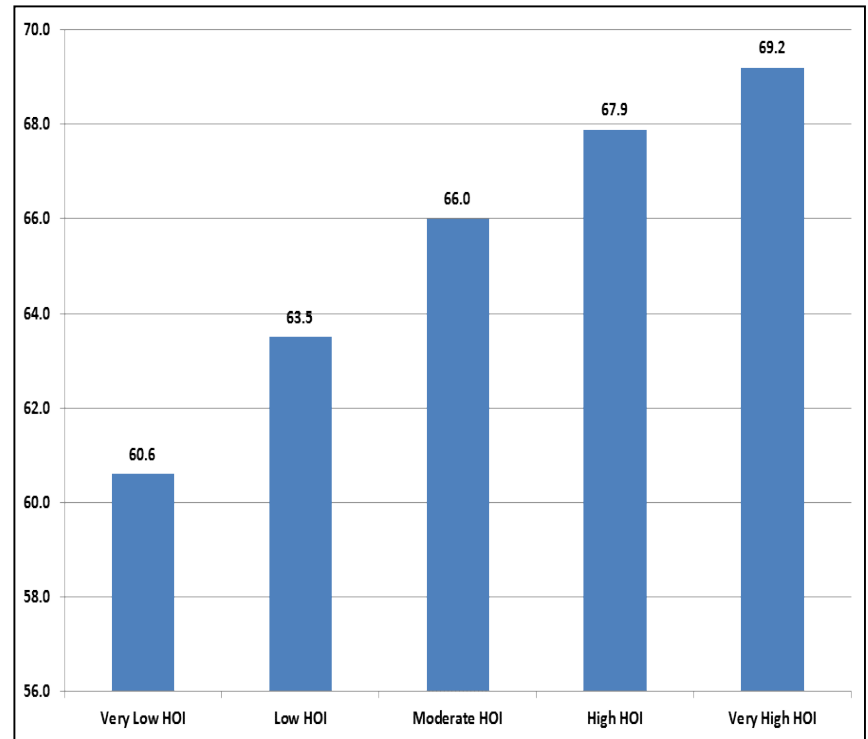
DISPARITIES & THE HOI

Monotonicity of HOI

Life Expectancy at Birth

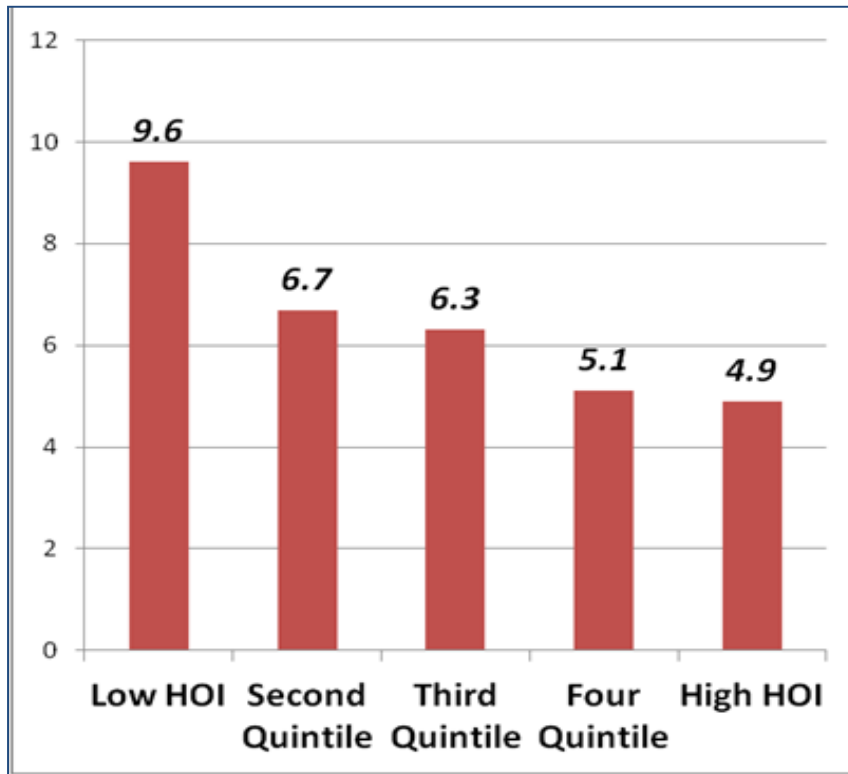


Disability Free Life Expectancy

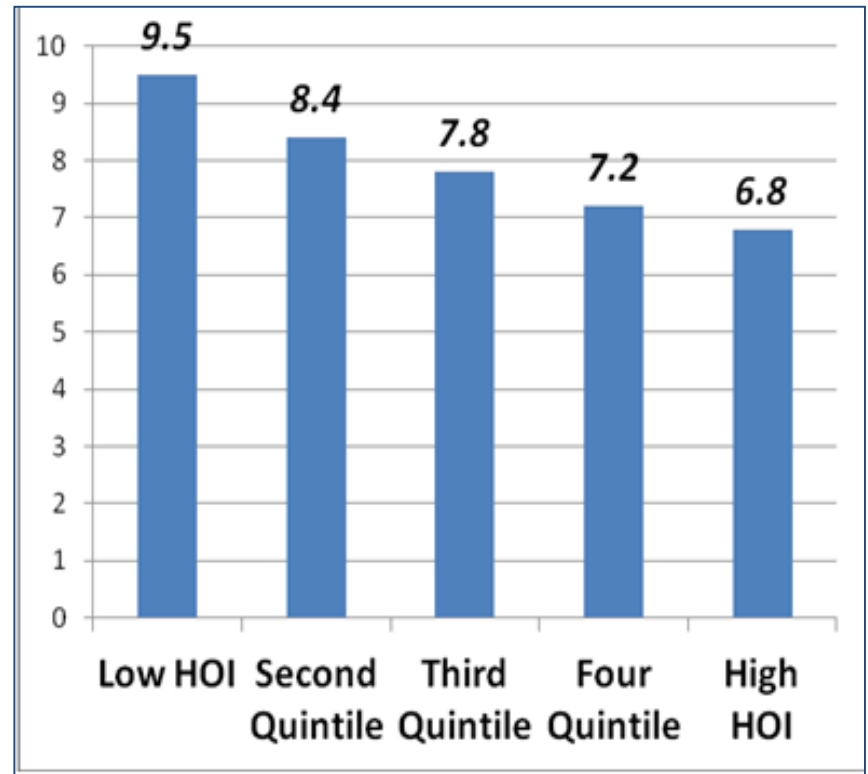


Monotonicity of HOI

Infant Mortality Per 1,000 Births

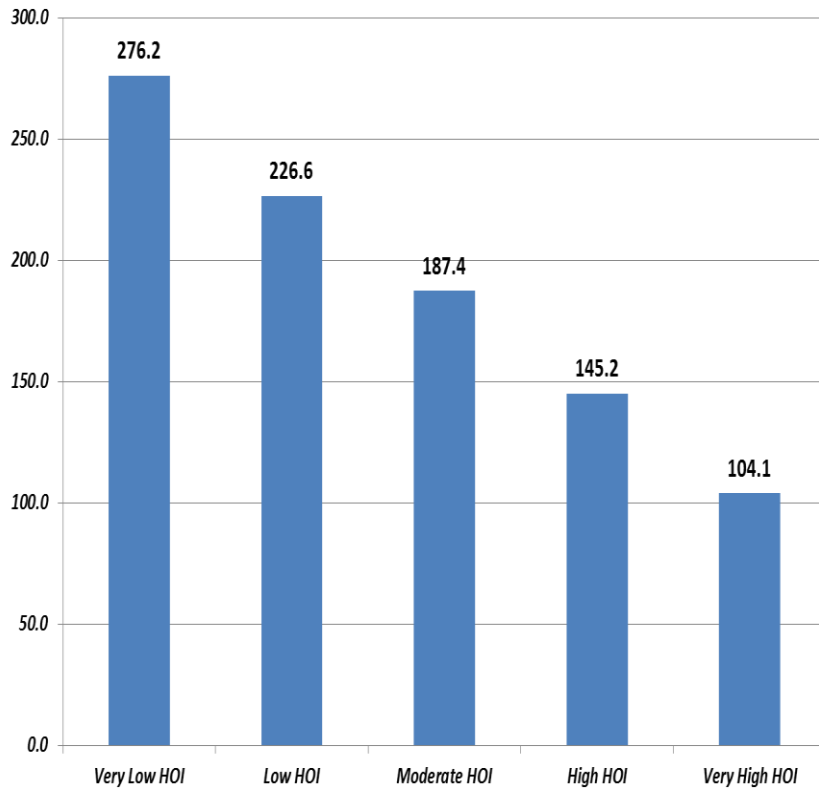


Low Birth Weight %

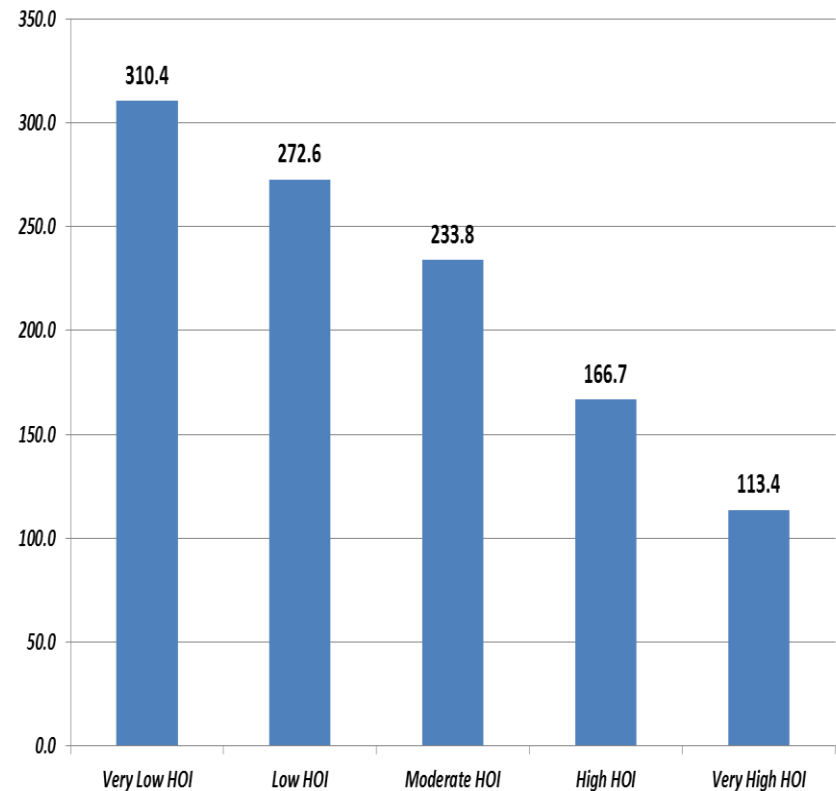


Monotonicity of HOI

Diabetes Hospitalization Rate per 100,000



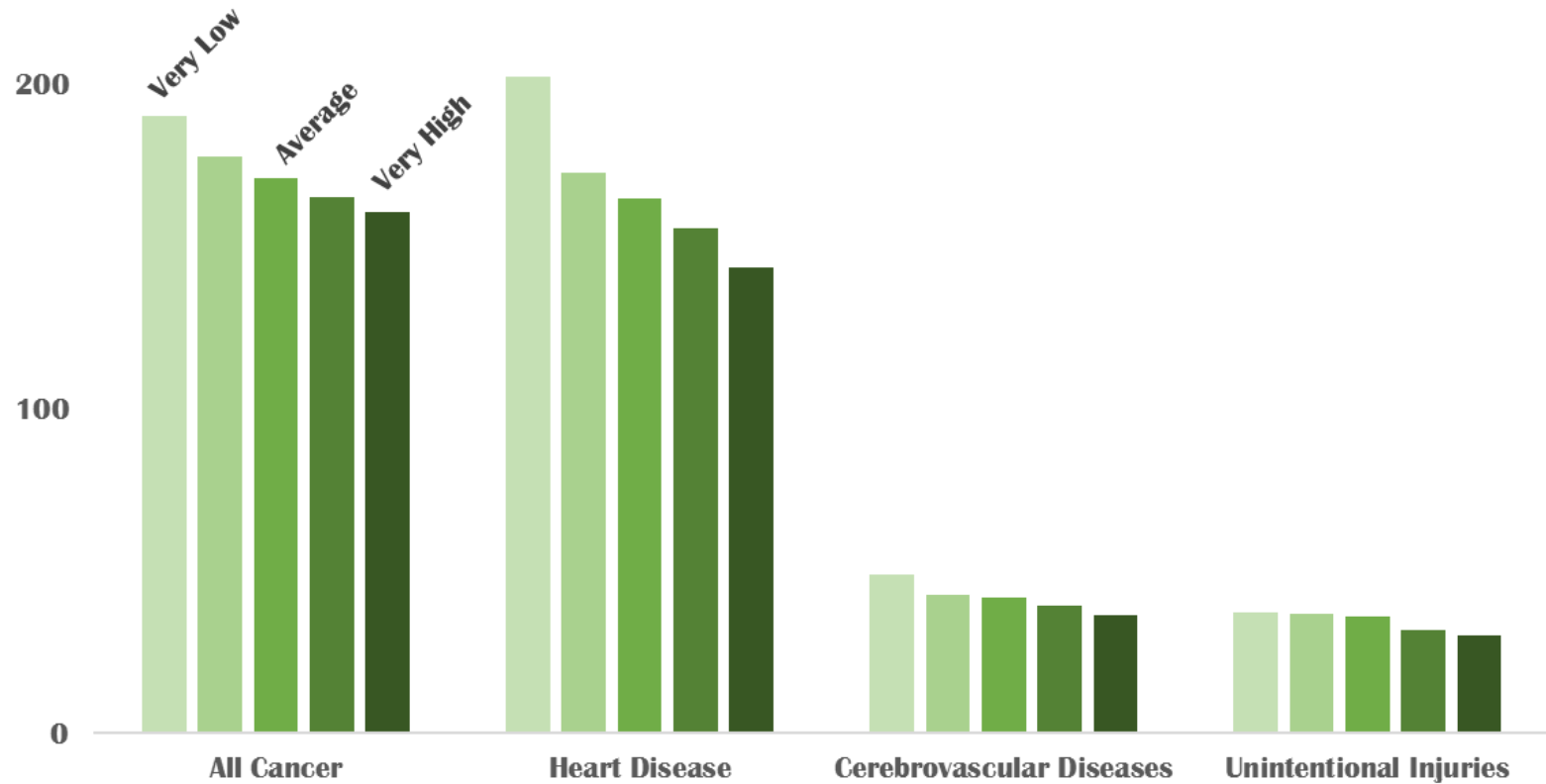
COPD Hospitalization Rate per 100,000



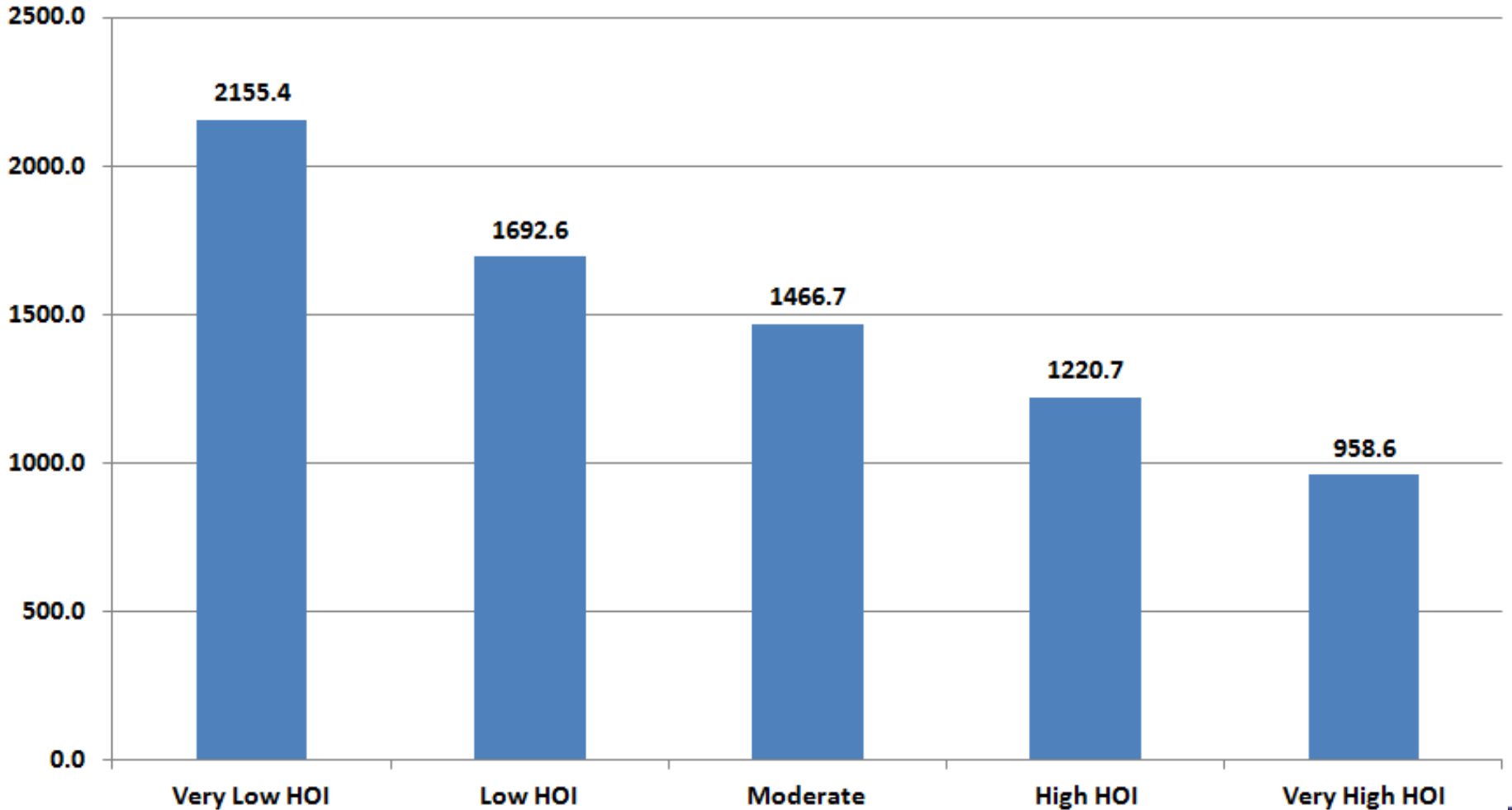
Disparities by Health Opportunity

Mortality per 100,000

(Age-Adjusted)



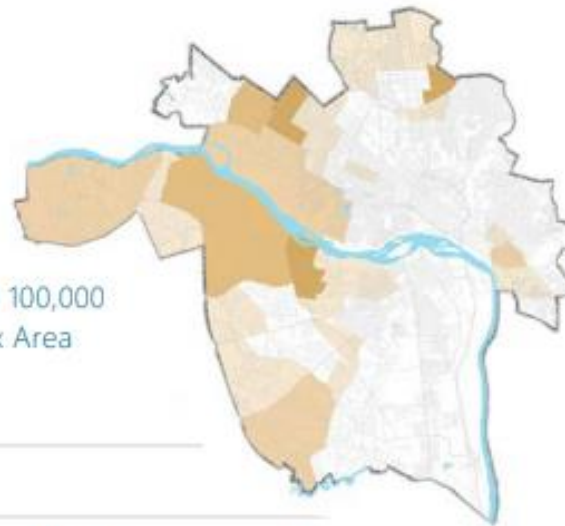
Age-Adjusted-Rate for Potentially Prevention Hospitalization for Overall (Acute & Chronic) - Virginia, 2010 & 2012



Vision Zero Richmond, VA

Health Outcomes

The Virginia Department of Health uses a Health Opportunity Index (HOI) as a composite measure of the social, economic, educational, demographic, and environmental factors that relate to a community's well-being. This includes indicators of neighborhood walkability and access to transportation; two factors directly relevant to Vision Zero. Areas in the City with a "very low" HOI experience a fatality and injury rate 2.65 times higher than areas with a very high HOI. Investments in transportation safety in these communities may contribute to the overall health outcomes of residents in areas with the greatest need. It will be necessary for the City and Vision Zero stakeholders to continue to determine which factors have the greatest influence on crash rates and the resulting injuries and fatalities in these specific communities.



Fatality and Injuries Rate per 100,000 by Health Opportunity Index Area
Colors on map reflect graph



Source: Virginia Department of Health

Limitations

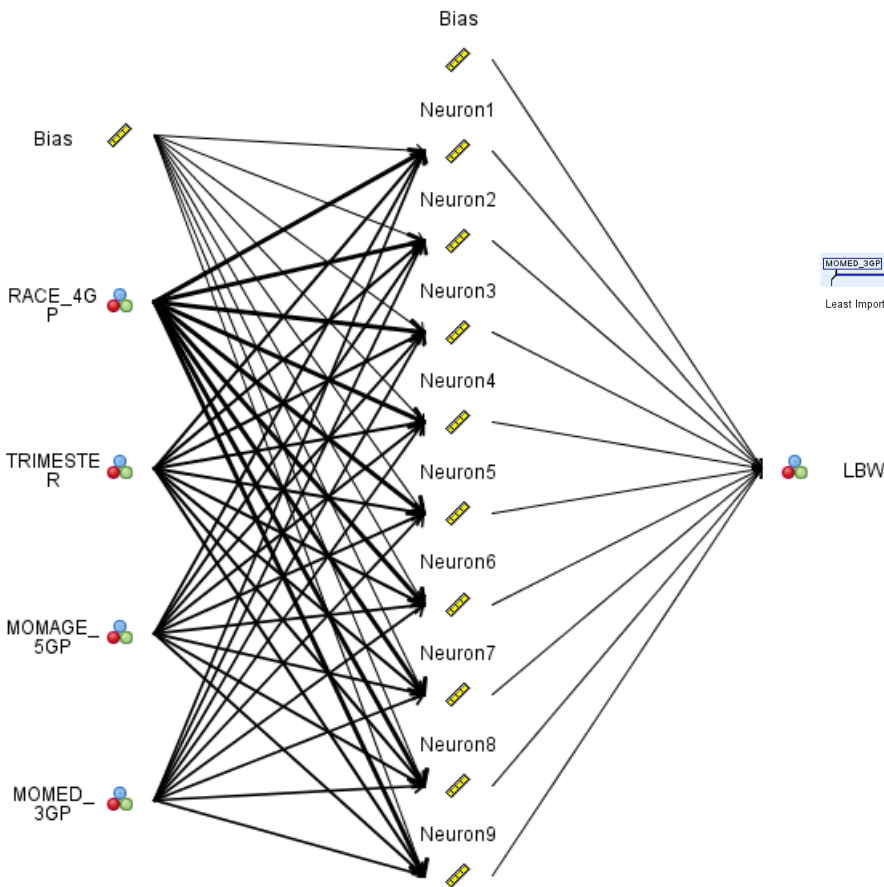
- Data limitations
- Ecological Fallacy: Individual results may vary
- Census Tract \neq Neighborhood
- 5-year estimates
- Statewide measure

Uses of the HOI

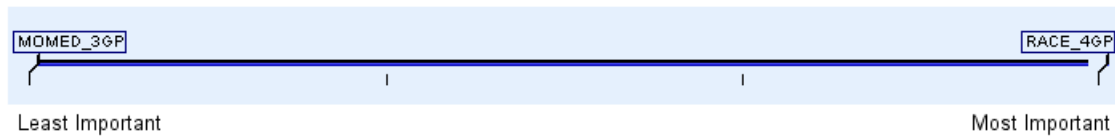
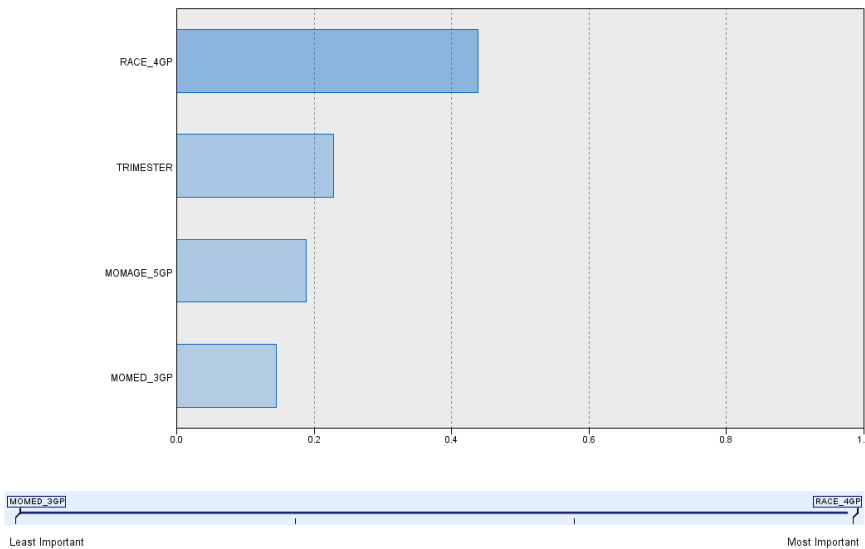
- To show that place matters when it comes to health
- To identify the impact of social determinants of health on statewide health landscape
- To identify HOI indicators that are most influential on local health
- To learn from communities with good health despite adverse HOI indicators
- To build collaboration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

Predictive Analytics for Low Birth Weight (Low HOI)

Network



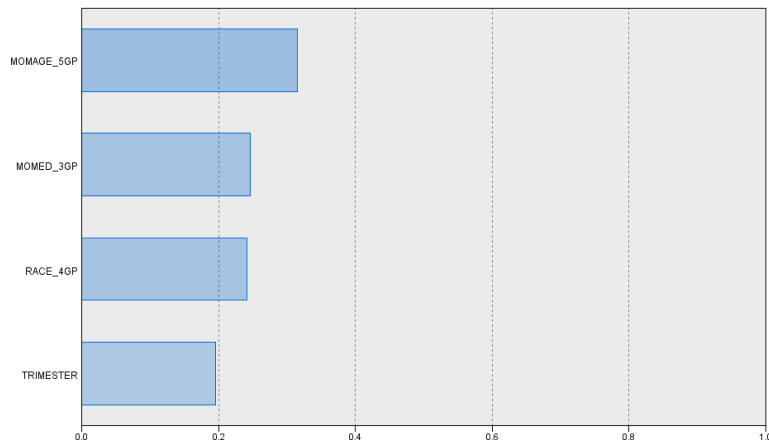
Predictor Importance
Target: LBW



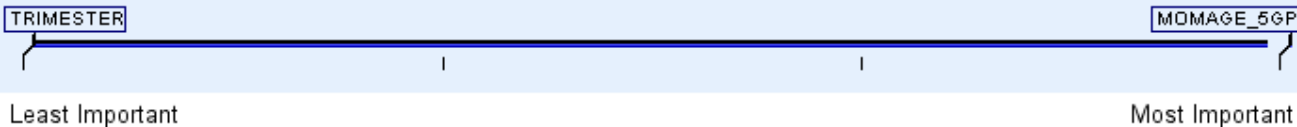
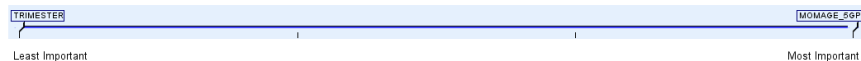
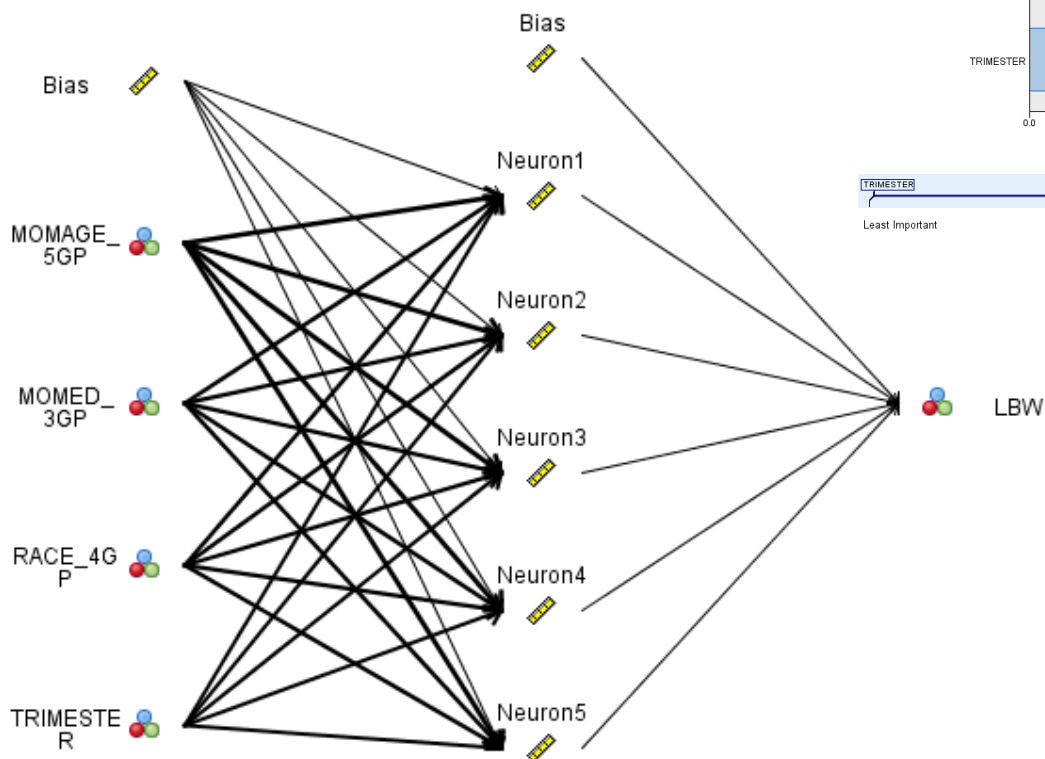
Predictive Analytics for Low Birth Weight (High HOI)

Predictor Importance

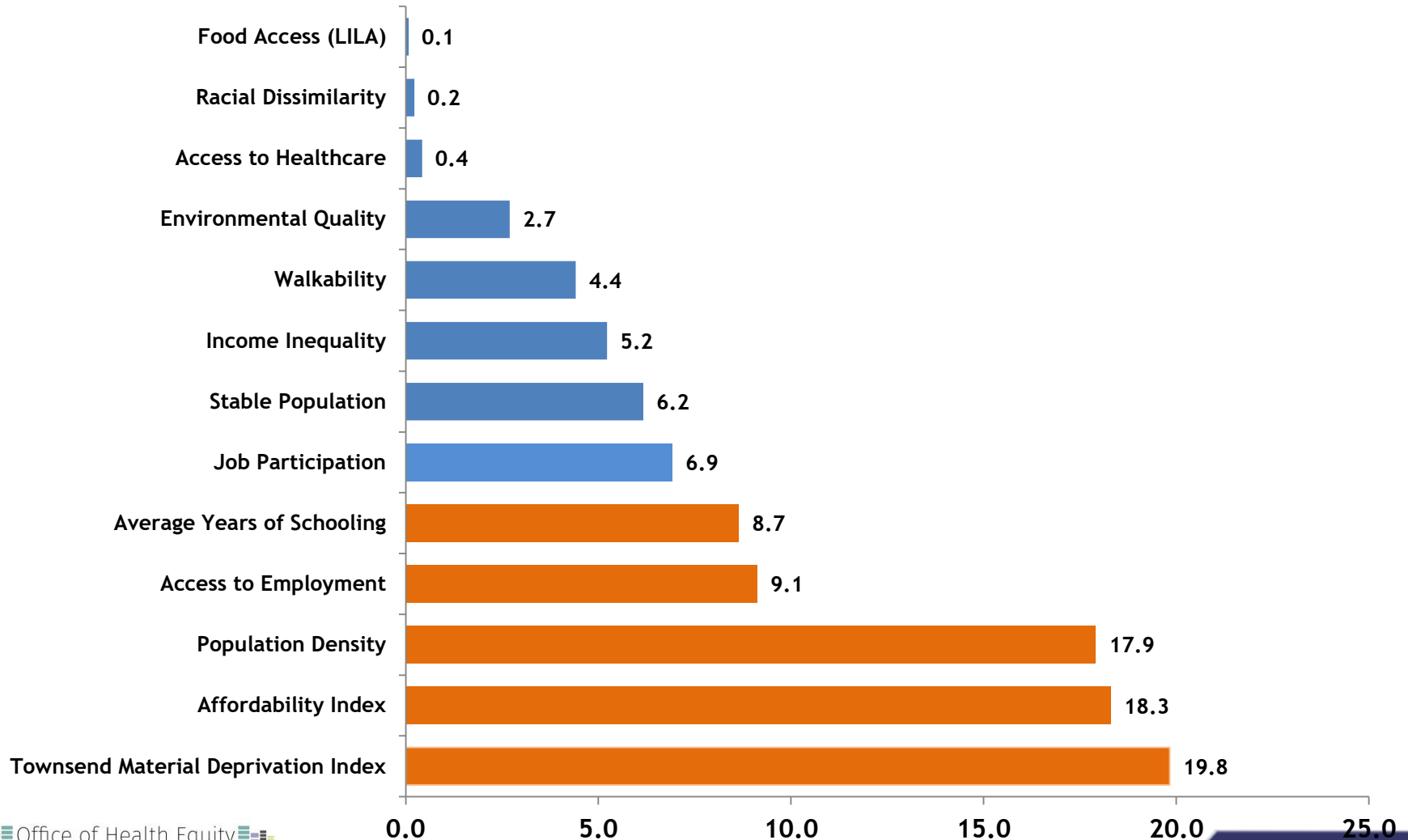
Target: LBW



Network



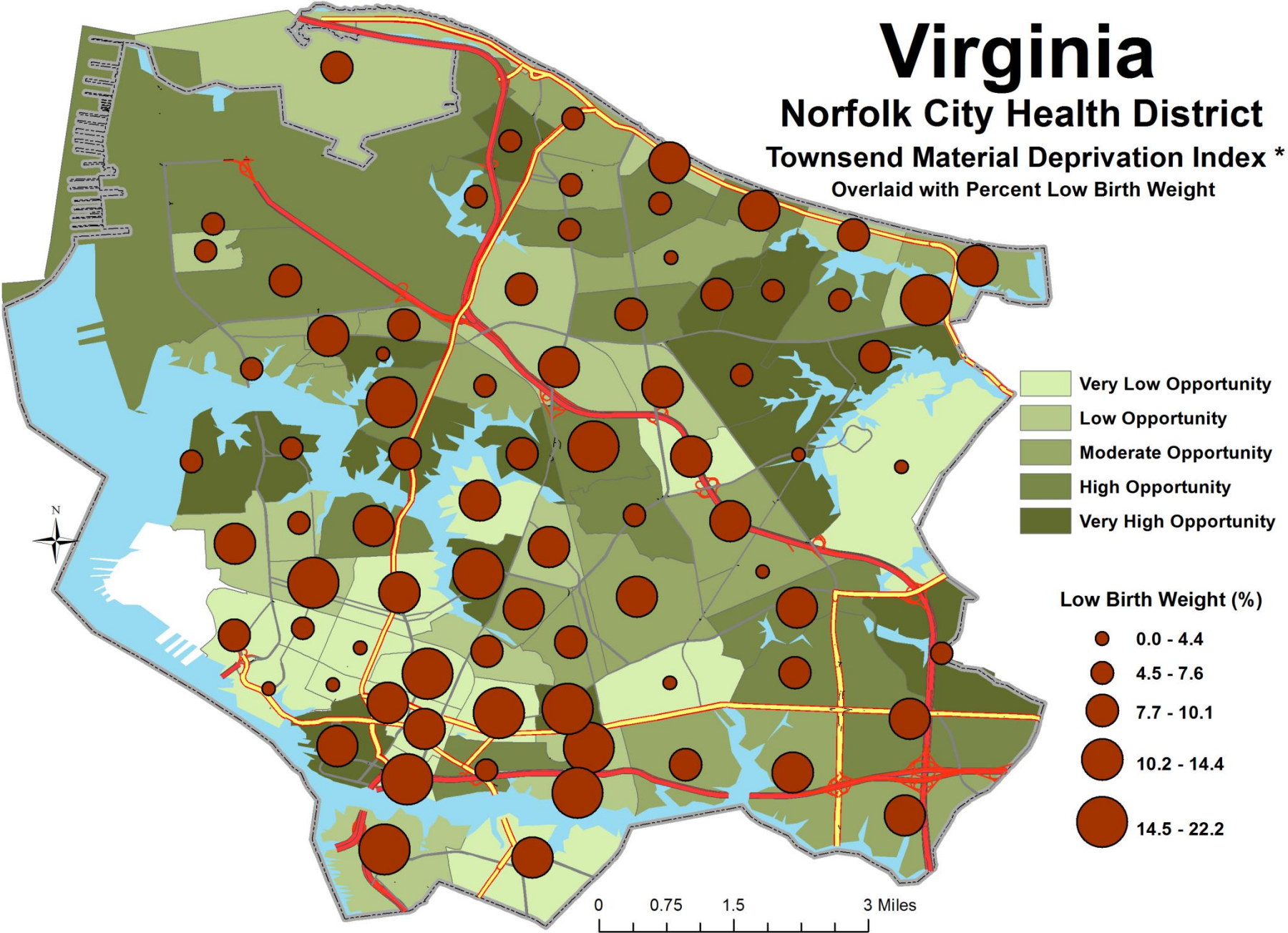
Norfolk Health District - Contribution to Low Birth Weight



Virginia

Norfolk City Health District

Townsend Material Deprivation Index * Overlaid with Percent Low Birth Weight *

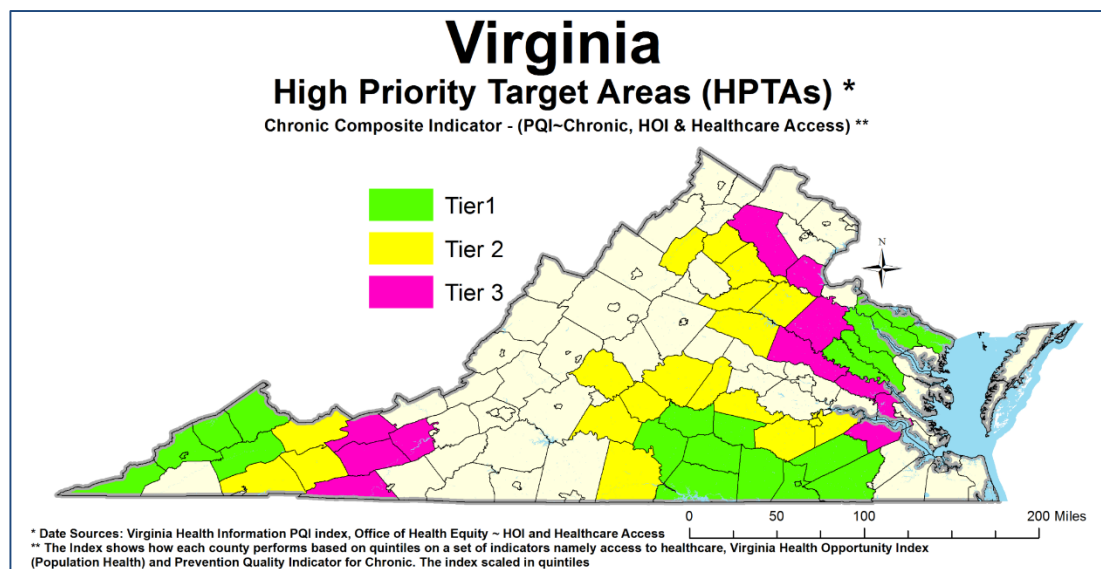


* Material deprivation entails the lack of goods, services, resources, amenities and physical environment which are customary, or at least widely approved in the society under consideration

Conrad-30 Program

Indicators

- Health Care Providers
 - Primary Care
 - OB/GYN
 - Pulmonologists
- AHRQ Prevention Quality Indicators
 - Chronic Composite
 - Low Birth Weight
 - COPD
- Health Opportunity Index





MAKING DATA ACCESSIBLE

Datasaurus Dozen (download .csv):



X Mean: 54.26
Y Mean: 47.83
X SD : 16.76
Y SD : 26.93
Corr. : -0.06

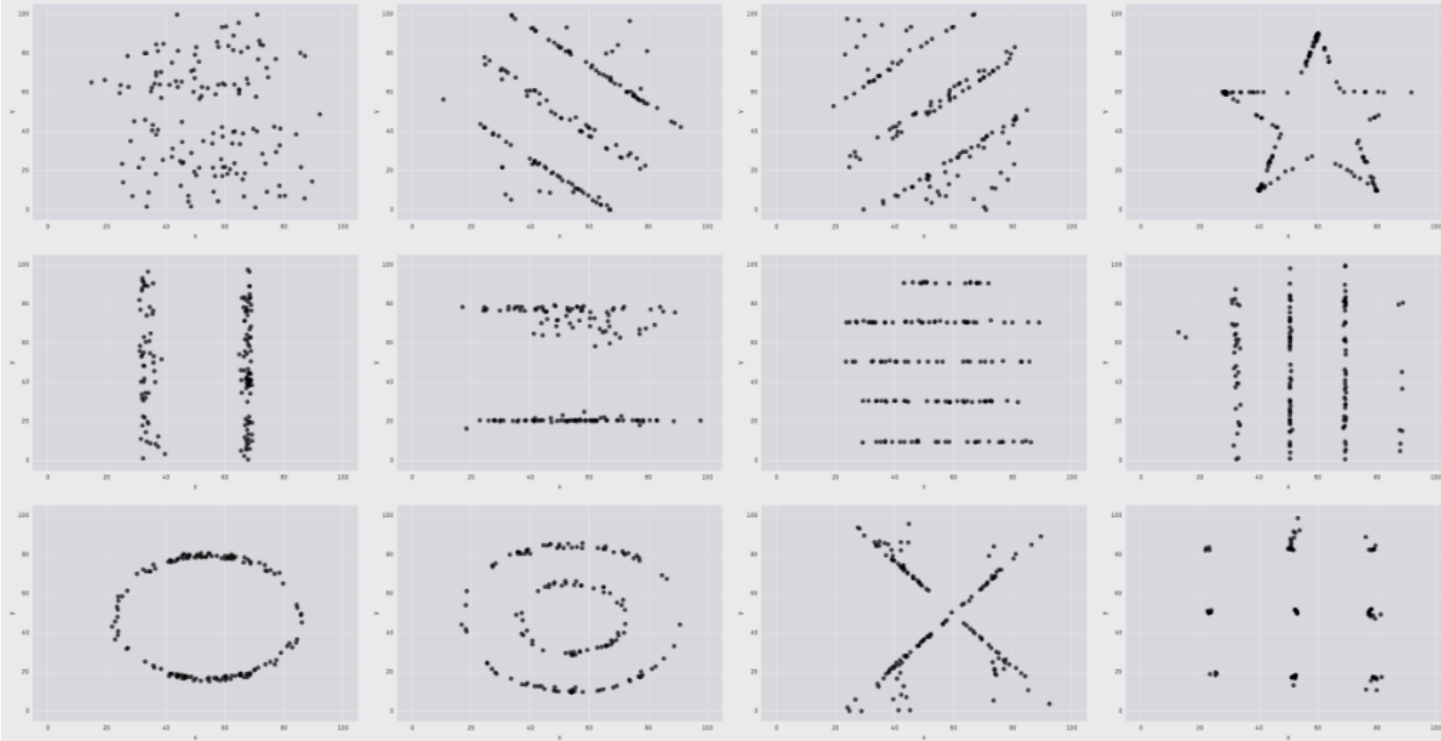
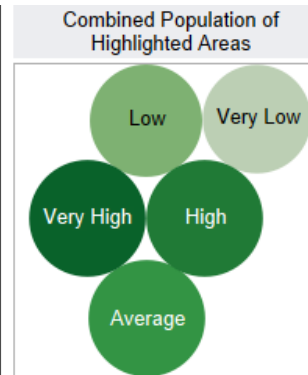
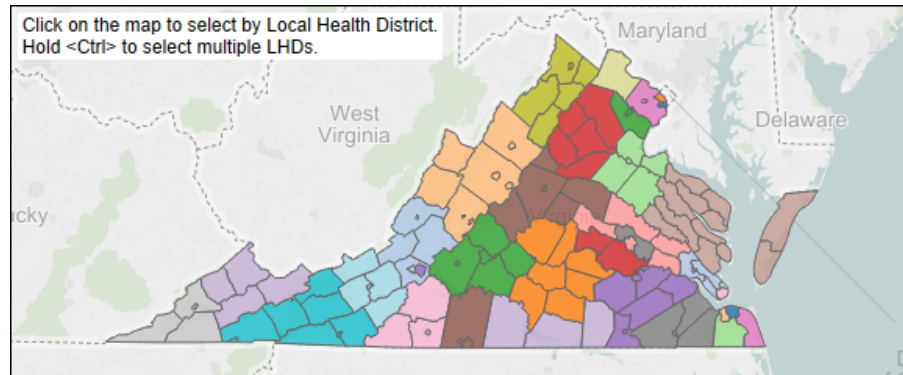


Fig 2. The *Datasaurus Dozen*. While different in appearance, each dataset has the same summary statistics (mean, standard deviation, and Pearson's correlation) to two decimal places.

Population Experience



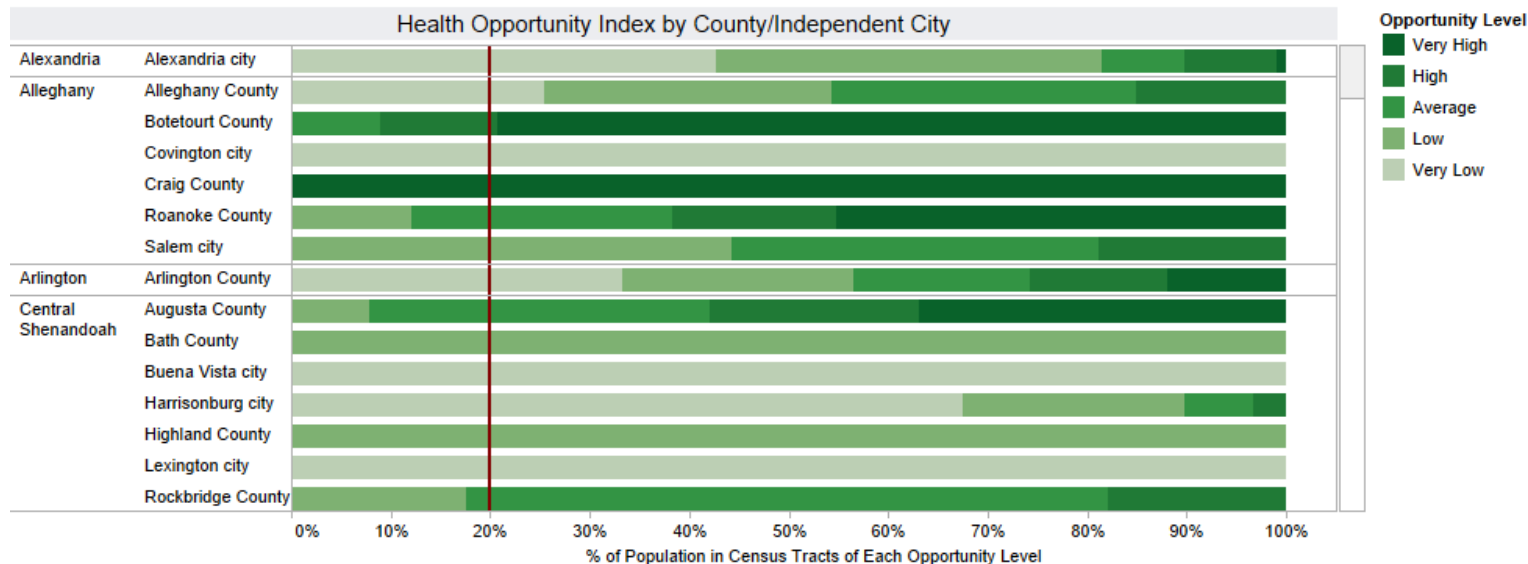
Office of Minority Health & Health Equity
Advancing Health Equity For All Virginians

Profile

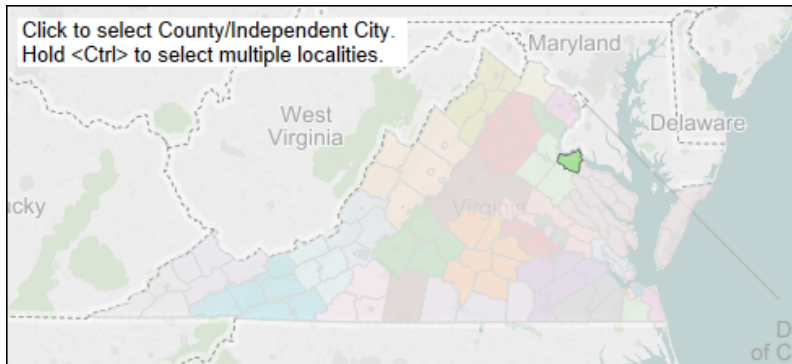
- Health Opportunity Index
- Community Environmental Profile
- Consumer Opportunity Profile
- Economic Opportunity Profile
- Wellness Disparity Profile

Geography

- County/Independent City
- Local Health District



County Rankings



Rank (of 134)
Median of Selected Counties

Local Health District
All

Health Opportunity Index	
67	
Economic Opportunity Profile	Consumer Opportunity Profile
67	68
Community Environmental Profile	Wellness Disparity Profile
68	67

Health Opportunity Index



Economic Opportunity Profile



Consumer Opportunity Profile



Community Environmental Profile



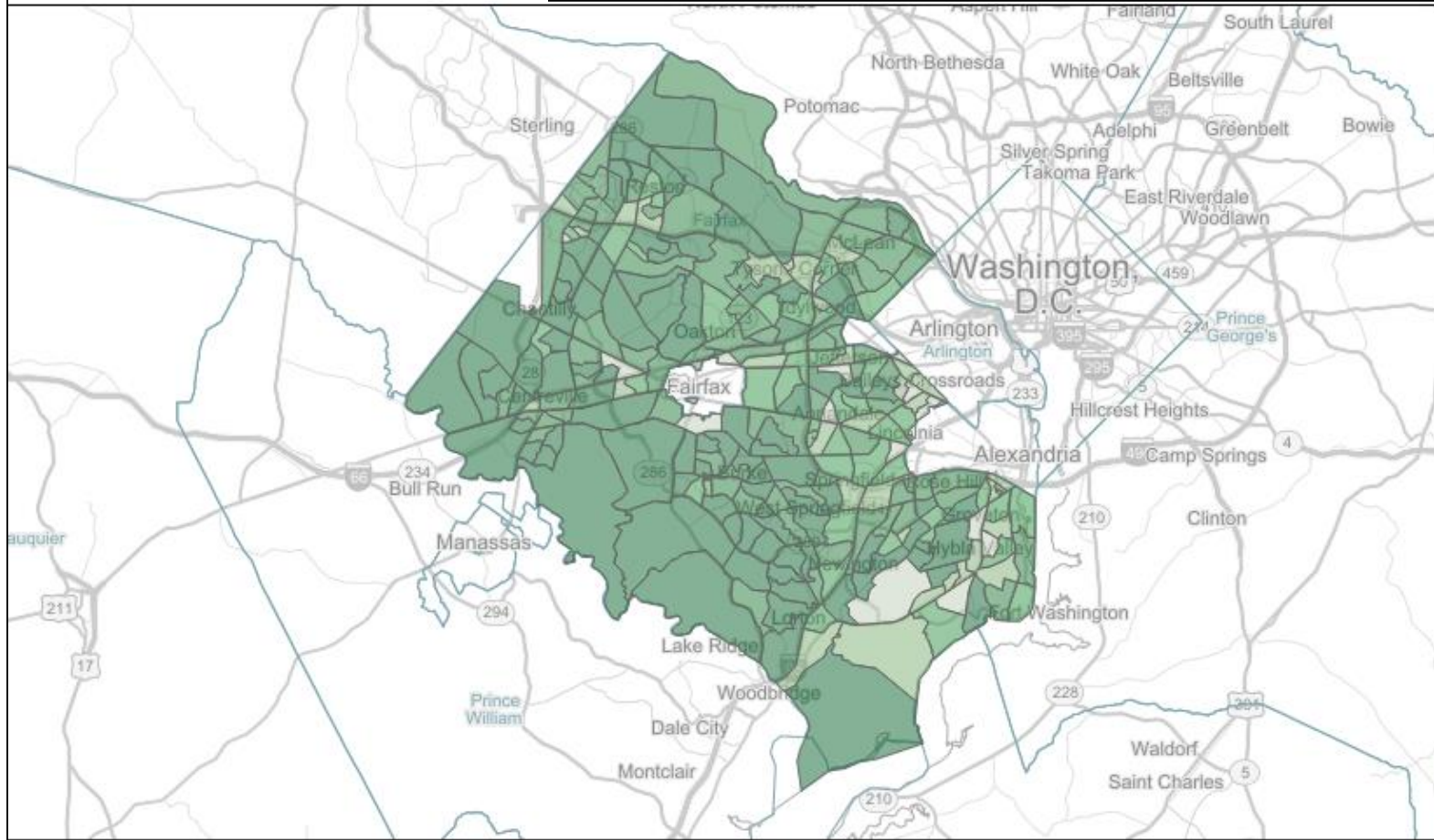
Wellness Disparity Profile



Fairfax County

Opportunity Level

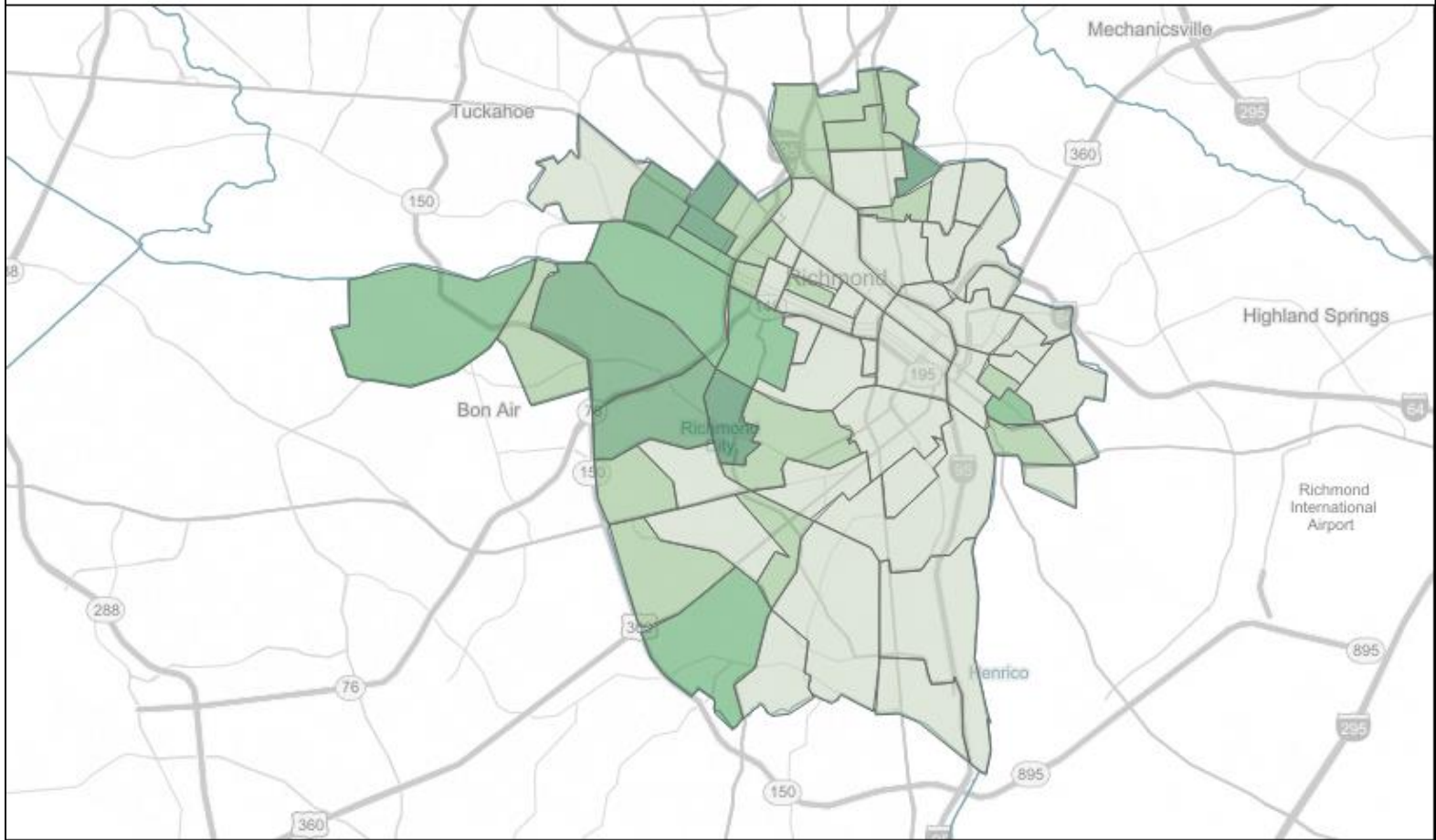
- Very Low
- Low
- Average
- High
- Very High



Richmond City

Opportunity Level

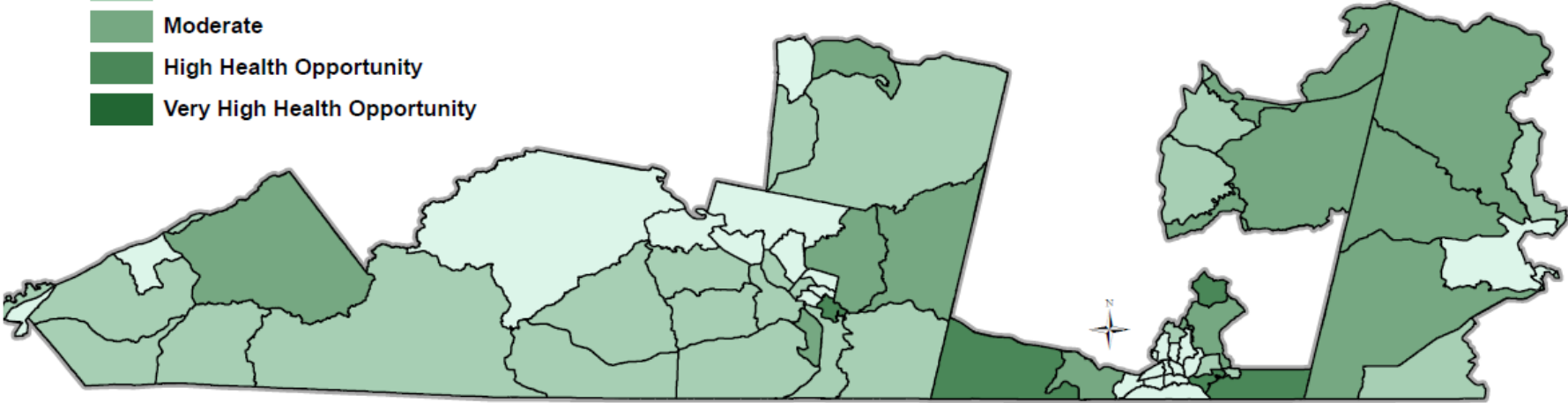
- Very Low
- Low
- Average
- High
- Very High



State Senate District 20 - Virginia Health Opportunity Index (HOI)

by Census Tract *

- Very Low Health Opportunity
- Low Health Opportunity
- Moderate
- High Health Opportunity
- Very High Health Opportunity

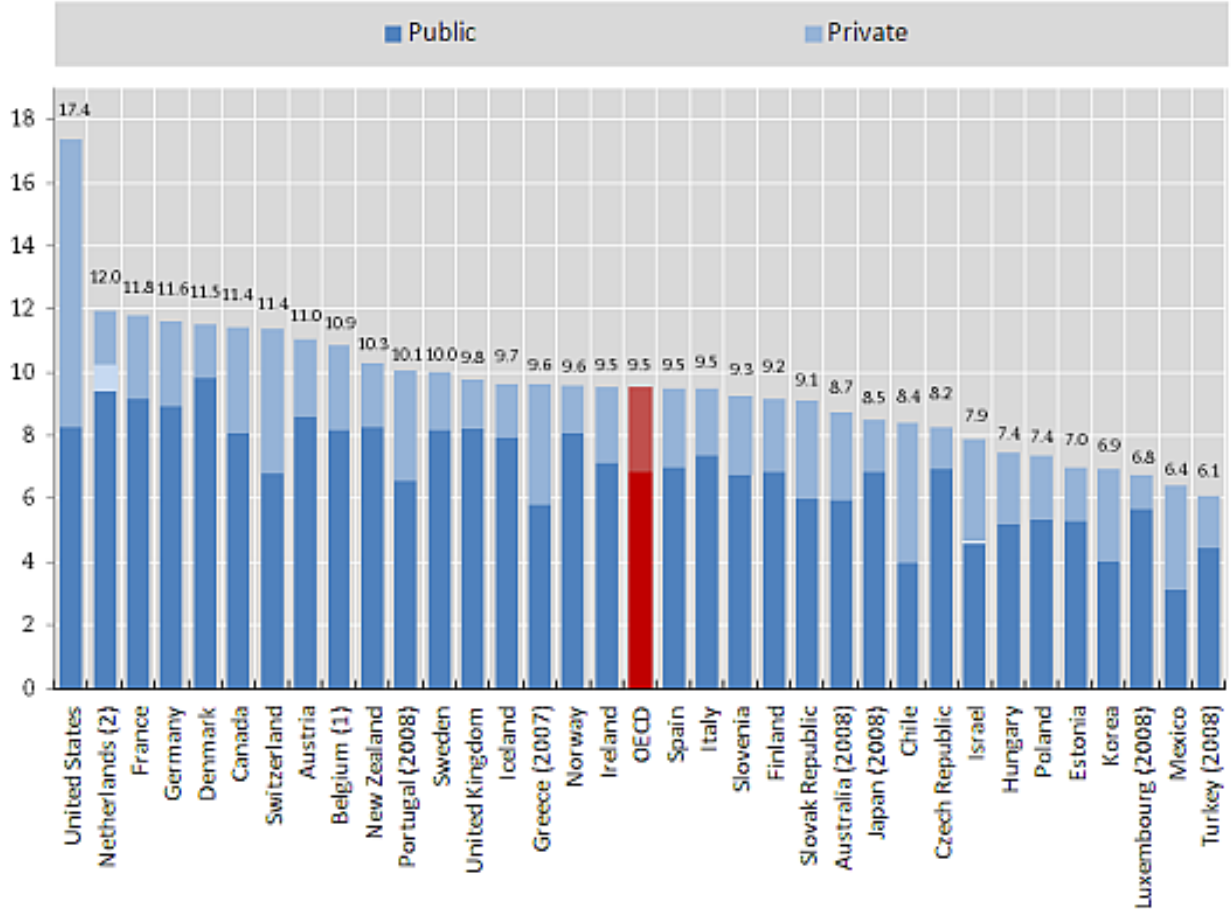


On the right path



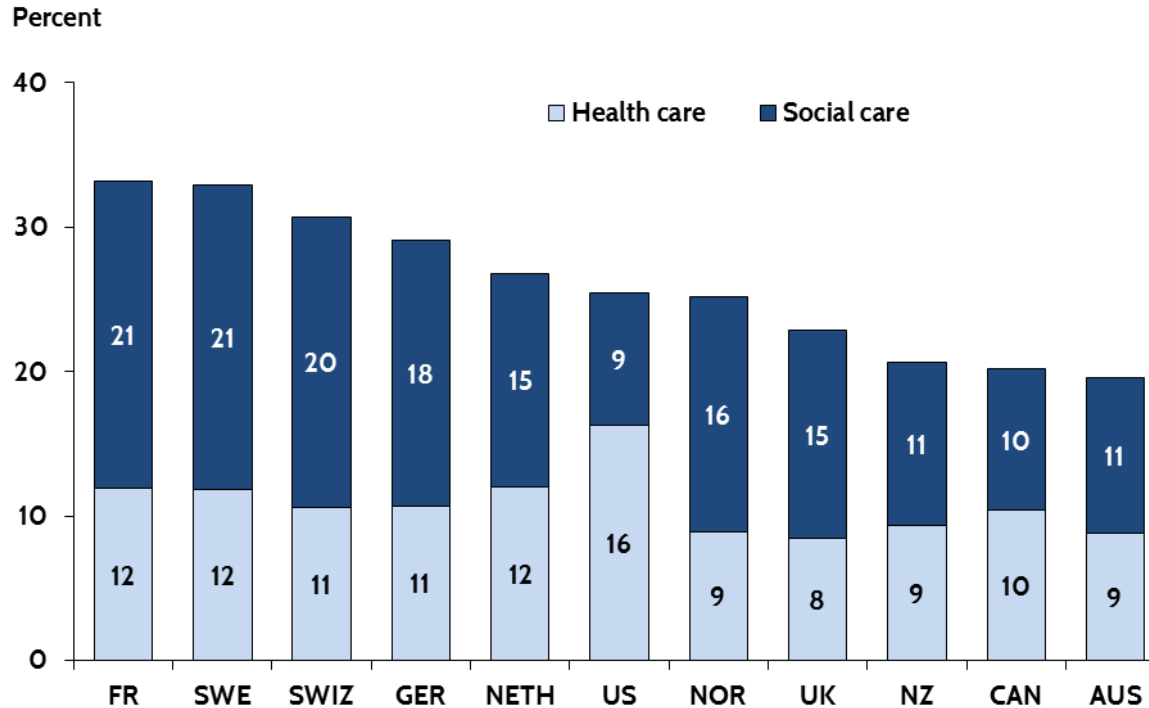
Photo Credit: Guilhem Vellet. Creative Commons, Attribution 2.0 Generic.
https://www.flickr.com/photos/o_0/36890402360/in/photostream/

Health Spending among Developed Nations



Health & Social Spending among Developed Nations

Exhibit 8. Health and Social Care Spending as a Percentage of GDP



Notes: GDP refers to gross domestic product.

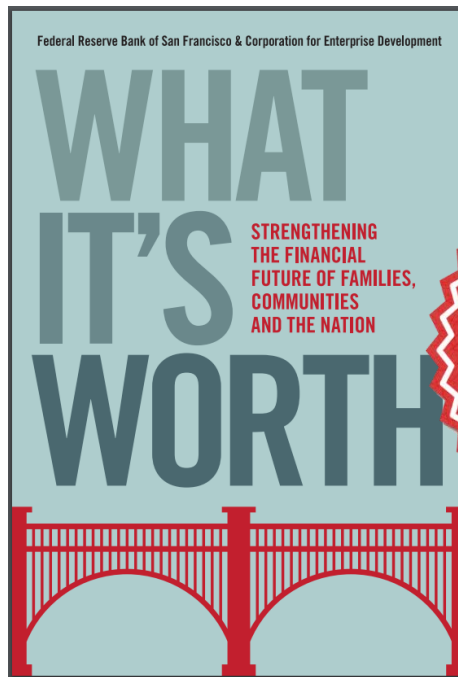
Source: E. H. Bradley and L. A. Taylor, *The American Health Care Paradox: Why Spending More Is Getting Us Less*, Public Affairs, 2013.

Upstream Approach

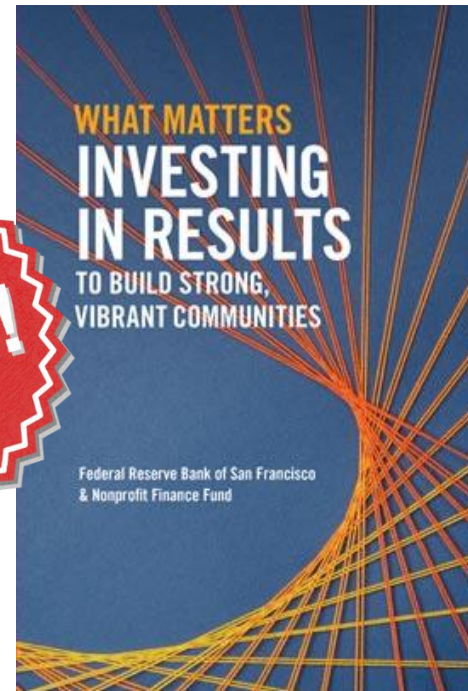
	Clinical (health care)	Nonclinical (health/wellness)
Community (total population)	<p>3</p> <p>Expand access to health care</p> <p><i>Example:</i> Shift from in-patient to community-based services</p>	<p>6</p> <p>Create opportunity <i>Examples:</i> jobs, public transport</p> <p>Improve conditions <i>Examples:</i> air pollution, complete streets, green space</p> <p>Change policies <i>Examples:</i> housing, food security</p>
High risk; likely to become patients	<p>2</p> <p>Emphasize outreach; prevention, early detection</p> <p><i>Examples:</i> mobile mammogram screening vans, visiting nurses</p>	<p>5</p> <p>Target nonclinical preventive actions</p> <p><i>Examples:</i> lead or mold remediation</p>
Patients	<p>1</p> <p>Reorganize care delivery</p> <p><i>Examples:</i> medical homes, health IT, care coordination, patient-centered care</p>	<p>4</p> <p>Integrate social services</p> <p><i>Examples:</i> provide referrals or transit passes, write prescriptions for fresh food</p>

Source: Robin Hacke, "Investment Leaders: The Emerging Landscape for Health Investment in Virginia" Sept 28, Richmond Federal Reserve Bank.

Resources

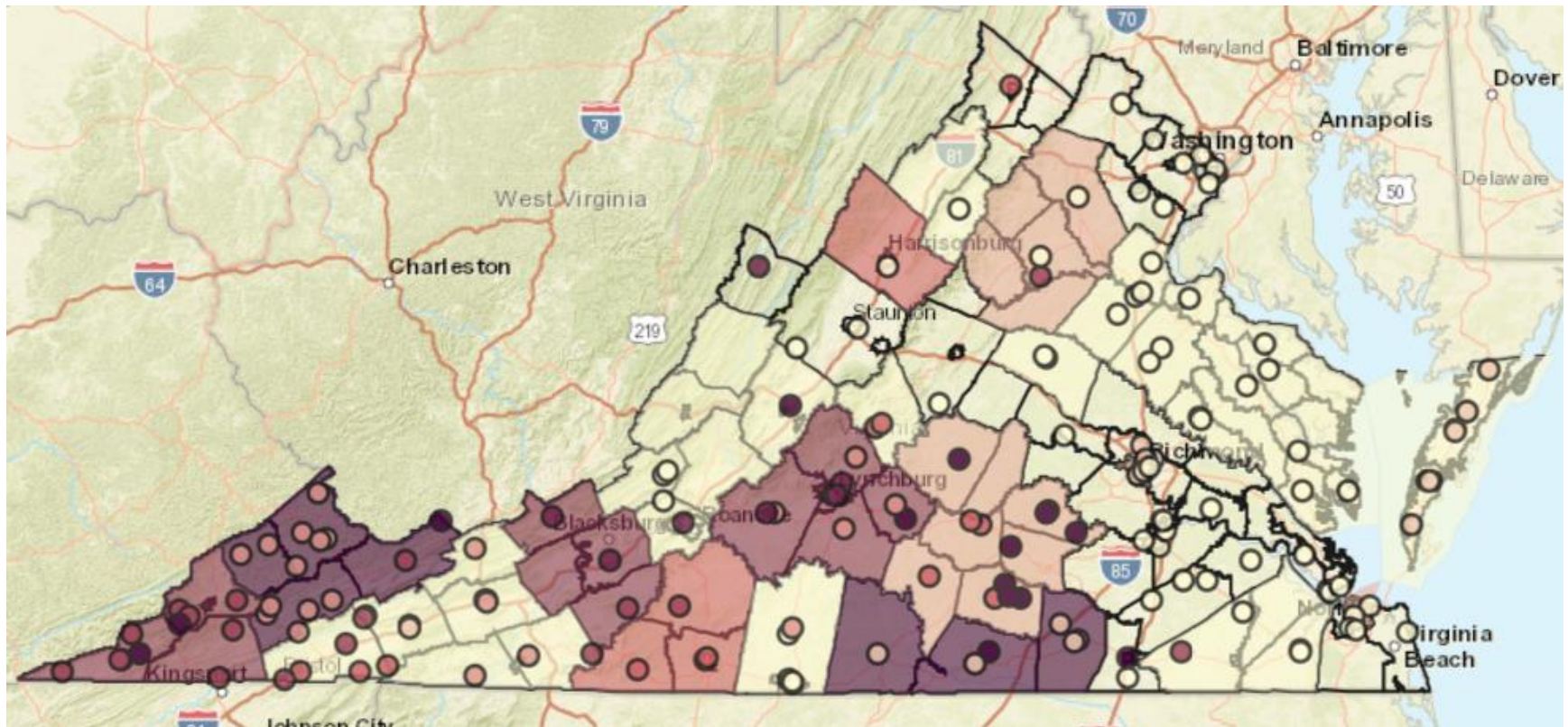


<http://www.strongfinancialfuture.org/>

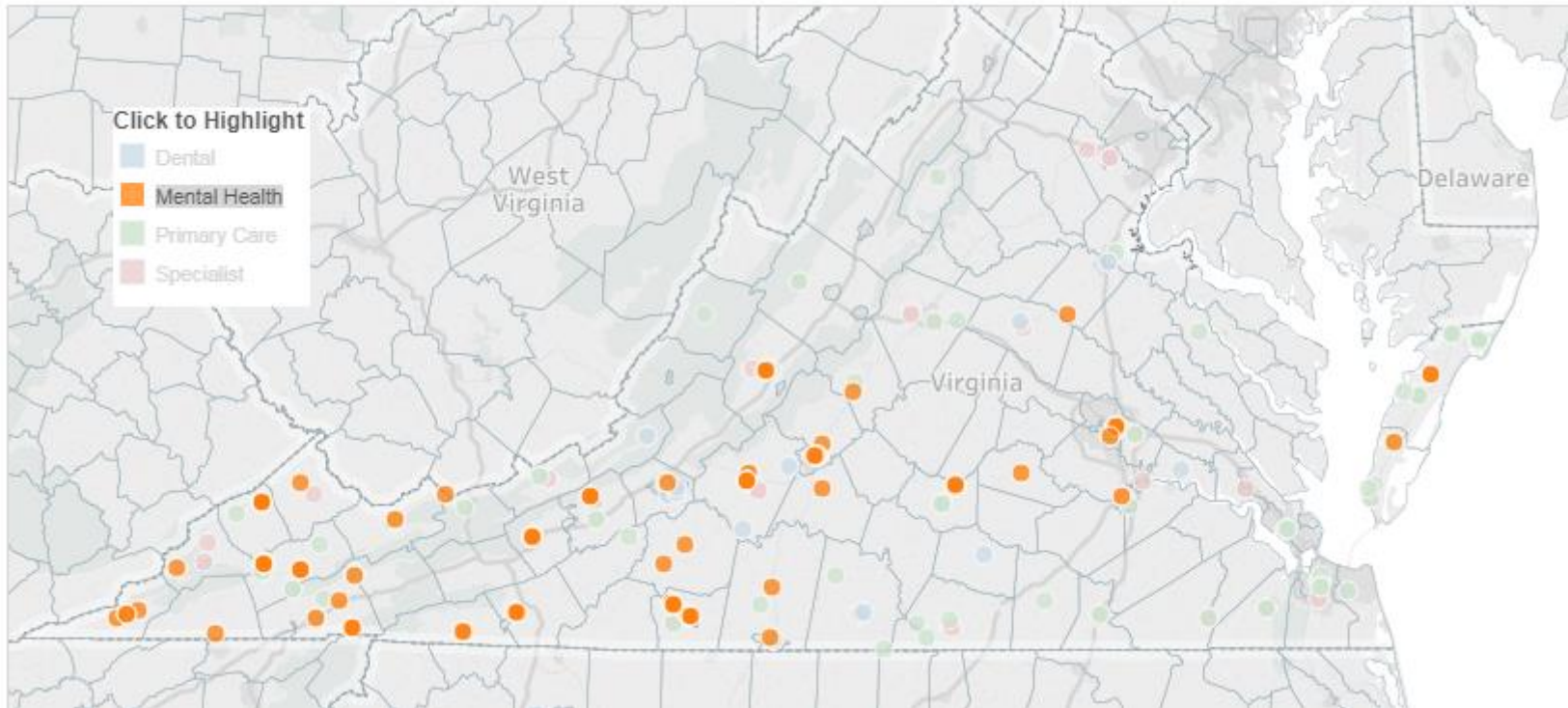


<http://investinresults.org/>

HPSA Designation



Obligated Mental Health Providers - 2016



Health Equity



Photo Credit: Gary Rogers. Sheep on sea cliffs near Grunta Beach. Creative Commons License Attribution-ShareAlike 2.0 Generic.
<http://www.geograph.org.uk/photo/4655934>

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Visit the Health Opportunity Index Website:

<https://www.vdh.virginia.gov/omhhe/hoi/>