# Socioeconomic Consequences of Health Disparities

Altaf Saadi, MD MSc @AltafSaadiMD
Massachusetts General Hospital, Harvard Medical

Health Disparities April 16-17, 2021

# Disclosures

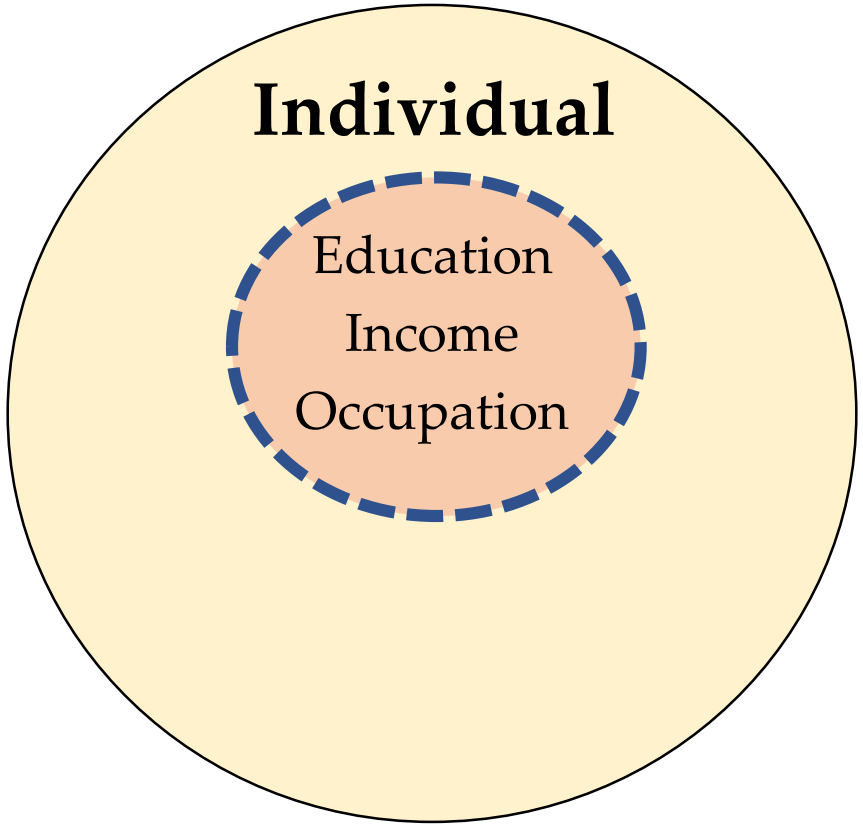
- No relevant commercial interest or financial relationship disclosures.

# Outline

- Socioeconomic status: a definition
- Role of SES and health at multiple levels
- Bidirectional relationship of SES on health
- Economic cost of health disparities
- ROI when addressing social determinants of health

# Defining SES?

"The differential access (realized and potential) to desired resources" (Oakes & Rossi 2003)

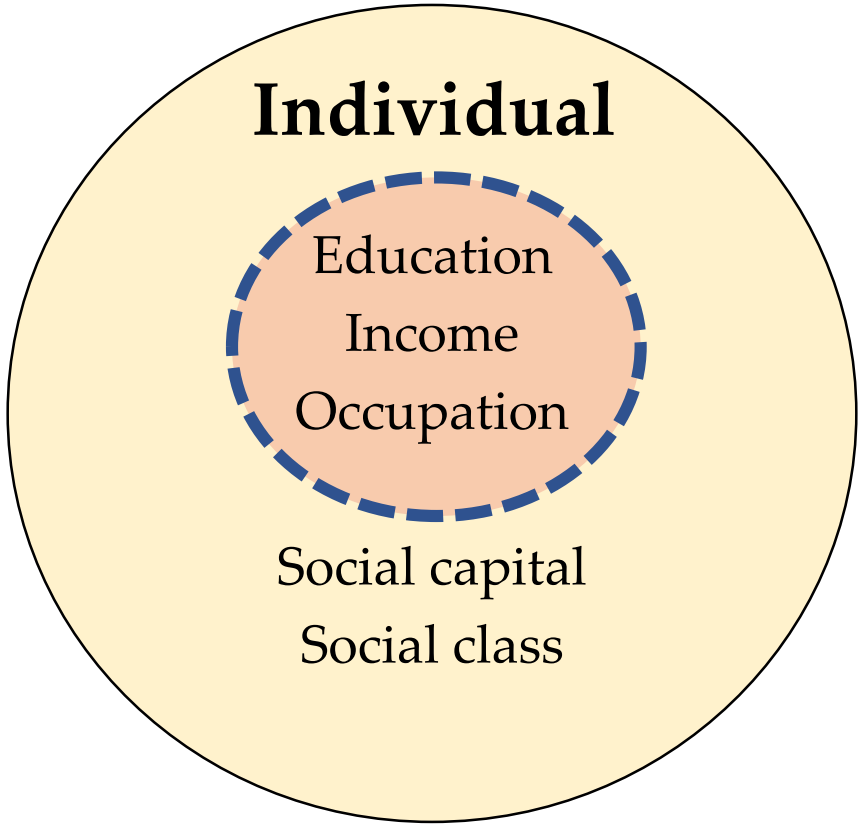



# That was no typo: The median net worth of black Bostonians really is $8

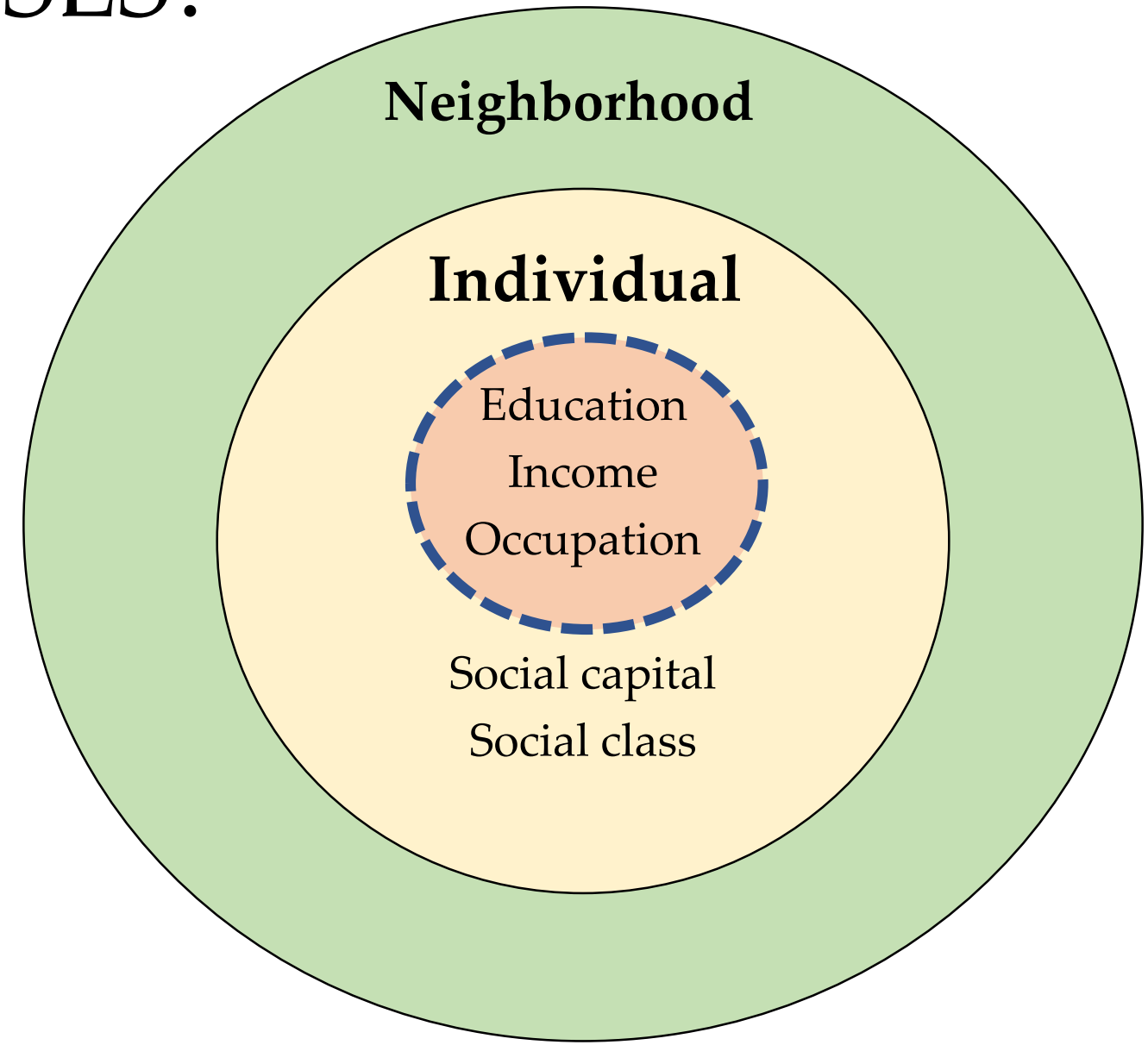
By **Akilah Johnson** Globe Staff, December 11, 2017, 4:24 p.m.

# Defining SES?

"The differential access (realized and potential) to desired resources" (Oakes & Rossi 2003)



# Defining SES?



The NEW ENGLAND JOURNAL of MEDICINE



Special Article

# NEIGHBORHOOD OF RESIDENCE AND INCIDENCE OF CORONARY HEART DISEASE

ANA V. DIEZ ROUX, M.D., PH.D., SHARON STEIN MERKIN, M.H.S., DONNA ARNETT, PH.D., LLOYD CHAMBLESS, PH.D., MARK MASSING, M.D., PH.D., F. JAVIER NIETO, M.D., PH.D., PAUL SORLIE, PH.D., MOYSES SZKLO, M.D., DR.P.H., HERMAN A. TYROLER, M.D., AND ROBERT L. WATSON, PH.D.

**Even after controlling for personal income, education, and occupation, we found that living in a disadvantaged neighborhood is associated with an increased incidence of coronary heart disease.**

From: **The Burden of Cardiovascular Diseases Among US States, 1990-2016**
JAMA Cardiol. 2018;3(5):375-389. doi:10.1001/jamacardio.2018.0385

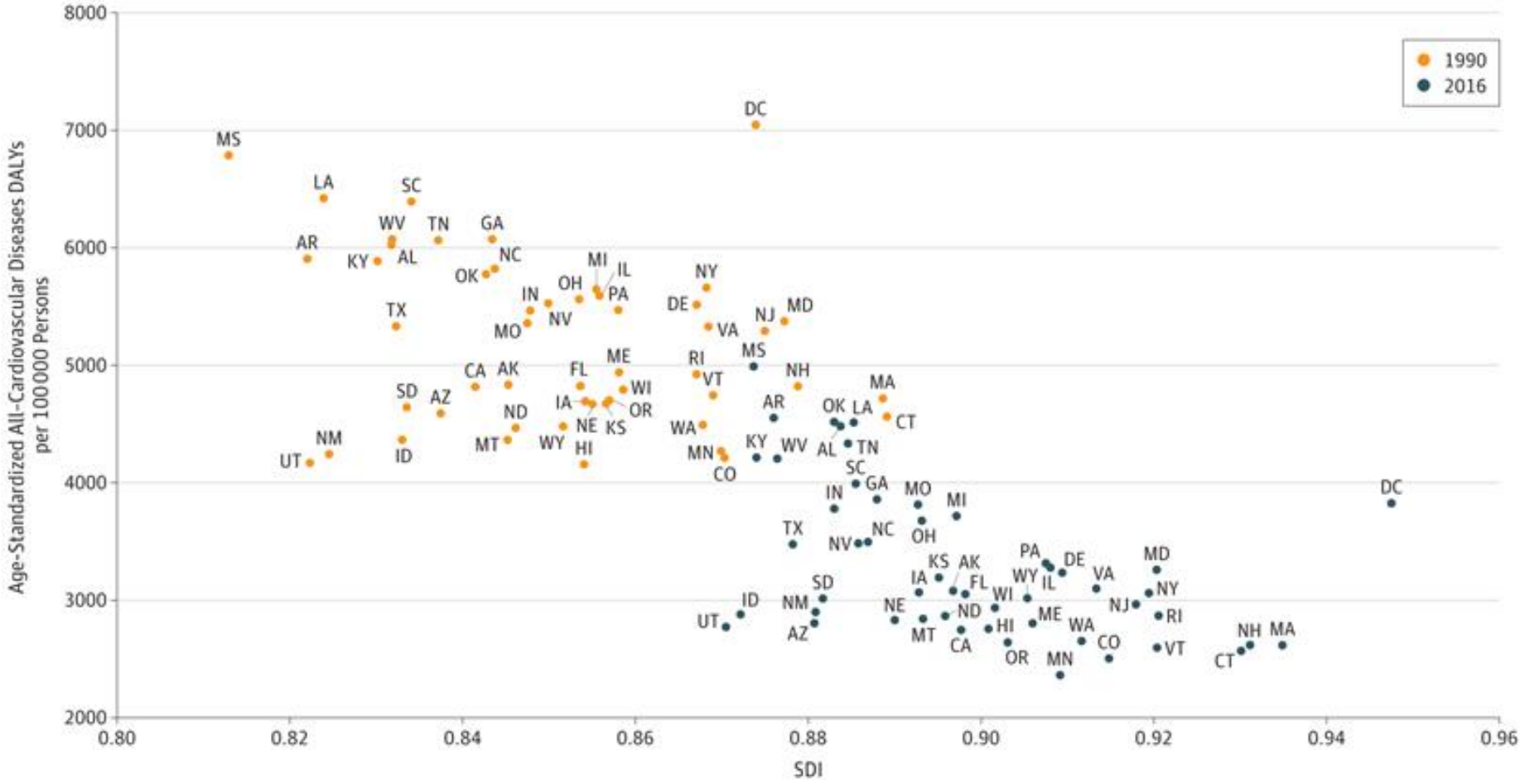
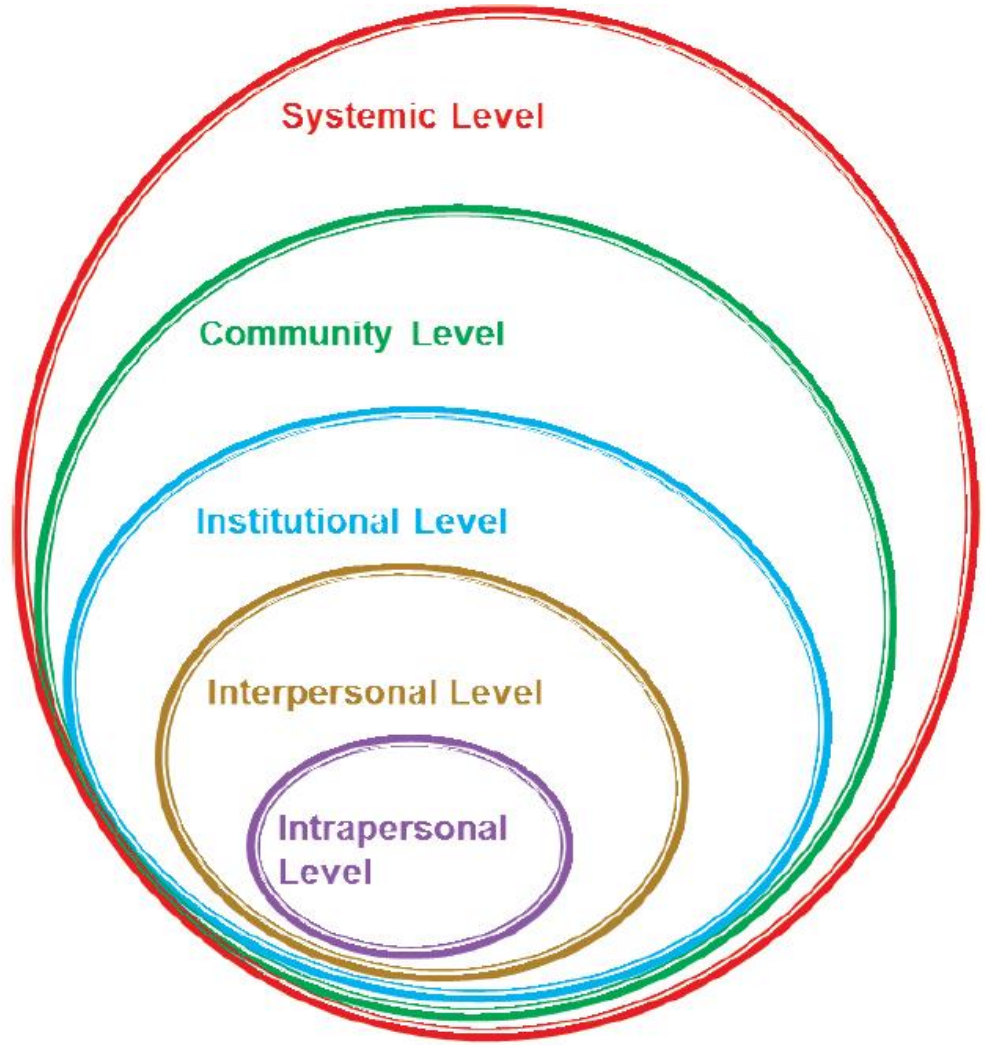



Figure Legend:

Scatterplot of Age-Standardized Cardiovascular Disease Disability-Adjusted Life-Years (DALYs) per 100 000 Persons and Sociodemographic Index (SDI) in 1990 and 2016To provide a consistent comparison by socioeconomic status, an SDI was estimated by state using equally weighted age-sex-state-year–specific geometric means of income per capita, educational attainment, and total fertility rate.


Systemic Level
Community Level
Institutional Level
Interpersonal Level
Intrapersonal Level

# SES at the interpersonal level

- Physicians are less likely to perceive low SES patients as: **intelligent**, **independent**, **responsible**, or **rational**

- Physicians are more likely to believe that low SES patients are less likely to comply with medical advice and return for follow-up visits.

- For low SES patients, physicians delay diagnostic testing and avoid referral to specialty care for.

**How Socioeconomic Status Affects Patient Perceptions of Health Care: A Qualitative Study**

Nicholas C. Arpey, Anne H. Gaglioti, Marcy E. Rosenbaum

First Published March 8, 2017 | Research Article | Find in PubMed | Check for updates
https://doi.org/10.1177/2150131917697439

- Participants used a variety of negative words and phrases to describe how they perceived their doctor viewed and treated them because of their SES: *a customer, on the back burner, bottom feeder, bum, another cog in the wheel, dollar bill, leech, livestock, a number on a file, peasant,* and *scum*.

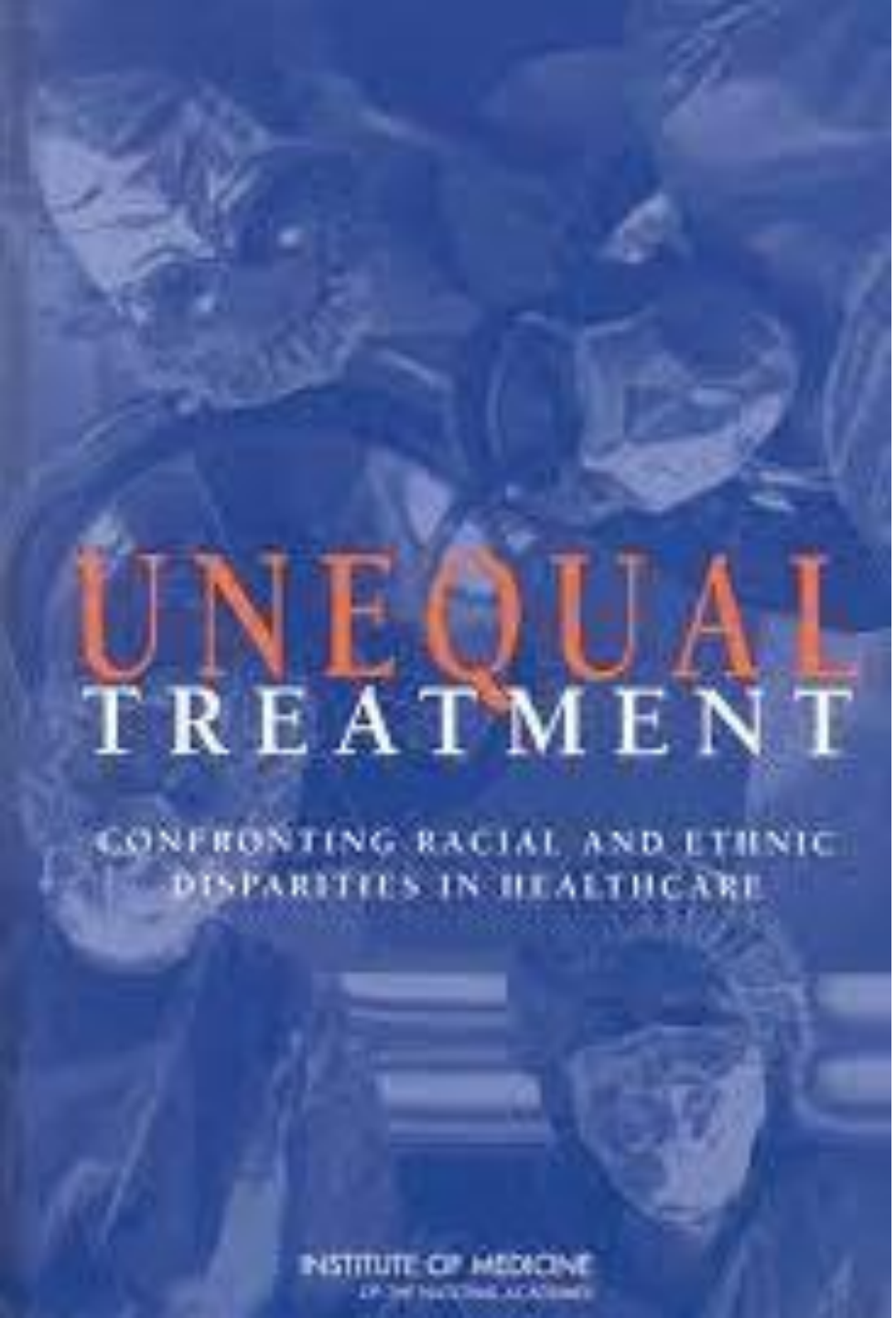
- *"I don't think the doctors listen to you the same as if you were a paying customer or if you had different insurance. It's like you say something and they just kinda skip over it and ignore you."*

# SES at institutional and systemic levels

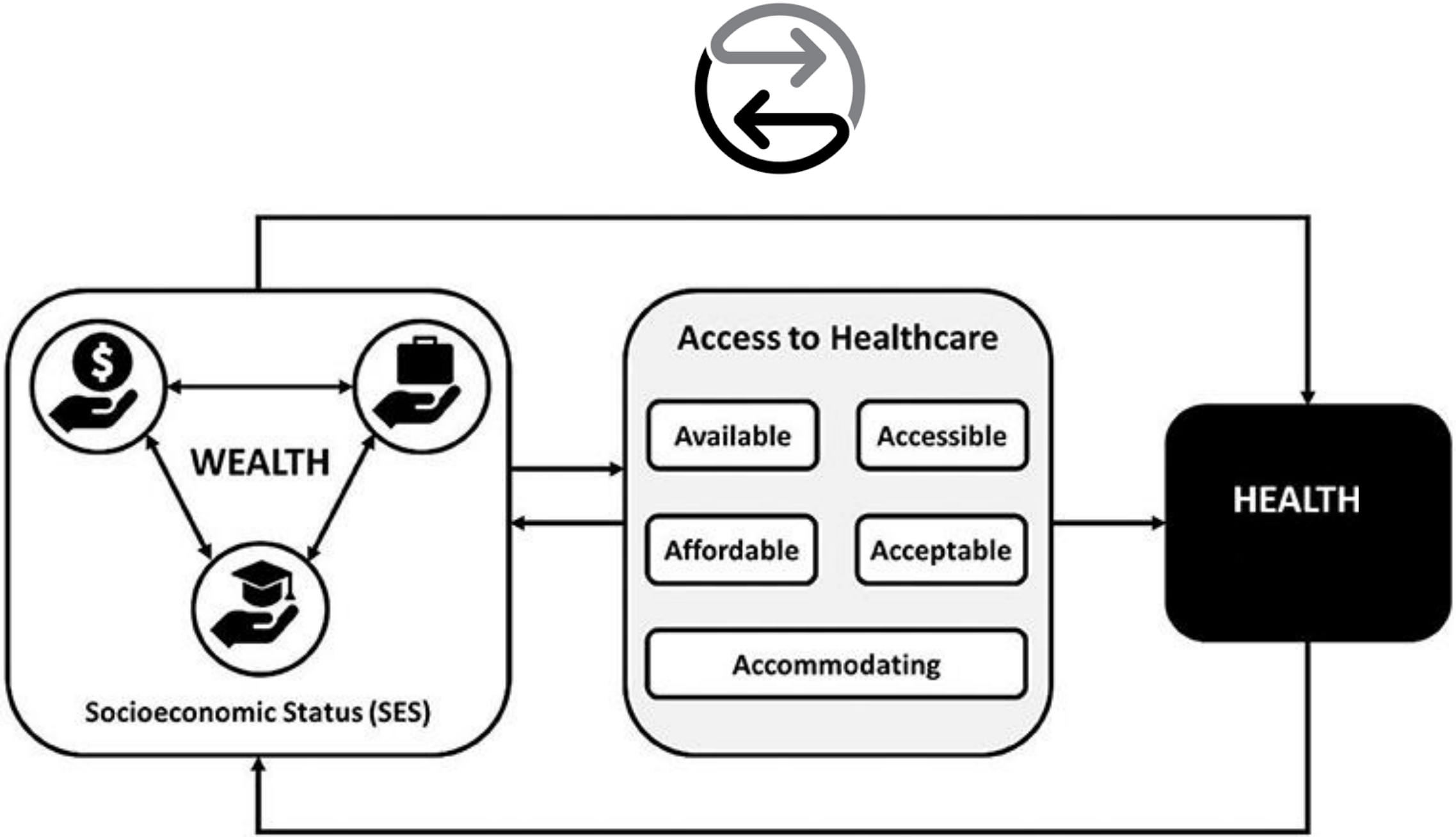
- Hospitals and providers may not care for patients of lower SES with publicly financed insurance due to low reimbursement rates.

- Racism has restricted socioeconomic attainment for members of minority groups.

  *"Race is an antecedent and determinant of SES, and racial differences in SES reflect, in part, the successful implementation of discriminatory policies premised on the inferiority of certain racial groups."* –David Williams, PhD




"Even when they have the same health insurance benefits and socioeconomic status, and when comorbidities, stage of presentation, and other confounding variables are controlled for, members of racial and ethnic minority groups in the United States often receive lower quality health care than do their white counterparts."


WEALTH
Socioeconomic Status (SES)
Access to Healthcare
Available
Accessible
Affordable
Acceptable
Accommodating
HEALTH

**Patient and caregiver productivity loss and indirect costs associated with cardiovascular events in Europe**

Kornelia Kotseva, Laetitia Gerlier, Eduard Sidelnikov, Lucie Kutikova, Mark Lamotte, Pierre Amarenco, Lieven Annemans

Show less

First Published April 6, 2019 | Research Article | Find in PubMed | Check for updates

https://doi.org/10.1177/2047487319834770

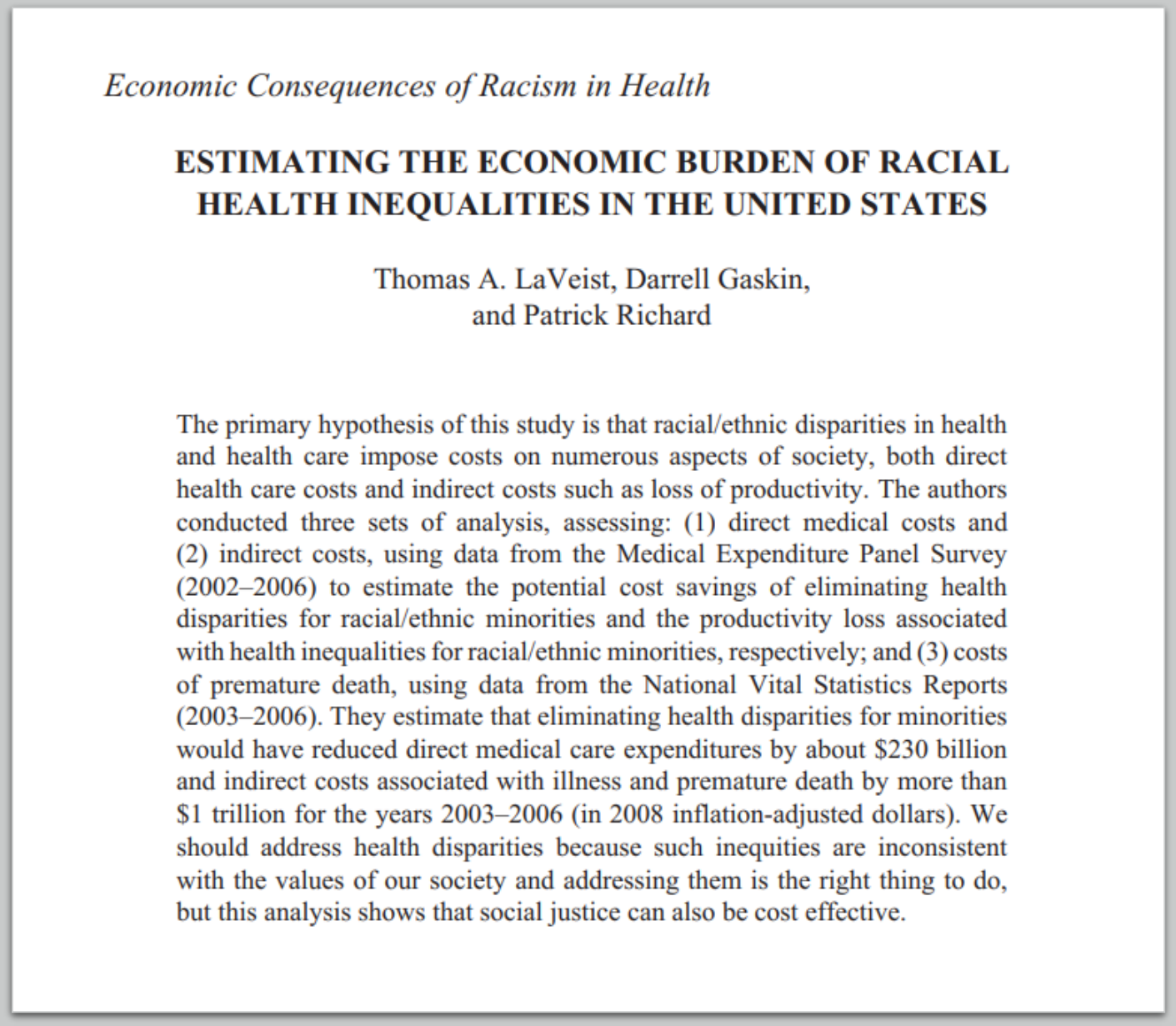
- 394 patients from 7 European countries (196 with ACS – 86% had heart attacks; 198 with strokes – 99% ischemic)
- Patients returned to work 3 to 12 months after the event
- Value of time lost calculated based on each country's labor costs in 2018.
  - Heart patients lost 59 days of work in their first year after an event, and caregivers lost 11 days= average cost of €13,953 ($16,425).
  - Stroke patients lost 56 days of work and caregivers lost 12 days= average cost of €13,773 ($16,832).

# Economic burden of racial disparities

- Direct health care costs
- Indirect costs (e.g. loss of productivity, premature death)

**Eliminating health disparities would have reduced direct medical care expenditures by $229.4 billion between 2003-2006.**

**Eliminating health disparities for minorities would have reduced indirect costs by $1.24 trillion dollars between 2003-2006.**



*Economic Consequences of Racism in Health*

**ESTIMATING THE ECONOMIC BURDEN OF RACIAL HEALTH INEQUALITIES IN THE UNITED STATES**

Thomas A. LaVeist, Darrell Gaskin,
and Patrick Richard

The primary hypothesis of this study is that racial/ethnic disparities in health and health care impose costs on numerous aspects of society, both direct health care costs and indirect costs such as loss of productivity. The authors conducted three sets of analysis, assessing: (1) direct medical costs and (2) indirect costs, using data from the Medical Expenditure Panel Survey (2002–2006) to estimate the potential cost savings of eliminating health disparities for racial/ethnic minorities and the productivity loss associated with health inequalities for racial/ethnic minorities, respectively; and (3) costs of premature death, using data from the National Vital Statistics Reports (2003–2006). They estimate that eliminating health disparities for minorities would have reduced direct medical care expenditures by about $230 billion and indirect costs associated with illness and premature death by more than $1 trillion for the years 2003–2006 (in 2008 inflation-adjusted dollars). We should address health disparities because such inequities are inconsistent with the values of our society and addressing them is the right thing to do, but this analysis shows that social justice can also be cost effective.

Neurology®

June 13, 2017; 88 (24) ARTICLE

# Racial disparities in neurologic health care access and utilization in the United States

Altaf Saadi, David U. Himmelstein, Steffie Woolhandler, Nicte I. Mejia

- Medical Expenditure Panel Survey, 2006 to 2013
- Self-report of neurological condition (patient survey) and ICD-9 codes (provider survey)
- Use of and expenditures for neurologic services
  - Outpatient neurologist visits
  - Inpatient stays
  - Emergency Department (ED) visits

**Table 4** Annual health care utilization of persons with known neurologic conditions according to race and ethnicity, 2006-2013

| | Non-Hispanic white (n = 10,133) | Non-Hispanic black (n = 3,102) | Hispanic (n = 2,711) |
|---|---|---|---|
| **Office-based neurologist visits** | | | |
| Percent of persons with an encounter | 17.21 (16.17-18.25) | 14.38 (12.55-16.21) | 10.79 (9.42-12.16) |
| No. of encounters per 100 persons with a neurologic condition | 43.16 (39.71-46.60) | 34.77 (28.67-40.87) | 27.01 (20.97-33.04) |
| Cost per person with a neurologic condition | $138.78 (113.18-164.39) | $104.10 (81.16-127.04) | $64.30 (28.78-99.82) |
| **Office-based physiatrist visits** | | | |
| No. of encounters per 100 persons with a neurologic condition | 0.95 (0.34-1.57) | 1.59 (0.39-2.79) | 3.02 (0.94-5.09) |
| **Office-based physical and occupational therapist visits for a neurologic diagnosis** | | | |
| No. of encounters per 100 persons with a neurologic condition | 34.22 (25.90-42.54) | 34.61 (22.36-46.85) | 36.13 (0-73.78) |
| **Emergency department visits for a neurologic diagnosis** | | | |
| No. of encounters for a neurologic diagnosis per 100 persons with a neurologic condition | 7.70 (6.91-8.68) | 12.55 (10.52-14.58) | 7.66 (6.23-9.08) |
| **Hospital inpatient discharges** | | | |
| No. of encounters for a neurologic diagnosis per 100 persons with a neurologic condition | 4.50 (3.89-5.12) | 9.39 (7.49-11.28) | 4.69 (3.22-6.16) |
| Per capita cost, USD | $598.98 (486.88-711.08) | $1,485.21 (1,103.03-1,867.40) | $576.36 (329.39-823.33) |

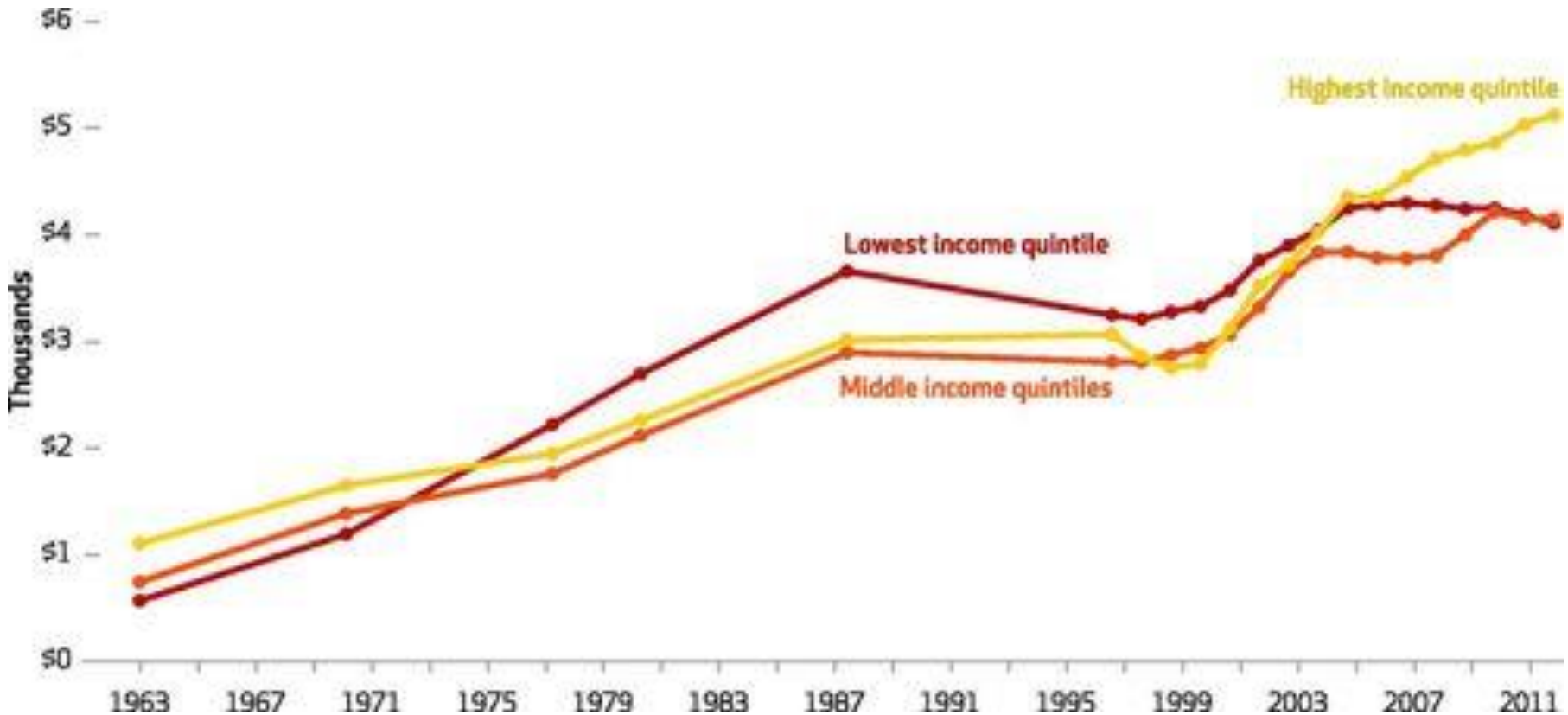
RESEARCH ARTICLE

HEALTH AFFAIRS > VOL. 35, NO. 7: ACA COVERAGE, HEALTH SPENDING & MORE

# Health Spending For Low-, Middle-, And High-Income Americans, 1963–2012

Samuel L. Dickman, Steffie Woolhandler, Jacob Bor, Danny McCormick, David H. Bor, and David U. Himmelstein See fewer authors

**Exhibit 1** Medical spending per capita, by income group, adjusted for inflation



# Beyond Healthcare

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 | Quality of care |
| Medical bills | Playgrounds | Higher education | | Stress | |
| Support | Walkability | | | | |
| | Zip code / geography | | | | |

**Health Outcomes**

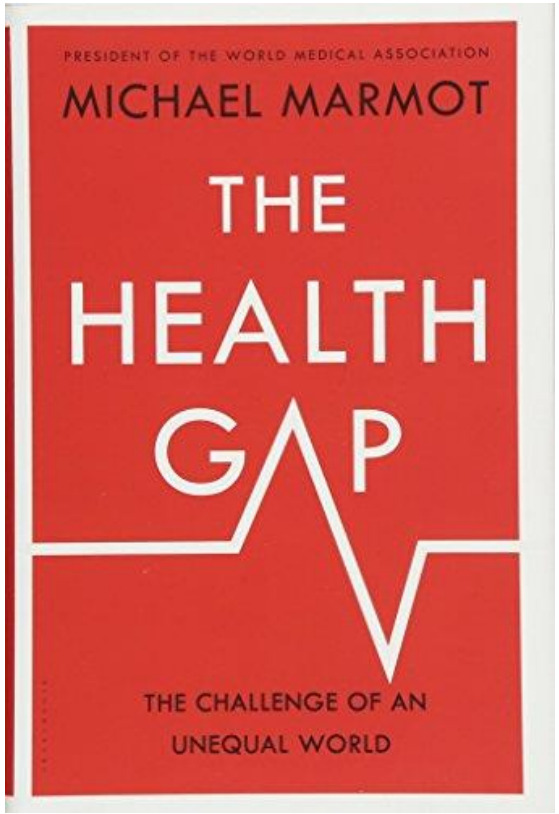
Mortality, Morbidity, Life Expectancy, Health Care Expenditures, Health Status, Functional Limitations

KFF
HENRY J KAISER FAMILY FOUNDATION

# What's the ROI on social determinants investments?

- **Montefiore Health System in Bronx**
  - Invested in housing and saw an annual 300% return on investment
- **Los Angeles County Housing for Health (HFH)**
  - For every $1 invested in the program, LAC saved $1.20
  - Use of emergency visits decreased by 68%, inpatient stays by 77% and outpatient visits by 25%
  - In the year before housing, participants received public services that cost an average of $38,146/ person. After one year of housing, this fell to $15,358.
- **WellCare Health Plans, CommUnity Assistance Line**
  - 26% reduction in emergency spending, 53% decrease in inpatient spending, 23% decrease in outpatient spending
  - $2400 in annual savings per person for people who were successfully connected to social services compared to a control group who were not

# Why treat people and send them back to the conditions that made them sick?



FULL TEXT ARTICLE

# A Systematic Review of Interventions on Patients' Social and Economic Needs

Laura M. Gottlieb MD, MPH, Holly Wing MA and Nancy E. Adler PhD

American Journal of Preventive Medicine, 2017-11-01, Volume 53, Issue 5, Pages 719-729, Copyright © 2017 American Journal of Preventive Medicine

## Evidence synthesis

Screening of 4,995 articles identified 67 studies of 37 programs addressing social needs. Interventions targeted a broad range of social needs and populations. Forty studies involved non-experimental designs. There was wide heterogeneity in outcome measures selected. More studies reported findings associated with process (69%) or social or economic determinants of health (48%) outcomes than health (30%) or healthcare utilization or cost (27%) outcomes. Studies reporting health, utilization, or cost outcomes reported mixed results.

## Conclusions

Healthcare systems increasingly incorporate programs to address patients' social and economic needs in the context of care. But evaluations of these programs to date focus primarily on process and social outcomes and are often limited by poor study quality. Higher-quality studies that include common health and healthcare utilization outcomes would advance effectiveness research in this rapidly expanding field.

# Evidence Review

The Commonwealth Fund
*Affordable, quality health care. For everyone.*

## HOUSING

There is strong evidence that providing people who are homeless, or at risk of becoming homeless, with supportive housing can significantly lower expensive forms of heath care, thereby reducing costs. We found several studies that provided supportive housing — both with and without case management services — to homeless individuals with a medical need like a chronic condition or behavioral health problem. These studies consistently found that housing reduces ED visits, admissions, and inpatient days and results in large decreases in health care costs. Some studies also found significant increases in the receipt of preventive primary care services among those provided housing compared to their counterparts.

A few studies looking at the impact of providing housing to the elderly found — in addition to reductions in hospitalizations and ED visits — large decreases in skilled nursing facility and long-term-care days, which resulted in significant cost savings to Medicare and Medicaid.

Several of the studies found housing can generate an ROI. For example, one study estimated an ROI of $2,249 per person per month, and another estimated for every $1 spent, savings of $1.57.

| Study | Target population | Intervention summary | Type of evidence | Intervention cost | Results on utilization and costs of care |
|---|---|---|---|---|---|
| Basu et al., 2012 | Homeless adults with chronic medical illnesses in Chicago | The housing and case management intervention was based on the Housing First model and offered three components: interim housing at a respite center after hospital discharge, stable housing after recovery from hospitalization, and case management based in study hospital, respite, and housing sites. Study participants were followed for 18 months. | Randomized control trial (n=201 intervention group, 206 usual care group)<br>Strong evidence | Not given | Compared to usual care, the intervention group generated an average annual cost savings of $6,307 per person.<br>Chronically homeless participants in the intervention group generated the highest per person annual cost savings ($9,809). |
| Sadowski et al., 2009 | Homeless adults with chronic medical illnesses in Chicago | Study looked at the effectiveness of a case management and housing program. Intervention group was offered transitional housing after hospital discharge followed by placement in long-term housing. Case management was offered on-site at primary study sites, transitional housing, and stable housing sites. Usual care participants received standard discharge planning from hospital social workers | Randomized control trial (n=201 intervention group, 206 usual care group)<br>Strong evidence | Not given | For every 100 homeless adults offered the intervention, the expected benefits over the next year would be 49 fewer hospitalizations, 270 fewer hospital days, and 116 fewer ED visits.<br>After adjusting for baseline covariates, intervention group, compared to usual care group, had relative reductions of 29% in hospitalizations, 29% in hospital days, and 24% in ED visits. |

# Outline

- Socioeconomic status: a definition
- Role of SES and health at multiple levels
- Bidirectional relationship of SES on health
- Economic cost of health disparities
- ROI when addressing social determinants of health

# Thank you!