CONNECTING THE POLICY DOTS

HOW LIFELONG INCOME AND WEALTH IMPACT HEALTH, LONGEVITY AND ECONOMIC SELF-SUFFICIENCY

Health Policy Institute of Ohio Forum

Making the Connection Between Health and Economic Self Sufficiency

Columbus, Ohio

October 29, 2015

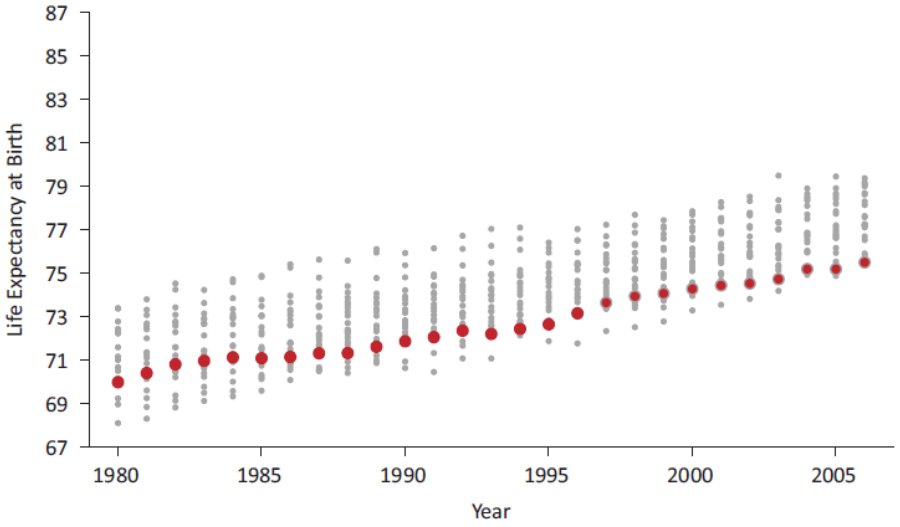
Steven H. Woolf, MD, MPH
VCU Center on Society and Health
Department of Family Medicine and Population Health
Virginia Commonwealth University

Center on Society and Health

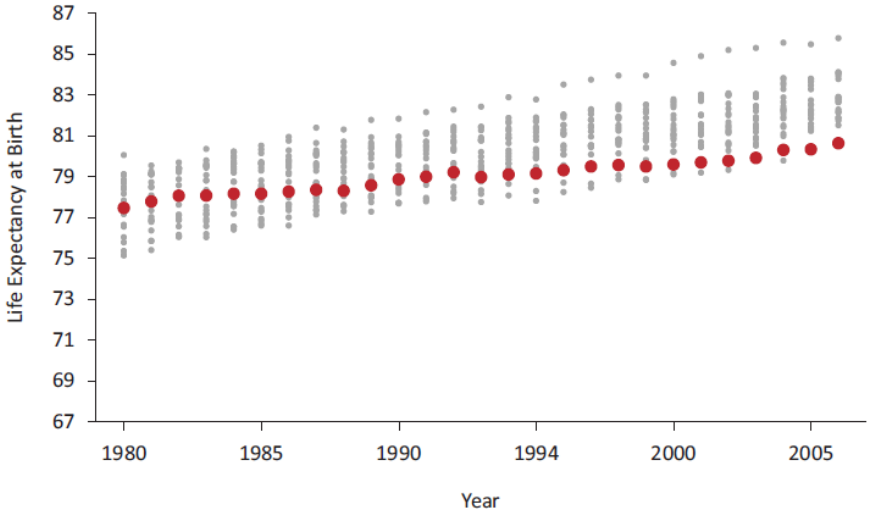
The Problem of Silos

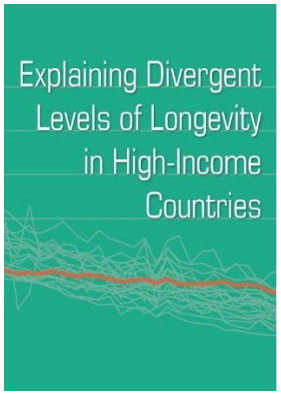
Life Expectancy at Birth in 21 High-Income Countries, 1980-2006

Males



Females





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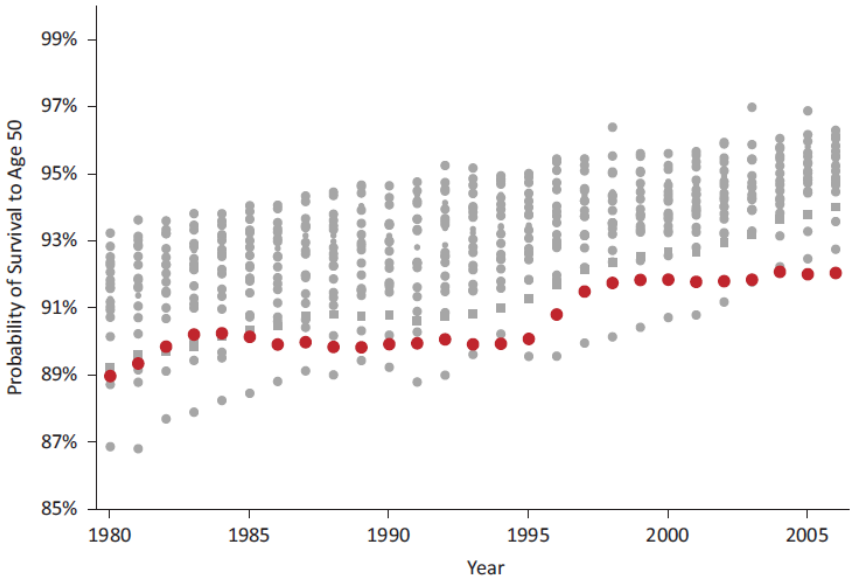
Probability of Survival to Age 50 in 21 High-Income Countries, 1980-2006

Males



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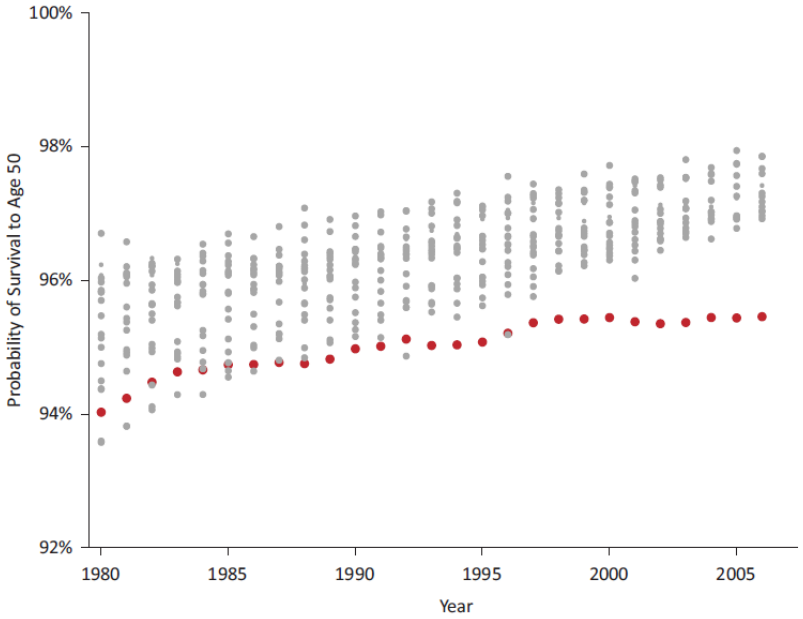

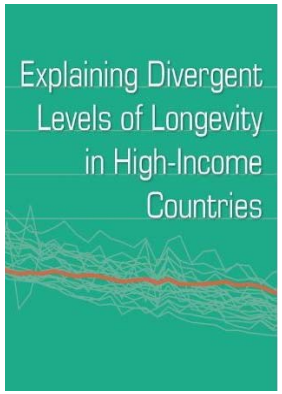

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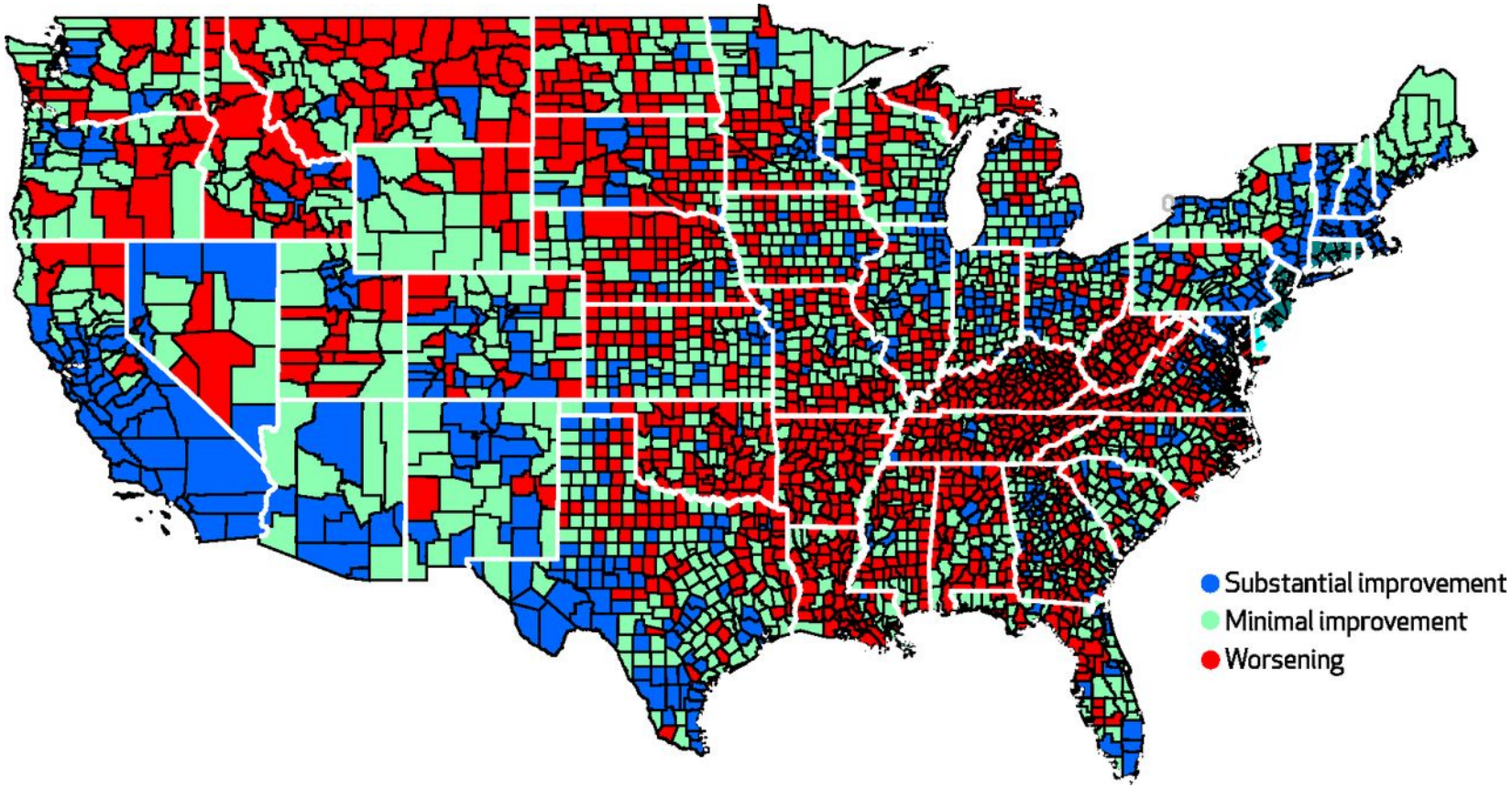
Change In Female Mortality Rates From 1992–96 To 2002–06 In US Counties.



Kindig D A , and Cheng E R Health Aff 2013;32:451-458

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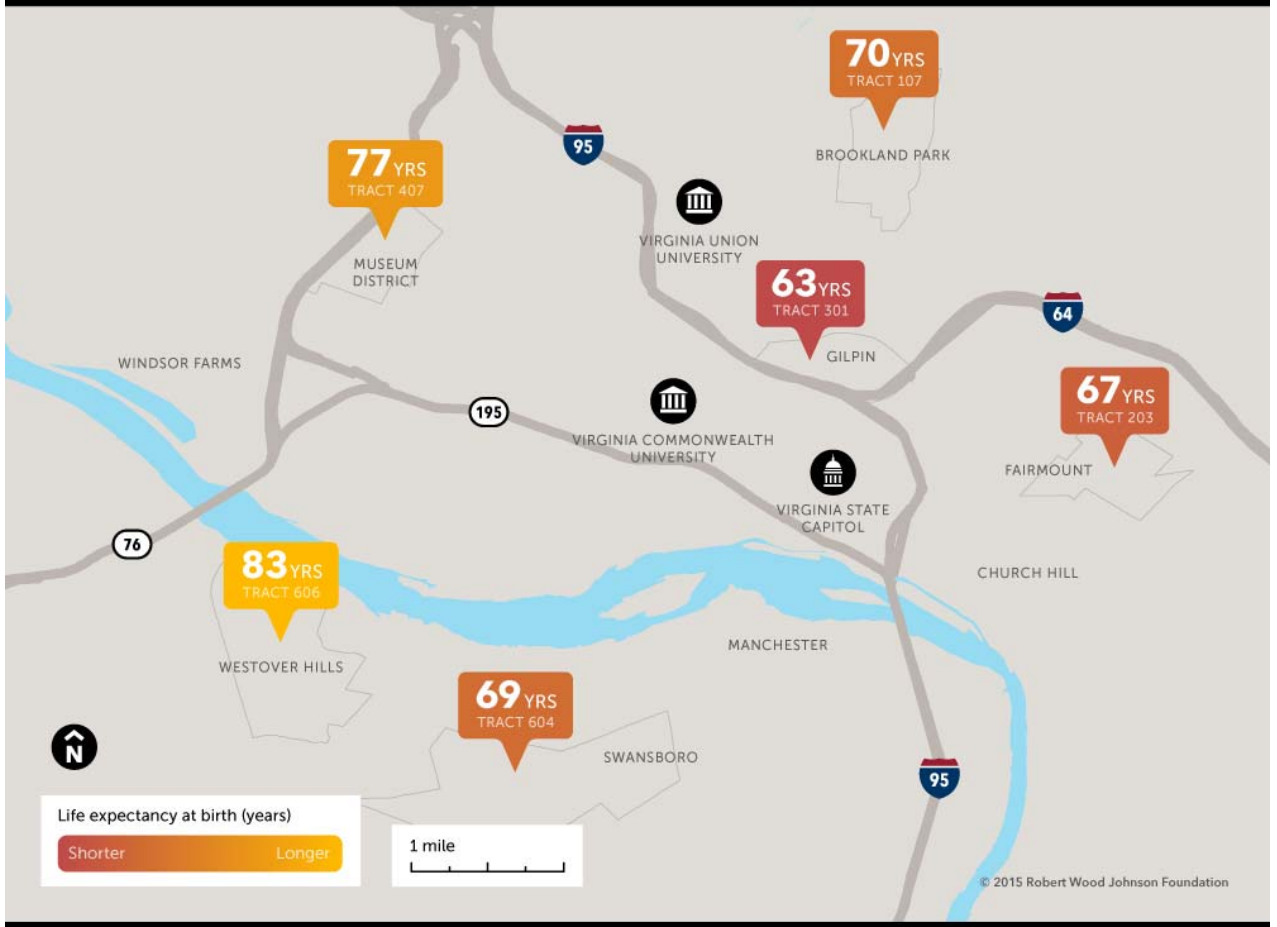
HealthAffairs

RICHMOND, VIRGINIA

Short Distances to Large Gaps in Health

Follow the discussion

#CloseHealthGaps



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Same City, but Very Different Life Spans

By **SABRINA TAVERNISE** and **ALBERT SUN** APRIL 28, 2015

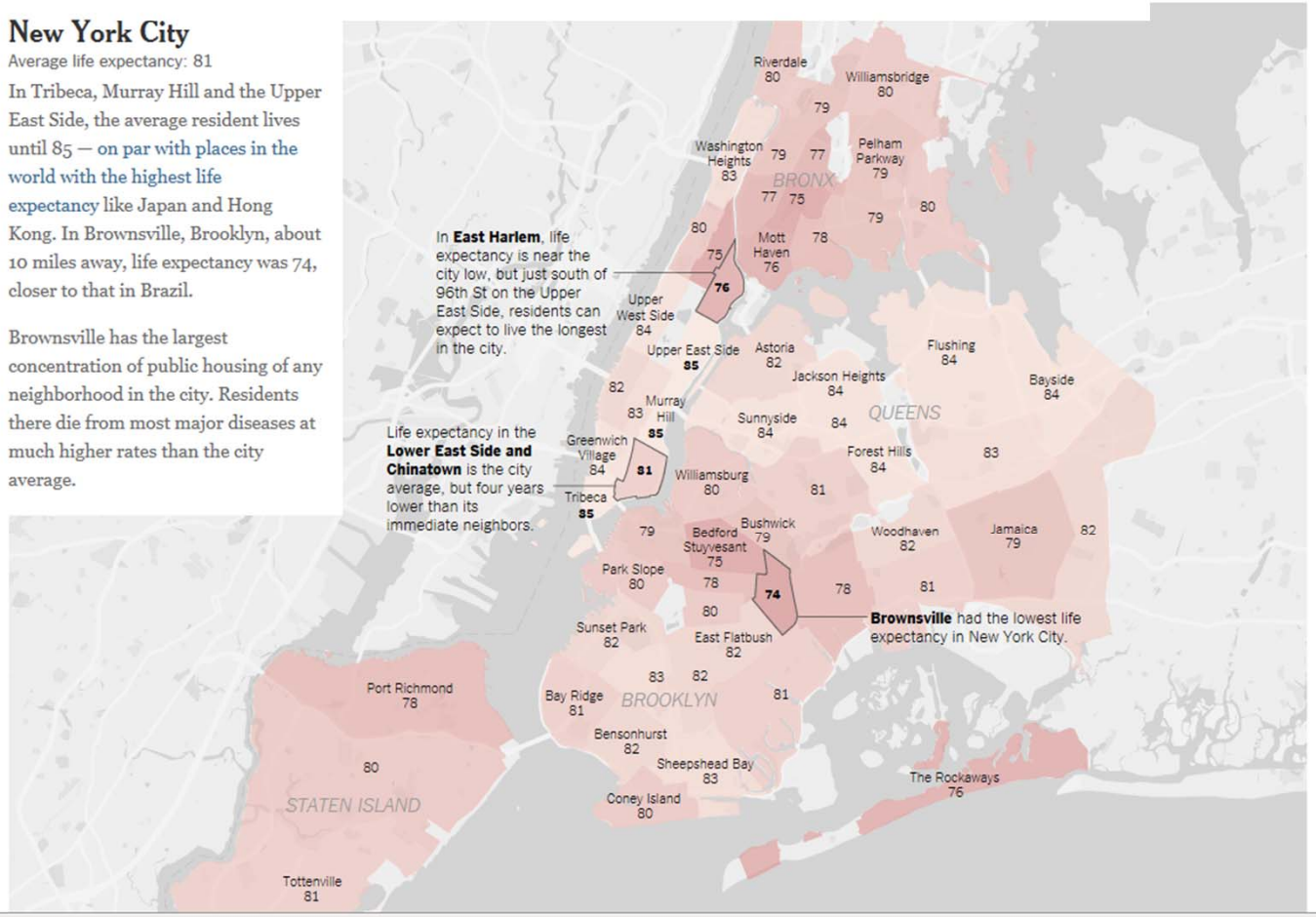
Life expectancy is a measure unlike any other, a sort of X-ray machine that can see through the geography of a city to the bones of a neighborhood's distress. This week, researchers from Virginia Commonwealth University and the Robert Wood Johnson Foundation released life expectancy calculations for four cities, part of a broader series whose aim is to influence social policy.

New York City

Average life expectancy: 81

In Tribeca, Murray Hill and the Upper East Side, the average resident lives until 85 — on par with places in the world with the highest life expectancy like Japan and Hong Kong. In Brownsville, Brooklyn, about 10 miles away, life expectancy was 74, closer to that in Brazil.

Brownsville has the largest concentration of public housing of any neighborhood in the city. Residents there die from most major diseases at much higher rates than the city average.



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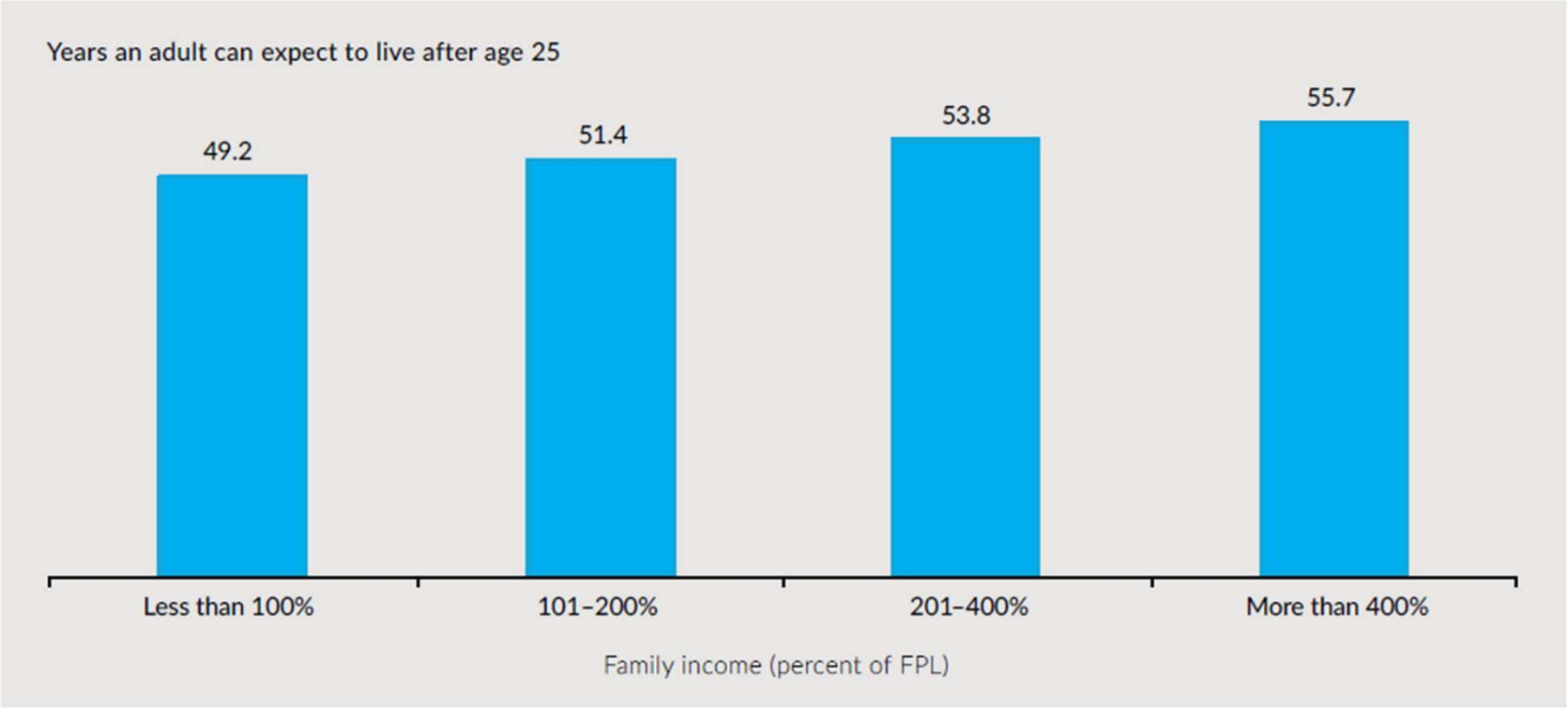
Why the Differences?

- **Education and income** are directly linked to health: Communities with weak tax bases cannot support high-quality schools and jobs are often scare in neighborhoods with struggling economies.
- **Unsafe or unhealthy housing** exposes residents to allergens and other hazards like overcrowding.
- **Stores and restaurants selling unhealthy food** may outnumber markets with fresh produce or restaurants with nutritious food.
- **Opportunities for residents to exercise, walk, or cycle** may be limited and some neighborhoods are unsafe for children to play outside.
- **Proximity to highways, factories, or other sources of toxic agents** expose residents to pollutants.
- **Access to primary care doctors and good hospitals** may be limited.
- **Unreliable or expensive public transit** can isolate residents from good jobs, health and child care, and social services.
- **Residential segregation and features that isolate communities** (e.g., highways) can limit social cohesion, stifle economic growth, and perpetuate cycles of poverty.

Income and Life Expectancy



Source: Paula Braveman, Susan Egerter, and Colleen Barclay, "Income, Wealth and Health," Exploring the Social Determinants of Health, (Princeton, NJ: Robert Wood Johnson Foundation): 2011.

Avertable Deaths Associated With Household Income in Virginia

Steven H. Woolf, MD, MPH, Resa M. Jones, PhD, MPH, Robert E. Johnson, PhD, Robert L. Phillips Jr, MD, MSPH, M. Norman Oliver, MD, Andrew Bazemore, MD, MPH, and Anushree Vichare, MPH

Objectives. We estimated how many deaths would be averted if the entire population of Virginia experienced the mortality rates of the 5 most affluent counties or cities.

Methods. Using census data and vital statistics for the years 1990 through 2006, we applied the mortality rates of the 5 counties/cities with the highest median household income to the populations of all counties and cities in the state.

Results. If the mortality rates of the reference population had applied to the entire state, 24.3% of deaths in Virginia from 1990 through 2006 (range=21.8%–28.1%) would not have occurred. An annual mean of 12954 deaths would have been averted (range=10548–14569), totaling 220211 deaths from 1990 through 2006. In some of the most disadvantaged areas of the state, nearly half of deaths would have been averted.

Conclusions. Favorable conditions that exist in areas with high household incomes exert a major influence on mortality rates. The corollary—that health suffers when society is exposed to economic stresses—is especially timely amid the current recession. Further research must clarify the extent to which individual-level factors (e.g., earnings, education, race, health insurance) and community characteristics can improve health outcomes. (*Am J Public Health.* 2010;100:750–755. doi:10.2105/AJPH.2009.165142)

An extensive literature documents the profound influence of socioeconomic status on life expectancy.[1–4] The notion that social conditions affect health is intuitive to policymakers and the public, but the magnitude of this effect may not be fully appreciated, and our previous work has sought to put it in perspective. For example, we have previously demonstrated on the basis of vital statistics that correcting mortality disparities by race and educational status would save 5 and 8 lives, respectively, for every 1 life saved by biomedical advances.[5,6]

Social determinants exert influences on health through individual and household circumstances as well as through concurrent environmental conditions that exist in areas where people reside.[7–11] People with good jobs, higher incomes, an advanced education, or historically favored racial or ethnic backgrounds experience better health not only because of

Am J Public Health. 2010;100:750-5

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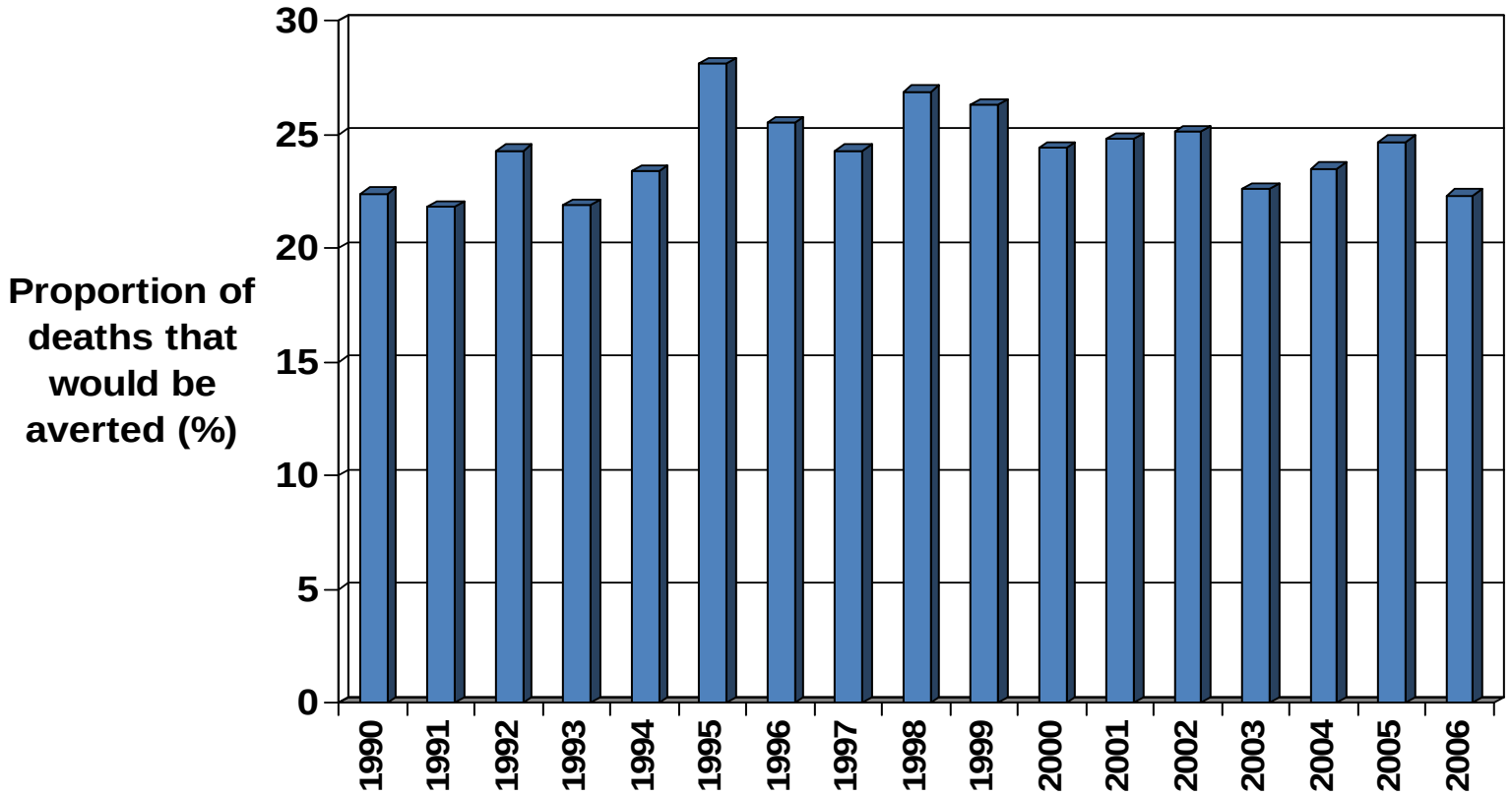
Proportion of Deaths in Virginia Associated With Reduced Household Income



Am J Public Health. 2010;100:750-5

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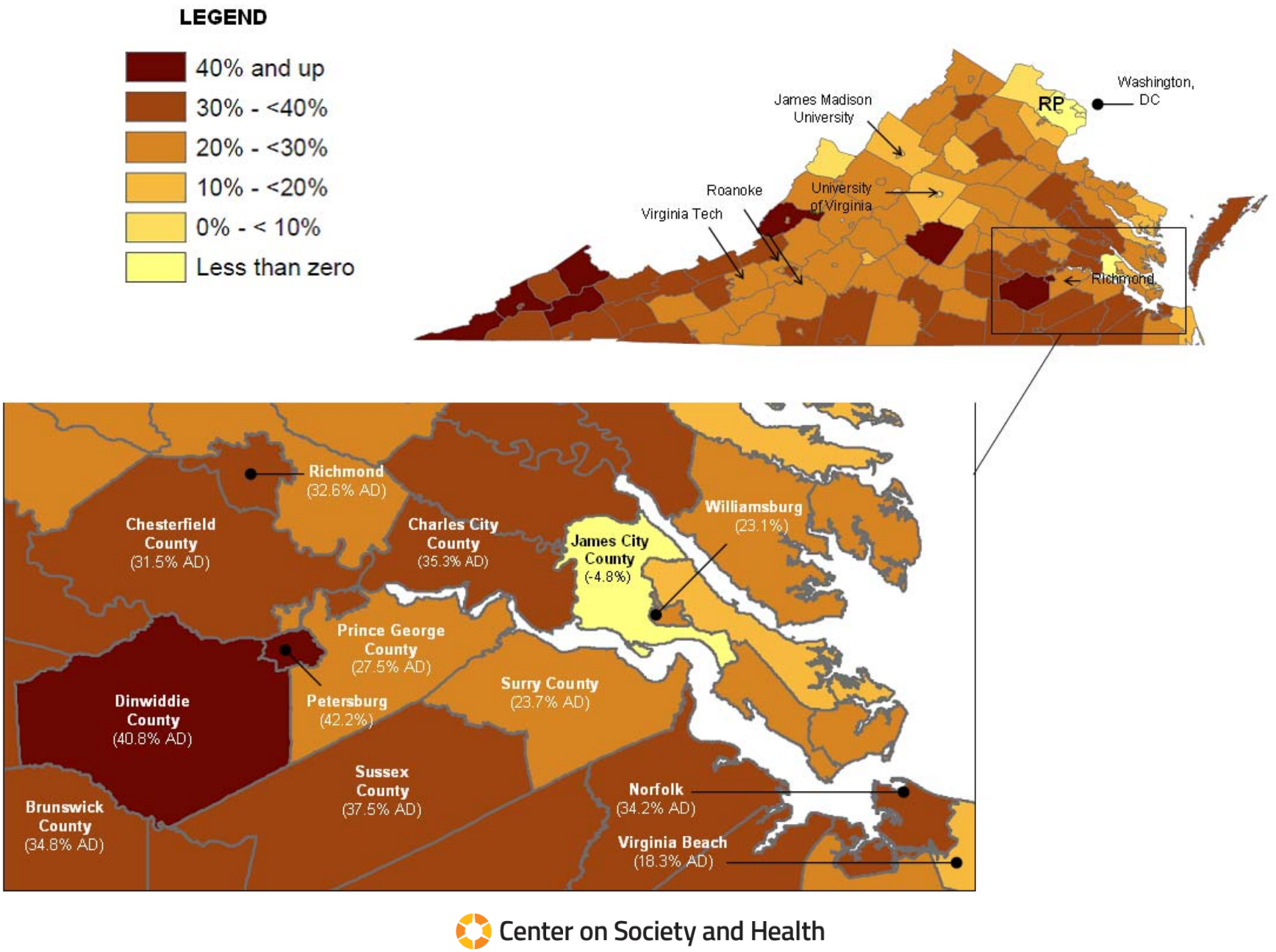

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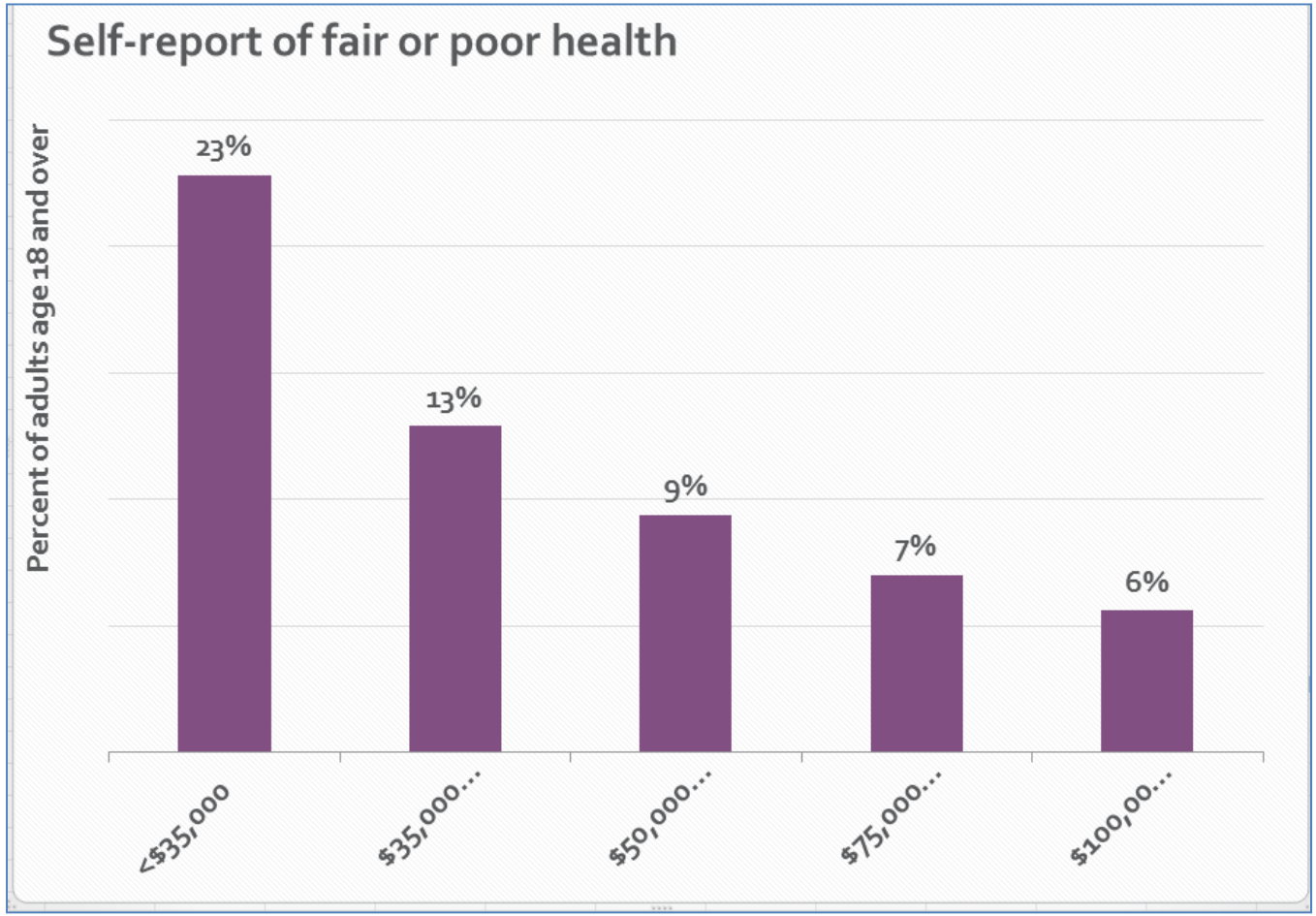
Income and Disease Burden



Income and Disease Burden

DISEASE OR ILLNESS	ANNUAL FAMILY INCOME				
	Less than $35,000	$35,000–49,999	$50,000–74,999	$75,000–99,999	$100,000 or more
Coronary heart disease	8.1	6.5	6.3	5.3	4.9
Stroke	3.9	2.5	2.3	1.8	1.6
Emphysema	3.2	2.5	1.4	1.0	0.8
Chronic bronchitis	6.3	4.0	4.4	2.2	2.4
Diabetes	11.0	10.4	8.3	5.6	5.9
Ulcers	8.7	6.7	6.5	4.7	4.4
Kidney disease	3.0	1.9	1.3	0.9	0.9
Liver disease	2.0	1.6	1.0	0.6	0.7
Chronic arthritis	33.4	30.3	27.9	27.4	24.4
Hearing trouble	17.2	16.0	16.0	16.2	12.4
Vision trouble	12.7	9.8	7.5	5.7	6.6
No teeth	11.6	7.8	5.5	4.2	4.1

Source: J. S., Schiller, J. W. Lucas, and J. A. Peregoy, "Summary Health Statistics for U.S. Adults: National Health Interview Survey, 2011." Vital and Health Statistics 10, no. 256 (2012): 1–207, tables 1, 4, 8, and 12. http://www.cdc.gov/nchs/data/series/sr_10/sr10_256.pdf.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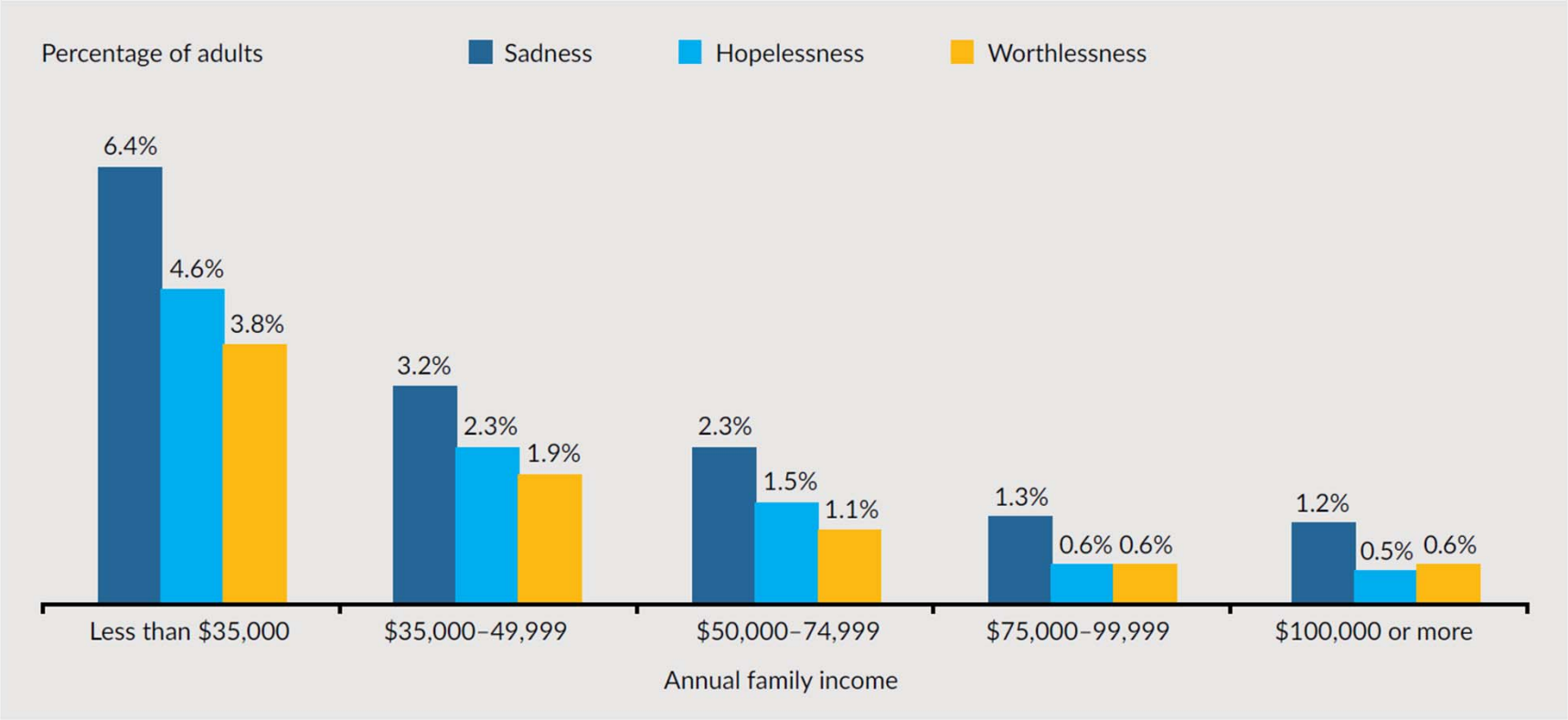
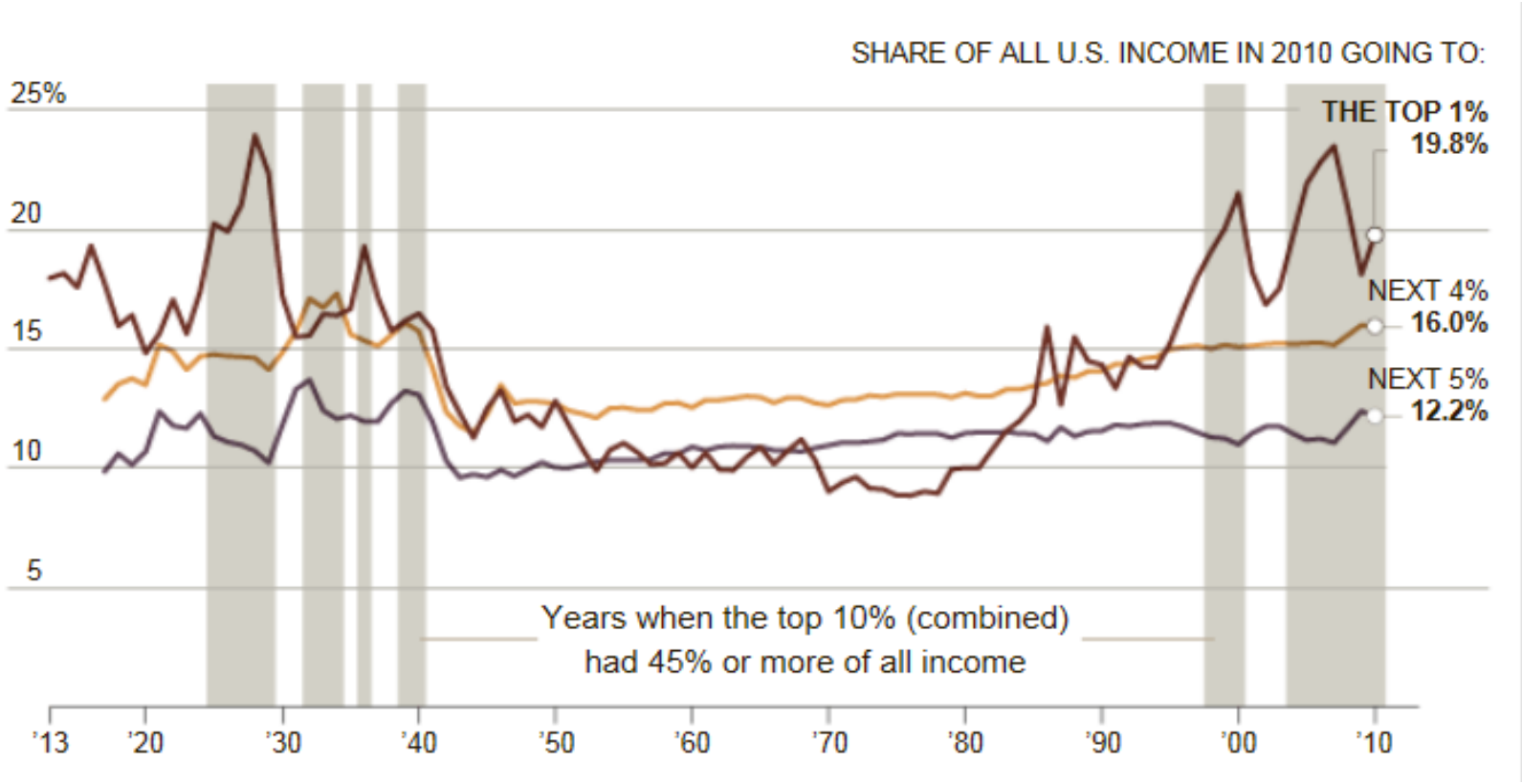
Income and Psychological Wellbeing

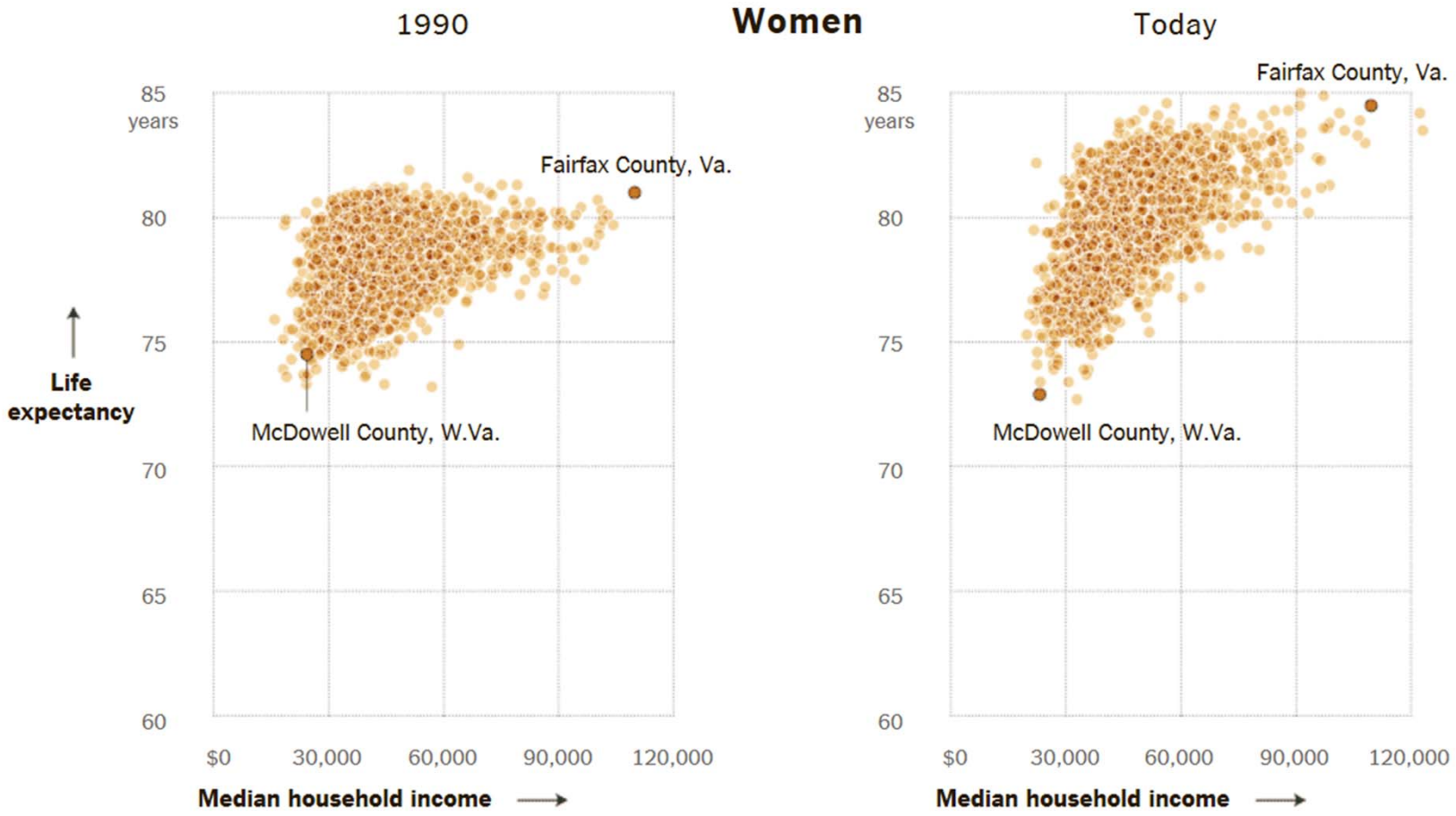


Source: J. S., Schiller, J. W. Lucas, and J. A. Peregoy, "Summary Health Statistics for U.S. Adults: National Health Interview Survey, 2011." Vital and Health Statistics 10, no. 256 (2012): 1–207, table 14. http://www.cdc.gov/nchs/data/series/sr_10/sr10_256.pdf.

Income Inequality



Source: New York Times, April 16, 2012



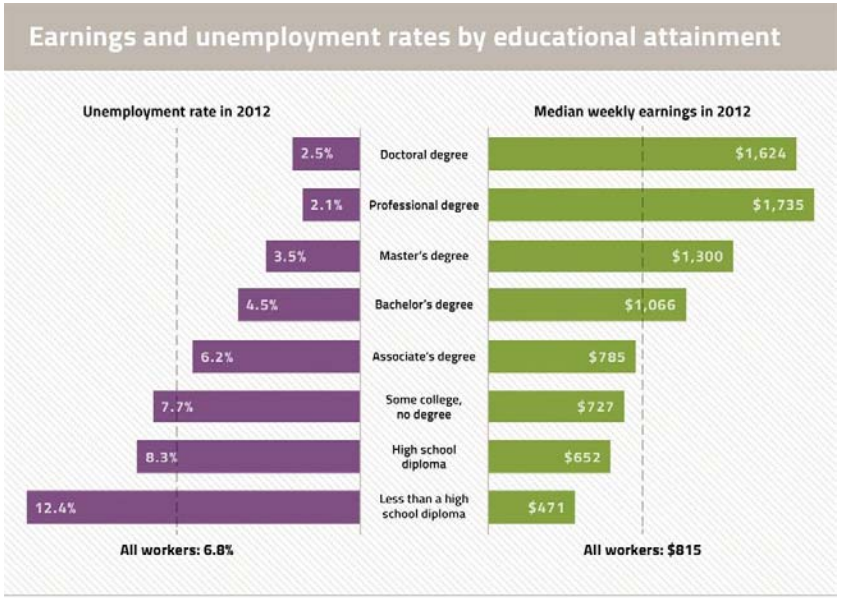
By ALICIA PARLAPIANO

Sources: Institute for Health Metrics and Evaluation (life expectancy); socialexplorer.com (income data from the 1990 decennial Census and 2008-2012 American Community Survey)

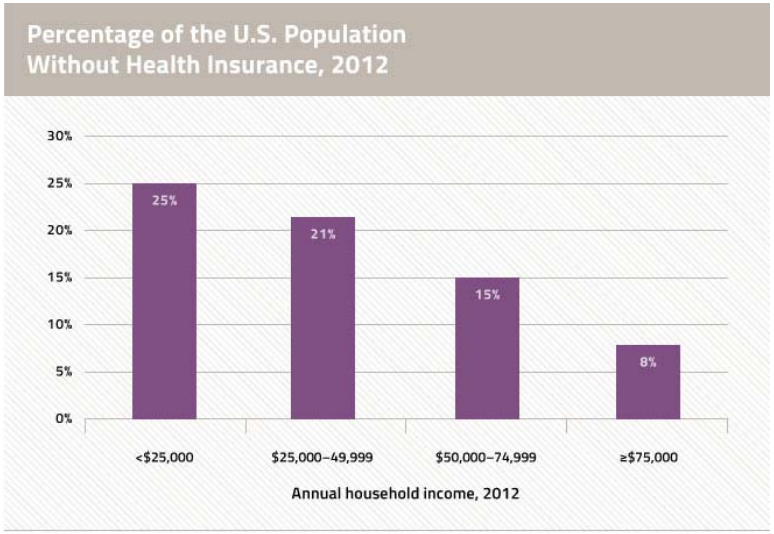
The Health Benefits of Education and Income

- Income and resources
  - Better jobs
  - Higher earnings
  - Resources for good health
- Social/psychological benefits
  - Reduced stress
  - Social/psychological skills
  - Social networks and norms

- Health behaviors
  - Knowledge and information
  - Health skills
- Healthier neighborhoods
  - Access to foods, green space, clean air
  - Access to health care services
  - Lower crime and violence
  - Quality schools and job opportunities



Data from: Bureau of Labor Statistics, Current Population Survey. http://www.bls.gov/emp/ep_chart_001.htm



Data from DeNavas-Walt et al. U.S. Census Bureau. *Income, Poverty, and Health Insurance Coverage in the United States: 2012*, U.S. Government Printing Office, Washington, DC, 2013.

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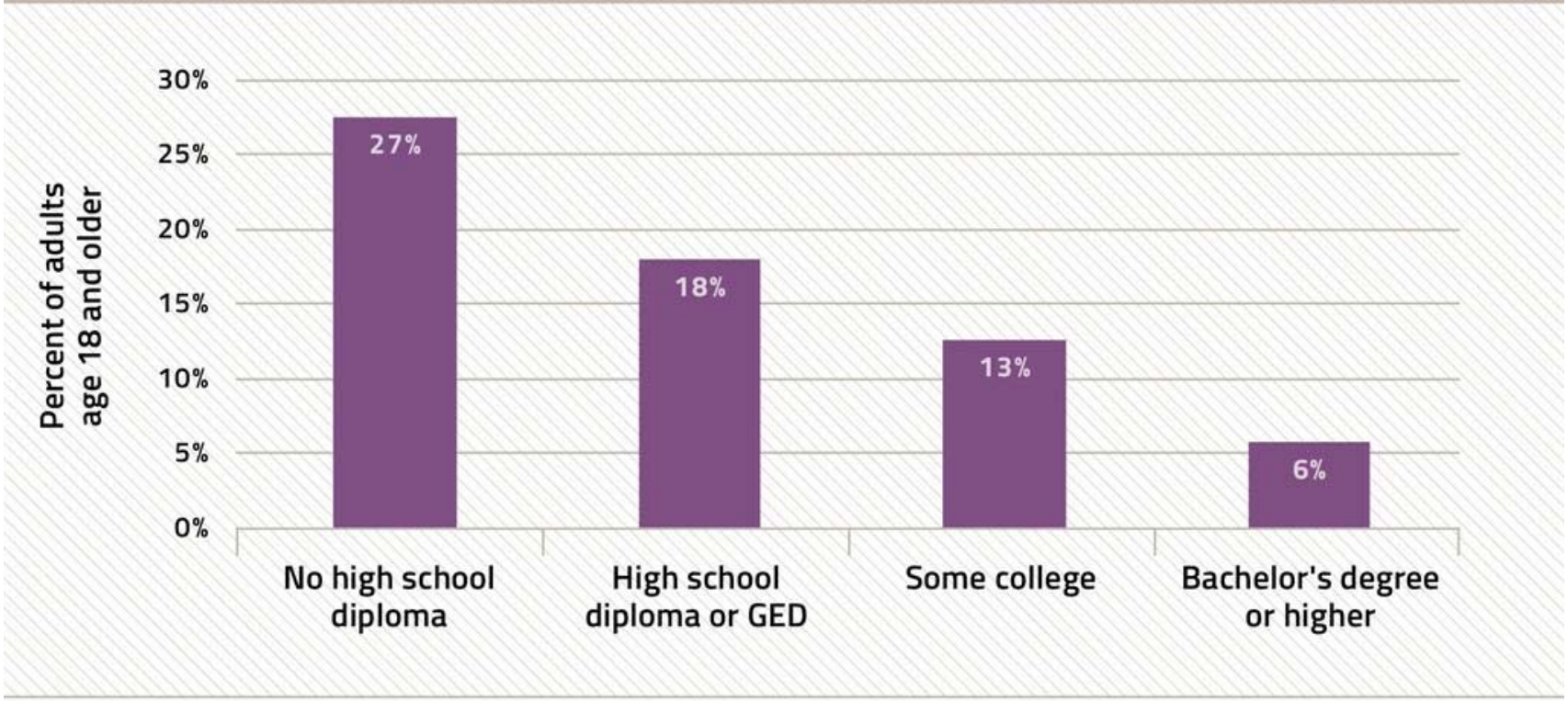
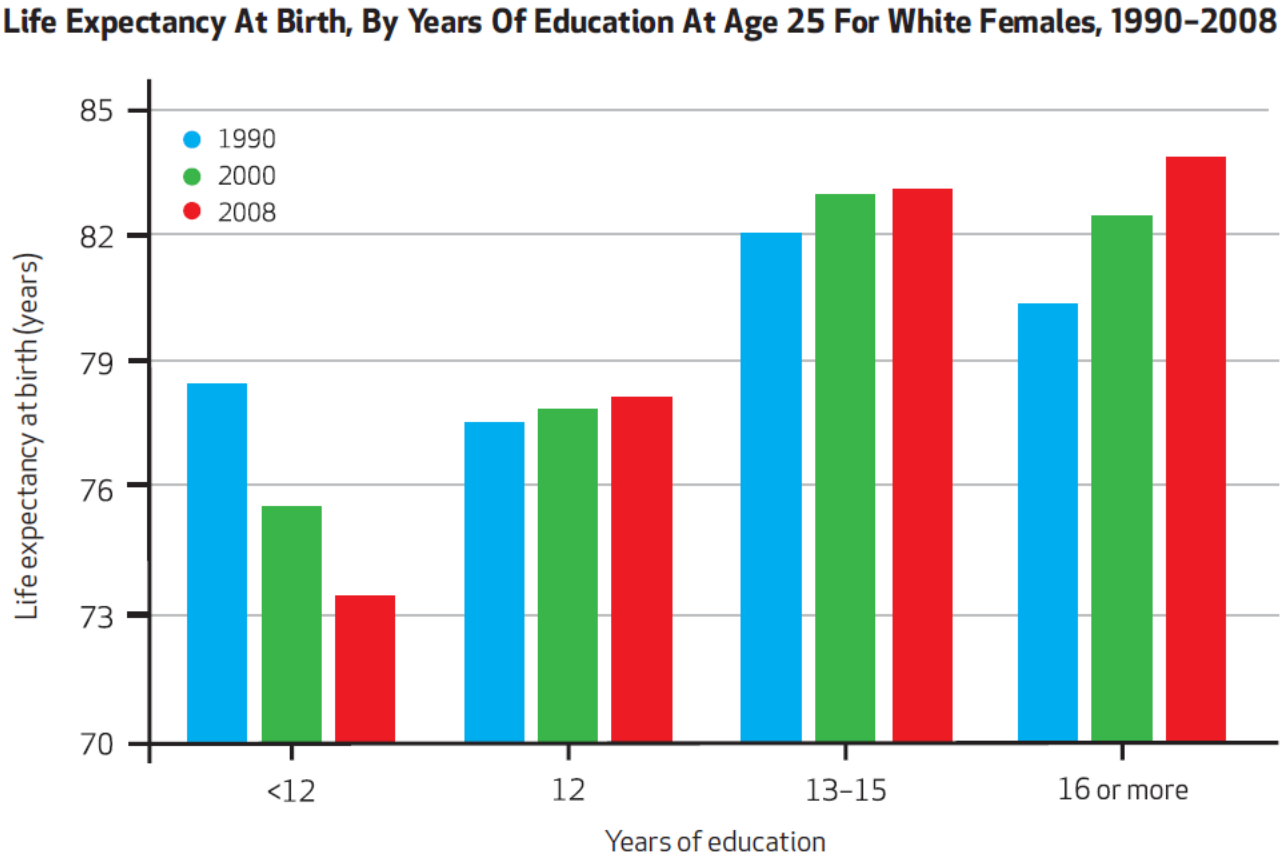
Self-report of fair or poor health



Data from Schiller et al. Summary health statistics for U.S. adults: National Health Interview Survey, 2011. Table 21. National Center for Health Statistics. Vital Health Stat 10(256). 2012.

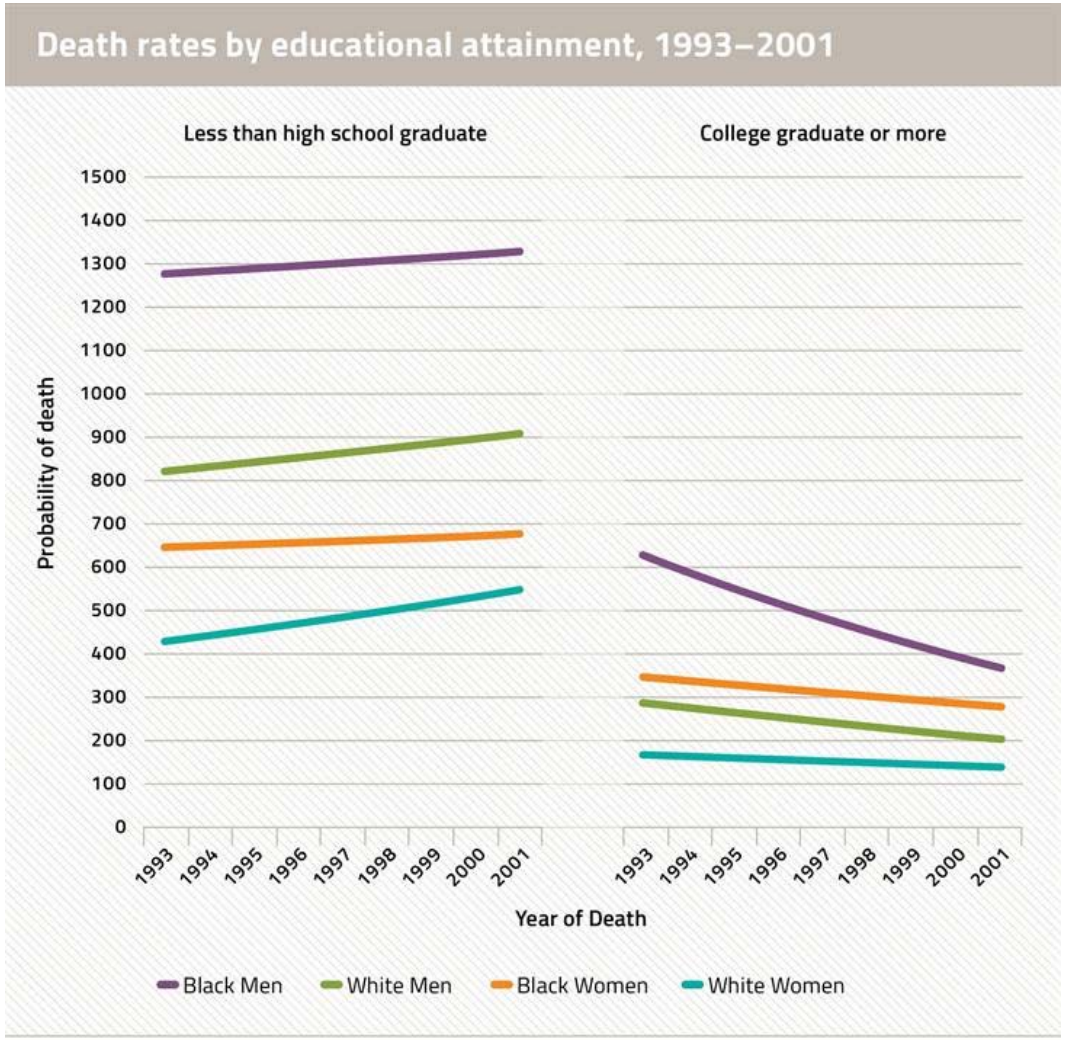
"White males with fewer than twelve years of education currently have a life expectancy at birth equivalent to that of all men in the United States born in 1972, while white females with similar education have the life expectancy of all women in the country born in 1964."

Olshanksky et al., 2012



Olshansky et al. Health Aff 2012;31:1803-13.

The Plight of High School Dropouts



Death rates increased for those with less than a high school education. Data age-standardized for adults age 25-64 years.
Reprinted from Jemal et al. Widening of socioeconomic inequalities in U.S. death rates, 1993-2001. PLoS One. 2008;3:e2181.

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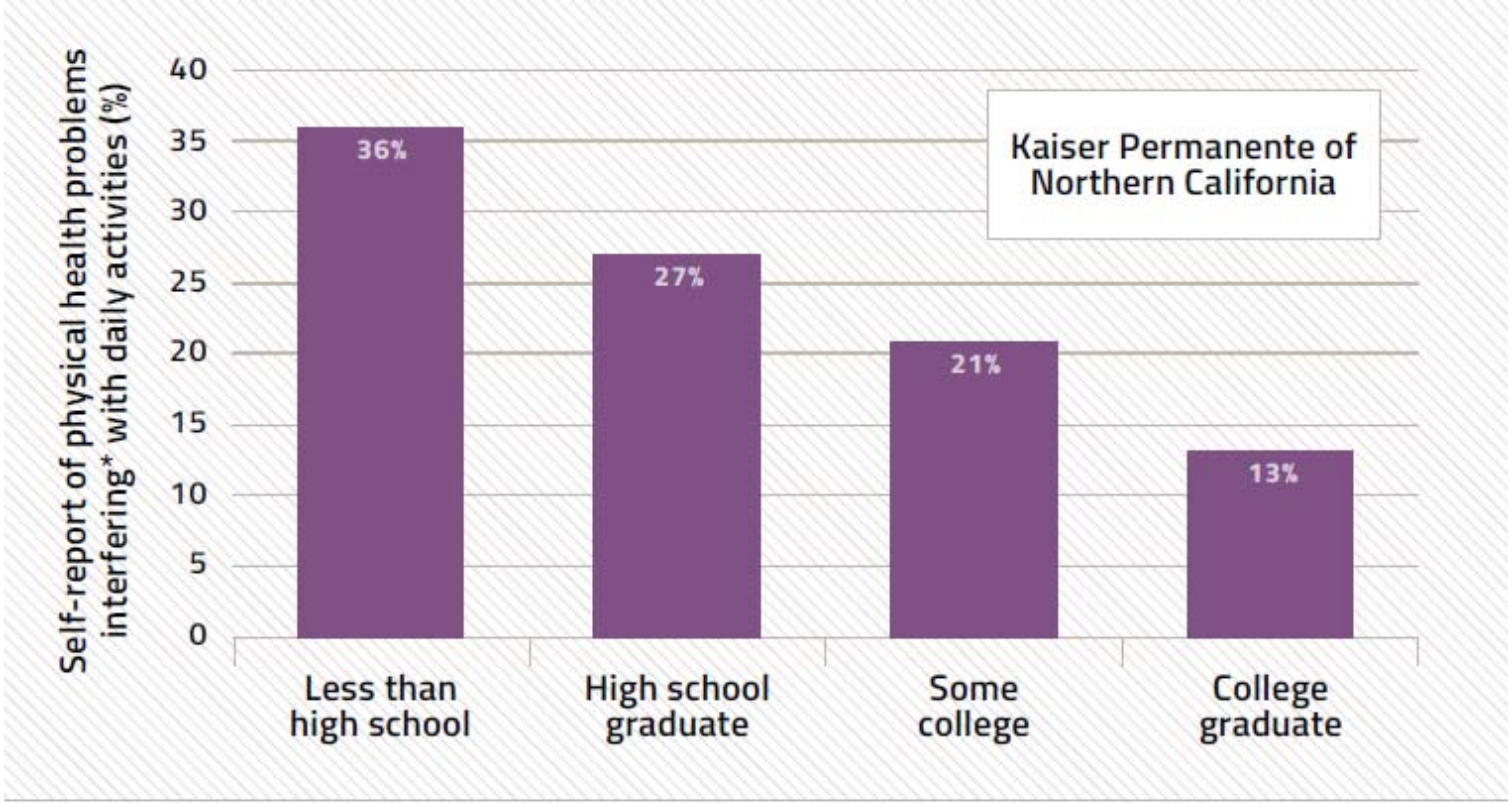
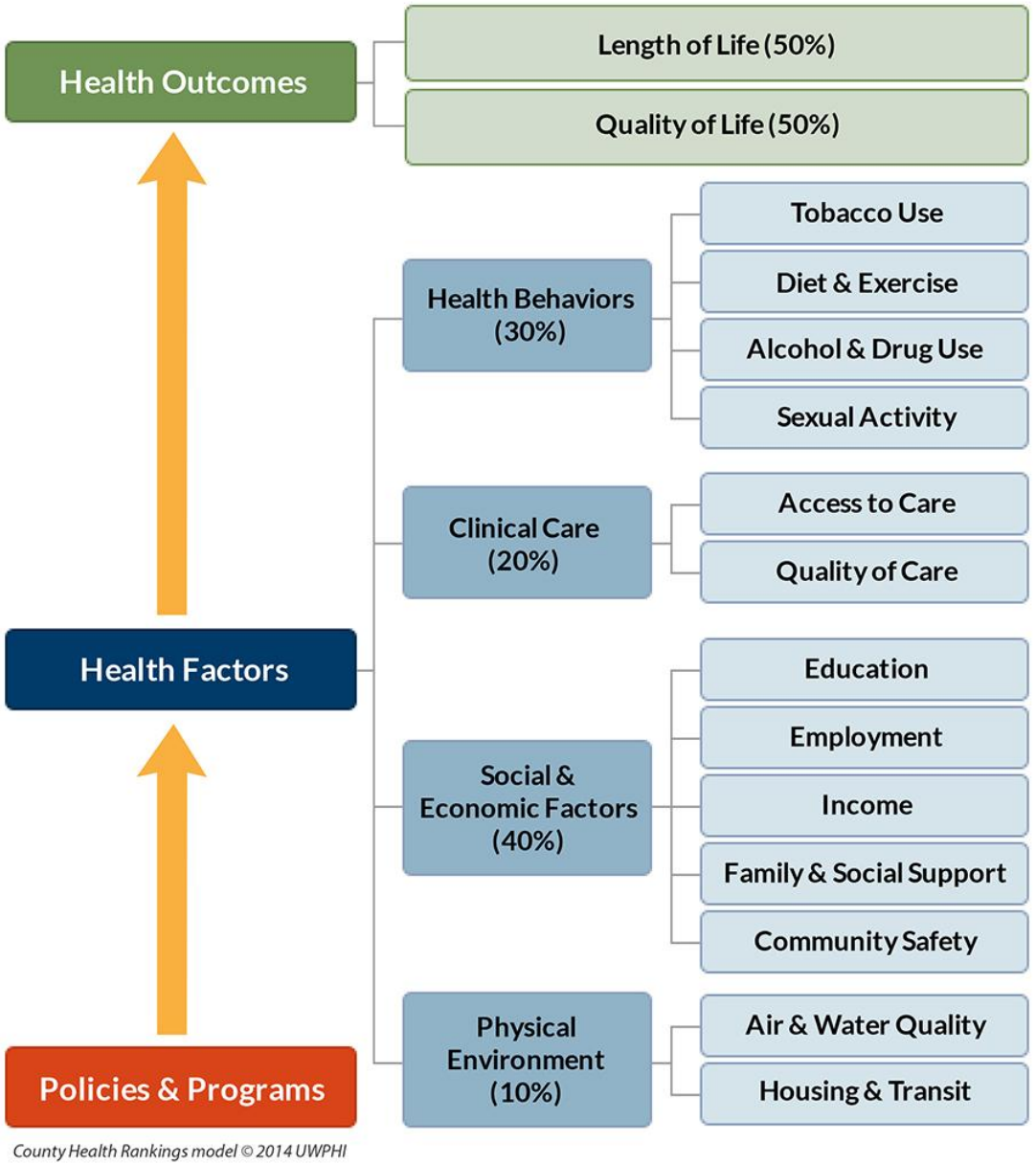
The same health care doesn't mean the same health



* Interfering at least moderately.
Unpublished data from Nancy Gordon (Member Health Survey, 2011), Kaiser Permanente Division of Research.



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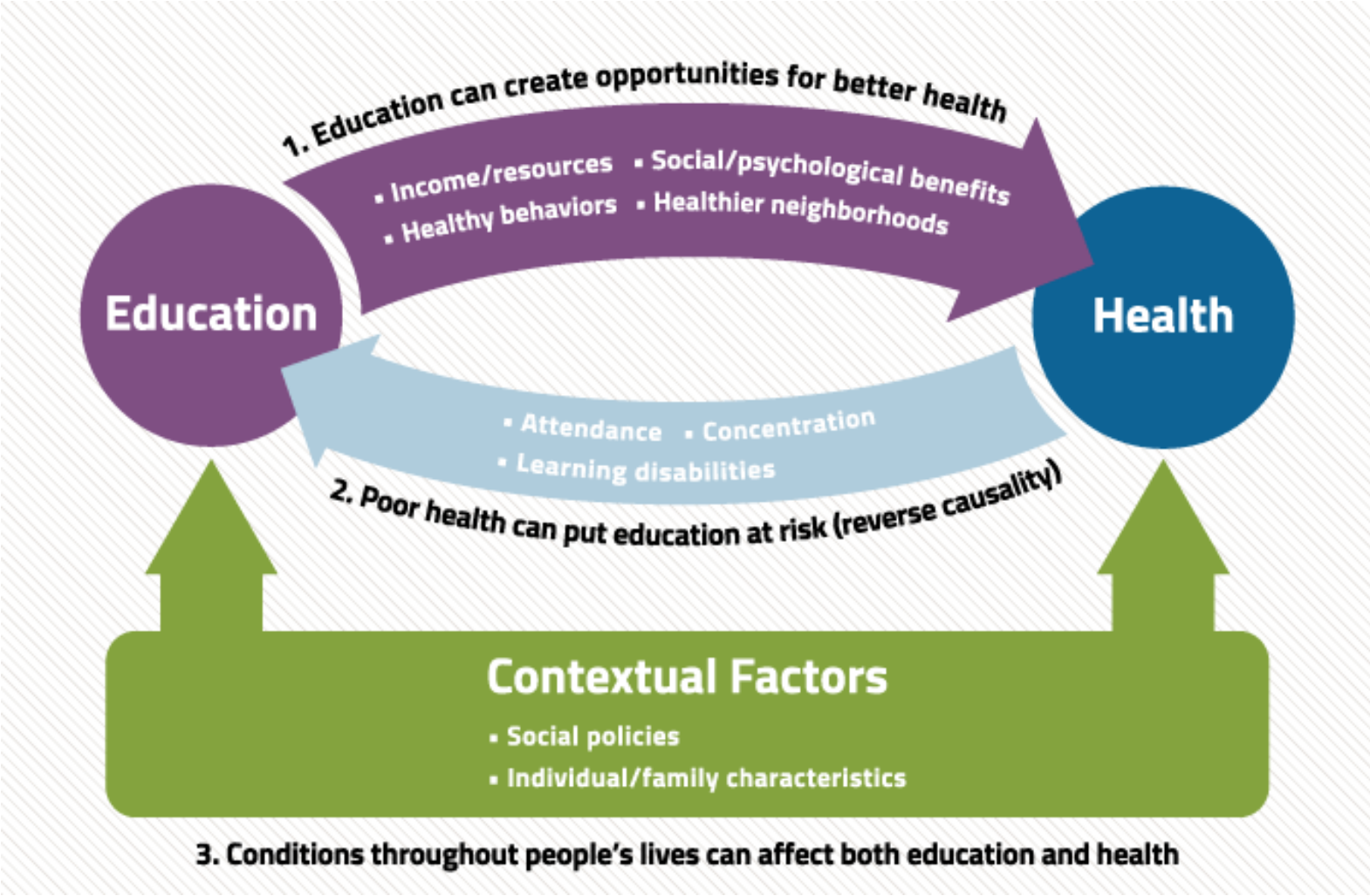
Why education matters to health



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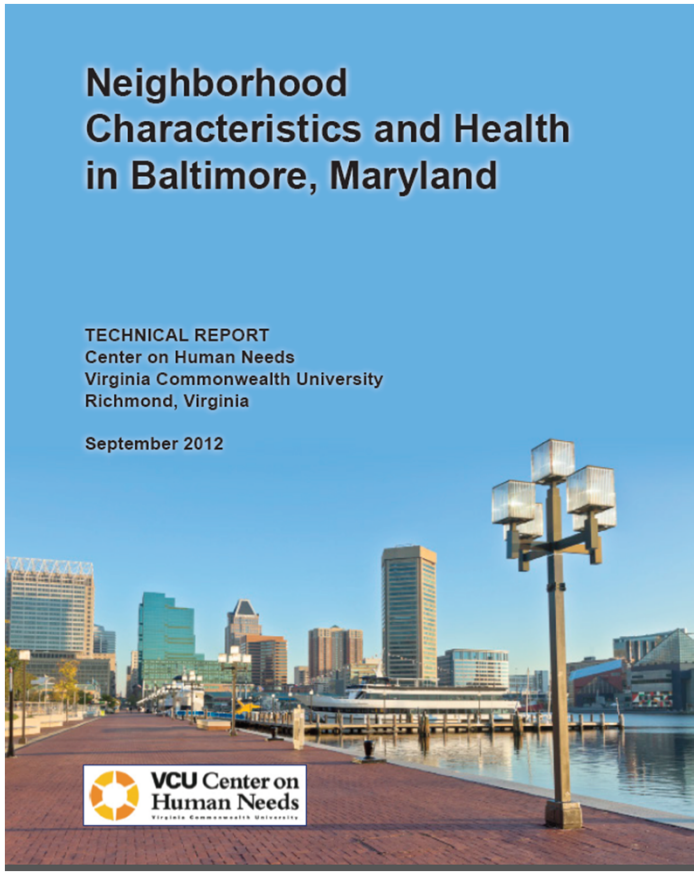
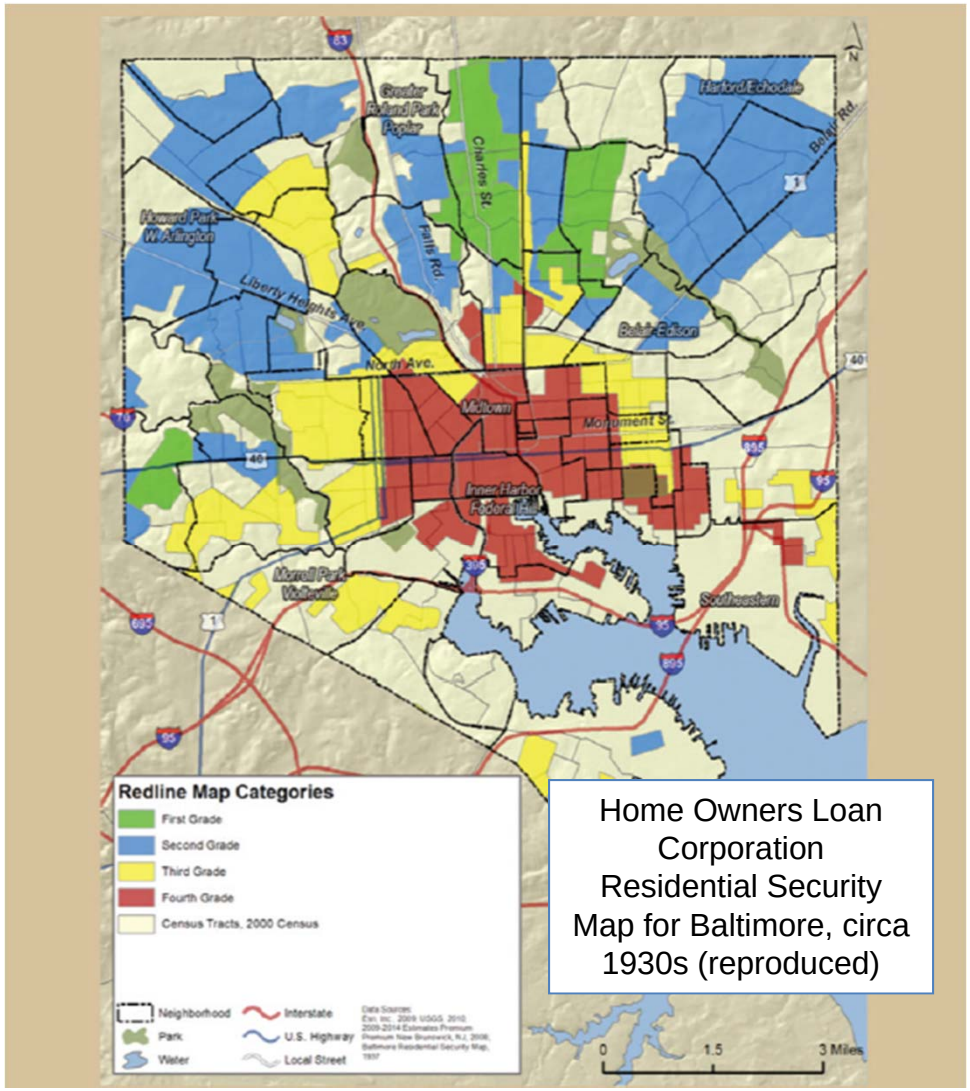
The role of place

The role of policy





Home Owners Loan Corporation Residential Security Map for Baltimore, circa 1930s (reproduced)

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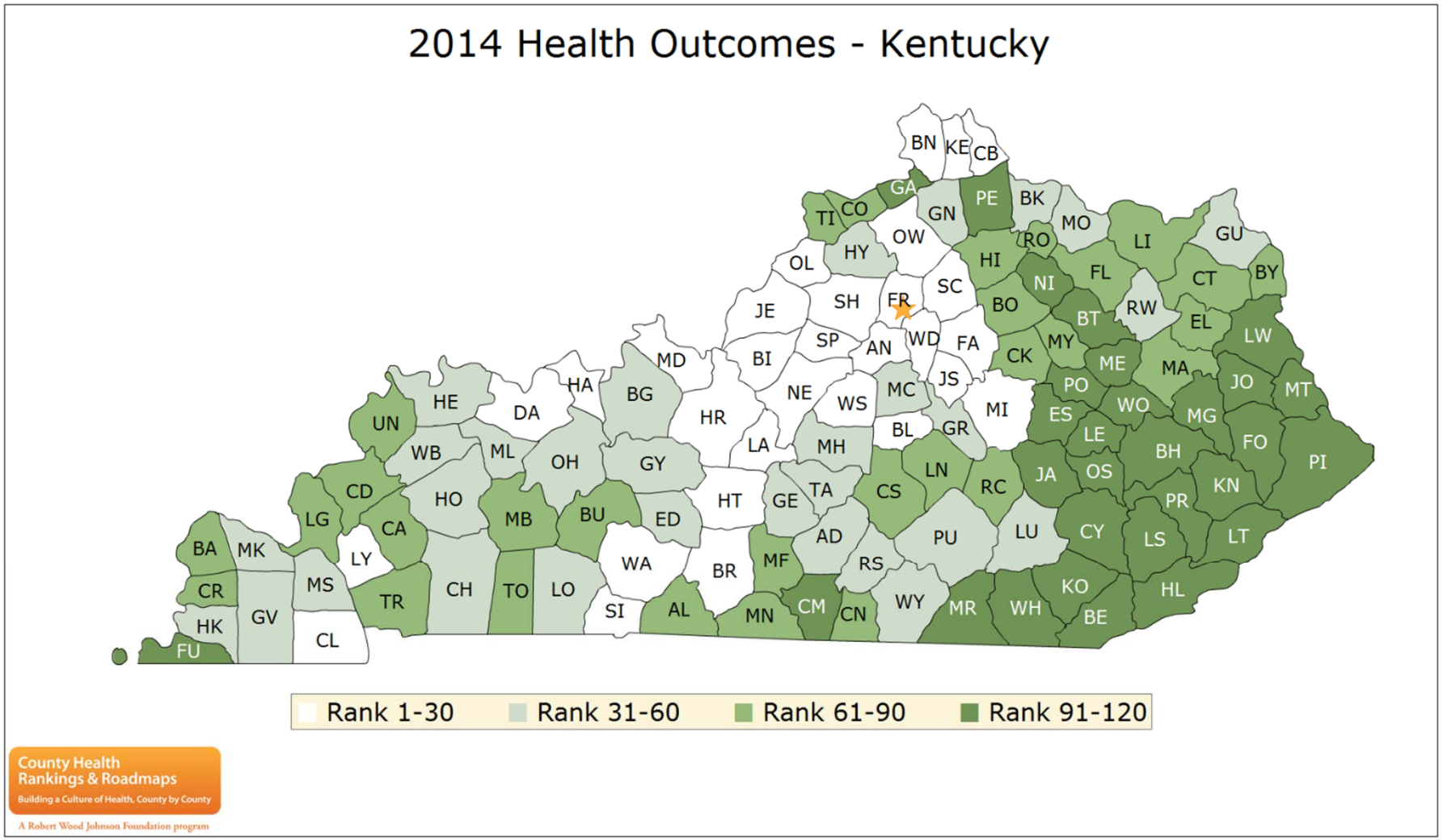
County Health Rankings



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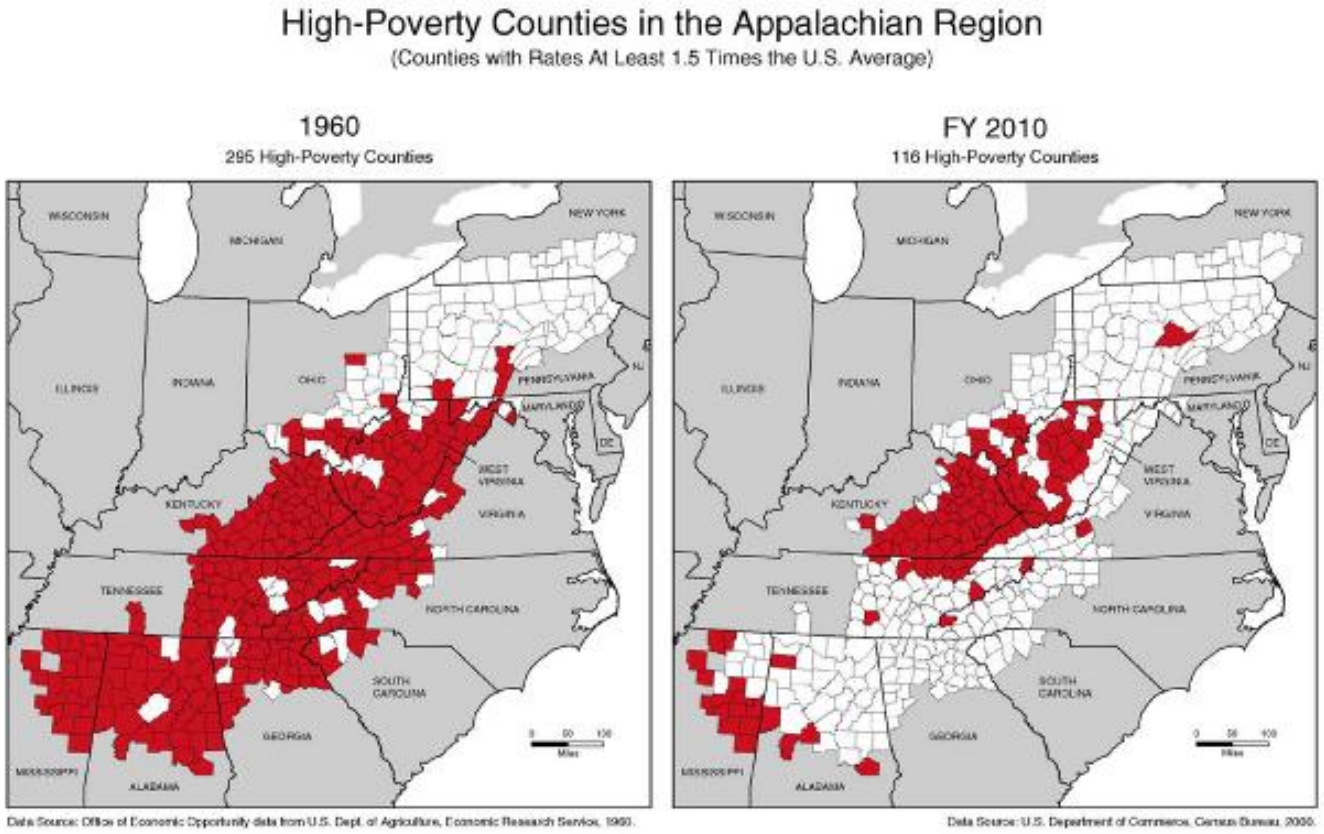
Persistent Poverty



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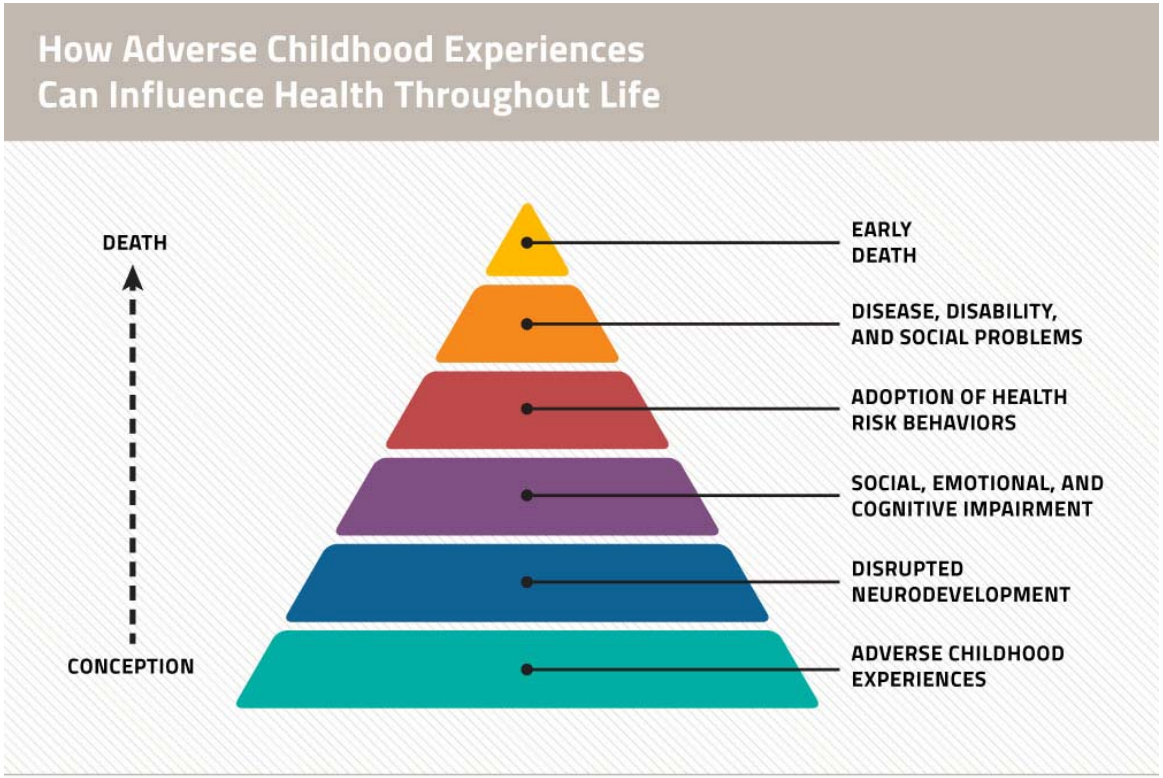
John Dominis—Time & Life Pictures/Getty Images

FULL SCREEN

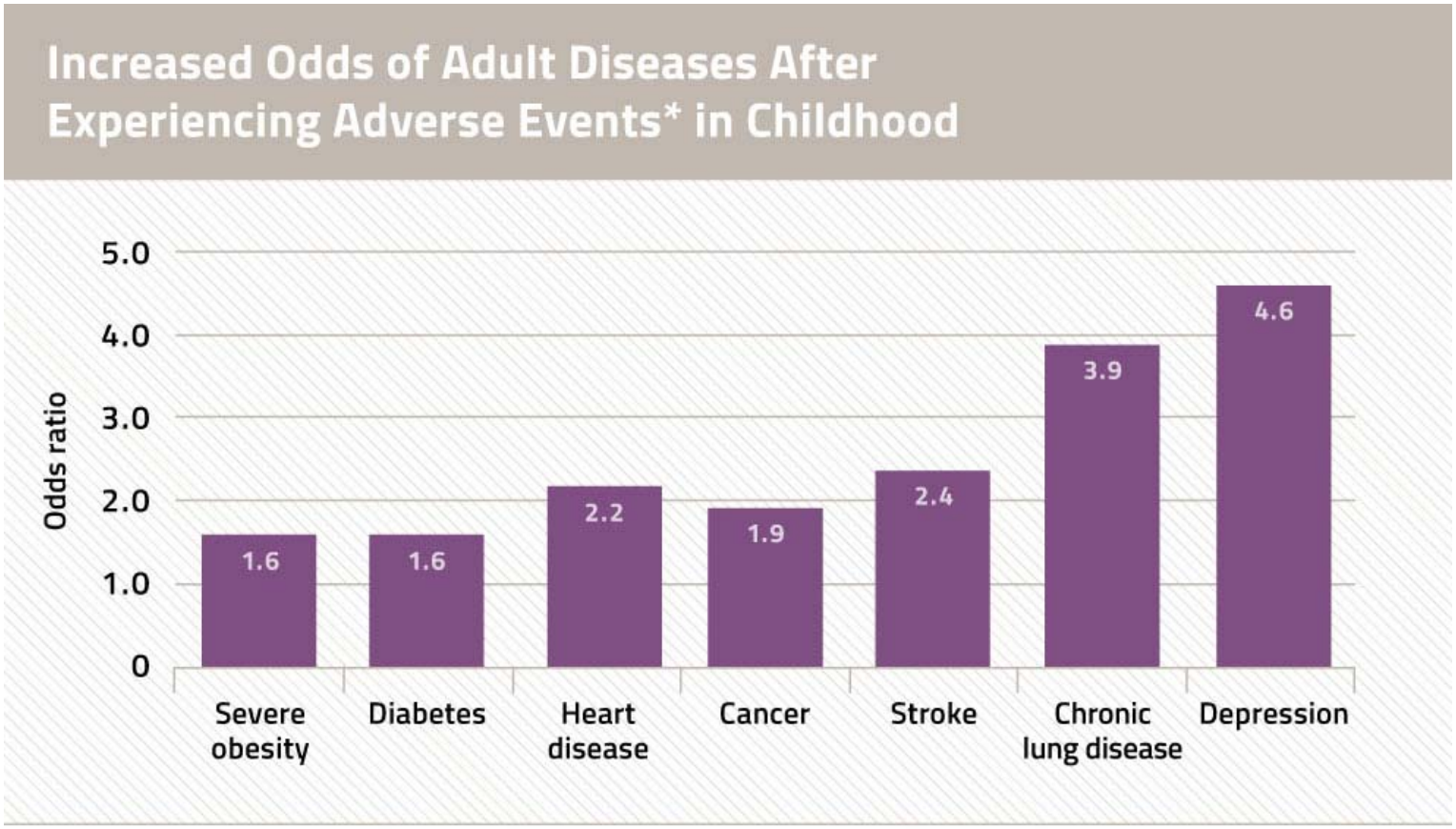
Caption from LIFE. "All over Appalachia the ruins of trestles jut from deserted hillside coal mines. This mine, once owned by Thornton Mining Co., was making big money 20 years ago. It paid miners $8.50 a day -- good pay in those days -- and wealth flowed through the valley. The mine closed in 1945."

Further Complexities to the Causal Web

- Reverse causality (selection)
- Factors that affect education and health throughout the life course



“The Body Doesn’t Forget” (Hayward)



* Odds ratios after exposure to four or more adverse childhood events (see text for description). All odds ratios were statically significant. Data from Adverse Childhood Experiences (ACE) Study. Felitti et al. *Am J Prev Med* 1998;14:245-58.

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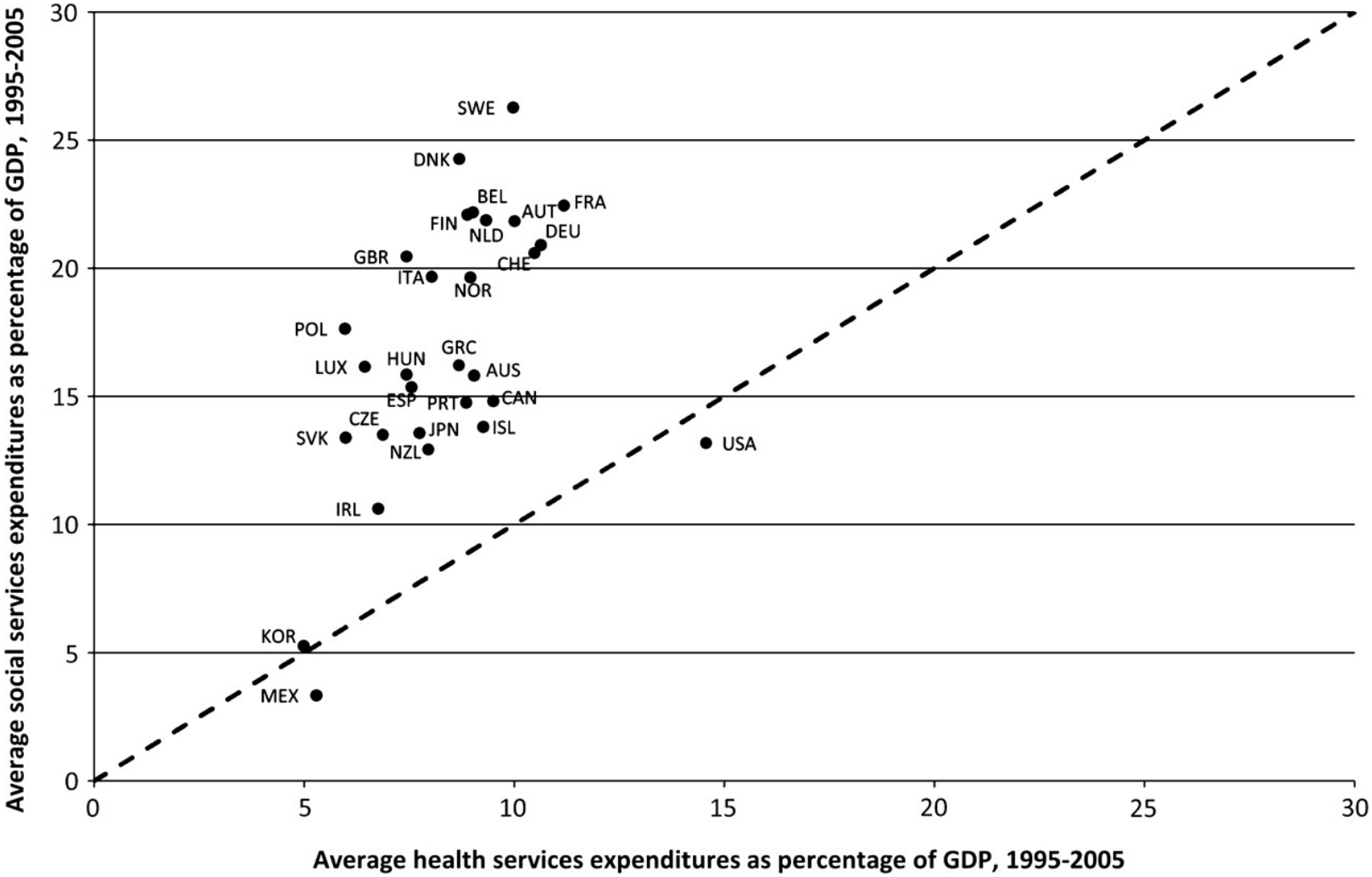
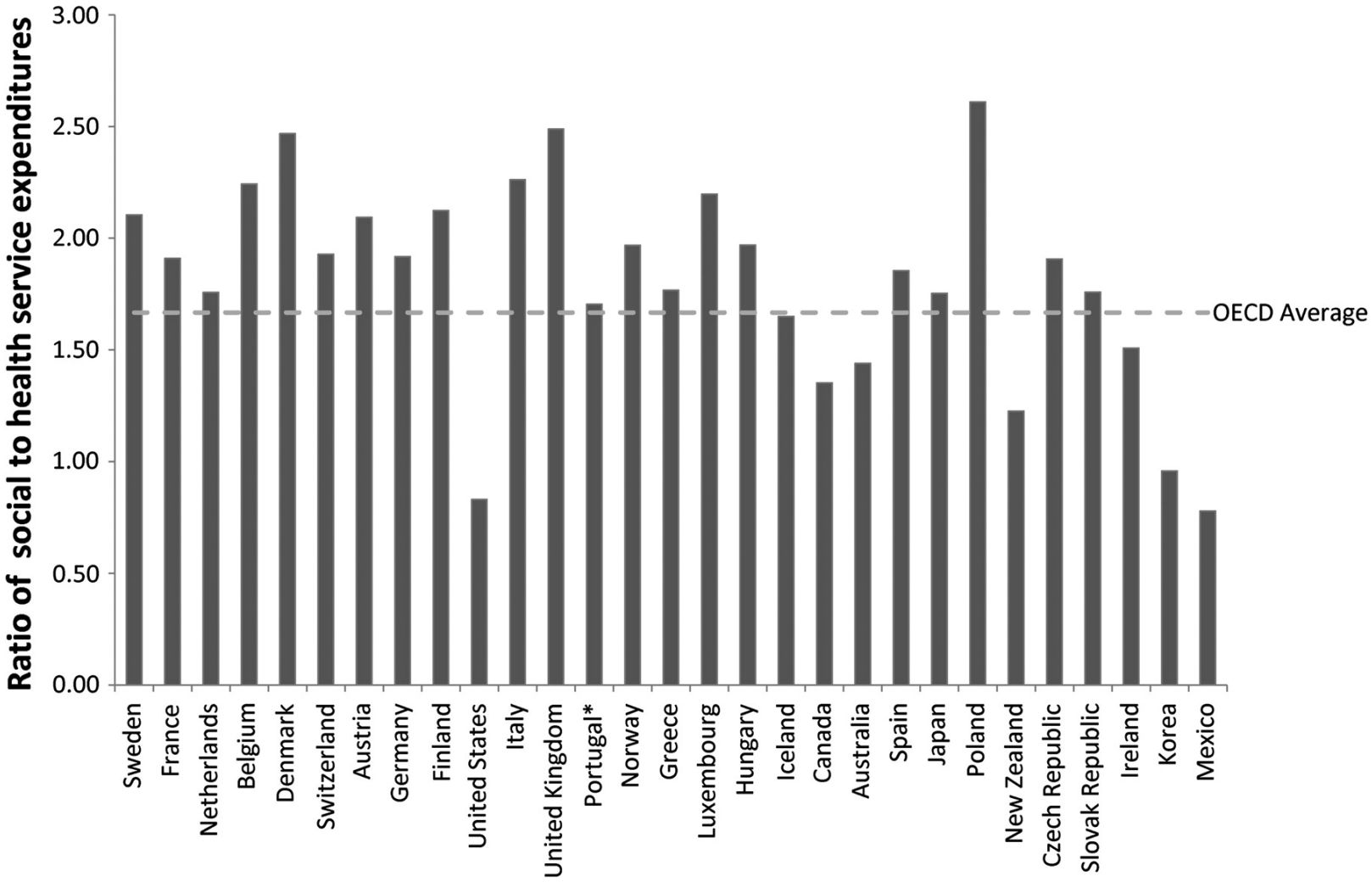


Bradley E H et al. BMJ Qual Saf 2011;20:826-831

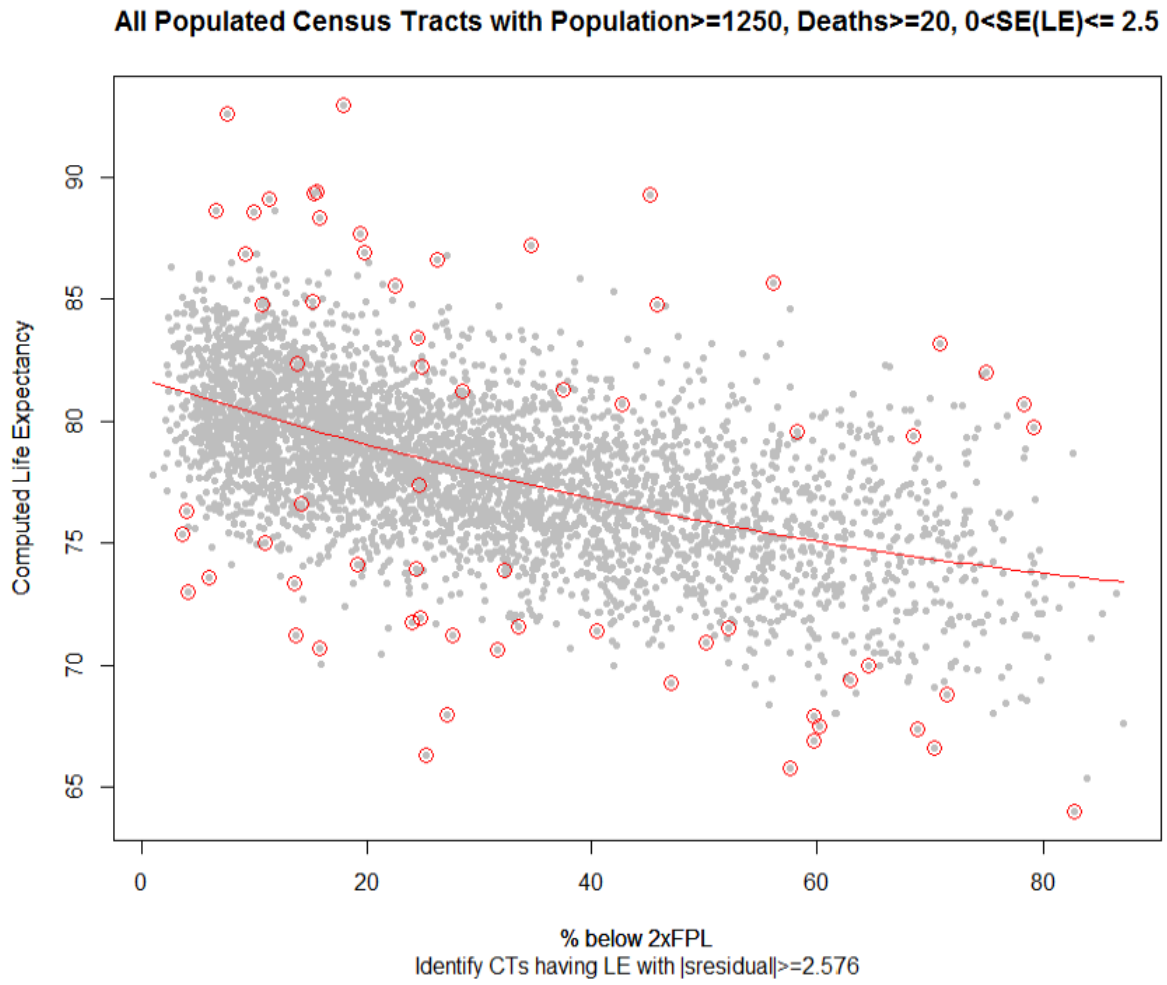
Ratio of social to health service expenditures for OECD countries, 2005.



Bradley E H et al. BMJ Qual Saf 2011;20:826-831

Census tract life expectancy by income

(% of population living with incomes below twice the poverty threshold)



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The Return on Investment

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An Investor Perspective

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An Employer Perspective

- Educated and skilled workforce
- Health care costs
- Absenteeism
- Presenteeism
- Decreased workforce productivity

Table 2. Percentage of U.S. adults aged 18 and older with difficulties in physical functioning, 2011

Activities that are very difficult or cannot be done at all	Less than a high school diploma	High school diploma or GED	Some college	Bachelor's degree or higher
Any physical difficulty	28.0%	20.5%	17.7%	9.0%
Difficulty walking quarter of a mile	15.4%	9.9%	7.5%	3.6%
Difficulty climbing 10 steps	12.0%	6.8%	5.5%	2.3%
Difficulty standing for 2 hours	18.1%	12.4%	9.9%	5.5%
Difficulty sitting for 2 hours	7.0%	4.4%	3.5%	1.1%
Difficulty stooping, bending, or kneeling	16.8%	12.1%	10.1%	4.8%
Difficulty grasping or handling small objects	3.3%	2.4%	1.9%	0.9%
Difficulty lifting or carrying 10 pounds	10.2%	5.9%	4.3%	1.9%
Difficulty pushing or pulling large objects	14.1%	8.9%	6.9%	2.9%

Data from Schiller et al. Summary health statistics for U.S. adults: National Health Interview Survey, 2011. Table 19. National Center for Health Statistics. Vital Health Stat 10(256). 2012.

Strengthening Businesses Through Proven Investments in Kids

ReadyNation

AMERICA'S EDGE

New Research and Tools Demonstrate Economic Importance of Early Childhood Programs

ReadyNews Issue 14(5)

New 60-Second Video Shows Support for Preschool from Unexpected Messengers

A business partnership for early childhood and economic success

ReadyNation

Championing Success: Business Organizations for Early Childhood Investments

Today more than ever, businesses need employees who are well prepared to succeed in the labor market. But the current workforce pipeline is not sufficient—not for businesses who need well-prepared employees, not for young people who need good jobs, and not for the nation that needs a growing economy.

Pennsylvania Businesses

Center on Society and Health

Change the Equation

The Center on Education and the Workforce **reports** that by 2018 eight million U.S. jobs will be available in fields relating to science, technology, engineering and math (STEM).

The Problem of Silos

Contact Information

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