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Social Determinants of Mental Health and Substance Use

Brady J. Heward, MD

Co-Director of Clinical Affairs, Assistant Professor of Psychiatry

University of Vermont, Burlington, VT

Disclosures

- No Financial Disclosures related to this topic
- My world view and understanding of this topic is shaped by my lived experiences and by the experiences I have never had to experience. I have implicit biases that impact how I interpret patients' histories, provide treatment, and respond to treatment non-adherence. I am the product of many things, including the Privilege that I am granted because I am an educated, able-bodied, able-minded, cis-gender, straight, white, male.

Learning Objectives

- 1) Define social and structural determinants of health
- 2) Identify how social determinants lead to inequity in health, healthcare, and outcomes, particularly in rural communities
- 3) Identify ways that social determinants impact substance use and treatment
- 4) Discuss implications for clinical care and advocacy for individuals and rural communities

Determinants of Health

- An individual's health may have less to do with the to whom and how of their birth and more with the where and with whom they live and are raised.
- Rural Communities are often at higher risk of worse outcomes due to differences, not in genetics, but in the other determinants of health.
- The COVID-19 pandemic has highlighted many inequities in the determinants of health

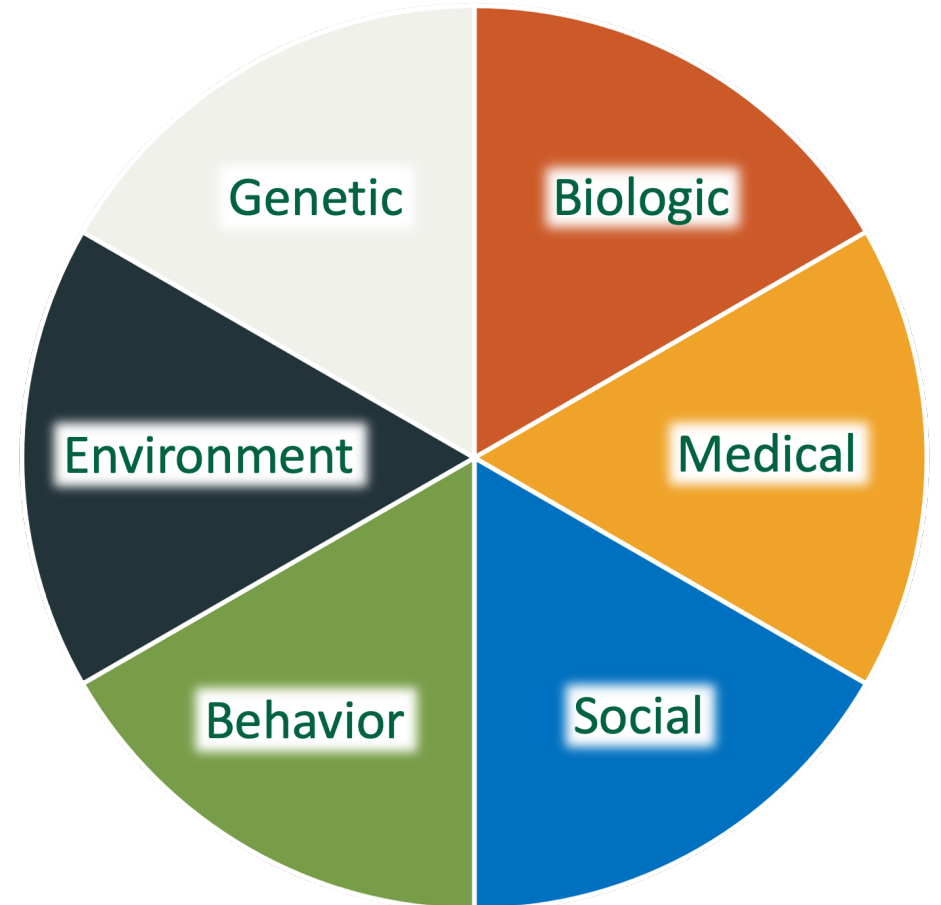
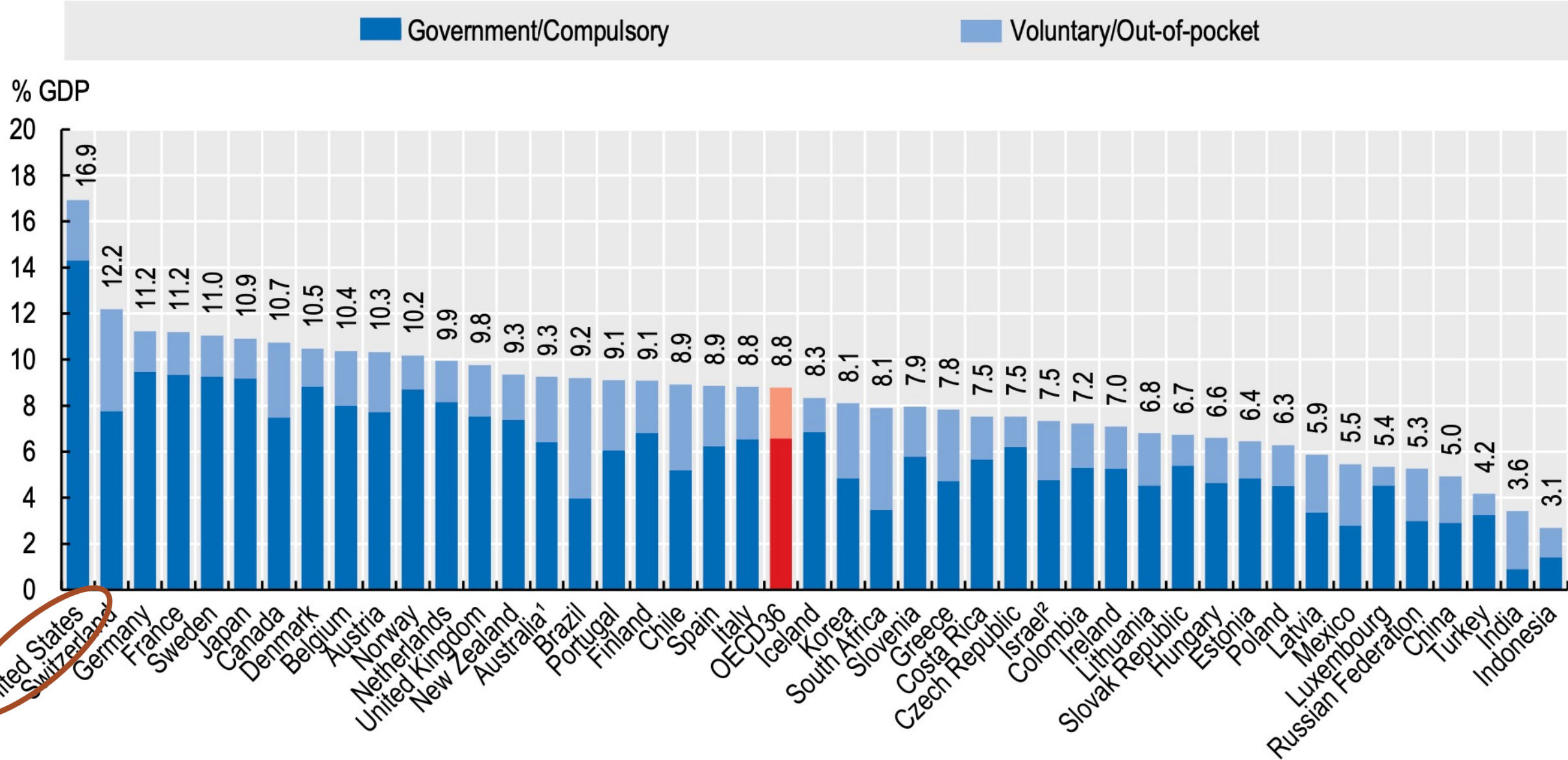
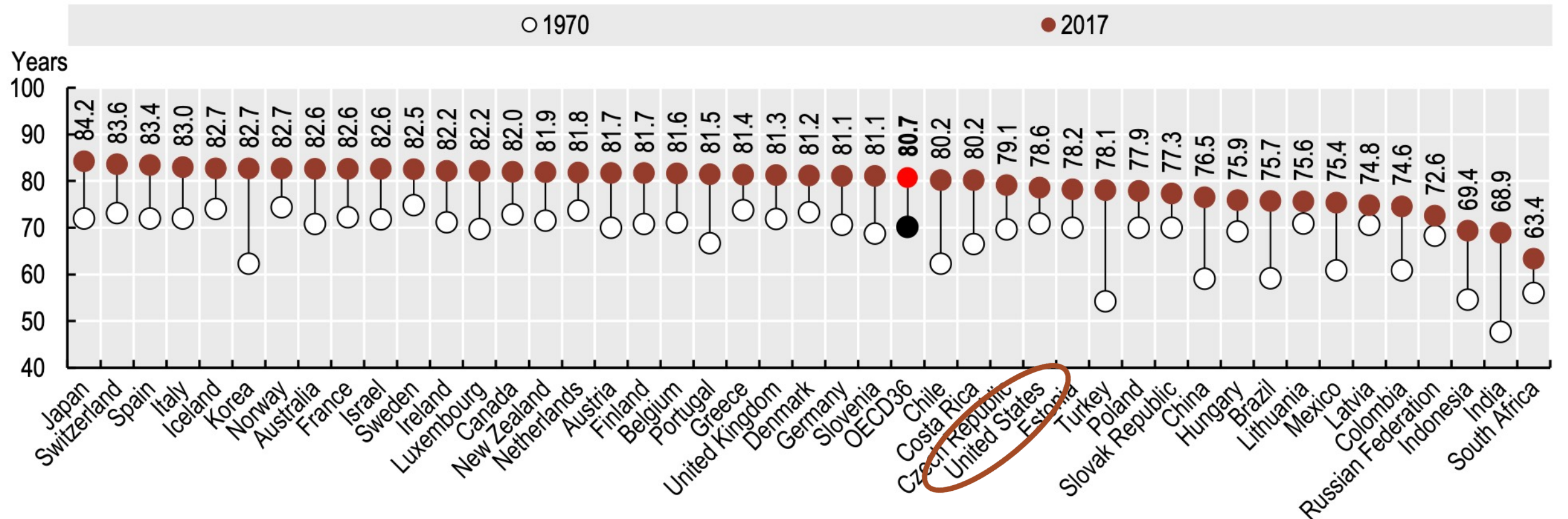


Figure 7.3. **Health expenditure as a share of GDP, 2018 (or nearest year)**

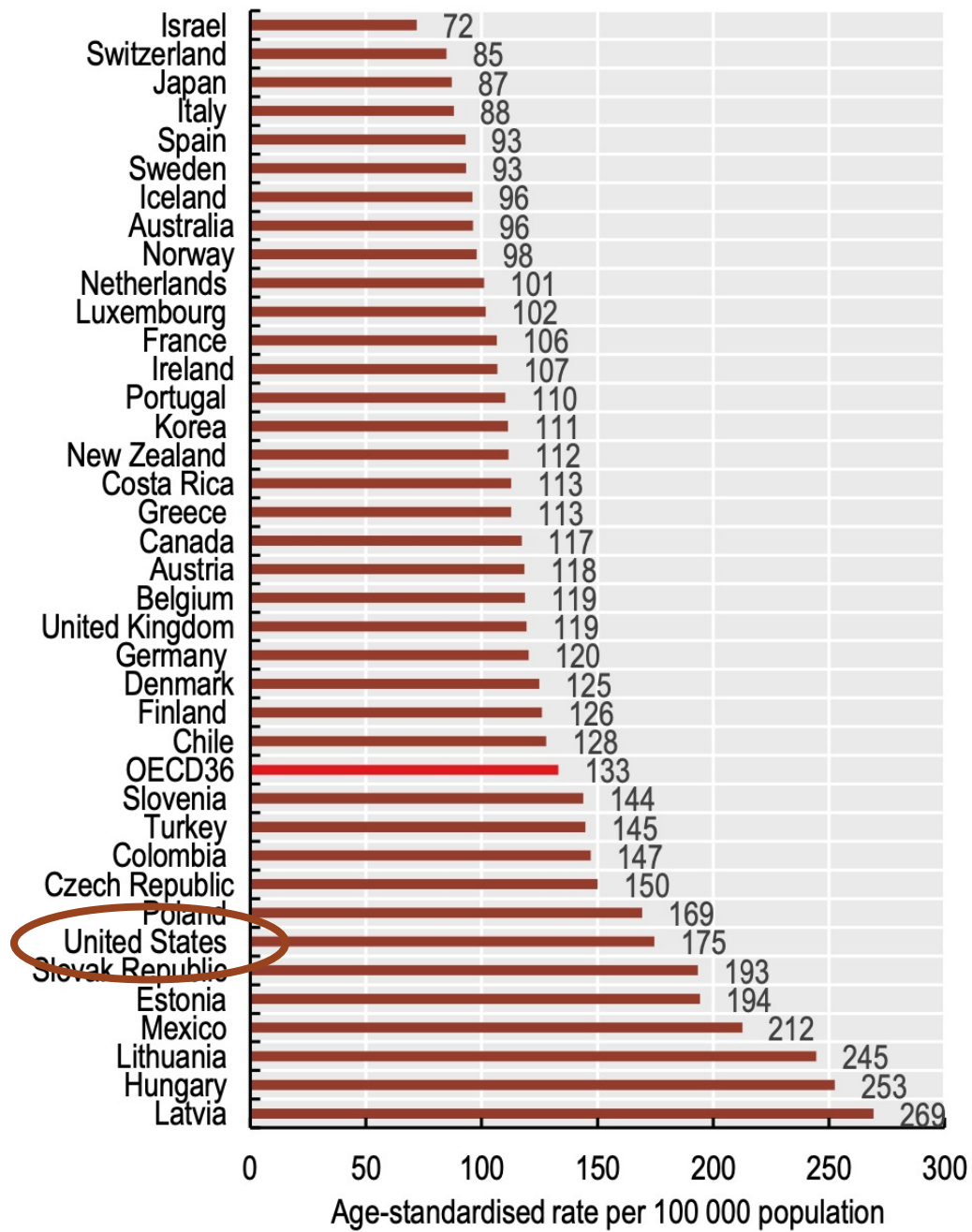


OECD (2019), *Health at a Glance 2019: OECD Indicators*, OECD Publishing, Paris, <https://doi.org/10.1787/4dd50c09-en>.

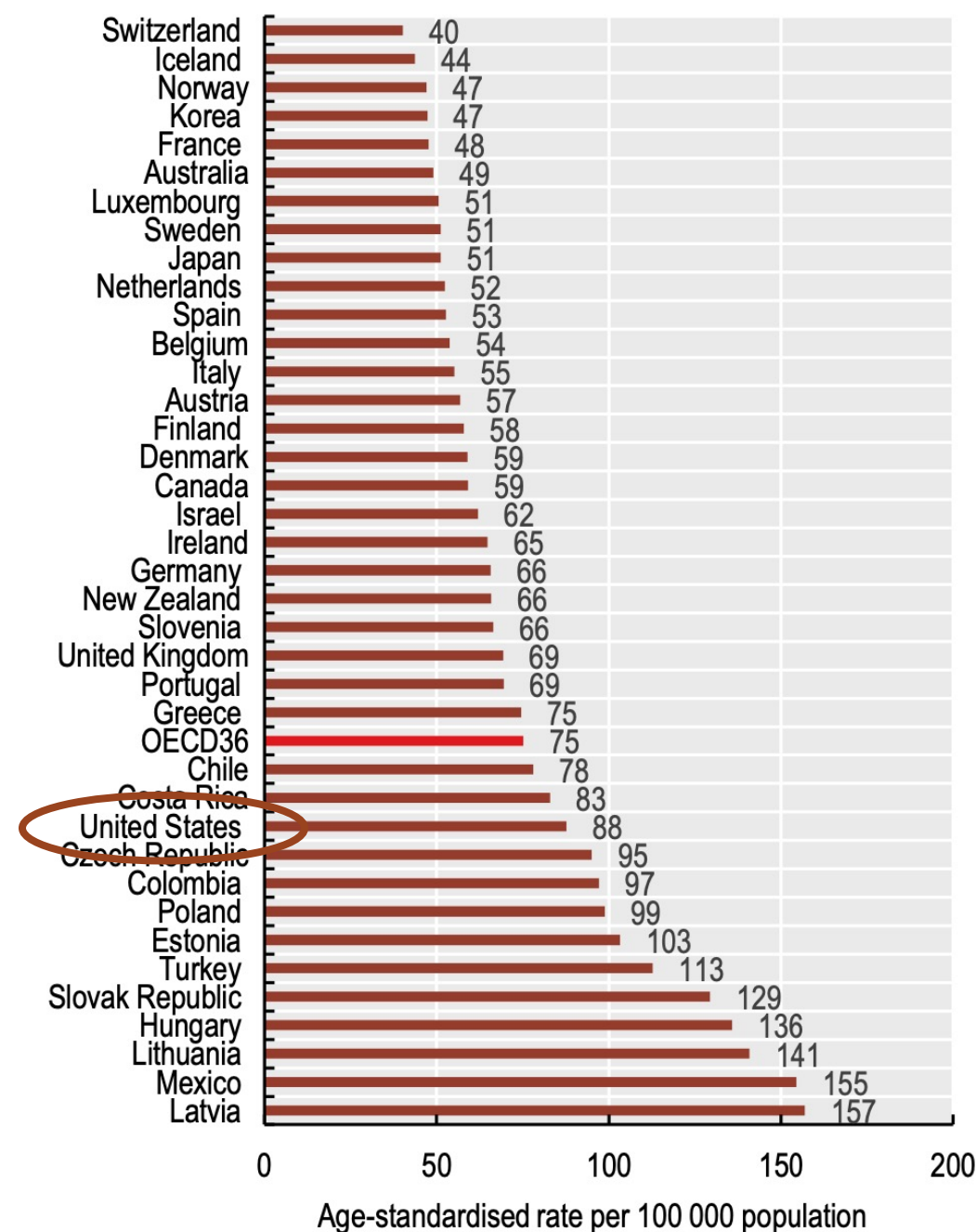
Figure 3.1. Life expectancy at birth, 1970 and 2017 (or nearest year)



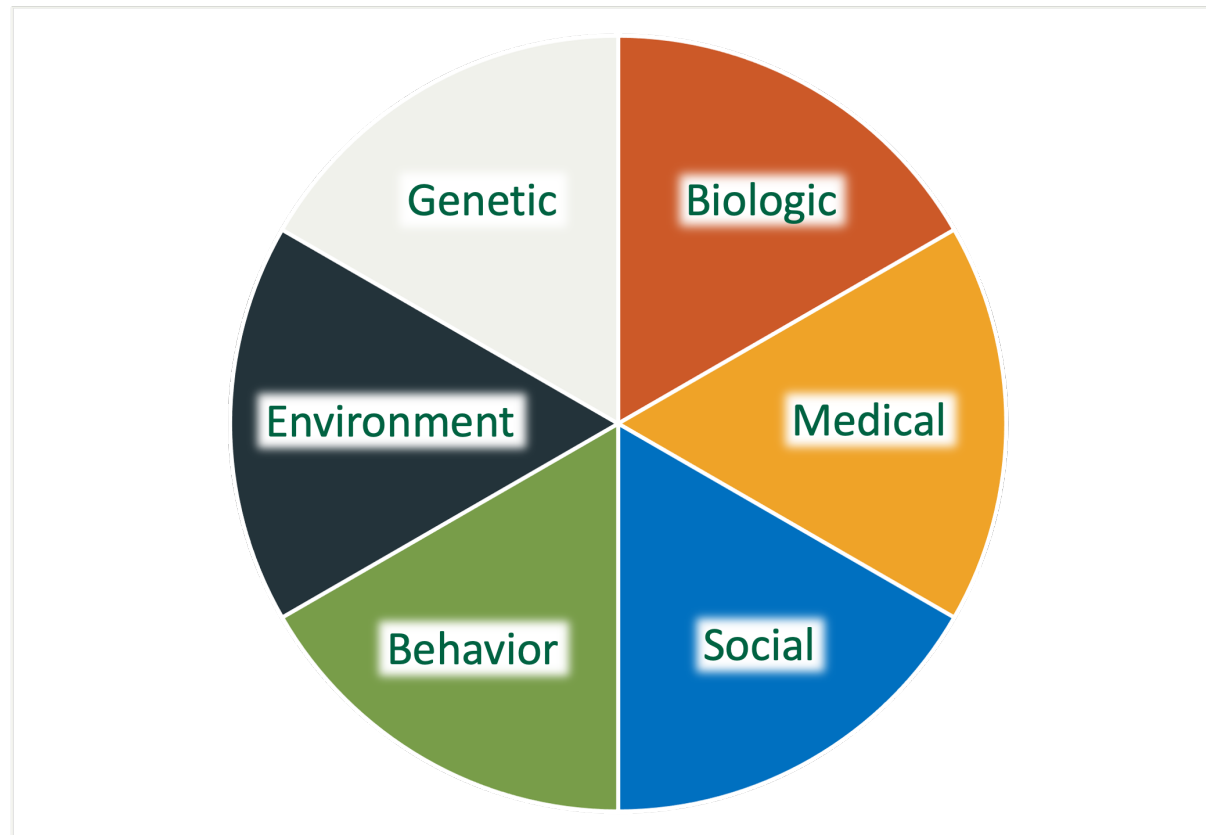
Mortality from preventable causes

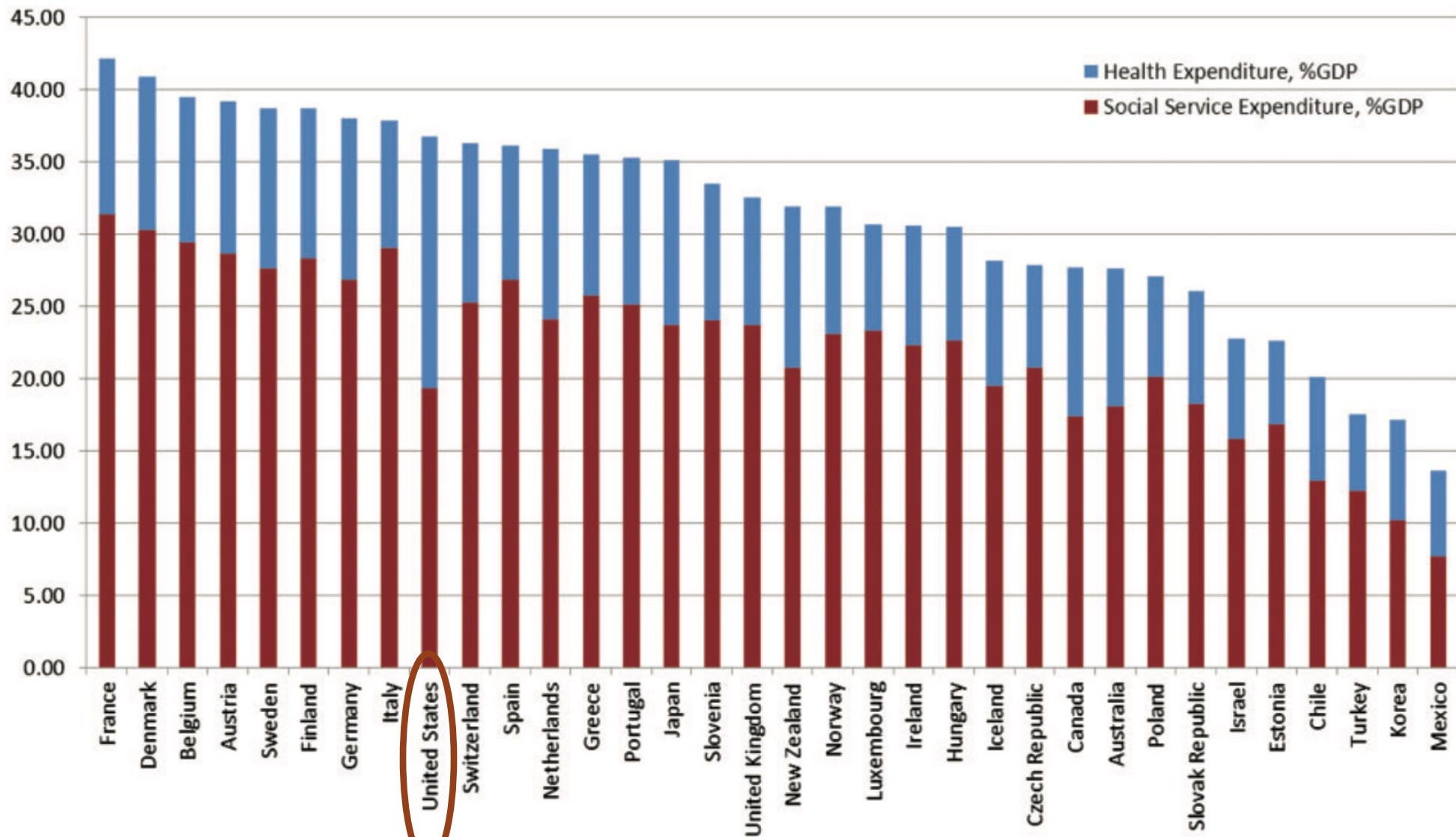


Mortality from treatable causes



Why are we falling behind in health outcomes?

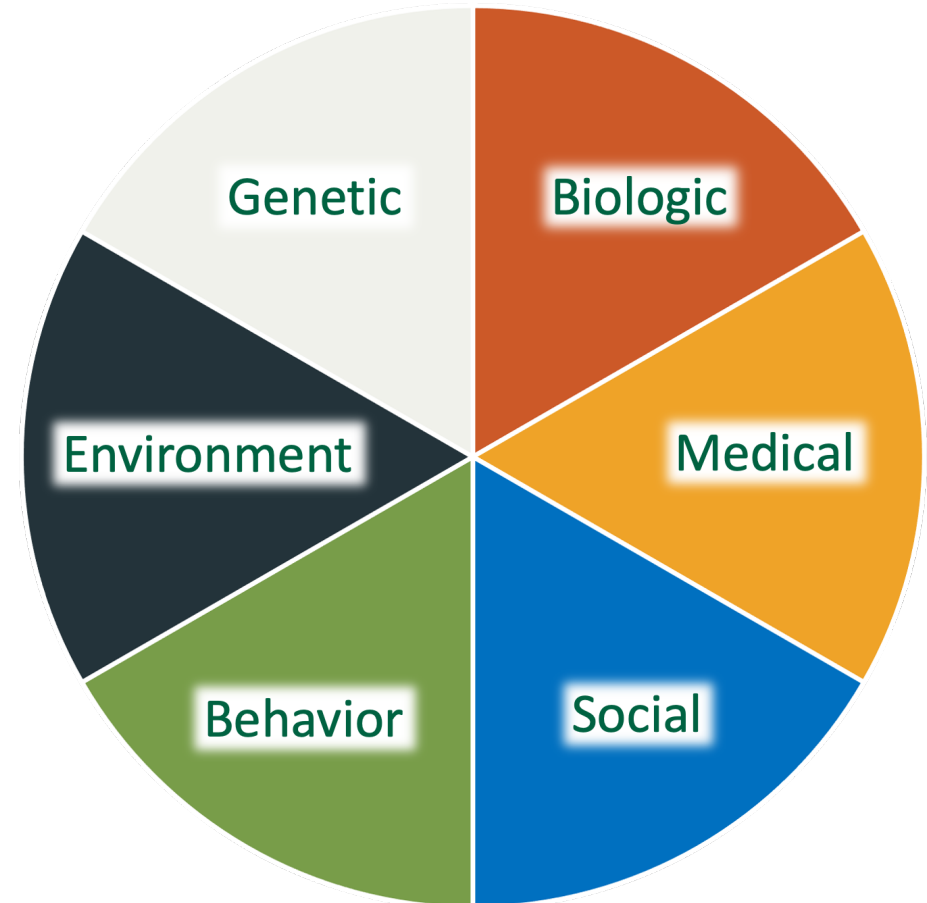




²Health and social service expenditure data for 2011 were abstracted from <http://stats.oecd.org/> (Accessed October 1, 2015). Health expenditure data includes public ("general government") and private spending across all health care providers and included current expenditures on health care (all functions), capital formation of health care providers, education and training of health personnel, research and development in health, and social services of long-term care. Social service expenditures include public and mandatory private spending across all branches, types of expenditures, and types of programs.

Determinants of Health

- Medical
 - 97% of Health Care Expenditures (Patcher 2018)
 - 16-20% of Modifiable Outcomes (Hood 2016)
- Social Determinants (Social, Behavioral, Environmental)
 - 3% of Health Care Expenditures Expenditures (Patcher 2018)
 - 80-84% of Modifiable Outcomes (Hood 2016)



Social Determinants of Health

- “The social determinants of health (SDH) are the non-medical factors that influence health outcomes. They are the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life. These forces and systems include economic policies and systems, development agendas, social norms, social policies and political systems.”
- The WHO estimates Social Determinants are responsible for 30-55% of all health outcomes.

https://www.who.int/health-topics/social-determinants-of-health#tab=tab_1

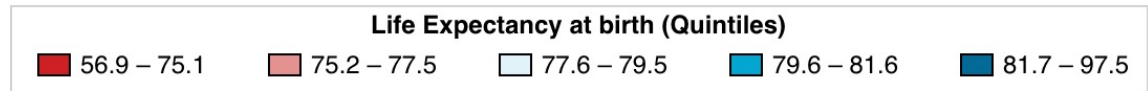
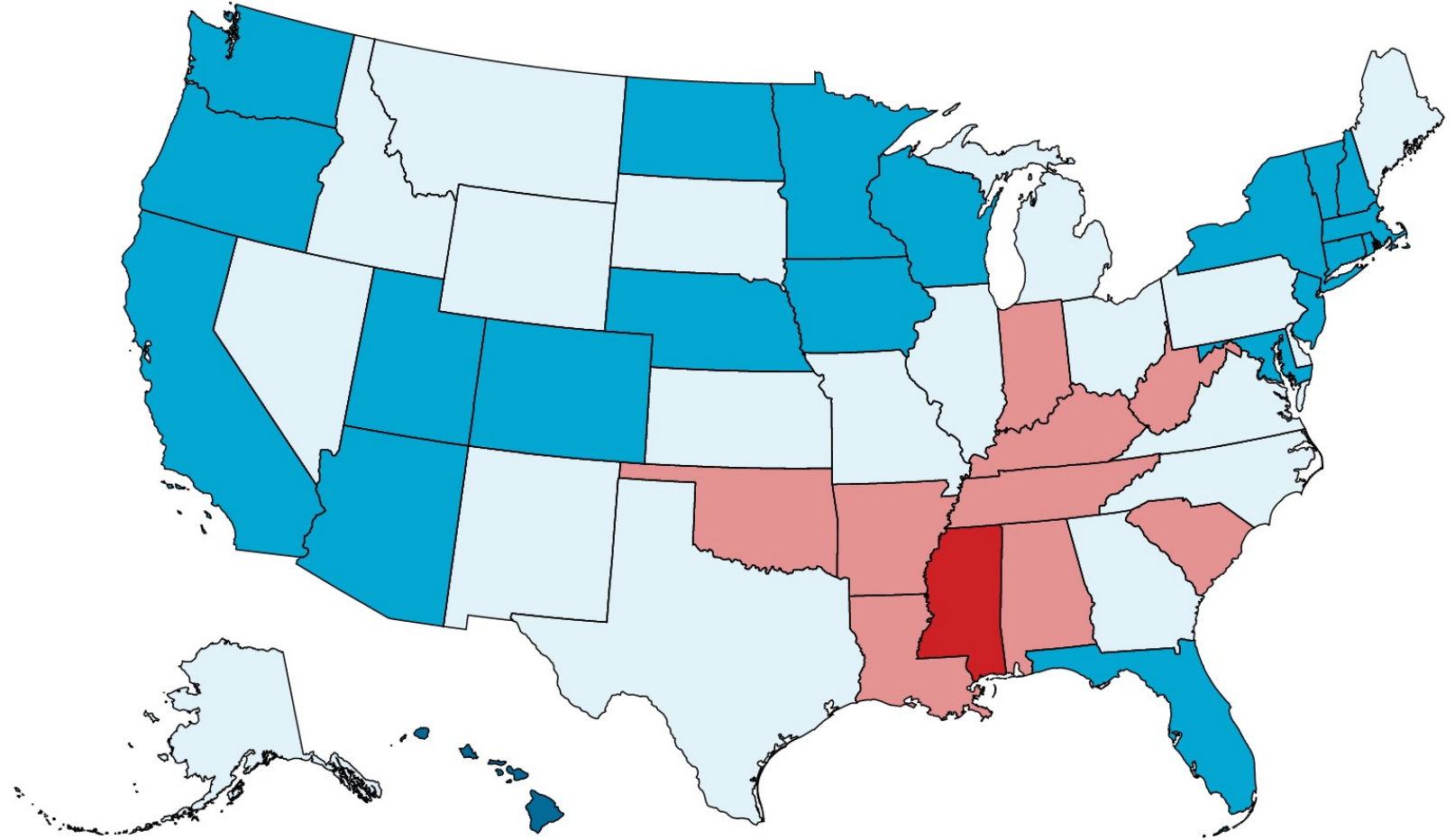
Examples of Social Determinants

- Income and social protection
- Education
- Unemployment and job insecurity
- Working life conditions
- Food insecurity
- Housing, basic amenities and the environment
- Early childhood development
- Social inclusion and non-discrimination
- Structural conflict
- Access to affordable health services of decent quality

https://www.who.int/health-topics/social-determinants-of-health#tab=tab_1

Life Expectancy at Birth

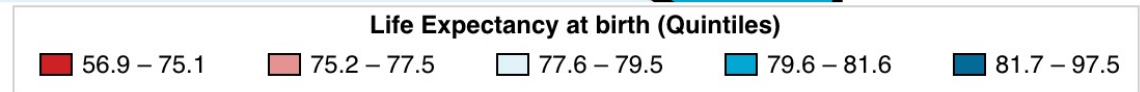
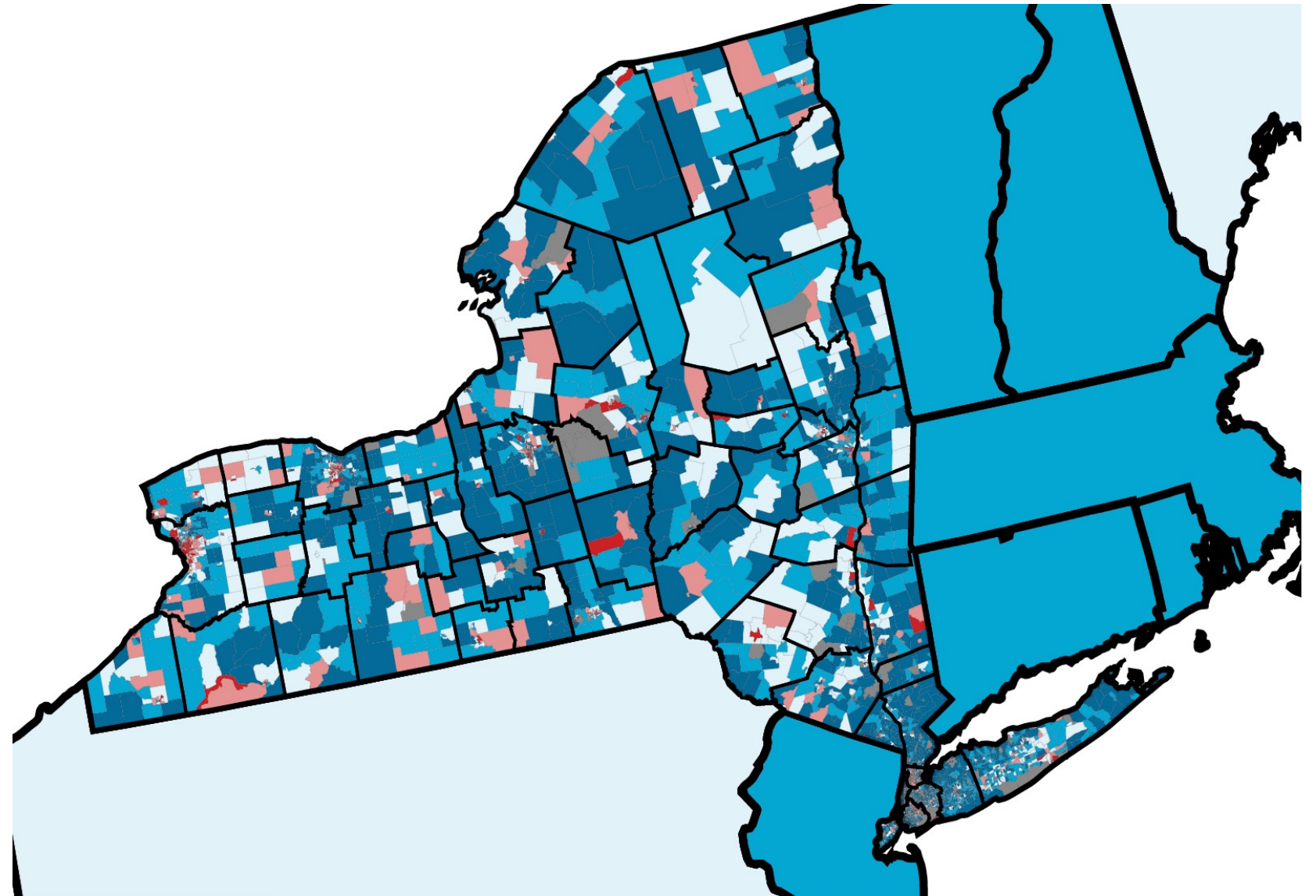
Mississippi	74.9
Alabama	75.5
Louisiana	76.0
West Virginia	75.3
Maine	79.0
Vermont	80.0
New Hampshire	80.1
New York	81.0
Hawaii	82.0



<https://www.cdc.gov/nchs/data-visualization/life-expectancy/>

Life Expectancy at Birth

New York 81.0



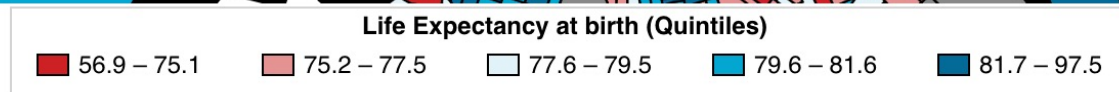
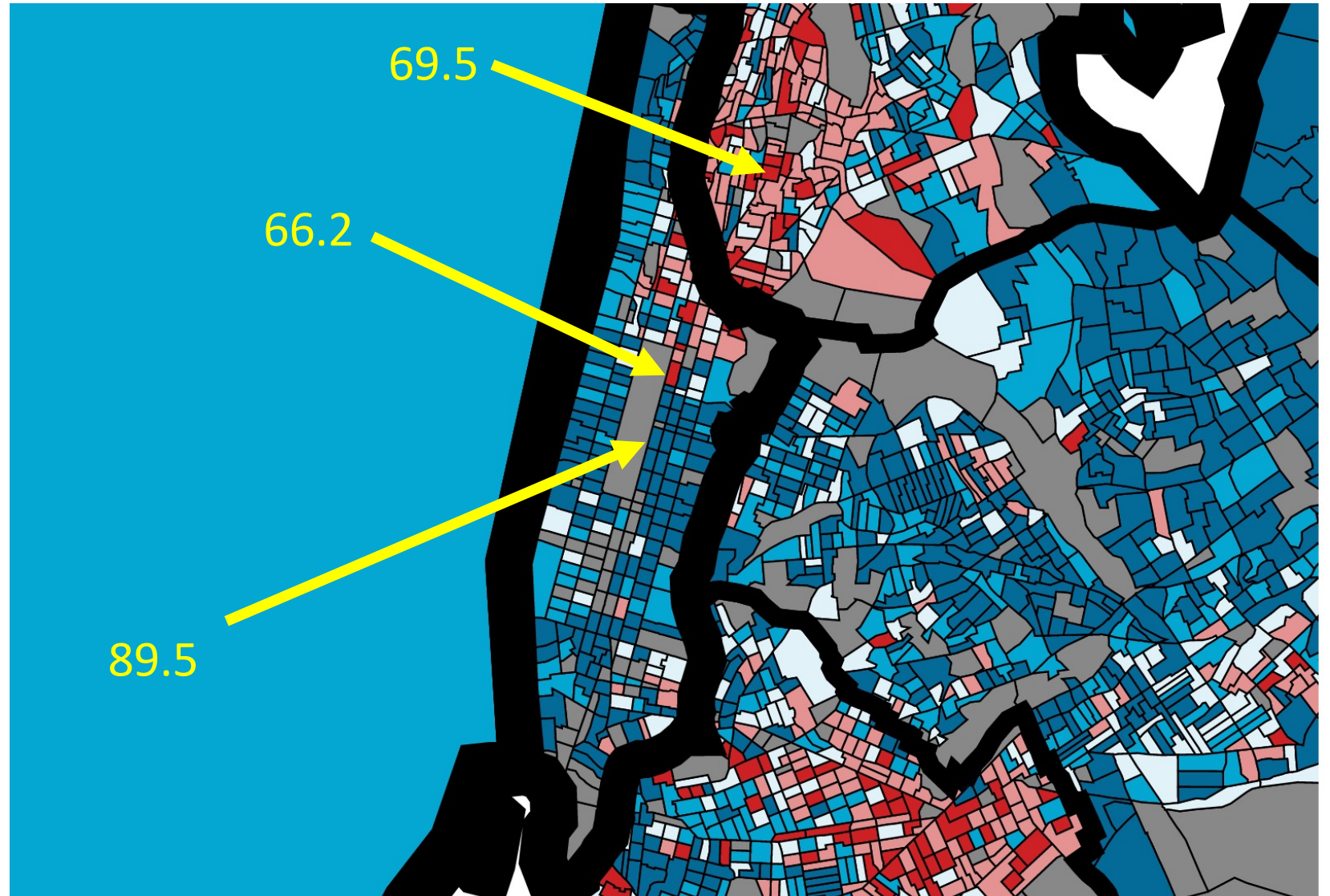
<https://www.cdc.gov/nchs/data-visualization/life-expectancy/>

Life Expectancy at Birth

New York 81.0

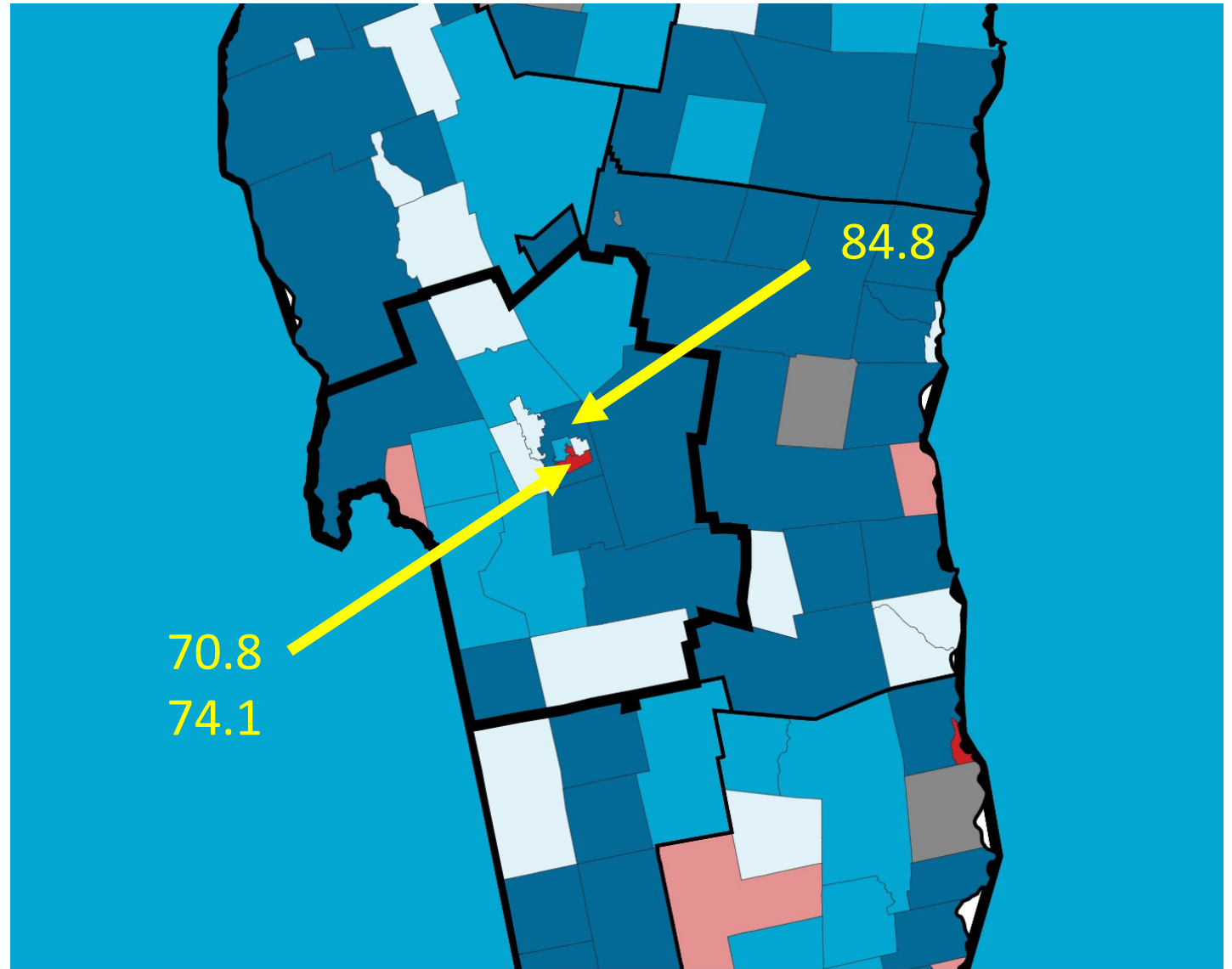
Bronx County

New York County



Life Expectancy at Birth

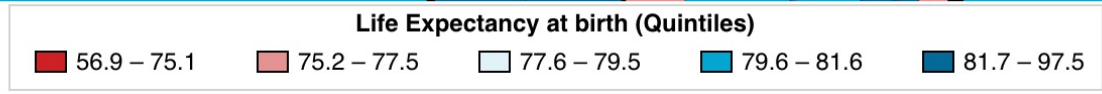
Vermont 80.0
Rutland County



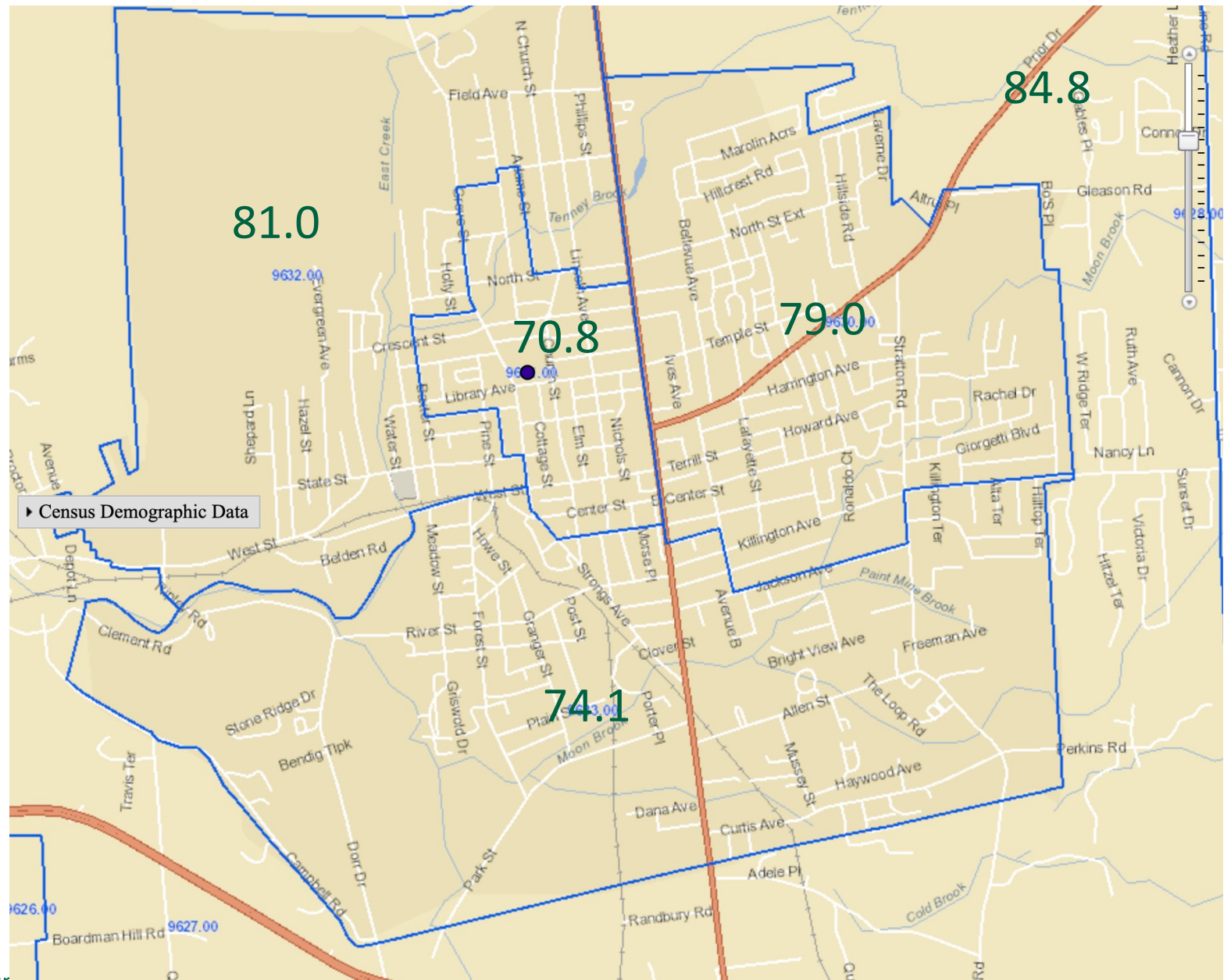
70.8
74.1

84.8

<https://www.cdc.gov/nchs/data-visualization/life-expectancy/>



Rutland Vermont



Social Determinants in Rural Settings

- 5 Main Identified Themes in Appalachia impact Well Being and Quality of Life (Hege 2018)
 - Poverty/Lack of economic opportunity
 - Access to health care and health resources
 - Social/mental health challenges
 - Food insecurity
 - Youth/older adults are most vulnerable

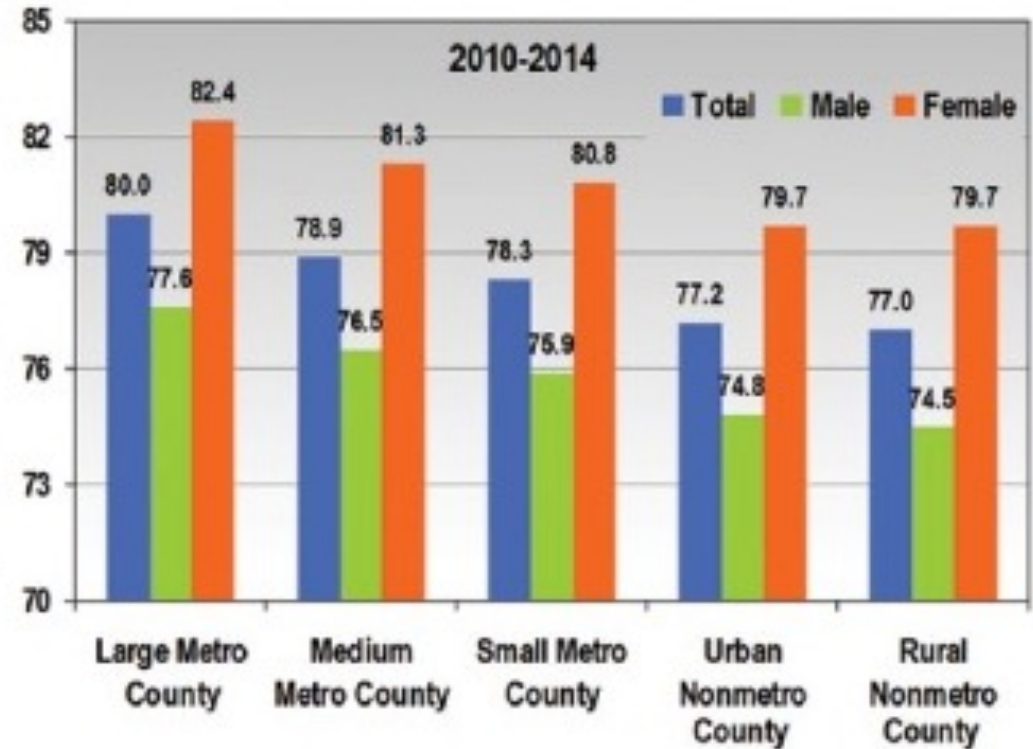
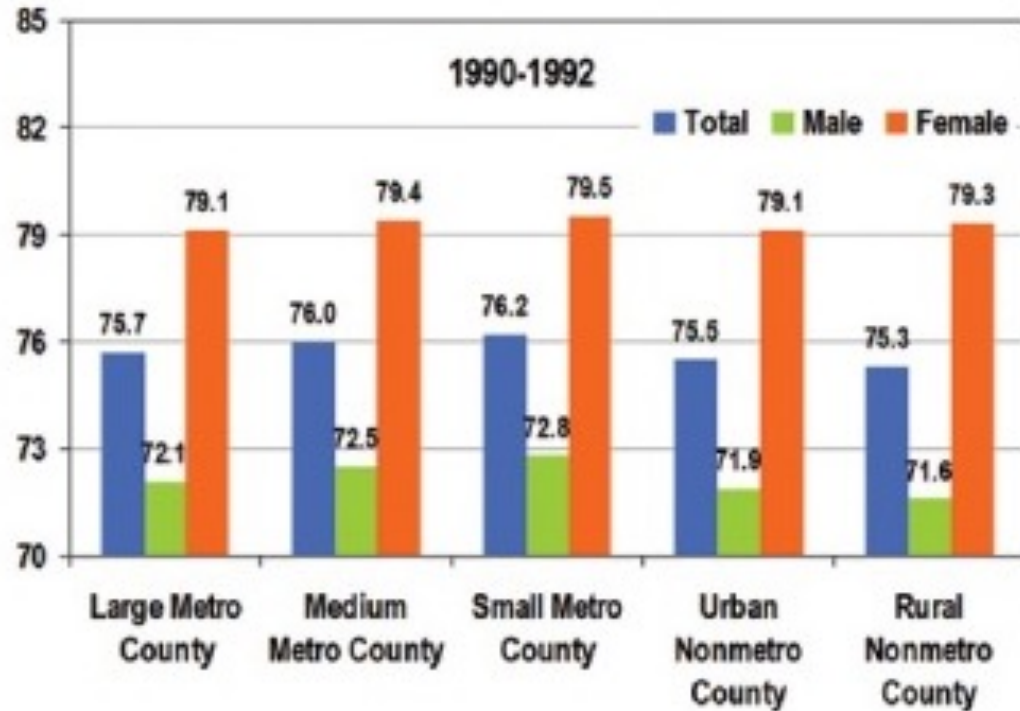
Rural areas are lagging behind in LE

Table 1 Rural and urban life expectancies (LEs) at age 25 years in years over time, by sex

		LE in 1999	LE in 2009	Change 1999–2009	LE in 2010	LE in 2019	Change 2010–2019
Women	Rural	55.11	55.77	0.66	55.78	55.58	-0.20
	Urban	55.64	57.48	1.85	57.52	58.07	0.55
	Rural–urban gap	0.52	1.71	1.19	1.74	2.48	0.74
Men	Rural	49.76	51.10	1.34	51.13	50.83	-0.30
	Urban	50.76	52.96	2.20	53.07	53.36	0.29
	Rural–urban gap	1.00	1.86	0.86	1.94	2.53	0.59

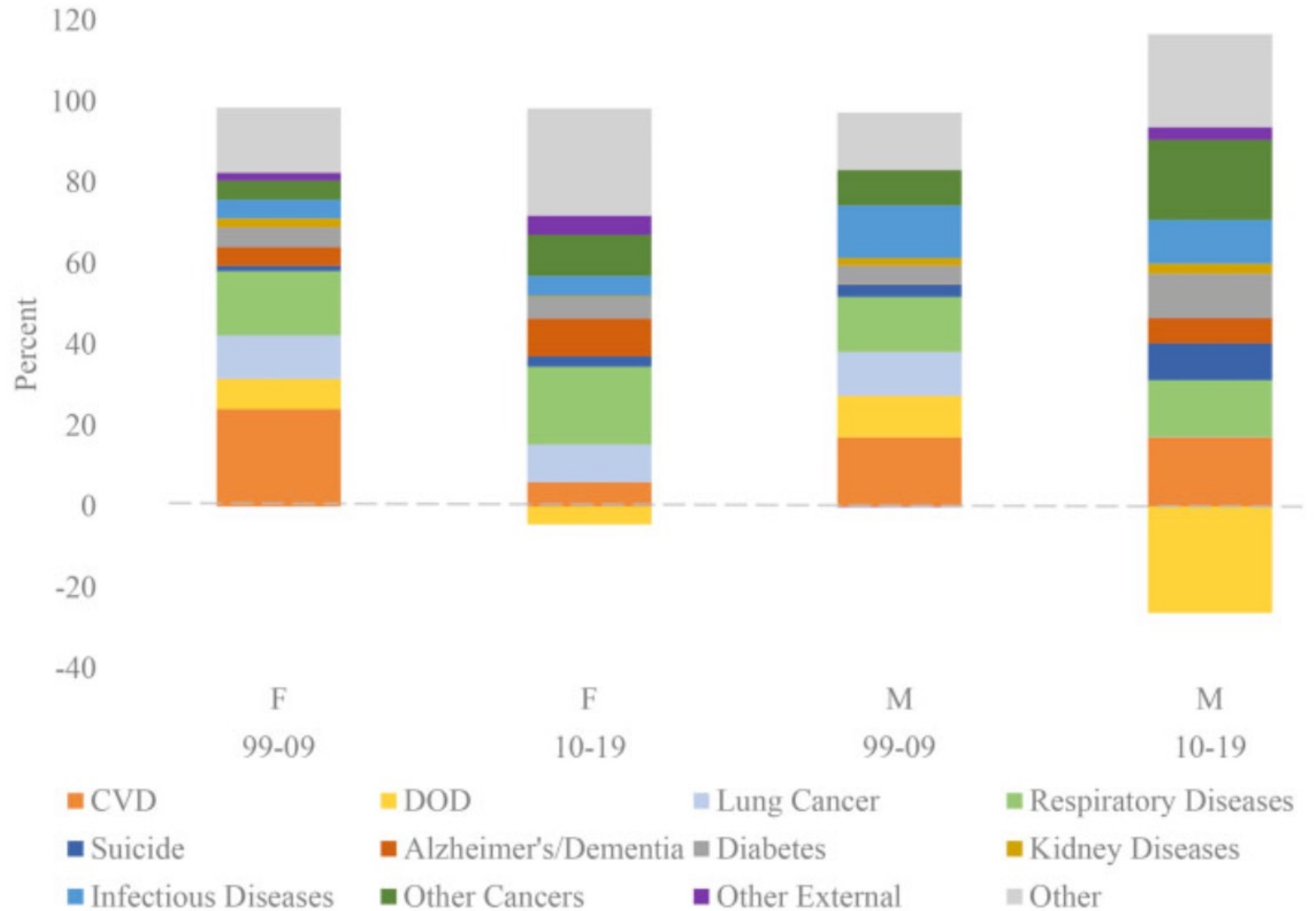
(Abrams 2021)

Life Expectancy by Level of Urbanization



Singh 2017

Medical Reasons for Rural/Urban Divide

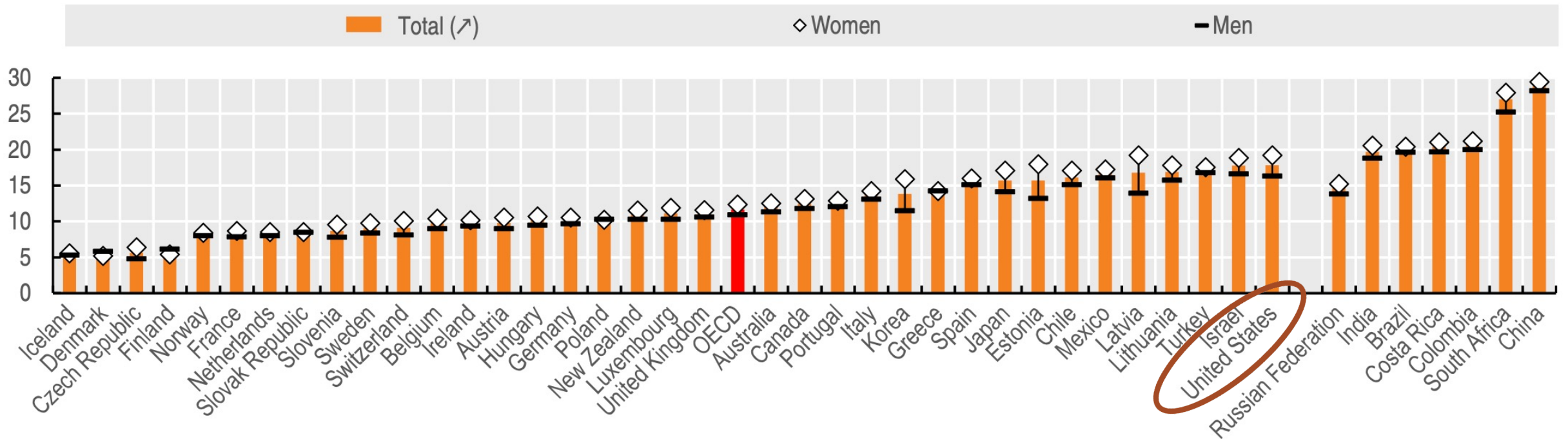


Abrams et al. 2021

Poverty as a Social Determinant

6.4. There are large differences in levels of relative poverty across the OECD

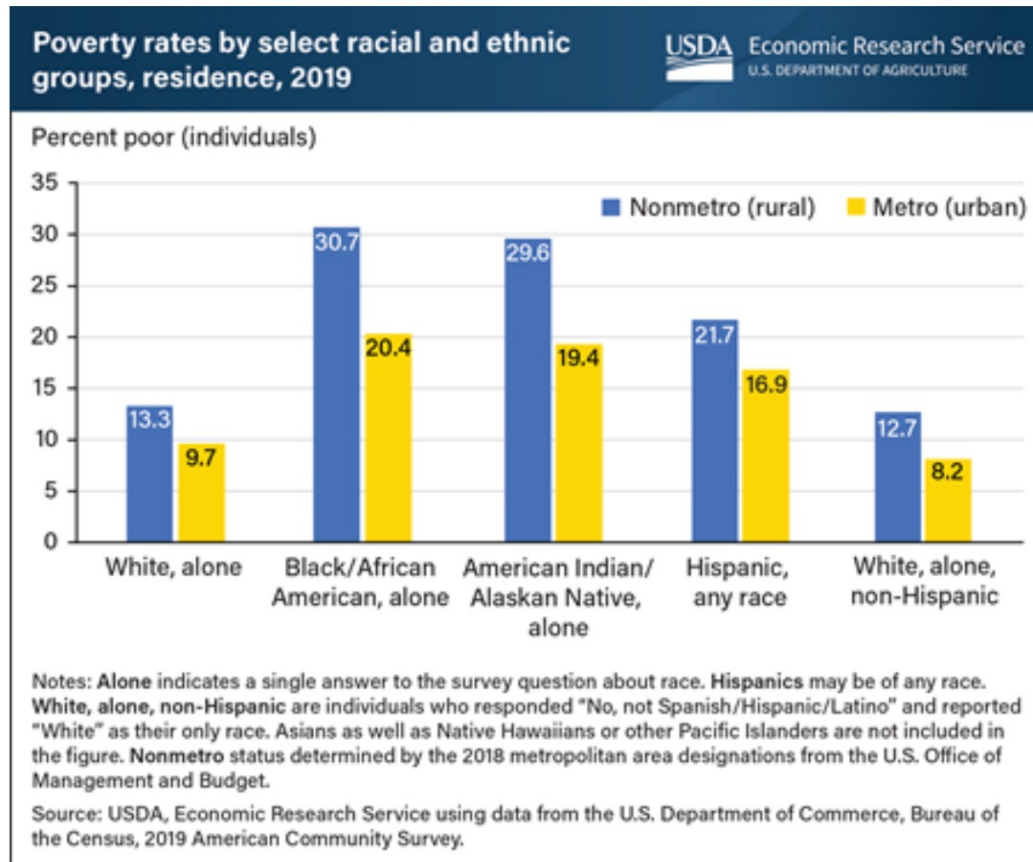
Percentage of persons living with less than 50% of median equivalised disposable income, by gender, in 2016 (or nearest year)



Source: OECD Income Distribution Database, <http://oe.cd/idd>.

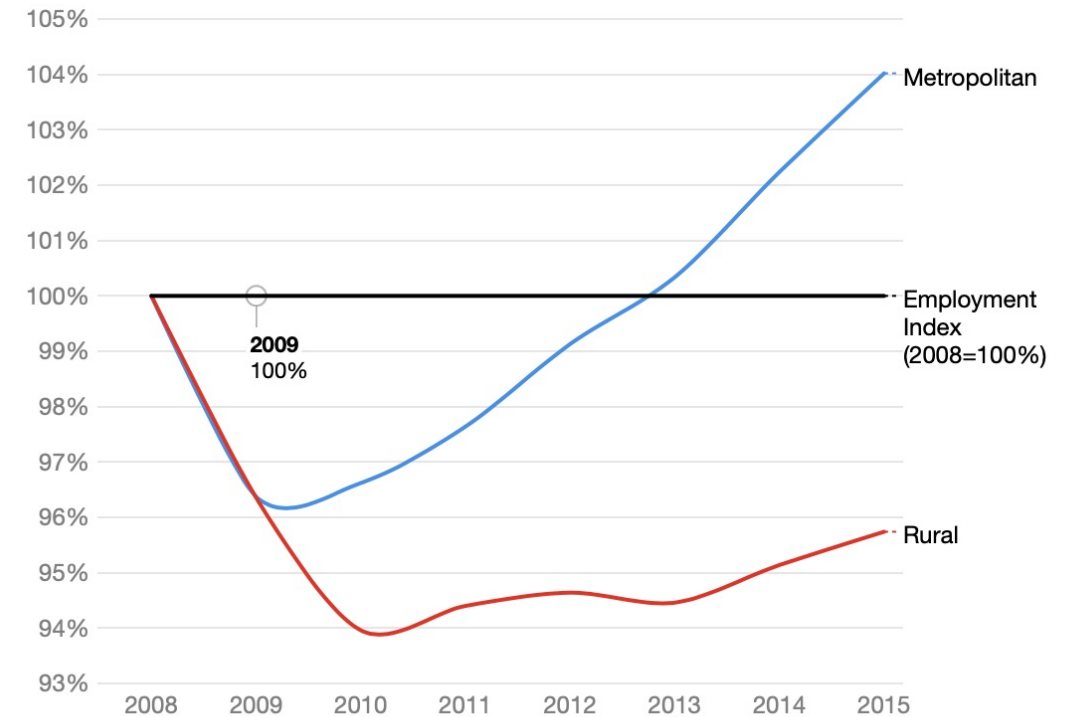
OECD (2019), Society at a Glance 2019: OECD Social Indicators, OECD Publishing, Paris.
https://doi.org/10.1787/soc_glance-2019-en

Rural vs Metro Poverty



Job growth in America

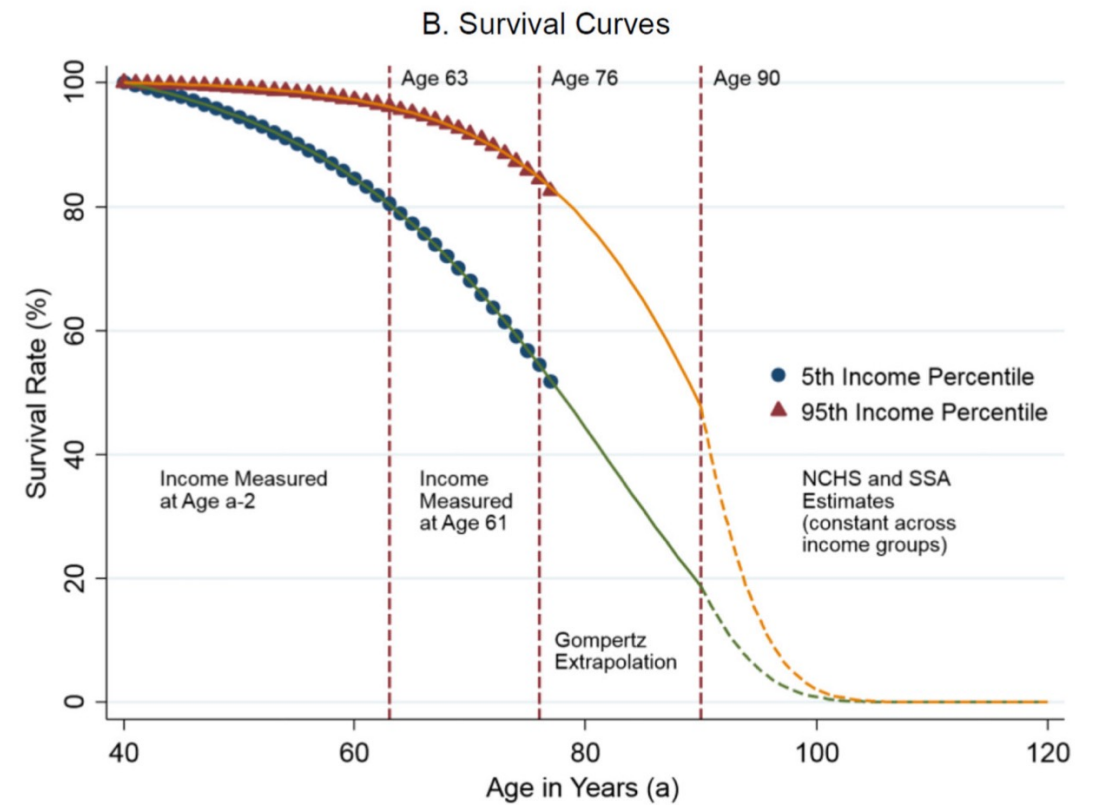
Since 2008, job growth in metropolitan areas has outpaced that in rural areas.



<https://www.pbs.org/newshour/nation/six-charts-illustrate-divide-rural-urban-america>

Poverty and Life Expectancy

- 14.6 yrs greater in top 1% of men compared to bottom 1%, 10.1 yrs for women
- Life expectancy increased by 2.34 yrs for men and 2.91 yrs for women in top 5% from 2001-2014; only 0.32/0.04 yrs for men/women in bottom 5%



Chetty 2016

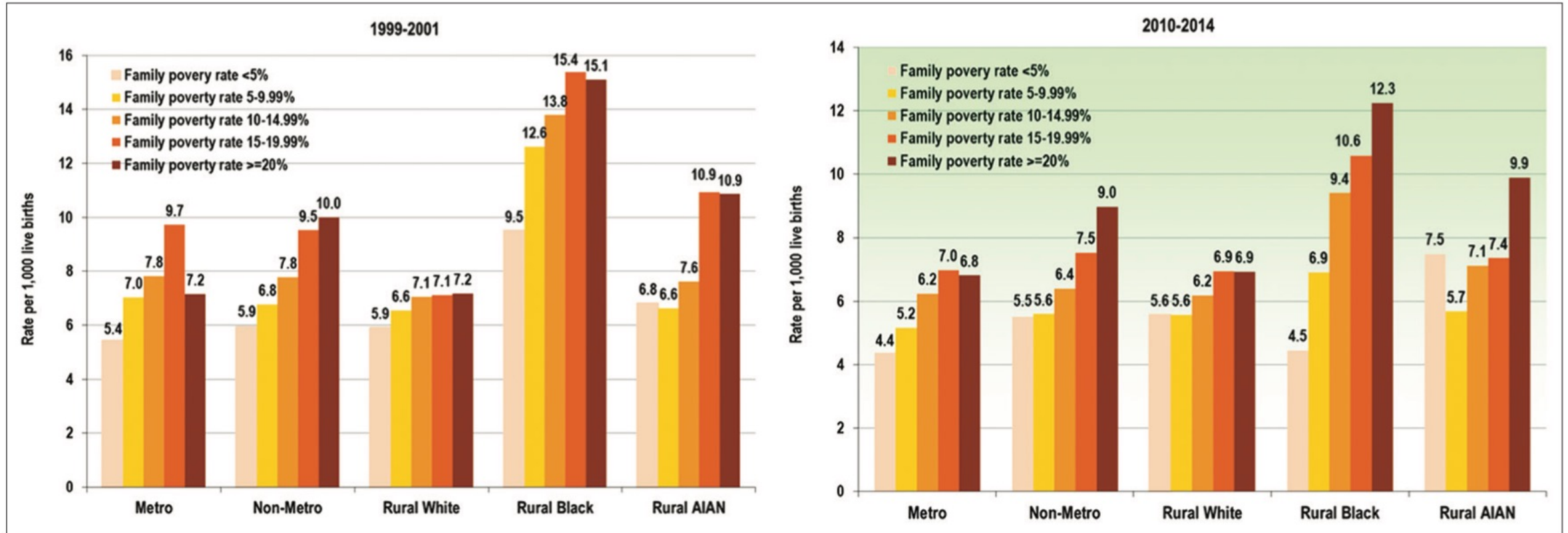


Figure 10. Infant Mortality Rate by County-Level Family Poverty Rate, United States, 1999-2001 and 2010-2014
Source: Data derived from the National Vital Statistics System.

Social Determinants of Health in the United States

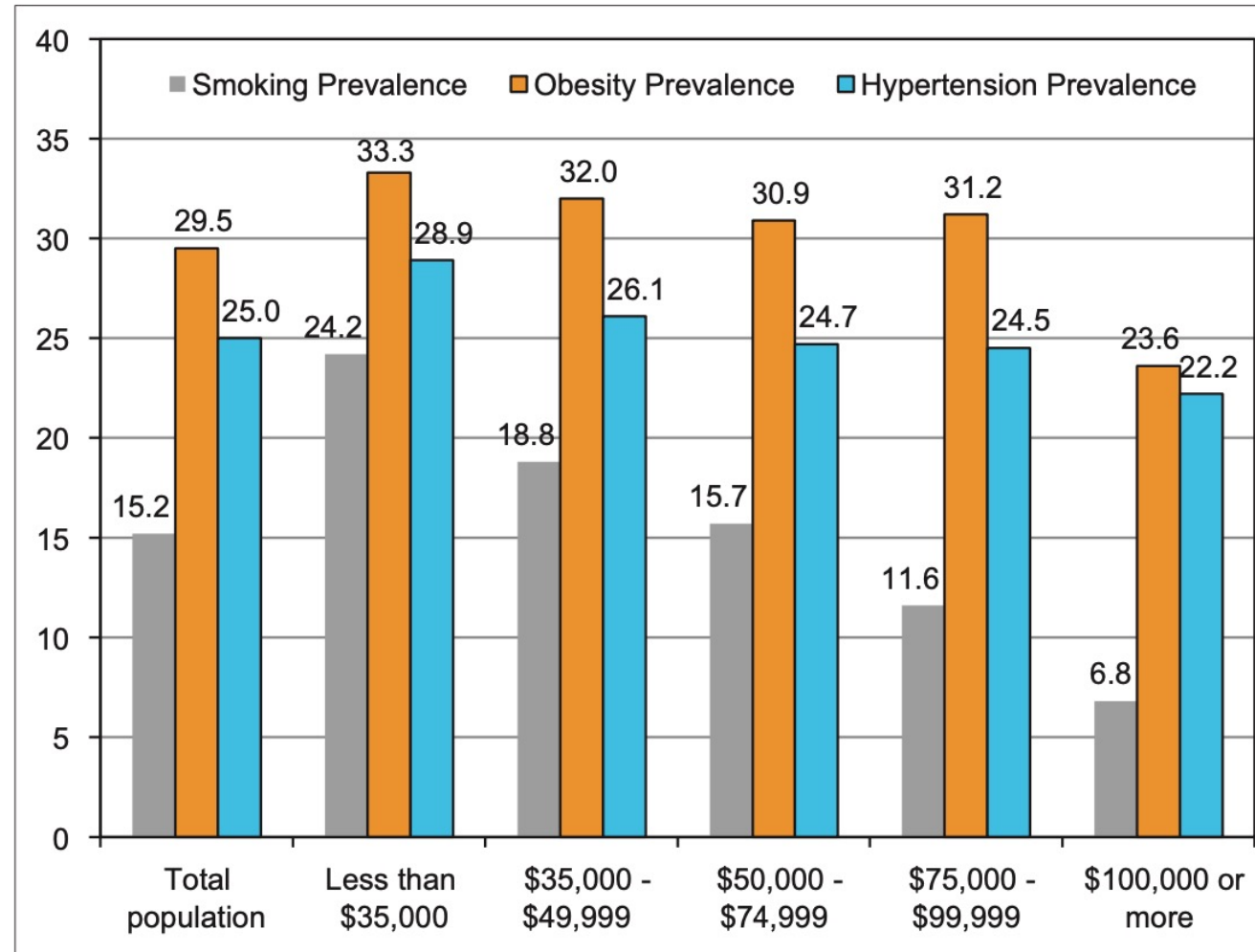


Figure 27. Age-Adjusted Prevalence (%) of Current Smoking, Obesity, and Hypertension by Family Income, US Adults Aged 18 Years and Older, 2015

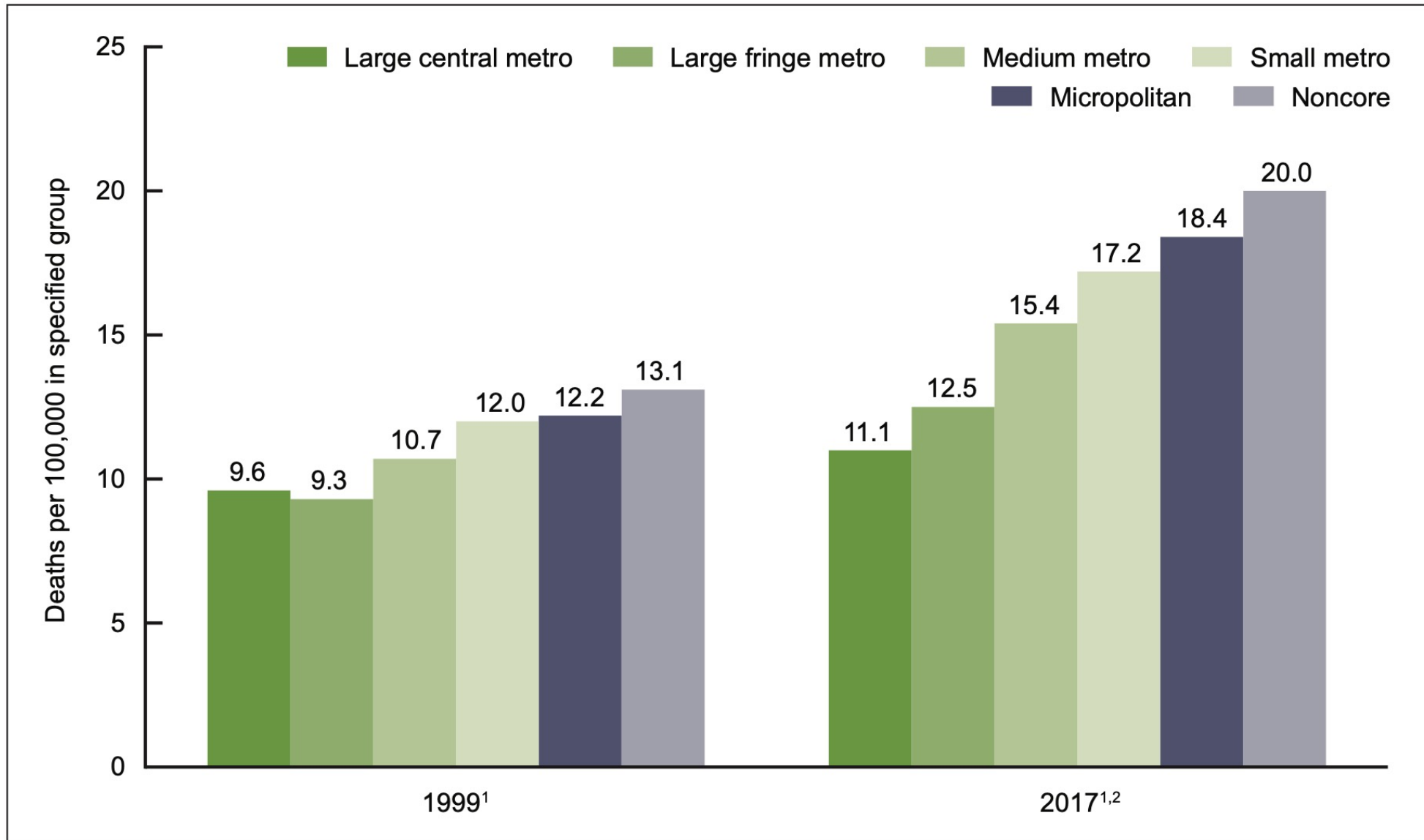
Source: CDC/NCHS. 2015 National Health Interview Survey..

Singh 2017

Poverty, Suicide and level of Urbanization

- One study showed a 35% increase in Suicidal Ideation or Attempts related to poverty (Thompson 2018)
- Youth suicide increases in counties with higher levels of poverty (Hoffmann 2020)

Figure 4. Age-adjusted suicide rates, by county urbanization level: United States, 1999 and 2017



CDC.org,
Hedegard 2018

Rural Differences in Smoking in the US

- Cigarette rates are higher in Rural areas
 - Rural 25.2%
 - Metro 18-22%
- Adolescent Tobacco Use is 2x higher in Rural areas
- Smokeless Tobacco is 2x higher
 - Rural 7.7%
 - Metro 2.8-5.1%
- Vaping is higher in Rural areas
 - Rural 4.6%
 - Metro 3.3-4.3%

NSDUH 2020

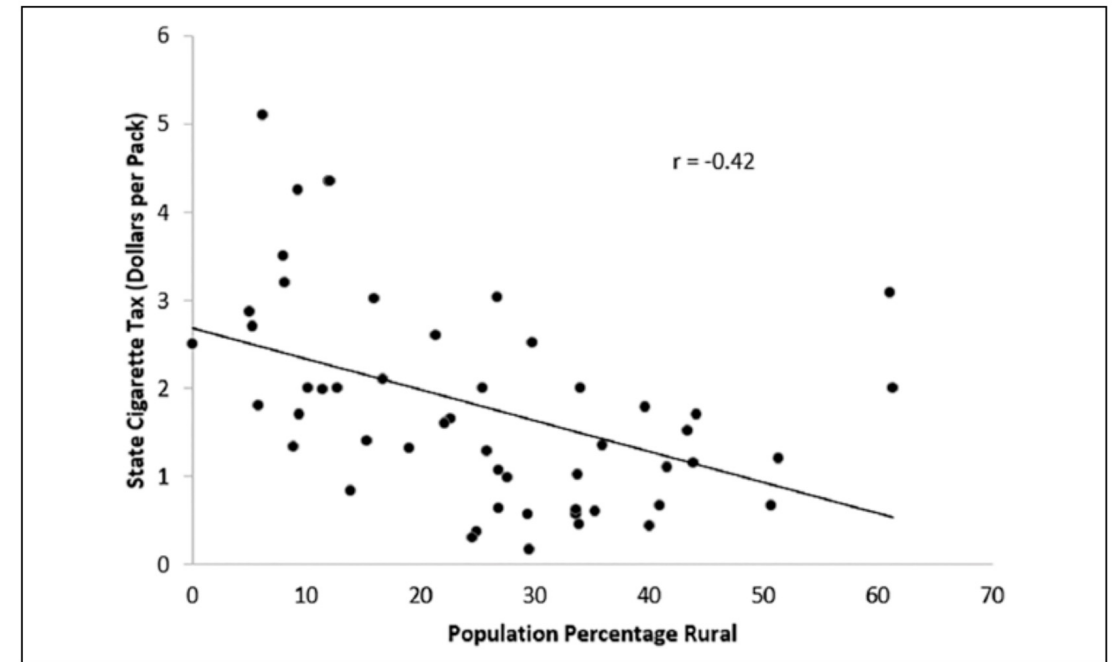
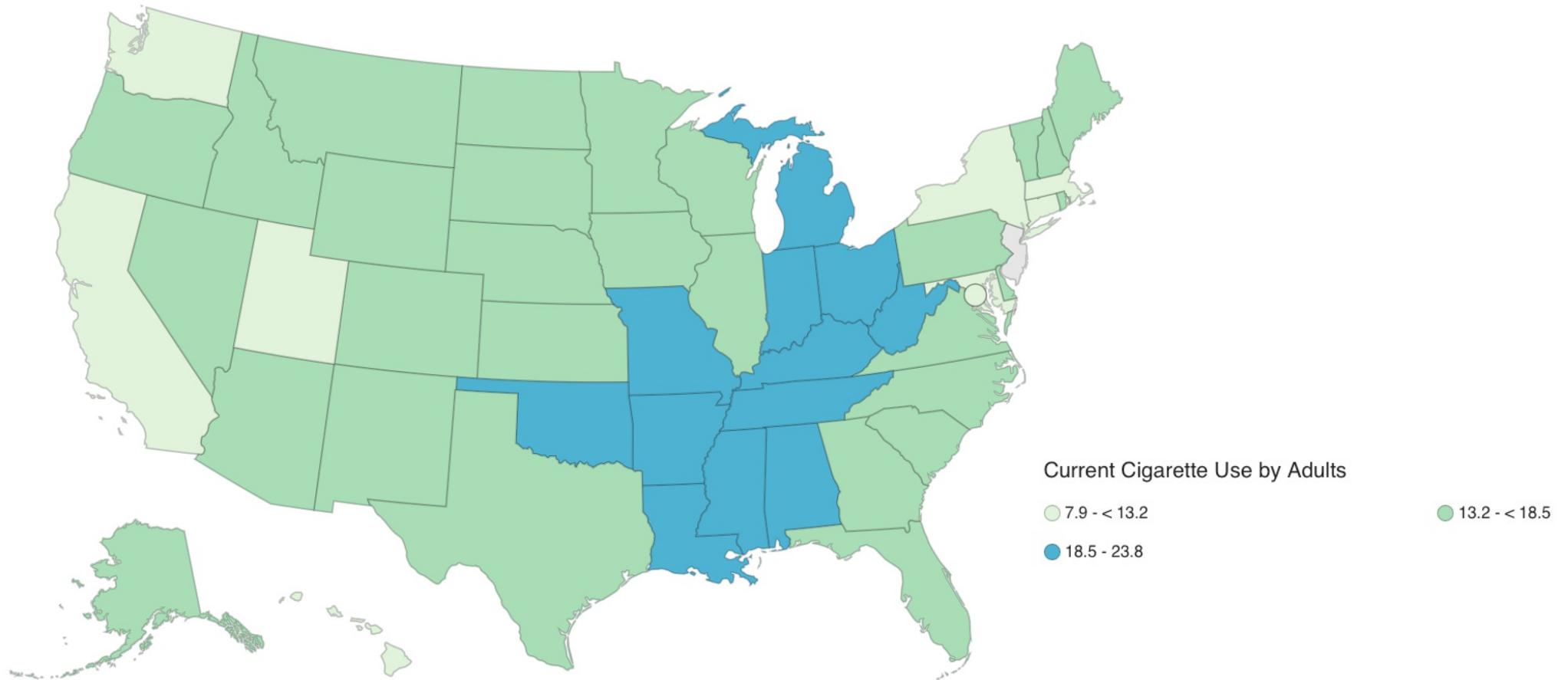


Figure 1. Scatterplot of state tax rates, as of July 1, 2018 (Campaign for Tobacco-Free Kids, 2018), and rural classification by 2010 percentage of population (U.S. Census Bureau, 2010).

Buettner-Schmidt 2019

Map of Current Cigarette Use Among Adults

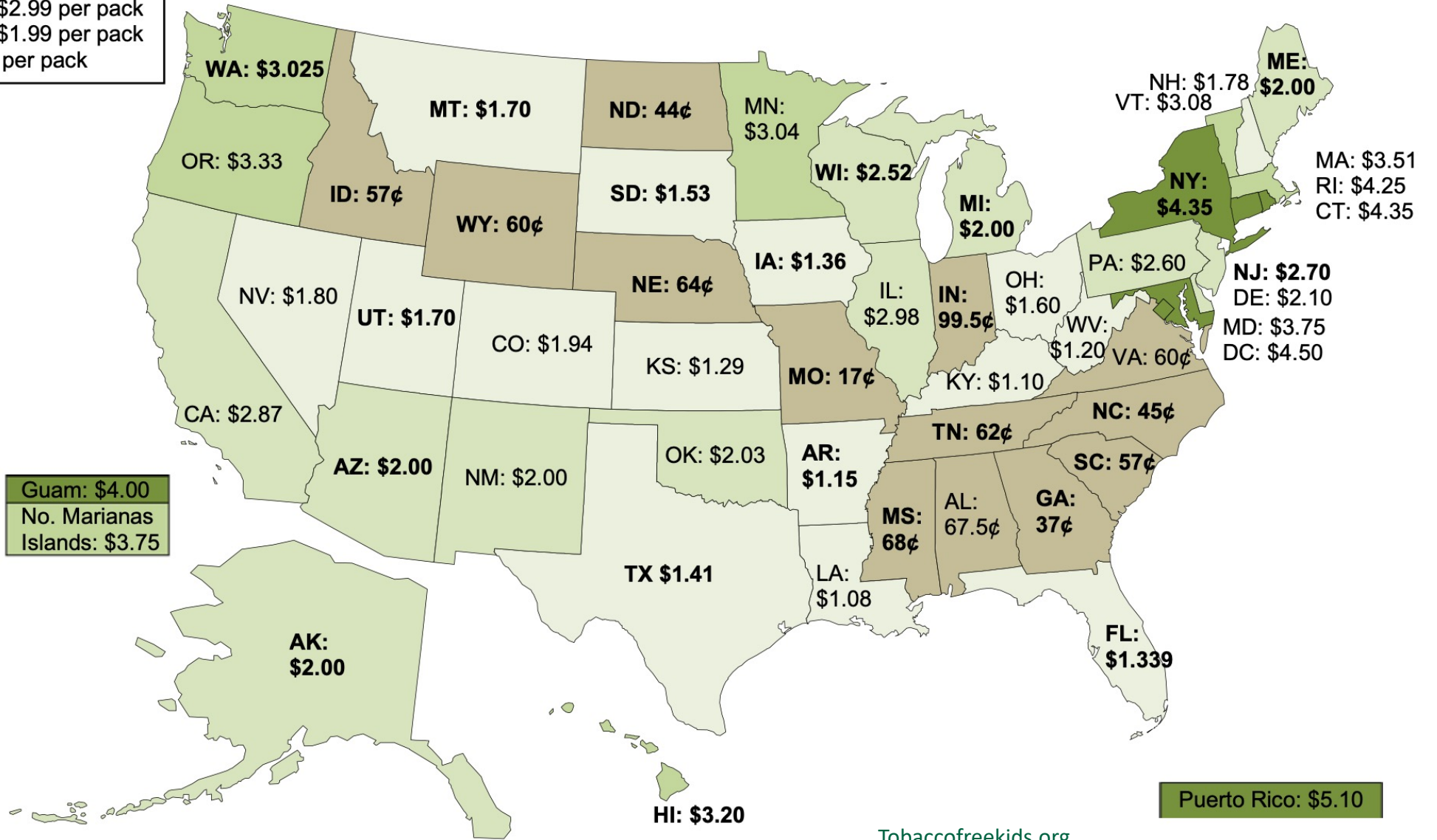
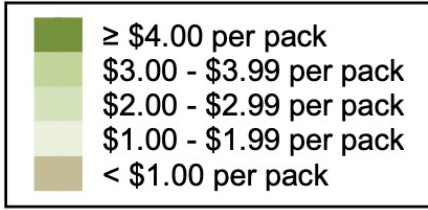
Current Cigarette Use Among Adults (Behavior Risk Factor Surveillance System) 2019



Territories



Average State Cigarette Tax: \$1.91 per Pack



Tobaccofreekids.org

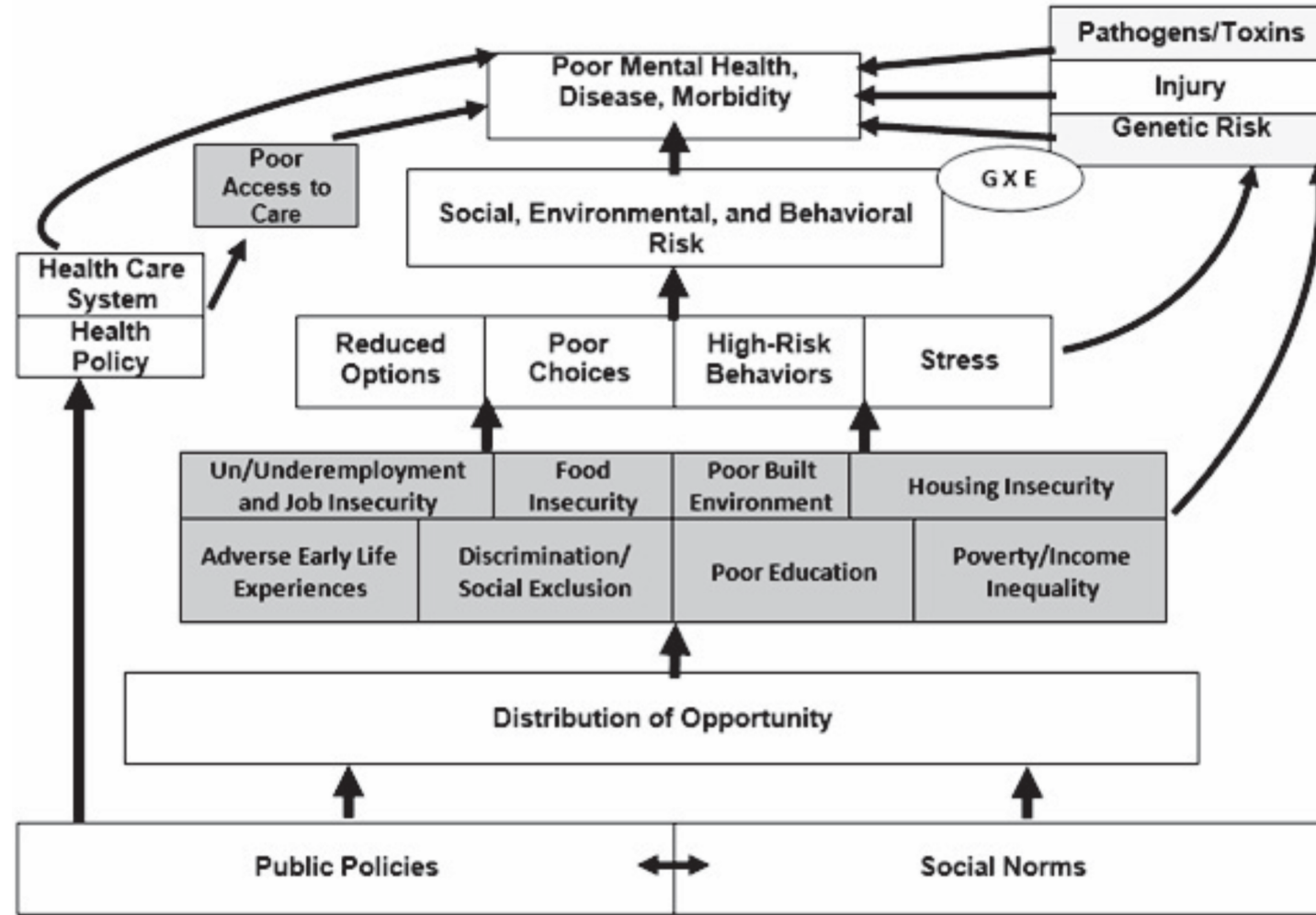
“If medicine is to fulfill her great task, then she must enter the political and social life. Do we not always find the diseases of the populace traceable to defects in society?”

—Rudolph Virchow, 1848

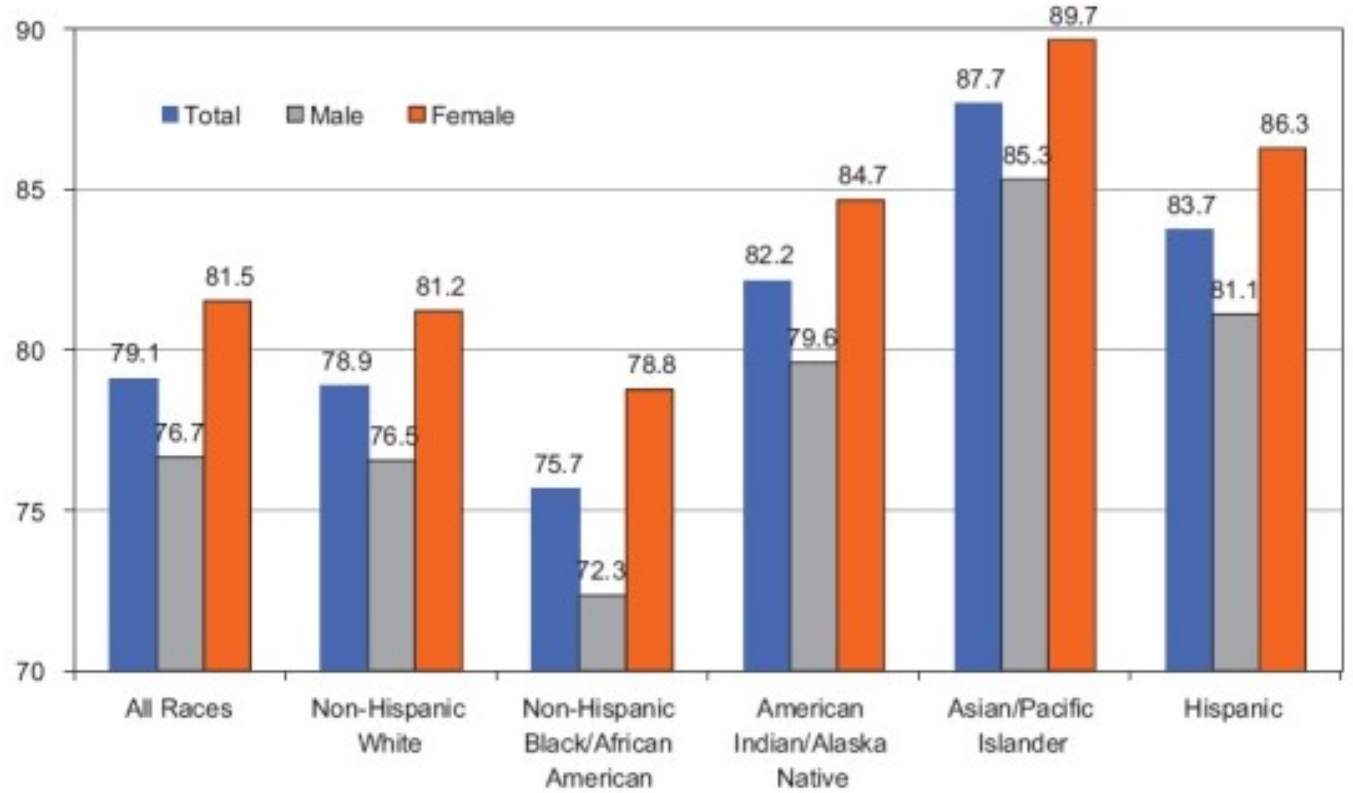
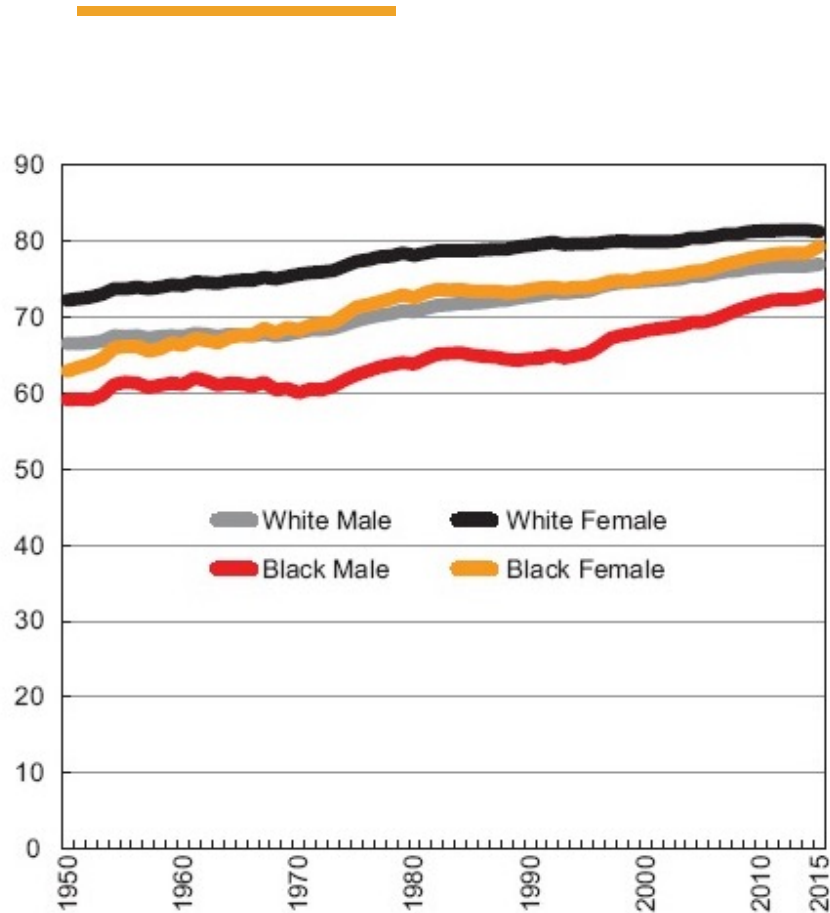
Structural Determinants

- “Mechanisms that generate stratification and social class divisions in the society and that define individual's socioeconomic position within hierarchies of power, prestige and access to resources.” (WHO 2010)
- Social Structures: “The policies, economic systems, and other institutions (policing & judicial systems, schools, etc.) that have produced and maintain social inequities and health disparities, often along the lines of social categories (race, class, gender, etc.).”

FIGURE 1. Conceptualizing the Social Determinants of Mental Health^a



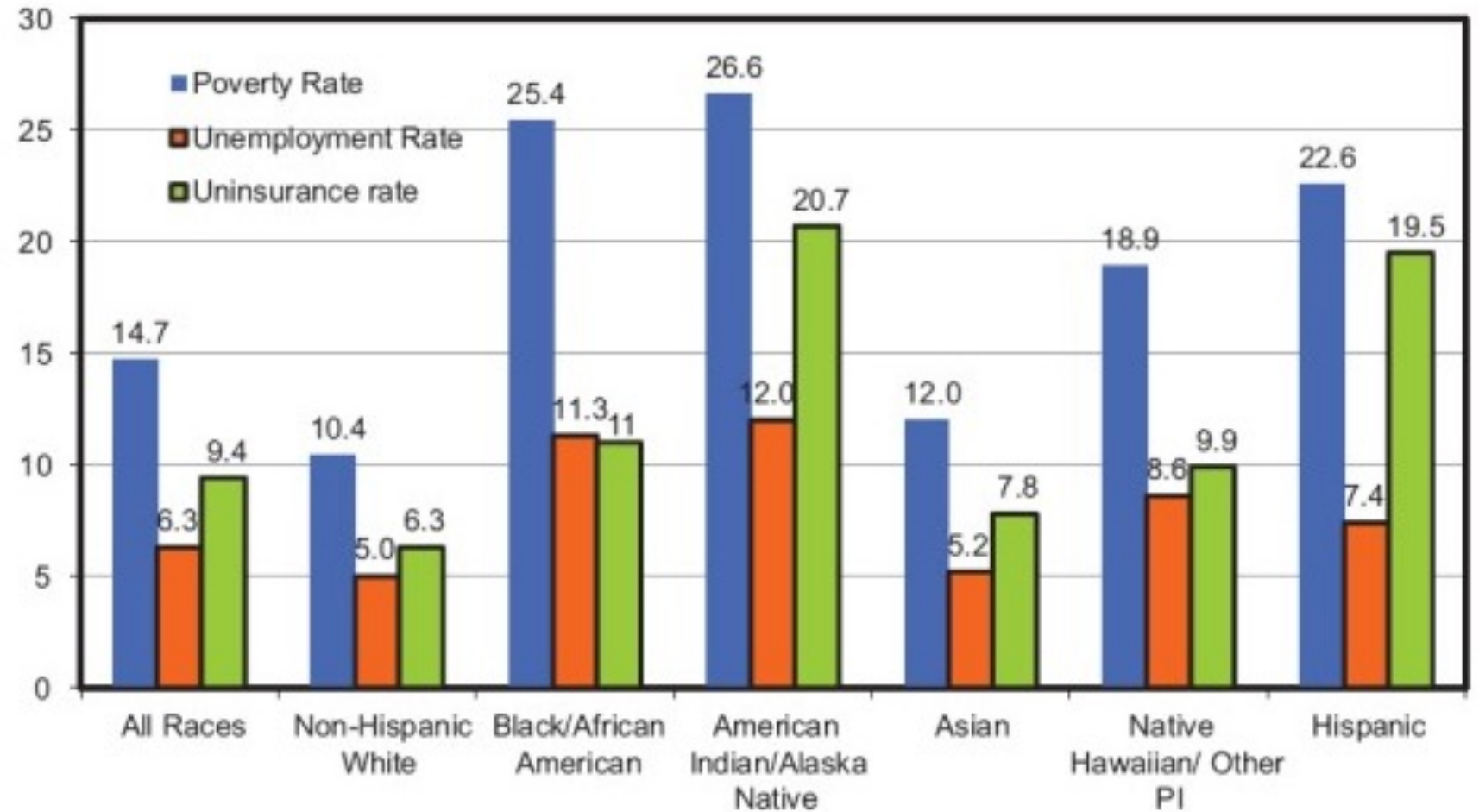
^a G × E, gene-by-environment interaction



Life Expectancy at Birth by Race and Sex

Singh 2017

Racial Disparities in Poverty, Employment, and Uninsurance



Singh 2017

Other Concepts in SDoH

- Structural Violence – "social arrangements that put individuals and populations in harm's way"
- Structural Vulnerabilities - "the risk an individual experiences as a result of structural violence"
- Structural Racism - "A system in which public policies, institutional practices, cultural representations, and other norms work in various, often reinforcing ways to perpetuate racial group inequity".
- Implicit Frameworks - "Common, taken-for-granted way of understanding health and wellness. Includes interpreting disparities in terms of individual behavior, "culture," and biology/genetics, without also adequately considering underlying social and structural factors."

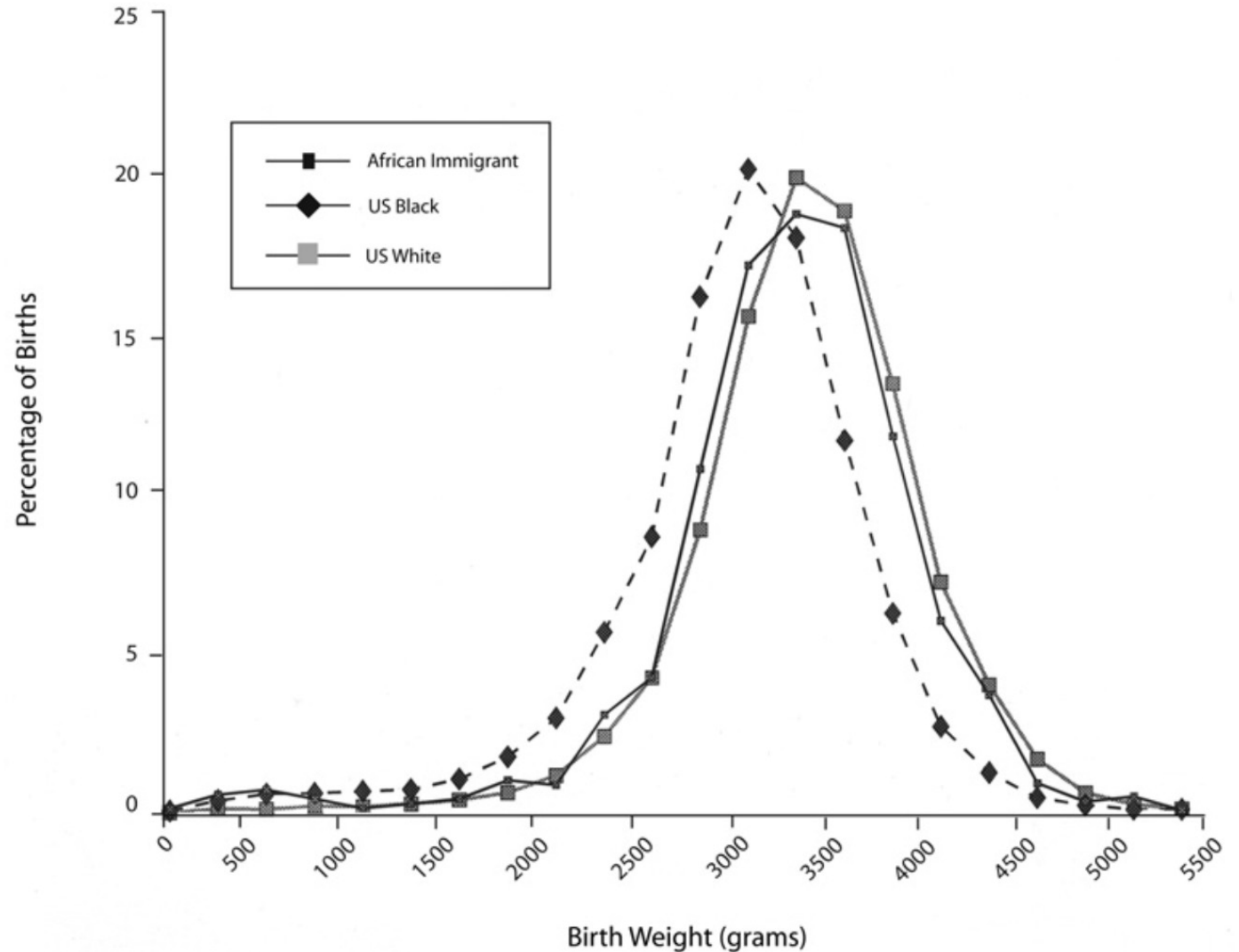
Neff 2020

Naturalizing Inequality

- “When inequality and structural violence are justified by, or go unacknowledged due to, ways of thinking that focus on individual behaviors, “cultural” characteristics, or biologized racial categories. This helps preserve social inequities by giving the impression that the current, inequitable status quo is ‘natural.’” Neff 2020

An Example

- Racial Differences in Birth Weight? (David 1997)





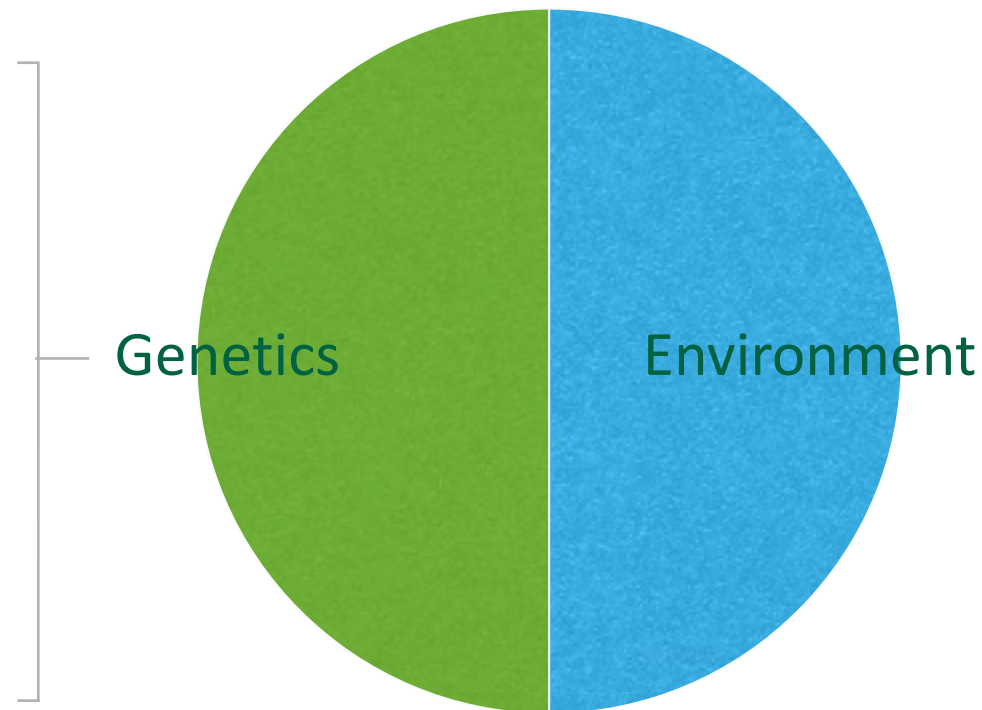
Determinants of Substance Use

Biochemical

- opioid receptors
- dopamine
- other transmitters
- intracellular signals

Behavioral

- novelty seeking
- impulsivity
- psychiatric disorders



Social influence

- parents
- siblings
- friends

Adversity

- psychiatric disorders
- stressors
- lack of positive experiences

Exposure

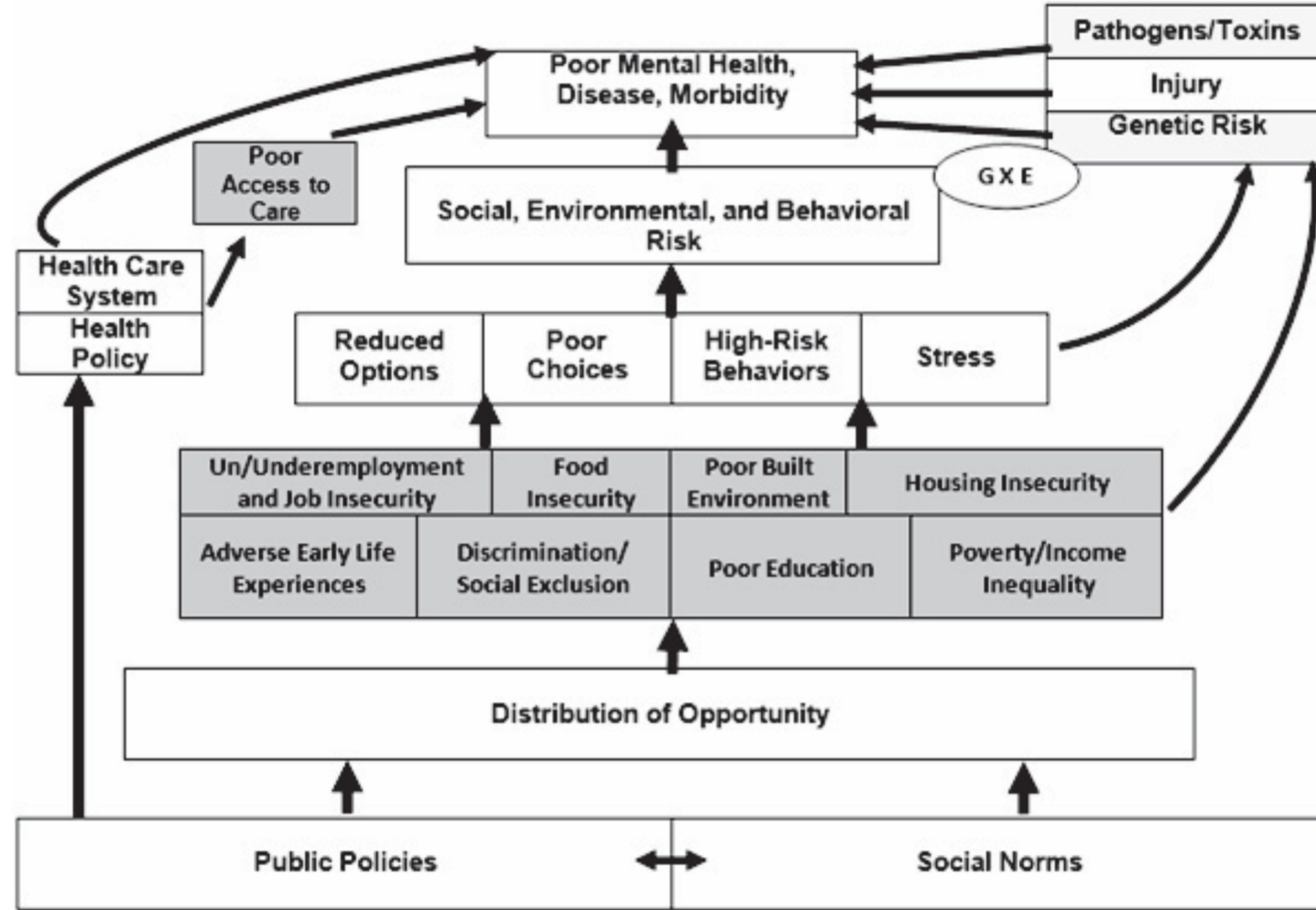
- illicit sources
- prescription
- family and friends

Anokhin et al 2015, Reed et al 2014, Wingo et al 2015, Volkow et al 2016

Social Determinants of Substance Use

- Social and Economic Instability – including loss of living-wage jobs
- Underfunded schools
- Criminalization of Substance Use
- Limited access to health care including mental health and substance use
- Structural racism
- Intergenerational poverty
- Social Isolation
- Underfunded social services

FIGURE 1. Conceptualizing the Social Determinants of Mental Health^a



^a G × E, gene-by-environment interaction

Access to Treatment

- 40% of Rural Counties in the US did not have a Buprenorphine waived provider in 2018
- 56% of the 1100 counties identified at the highest risk have inadequate capacity to treat OUD

Exhibit 3: Rates of Patient Capacity in the United States by County, 2018

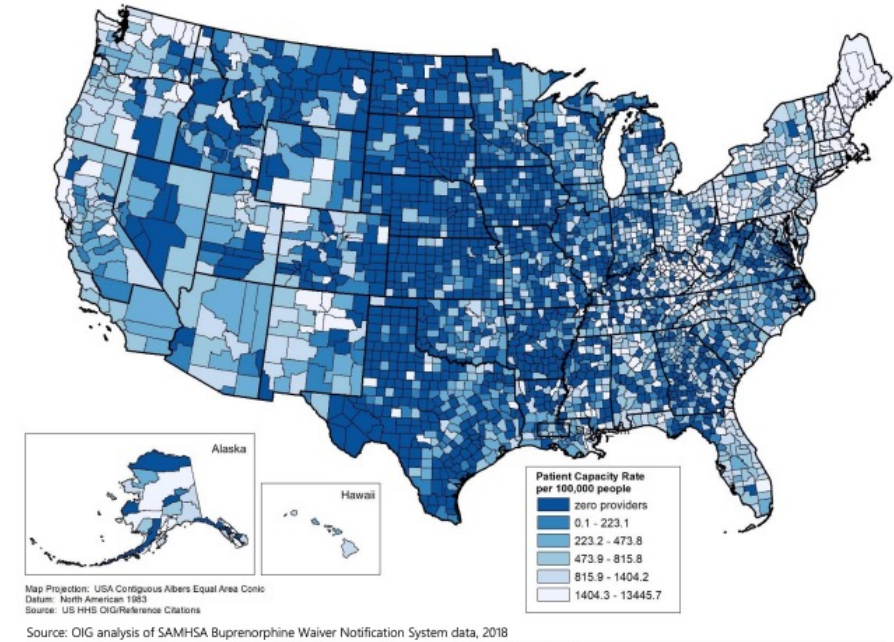
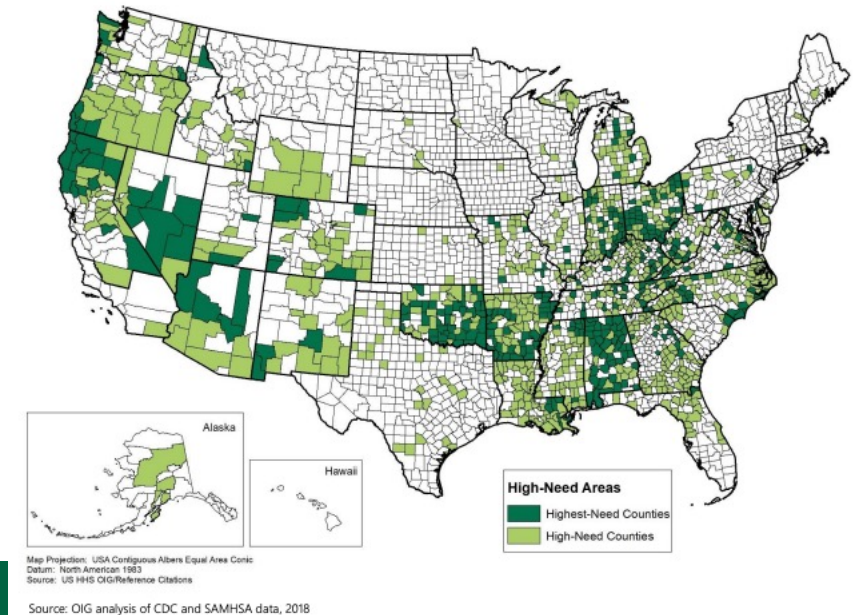


Exhibit 4: Counties With High Need for Treatment Services, 2018



Nonmedical Opioid Use in Rural Communities

- Barriers to Treatment
 - Lack of access to providers in the community where one lives
 - Social Stigma may cause individuals to seek care out of their community
 - Need to travel to a different county and more metropolitan area
 - More likely to relapse
 - More likely to be incarcerated
 - Less likely to attend self help groups



Original Investigation | Substance Use and Addiction

Association of Racial/Ethnic Segregation With Treatment Capacity for Opioid Use Disorder in Counties in the United States

William C. Goedel, BA; Aaron Shapiro, MD, MPH; Magdalena Cerdá, DrPH; Jennifer W. Tsai, MD, MEd; Scott E. Hadland, MD, MPH, MS; Brandon D. L. Marshall, PhD



Results

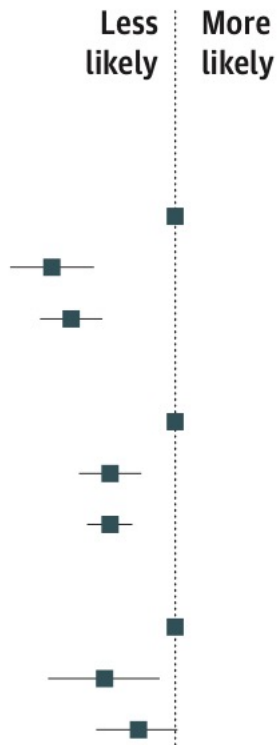
- 3142 US counties, 1698 facilities providing methadone, 18,868 facilities providing buprenorphine
- “Each 1% decrease in probability of interaction of an African American resident with a white resident was associated with 0.6 more facilities providing methadone per 100 000 population.
- Similarly, each 1% decrease in probability of interaction of a Hispanic/Latino resident with a white resident was associated with 0.3 more facilities providing methadone per 100 000 population.
- Each 1% decrease in the probability of interaction of a white resident with an African American resident was associated with 8.17 more facilities providing buprenorphine per 100 000 population.
- Similarly, each 1% decrease in the probability of interaction of a white resident with a Hispanic/Latino resident was associated with 1.61 more facilities providing buprenorphine per 100 000 population.”

Assessment of Racial and Ethnic Disparities in the Use of Medication to Treat Opioid Use Disorder Among Pregnant Women in Massachusetts

David M Schiff ¹, Timothy Nielsen ², Bettina B Hoepfner ³, Mishka Terplan ⁴, Helena Hansen ⁵, Dana Bernson ⁶, Hafsatou Diop ⁶, Monica Bharel ⁶, Elizabeth E Krans ⁷, Sabrina Selk ⁶, John F Kelly ⁵, Timothy E Wilens ⁸, Elsie M Taveras ¹

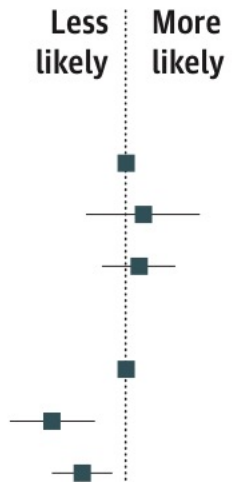
A Extent of medication use

Any use of medication in year before delivery	aOR (95% CI)
Age, y	
≤25	
White non-Hispanic	[Reference]
Black non-Hispanic	0.23 (0.14-0.38)
Hispanic	0.29 (0.20-0.42)
26-34	
White non-Hispanic	[Reference]
Black non-Hispanic	0.46 (0.32-0.67)
Hispanic	0.46 (0.35-0.60)
≥35	
White non-Hispanic	[Reference]
Black non-Hispanic	0.43 (0.22-0.83)
Hispanic	0.64 (0.39-1.03)



B Type of medication used

Buprenorphine vs methadone	aOR (95% CI)
Maternal depression/anxiety	
White non-Hispanic	[Reference]
Black non-Hispanic	1.23 (0.62-2.41)
Hispanic	1.16 (0.75-1.80)
No maternal depression/anxiety	
White non-Hispanic	[Reference]
Black non-Hispanic	0.41 (0.25-0.69)
Hispanic	0.59 (0.41-0.85)



Social Determinants of Recovery

Recovery: A process of change through which individuals improve their health and wellness, live a self-directed life, and strive to reach their full potential.

- **Health**
 - Overcoming or managing one's disease(s) or symptoms and for everyone in recovery, making informed, healthy choices that support physical and emotional wellbeing.
- **Home**
 - A stable and safe place to live
- **Purpose**
 - Meaningful daily activities, such as a job, school, volunteerism, family caretaking, or creative endeavors, and the independence, income and resources to participate in society
- **Community**
 - Relationships and social networks that provide support, friendship, love, and hope

<https://store.samhsa.gov/sites/default/files/d7/priv/pep12-recdef.pdf>

SAMHSA's WORKING DEFINITION OF RECOVERY



10 GUIDING PRINCIPLES
OF RECOVERY

Health Recovery

- Improving access to Substance Use Treatment
 - Removing the 8 hour requirement for prescribing Buprenorphine
 - Telehealth during the COVID-19 pandemic
 - Providing online education options
 - Emergency department initiation and access to recovery coaches
- Harm reduction approaches to treatment
 - Naloxone, needle exchange programs, fentanyl test strips, infectious disease screening, keeping people on medications

Home Recovery

- Housing First programs
 - More time housed, and more housing stability; may decrease emergency department visits, hospitalizations, and time spent hospitalized; decreases HIV viral load; mixed results with no clear benefit to substance use (Baxter 2019; Peng 2020; Tsai 2020)
- Recovery Housing
 - Decreased homelessness, increased housing stability, decreased psychiatric distress, decreased substance use (Polcin 2017)
 - Longer treatment retention and higher satisfactory discharges from substance use treatment (Mericle 2021)



Purpose Recovery

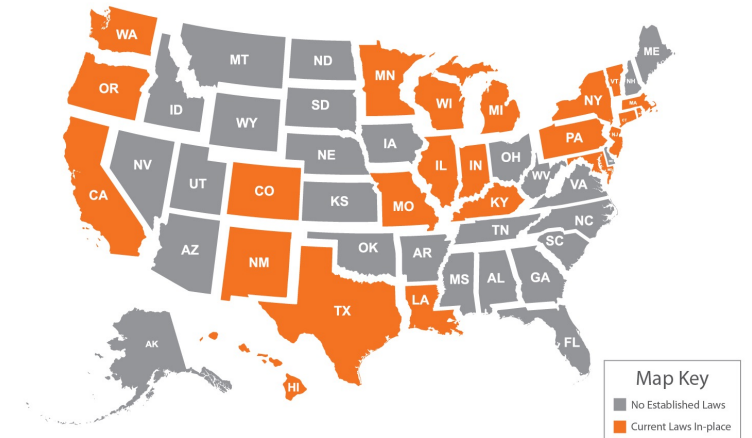
- Employment
 - Significant barriers exist for individuals with SUDs in obtaining employment
 - Treatment can create barriers
 - Ban the Box laws
 - Supportive Employment/Therapeutic Employment

JOB APPLICATION

Have you ever been convicted of a criminal offense?

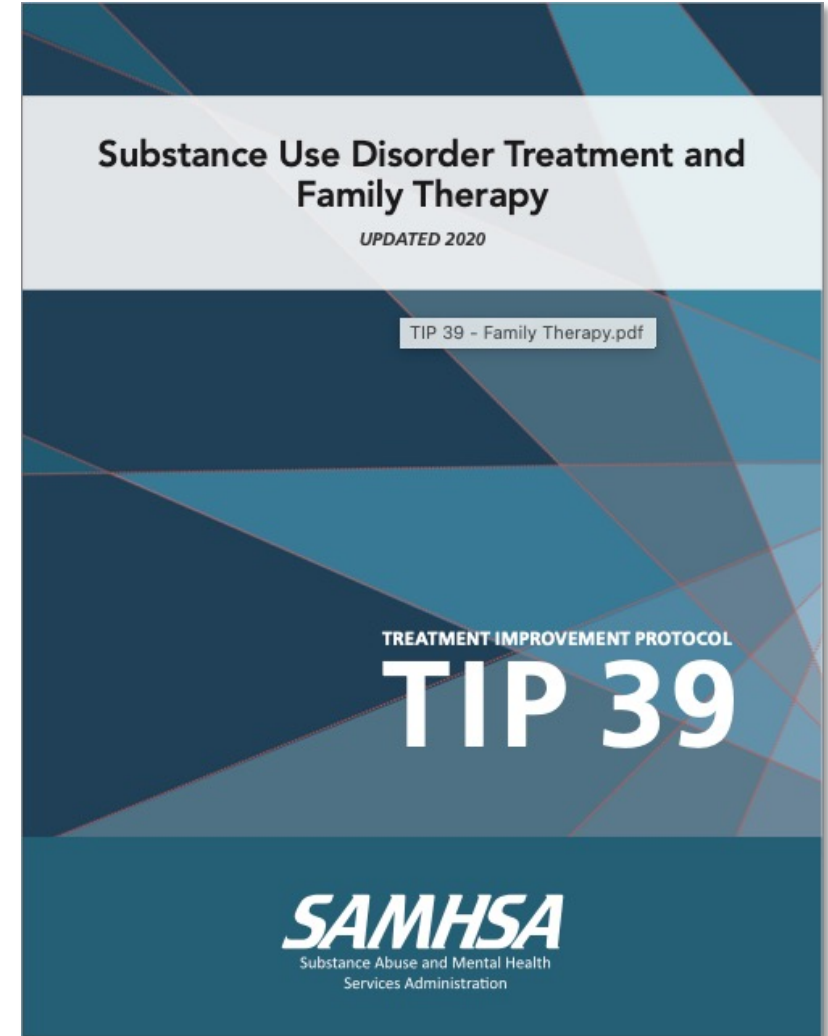
Ban the BOX

Has Your State *Banned the Box?*



Community Recovery

- Mentors
 - Recovery Coaches, Sponsors, Employers
- Sober Communities
 - 12-step, Smart Recovery, etc.
 - Sober Softball League
 - #sobercurious
- Family
 - Family Based Therapies
 - Family support and involvement



Implications for Clinical Practice

- Evaluate for social determinants of health – Structural Vulnerability Assessment Tool
- Work in a team to address patient needs
- Recognize that adherence to treatment is complicated
- Evaluate program treatment expectations and needs
- Recognize that we all have implicit bias and stigma and find ways to recognize and address in clinical practice
- Consider ways to advocate for patients in our clinics, communities and states

Structural Vulnerability Assessment Tool^a

Domain	Screening questions and assessment probes ^b
Financial security	<p data-bbox="377 187 2178 225">Do you have enough money to live comfortably—pay rent, get food, pay utilities/telephone?</p> <ul data-bbox="377 239 1796 544" style="list-style-type: none"><li data-bbox="377 239 1541 278">• How do you make money? Do you have a hard time doing this work?<li data-bbox="377 292 1337 331">• Do you run out of money at the end of the month/week?<li data-bbox="377 345 1261 384">• Do you receive any forms of government assistance?<li data-bbox="377 398 1057 436">• Are there other ways you make money?<li data-bbox="377 451 1133 489">• Do you depend on anyone else for income?<li data-bbox="377 504 1796 544">• Have you ever been unable to pay for medical care or for medicines at the pharmacy?
Residence	<p data-bbox="377 568 1719 606">Do you have a safe, stable place to sleep and store your possessions?</p> <ul data-bbox="377 621 1567 706" style="list-style-type: none"><li data-bbox="377 621 1057 659">• How long have you lived/stayed there?<li data-bbox="377 674 1567 706">• Is the place where you live/stay clean/private/quiet/protected by a lease?
Risk environments	<p data-bbox="377 735 1796 773">Do the places where you spend your time each day feel safe and healthy?</p> <ul data-bbox="377 788 1847 1035" style="list-style-type: none"><li data-bbox="377 788 1617 826">• Are you worried about being injured while working/trying to earn money?<li data-bbox="377 841 1643 879">• Are you exposed to any toxins or chemicals in your day-to-day environment?<li data-bbox="377 893 1847 932">• Are you exposed to violence? Are you exposed regularly to drug use and criminal activity?<li data-bbox="377 946 1465 985">• Are you scared to walk around your neighborhood at night/day?<li data-bbox="377 999 1210 1035">• Have you been attacked/mugged/beaten/chased?
Food access	<p data-bbox="377 1063 1541 1102">Do you have adequate nutrition and access to healthy food?</p> <ul data-bbox="377 1116 930 1306" style="list-style-type: none"><li data-bbox="377 1116 930 1155">• What do you eat on most days?<li data-bbox="377 1169 879 1208">• What did you eat yesterday?<li data-bbox="377 1222 904 1260">• What are your favorite foods?<li data-bbox="377 1275 930 1306">• Do you have cooking facilities?

Social network

Do you have friends, family, or other people who help you when you need it?

- Who are the members of your social network, family and friends? Do you feel this network is helpful or unhelpful to you? In what ways?
- Is anyone trying to hurt you?
- Do you have a primary care provider/other health professionals?

Legal status

Do you have any legal problems?

- Are you scared of getting in trouble because of your legal status?
- Are you scared the police might find you?
- Are you eligible for public services? Do you need help accessing these services?
- Have you ever been arrested and/or incarcerated?

Education

Can you read?

- In what language(s)? What level of education have you reached?
- Do you understand the documents and papers you must read and submit to obtain the services and resources you need?

Discrimination

[Ask the patient] Have you experienced discrimination?

- Have you experienced discrimination based on your skin color, your accent, or where you are from?
- Have you experienced discrimination based on your gender or sexual orientation?
- Have you experienced discrimination for any other reason?

[Ask yourself silently] May some service providers (including me) find it difficult to work with this patient?

- Could the interactional style of this patient alienate some service providers, eliciting potential stigma, stereotypical biases, or negative moral judgments?
- Could aspects of this patient's appearance, ethnicity, accent, etiquette, addiction status, personality, or behaviors cause some service providers to think this patient does not deserve/want or care about receiving top quality care?
- Is this patient likely to elicit distrust because of his/her behavior or appearance?
- May some service providers assume this patient deserves his/her plight in life because of his/her lifestyle or aspects of appearance?

Summary

- Social and Structural Determinants of Health have significant impacts on overall health outcomes
- Social Determinants of Health help identify reasons for disparities seen in race, class, and other social categories
- Social Determinants impact Substance Use and Treatment
- Recognition of Social Determinants of Health can lead to greater understanding of disparities, individual risk and protective factors, and ways to advocate for patients and communities.

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Questions & Discussion

