What is the Health Gap . . . and why should I care?

The impact of the social determinants of health

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Thomas Buckley has nothing to disclose for this presentation

Lecture Objectives

1. Describe the social determinants of health on an individual, community and global level
2. Understand the role of gender in population health
3. Illustrate how the social determinants of health impact women
4. Demonstrate how pharmacists' clinical and health promotion activities impact health equity

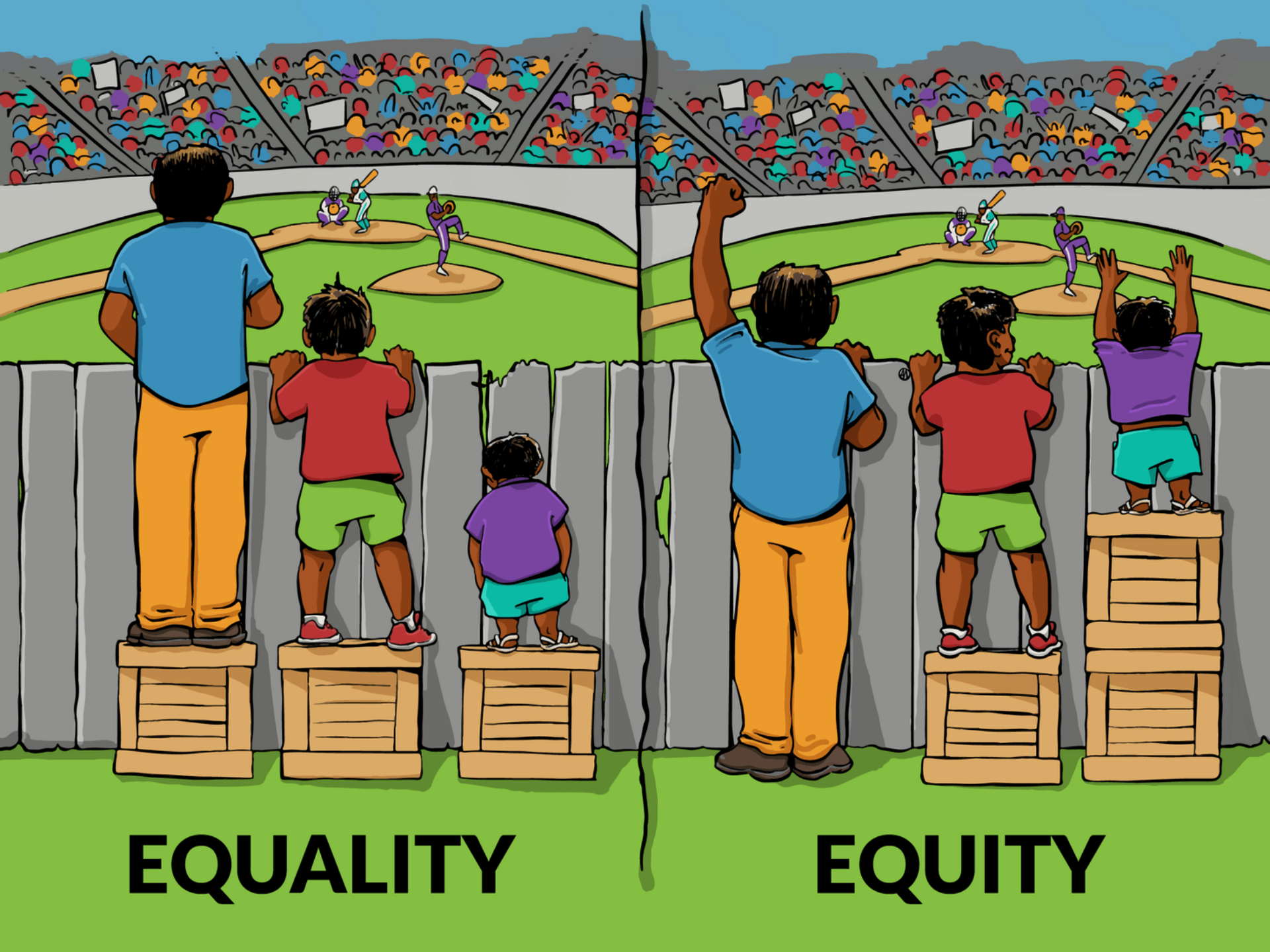
Human rights principles of health equity

- "Health" is defined as "a state of complete physical, mental and social well-being, and not merely the absence of disease & infirmity"

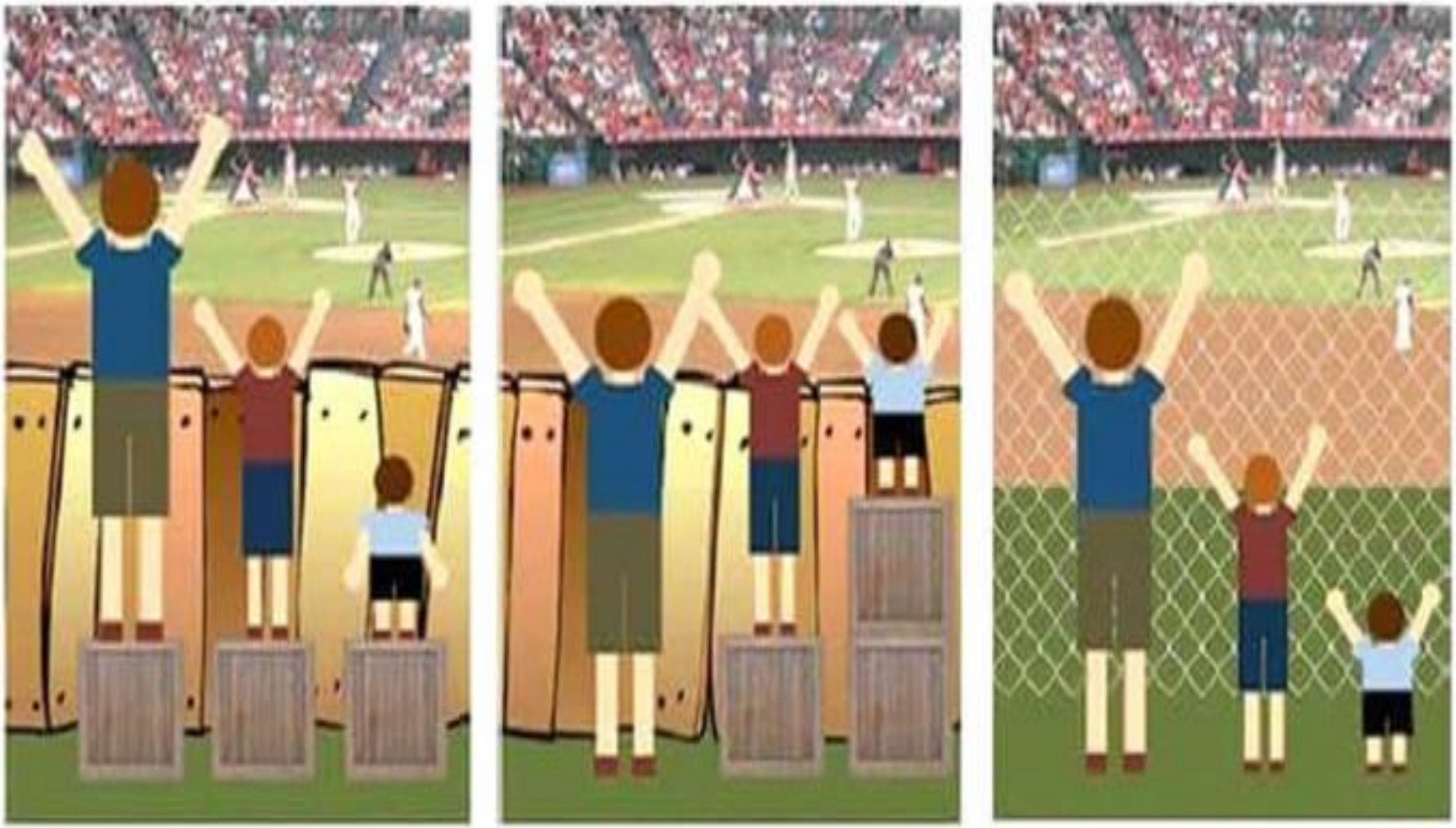
- "Right to health" includes the elements of availability, accessibility, quality of health care, as well as cultural sensitivity and respect for medical ethics

- "Health equity" is defined as the right of everyone to have "a fair and just opportunity to be as healthy as possible. This requires removing obstacles to health (social determinants of health)."

1. CESCR (2000). General Comment No. 14: The Right to the Highest Attainable Standard of Health (GC 14).
2. Braveman, P. (June 22, 2017). A New Definition of Health Equity to Guide Future Efforts and Measure Progress. Health Affairs Blog.
3. Office of Minority Health (2011). HHS Action Plan to Reduce Racial and Ethnic Health Disparities.


EQUALITY
EQUITY

Equality vs. Equity – Removing the Barrier



What determines health?

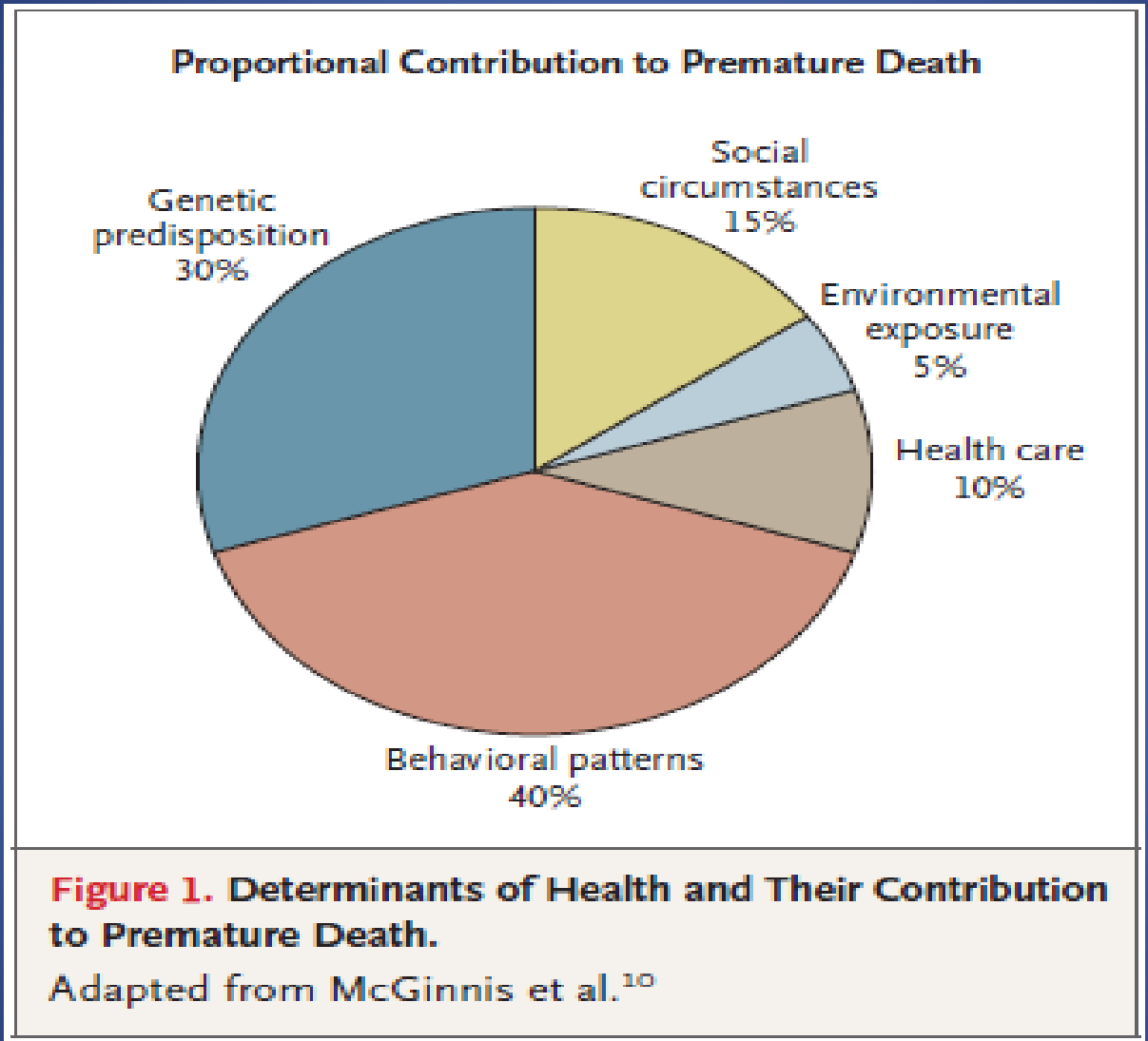


Figure 1. Determinants of Health and Their Contribution to Premature Death.

Adapted from McGinnis et al.[10]

Schroeder *NEJM 2007*

Medical care alone cannot address what actually makes us sick

What are the “social determinants of health”

- WHO defines social determinants of health as “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”

- Health inequities, “the unfair and avoidable differences in health between groups of people within countries and between countries” (WHO), stem from the social determinants of health and result in stark differences in health and health outcomes

Figure 1

Social Determinants of Health

Economic Stability	Neighborhood and Physical Environment	Education	Food	Community and Social Context	Health Care System
Employment	Housing	Literacy	Hunger	Social integration	Health coverage
Income	Transportation	Language	Access to healthy options	Support systems	Provider availability
Expenses	Safety	Early childhood education		Community engagement	Provider linguistic and cultural competency
Debt	Parks	Vocational training		Discrimination	
Medical bills	Playgrounds	Higher education		Stress	Quality of care
Support	Walkability				
	Zip code / geography				

Health Outcomes

Mortality, Morbidity, Life Expectancy, Health Care Expenditures, Health Status, Functional Limitations

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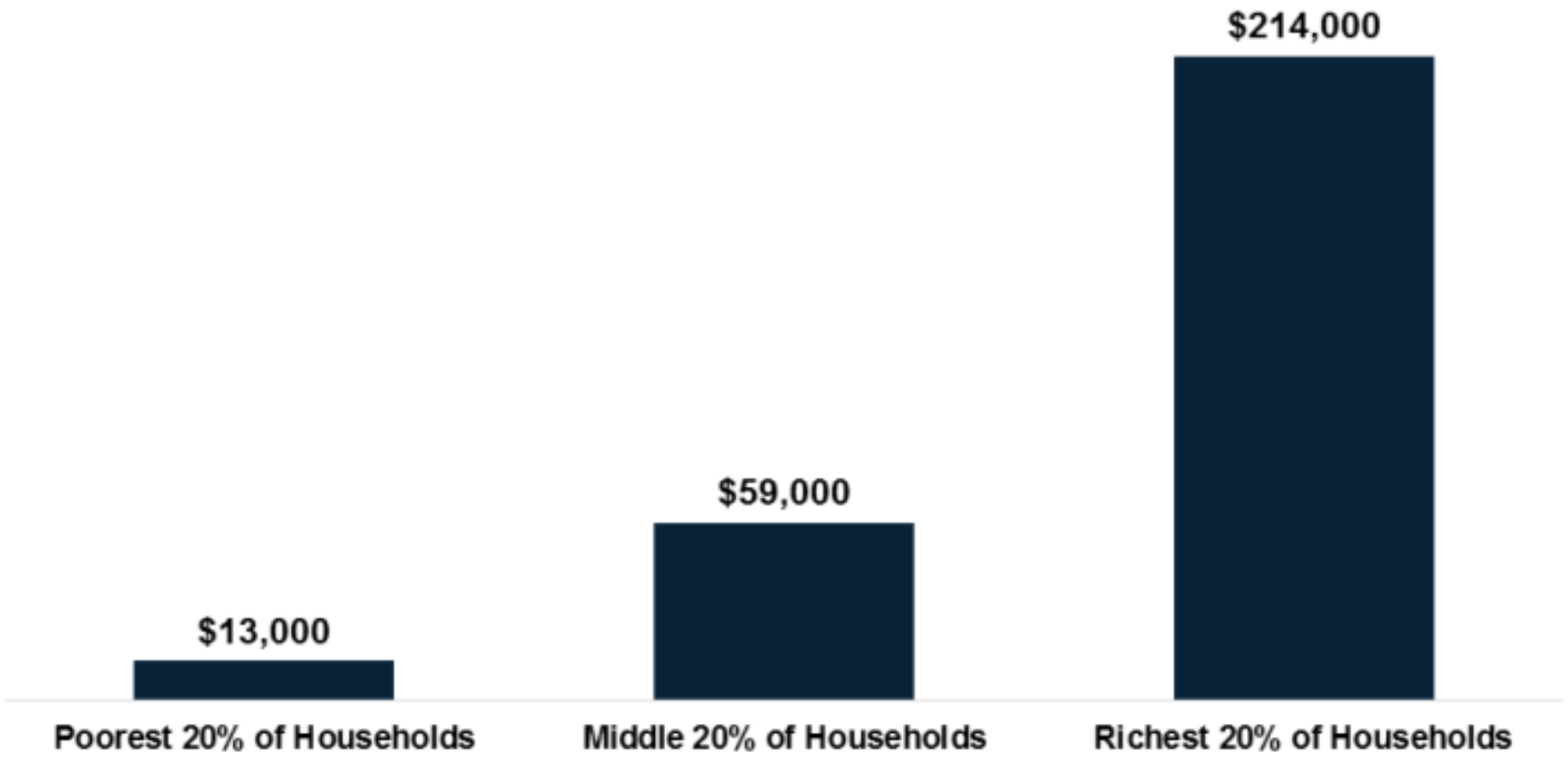
Facts of Social Determinants

- **Income**:
  - Income inequality in U.S. increased between 1977-1999: income of richest 1% doubled; income of lowest 20% declined by 9%
  - Countries w/unequal income distribution have higher rates of infant mortality than countries w/more equitable income distribution
  - "Robin Hood Index" of 50 states: income inequality significantly related to level of homicide, assault, robbery

Figure 3

Gaps Between Average Annual Income of Richest and Poorest Households in the United States, 2016



SOURCE: Semega, Jessica L., et al. "Income and Poverty in the United States: 2016." *Current Population Reports*. United States Census Bureau, September 2017, https://www.census.gov/content/dam/Census/library/publications/2017/demo/P60-259.pdf.

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Facts of Social Determinants

- **Education & employment**:
  - Ages 25-64: death rate for those w/less than 12 yrs education more than twice for those w/13 or more yrs of education
  - Infant mortality double for mothers w/less than high school education
  - Unemployment associated w/poorer outcomes:
    - Depression, suicide, alcoholism, sleep disturbances, GI distress, headache, CVD, musculoskeletal disorders

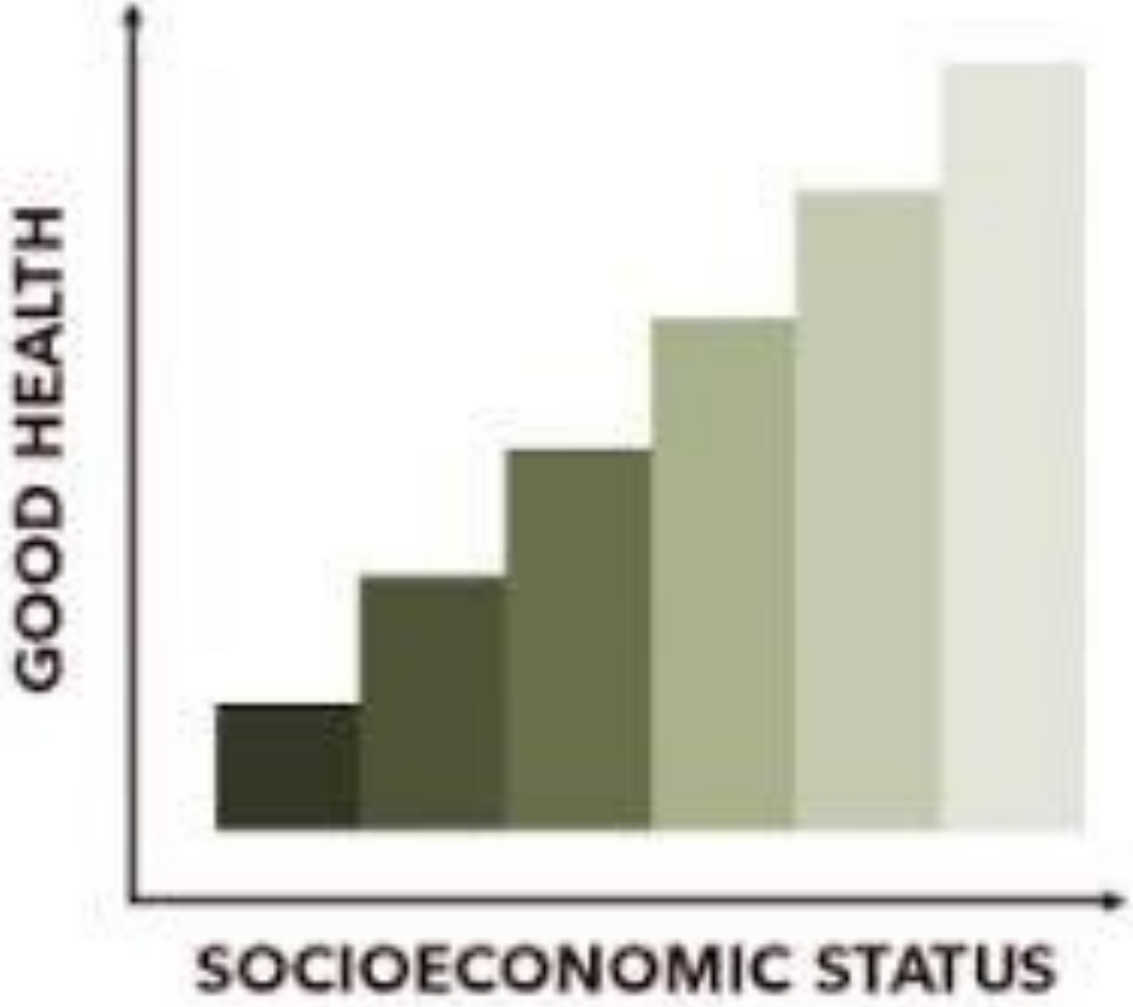
Facts of Social Determinants

- **Environment**:
  - Worldwide, ¼ preventable disease attributable to poor environmental quality
  - U.S.: air pollution associated w/50,000 premature deaths & up to $50 billion health costs
- **Social Capital**:
  - Individuals lacking social ties: 2-3x risk of dying of all causes compared to those well-connected
    - Socially isolated: 4x greater rate of heart attack
  - ***Social connectedness stronger predictor of perceived quality of life than income or education level***

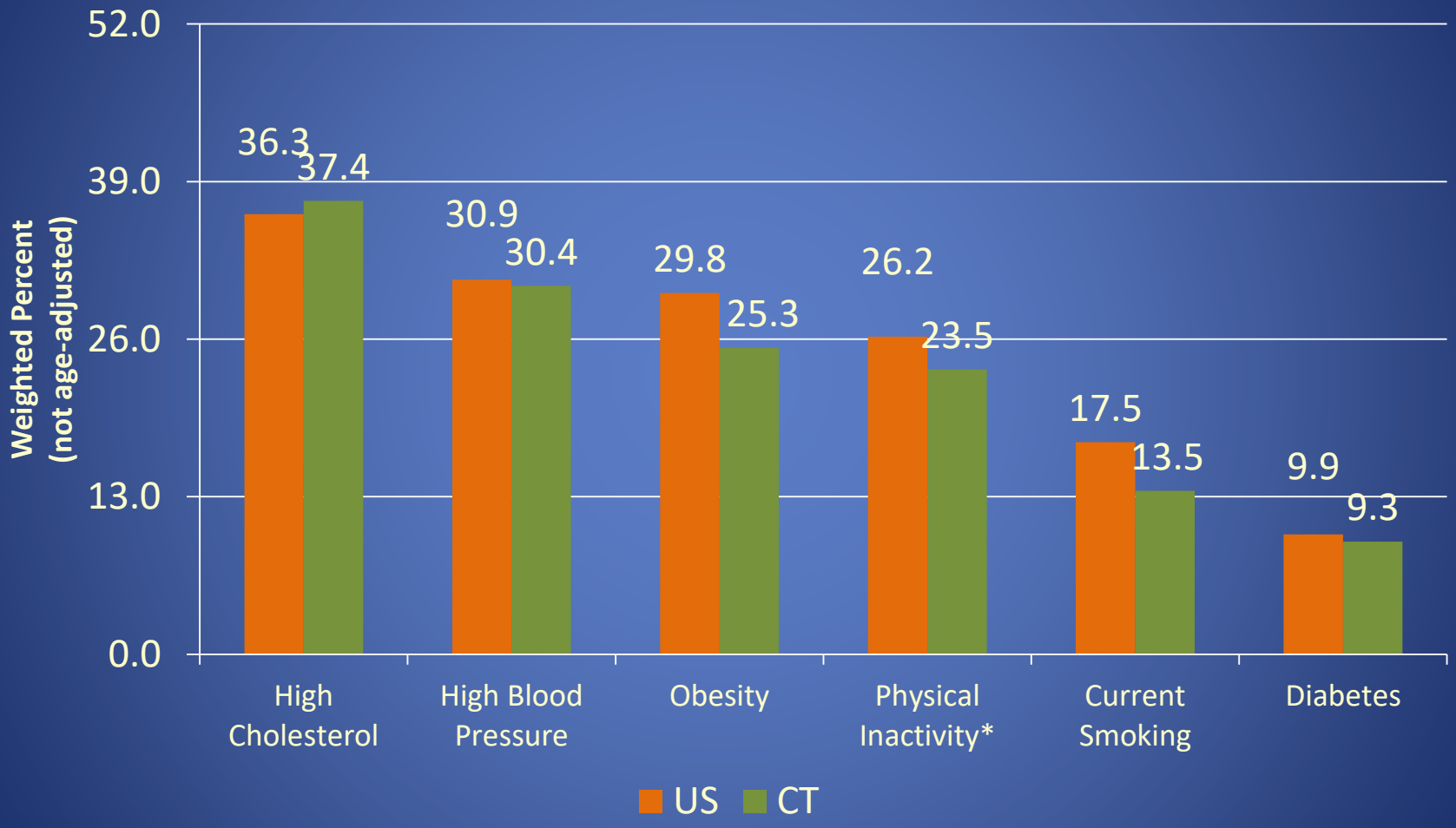
Determinants of Health

- Conditions or factors associated with health
  - Characteristics of individual, community, state, national, or global
  - Person-environment interaction
    - Positive interactions = health or maintenance of health
    - Negative interactions = illness or decrement of health
- Blaming individuals for poor health or crediting for good health inappropriate
  - May not be able to control determinants of health

THE HEALTH-WEALTH GRADIENT



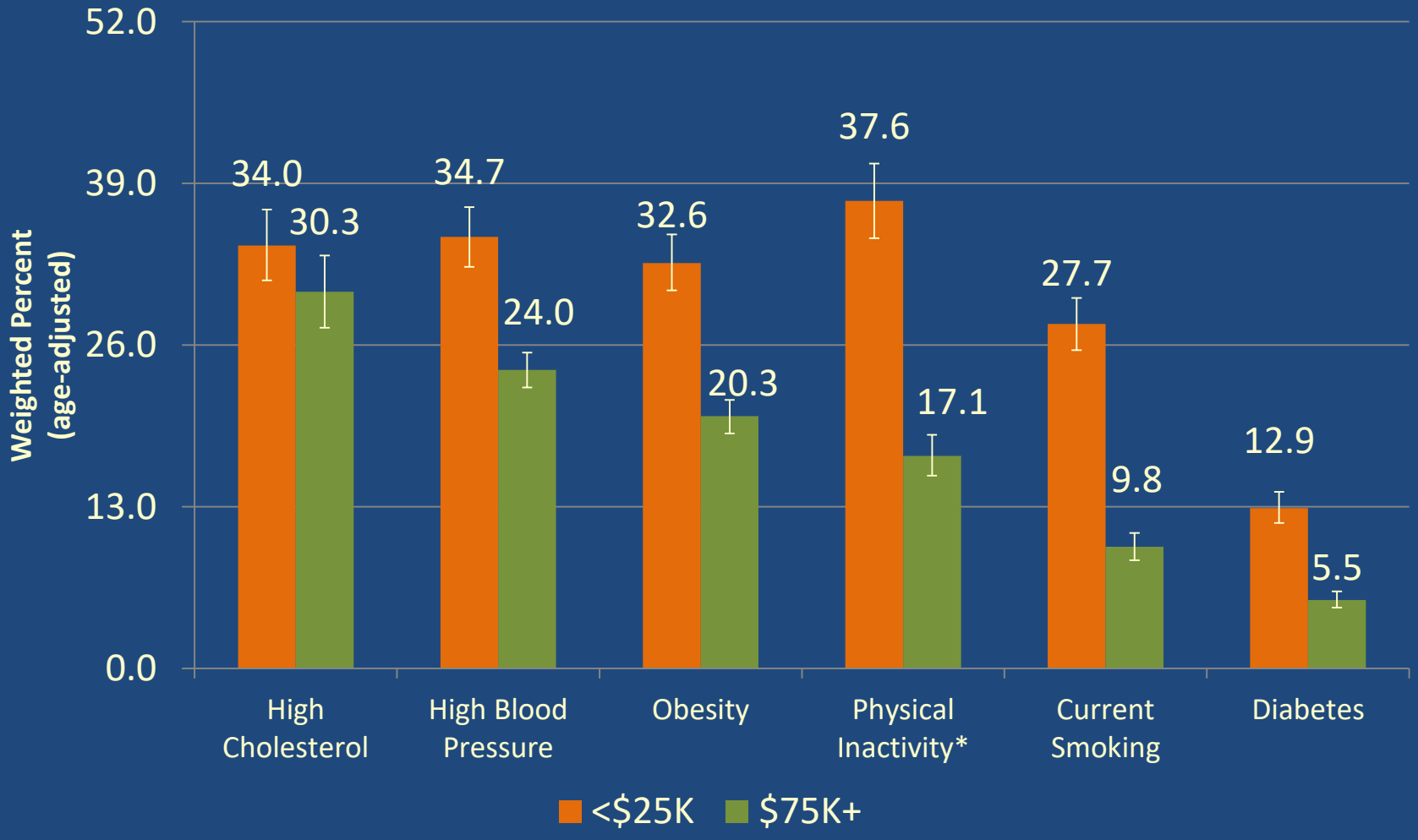
Modifiable Risk Factors for CVD among Adults (18+y), Connecticut and the US, 2015



Source: CDC, BRFSS, 2015 data.

*Participated in no physical activities in past month

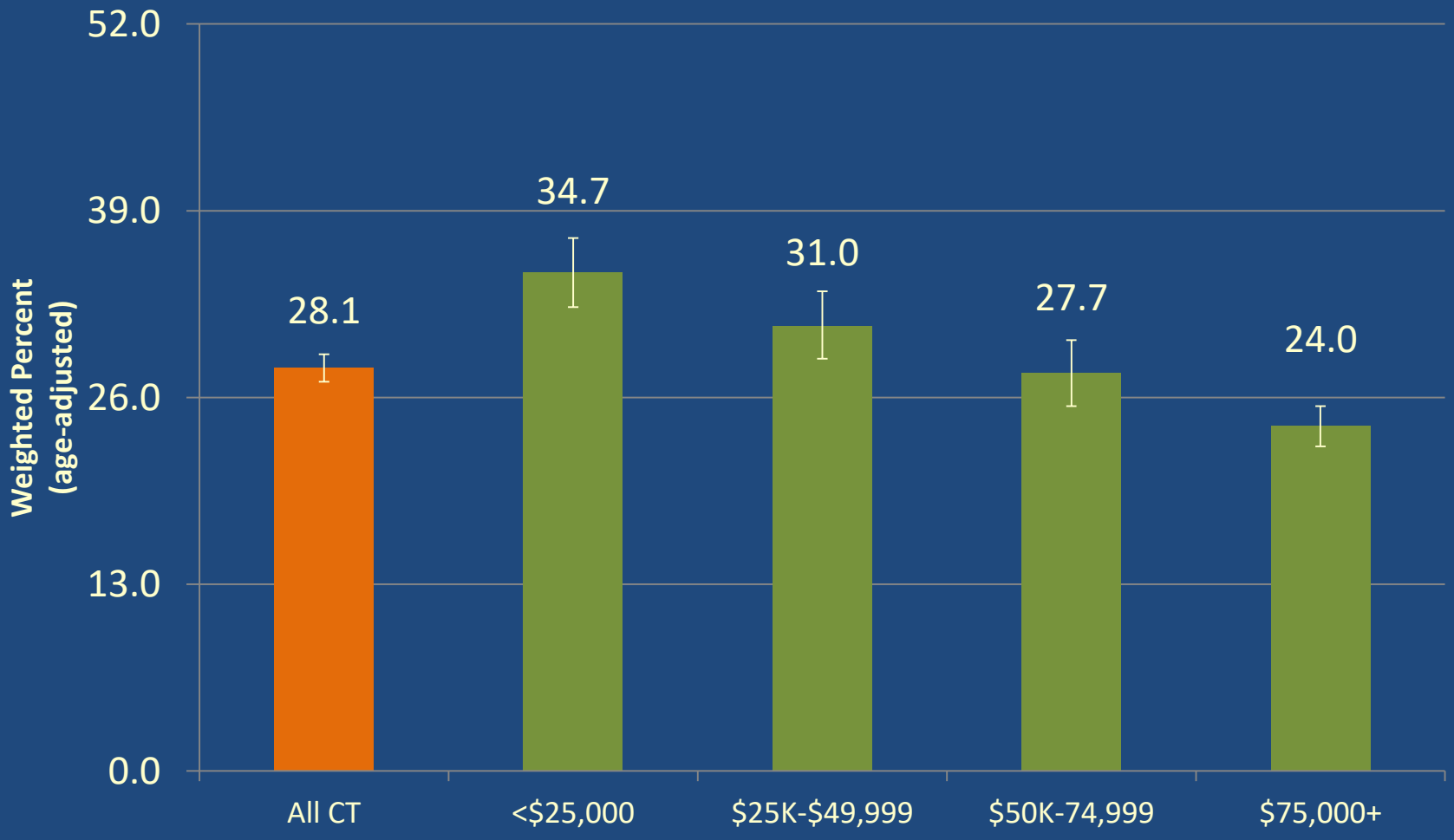
Modifiable Risk Factors among Adults (18+y) by Annual Household Income, Connecticut, 2011-2013



Source: CT DPH, BRFSS, 2011-2013 data.

*Participated in no physical activities in past month

Prevalence of High Blood Pressure by Annual Household Income (18+y), CT, 2011-2013



Source: CT DPH, BRFSS, 2011-2013 data.

Gender and health

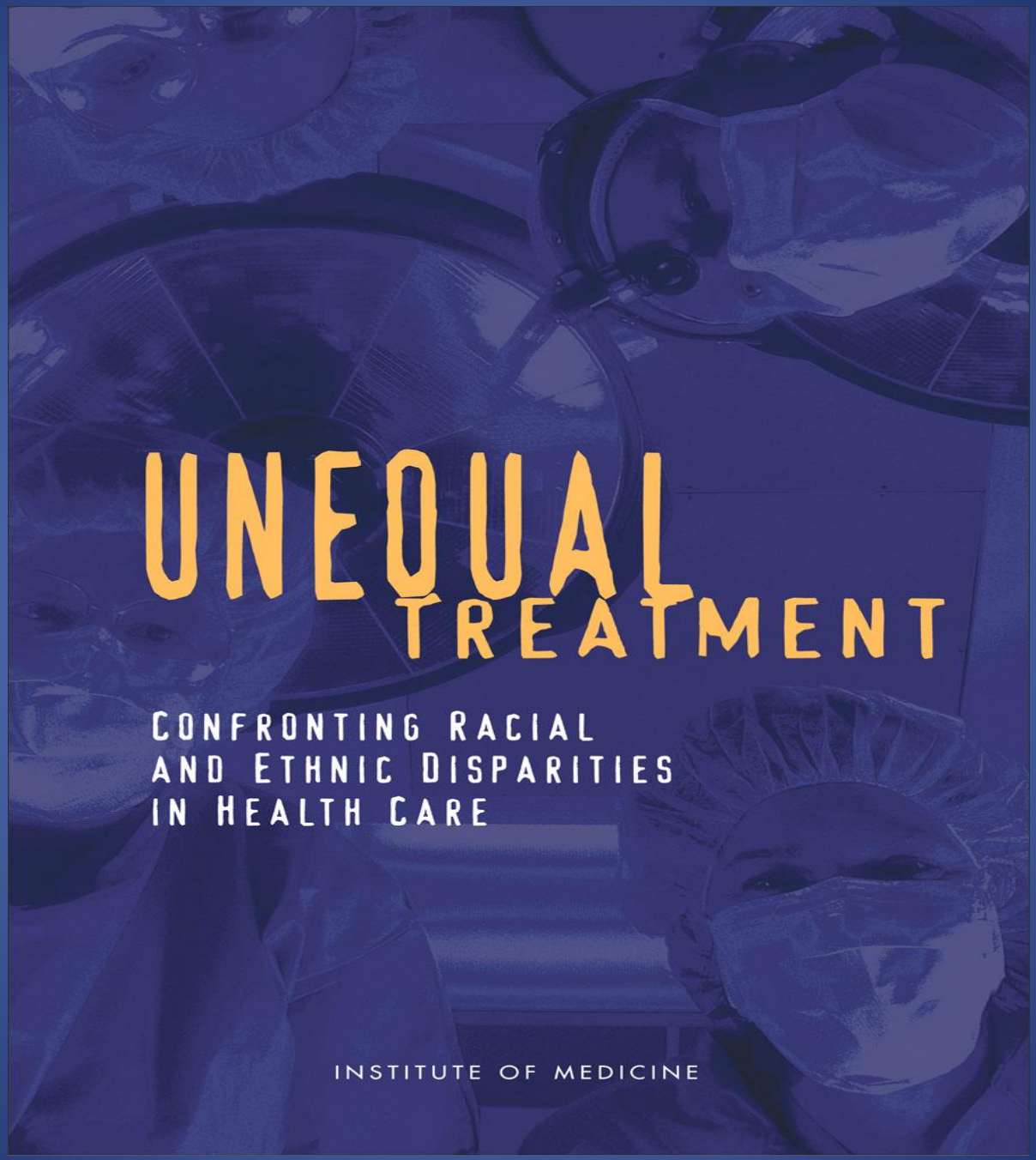
- Well-established that race, class and wealth affect quality of healthcare
  - less obvious, affecting most people, is gender
- Women less likely to have their pain treated, symptoms taken seriously, or given diagnosis
- Women, and conditions that primarily affect them, less studied in clinical trials
  - Even oral contraceptive studies based on male hormones!

Women are more likely to wait longer for a health diagnosis

- Women more likely than men to see 10 or more months pass between their first visit to a doctor and diagnosis –and to have made more than five visits to a doctor prior to diagnosis

- Growing research on "implicit" bias – unconscious biases usually not linked to consciously held prejudiced attitudes
  - One of the most pervasive implicit biases in the medical system regards gender

Maya Dusenberry; *Doing Harm: The Truth About How Bad Medicine and Lazy Science Leave Women Dismissed, Misdiagnosed, and Sick*; 2018.

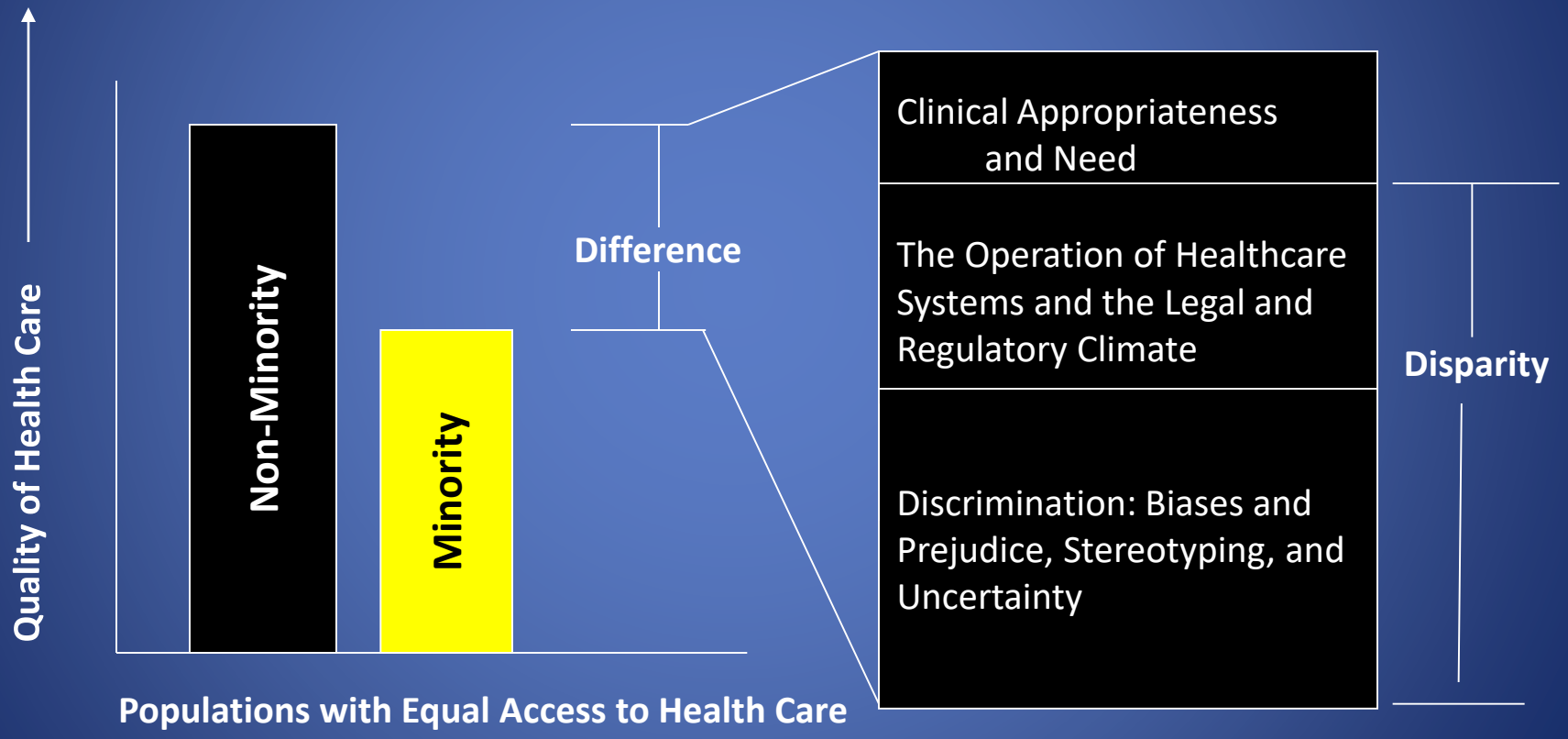

UNEQUAL TREATMENT
CONFRONTING RACIAL AND ETHNIC DISPARITIES IN HEALTH CARE
INSTITUTE OF MEDICINE

"Unequal Treatment: Confronting Racial & Ethnic Disparities in Healthcare"

New York Times, March 22, 2003 "Subtle Racism in Medicine"

" . . . a disturbing new study by the Institute of Medicine has concluded that **even when members of minority groups have the same incomes, insurance coverage and medical conditions** as whites, they receive notably poorer care. Biases, prejudices and negative racial stereotypes, the panel concludes, may be misleading doctors and other health professionals."

Differences, Disparities, and Discrimination: Populations with *Equal Access* to Health Care



Unequal Treatment; IOM, 2003.

Disparities in the Clinical Encounter: The Core Paradox

How could well-meaning and highly educated health professionals, working in their usual circumstances with diverse populations of patients, create a pattern of care that appears to be discriminatory?

Disparities in the Clinical Encounter: The Core Paradox

Possibilities examined: bias (prejudice), uncertainty, stereotyping:

- **Bias – no evidence suggests that providers are more likely than the general public to express biases, but some evidence suggests that unconscious biases may exist**

- **Uncertainty – a plausible hypothesis, particularly when providers treat patients that are dissimilar in cultural or linguistic background (rely on "priors")**

- **Stereotyping – evidence suggests that physicians, like everyone else, use these 'cognitive shortcuts'**

Stereotyping: When Is It in Action?

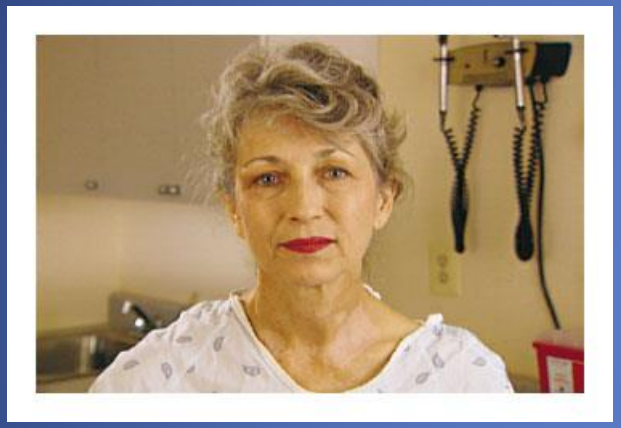
Situations characterized by time pressure, resource constraints, and high cognitive demand promote stereotyping due to the need for cognitive ‘shortcuts’ and lack of full information.

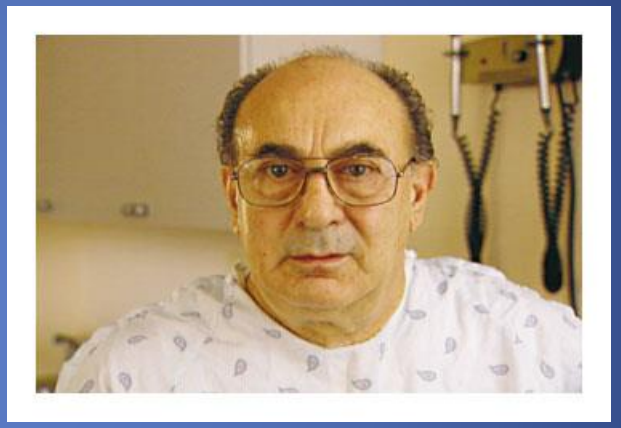
Implicit Bias

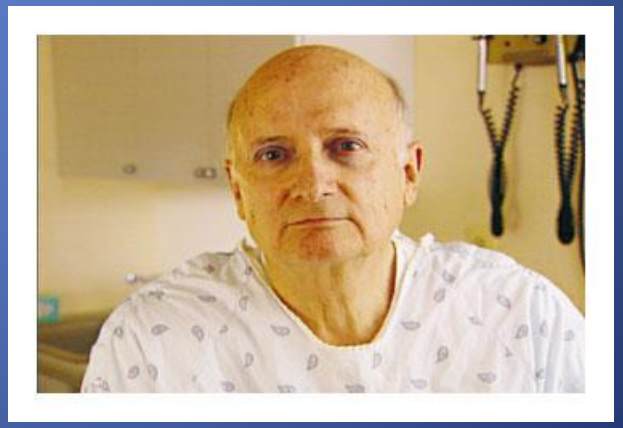
- Also known as unconscious bias, is “the bias in judgment and/or behavior that results from subtle cognitive processes that often operate at a level below conscious awareness and without intentional control.”

- In a 2015 systematic review by Hall, et al, researchers found that implicit bias is significantly related to patient-provider interactions, treatment decisions, treatment adherence, and patient health outcomes

“Patients” experiencing symptoms of heart disease, from Schulman et al. (1999)







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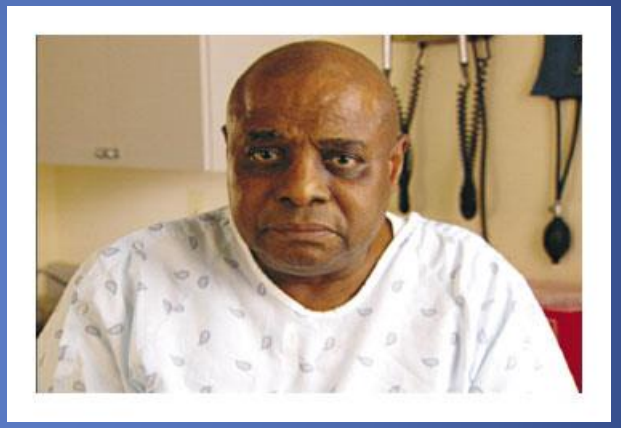
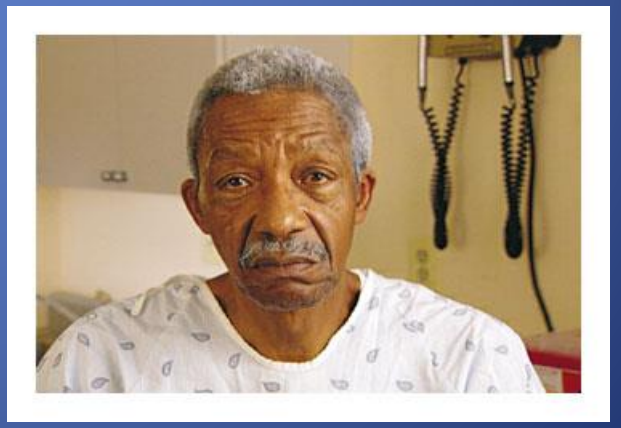
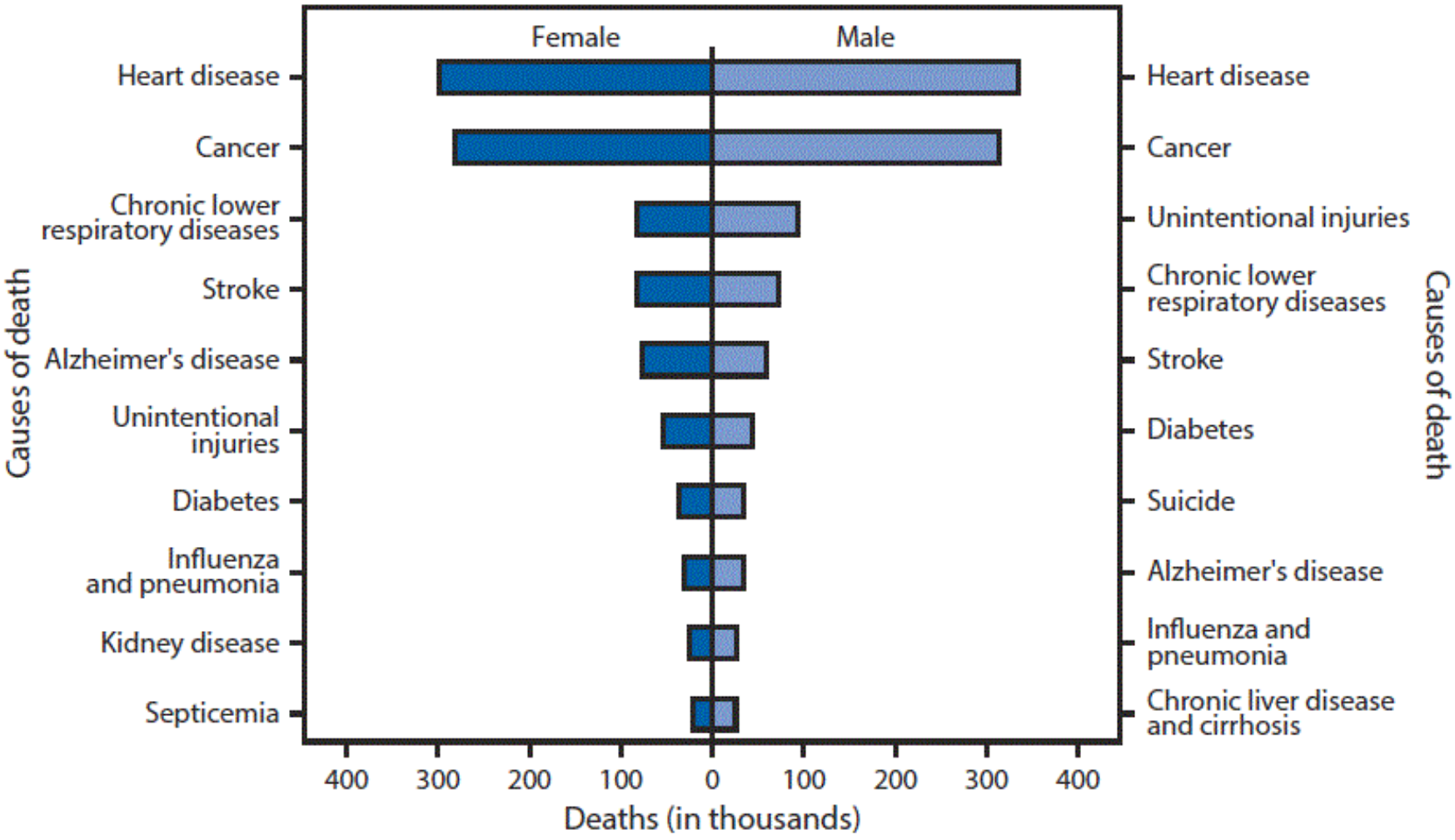




Modern cardiac gender research

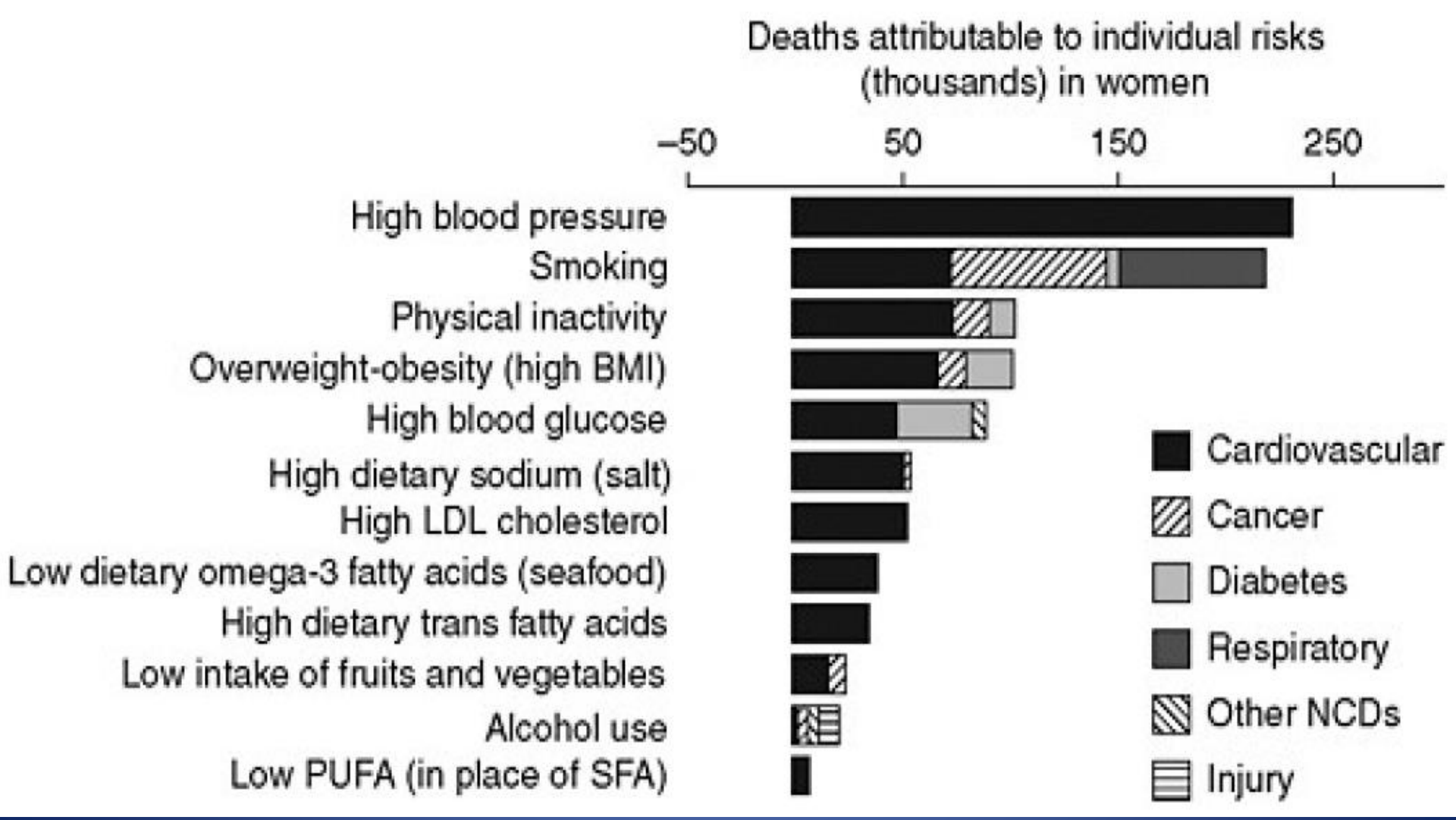
- CVD develops 7-10 yrs later in women than in men & is the ***major cause of death in women***
- CVD in women underestimated due to mis-perception females are 'protected' against CVD
- When women seen for cardiac issues, they often focus on symptoms outside of chest pain
- SBP rises more than men after menopause
  - Upregulation in RAS, increased renin activity
  - Women have lower HDL (after 65 higher LDL)

Leading causes of death by gender



CDC Weekly / April 21, 2017 / 66(15);413

Deaths in women attributable to individual risks by disease



Women's Health Research: Progress, Pitfalls and Promise; 2012; National Academies Press

What is the "trust gap" in medicine for women?

- "Hysteria", so-called disease of 19th& 20th C
- Anything that couldn't be medically explained was attributed to the unconscious mind
- If a symptom not explained by a physical disease, then scientific research not done
- 1997 study: 30-50% women misdiagnosed with depression (sx of other diseases unrecognized)
  - Major contributor to delay in correct diagnosis
  - Gender stereotyping affects symptom recognition

www.bbc.com/future/story/20180518-the-inequality-in-how-women-are-treated-for-pain

History has made women caught in this self-fulfilling prophecy

- Autoimmune issues affect 50 million people in the U.S., 75% are women
- Medical system weak at diagnosing them
  - Few autoimmune specialists, little PCP training
- Many doctors seen for fatigue & pain, dx after 4 yrs, other doctors don't hear of correct dx
- Long history of dismissing women's pain
  - ? Due to gender bias, lack of research on women, or differences between how sexes interpret pain

www.bbc.com/future/story/20180518-the-inequality-in-how-women-are-treated-for-pain

Does the trust gap shrink when doctors and nurses are women?

- Lack of systemic research that shows it true
- More likely: unconscious bias and systemic bias
  - "men are silent stoics, women hysterical hypochondriacs"
  - 2010 study: women more likely to say they were in poor health, but less likely to die over next 5 years
- Major issues hindering women's medical care: the trust gap & the knowledge gap

https://www.theguardian.com/lifeandstyle/2017/nov/20/healthcare-gender-bias-women-pain

The knowledge gap

- Legacy of decades of women being underrepresented or excluded from research
- 1993: NIH Revitalization Act, requires research to include women, enough for gender analysis
- Women still underrepresented in CVD, cancer and HIV/AIDS

The trust gap

- Idea that a woman's medically inexplicable complaints "were all in her head," still persists
- *Maya Dusenbery:* "It's long been taught as a medical fact that women are more prone to psychogenic symptoms."
- Women have more medically unexplained symptoms (MUS) than men; 2/3 in primary care

Maya Dusenberry; *Doing Harm: The Truth About How Bad Medicine and Lazy Science Leave Women Dismissed, Misdiagnosed, and Sick*; 2018.

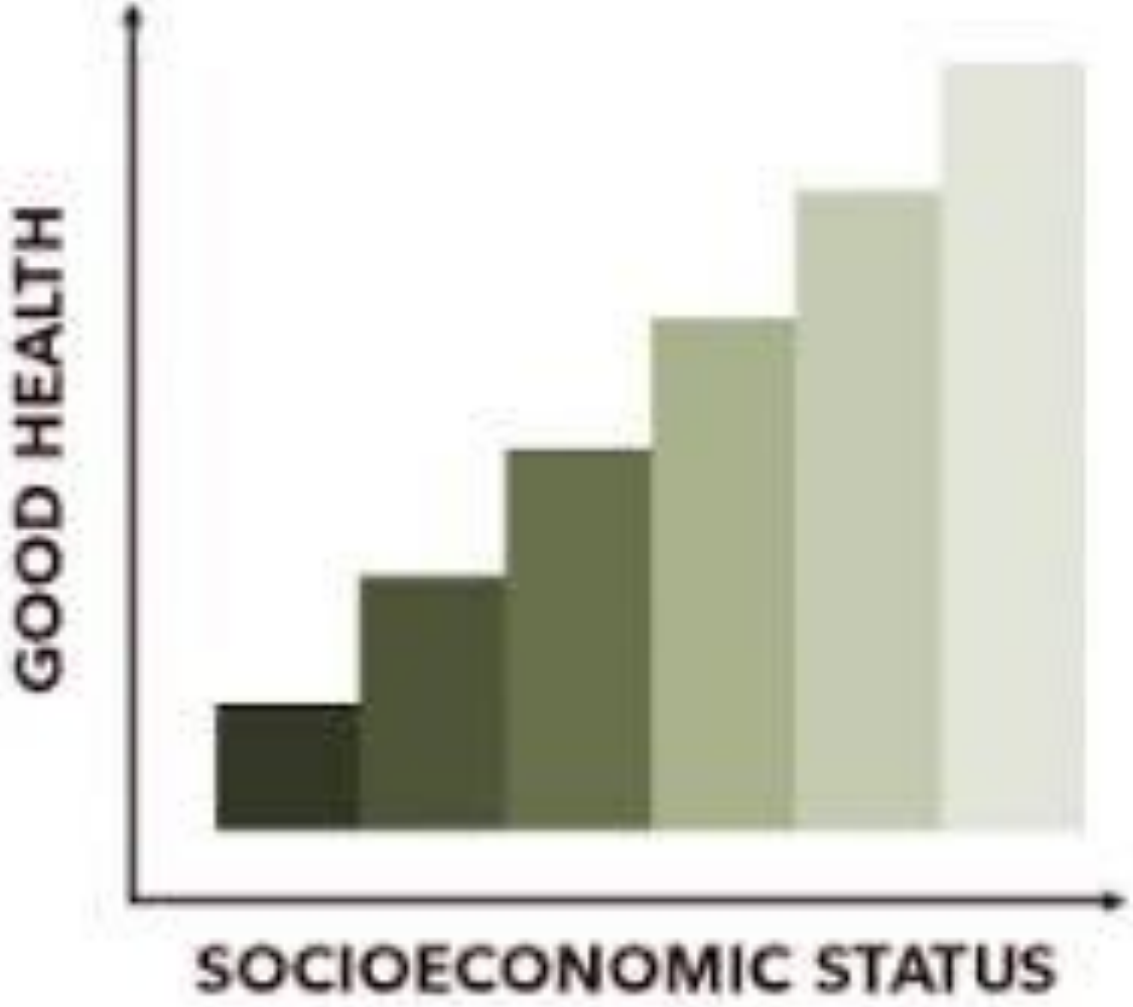
The trust gap

- Most serious potential problem when it comes to diagnosis, especially during their first encounters with the medical system, before any evaluation or testing has been done

- “That’s when it’s most critical that a patient’s account of her own symptoms be believed.”

Maya Dusenbery

THE HEALTH-WEALTH GRADIENT



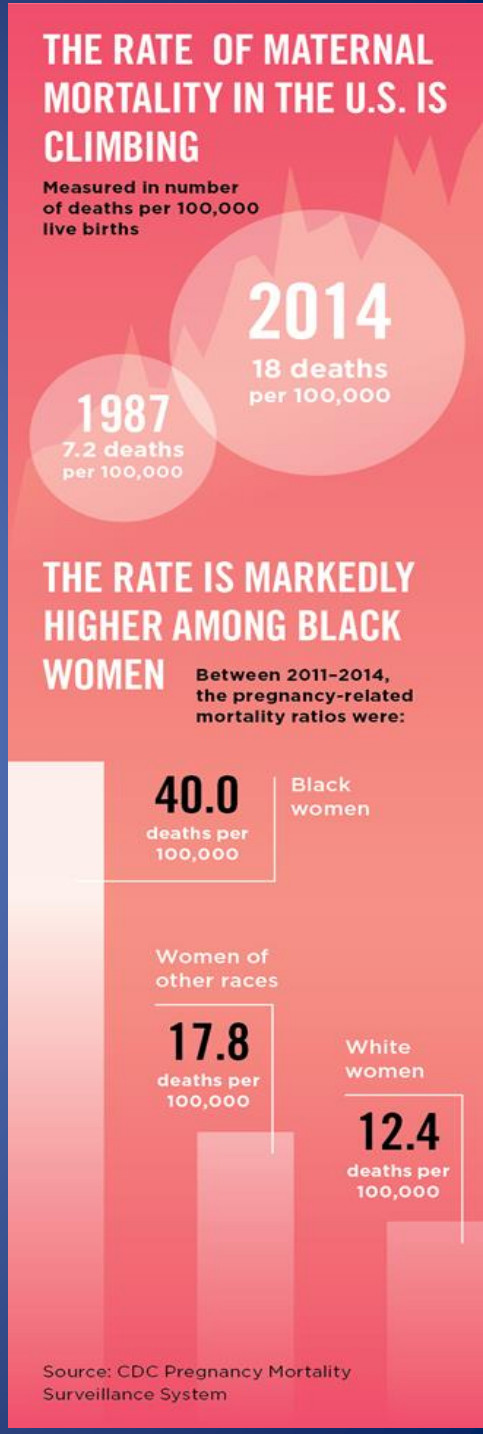
Does wealth always equal health?

The recent birth complications for Serena and Beyoncé suggest otherwise

"AMERICA IS FAILING ITS BLACK MOTHERS"

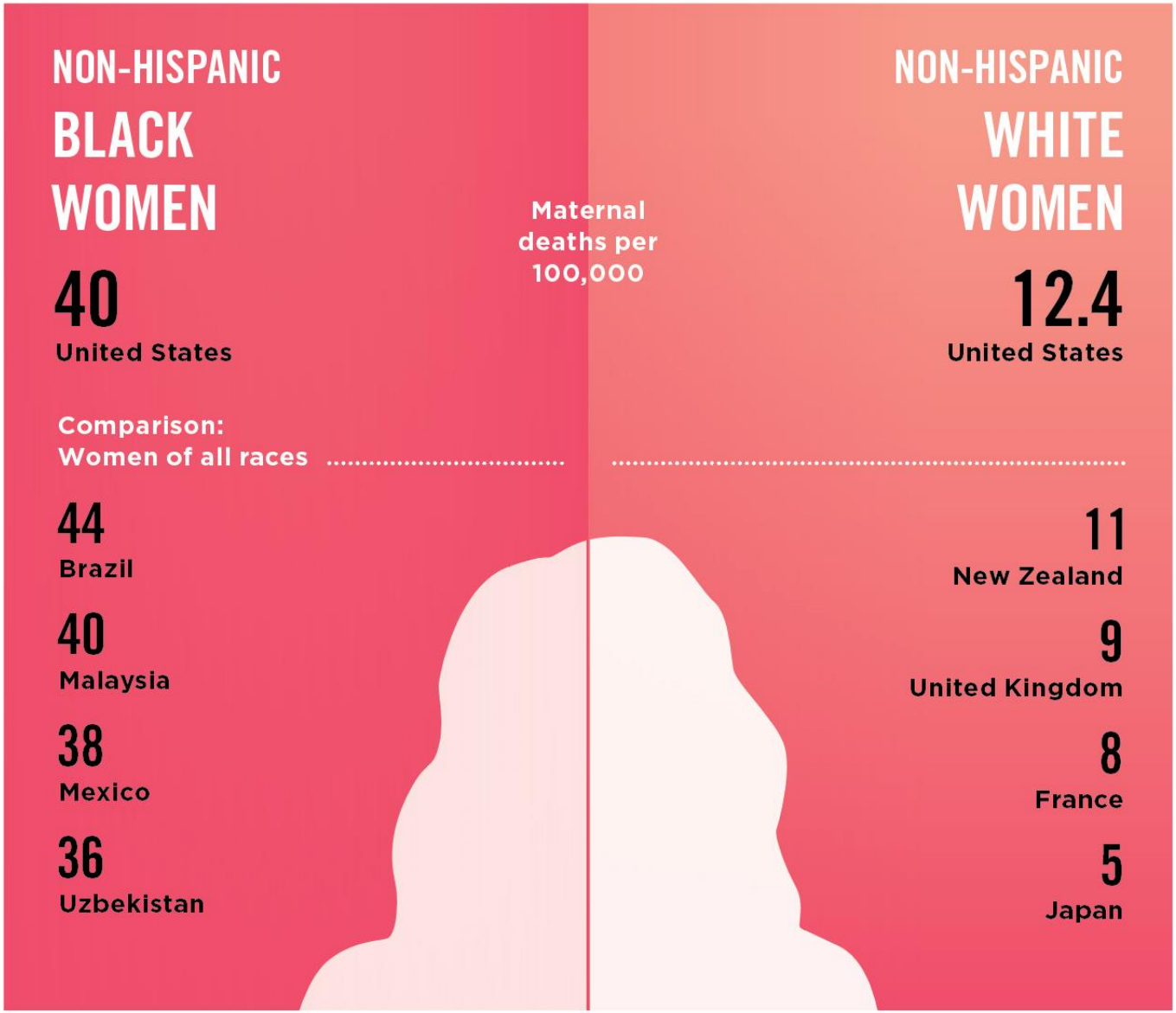
- Since 1990, maternal mortality rates in AA women have steadily increased
- AA women 3-4x more likely to die during or after delivery than are white women
- Odds of surviving childbirth lower than women in Mexico & Uzbekistan

Harvard Public Health Magazine, February 2019



MORTALITY GAP FOR U.S. MOMS

In the U.S., black women who are expecting or who are new mothers die at rates similar to those of the same women in lower-income countries, while the maternal mortality rate for white U.S. mothers more closely resembles rates in more affluent nations.



Sources: U.S. ratios (2011-2013): CDC Pregnancy Mortality Surveillance System; Global ratios (2015): UNICEF

When implicit bias outweighs wealth

- "When black women expressed concern about their symptoms, clinicians were more delayed and seemed to believe them less"

- The experiences of prominent black women may prove to be a teachable moment
  - Beyoncé (pre-eclampsia 60% higher in AA)

- Implicit bias is a social determinant of health

Harvard Public Health Magazine, February 2019

"Weathering"

Arline Geronimus

- Concept to describe how social disadvantage corrodes health
- In public health, the condition of a baby is considered a reliable proxy for the health of the mother, but . . .
  - IMR high in teens, lower in 20s, rises in mid-30s…
  - AA rate double white rate in mid-20s, essentially no safe age for AA women to have children

Harvard Public Health Magazine, February 2019

Black women consistently higher risk of infant mortality at every age

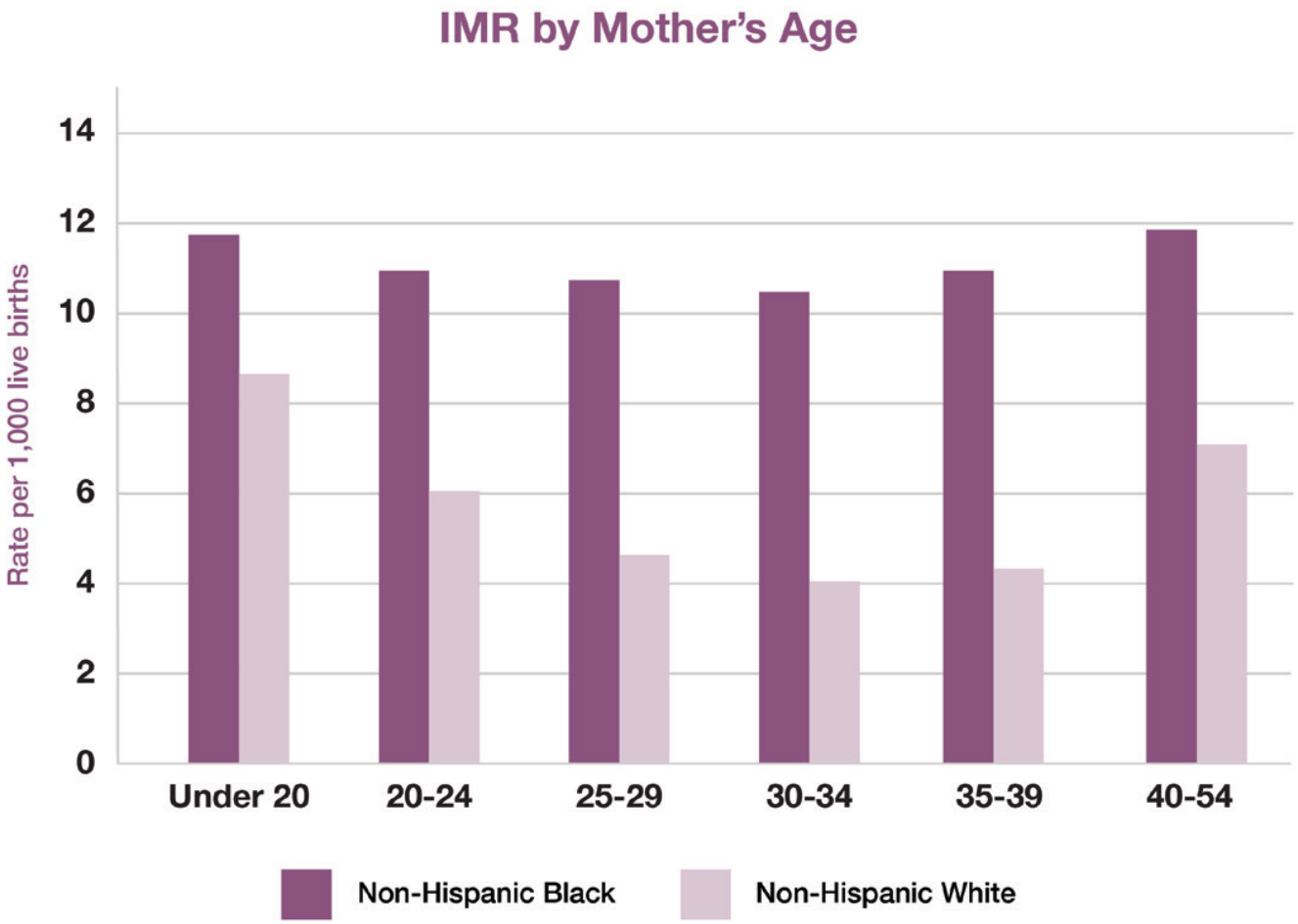


Figure 1. Source: CDC 2015. Infant Mortality Statistics from the 2013 Period Linked Birth/Infant Death Data Set. National Vital Statistics Reports.

Biologic connection to “weathering”

- Allostatic load: cortisol response to chronic stress, pro-inflammatory cytokines release
  - Chronic stress overloads cortisol negative feedback loop in HPA axis
  - HTN, DM, depression, sleep deprivation become more common at younger age
  - Risky coping behaviors increase (eat/drink/smoke)

- Allostatic load causes cells to divide faster to keep repairing themselves, causes early deterioration of organs and tissues . . . i.e. premature aging

Harvard Public Health Magazine, February 2019

Heckler Report (1985)

- Black babies were twice as likely to die within their 1st year as white babies
- Baby's health related to the health of the mother, health of the mother related to her community/circumstances of life

- UN (2008): improve access to maternal health care, family planning, and sexuality education and information

- 2012 Amnesty International : "Preventable maternal mortality can result from or reflect violations of a variety of human rights, including the right to life, the right to freedom from discrimination, and the right to the highest attainable standard of health."

Report of the Secretary's Task Force on Black and Minority Health , HHS, 1985

Where has this brought us to today?

- “Racism is an undeniable thread running through the stories of black mothers who die”
- “Providers & researchers often place the onus for large-scale change on individuals rather than the systems that we know cause harm.”
- “Race is not a risk factor. It is the lived experience of being a black woman in this society that is the risk factor.”

The United Nations Committee on the Elimination of Racial Discrimination , 2019

THE BLACK WOMEN'S HEALTH STUDY

- 2019 is 23rd yr: cohort of 59,000 AA women
- Early focus on breast CA: AA 40% higher mort.
  - AA develop more ER-negative breast CA
  - Why: non-breastfeeding link; being born in a "Jim Crow state" much higher rate of ER-negative CA
  - Much higher rate sarcoidosis (inflammatory tissue)
- Research has raised public awareness

https://www.bu.edu/bwhs/

A wider view is needed

- Factors considered to be protective for pregnant women do not provide the same benefits for black women
- Solution to racial inequities in maternal mortality is to change the way society works
- In the near term, race should be taken into consideration during prenatal risk screenings
  - Consider AA women may be biologically older than their age; true even among highly educated or professional women (i.e. Serena & Beyoncé)

Serena Williams understands

"I received excellent care overall for my postpartum complications. Imagine all the other women who go through that without the same health care, without the same response."

Policy recommendations

- Support programs on AA women's perinatal and postpartum needs
- Treatment protocols to minimize provider bias
- Enforce laws protecting AA women against discrimination (i.e. more funding to EEOC)
- Increase social support for pregnant AA
  - ACA provided home visit programs
- Comprehensive prenatal education programs
- Promote vaginal birth practices (i.e. midwives)
- Promote lactation & lactation maintenance
  - Expand ACA policy to cover lactation consultants

Smith IZ, Bentley-Edwards KL, El-Amin S, Darity W; Duke University Samuel DuBois Cook Center on Social Equity & Insight Center for Community Economic Development

Research recommendations

- Risk factors that affect black women's maternal and infant health outcomes
- Reasons why protective factors do not improve birth outcomes for black women in the same manner as white women
- Impact of racism-induced stress on health outcomes; identify insulating mechanisms that can be used to decrease it
- Within-race research to isolate the factors that specifically improve outcomes for black women

Smith IZ, Bentley-Edwards KL, El-Amin S, Darity W; Duke University Samuel DuBois Cook Center on Social Equity & Insight Center for Community Economic Development

Education & patient recommendations

- Health education schools better educate on:
  - atypical symptoms of heart disease
  - autoimmune diseases
  - unrecognized side effects of medications that weren't well-tested in women
- Will prevent assumptions and biases becoming self-perpetuating when providers don't see dx
- Women continue to feedback providers on missed dx - power in women seeing/hearing their experiences are similar (i.e. #metoo activism)

Strategies to reduce implicit bias

1. Stereotype replacement: Recognizing response is based on stereotype and consciously adjusting the response
2. Counter-stereotypic imaging: Imagining the individual as the opposite of the stereotype
3. Individuation: Seeing the person as an individual rather than a stereotype (learning their history)
4. Perspective taking: “Putting yourself in the other person’s shoes”
5. Increasing opportunities for contact with individuals from different groups
6. Partnership building: Patient as a collaborating equal

Project Implicit

- Goal: educate the public about hidden biases and to provide a “virtual laboratory” for collecting data on the Internet.
- Take an Implicit Association Test (IAT):
- https://implicit.harvard.edu/implicit/

Weight IAT	*Weight* (**'Fat - Thin' IAT**). This IAT requires the ability to distinguish faces of people who are obese and people who are thin. It often reveals an automatic preference for thin people relative to fat people.
Age IAT	*Age* (**'Young - Old' IAT**). This IAT requires the ability to distinguish old from young faces. This test often indicates that Americans have automatic preference for young over old.
Presidents IAT	*Presidents* (**'Presidential Popularity' IAT**). This IAT requires the ability to recognize photos of Donald Trump and one or more previous presidents.
Race IAT	*Race* (**'Black - White' IAT**). This IAT requires the ability to distinguish faces of European and African origin. It indicates that most Americans have an automatic preference for white over black.
Asian IAT	*Asian American* (**'Asian - European American' IAT**). This IAT requires the ability to recognize White and Asian-American faces, and images of places that are either American or Foreign in origin.
Religion IAT	*Religion* (**'Religions' IAT**). This IAT requires some familiarity with religious terms from various world religions.
Gender-Career IAT	*Gender - Career*. This IAT often reveals a relative link between family and females and between career and males.
Sexuality IAT	*Sexuality* (**'Gay - Straight' IAT**). This IAT requires the ability to distinguish words and symbols representing gay and straight people. It often reveals an automatic preference for straight relative to gay people.
Native IAT	*Native American* (**'Native - White American' IAT**). This IAT requires the ability to recognize White and Native American faces in either classic or modern dress, and the names of places that are either American or Foreign in origin.
Disability IAT	*Disability* (**'Disabled - Abled' IAT**). This IAT requires the ability to recognize symbols representing abled and disabled individuals.
Skin-tone IAT	*Skin-tone* (**'Light Skin - Dark Skin' IAT**). This IAT requires the ability to recognize light and dark-skinned faces. It often reveals an automatic preference for light-skin relative to dark-skin.
Weapons IAT	*Weapons* (**'Weapons - Harmless Objects' IAT**). This IAT requires the ability to recognize White and Black faces, and images of weapons or harmless objects.
Arab-Muslim IAT	*Arab-Muslim* (**'Arab Muslim - Other People' IAT**). This IAT requires the ability to distinguish names that are likely to belong to Arab-Muslims versus people of other nationalities or religions.
Gender-Science IAT	*Gender - Science*. This IAT often reveals a relative link between liberal arts and females and between science and males.

Thank you!

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