S. HRG. 113–820

DYING YOUNG: WHY YOUR SOCIAL AND ECONOMIC STATUS MAY BE A DEATH SENTENCE IN AMERICA

HEARING

BEFORE THE

SUBCOMMITTEE ON PRIMARY HEALTH AND AGING

OF THE

COMMITTEE ON HEALTH, EDUCATION, LABOR, AND PENSIONS

UNITED STATES SENATE

ONE HUNDRED THIRTEENTH CONGRESS

FIRST SESSION

ON

EXAMINING HEALTH RELATING TO SOCIAL AND ECONOMIC STATUS

NOVEMBER 20, 2013

Printed for the use of the Committee on Health, Education, Labor, and Pensions

Available via the World Wide Web: *http://www.gpo.gov/fdsys/*

U.S. GOVERNMENT PUBLISHING OFFICE

22–267 PDF WASHINGTON : 2016

For sale by the Superintendent of Documents, U.S. Government Publishing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512–1800; DC area (202) 512–1800
Fax: (202) 512–2104 Mail: Stop IDCC, Washington, DC 20402–0001

COMMITTEE ON HEALTH, EDUCATION, LABOR, AND PENSIONS

TOM HARKIN, Iowa, *Chairman*

BARBARA A. MIKULSKI, Maryland
PATTY MURRAY, Washington
BERNARD SANDERS (I), Vermont
ROBERT P. CASEY, JR., Pennsylvania
KAY R. HAGAN, North Carolina
AL FRANKEN, Minnesota
MICHAEL F. BENNET, Colorado
SHELDON WHITEHOUSE, Rhode Island
TAMMY BALDWIN, Wisconsin
CHRISTOPHER S. MURPHY, Connecticut
ELIZABETH WARREN, Massachusetts

LAMAR ALEXANDER, Tennessee
MICHAEL B. ENZI, Wyoming
RICHARD BURR, North Carolina
JOHNNY ISAKSON, Georgia
RAND PAUL, Kentucky
ORRIN G. HATCH, Utah
PAT ROBERTS, Kansas
LISA MURKOWSKI, Alaska
MARK KIRK, Illinois
TIM SCOTT, South Carolina

PAMELA SMITH, *Staff Director*
LAUREN MCFERRAN, *Deputy Staff Director and Chief Counsel*
DAVID P. CLEARY, *Republican Staff Director*

SUBCOMMITTEE ON PRIMARY HEALTH AND AGING

BERNARD SANDERS, Vermont, *Chairman*

BARBARA A. MIKULSKI, Maryland
KAY R. HAGAN, North Carolina
SHELDON WHITEHOUSE, Rhode Island
TAMMY BALDWIN, Wisconsin
CHRISTOPHER S. MURPHY, Connecticut
ELIZABETH WARREN, Massachusetts
TOM HARKIN, Iowa (ex officio)

RICHARD BURR, North Carolina
PAT ROBERTS, Kansas
LISA MURKOWSKI, Alaska
MICHAEL B. ENZI, Wyoming
MARK KIRK, Illinois
LAMAR ALEXANDER, Tennessee (ex officio)

SOPHIE KASIMOW, *Staff Director*
RILEY SWINEHART, *Republican Staff Director*

C O N T E N T S

STATEMENTS

WEDNESDAY, NOVEMBER 20, 2013

DYING YOUNG: WHY YOUR SOCIAL AND ECONOMIC STATUS MAY BE A DEATH SENTENCE IN AMERICA

WEDNESDAY, NOVEMBER 20, 2013

U.S. SENATE,
SUBCOMMITTEE ON PRIMARY HEALTH AND AGING,
COMMITTEE ON HEALTH, EDUCATION, LABOR, AND PENSIONS,
Washington, DC.

The subcommittee met, pursuant to notice, at 10 a.m. in room SD–430, Dirksen Senate Office Building, Hon. Bernard Sanders, chairman of the subcommittee, presiding.

Present: Senators Sanders, Baldwin, Murphy, and Warren.

OPENING STATEMENT OF SENATOR SANDERS

Senator SANDERS. Let me thank our wonderful panelists for being here to discuss an issue of huge consequence for our country. I think what will be happening during the morning is Senators will be drifting in and out. It is a particularly busy time. But the issue that we are going to be discussing is something that needs to be worked on a whole lot.

The first point that has to be made is that in this great country, we see huge disparities in terms of how long people live; life expectancy. I think people would be shocked if they knew that in this country—just between neighborhoods in a given city or areas of our country—you will find in one place people living rather long and healthy lives, and in other parts of the country, people living much shorter lives often plagued by illness.

One point that I want to make is that when we talk about poverty, I think a lot of people say, "Well, somebody is poor who maybe lives in inadequate housing, and that is just too bad," or may not have a good automobile, or may not even be able to go to college, or afford to go to college; all of that is true. But poverty and the stress of poverty is much, much more than that, and in many ways in our country, the stress of poverty is a death sentence which results in significantly shorter life expectancy.

One of our witnesses today, Dr. Kindig, published a paper earlier this year in "Health Affairs" showing that female mortality rose—rose—in the United States in 43 percent of U.S. counties between 1992 and 2006. That women in those counties are actually dying at a younger age.

The goal of everything that we do in this sense, is that we strive to figure out ways in which people can live longer and happier lives. That is really what it is about. People may disagree about

how to get there, but that is the goal. But when we find that female mortality rose in 43 percent of U.S. counties between 1992 and 2006, that is a profound reality that has got to be dealt with.

Right here in the Nation's Capital, in Washington, DC, life expectancy varies from 77 years in the District to 84 years in Montgomery County just a few metro stops away; a 7 year difference in life expectancy for women. The county with the highest life expectancy is Marin County in northern California where the average life expectancy is 85 years, which stacks up pretty well with the rest of the world.

We, as a Nation, are behind many other countries in terms of life expectancy and that, in itself, is worthy of serious discussion. In Marin County, CA, women live to be 85 years of age, which is good. The lowest in the Nation is Perry County, KY with an average life expectancy for women of 73 years; 12 years less in the United States of America.

For men, the highest life expectancy occurs in nearby Fairfax County outside of Washington, DC where the average is 82 years for men; that is pretty good. This compares to a life expectancy of 64 years for men in McDowell County, WV where one of our guests is from. That is an 18-year gap within the United States of America. Men born in Marin County will live 18 years longer than men in McDowell County, WV.

One of our witnesses today, Sabrina Shrader, grew up in McDowell County, WV, where men have the same average life expectancy as men in Botswana or Namibia. Women in McDowell County have shorter lives than women in El Salvador or Mongolia, and the gaps in life expectancy within our country are widening, and today's hearing will call attention to this troubling fact.

We know that there are disparities in life expectancy based on gender, race, and socioeconomic status. It is becoming increasingly clear that education plays a critical role of determining how long someone will live. Those without a high school education in the United States, of all races, live shorter lives and experience poorer health than those with higher levels of education. In fact, a white woman without a high school education saw her life expectancy drop 5 years from 1990 to 2008.

The issue that we want to explore today is why that is so. Why we are seeing, in some cases, people in our country living shorter lives than their parents did? We want to look at why this disparity exists. We want to understand almost the physiology of what poverty is about.

What does stress mean? What does it mean if you wake up in the morning, and you are not quite sure if you and your kids are going to have enough food? If you do not have a job, what does it mean to you, personally, and how does that result overall in shortening your life?

This is a very important and profound discussion, and we are so pleased to have our knowledgeable panelists with us. I see Senator Warren here.

Senator Warren, do you want to make some opening remarks?

STATEMENT OF SENATOR WARREN

Senator WARREN. Thank you very much, Chairman Sanders.

Thank you very much for calling this hearing and thank you all for being with us today. I will be brief because I want to get to your questions so that we can ask more, but I do want to say after reading our notes, this is something you and I have talked about a lot.

Our witnesses have highlighted how the health of our citizens is tied to our economy. We know that income is one of the best predictors of life expectancy, as you have pointed out, but I would add, that it is also one of the best indicators of other health problems—asthma, diabetes, mental health disorders, the list is just starting—in which we know that income has a profound influence on the likelihood of having those problems and the severity of those problems.

So when we talk about reducing costs in the healthcare system and improving the health of Americans generally, I think we have to take a step back and take a very hard look at what is happening to the economy in the United States; how these things fit together. How greater income inequality is having a profound effect, not only on the economic life of Americans, but also on their health and the health of their children.

With that, I want to go straight to hearing from our witnesses if we can.

Thank you, Mr. Chairman.

Senator SANDERS. We certainly can, and thanks very much.

Our first witness is Dr. Steven Woolf. Dr. Woolf is a professor of family medicine and population health, and director of the Center on Society and Health at the Virginia Commonwealth University; an expert on primary care and public health. He received his training at Emory University, Johns Hopkins University, and Virginia Commonwealth University, and has worked for 25 years in academic and public policy settings.

Dr. Woolf, thanks so much for being with us.

STATEMENT OF STEVEN WOOLF, M.D., MPH, DIRECTOR OF THE CENTER ON SOCIETY AND HEALTH, AND PROFESSOR OF FAMILY MEDICINE AND POPULATION HEALTH, VIRGINIA COMMONWEALTH UNIVERSITY, RICHMOND, VA

Dr. WOOLF. Thank you, Senator Sanders. Thank you, Senator Warren. It is a pleasure to be here to testify on this important issue.

Our Center, the Center on Society and Health study how factors outside of healthcare shape health outcomes. One such factor is income. The lower people's income, the earlier they die and the sicker they live. The poor have higher rates of a long list of diseases such as diabetes, heart disease, depression, and disability, as Senator Warren mentioned.

But it is not just the poor. The health of working-class and middle-class, and even upper-class Americans also rises and falls with our socioeconomic status. Take this for example, 68 percent of American adults have an income that is more than twice the poverty level. Suppose we boosted that number just slightly from 68 percent to 70 percent and looked at the impact on one disease, diabetes. That higher income would mean about 400,000 fewer cases of diabetes, saving $2.5 billion dollars per year to treat that one disease.

If economic conditions matter so greatly to health and healthcare costs, the reverse is also true. Harder times for the middle class and the poor mean that Americans and their children will get sicker and die earlier. Already, the health of Americans is inferior to that of people in other high-income countries.

I recently chaired an expert panel convened by the National Research Council and the Institute of Medicine. We compared the United States with 16 other high-income countries and found that Americans die earlier and have higher rates of disease and injury.

The U.S. health disadvantage exists for men and women, for young and old, and as this table shows on the easel, across multiple areas of health from infant mortality to traffic fatalities, from teen pregnancies to diseases of the heart and lungs, diabetes, and disability. American children are less likely to reach age 5 than children in other rich Nations. Our babies are less likely to reach their first birthday. Our rate for premature babies is similar to sub-Saharan Africa.

The U.S. health disadvantage is not restricted to the poor and minorities; it is seen among all social classes, the rich and poor, more-educated and less-educated Americans. But the problem is clearly worse for those with less-income, and the socioeconomic picture for the average American family is not good.

Although in aggregate our Nation is wealthy, we have high rates of income inequality, and thus, high poverty rates. For three decades, we have had the highest child poverty rate in the industrialized world. These conditions affect health and when we die.

Consider my State, Virginia, home to the two most affluent counties in the country, but also home to rural areas with deep poverty. Our Center found that 25 percent of all deaths in Virginia would be averted if everyone had the death rate of Virginia's five most affluent areas. Let me repeat, that is one out four deaths.

This reflects not just the difference in the loss of the people who live in those counties, but the economic and social capital of the communities themselves. These differences produce big gaps in life expectancy across a matter of miles.

We produced a metro map of Washington, DC showing that lives are 7 years shorter in DC than in the Maryland suburbs at the end of the Red Line, as Senator Sanders mentioned.

In New Orleans, if you can show the next map, we found that a baby born in ZIP Code 70112 can expect to live 25 fewer years than a baby born in ZIP Code 70124.

Neighborhoods in Boston and Baltimore have a lower life expectancy than Ethiopia and Sudan. Azerbaijan has a higher life expectancy than areas of Chicago.

What is the take away for Congress? First of all, it is that economic policy is not just economic policy, it is health policy. Pocketbook issues affect disease rates and how long Americans live. Strategies to strengthen the middle class and relieve poverty can prevent costly diseases like diabetes, which leads to the second major takeaway: relieving economic hardship for Americans is a smart way for Congress to control medical spending.

Spiraling healthcare costs are a big concern here in Congress and in corporate America. We are all searching for ways to bend the cost curve. What better way than reducing the flow of disease into

the system? Earlier I mentioned that 25 percent of all deaths in Virginia could be averted. No form of healthcare reform and no treatments by doctors and hospitals can rival that kind of effect.

The third takeaway is that health is affected not only by what is in your bank account, but also by policies that put people on the road to economic success such as helping our young people get a good education. Investments in early childhood are key to our Nation's future and to their life expectancy. Legislation that puts American families on a stronger footing, and strengthens the physical and social environment in which they live, like those neighborhoods in New Orleans and Baltimore, can be good for the economy and public health, thereby curbing healthcare costs.

The opposite is true: cutting these programs in an attempt to save money could save nothing if it makes people sicker and thereby drives up medical spending. A sicker population means a sicker workforce, making American businesses less competitive and our military less fit for duty. Our economy, and national security, cannot afford this and nor can our people.

Thank you.

[The prepared statement of Dr. Woolf follows:]

PREPARED STATEMENT OF STEVEN WOOLF, M.D., MPH

Thank you, Senators Sanders and Burr. I'm Steven Woolf and I appreciate the opportunity to testify this morning. I'm a family physician and I direct Virginia Commonwealth University's Center on Society and Health. Our center studies how factors outside of health care shape health outcomes. One such factor is income. This committee needs no reminders about the importance of income to American families. What's perhaps less apparent is how greatly economic conditions affect the health of adults and children—and by extension the costs of health care.

The lower people's income, the earlier they die and the sicker they live. The poor have higher rates of a long list of diseases such as diabetes, heart disease, depression, and disability. Children raised in poverty grow up with more illnesses.

But it's not just the poor. The health of working class and middle class and even upper class Americans also rises and falls with their socioeconomic status. Let's look at an example: 68 percent of American adults have an income that is more than twice the poverty level. Suppose we boosted that number just slightly, from 68 percent to 70 percent and looked at the impact on one disease—diabetes. That higher income would mean about 400 million fewer cases of diabetes, saving $2 billion per year to treat that disease.

If economic conditions matter so greatly to health and health care costs, the reverse is also true. Subjecting the middle class and the poor to harder times means that Americans, and their children, will get sicker and die earlier.

Already, the health of Americans is inferior to that of people in other high-income countries. I recently chaired an expert panel convened by the National Research Council and the Institute of Medicine. We compared the United States with 16 other high-income countries and found that Americans die earlier and we have higher rates of disease and injury. This U.S. health disadvantage exists for men and women, for young and old, and across multiple areas of health, from infant mortality to traffic fatalities, from teen pregnancies to diseases of the heart and lung, diabetes, and disability.

American children are less likely to reach age 5 than children in other rich nations. Our babies are less likely to reach their first birthday. Our rate for premature babies is similar to sub-Saharan Africa and our teenagers are sicker than teens elsewhere.

The U.S. health disadvantage is not restricted to the poor and minorities. It's seen among all social classes, the rich and poor, more-educated and less-educated, whites and people of color.

But the problem is clearly worse for those with less income, and the socioeconomic picture for the average American family is not good. Although in aggregate our Nation is wealthy, we have notoriously high rates of income inequality and thus for three decades our relative poverty rates, especially child poverty rates, have been the highest in the industrialized world. America is the land of opportunity but stud-

ies show that the ability of a poor child to climb the economic ladder and escape poverty is lower here than elsewhere.

These conditions affect health—and when we die. Consider my State, Virginia—home to the two most affluent counties in the country but also home to rural areas with deep poverty. Our center found that 25 percent of all deaths in Virginia would be averted if everyone had the death rate of Virginia's five most affluent areas. Let me repeat—one out of four deaths.

What this reflects is not just a difference in the wealth of the people living in those counties but the economic vitality, infrastructure, and social capital of the communities themselves. Together, these factors produce vast differences in life expectancy across small distances. We produced this metro map of Washington, DC, showing that lives are 7 years shorter in DC than in the Maryland suburbs at the end of the Red Line. In New Orleans, we found that a baby born in zip code 70112 can expect to live 25 fewer years than a baby born in zip code 70124. Neighborhoods in Boston and Baltimore have a lower life expectancy than Ethiopia and Sudan. Azerbaijan has a higher life expectancy than areas of Chicago.

What's the takeaway for Congress? First of all, economic policy is not just economic policy—it's health policy. Pocketbook issues affect disease rates and how long Americans will live. Strategies to strengthen the middle class and relieve poverty can prevent costly diseases like diabetes, which leads to the second major takeaway: relieving economic hardship for Americans is a smart way for Congress to control medical spending. Spiraling health care costs are a big concern here in Congress and in corporate America. We are all searching for ways to bend the cost curve. What better way than reducing the flow of disease into the system? Earlier I mentioned that 25 percent of all deaths in Virginia could be averted. No form of health care reform, and no treatments by doctors and hospitals, can rival that kind of effect.

The third takeaway is that health is affected not only by what's in your bank account but also, perhaps more importantly, by policies that put people on the road to economic success, such as helping our young people get a good education. Deaths from diabetes are three times higher for Americans without a high school diploma. Investments in early childhood are keys to our Nation's future, and to their life expectancy. The laws you pass that strengthen the physical and social environment in which Americans live, like those neighborhoods in New Orleans and Baltimore, can both grow the economy and also save lives and curb health care costs.

And now to my last point: Many of these programs are in jeopardy because of fiscal pressures to cut spending. Education reform, job training, urban renewal, and safety net programs may not seem like health expenditures but they affect health and medical spending nonetheless. There are forms of discretionary spending that are keys to curbing entitlement spending on health care.

Slashing these programs could be counterproductive. I urge Congress to consider how proposed cuts outside the health sector will affect disease rates. Cutting a program to save money may save nothing if it makes people sicker and thereby drives up the costs of health care. And a sicker population means a sicker workforce, making American businesses less competitive and our military less fit for duty. Our economy and national security can't afford this, and nor can our people.

Attachment By Steven H. Woolf* and Paula Braveman †

WHERE HEALTH DISPARITIES BEGIN: THE ROLE OF SOCIAL AND ECONOMIC DETERMINANTS—AND WHY CURRENT POLICIES MAY MAKE MATTERS WORSE

ABSTRACT: Health disparities by racial or ethnic group or by income or education are only partly explained by disparities in medical care. Inadequate education and living conditions—ranging from low income to the unhealthy characteristics of neighborhood and communities—can harm health through complex pathways. Meaningful progress in narrowing health disparities is unlikely without addressing these root causes. Policies on education, child care, jobs, community and economic revitalization, housing, transportation, and land use bear on these root causes and have implications for health and medical spending. A shortsighted political focus on

* **Steven H. Woolf** (swoolf@vcu.edu) is the director of the Center on Human Needs and a professor in the Department of Family Medicine at Virginia Commonwealth University, in Richmond.

† **Paula Braveman** is the director of the Center on Social Disparities in Health at the University of California, San Francisco (UCSF), and a professor of family and community medicine at UCSF.

reducing spending in these areas could actually increase medical costs by magnifying disease burden and widening health disparities.

In 2003 the landmark Institute of Medicine report *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care* drew needed attention to disparities in the health care of racial and ethnic minorities.[1] The response from the health care and policy communities included new initiatives to standardize treatments for racial and ethnic minorities, heighten providers' cultural competency, and increase minority representation among health care professionals.

Although some disparities in health care have narrowed, disparities in the health of minority and disadvantaged populations have persisted. Since the 1960s, the mortality rate for blacks has been 50 percent higher than that for whites, and the infant mortality rate for blacks has been twice as high as that for whites.[2 3] Health disparities exist even in health care systems that offer patients similar access to care, such as the Department of Veterans Affairs,[4] which suggests that disparities originate outside the formal health care setting.

SOCIAL DETERMINANTS OF HEALTH

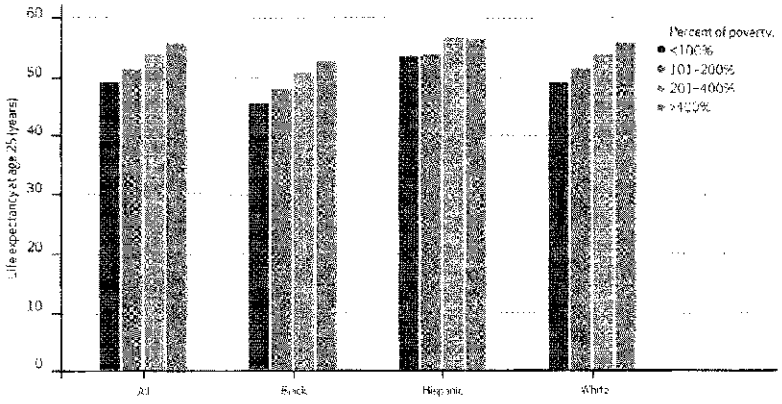
Understanding health disparities requires a fresh look at the determinants of health itself, the most obvious being intrinsic biological attributes such as age, sex, and genes. Some other risk factors that affect health are referred to as "downstream" determinants because they are often shaped by "upstream" societal conditions. Downstream determinants include medical care; environmental factors, such as air pollution; and health behaviors, such as smoking, seeking or forgoing medical care, and not adhering to treatment guidelines.[5]

Exposure to these determinants is influenced by "upstream" social determinants of health—personal resources such as education and income and the social environments in which people live, work, study, and engage in recreational activities. These contextual conditions influence people's exposure to environmental risks and their personal health behaviors, vulnerability to illness, access to care, and ability to manage conditions at home—for example, the ability of patients with diabetes to adopt necessary lifestyle changes to control their blood sugar.[6 7 8 9 10 11 12] Social determinants are often the root causes of illnesses and are key to understanding health disparities.

Income. Income—with education, one of the most familiar social determinants—has a striking association with health (Exhibit 1).[11] Paula Braveman and Susan Egerter have shown that U.S. adults living in poverty are more than five times as likely to report being in fair or poor health as adults with incomes at least four times the Federal poverty level.[8] The income-health relationship is not restricted to the poor: Studies of Americans at all income levels reveal inferior health outcomes when compared to Americans at higher income levels.[10]

EXHIBIT 1

Disparities In US Life Expectancy At Age 25, By Income And Race Or Ethnicity



SOURCE Analysis by the Robert Wood Johnson Commission to Build a Healthier America's research staff of data from the National Longitudinal Mortality Study, 1988–98. **NOTE** Life expectancy is the number of years an average twenty-five-year-old could expect to live, based on family income relative to the federal poverty level.

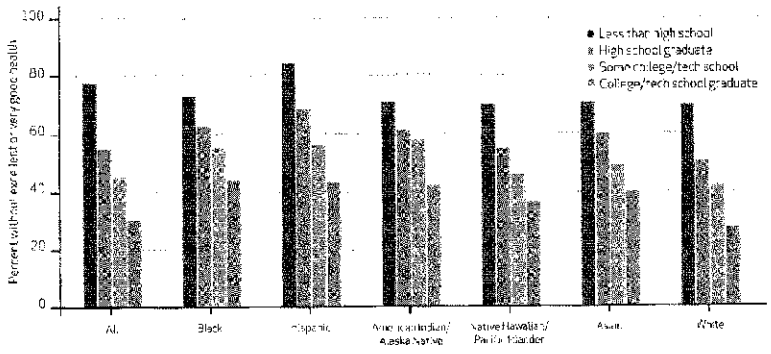
That income is important to health might not be surprising to some, but the magnitude of the relationship is not always appreciated. For example, Nancy Krieger and colleagues estimated that 14 percent of premature deaths among whites and 30 percent of premature deaths among blacks between 1960 and 2002 would not have occurred if everyone had experienced the mortality rates of whites in the highest income quintile.[13] Steven Woolf and coauthors calculated that 25 percent of all deaths in Virginia between 1996 and 2002 would have been averted if the mortality rates of the five most affluent counties and cities had applied statewide.[14] Peter Muennig and colleagues estimated that living on incomes of less than 200 percent of the Federal poverty level claimed more than 400 million quality-adjusted life-years between 1997 and 2002, meaning that poverty had a larger effect than tobacco use and obesity.[15]

Such estimates rely on certain assumptions and do not prove causality. However, the consistency of the evidence supports the conclusion that income, or the conditions associated with income, are important determinants of health.

Education. Like income, education has a large influence on health (Exhibit 2). An extensive literature documents large health disparities among adults with different levels of education. Adults without a high school diploma or equivalent are three times as likely as those with a college education to die before age 65.[16] The average 25-year-old with less than 12 years' education lives almost 7 fewer years than someone with at least 16 years' education.[10] Children's health is also strongly linked to their parents' education.[10]

EXHIBIT 2

Disparities in Health Status Of US Adults Ages 25–74, By Educational Attainment And Race Or Ethnicity



SOURCE Analysis by the Robert Wood Johnson Commission to Build a Healthier America's research staff of data from the Behavioral Risk Factor Surveillance System, 2005–07. **NOTES** Respondents could describe their health as poor, fair, good, very good, or excellent. "High school diploma" includes general educational development certificate.

According to Irma Elo and Samuel Preston, every additional year in educational attainment reduces the odds of dying by 1–3 percent.[17] Ahmedin Jemal and colleagues reported that approximately 50 percent of all male deaths and 40 percent of all female deaths at ages 25–64 would not occur if everyone experienced the mortality rates of college graduates.[18] Woolf and coauthors estimated that giving all U.S. adults the mortality rate of adults with some college education would save seven lives for every life saved by biomedical advances.[19]

Stark racial or ethnic differences in education and income could largely explain the poorer health of blacks and some other minorities. The high school dropout rate is 18.3 percent among Hispanics, 9.9 percent among blacks, and 4.8 percent among non-Hispanic whites. The proportion of Hispanic adults with less than 7 years of elementary school education is 20 times that of non-Hispanic whites. Black and Hispanic households earned two-thirds the income of non-Hispanic whites and were three times as likely to live in poverty.[20] As of 2009 white households had 20 times the net worth of black households.[21]

A Web of Conditions. Education and income are elements of a web of social and economic conditions that affect health (and influence each other) in complex ways over a lifetime. These conditions include employment, wealth, neighborhood characteristics, and social policies as well as culture and beliefs about health—for example, the belief that diseases are ordained by fate and therefore not preventable. People with low education and income are more likely than their better-educated, higher income counterparts to lack a job, health insurance, and disposable income for medical expenses.

Education and income are also associated with behaviors that affect health. Smoking is three times as prevalent among adults without a high school diploma than among college graduates.[2] Similar patterns exist for other unhealthy behaviors, such as physical inactivity.

THE ROLE OF NEIGHBORHOODS AND COMMUNITIES

Unhealthy behavior is partly a matter of personal choice, but extensive evidence documents the strong influence of the environment in which people live and work.[5 6 11 12] One may desire to eat a healthy diet but find nutritious foods too costly or live too far from a supermarket that sells fresh produce.[5] Parents might want to limit the time their children spend in front of a television or computer in favor of sending them outdoors for exercise, but their neighborhoods may be unsafe or lack playgrounds or sidewalks.

The built environment—for example, the design of roads and pedestrian routes—can thwart efforts to walk or bicycle to the store or work. Poor and minority neighborhoods are often "food deserts" with limited access to healthy foods but numerous fast-food outlets.[5] Schools in low-income neighborhoods often serve inexpensive processed foods and rely on revenue from vending machine contracts that promote soft drinks and high-calorie snacks.[5]

But behavior is not the whole story.[11 12] Distressed homes and neighborhoods can induce disease and contribute to disparities via pathways unrelated to behavior.[8] For example, housing can expose occupants to lead and allergens. Bus depots, factories, highways, and hazardous waste sites are often situated near low-income and minority neighborhoods.[22] Distressed communities have a notorious shortage of health care providers, especially in primary care.

Social conditions are also important. Health may be compromised by the chronic stress of living amid multiple adverse conditions, such as poverty, unemployment, urban blight, and crime. Communities of color—especially minority youth—are targets of advertising that promotes the consumption of alcohol, tobacco, and high-calorie foods.[5]

Impoverished neighborhoods may have residents who are less able to help their neighbors. These neighborhoods may also have reduced social cohesion—which can influence health behavior; the sense of security and social well-being experienced by members of the community; and the ability of individuals within a community to join forces to advocate for needed services.[11] For example, minority neighborhoods with poor social cohesion may be unable to mount effective political opposition to decisions that will affect local schools or air quality.

Entrenched patterns reflecting long-standing disadvantage in low-income and minority neighborhoods often perpetuate cycles of socioeconomic failure. Employment opportunities and good schools may be scarce. Low-income residents often cannot afford to move elsewhere. Traveling across town to find a job—or a better one—or to reach a supermarket or doctor may be difficult if public transportation is unavailable or costly.

BIOLOGICAL PATHWAYS TO HEALTH DISPARITIES

Sandro Galea and colleagues recently estimated that of the 2.8 million deaths in the United States in 2000, 245,000 were attributable to low education, 176,000 to racial segregation, 162,000 to low social support, 133,000 to individual-level poverty, and 119,000 to income inequality.[23]

How do these conditions claim lives? Research has identified several plausible pathways. For example, people living with inadequate resources often experience stress levels that can cause the brain to stimulate endocrine organs to produce hormones, such as cortisol and epinephrine, at levels that may alter immune function or cause inflammation. Repeated or sustained exposure to these substances may produce "wear and tear" on organs and precipitate chronic diseases such as diabetes and heart disease.[11 24]

Other research suggests that the most profound health effects of living conditions may be delayed consequences that unfold over the span of a lifetime.[25] Experiences in the womb and early childhood, including stress, can have lasting effects that do not manifest themselves until late adulthood—or even in the next generation. An adult mother's childhood experiences can leave a biological imprint that affects the neurological and mental development of her offspring.

Even the effects of genes can be modified by the environment. New research in the field of epigenetics—the study of inherited changes in gene expression—suggests that the social and physical environment can activate the expression of genes and thus can determine whether a disease develops. This epigenetic makeup can be passed on to children and influence the occurrence of disease in more than one generation.[11] Although more remains to be investigated and understood, the fact that many social determinants have an impact on health makes scientific sense.

DECLINING INCOMES AND INCREASING INEQUALITY

Given that income contributes greatly to health disparities, the decline in the average income of Americans since 1999 and other signs of economic hardship are troubling. Between 2000 and 2009 food insecurity (defined as limited or uncertain access to adequate food), severe housing cost burdens (spending more than 50 percent of income on housing), and homelessness increased in the United States.[20] By 2010 the U.S. poverty rate had reached 15.1 percent, its highest percentage since 1993.[26]

The gap between the rich and poor has been widening since 1968, especially recently.[26] Between 2005 and 2009 the share of wealth held by the top 10 percent of the population increased from 49 percent to 56 percent. Over the same period, the average net worth of white households fell by 16 percent, from $134,992 to $113,149; the average net worth of black and Hispanic households fell by 53 percent (from $12,124 to $5,677) and 66 percent (from $18,359 to $6,325), respectively.[21]

The fact that the average American's income and wealth are shrinking has important health implications. Since 1980, when the United States ranked 14th in life ex-

pectancy among industrialized countries, the U.S. ranking has been declining. By 2008 the United States ranked 25th in life expectancy, behind such countries as Portugal and Slovenia.[27] The United States has also not kept pace with other industrialized countries in terms of infant mortality and other health indicators.[27]

Various explanations have been proposed, ranging from unhealthier behavior on the part of Americans to deficiencies in the U.S. health care system. However, a persistent question is whether U.S. health status is slipping because of unfavorable societal conditions. Other industrialized countries outperform the United States in education, have lower child poverty rates, and maintain a stronger safety net to help disadvantaged families maintain their health.

POLICIES, MACROECONOMICS, AND SOCIETAL STRUCTURE

Economic opportunity, the vibrancy of neighborhoods, and access to education and income are conditions set by society, not by physicians, hospitals, health plans, or even the public health community. The leaders who can best address the root causes of disparities may be the decisionmakers outside of health care who are in a position to strengthen schools, reduce unemployment, stabilize the economy, and restore neighborhood infrastructure. Policymakers in these sectors may have greater opportunity than health care leaders to narrow health disparities. The key change agents may be those working in education reform to help students finish high school and obtain college degrees, and those crafting economic policies to create jobs and teach workers marketable skills.

Even public health efforts to reduce smoking and obesity demonstrate that policy can often achieve more than clinical interventions. Policies to restrict indoor smoking and increase cigarette prices did more to reduce tobacco use in the past 20 years than relying on physicians to counsel smokers to quit.[28]

The most influential change agents in efforts to help Americans eat well and stay active may be the agencies and business interests that determine advertising messages, supermarket locations, school lunch menus, after-school and summer sports programs, food labels, and the built environment. Key actors include city planners, State officials, Federal agencies, legislatures at both the State and Federal levels, employers, school boards, zoning commissions, developers, supermarket chains, restaurants, and industries ranging from soda bottlers to transit companies. Initiatives by hospitals, medical societies, and insurers to reduce health care disparities remain vital, but the front line in narrowing health disparities lies beyond health care.

THE "HEALTH IN ALL POLICIES" MOVEMENT

Increasingly, governments and businesses are being encouraged to consider the consequences to health, and to health disparities, of proposed policies in transportation, housing, education, taxes, land use, and so forth—a "health in all policies" approach. For example, a city council might replace an abandoned warehouse with a public park or offer tax incentives for supermarkets to locate in a "food desert" neighborhood. Health impact assessments are being commissioned to study the potential health consequences of policies concerning such diverse topics as minimum wage laws and freeway widening.[29] The "health in all policies" approach has been adopted by individual communities, State governments, and Federal initiatives, including the interagency health promotion council established under the Affordable Care Act of 2010.[30]

This holistic approach to public policy comes at the recommendation of prestigious commissions sponsored by the World Health Organization,[6] MacArthur Foundation,[7] and Robert Wood Johnson Foundation.[8] Studies in the Bay Area[31] and New York City,[32] for example; the acclaimed 2008 documentary film *Unnatural Causes*[33]; and major initiatives by the W.K. Kellogg Foundation,[34] California Endowment,[35] and Robert Wood Johnson Foundation[36] have all reinforced the message that "place matters." Armed with a new field of research that collects data at the neighborhood level, communities are beginning to document and rectify local social and environmental conditions that foment health disparities.

LINKING SOCIAL POLICY TO HEALTH DISPARITIES

Although some academics and policymakers understand the health impact of social determinants, the general public and other policymakers do not always recognize that social policy and health policy are intimately linked. Social policies are clearly of concern for reasons other than their health consequences. The recession has riveted the Nation's attention on the need for jobs and economic growth. Politicians view the economic plight of voters as an election issue.

The missing piece is that advocates for jobs, education, and other issues often overlook the health argument in making their case or calculating the return on in-

vestment. Public programs to address failing schools, disappearing jobs, and needed community development are under scrutiny as the fiscal crisis forces spending cuts to balance budgets and reduce the national debt. Defending these programs requires more than just making moral arguments for their retention and expansion. It requires proponents to make a solid business case, but the value proposition should include the medical spending avoided by having these programs in place.

Advocates for education or jobs programs often list important benefits, such as a more competitive workforce, job security, and economic growth. However, they could gather more support, especially from policymakers concerned about medical spending, by showing that disease rates—and hence health care costs—are connected to education, employment, and socioeconomic well-being.

For example, the health connection strengthens the business case for education. Henry Levin and colleagues reported that interventions to improve high school graduation rates among black males yield $166,000 per graduate in net savings to the government as a result of higher tax revenues and lower public health costs and crime rates.[37] Muennig and Woolf estimated that the health benefits of reducing elementary school classroom sizes yield $168,000 in net savings per high school graduate.[38] Robert Schoeni and coauthors estimated that giving all Americans the health status of college-educated adults would generate more than $1 trillion per year in health benefits.[39]

Making the connection between social determinants and medical spending heightens the relevance of social policy to a pressing national priority: the spiraling costs of health care, which have alarmed elected officials, employers, health plans, and the public. Whether any proposed remedy—from malpractice reform to the implementation of accountable care organizations—can bend the cost curve remains uncertain.

The gravitational pull of health care has kept the policy focus on reorganizing care, implementing information technology, and reforming the payment system, with less consideration of issues outside of medicine—even though they might curb the flow of patients into the system and reduce spending more dramatically. Bobby Milstein and coauthors recently calculated that expanding health insurance coverage and improving health care would do less to save lives and control medical spending than policies to improve environmental conditions and promote healthier behavior.[40]

Remedies outside of health care can both reduce the cost of care and ameliorate health disparities. An example is diabetes, a disease of rising prevalence and costs. Diabetes occurs among adults without a high school diploma at twice the rate observed among college graduates.[2] This disparity should speak volumes to policymakers seeking to control spending on this disease—and those tempted to cut education budgets to finance health care.

WHY THIS MATTERS NOW

These issues need attention now, for four reasons. First, this is a time of worsening socioeconomic conditions and rising inequality, fomented by the recession and economic policies. Higher disease burden, greater medical spending, and widened disparities could result.

The programs that could cushion stresses on children and families are now vulnerable to budget reductions.

Second, exposing children to today's adverse social conditions has ramifications for the health of tomorrow's adults. It has already been predicted that this generation could, for the first time in U.S. history, live shorter lives than its predecessors because of the obesity epidemic.[41] Children's exposure to worsening socioeconomic conditions from fetal life through adolescence could alter the trajectory of their health, making them more likely to develop disease later in life.[25] These outcomes could intensify demands on a health care system that is already too costly to sustain.

Third, the very programs that could cushion stresses on children and families are now vulnerable to proposed budget reductions. Programs that help people get an education, find a job that can lift a family out of poverty, or provide healthy food and stable housing are being eliminated to balance budgets. This strategy, however, could backfire if it precipitates disease, drives more patients into the health care system, and increases medical spending.

Fourth, presidential and congressional elections are fast approaching, and many politicians are eager to exhibit their fiscal conservatism by reducing the size of government and eliminating social programs. The zeal to cut spending may discourage thoughtful consideration of how such cuts might expose voters to greater illness or harm the economy.

It may be naïve to hope that elected officials will rise above reelection concerns to address outcomes that will outlast their term in office and promote the greater good. It may be more realistic to hope that the public and policymakers will begin to connect the dots and see health as a by-product of the environment in which Americans live. They might come to see that decisions about child care, schools, jobs, and economic revitalization are ultimately decisions about health—and the costs of health care.

Social issues lack quick and easy solutions. Politics surrounds questions of how best to educate children and improve the economic well-being of American families. However, scientific knowledge now makes it clear that the current movement to shrink investments in these areas has implications for public health and the costs of medical care. Fiscally prudent politicians (and voters) who learn about the medical price tag associated with austere economic and social policies may question the logic of "cutting spending" in ways that ultimately increase costs.

For the health equity movement, the challenge is to clarify this connection for policymakers and to not focus exclusively on how physicians and hospitals can reduce disparities. Equitable health care is essential, but health disparities will persist—as they have for generations—until attention turns to the root causes outside the clinic.

Note: The authors thank the research staff of the Virginia Commonwealth University Center on Human Needs (Project on Societal Distress) and of the Robert Wood Johnson Foundation Commission to Build a Healthier America for source data cited in this article. The authors also thank Karen Simpkins for assistance in producing the exhibits. The Project on Societal Distress was funded by the W.K. Kellogg Foundation (Grants P3008553, P3011306, and P3015544).

ENDNOTES

1. Smedley BD, Stith AY, Nelson AR, editors. Unequal treatment: confronting racial and ethnic disparities in health care. Washington (DC): National Academies Press; 2003.

2. National Center for Health Statistics. Health, United States, 2010: with special feature on death and dying. Hyattsville (MD): NCHS; 2011.

3. Satcher D, Fryer GE, Jr., McCann J, Troutman A, Woolf SH, Rust G. What if we were equal? A comparison of the black-white mortality gap in 1960 and 2000. Health Aff (Millwood). 2005;24(2):459–64.

4. Saha S, Freeman M, Toure J, Tippens KM, Weeks C, Ibrahim S. Racial and ethnic disparities in the VA health care system: a systematic review. J Gen Intern Med. 2008;23(5): 654–71.

5. Woolf SH, Dekker MM, Byrne FR, Miller WD. Citizen-centered health promotion: building collaborations to facilitate healthy living. Am J Prev Med. 2011;40(1 Suppl 1):S38–47.

6. Commission on Social Determinants of Health. Closing the gap in a generation: health equity through action on the social determinants of health; final report of the Commission on Social Determinants of Health. Geneva: World Health Organization; 2008.

7. John D. and Catherine T. MacArthur Foundation Research Network on Socioeconomic Status and Health. Reaching for a healthier life: facts on socieconomic status and health in the United States. Chicago (IL): MacArthur Foundation; 2008.

8. Braveman P, Egerter S. Overcoming obstacles to health. Princeton (NJ): Robert Wood Johnson Foundation; 2008.

9. Link BG, Phelan J. Social conditions as fundamental causes of disease. J Health Soc Behav. 1995;35:80–94.

10. Braveman PA, Cubbin C, Egerter S, Williams DR, Pamuk E. Socioeconomic disparities in health in the United States: what the patterns tell us. Am J Public Health. 2010;100 (Suppl 1):S186–96.

11. Braveman P, Egerter S, Williams D. Social determinants of health: coming of age. Annu Rev Public Health. 2011;32:381–98.

12. Adler NE, Rehkopf DH. U.S. disparities in health: descriptions, causes, and mechanisms. Annu Rev Public Health. 2008;29:235–52.

13. Krieger N, Rehkopf DH, Chen JT, Waterman PD, Marcelli E, Kennedy M. The fall and rise of U.S. inequities in premature mortality: 1960–2002. PLoS Med. 2008;5(2):e46.

14. Woolf SH, Jones RM, Johnson RE, Phillips RL, Jr., Oliver MN, Vichare A. Avertable deaths associated with household income in Virginia. Am J Public Health. 2010;100(4):750–5.

15. Muennig P, Fiscella K, Tancredi D, Franks P. The relative health burden of selected social and behavioral risk factors in the United States: implications for policy. Am J Public Health. 2010;100(9):1758–64.
16. Heron M, Hoyert DL, Murphy SL, Xu JQ, Kochanek KD, Tejada-Vera B. Deaths: final data for 2006. Nat Vital Stat Rep. 2009;57(14):1–134.
17. Elo IT, Preston SH. Educational differentials in mortality: United States 1979–1985. Soc Sci Med. 1996;42(1):47–57.
18. Jemal A, Thun MJ, Ward EE, Henley SJ, Cokkinides VE, Murray TE. Mortality from leading causes by education and race in the United States, 2001. Am J Prev Med. 2008;34(1):1–8.
19. Woolf SH, Johnson RE, Phillips RL Jr., Philipsen M. Giving everyone the health of the educated: an examination of whether social change would save more lives than medical advances. Am J Public Health. 2007; 97(4):679–83.
20. Project on Societal Distress [home page on the Internet]. Richmond (VA): Virginia Commonwealth University, Center on Human Needs; [cited 2011 Aug 25]. Available from: *http://www.societaldistress.org/*.
21. Taylor P, Kochhar R, Fry R, Velasco G, Motel S. Wealth gaps rise to record highs between whites, blacks, and Hispanics. Washington (DC): Pew Research Center; 2011.
22. Brulle RJ, Pellow DN. Environmental justice: human health and environmental inequalities. Annu Rev Public Health. 2006;27:103–24.
23. Galea S, Tracy M, Hoggatt KJ, Dimaggio C, Karpati A. Estimated deaths attributable to social factors in the United States. Am J Public Health. 2011;101(8):1456–65.
24. McKewen B, Gianaros PJ. Central role of the brain in stress and adaptation: links to socioeconomic status, health, and disease. Ann N Y Acad Sci. 2010;1186:190–222.
25. Cohen S, Janicki-Deverts D, Chen E, Matthews KA. Childhood socioeconomic status and adult health. Ann N Y Acad Sci 2010;1186:37–55.
26. DeNavas-Walt C, Proctor BD, Smith JC. Income, poverty, and health insurance coverage in the United States: 2010 [Internet]. Washington (DC): Census Bureau; 2011 Sep [cited 2011 Sep 21]. (Current Population Reports). Available from: *http://www.census.gov/prod/2011pubs/p60–239.pdf*.
27. Organization for Economic Cooperation and Development. OECD health data 2011—frequently requested data [Internet]. Paris: OECD; 2011 Jun 30 [cited 2011 Aug 25]. [Available from: *http://www.oecd.org/dataoecd/52/42/48304068.xls#'LE Total population at birth'!A1*.]
28. Brownson RC, Haire-Joshu D, Luke DA. Shaping the context of health: a review of environmental and policy approaches in the prevention of chronic diseases. Annu Rev Public Health. 2006;27:341–70.
29. Cole BL, Fielding JE. Health impact assessment: a tool to help policymakers understand health beyond health care. Annu Rev Public Health. 2007;28:393–412.
30. National Prevention, Health Promotion, and Public Health Council. 2010 annual status report [Internet]. Washington (DC): Department of Health and Human Services; 2010 Jul 1 [cited 2011 Aug 25]. Available from: *http://www.hhs.gov/news/reports/nationalprevention2010report.pdf*.
31. Beyers M, Brown J, Cho S, Desautels A, Gaska K, Horsley K, et al. Life and death from unnatural causes: health and social inequity in Alameda County; executive summary [Internet]. Oakland (CA): Alameda County Department of Health; 2008 Apr [cited 2011 Sep 21]. Available from: *http://www.barhii.org/press/download/unnatural_causes_report.pdf*.
32. Myers C, Olson C, Kerker B, Thorpe L, Greene C, Farley T. Reducing health disparities in New York City: health disparities in life expectancy and death. New York (NY): New York City Department of Health and Mental Hygiene; 2010.
33. National Minority Consortia of Public Television. Unnatural causes . . . is inequality making us sick? [DVD]. San Francisco (CA): California Newsreel; c2008.
34. W.K. Kellogg Foundation. Place matters: empowering local leaders to build public will to address community needs [Internet]. Battle Creek (MI): WKKF; [cited 2011 Sep 21]. Available from: *http://www.wkkf.org/what-we-support/racial-equity/stories/empowering-local-leaders-to-build-public-will-to-address-community-needs.aspx*.
35. California Endowment. Building healthy communities: California living 2.0 [Internet]. Los Angeles (CA): The Endowment; [cited 2011 Sep 21]. Available from: *http://www.calendow.org/Article.aspx?id=134 &ItemID=134*.
36. Robert Wood Johnson Foundation. Place and health: why conditions where we live, learn, work, and play matter [Internet]. Princeton (NJ): RWJF; [cited 2011 Sep 21]. Available from: *http://rwjf.org/vulnerablepopulations/product.jsp?id=72288*.

37. Levin HM, Belfield C, Muennig P, Rouse C. The public returns to public educational investments in African-American males. Econ Educ Rev. 2007;26(6):699–708.
38. Muennig PA, Woolf SH. Health and economic benefits of reducing the number of students per classroom in U.S. primary schools. Am J Public Health. 2007;97 (11):2020–7.
39. Schoeni RF, Dow WH, Miller WD, Pamuk ER. The economic value of improving the health of disadvantaged Americans. Am J Prev Med. 2011;40(1 Suppl 1):S67–72.
40. Milstein B, Homer J, Briss P, Burton D, Pechacek T. Why behavioral and environmental interventions are needed to improve health at lower cost. Health Aff (Millwood). 2011;30 (5):823–32.
41. Olshansky SJ, Passaro DJ, Hershow RC, Layden J, Carnes BA, Brody J, et al. A potential decline in life expectancy in the United States in the 21st century. N Engl J Med. 2005;352 (1):1138–45.

COMMENTARY

PUBLIC HEALTH IMPLICATIONS OF GOVERNMENT SPENDING REDUCTIONS *

(By: Steven H. Woolf, MD, MPH) †

ACROSS THE UNITED STATES, CONCERNS OVER BUDGET deficits and a weak economy have prompted Federal, State, and local governments to propose controversial spending reductions to balance their budgets. Debates and protests incited by these decisions dominate the news, but what is their relevance to medicine? The reflexive answer might be that government spending policies are relevant if they compromise health care services, essential public health programs, or biomedical research. However, the biggest threat to public health may come from funding cuts outside the health sector. Namely, budget decisions that affect basic living conditions—removing opportunities for education, employment, food security, and stable neighborhoods—could arguably have greater disease significance than disruptions in health care.

Health status is determined by more than health care. Education, income, and the neighborhood environment exert great influence on the development of disease—perhaps more than interventions by physicians or hospitals.[1] Consider the role of education. In 2007, adults with a bachelor's degree were four times less likely to report fair or poor health than those without a high school education.[2] The prevalence of diabetes among adults without a high school diploma was 13.2 percent, more than double the prevalence among adults with a bachelor's degree (6.4 percent).[2] In 2008–9, the risk of stroke was 80 percent higher among adults who lacked a high school diploma than among those with some college education.[3] At age 25, life expectancy is at least 5 years longer among college graduates than among those who did not complete high school.[4] Multiple factors explain the health disparity associated with education. Educational attainment is inversely associated with smoking and obesity,[3] but it is also a pathway to better jobs, benefits (including health insurance), and financial security—each of which conveys health advantages.

Families with financial insecurity face hardships that often take priority over health concerns. These families tend to eat poorly, forgo exercise, and skip medications to stretch their budget. Low incomes force many to live in unhealthy housing or in struggling or insecure neighborhoods. Such neighborhoods tend to have limited access to medical care, nutritious groceries, and safe places to exercise and an oversupply of fast foods, liquor stores, pollution, and crime.[5] A life of hardships is associated with higher rates of stress and depression.[2]

The association between income and health applies to everyone, not just those who are poor. Middle-class individuals have lower life expectancy and worse health status than those who are wealthy.[4] Rich or poor, individuals facing more difficult financial circumstances tend to defer clinical care and allow complications to linger. Disadvantaged patients present to physicians in more advanced stages of disease that are more difficult and costly to treat and are often less survivable.[6] In sum, budget policies that impose financial strain on families or curtail educational opportunities could, in time, cause greater morbidity, mortality, and costs—all of which are problematic on moral and economic grounds.

* **Note: Author Affiliations:** Virginia Commonwealth University Center on Human Needs, Virginia Commonwealth University, Richmond.
† **Note: Corresponding Author:** Steven H. Woolf, MD, MPH, Center on Human Needs, Virginia Commonwealth University, West Hospital, 1200 East Broad St, PO Box 980251, Richmond, VA 23298–0251 (swoolf@vcu.edu).

The moral issue is clear: it is unsettling to adopt policies that will induce a higher rate of premature deaths or greater disease or disability. Such policies tend to disproportionately affect those who are poor or who are members of racial or ethnic minority groups, and they often affect children as well. These policies would be soundly rejected if health outcomes and ethics were the only considerations, but policymakers must also contend with economic and political realities.

The core argument of fiscal conservatives is that difficult budget decisions and fiscal discipline are necessary for the economy—a worthy principle for many spending areas. However, fiscal discipline loses its logic when spending reductions lead to greater illness and thereby increase health care costs. Any policy that increases disease burden is a threat to the economy because medical spending is so costly to government and employers. Medicare, Medicaid, and children's health insurance consume 23 percent of the Federal budget.[7] Health care costs are complicating efforts to balance State budgets, operate businesses, and compete in the global marketplace. The need to control medical cost inflation is a mounting national priority, one that argues against budgetary policies that would increase morbidity, heighten demand on the system, and drive up medical spending.

That unwanted scenario is a potential outcome of the more austere budget cuts under current consideration, many of which would impose economic strain on families, weaken support for education, and allow neighborhood living conditions to become more unhealthy. The effect of these conditions on health, relative to medical care, is often underestimated. According to one estimate, giving every adult the mortality rate of those who attend college would save seven times as many lives as those saved by biomedical advances.[8] It has been estimated that 25 percent of all deaths in Virginia between 1990 and 2006 might not have occurred if the entire population had experienced the mortality rate of those who lived in the State's most affluent counties and cities.[9]

In the United States, the adverse socioeconomic conditions that are linked with mortality have become more prevalent in the past decade, especially with the economic recession. Between 2007 and 2009, median household income decreased from $51,965 to $49,777, down from a peak of $52,388 in 1999.[10] Between 2000 and 2009, the number of households with food insecurity increased from 10 million to 17 million.[10] The percentage of individuals with severe housing costs burdens (spending more than 50 percent of their income on housing) increased from 13 percent in 2001 to more than 18 percent in 2009.[10] The number of homeless individuals in families requiring shelters or transitional housing increased from 474,000 in 2007 to 535,000 in 2009.[10] The poverty rate increased from 11.3 percent in 2000 to 14.3 percent in 2009, its highest percentage since 1994 and the largest absolute number on record.[10]

It is reasonable to predict that the population's exposure to these conditions will eventually result in some increase in the prevalence and severity of major illnesses, a trend that would place greater demands on the health care system. Already, emergency departments and hospitals are noting the recession's effect on admissions for uncontrolled diabetes and heart failure. Lasting effects may take years to document. Many of today's children could endure greater illness decades hence and a shorter life expectancy because they grew up during current conditions. This dismal forecast bears attention from health care leaders, who must prepare capacity plans for the wave of patients that a distressed economy would push into the system, and from politicians and economists, who must consider how that care will be financed by a system already too expensive to sustain.

Amid these conditions, it is fair to ask whether now is the right time to cut programs that sustain living conditions for good health and that protect U.S. residents from losing their jobs, income, education, and food. The answer may be disappointing, as the downstream effects on illness and spending may not be enough to outweigh the budgetary pressures of the present, but the question should at least be posed and the tradeoffs discussed. Too often, policymakers and the public fail to recognize the connection between social and health policies, and this seems true again as proponents and critics of current budget reforms wage their debate. When policies could claim lives, exacerbate illnesses, and worsen the economic crisis, these ramifications should at least be discussed.

Note: Conflict of Interest Disclosures: The author has completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest and none were reported.

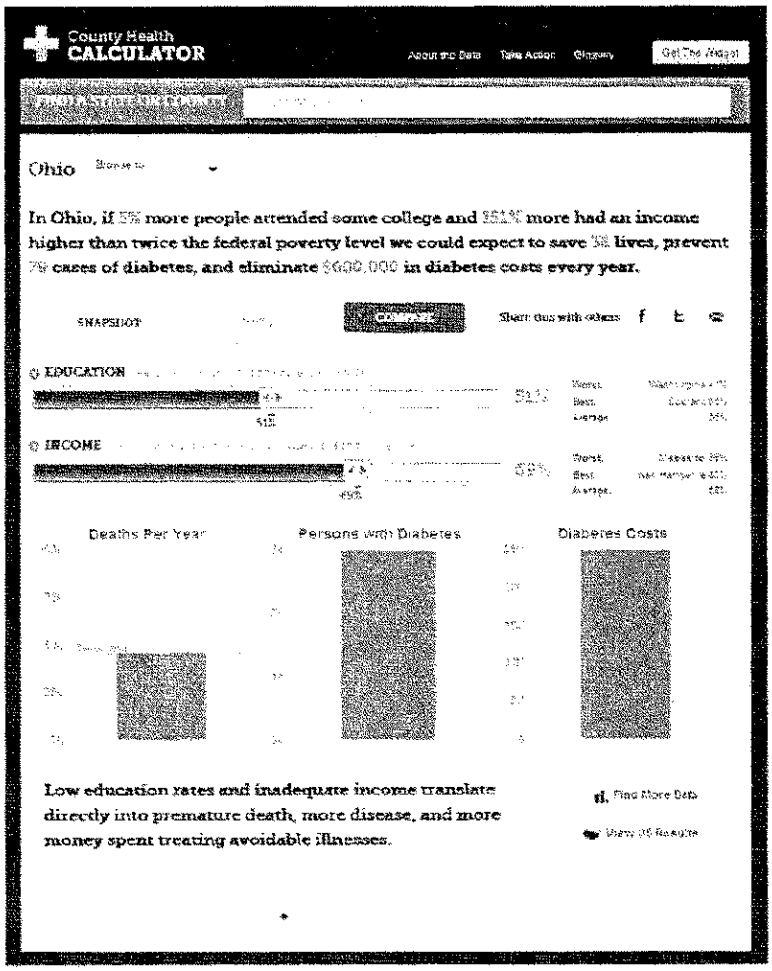
Note: Funding/Support: This Commentary cites research by the Virginia Commonwealth University Center on Human Needs that was funded by the Robert Wood Johnson Foundation (grant 63408) and the statistics were compiled by the Center on Human Needs' Project on Societal Distress, which is supported by the W.K. Kellogg Foundation (grants P3008553, P3011306, and P3015544).

Note: Role of the Sponsor: The W.K. Kellogg Foundation and Robert Wood Johnson Foundation had no role in the preparation, review, or approval of the manuscript.

REFERENCES

1. Woolf SH. Social policy as health policy. *JAMA.* 2009;301(11):1166–69.
2. Pleis JR, Lucas JW. Summary health statistics for U.S. adults: National Health Interview Survey 2007. *Vital Health Stat 10.* 2007;(240):1–159.
3. National Center for Health Statistics. *Health, United States, 2010: With Special Feature on Death and Dying*. Hyattsville, MD: National Center for Health Statistics; 2011.
4. Braveman P, Egerter S. *Overcoming Obstacles to Health: Report From the Robert Wood Johnson Foundation to the Commission to Build a Healthier America.* Princeton, NJ: Robert Wood Johnson Foundation; 2008.
5. Miller WD, Pollack CE, Williams DR. Healthy homes and communities: putting the pieces together. *Am J Prev Med.* 2011;40(1 suppl 1):S48-S57.
6. Singh GK, Miller BA, Hankey BF, Edwards BK. Area socioeconomic variation in U.S. cancer incidence, mortality, stage, treatment, and survival 1975–99. In: *NCI Cancer Surveillance Monograph Series, Number 4*. Bethesda, MD: National Cancer Institute; 2003. NIH publication 03–5417.
7. Office of Management and Budget. *Fiscal Year 2012 Budget of the U.S. Government.* Washington, DC: Executive Office of the President of the United States; 2011.
8. Woolf SH, Johnson RE, Phillips RL Jr, Philipsen M. Giving everyone the health of the educated: an examination of whether social change would save more lives than medical advances. *Am J Public Health.* 2007;97(4):679–83.
9. Woolf SH, Jones RM, Johnson RE, Phillips RL Jr, Oliver MN, Vichare A. Avertable deaths in Virginia associated with areas of reduced household income. *Am J Public Health.* 2010;100:750–55.
10. Virginia Commonwealth University Center on Human Needs. VCU Project on Societal Distress. *http://www.societaldistress.org/*. Accessed March 22, 2011.

County Health Calculator



www.countyhealthcalculator.org

Senator SANDERS. Thank you very much, Dr. Woolf.

Senator Warren, did you want to introduce Dr. Berkman?

Senator WARREN. I do, Mr. Chairman. Thank you very much.

It is my honor to introduce Dr. Lisa Berkman, the Thomas Cabot Professor of Public Policy and Epidemiology, and the director of the Harvard Center for Population and Development Studies at the Harvard School of Public Health. Dr. Berkman is a social epi-

demiologist who examines the impact of social and policy factors on health outcomes.

Dr. Berkman began her career at Northwestern University, where she received her bachelor's in sociology, later attended the University of California Berkeley where she earned both her master's and her doctorate in epidemiology. Before joining the faculty at Harvard, she spent 16 years as a professor at the Yale School of Medicine.

Dr. Berkman's research, both in America and internationally, has helped us better understand the role that social inequality plays in people's health. She has authored or co-authored 275 publications in peer-reviewed literature and numerous book chapters, and is a member of the Institute of Medicine.

I am so pleased that Dr. Berkman is with us here today, and I am looking forward to an engaging conversation with her.

Senator SANDERS. Dr. Berkman, thanks very much for being here. Please begin.

STATEMENT OF LISA BERKMAN, Ph.D., DIRECTOR OF THE HARVARD CENTER FOR POPULATION AND DEVELOPMENT STUDIES AND THOMAS D. CABOT PROFESSOR OF PUBLIC POLICY AND EPIDEMIOLOGY, HARVARD UNIVERSITY, CAMBRIDGE, MA

Ms. BERKMAN. Chairman Sanders, Senator Warren, Senator Baldwin, and other members of the committee, thank you for this invitation to testify. You have chosen a very provocative title for this hearing. It calls for a straightforward response that outlines more than the situation, but also includes potential solutions.

First, I am going to describe, very briefly, trends in life expectancy and the unequal distribution of lists of death by socioeconomic status in the United States, then I will go to some practical options for improving the Nation's health. I will focus on work policy particularly here because it is an area in which the Federal and State Governments have a role in shaping policies that would reduce health disparities.

First, as we have said, U.S. life expectancy has lost ground compared to other Nations in the last decades, especially for women. I was a member of the National Academy of Science's panel on longevity trends. It found that the United States ranked at the bottom of 21 industrialized, developed Nations. These low rankings are particularly striking for the poor and for women.

Of most concern is the widening gap and the risk of death between those at the bottom and those at the top. This gap has widened over the past 25 years. For instance, in 2007, the death rate for men without a high school education was 7 per 100; it was 2 per 100 for those with a college education. This corresponds to a 3½-fold increased risk for those less-educated men. This risk has grown substantially over the last 25 years.

Among women, the patterns are even more troubling. For less-educated women, the risk of dying actually increased, as you noted, in absolute terms during this time. Most striking, this pattern holds even if we only look at white women in the United States.

Now, using the public health framework, I want to show how labor policies and practices can make a difference in American's

health. Although health insurance and access to medical care can help reduce risks of financial catastrophe, and also help cure disease once it occurs, healthcare alone cannot prevent disease. It is like aspirin and headaches. Aspirin can cure headaches, but headaches are not caused by lack of aspirin; they are not aspirin deficiency diseases.

To reduce headaches, we need to focus on the cause of the headache. For this same reason, we need to look at what causes these high rates of dying among the poor and less-educated.

So turning to work, then. A number of studies on the relationship between work and health show that employment almost always associates with better health. These associations last well into old age and relates to reduced mortality risk, as well as to the maintenance of cognitive and physical functioning.

Here are three specific work-related policies that promise to improve health, especially for low wage earners and their families. No. 1, the Earned Income Tax Credit program. EITC is associated with improvement in infant health and decreases in smoking among mothers. Getting the EITC means that your baby, on average, will be 16 grams heavier. To put that in context, it is equal to about one-third of the association between birth weight and having a mother with a high school degree. EITC reduces the odds of maternal smoking by 5 percent and increases mother's odds of working and increases her wages.

No. 2, recent evidence on maternity leave policies in the United States and Europe suggests that protecting employment among expectant and recent mothers leads to better long-term labor-market outcomes including wage level and growth, career prospects, labor market attachment, and employability. Mounting evidence suggests maternity leave is health-promoting for infants and for their mothers throughout their lives.

No. 3, work-family practices. In a study that we did of employees in long term care facilities—which is primarily a low wage working group in a very highly regulated industry—we found that when managers were attentive to work-family issues, their employees were half as likely to have cardiovascular risks compared to workers who have less family friendly bosses. Specifically, these employees were less likely to be overweight, they have lower blood pressure, lower diabetes.

The health effects that I have described here are not counted in the current cost benefit metrics of these policies, so we dramatically underestimate the real benefits that they have. Our labor policies challenge working-class families to remain simultaneously committed to work and to family. Over half of low-wage earners lack sick leave to take care of family. I could give you more policies that would help the health of our low-income working families, but I will stop here.

The EITC, pro-family work policies and practices, and parental leave are just three examples of policies that impact the health of low-income working families.

Thank you very much.

[The prepared statement of Ms. Berkman follows:]

PREPARED STATEMENT OF LISA F. BERKMAN, PH.D.

Chairman Sanders, Senator Burr and members of the committee, thank you for the invitation to testify.

I will discuss two issues today. First, I will describe trends in U.S. life expectancy and the unequal distribution of mortality risk by socioeconomic status in the United States. Second, I will elaborate on options for improving the Nation's health, especially related to labor policies for low-wage workers. I will frame our options for improving health in terms of what we can do to create a healthy population and prevent disease.

First, U.S. overall life expectancy—that is the expected number of years someone born today can expect to live—has lost ground compared to that of other nations in the last decades, especially for women. I was a member of a recent National Academy of Science Panel on diverging trends in longevity. It found that the United States ranked at the bottom of 21 developed, industrialized nations[1] and poor rankings were particularly striking for women. In the 1980s our rankings were in the middle of OECD countries in this study. While it is true that LE improved during this time from by 5.6 years for men and 3.6 years for women, other countries gained substantially more in terms of life expectancy, leaving us behind. Furthermore, almost all those gains were concentrated among the most socioeconomically advantaged segments of the U.S. population. And they were more substantial for men than for women. The poorest Americans experienced the greatest health disadvantage compared to those in other countries.[2 3] At a recent NIH conference, the discussion was focused on the steps required for the United States to reach just the OECD average in the next 20 years—not even the top. It seems we have given up on achieving better than average health.

More concerning is the widening gap in mortality—or risk of death—between those at the bottom and at the top in the United States. These gaps have widened over the last 25 years. These patterns are evident whether we look at education, income or wealth differentials, but because the evidence is clearest that education itself is causally linked to health and functioning.[4 5] I will focus on these associations. For instance, the mortality for men with less than a high school education in 2007, was about 7 per 100. For those with 16 years or more of education, the rate was less than 2 per 100. This corresponds to a 3½-fold risk of dying in 2007, compared to 2.5 times the risk in 1993. For less-educated women, their mortality risk actually increased absolutely during this time giving rise to an increased risk from 1.9 to 3 in 2007[6] and this pattern holds even if we confine our analyses to white women.[7] While it is true that fewer adults are in the less-educated pool in later years, giving rise to questions about selection issues, it is also true that adults in the highest educated categories have grown over this same time suggesting increased compositional heterogeneity in these groups. Overall while selection into education level occurs, it accounts for only a small part of this widening gap.

While mortality gaps in socioeconomic status have existed for centuries, the magnitude of these differences has grown substantially over time in the United States. These widening disparities suggest that either disparities in the underlying determinants of illness and mortality have also been growing over time or that support to buffer these stressful conditions has changed. In either case, while we may not be able to eliminate health disparities, the fact that the size of the risks varies so much suggests that such large inequalities are not inevitable or innate and, gives hope that there are ways to reduce the burden of illness for our most vulnerable citizens.

Now, using a public health framework, I discuss the identification of health risks. While health insurance and access to medical care help reduce risks of financial catastrophe and can improve the health of those suffering from illness, health care alone cannot ensure good health and prevent the onset of disease. To illustrate this point, we can think of the aspirin/headache analogy. "While Aspirin cures a headache, lack of aspirin is not the cause of headaches." Headaches are not caused by aspirin deficiency—to reduce headaches we need to focus on what causes headaches. This is what prevention and public health approaches offer. Obviously it would be better to maintain health than have to treat illness once it occurs. Treatments are financially very costly, but more importantly, waiting to treat disease is costly to the quality of lives of all Americans.

What would be required to produce better health among Americans and reduce socioeconomic disparities in health? What do poor socioeconomic conditions influence that could cause such increased risk across such a huge number of diseases across all age groups from the infancy to old age? You are all probably thinking about the usual suspects—smoking, poor diet, and lack of exercise. I'm not going to focus on these usual suspects today, not because I don't believe they pose substantial risks

to health, but because we know that it is very hard to change these behaviors without considering the social and economic conditions that shape them. These social and economic conditions are fundamental determinants of health because they influence so many behaviors and access to so many opportunities and resources. Change here will influence a number of channels leading to increased mortality risk. In my testimony I will focus on one of these conditions relating to participation in the labor market.

Several years ago, I embarked on a study to assess the relationships between employment, family dynamics and health. We found that employment was almost always associated with better health. These associations lasted well into old age.

Women who had the lowest mortality risk in later adulthood had spent some time out of the labor market (a few years over the career path) but maintain steady labor force participation for most of their lives until retirement. Drawing on data from the Health and Retirement Study, we find that among married mothers, those who never worked had an age-standardized mortality rate of 52.[6] whereas mothers who took some time off when their children were young but who later joined the workforce and mortality rates of around 40. Single mothers who never worked had the highest mortality of 98 compared to 68 for single mothers who worked.

Selection into the labor force may account for some of this association, but more experimental evidence confirms the positive health benefits of working especially for low-income women and men.

For example, the EITC is associated with improvements in infant health and decreases in smoking among mothers.[8] In an analysis of State variation in the Earned Income Tax Credits (EITCs) between 1980 and 2002, Strully finds that EITC's increase birth weights by, on average, 16 grams. To put that in context, it is equal to about a third of the association between birth weight and having a mother with a high school degree. Living in State with EITC reduces the odds of maternal smoking by 5 percent, and increases mother's odds of working and increases her wages and salary.

Recent evidence from several studies of maternity leave policies in the United States and Europe suggests that, by protecting employment among mothers in the period around birth, maternity leave leads to better long-term labor market outcomes after maternity including wage level and growth, career prospects, labor market attachment and employability.[9] [10] [11] [12] Thus not only may maternity leave benefit children and mothers around the period of birth, they may have long-term benefits for mothers that extend for decades in later adulthood.

In an observational study of employees in long-term care facilities, we found that workers whose managers were attentive to work-family issues had half the cardiovascular risks as assessed by objective biomarkers from blood or clinical exam and healthier patterns of sleep compared to those who worked for less family-friendly managers.[13] Specifically, employees whose managers maintained family-friendly practices were less likely to be overweight, had lower risk of diabetes and lower blood pressure. Based on objective measures of sleep using actigraphy monitors, these same employees slept almost 30 minutes more per night than their counterparts. For nurses and certified nursing assistants in low- and middle-wage jobs, these are important risks to which they were exposed.

Such research suggests that labor policies and practices that support men and women in the labor force and especially help those with caregiving obligations are health promoting. These policies and practices have health effects that are not often "counted" as we think about their costs and benefits. Men and women will need opportunities and flexibility and schedule control to enter and remain in the labor force given the inevitability of having to care for children, parents, or partners at some point in time. Our goal for women should be to enable them to be successful in their productive as well as reproductive lives. Right now, we make this very difficult. Our labor policies challenge working class families to remain committed to work and to their families. For example, over half (54 percent) of low-wage earners lack sick leave or vacation to take care of families and around 30 percent of middle-income families lack such leave.[14] Even fewer have parental leave.

We have shown that we can identify the socioeconomic disparities in health with some precision. Solutions that help to maintain low- and working-class men and women in the paid labor force have clear health benefits. The EITC, pro-family work policies and practices and parental leave are examples of polices that impact health of low-income working families. Targets enabling adults to participate in the paid labor force while not risking the health and well-being of their family members show particular value. Metrics for evaluating social and economic policies do not currently include health metrics. The health spillovers of such policies would increase the benefits of such policies in any cost-benefit equations. We want to ensure

that Americans, particularly those living in poverty and working-class families aren't robbed of healthy years of life.

REFERENCES

1. National Research Council (US) Panel on Understanding Divergent Trends in Longevity in High-Income Countries; Crimmins EM, Preston SH, Cohen B, editors. Explaining Divergent Levels of Longevity in High-Income Countries. Washington (DC): National Academies Press (US); 2011. Available from: *http://www.ncbi.nlm.nih.gov/books/NBK62369/*.

2. Avendano M, Glymour MM, Banks J, Mackenbach JP. Health disadvantage in U.S. adults aged 50 to 74 years: a comparison of the health of rich and poor Americans with that of Europeans. Am J Public Health. 2009 Mar;99(3):540–8. doi: 10.2105/AJPH.2008.139469. Epub 2009 Jan 15. PubMed PMID: 19150903; PubMed Central PMCID: PMC2661456.

3. Banks J, Marmot M, Oldfield Z, Smith JP. Disease and disadvantage in the United States and in England. JAMA. 2006 May 3;295(17):2037–45. PubMed PMID: 16670412.

4. Lleras-Muney, Adriana. "The Relationships Between Education And Adult Mortality In The United States," Review of Economic Studies, 2005, v72(250,Jan), 189–221.

5. Glymour MM, Kawachi I, Jencks CS, Berkman LF. Does childhood schooling affect old-age memory or mental status? Using State schooling laws as natural experiments. J Epidemiol Community Health. 2008 Jun;62(6):532–7. doi: 10.1136/jech.2006.059469. PubMed PMID: 18477752; PubMed Central PMCID: PMC2796854.

6. Ma J, Xu J, Anderson RN, Jemal A (2012) Widening Educational Disparities in Premature Death Rates in Twenty Six States in the United States, 1993–2007. PLoS ONE 7(7): e41560. doi:10.1371/journal.pone.0041560.

7. Montez JK, Hummer RA, Hayward MD, Woo H, Rogers RG. Trends in the Educational Gradient of U.S. Adult Mortality from 1986 to 2006 by Race, Gender, and Age Group. Res Aging. 2011 Mar;33(2):145–171. PubMed PMID: 21897495; PubMed Central PMCID: PMC3166515.

8. Strully KW, Rehkopf DH, Xuan Z. Effects of Prenatal Poverty on Infant Health:State Earned Income Tax Credits and Birth Weight. Am Sociol Rev. 2010 Aug 11;75(4):534–562. PubMed PMID: 21643514; PubMed Central PMCID: PMC3104729.

9. Brugiavini, A., Pasini, G. and E. Trevisan (2013) "The direct impact of maternity benefits on leave taking: evidence from complete fertility histories", Advances in life course research, 18: 46–67.

10. Rossin M. The effects of maternity leave on children's birth and infant health outcomes in the United States. J Health Econ. 2011 Mar;30(2):221–39. doi: 10.1016/j.jhealeco.2011.01.005. Epub 2011 Jan 18. PubMed PMID: 21300415; PubMed Central PMCID: PMC3698961.

11. Rossin-Slater M, Ruhm CJ, Waldfogel J. The effects of California's paid family leave program on mothers' leave-taking and subsequent labor market outcomes. J Policy Anal Manage. 2013;32(2):224–45. PubMed PMID: 23547324; PubMed Central PMCID: PMC3701456.

12. Ruhm CJ. Policies to assist parents with young children. Future Child. 2011 Fall;21(2):37–68. PubMed PMID: 22013628; PubMed Central PMCID: PMC3202345.

13. Berkman LF, Buxton O, Ertel K, Okechukwu C. Managers' practices related to work-family balance predict employee cardiovascular risk and sleep duration in extended care settings. J Occup Health Psychol. 2010 Jul;15(3):316–29. doi: 10.1037/a0019721. PubMed PMID: 20604637; PubMed Central PMCID: PMC3526833.

14. Heymann SJ. The Widening Gap: Why Working Families Are in Jeopardy and What Can Be Done About It. New York: Basic Books, 2000.

Senator SANDERS. Thank you very much, Dr. Berkman.

Senator Burr is unable to be with us this morning, but his guest is Dr. Nicholas Eberstadt, who is the Henry Wendt Chair in Political Economy at the American Enterprise Institute. He is also a senior advisor to the National Bureau of Asian Research, a member of the Visiting Committee at the Harvard School of Public Health, and a member of the Global Leadership Council at the World Economic Forum. He researches and writes extensively on economic development, foreign aid, global health, demographics, and poverty.

Dr. Eberstadt, thanks very much for being with us.

STATEMENT OF NICHOLAS EBERSTADT, Ph.D., MPA, M.Sc., HENRY WENDT CHAIR IN POLITICAL ECONOMY, AMERICAN ENTERPRISE INSTITUTE, WASHINGTON, DC

Mr. EBERSTADT. Mr. Chairman, Senators Warren, Baldwin, distinguished co-panelists, and guests.

It is an honor to be here. My testimony focuses upon the exceptions to the established generalization that better education, better health access, and better income result in better health outcomes. Nobody disputes this, but the predictive power of those generalizations should be appreciated, because it is limited.

In my testimony, I show a number of tables which make this argument more clearly than perhaps one can in a brief period of time. If we look at Table 1 in my testimony, I show poverty rates, percentages of adults without high school degrees, GINI coefficients, percentages with no health insurance, and age-adjusted percentages of adults 18 or over with no healthcare visits in the previous 12 months for non-Hispanic whites, also known as Anglos, for Asian Pacific Americans, for Black non-Hispanic African-Americans, for Hispanics, and for the country as a whole.

Now what you will see in this chart is that by all of these indicators, by far the most advantaged group in the United States are the Anglos, lower poverty rates, lower percentages of adults without high school education, lower GINI coefficients for family income, lower percentages without health insurance, and lower percentages who have never been to a doctor or another professional in the last 12 months.

One would think on the basis of what we know that these Anglos would have better than average mortality for the United States as a whole. They do not. In fact, their mortality level, age standardized, is slightly worse than the Nation as a whole.

If one takes a look at the group which seems to be most disadvantaged by these metrics, which would be Latinos, their age standardized mortality is not higher than the national average. In fact, it is 25 percent lower. We should want to understand why this paradox occurs.

If we look at Figure 5 in my testimony, which shows life expectancy in the County of Los Angeles, America's largest, most populous county, the most privileged group in terms of poverty rate would be the non-Hispanic whites. Latinos have a poverty rate which is over twice as high as the Anglos in Los Angeles County, yet the life expectancy at birth for Latinos in Las Angeles is almost 2½ years higher than for whites. We should want to understand how this sort of an outcome can occur.

In Figure 8 in my testimony, I use an analysis, or I present an analysis, done by the New York City Department of Health which shows life expectancy by ethnicity and by poverty statuses, neighborhoods. One of the fascinating results here, for Asian-Americans, the poverty status of neighborhoods makes practically no difference in life expectancy, and life expectancy for Asian-Americans in New York City is higher than for any other group. We should want to know how that can be.

Finally, Figures 11 and 12, I take estimates made by the Social Science Research Council in New York City for life expectancy by ethnicity by State across the United States, and I compare these with life expectancy as estimated by the U.S. Census Bureau for various OECD countries.

You can see in Figure 11 that for Hispanic Americans taken by themselves, life expectancy at birth is higher than for any OECD country. The healthiest country in the world at this point is Japan. Latino life expectancy in America is higher than life expectancy in Japan. And the figures for Asian-Americans are just off the charts.

If the United States was a nation of only Latinos and Asian-Americans, disadvantaged groups by these indicators I used, we would be the healthiest country on earth.

A question for us, it seems to me, a critical question is: how do some disadvantaged groups achieve excellent, world-class health outcomes? If we answer that question, I think we can help to increase health for all Americans.

Thank you.

[The prepared statement of Mr. Eberstadt follows:]

PREPARED STATEMENT OF NICHOLAS EBERSTADT, PH.D., MPA, M.SC.

Mr. Chairman, distinguished Members, esteemed co-panelists and guests, in these august chambers, as in other policymaking circles in Washington and around the Nation, a policy syllogism is gaining currency and receiving increasingly respectful attention. The syllogism runs something like this: health progress is faltering in America today; faltering health progress is the consequence of social and economic disparities; therefore government must intervene to reduce disparities if health progress is to be revitalized.

Influential as this syllogism has come to be nowadays, I submit that it is empirically flawed, and therefore requires serious qualification and re-examination.

The problem with the syllogism lies not in its assertion that health progress in modern America is disappointing. For the Nation as a whole, the evidence to this effect is, unfortunately, overwhelming.

Rather, the trouble lies with the proposition that social and economic disparities are the cause of America's disappointing health performance today.

To be clear: this is not to ignore the great corpus of data pointing to a widening of income differences and other economic differences in America over the past generation. Nor is it to suggest that it is not better to be affluent, educated, and well-insured. Obviously it is: and not just for reasons bearing on health.

Yet the perhaps curious fact of the matter is that real existing social and economic disparities are just not that good in predicting real existing health disparities in our real existing modern America. In fact, it is commonplace today for poorer, less-educated groups to enjoy substantially *better* health outcomes than those who would appear to enjoy distinctly greater socioeconomic advantages. The surprising—but also hopeful—fact is that it is possible for groups suffering what might be described as both social and economic disadvantage to achieve very good health outcomes in America today. And that is not just a technical, arcane, theoretical possibility: it is a main street reality, ratified by the survival profiles of millions upon millions of Americans today.

We manifestly need to understand exactly how it is that so many Americans today manage to achieve good or excellent health outcomes with limited incomes, educational backgrounds, and other socioeconomic resources. But manifestly, the mental straitjacket that the "social disparities" mindset imposes on public health research is incapable of helping us in this critical task.

The tables and graphs that accompany this written statement offer data and analysis that underscore, and expand upon, the summary points offered telegraphically in the preceding paragraphs.

Let us begin with the question of America's health record over the postwar era. There is really no question at this point as to the at-best mediocre results we as a society have garnered over the past half century and more. While our country has achieved continuing incremental improvements in overall health conditions (as reflected in the mirror of mortality), our progress has been decidedly slower than in

other affluent Western democracies—and thus our ranking in this roster has gradually but steadily declined.

We can see this in Figures 1 and 2 of the attachment to this written statement. [See Figures 1 and 2] The graphics trace out the trends in years of combined male and female life expectancy at birth on the one hand, and infant mortality rates per thousand live births on the other hand, for the United States and 23 other never-communist members of the OECD (Organization for Economic Cooperation and Development), an association of aid-dispensing Western industrialized democracies.

These estimates come from the Human Mortality Data base, a project undertaken by the University of California at Berkeley and the Max Planck Institute for Demographic Research in Germany—since experts in this network have carefully examined the underlying data from all these countries and offered their own corrections or reconstructions as warranted, we get an "apples to apples" comparison here.

As can be seen in Figures 1 and 2, despite continuing progress in reducing mortality levels, America has gone from a more or less middling ranking in this pack of 24 countries shortly after the end of World War II (1950) to the very poorest ranking among these 24 countries today (circa 2010). Life expectancy at birth is now estimated by the Human Mortality Database researchers to be lower in the USA than in any of the other 23 comparators—and infant mortality conversely is placed highest in the USA for any country in this same group. Trend lines for the odds of surviving from birth to say age 65, or any other measure for the risk of premature mortality, would tell a roughly similar story for America's health performance over the postwar era.

What accounts for this long-term relative decline in U.S. health performance?

Over the past half century, America has become an increasingly multiethnic society, and it has also seen the emergence of growing economic differences. (Admittedly, rising measured economic differences have also been characteristic of almost all other affluent Western democracies over these same decades—but measured income dispersion in the USA today appears to be greater than in almost all of the comparator countries in Figures 1 and 2).

It is tempting to link these big changes in American society and economy with our disappointing health performance. This impulse, indeed, is at the heart of the current popularity of the "social disparities" paradigm, so widely utilized in public health research on America today. There is no gainsaying the general insight that more prosperous and better-educated people should be expected to have more favorable health outcomes than those who are less well-to-do. But as a practical matter, socioeconomic disparities do not seem to offer us all that much help in understanding the big health differentials we see in our society today.

Table 1 makes the point. [See Table 1] It presents figures for America's major ethnic groups on the one hand for major indices of social and economic disparity—poverty rates; proportions of the adult population without high school education; income distribution for families; percentages of persons without health insurance; percentages of adults with no health care visits over the previous 12 months—and on the other for age-standardized mortality.

If the "social disparities" model has much predictive power in the modern American context, we would expect these major disparities to track with differential in mortality. We should bear this in mind when we examine the findings in Table 1.

Consider what this table reveals for the "non-Hispanic White" (i.e., "Anglo") population in contemporary America (i.e., around the year 2010). By all indicators in this table—poverty, education, income distribution, access to health insurance, use of health services in the past 12 months—the "Anglo" community or population appears to be decidedly better off on average than Americans as a whole. But age standardized mortality for Anglos is no better than for the U.S.A. as a whole. Indeed, age standardized mortality is reportedly slightly *higher* for Anglos than for the Nation as a whole.

Needless to say, if social and economic disparities were the dominant factor in determining health outcomes in the United States, the improbable correspondence between relative socioeconomic privilege and slightly less-than-average health results for Anglo America today would be unfathomable. But the situation is even more striking than this one comparison would suggest.

Consider next the circumstances for our Asian minority (officially, Asian and Pacific Islanders). On all of the social and economic indicators in Table 1, the Asian population fares less favorably than the Anglos. Yet age-standardized mortality levels for our Asian-Pacific population are officially estimated to be over 40 percent below the national average.

Finally, consider the situation for the Hispanic population in America today. By a number of measures, it would appear to be *the* most socioeconomically disadvantaged major ethnic group in America today. Nearly 40 percent of Hispanic American

adults, for example, have no high school degree (2009); over 30 percent of all have no health insurance (2010); and nearly 30 percent of Hispanic adults did not report even a single visit to get health care over the previous year (2010). Even so: the age-standardized mortality level for Hispanic Americans is estimated to be fully 25 percent lower than the average for the Nation as a whole!

Thus the striking paradox of health in modern America is this: minority groups reporting higher incidences of poverty and income inequality, lower educational attainment, less health insurance coverage, and greater likelihood of no treatment by medical professionals than our Anglo majority also report significantly lower mortality (and thus longer life expectancy) than our Anglos—indeed, significantly better mortality levels than for America as a whole. And this paradox is not new: as Figures 3 and 4 attest, for males and females alike, mortality rates for our Asian and Hispanic minorities have been superior to those of non-Hispanic Whites for many decades—in fact, for as long as such numbers have been compiled. Non-Hispanic Blacks or African-Americans are the only ethnic minority whose health profile appears to be poorer nowadays than our Anglos.

The phenomenon of superior health performance by ostensibly disadvantaged minorities can be seen from sea to shining sea. Consider first Los Angeles County: with nearly 10 million inhabitants, the Nation's most populous jurisdiction, fewer than 30 percent of whose residents are Anglos. [See Figure 5] According to the LA County Department of Public Health, total male and female life expectancy at birth for these non-Hispanic White residents in 2010 was actually a bit below the countywide average (80.8 years vs. 81.5 years). But the official poverty rate for the Anglo population in LA County is well below the countrywide average. On the other hand, Hispanics and Asians both suffered higher poverty rates than Anglos—the rate for Latinos was over twice as high as for non-Hispanic Whites—yet their life expectancies were also markedly higher. In 2010, the Latino edge in life expectancy over Anglos in LA County amounted to roughly 2.4 years; for Asians, the premium was fully 5 years. Is "your social and economic status" a "death sentence in America," as the title of our hearing today avers? Evidently, not in Los Angeles.

Now consider New York City, the Nation's biggest urban jurisdiction. [See Figure 6] As we all know, the "Hispanic" designation encompasses a wide variety of backgrounds. In terms of country or place of origin, the Latino population of New York City is quite different from Los Angeles County. No matter: according to the New York Department of Health, Hispanics still edge out Whites in life expectancy in New York City, and have been doing so for many years, even though the Hispanic population's poverty rate in 2010 was over twice as high as the rate for Whites.

If we look at age-standardized mortality in New York City, we see our national health paradox instantiated locally. [See Figure 7] Here again, mortality levels are lower for Hispanics and for Asians than for Whites, even though their official poverty rates are higher. It is true that mortality levels for New York's Black population is dramatically higher than for its White population—and poverty rates for Blacks in New York were about twice as high as for non-Hispanic Whites in the period under consideration. But the Hispanic poverty rate in New York was very appreciably higher than the Black rate, even as the Hispanic age-adjusted mortality levels were fully one-third lower than Black levels.

In and of itself, poverty just isn't that good a predictor of health outcomes in New York City. That point is further emphasized in an analysis by the New York City Department of Health on life expectancy, ethnicity, and neighborhoods. [See Figure 8] It is true that the very lowest life expectancy was recorded for Black New Yorkers who lived in the city's poorest neighborhoods. It is also true that life expectancy generally tended to increase for city residents as the affluence of their neighborhood increased. So far, so good for the "social disparity" model. But the biggest differences in health outcome in New York City just can't be predicted by this proxy of affluence or disadvantage. Note that life expectancy for African-Americans in the city's most affluent neighborhoods was notably lower than for Hispanics in the city's poorest neighborhoods. Note as well that there was no "poverty neighborhood" effect whatsoever for New York's Asian population. Indeed: according to this analysis, the very healthiest group in New York City was Asians who lived in New York's poorest neighborhoods. These people enjoyed life expectancies roughly 5 years higher than for Whites from the city's wealthiest neighborhoods.

Let us return to our international comparison of America's health performance. The disappointing picture painted in Figure 1 turns out to be much more interesting, and somewhat more promising, when we disaggregate life expectancy by State and by ethnicity. We can do so with the aid of research by the "Measure of America" project from the Social Science Research Council (SSRC), which permits us to compare State-level life expectancy at birth by ethnicity with U.S. Census Bureau estimates for life expectancy at birth for the rest of the OECD. [See Figures

9–12] As we can see, America's international health standing depends very much on which group and region we are talking about.

For African-Americans, the story is pretty dispiriting—the nationwide average for life expectancy for American Blacks is lower than the life expectancy of all but three of the OECD's 34 countries, and even the highest calculated State-level African-American life expectancy (Rhode Island) is lower than 20 of the OECD's country-level averages.

For U.S. Whites, the situation looks better, but only to a degree. By these SSRC calculations, the nationwide life expectancy at birth for America's Whites ranks below the life expectancy at birth of fully 20 OECD countries, as estimated by the U.S. Census Bureau. The dispersion of life expectancy by State for America's Whites is noteworthy. Among U.S. Whites, life expectancy for the longest living region (Washington DC) is higher than for any country in the OECD—but life expectancy for the lowest region (West Virginia) is worse than for all but four OECD nations.

When we place Hispanic America's health in international perspective, the contrast is dramatic. To many viewers, the results are likely to be unexpected. By themselves, Hispanic Americans today are estimated to enjoy a life expectancy higher than for any country in the OECD—higher even than Japan, the world's healthiest society by the yardstick of life expectancy.

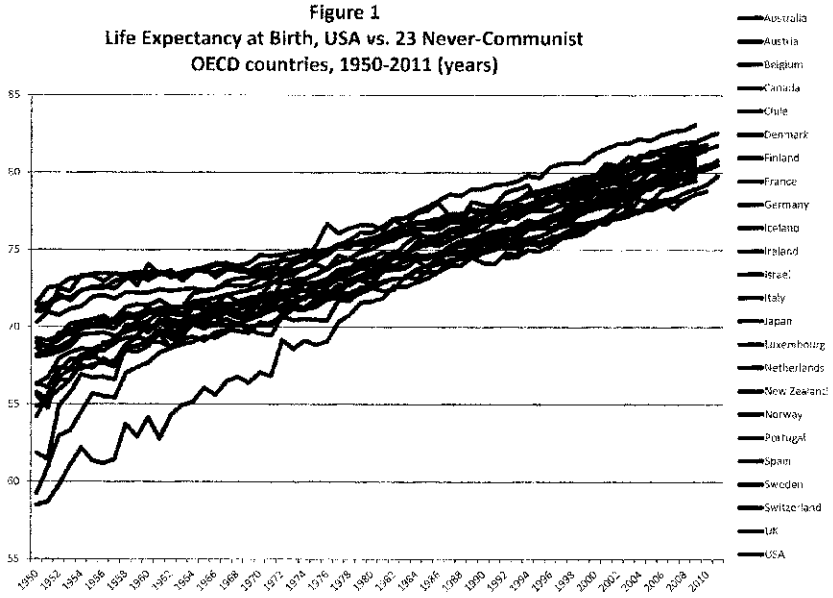
And America's Asian population is almost off the chart. By the SSRC's reckoning, Asian Americans nationwide can expect to live about 5 years longer than citizens of Japan; life expectancy for Asian Americans in their lowest-health State (Hawaii) would be a bit higher than life expectancy in Switzerland; and in at least six States. Asian-American life expectancy at birth nowadays is placed above 90 years.

Viewed from this perspective, America's health problem looks a little different from the conventional formulations. If the United States were a nation composed solely of its Hispanic and Asian Pacific minorities—populations, as we have seen, where conventionally described "social disparities" weigh heavier than on the Nation as a whole—we would be the healthiest country on earth. Our nationwide health problem is a problem within our African-American population—a group that suffers disproportionately from poverty and other conventional metrics of socioeconomic disadvantage—and our Anglo population—a group that suffers *less* from poverty and other conventional metric of socioeconomic disadvantage than the Nation as a whole.

As should by now be apparent, health outcomes in modern America are a consequence of something beyond abstract social forces. Seeming victims of "social disparities" regularly achieve high levels of life expectancy—very often, levels better than those with seemingly greater social and economic advantages. If we are truly interested in improving our country's public health conditions, we should be asking what is going *right* in these populations and these communities. Is it behavior? Lifestyles? Outlook and attitudes? Some combination of these things? We should desperately want to know. We will not—indeed cannot—learn the answers to this critically important question to our Nation's well-being if we insist on attempting to protect the conclusion that social inequality is really what ails us.

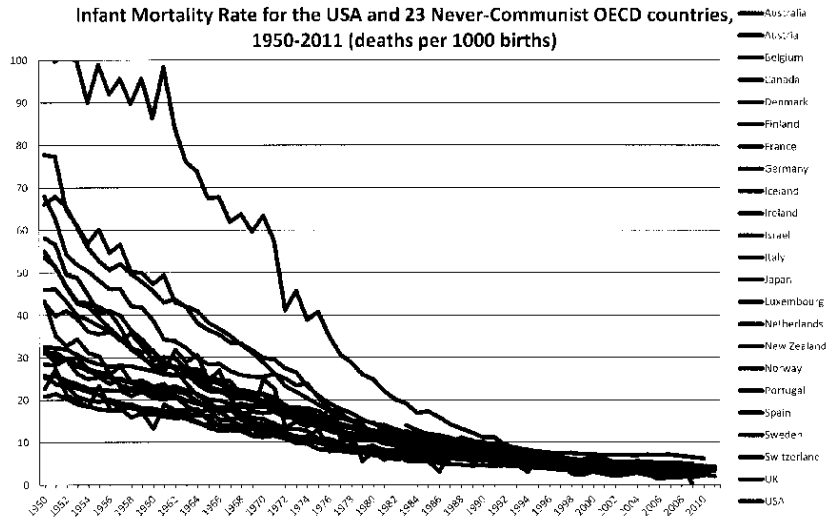
Attachments—Tables and Figures

Figure 1
Life Expectancy at Birth, USA vs. 23 Never-Communist OECD countries, 1950-2011 (years)



Source: *Human Mortality Database*. University of California, Berkeley (USA), and Max Planck Institute for Demographic Research (Germany). Available at www.mortality.org, Accessed November 15, 2013.

Figure 2
Infant Mortality Rate for the USA and 23 Never-Communist OECD countries, 1950-2011 (deaths per 1000 births)



Source: *Human Mortality Database*. University of California, Berkeley (USA), and Max Planck Institute for Demographic Research (Germany). Available at www.mortality.org, Accessed November 15, 2013.

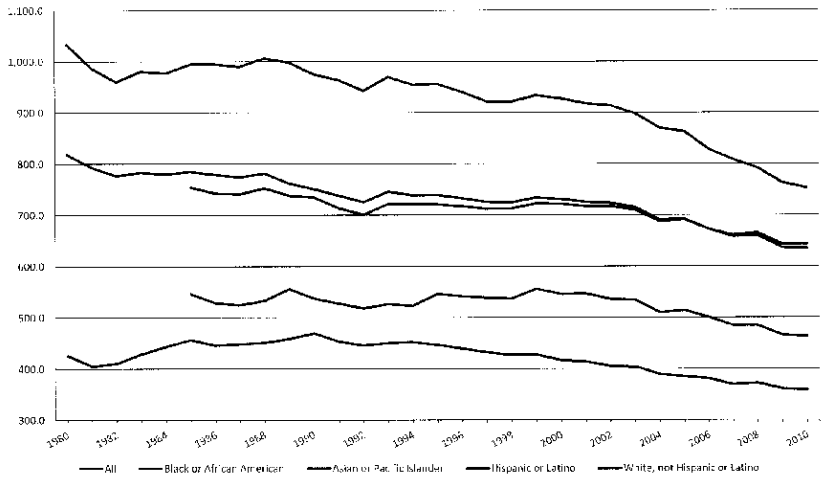
Table 1

Socioeconomic Disparities and Mortality in the United States, by Ethnicity, c. 2010

	Poverty Rate (2010)	Percent Adults Age 25+ without High school Degree (2009)	Gini Coefficient for Family Income (2010)	Percent with no health insurance (2010)	Age-Adjusted Percentage of Adults Age 18+ With no Health Care Visits over Previous 12 Months (2009)	Age standardized mortality rate (2008-2010)	Index of Age Standardized Mortality 2008 -2010 (All = 100)
White, not Hispanic	**9.9**	**9.6**	**0.418**	**11.7**	**16.5**	**755.0**	**101**
Asian Pacific	12.2	14.7	0.427	18.4	24.2	424.3	57
Black, not Hispanic	27.4 (classified as black alone)	18.6	0.403	20.8	19.7	898.2	120
Hispanic (any race)	26.5	39.1	0.456	30.7	29.8	558.6	75
All	**15.1**	**14.7**	**0.440**	**16.3**	**19.5**	**747.0**	100

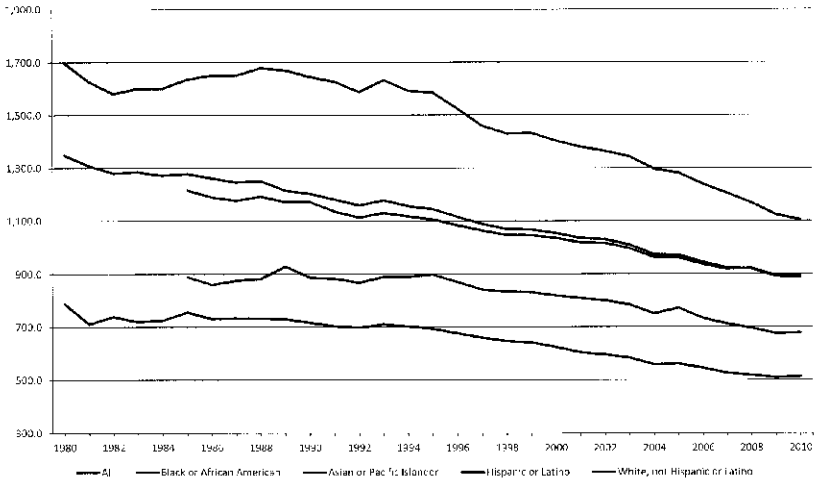
Sources: Poverty Rate: U.S. Census Bureau, Current Population Survey, 2011 Annual Social and Economic Supplements, http://www.census.gov/hhes/www/cpstables/032011/pov/POV01_100.htm; Education: Camille L. Ryan and Julie Siebens, *Educational attainment in the United States: 2009*, U.S. Census Bureau, Current Population Reports, P20-566 (February 2012), Table 1, http://www.census.gov/prod/2012pubs/p20-566.pdf ; Gini coefficient for family income: U.S. Census Bureau, "Historical Income Tables: Income Inequality", Table F-4, http://www.census.gov/hhes/www/income/data/historical/inequality/ ; Health Insurance: Carmen DeNavas-Walt, Bernadette D. Proctor, Jessica C. Smith, U.S. Census Bureau, Current Population Reports, P60-239, *Income, Poverty, and Health Insurance Coverage in the United States: 2010*, Figure 7 and Table 8, http://www.census.gov/prod/2011pubs/p60-239.pdf ; Health Care Use: Schiller JS, Lucas JW, Peregoy JA. Summary health statistics for U.S. adults: National Health Interview Survey, 2011. National Center for Health Statistics. Vital Health Stat 10(256). 2012., Table 35, http://www.cdc.gov/nchs/data/series/sr_10/sr10_256.pdf ; Mortality: Centers for Disease Control/National Center for Health Statistics, *Health, United States, 2012*, Table 20, http://www.cdc.gov/nchs/hus/contents2012.htm#fig01 . All Data Accessed November 15, 2013.

Figure 3
Age Standardized Mortality for Females by Ethnicity: USA, 1980-2010



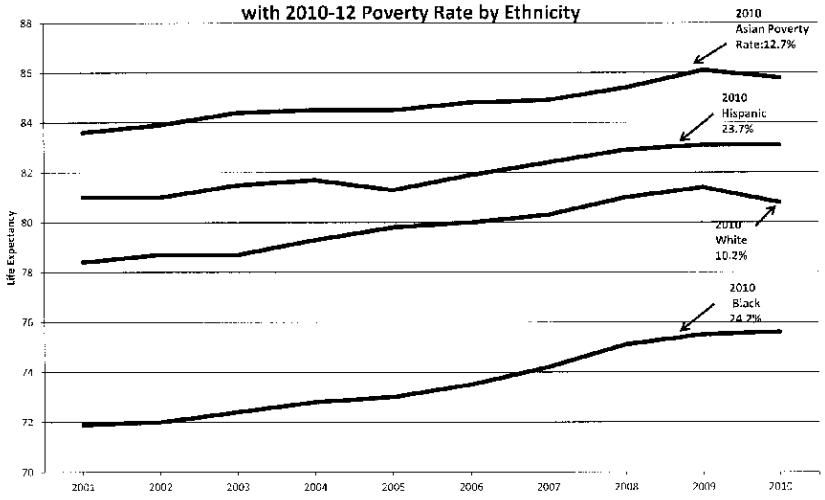
Source: CDC/NCHS, National Vital Statistics System, Compressed Mortality File, See Appendix I, National Vital Statistics System (NVSS), Health, United States, 2012, Table 25, http://www.cdc.gov/nchs/hus/contents2012.htm#fig01 , Accessed November 15, 2013

Figure 4
Age Standardized Mortality for Males by Ethnicity:
USA, 1980-2010



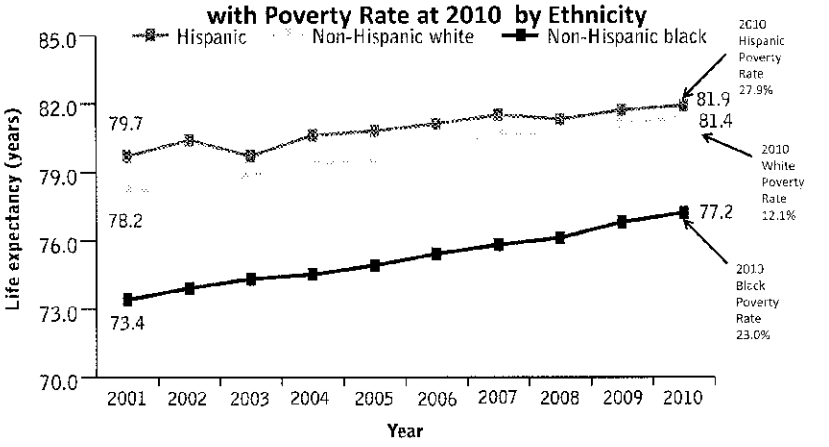
Source: CDC/NCHS, National Vital Statistics System, Compressed Mortality File, See Appendix II, National Vital Statistics System (NVSS), Health, United States, 2012, Table 25, http://www.cdc.gov/nchs/hus/contents2012.htm#fig01 , Accessed November 15, 2013

Figure 5
Life Expectancy at Birth in Los Angeles County by Ethnicity, 2001-2010
with 2010-12 Poverty Rate by Ethnicity



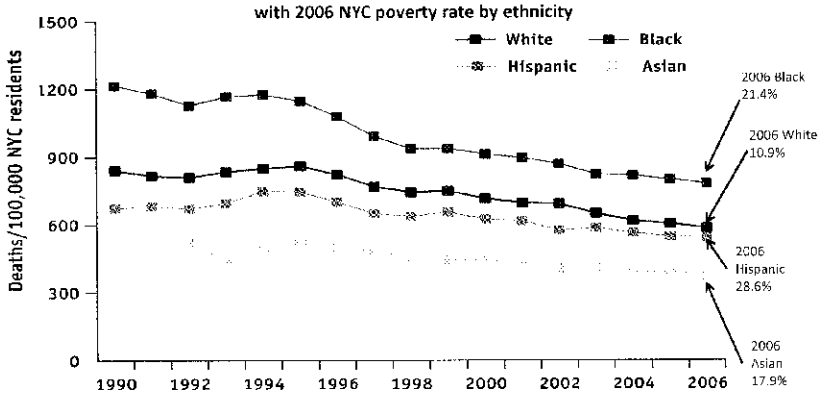
Sources: Life expectancy dataset, County of Los Angeles, Department of Public Health, https://dqs.publichealth.lacounty.gov/query.aspx?id=3, Accessed November 15, 2013;
Poverty Rate Statistics: Poverty Status in the Past (S1701): Los Angeles County, U.S. Census Bureau, American Community Survey, 2010-2012

Figure 6
Life Expectancy at Birth by Race/Ethnicity in New York City, 2001-2010; with Poverty Rate at 2010 by Ethnicity



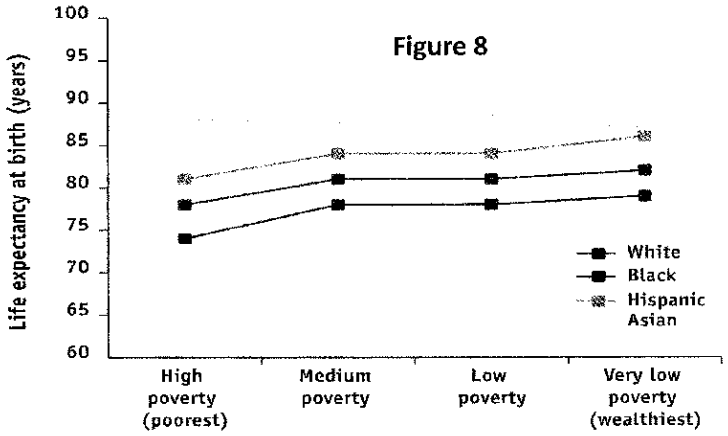
Sources: NYC DOHMH Bureau of Vital statistics from Li W, Maduro G, Begier EM. Life Expectancy in New York City: What Accounts for the Gains? New York City Department of Health and Mental Hygiene: Epi Research Report, March 2013; 1-12. Poverty Rate Statistics: Poverty Status in the Past 12 months(S1701): New York City, New York, U.S. Census Bureau, American Community Survey, 2010.

Figure 7
Age Standardized Mortality by Race/Ethnicity in New York City, 1990-2006; with 2006 NYC poverty rate by ethnicity



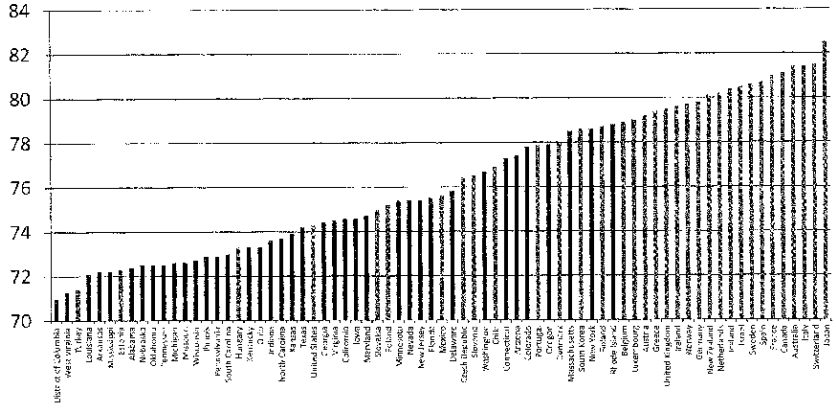
Notes: Rates are age adjusted. Asian data prior to 1993 excluded due to changes in category definition.
Sources: US Census 1990 and 2006; NYC DOHMH neighborhood population estimates, 2000-2006; Bureau of Vital Statistics, NYC DOHMH, 1990-2006 from Myers C, Olson C, Kerker B, Thorpe L., Greene C., Farley T. Reducing Health Disparities in New York City: Health Disparities in Life Expectancy and Death. New York: New York City Department of Health and Mental Hygiene, 2010. Poverty Rate Statistics: Poverty Status in the Past (S1701): New York City, New York, U.S. Census Bureau, American Community Survey, 2005.

Life expectancy varies by neighborhood poverty and race in NYC (2004-2006 annual average)



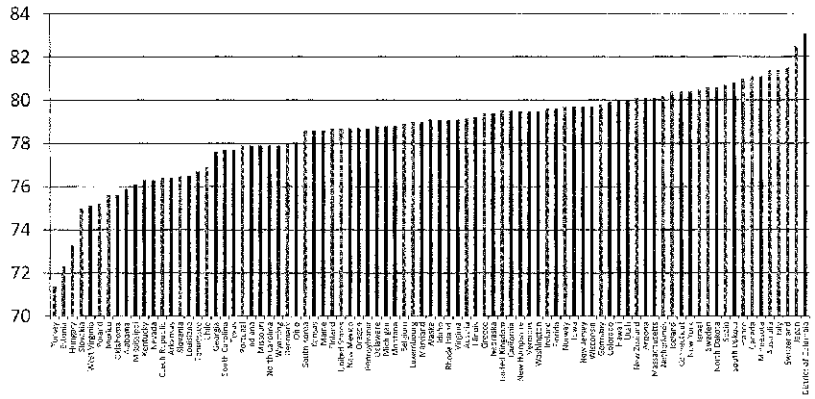
Source: Bureau of Vital Statistics, NYC DOHMH, and New York State Dept. Health Bureau of Biometrics, 2004-2006 combined; NYC neighborhood population estimates, 2004-2006 combined from Myers C, Olson C, Kerker B, Thorpe L., Greene C., Farley T. Reducing Health Disparities in New York City: Health Disparities in Life Expectancy and Death. New York: New York City Department of Health and Mental Hygiene, 2010.

Figure 9
Life Expectancy at Birth, 2007 in Years:
OECD Nations vs. African Americans by State



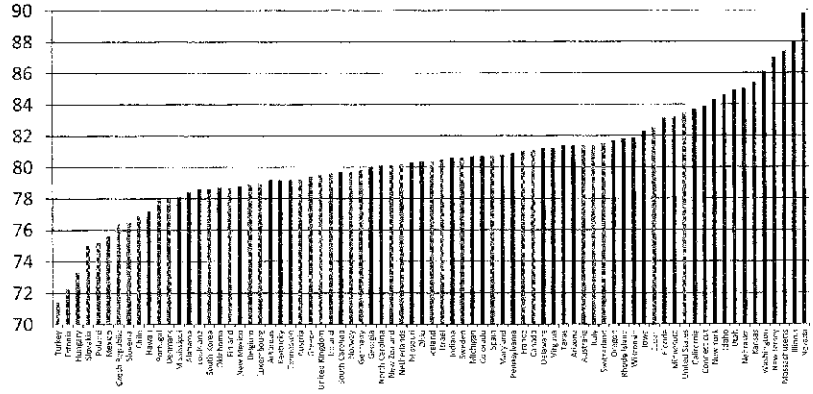
Source: OECD Data: United States Census Bureau. International Programs. International Data Base. Mortality Indicators by Sex.
http://www.census.gov/population/international/data/idb/informationGateway.php (Accessed: November 17, 2013)
US Data: HD Index and Supplemental Indicators By State, 2010-11 Dataset. Measure of America, Social Science Research Council,
http://measureofamerica.org/maps/?area=States&type=All&sex=All&year=Year2010&index=Life%20Expectancy%20at%20Birth%20%28years%29
(Accessed: Jan. 9, 2013)

Figure 10
Life Expectancy at Birth, 2007 in Years:
OECD Nations vs. White Americans by State



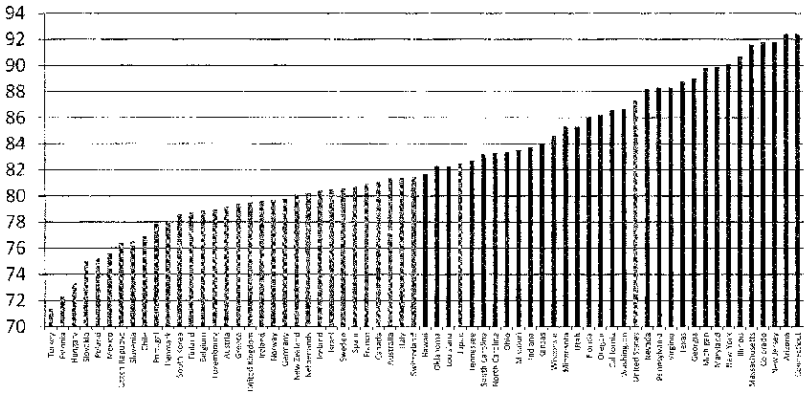
Source: OECD Data: United States Census Bureau, International Programs, International Data Base, Mortality Indicators by Sex.
http://www.census.gov/population/international/data/idb/informationGateway.php (Accessed: November 17, 2013)
US Data: IID Index and Supplemental Indicators By State, 2010-11 Dataset, Measure of America, Social Science Research Council.
http://measureofamerica.org/maps/?area=States&race=All&sex=All&years=Year2010&ind1=Life%20Expectancy%20at%20Birth%20%28years%29
(Accessed: Jan. 9, 2013)

Figure 11
Life Expectancy at Birth, 2007 in Years:
OECD Nations vs. Hispanic Americans by State



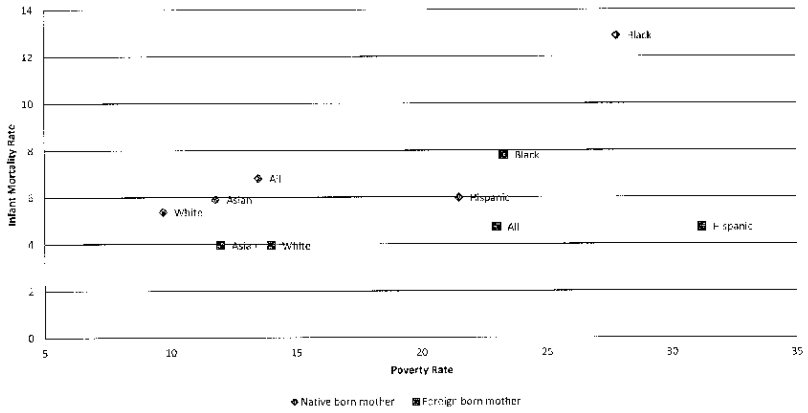
Source: OECD Data: United States Census Bureau, International Programs, International Data Base, Mortality Indicators by Sex.
http://www.census.gov/population/international/data/idb/informationGateway.php (Accessed: November 17, 2013)
US Data: IID Index and Supplemental Indicators By State, 2010-11 Dataset, Measure of America, Social Science Research Council.
http://measureofamerica.org/maps/?area=States&race=All&sex=All&years=Year2010&ind1=Life%20Expectancy%20at%20Birth%20%28years%29
(Accessed: Jan. 9, 2013)

Figure 12
Life Expectancy at Birth, 2007 in Years:
OECD Nations vs. Asian Americans by State



Source: OECD Data. United States Census Bureau. International Programs. International Data Base. Mortality Indicators by Sex.
http://www.census.gov/population/international/data/idb/informationGateway.php (Accessed: November 17, 2013)
US Data: HD Index and Supplemental Indicators By State, 2010-11 Dataset, Measure of America. Social Science Research Council.
http://measureofamerica.org/maps/?area=States&race=All&sex=All&year=Year2010&indx=Life%20Expectancy%20at%20Birth%20(Years)
(Accessed: Jan. 9, 2015)

Figure 13
Infant Mortality Rate (2009) vs. Poverty Rate (2010):
US Native born vs. Foreign born mothers by ethnicity



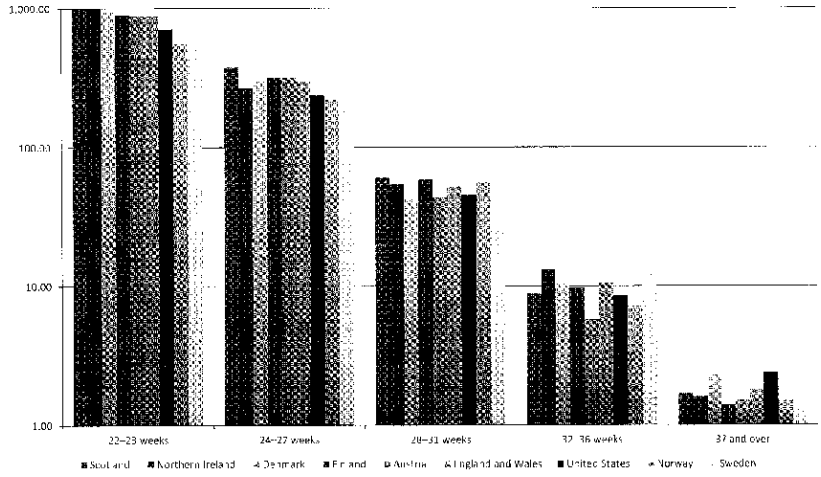
Source: Infant mortality rate: T. . . Mathews and Marian MacDorman, *Infant Mortality Statistics From the 2009 Period Linked Birth/Infant Death Data Set*, National Vital Statistics Reports, Vol 61, No. 8, January 24, 2013, http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_08.pdf
Poverty Rate data: Center for Immigration Studies, "Poverty, Welfare, and the Uninsured." Immigrants in the United States: A profile of America's Foreign born Population, Table 10, http://cis.org/node/3876#poverty, Accessed November 15, 2013.

Table 2
Infant Mortality Rate by Ethnicity, marital status, and education level, 2007-2009

	8th grade or less	9th-12th grade, no diploma	High school graduate or GED completed	Some college, no degree	Bachelor's degree	Master's degree	Doctorate or Professional degree	Total
Married Non-Hispanic Black		10.25	10.77	10.48	8.5	5.56		9.44
Unmarried Non-Hispanic Black	12.55	14.84	13.06	11.74	10.21	12.86		12.81
Married Non-Hispanic White	6.42	8.37	5.6	4.58	3.28	2.97	3.58	4.24
Unmarried Non-Hispanic White	8.43	10.03	7.53	5.66	5.66			7.13

Source: United States Department of Health and Human Services (US DHHS), Centers of Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Division of Vital Statistics (DVS), Linked Birth / Infant Death Records 2007-2009 on CDC WONDER On-line Database. Accessed at http://wonder.cdc.gov/lbc-current.html on Nov 17, 2013

Figure 14
Gestational age-specific infant mortality rates, United States vs. selected European countries, 2004



Source: Marian MacDorman and T.J. Mathews, *Behind international rankings of infant mortality. How the United States compares with Europe*, Table 2, International Journal of Health Services, Volume 40, Number 4, Pages 577-588, 2010.

Senator SANDERS. Thank you very much.
Senator Baldwin, did you want to introduce Dr. Kindig?

STATEMENT OF SENATOR BALDWIN

Senator BALDWIN. I would be honored. Thank you, Mr. Chairman.

I want to thank you and Ranking Member Burr for convening this hearing. We all know of your longstanding commitment to issues of income inequality, poverty, and health disparities. Too often, these issues are not discussed; they are swept under the rug. We know as a Nation, we have to do better to make sure that every American has a fair shake and a fair shot at success. Thank you, Mr. Chairman.

You have invited a distinguished panel here today, including a star from my home State of Wisconsin. Dr. David Kindig is Emeritus Professor of Population Health Sciences and Emeritus Life Chancellor for Health Sciences at the University of Wisconsin Madison School of Medicine. He co-directs the Wisconsin site of the Robert Wood Johnson Health & Society Scholars Program. He also serves as editor for the Improving Population Health blog.

Dr. Kindig served as senior advisor to Donna Shalala, Secretary of Health and Human Services, from 1993 to 1995. In 1996, he was elected to the Institute of Medicine National Academy of Sciences. He chaired the Institute of Medicine's Committee on Health Literacy in 2002 to 2004, as well as Wisconsin Governor Jim Doyle's Healthy Wisconsin Task force in 2006. In 2007, he received the Wisconsin Public Health Association's Distinguished Service to Public Health Award.

Dr. Kindig.

STATEMENT OF DAVID A. KINDIG, M.D., Ph.D., EMERITUS PROFESSOR OF POPULATION HEALTH SCIENCES, UNIVERSITY OF WISCONSIN SCHOOL OF MEDICINE AND PUBLIC HEALTH, MADISON, WI

Dr. KINDIG. Thank you very much, Senator Sanders, Senator Warren, and Senator Baldwin for that really warm introduction. Great to see you here in this role.

I thank you all for the opportunity to speak today about the social and economic factors that have caused many Americans to have shorter and less healthy lives than the generations that have gone before them. I have worked my whole career in what we now call population health, beginning as a pediatric resident in a poverty neighborhood in the South Bronx and serving as the first Medical Director of the National Health Service Corps in 1971.

This hearing shines light on something that many people do not yet understand: that while healthcare is necessary for health, it is not the only, nor even the most, important factor in producing longer, healthier, and more productive lives. Health is produced by many factors including medical care and health behaviors, but equally importantly or more importantly, issues like income, education, the structure of our neighborhoods, as my colleagues have been showing.

The bottom line is we will not improve our poor health performance unless we balance our financial and policy investment across this whole portfolio of factors.

For many years, I ran the Population Health Institute at the University of Wisconsin School of Medicine and Public Health. With my colleagues, we created the County Health Rankings for use in Wisconsin prior to collaborating with the Robert Wood Johnson Foundation to take the rankings national.

An easy to use snapshot, the rankings compare counties on a range of factors, as I have mentioned, particularly including the social factors on employment and income. In fact, we weight those factors in the rankings model as 40 percent of what impacts our health outcomes.

We initially did this for 6 years in Wisconsin for only our 72 counties. I will never forget the first morning we released those first rankings. I got a call from a radio talk show in a rural Wisconsin town; I believe it was Platteville. The first question asked was, this is like 7:30 a.m., "Dr. Kindig, does this report mean that income levels in our county is as important as the number of persons with health insurance?" I was surprised, but I could not have been more gratified to get that kind of a call to begin that program.

I encourage each of you to take a look at the rankings in your State and see the factors which impact the health of those counties.

The last several decades have shown a growing awareness of such a broad perspective, work like Lisa's and Steve's and others. Currently, I am co-chair of a new Institute of Medicine Roundtable on Population Health Improvement, just started 6 months ago. The vision of that roundtable starts, outcome such as improved life expectancy, quality of life, and health for all are shaped by interdependent, social, economic behavior factors and will require robust national and community-based actions and dependable resources to achieve it.

In my testimony, I listed several studies that we have done on this matter, I'll highlight two orally. One showed a fourfold variation in county death rates substantially influenced by median-family income level. An $8,900 increase in median-family income was associated with an 18 percent reduction in death rates in low-income counties and 12 percent in high-income counties.

Another study that the Chairman referred to, which is the map before you, showed this shocking, actually, increase in female mortality rates across the United States. The most important factors associated with this were college education, smoking, and median household income.

We know now that much more than healthcare is needed. Even though, of course, everyone needs access to affordable, quality care. Evidence for investments in efforts like early childhood education and many prevention programs, there is good, strong evidence for that, and that is beginning to result in new investments in many American communities.

But in a time of limited resources, we still need more efforts from private foundations and the Federal Government to much more aggressively fund the kind of studies that will help us to determine the most cost-effective investment and policy choices across these multiple determinants for a healthier future so we can make the right balance of investments.

We do know enough to act now, however. I am not just advocating research. As a former pediatrician, it just pains me that many children born today in poverty will have shorter and unhealthier lives determined in the next few years, by the time they get to middle school. That will impact those maps as we go forward.

I have been looking at these maps for my entire career and I am, frankly, very tired of it. At a time when the important issue of medical care access and cost is front page news every day, I commend this committee for bringing attention to the other determinants of health, which are at least as important in changing the color of these maps.

It is time for these maps to change.

Thank you very much.

[The prepared statement of Dr. Kindig follows:]

PREPARED STATEMENT OF DAVID A. KINDIG, M.D., PH.D.

Thank you Chairman Sanders and Ranking Member Burr for the opportunity to speak today about the social and economic factors that have caused many Americans to have shorter and less healthy lives than the generations that have gone before them.

My name is David Kindig, and I am Emeritus Professor of Population Health Sciences at the University of Wisconsin School of Medicine and Public Health. I have worked my whole career in what we now call population health, beginning as a pediatric resident in an Office of Economic Opportunity Neighborhood Health Center in the South Bronx and serving as the first Medical Director of the National Health Service Corps in 1971.

This hearing shines needed light on something that many citizens and policymakers don't yet understand . . . that while health CARE is necessary for health, it is not the only or even the most important factor in producing longer life and lives of high quality and productivity. As my colleagues have already pointed out, modern epidemiology and social science have established that health is produced by many factors including medical care and health behaviors and, importantly, components of the social and physical environment in which we live in like income, education, social support, and the structure of our neighborhoods. The bottom line is that we will not improve our poor performance unless we balance our financial and policy investments across this whole portfolio of factors.

For many years I ran the Population Health Institute at the University of Wisconsin School of Medicine and Public Health, and with my colleagues created the initial *County Health Rankings www.countyhealthrankings.org*. An easy-to-use snapshot, the rankings look at the overall health of nearly every county in all States. They compare counties on a range of factors that influence health such as tobacco use, physical inactivity, and access to health care, and more importantly, social and economic factors, including education, employment and income. In fact, these latter factors are assigned the largest weight at 40 percent. (*www.countyhealthrankings .org/our-approach*).

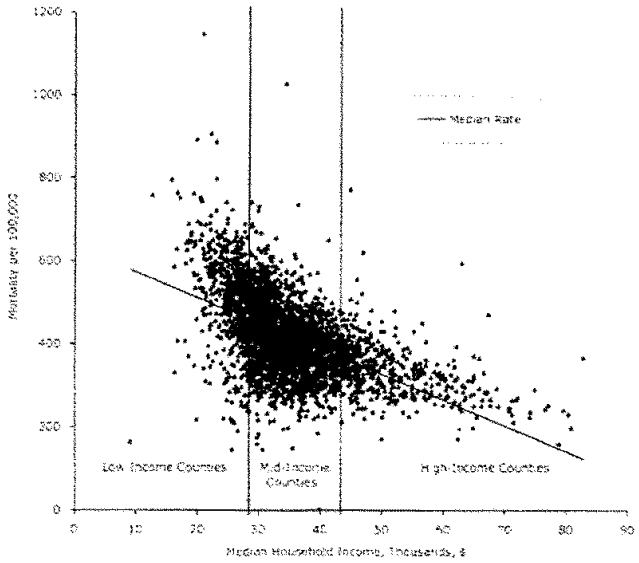
We initially did this for 7 years for only the 72 Wisconsin counties. I will never forget the morning of the first Wisconsin release, I got a call from an early morning radio talk show in rural Wisconsin and the first question asked was "Dr. Kindig, does this report mean that the income level in our county is as important as the number of persons with health insurance?" I could not have dreamed of a better and more sophisticated question to begin this program. I answered that this was certainly the case although we don't know for sure the exact balance in every county since all places vary in both their health outcomes and the factors producing those outcomes. Today this same model is used all across the country in the national *County Health Rankings and Roadmaps* program, and many communities are using it to prioritize health needs and solutions across their community. In early 2013, six communities were awarded the initial *RWJF Roadmaps to Health Prize*; to be eligible they had to show excellence in all the determinants including social and economic factors. The initial six Prizes were awarded to two communities in Massachusetts and one each in California, Louisiana, Michigan, and Minnesota. (*http://www.countyhealthrankings.org/roadmaps/prize/about-prize*).

As my colleagues here have indicated, the last several decades have shown a growing awareness of such a broad perspective. Currently, I am co-chair of a new Institute of Medicine Roundtable on Population Health Improvement, whose vision states in part,

> "Outcomes such as improved life expectancy, quality of life, and health for all are shaped by interdependent social, economic, environmental, genetic, behavioral, and health care factors, and will require robust national and community-based actions and dependable resources to achieve it . . . the roundtable will therefore facilitate sustainable collaborative action by a community of science-

informed leaders in public health, health care, business, education and early childhood development, housing, agriculture, transportation, economic development and non-profit and faith-based organization."

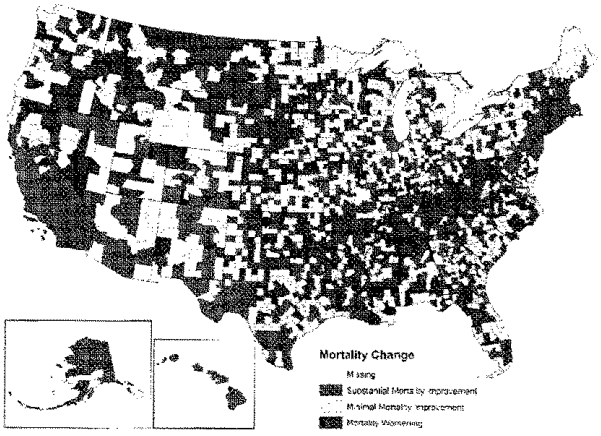
I will briefly mention a few of the studies my colleagues and I have conducted on this topic. The first of two I did with my graduate student Erika Cheng in which we showed a fourfold variation in county death rates substantially influenced by median-family income level.



Cheng ER, Kindig DA. Disparities in premature mortality between high- and low-income US counties. Prev Chronic Disease 2012 (9):110-120.

An $8,900 increase in median-family income was associated with an 18 percent reduction in death rates in low-income counties and 12 percent in high-income counties.

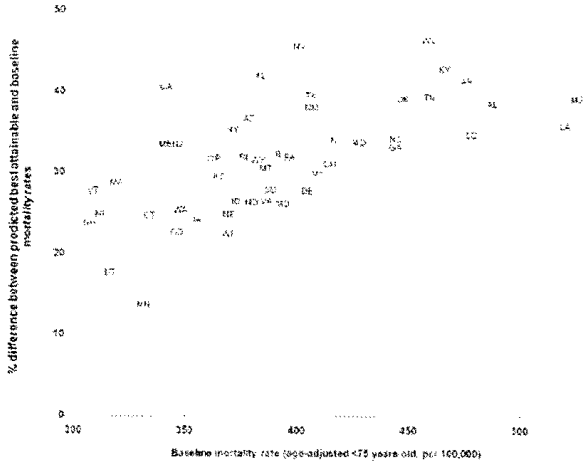
In the second study, shown on the map before you, we examined the change in mortality rates across U.S. counties over the past decade, and showed surprisingly that mortality rates for females had actually worsened in 42 percent of counties, those shown in the shaded area, primarily in the south and west regions.



Source: Kindig, D and Cheng, E. Even As Mortality Fell In Most US Counties, Female Mortality Nonetheless Rose In 42.8 Percent Of Counties From 1992 To 2006. Health Affairs 2013 32(3): 451-458

We found several factors associated with this worsening, the most important being college education, smoking, and median-household income. In this study no medical care factors such as percent uninsured or number of primary care physicians were associated with this worsening over time.

We also examined, "How Healthy Could a State Be?", in which we modeled how State mortality rates could improve if they each had the highest level of all the determinants that any State had already achieved.



Source: Kindig, DA, Peppard, P and Booske, B. "How healthy could a state be?." *Public health reports* 125(2) (2010): 160-167.

We found that even the healthiest State, New Hampshire, could improve mortality by 24 percent and the least healthy, West Virginia by 46 percent. The factors most associated with this improvement were reducing smoking rates, increasing insurance, increasing high school and college graduation rates, increasing median-family income, and increasing employment.

So we know that much more than health care is needed, even though of course, everyone needs access to affordable quality care. Evidence for investments in efforts like early childhood education is strong, resulting in such new investments in many

communities. An Institute of Medicine committee on Health Literacy that I chaired (*A Prescription to End Confusion*) found that 40 percent of American adults do not have adequate literacy skills to effectively navigate the health care system. But in a time of limited resources we do not know enough to guide exact choices of the most cost-effective investment balance across all determinants in a given community. This is why my colleague, John Mullahy, and I published a commentary in JAMA titled, "Comparative Effectiveness of What: Evaluation Strategies for Improving Population Health" (2010, 304 (8):901–2) in which we argued that now that we are realizing that social factors play such an important role in health outcomes, we need private foundations and the Federal Government to much more aggressively fund the kind of studies beyond medical care alone that will help us make the best investment and policy choices across the social determinants for a healthier future.

But we know enough to act now. Many children born in poverty will have shorter and unhealthier lives determined by the time they get to middle school. I have been looking at these maps for my entire career and am frankly very tired of it. At a time when the important issue of medical care access and cost is front page news every day, I commend this committee for bringing attention to the other determinants of health which are at least as important in changing the color of these maps.

Thank you for the invitation to appear before you today to discuss these important issues. I look forward to your questions.

Senator SANDERS. Dr. Kindig, thank you very much.

Our next panelist is Sabrina Shrader, who grew up in McDowell County, WV, and that is a county in our country with one of the lowest life expectancies. I believe it is the lowest for men, and the second lowest for women.

Ms. Shrader tells us that she is one among millions who are struggling to make ends meet in our country. She now resides in Athens, WV where she is a master of school work student and program assistant for the Upward Bound program at Concord University.

Ms. Shrader, thanks so much for being with us.

STATEMENT OF SABRINA SHRADER, ATHENS, WV

Ms. SHRADER. Thank you, Senator Sanders, Senator Baldwin, and Senator Warren.

My name is Sabrina Shrader, and I am from a hollow in West Virginia called Twin Branch where we made a good neighborhood and community. Twin Branch is in McDowell County. It is one of the poorest counties in one of the poorest States of the country.

Because of inadequate healthcare, lack of transportation, and lack of resources, I was born into a family that was afflicted by domestic violence, child abuse, and mental illnesses. These circumstances do not cause poverty; they are caused by poverty. My parents were not perfect, but they taught me to do my best, treat people how I wanted to be treated, and to pray.

Influenced by poverty, their chances for success are often swayed by drug abuse, poor healthcare, limited access to healthy food choices, lifestyle habits such as smoking cigarettes, and little interstate access.

Some say poverty is a death sentence. Frankly, I do not know how many times I have been given the death sentence. Even before I was born, doctors were questioning whether or not my mom should have me because she was 16-years-old and her future and mine looked bleak. The doctors did not even think I was alive and they told her she would die if she chose to have me. I was born 3 months early and I was born without fingernails, eyelashes, and hair.

When I was in eleventh grade, my mom and I got into a terrible car accident on our way to the bus stop. I had made straight A's for most of my life. The car wreck left me, as doctors said repeatedly, mentally challenged and paralyzed. I learned to walk and talk again, and I bounced back with resilience and I make good grades once again.

Then I got to college, and I got meningitis, and I was given a death sentence once again. That time, I literally waited to die in the hospital. Fortunately, I survived. I went back to school, and I tried my hardest to learn, and here I am in front of you all today still wrestling with residual illnesses.

I have seen many die before their time. I have had family members, friends, and classmates all die young. The deaths started a couple of days after I was born, with my mom's favorite aunt dying. Later, one of my best friends died from a drug overdose. This past year, both of my stepsisters died. I could go on and on about all the young people I have seen die in West Virginia.

A strong correlation between poverty and life expectancy exists. While many are born into poverty every day, poverty is not a child's fault nor is it a family's. No one asks for a life who is born into poverty, ask for a life that is encompassed with suffering for everything you need to live for every day, but nowadays, we seem more interested in taking things away from these kids instead of giving them a fair shot.

Today, I am in the advanced standing master of social work program at Concord University, and I am the program assistant for the Upward Bound program there. This program gave me hope when I was in the sixth grade of one day being able to go to college. If it had not been for the program, I may not even know what a college campus look like, let alone even know that I could work at one.

I am the first person in my family to not only graduate high school, but I am also the first to get a bachelor's degree. If it had not been for TRIO programs like Upward Bound and student support services, I do not know where I would be today. TRIO programs help vulnerable kids who are labeled at-risk survive and gives them hope to follow their dreams.

There are two Upward Bound programs at Concord University and they serve 150 high school students from five high-need counties in West Virginia. Sequestration cut our budget 5.23 percent and that means we will have to turn our backs on some needy kids, and we face additional budget cuts.

Programs like Upward Bound and student support services make it a little easier to try harder and keep a positive attitude when times are tough and hope is rare. I watched my classmates who did not have the TRIO program and they ended up dropping out of school or using drugs. Some have committed suicide. Life should not end this way.

TRIO programs make a huge difference for the kids living in poverty-stricken areas. High school graduation rates are near 100 percent and postsecondary education rates are 70 percent for poverty-stricken students enrolled in TRIO programs. TRIO programs save lives.

People living in poverty do not have as good of odds of living a long, happy, healthy life when compared to people who can easily meet their basic needs such as food, clothing, and shelter every day.

I am not a success story. I did not pull myself up by my bootstraps. I am proof that we live in a country that even if you work hard and even if you do everything that you are supposed to do, you still may not have enough to make ends meet.

I am still struggling to this day, but I am not struggling alone. I am also a leader with the Our Children, Our Future campaign. Our goal is to end child poverty in West Virginia, and this last year, we already helped win six statewide policy victories, from Medicaid extension to prison reform to expanding school breakfast programs. For the first part of my life, most people would not even listen to me, but this campaign has listened and helped me organize in my community to make a difference. Now I am showing everyone I know so that everyone else knows they can make a difference too.

Thank you for your time and for listening. God bless you.

[The prepared statement of Ms. Shrader follows:]

PREPARED STATEMENT OF SABRINA SHRADER

My name is Sabrina Shrader and I am one among millions who are struggling to make ends meet in America. Unfortunately, it had been very difficult to succeed in the type of environment I have been given. Because of inadequate healthcare, lack of transportation, and lack of resources, I was born into a family that was afflicted by domestic violence, child abuse, and mental illness. My parents weren't perfect but they taught me to do my best, treat people how I want to be treated, and to pray.

I am from a hollow in West Virginia called Twin Branch. I grew up in McDowell County, one of the poorest counties, in one of the poorest States of the country. Due to conditions influenced by poverty, decreased chances for success are often swayed by drug abuse, poor healthcare, limited access to healthy food choices, unhealthy lifestyle habits such as smoking cigarettes and little interstate access.

Some say poverty is a death sentence. Frankly, I don't know how many times I have been given that death sentence. Even before I was born, doctors were questioning whether or not my mom should have me because she was 16 years old and her future and mine looked bleak. The doctors didn't even think I was alive and they told her she would die if she chose to have me. I was born 3 months early and was born without fingernails, eye lashes, and hair.

Another time I was given a not-so-positive prognosis was on a snowy day. When I was in the 11th grade, my mom and I got into a terrible car accident on our way to the bus stop. I had perfect attendance and had made almost straight A's for most of my life. The car wreck left me as doctors said repeatedly "mentally challenged and paralyzed." I learned to walk and talk again and I bounced back with resiliency and started to make good grades again. I made it to college and there I got meningitis and was given a death sentence once again. I literally waited to die that time I was in the hospital. Fortunately, I went back to school and tried my hardest to learn and here I am in front of you all today.

Furthermore, I have seen many die before their time. I've had family members, friends, and classmates all die young. The deaths started a couple of days after I was born with my mom's favorite aunt dying and another one of her favorite aunt's dying a couple months after that. This past year, both of my stepsisters have died. One was in a car accident and had water on her brain from drowning in the river. She like me had learned to walk and talk again but after getting pneumonia repeatedly she died in the hospital. The other didn't go to the hospital when she needed to for not wanting to incur additional medical bills and she died from a brain hemorrhage.

A strong correlation between poverty and life expectancy exists. While many children are born into poverty every day, poverty is not a family's fault and it is not a child's fault. No one who is born into poverty asks for a life that is encompassed with suffering for everything you need to live for every day. But nowadays we seem

more interested in taking things away from these kids, instead of giving them a fair shot.

Today, I am in the Advanced Standing Master of Social Work program at Concord University and I am the program assistant for the Upward Bound program at Concord too. This program gave me hope when I was in the 6th grade of one day being able to go to college. If it hadn't been for the program, I may not even know what a college campus looks like. I am the first person in my family to not only graduate high school but to also get a bachelor's degree. If it hadn't been for TRIO programs like Upward Bound and Student Support Services, I don't know where I would be today.

TRIO programs help vulnerable kids survive and gives them hope to follow their dreams. There are two Upward Bound programs at Concord University and they serve 150 high school students from five high-need counties in West Virginia. Sequestration cut our budget 5.23 percent and TRIO programs face additional budget cuts thus causing fewer children to be helped. Programs like Upward Bound and Student Support Services make it a little easier to try harder and keep a positive attitude when times are tough and hope is rare. I have seen other people who are like me not be in TRIO programs and have suffered worse consequences such as being compelled to use drugs and some have committed suicide.

TRIO programs make a huge difference for the students living in poverty stricken areas. High school graduation rates are near 100 percent and postsecondary education rates are 70 percent for poverty students enrolled in TRIO programs. TRIO programs save lives. People living in poverty do not have as good of odds of living a long happy healthy life when compared to people who can easily meet their basic needs such as food, clothing, and shelter every day.

Please don't misunderstand me when I say that I am not a success story. I am still struggling but I am not struggling alone. I am also a leader with the Our Children, Our Future Campaign. Our goal is to end child poverty in West Virginia. For the first part of my life, most people wouldn't even listen to me. But this campaign has listened and helped me organize in my community to make a difference. Now I am telling everyone I know. I am talking with my family, my church, my workplace, and in my neighborhood so that everyone else knows they can make a difference too. Thank you for your time and for listening. God Bless You.

Senator SANDERS. Well, thank you very much, Ms. Shrader, for your very powerful testimony.

Our next witness is Dr. Michael Reisch, who is the Daniel Thursz Distinguished Professor of Social Justice at the University of Maryland School of Social Work in Baltimore. He has held faculty administrative positions at four other major universities and has played a leadership role in national and State advocacy, professional and social change organizations that focus on the needs of low-income children and families.

Dr. Reisch, thanks so much for being with us.

STATEMENT OF MICHAEL REISCH, Ph.D., MSW, DANIEL THURSZ DISTINGUISHED PROFESSOR OF SOCIAL JUSTICE, UNIVERSITY OF MARYLAND SCHOOL OF SOCIAL WORK, BALTIMORE, MD

Mr. REISCH. Good morning, Senator Sanders, Baldwin, Warren, and Murphy.

Thank you for the opportunity to participate in this panel.

I know the effects of poverty, both personally and professionally. I grew up in New York City in public housing. My parents' families were on Home Relief during the Great Depression. As a teenager, I was in a gang before being rescued by social workers at the local Y. Sometimes, you get dealt the right cards in life. Sadly, most people who live in poverty do not.

Poverty is not merely a statistic, although we often treat it in abstract terms. For tens of millions of Americans, it is a persistent barrier to full participation in our society: economically, politically,

and socially. Of greater significance, poverty is also a thief. It stills years of life from its victims.

Americans in the top 5 percent of income distribution live about 9 years longer than those in the bottom 10 percent. Almost 50 million Americans, nearly 16 percent of the Nation, now live below the official poverty line; the highest poverty rate in a generation. The majority of people who are poor are children and youth, the elderly and individuals with disabilities. More than 20 million Americans experience deep poverty; they live below 50 percent of the official poverty line and 4 million Americans, half of them children, try to survive on $2 a day. It is estimated that half of all adults in the United States today are at economic risk in terms of their levels of literacy, education, and healthcare.

But poverty is not merely a snapshot. Over 20 percent of poor individuals remain poor for a year or more. They have a 1-in–3 chance of escaping poverty in a given year and the odds are much lower for African-Americans, Latinos, and female-headed households. Roughly half of those who escape poverty become poor again within 5 years.

This duration of poverty spells is compounded by the widespread experience of poverty among Americans. Nearly 60 percent of the population and 91 percent of African-Americans experience an episode of poverty during their lifetime of 1 year or more, and over three-quarters of the population experiences at least a year of near-poverty. The impact of cycling in and out of poverty has a profound effect on people's health and longevity and on the stability of American communities.

Children constitute the demographic cohort most likely to be poor. Nationally, 22 percent of children under the age of 18 and over one-fourth of children under the age of 5 are in poverty. Among African-American children, the figure is 36 percent. They are more likely to suffer from health ailments such as lead poisoning, asthma, and anemia.

In addition, children growing up in low-income neighborhoods are much more likely to encounter a variety of environmental health and social hazards, such as elevated exposure to lead and toxic pollutants, crime and violence, dropping out of school, higher arrest rates, increased risk of substance abuse, and greater exposure to sexually transmitted diseases. These children are also less likely to finish high school and go to college, and more likely to become involved with the criminal justice system and develop chronic illnesses. They are, in effect, permanently trapped in the vise of poverty with all its deleterious effects on health and life expectancy.

Hunger is perhaps the most visible and painful symptom of poverty. Today, over 50 million people, nearly 1 out of every 6 Americans experiences what is euphemistically called "food insufficiency." Nearly 17 million people endure a very low food security and regularly run out of food several days each month. Here in the Nation's Capital, nearly 31 percent of all children live in households without consistent access to food; the highest rate in the Nation.

Hunger, particularly in the first 3 years of life, contribute significantly to a wide range of health problems, lowers the psychological development, greater prevalence of learning disabilities, and lower

academic achievement. The effects are similar among adults including women, and pregnant women, and the elderly.

Let me illustrate by some data from two neighborhoods in Baltimore that are just 2½ miles apart. The difference in life expectancy between those neighborhoods is almost 20 years regardless of race. In another neighborhood, Upton Druid Heights which is primarily African-American, life expectancy is 30 years less than that of Roland Park, which is primarily white.

If just 5 percent more people in Baltimore attended some college and 5 percent more had incomes higher than twice the Federal poverty line, we could save, each year, 247 lives, prevent 27,000 cases of diabetes, and eliminate $202 million in diabetes costs every year.

The impact of poverty on health and life expectancy of millions of Americans illustrates the growing importance of our fraying social safety net. Two years ago, these programs lifted 40 million people out of poverty including 9 million children. They lowered our official poverty rate by almost 14 percent. They are also fiscally prudent. Each 1 percent increase in child poverty costs us approximately $28 billion a year and the total costs associated with childhood poverty alone total almost one-half a trillion dollars per year, or the equivalent of nearly 4 percent of GDP.

Given the long term effects of poverty on people's life expectancy, and the damage it does to the well-being of our communities and our Nation, this is a time to expand, and not reduce, these essential life-giving programs.

Thank you very much for your attention.

[The prepared statement of Mr. Reisch follows:]

PREPARED STATEMENT OF MICHAEL REISCH, PH.D., MSW

Good morning, Senators Sanders and Burr. Thank you for the opportunity to participate in this panel. I know the effects of poverty both personally and professionally. I grew up in New York City in public housing. My grandparents were immigrants, and my parents' families were on relief during the Great Depression. As a teenager, I was in a gang before being rescued by social workers at the local Y. I was fortunate. Sometimes, you get dealt the right cards in life. Sadly, most people who live in poverty do not.

From my research and professional practice experience, I have learned that poverty is not merely a statistic, a snapshot of individual and family well-being, although we often treat it in such abstract terms. For tens of millions of Americans, it is a persistent barrier to full participation in our society, economically, politically and socially. Of greater significance, poverty is also a thief. Poverty not only diminishes a person's life chances, it steals years from one's life itself.

POVERTY IN THE UNITED STATES

In 2012, using new methods of calculation, the U.S. Census Bureau found that almost 50 million people in the United States were poor, 3 million more than in 2010. This is the largest number of people in poverty since the United States began to measure poverty and the highest poverty rate in a generation (U.S. Bureau of the Census, 2012a). Nearly 16 percent of the U.S. population now lives below the *official poverty line*, which in 2013 is slightly above $23,000/year for a family of four.

The majority of people who are poor are the most vulnerable members of our society. Thirty-five percent are under the age of 18. Eight percent are over the age of 65; 9 percent are between the ages of 18 and 64 and suffer from some type of disability (U.S. Census Bureau, 2012a). Over one-quarter of African-Americans and Latinos now live below the poverty line; since 1980, they have been 2½–3 times more likely to be poor than white, non-Hispanic Americans. Over ⅓ of African-American children and all young families are poor. Women, particularly elderly women and single parents, are also more likely to be poor at every educational level. Poverty among unmarried female-headed households is nearly 40 percent—the high-

est rate of poverty for female-headed households among 22 industrialized nations, about three times higher than average (U.S. Bureau of the Census, 2012b).

Poverty in the United States is no longer confined to depressed inner city neighborhoods or isolated rural areas. Since 2010, the number and percentage of people in poverty increased in 17 States, particularly in the South and West, and in suburban areas as well. It is estimated that half of all adults in the United States today are at economic risk in terms of their levels of literacy, education, and health care.

Poverty is not only more extensive, it is also deeper and more persistent. More than 20 million Americans, including nearly 12 percent of African-Americans and over 10 percent of Latinos experience "deep poverty," defined as below 50 percent of the official Federal poverty line (U.S. Bureau of the Census, 2012b; Acs & Nichols, 2010; Buss, 2010). Almost half of the families living in poverty actually live below one-half of the official poverty line (U.S. Census Bureau, 2012a). Four million Americans, half of them children, live in extreme poverty and try to survive on $2/day.

Over 20 percent of poor individuals are chronically poor (i.e., remain poor for a year or more). African-Americans, Latinos, and female-headed households are over five times more likely than whites to experience chronic poverty (U.S. Census Bureau, 2011). On average, individuals in poverty have a one in three chance of escaping poverty in a given year, although this probability is much lower among African-Americans, Latinos, female-headed households, and larger families. Roughly half of those who escape poverty become poor again within 5 years. Race, household status, and level of education are the key factors determining whether an individual can permanently escape poverty.

The duration of poverty spells is compounded by the widespread experience of poverty among Americans. Nearly 60 percent of the population experiences an episode of poverty during their lifetime of 1 year or more between the ages of 20–75, and over ¾ of the population experiences at least a year of near poverty. Even more striking is that 91 percent of African-Americans will experience poverty at some point in their lives (Rank, 2004).

Many analysts believe that the poverty rate is underestimated by half because it excludes homeless persons, people who are incarcerated, and people "doubled up" and living with family members. It also fails to consider the high cost of living in many metropolitan areas. Three-fourths of Americans have incomes under $50,000/year, considerably below what it takes to live a minimally decent life in major cities. The official poverty line has not been adjusted to increases in real income and changes in living standards since it was formulated nearly 50 years ago. If the poverty line was raised by 10 percent, about one-third of the U.S. population (100 million persons) would be poor (Buss, 2010).

Given our knowledge about the long-term effects of poverty on health, psychological development, and educational attainment, these figures indicate the extent to which large numbers of the U.S. population, particularly in communities of color or immigrant communities, are at risk of a wide range of health, mental health, and social problems (Monea & Sawhill, 2010; Edelman, Golden, & Holzer, 2010; Pavetti & Rosenbaum, 2010; Lim, Coulton, & Lalich, 2009; Fertig & Reingold, 2008; Auerbach & Kellermann, 2011; Galea, Tracy, Hoggatt, DiMaggio, & Karpati, 2011). The impact of cycling in and out of poverty has a profound impact on people's health and longevity and on stability of American communities (Acs & Nichols, 2010; Pavetti & Rosenbaum, 2010; Turner, Oliff, & Williams, 2010).

POVERTY AMONG CHILDREN

Children constitute the demographic cohort most likely to be poor, a phenomenon unprecedented in industrialized nations. Nationally, nearly 22 percent of children under the age of 18 and over ¼th of children under the age of 5 were in poverty. Among African-American children, the figure was 36 percent. Children who experience extended periods of poverty are less likely to finish high school and go to college. They are more likely to become involved with the criminal justice system and to develop chronic illnesses. The life course risk of poverty appears to have increased during the past several decades especially for individuals in their 20s, 30s, and 40s (Sandoval, Rank, and Hirschl, 2009; Alesina & Glaeser, 2004; Gornick & Jantti, 2012; Smeeding, 2005)

Children in poverty are nearly three times as likely to have fair or poor health and over twice as likely to have parents who report symptoms of poor mental health (Loprest & Zedlewski, 2006; Case, Fertig, & Paxson, 2005). Children in poverty are more likely to suffer from various health ailments, such as lead poisoning, asthma, and injury from accidents and violence (Aber, et al., 1997). Poverty and poor nutrition produce a wide range of health and behavioral problems, slower psychological

development, greater frequency of learning disabilities, and lower academic achievement. Nonwhite children in particular are routinely exposed to high levels of neighborhood poverty when growing up compared to their white counterparts (Drake & Rank, 2009). Exposure to such levels of poverty can have a profound impact upon one's life chances and life expectancy.

For example, children growing up in neighborhoods marked by high poverty are much more likely to encounter a variety of environmental health and social hazards. These include elevated exposure to toxic pollutants, greater likelihood of being victimized by crime and violence, dropping out of school, higher arrest rates, increased risk of substance abuse, and greater exposure to sexually transmitted diseases (Evans, 2004). All of these can detrimentally affect a child's health, which in turn, can have a profound impact upon that child's health and economic well-being as an adult.

In addition, the infant mortality rate in the United States is higher than in some developing nations and the U.S. life expectancy ranks near the bottom among comparable industrialized countries. While in neighboring Mexico 90 percent of all children under five are immunized against childhood diseases, in some U.S. cities the rate is below 50 percent (Children's Defense Fund, 2006). As a result of persistent health disparities, Americans in the top 5 percent of the income distribution can expect to live approximately 9 years longer than those in the bottom 10 percent (Jencks, 2002). In two neighborhoods in Baltimore, just 2.5 miles apart, the difference in life expectancy is almost 20 years regardless of race (LaVeist, et al., 2010).

Children born into low-income families also have far less opportunity to be upwardly mobile than in the past. As educational attainment and job skills become increasingly important determinants of economic success in the global market, children from lower SES backgrounds face mounting obstacles due to the inadequacy of the schools most of them attend (Economic Policy Institute, 2012; Collins & Mayer, 2010; Allard, 2009; Wacquant, 2009; Blank & Kovak, 2008). Yet, in order to compete effectively for economic opportunities today, the quality and the quantity of their education are critical. On both counts, poverty and lower income status stunt the educational process. Those growing up in poor households are likely to live in lower income areas which have fewer financial resources to spend on their school systems. This results in a significant reduction in the quality of education that students who are poor receive.

Racial and class gaps in education, particularly in regard to workforce preparation at the secondary school level, create especially acute problems for African-American, Latino, and American Indian youth. These problems are even more serious for the children of recent immigrants, documented or undocumented, and for children in single family female-headed households (Bureau of Labor Statistics, 2010; Collins & Mayer, 2010; Wacquant, 2009; Soss, Fording, & Schram, 2011; Braveman, et al,, 2011). They are, in effect, trapped in the vise of poverty with all of its deleterious health effects.

Finally, child poverty is also a drain on the Nation's economy. Six years ago, a study (Holzer, Schanzenbach, Duncan, & Ludwig, 2007) concluded that "the costs to the United States associated with childhood poverty total about $500 billion per year, or the equivalent of nearly 4 percent of GDP" (p. 1). Each 1 percent increase in child poverty costs the Nation approximately $28 billion/year.

POVERTY AND HUNGER

Hunger is, perhaps, the most visible and painful symptom of poverty. Today, over 50 million people in the United States—nearly one out of every six Americans—experiences what is euphemistically called "food insufficiency." This number has nearly doubled since 2000. Nearly 17 million people endure "very low food security." Their food intake is below levels considered adequate by nutritional experts. They regularly run out of food several days each month.

Poverty and hunger in the United States are not confined to any geographic region or segment of the population. Although less visible, they exist in startling and increasing numbers in suburbs and rural areas. About ⅛th of suburban households and over 1/7th of rural households experience food insecurity; almost 5 percent experience very low food security. Nearly half of all Americans who receive food assistance live in these communities. The problem is particularly severe in southern and western States.

About one-third of the people who are hungry in America are children and over 22 percent of all children nationally live in households that experience hunger. In 36 of the 50 States, over 20 percent of children are hungry. Over 25 percent of African-American and Latino households experience food insecurity. Here, in the Na-

tion's capital, nearly 31 percent of all children live in households without consistent access to food—the highest rate in the Nation (Cohen, Mabli, Potter, & Zhao, 2011).

It has been clearly established that hunger, particularly in the first 3 years of life, has dramatic implications for children's future physical and mental health, academic achievement, and economic productivity. Children's hunger contributes significantly to a wide range of health problems, to slower psychological development, greater prevalence of learning disabilities, and lower academic achievement. Children growing up in food insecure households are more likely to require hospitalization, have more frequent instances of oral health problems, and may be at higher risk for conditions such as anemia and asthma. They may also be at higher risk for behavioral issues, such as school truancy and tardiness, and more likely to experience a range of behavioral problems including hyperactivity, aggression, anxiety, mood swings, and bullying. Children who are chronically hungry often lag behind in academic development, with clear implications for their ultimate life chances.

The problem of hunger is slightly less severe, but still quite serious, for working adults and the elderly population in the United States. Among adults, food insecurity correlates strong with a variety of negative physical health outcomes, such as diabetes, hypertension, and various cardiovascular risk factors. There is also a demonstrated relationship between hunger and higher levels of aggression and anxiety. Pregnant women who experience food insecurity are at risk of premature births, low-birth-weight babies, and other birth complications. Women who experience hunger may be at greater risk of major depression and other mental health problems. Food insecurity among the children of mothers who are food insecure has also been linked with delayed development, poorer parental attachment, and learning difficulties during the first 2 years of life (Gundersen, Waxman, Engelhard, Del Vecchio, Satoh, & Lopez-Betanzos, 2012).

Over 8 percent of households with one or more elderly Americans experienced hunger in 2011, the last year for which complete data are available. Seniors are more likely to be food insecure if they live in a southern State, are younger, live with a grandchild, and are African-American or Latino. Nearly one-third of these households have to choose each month between purchasing food and paying for medical care and over one-third of these households have to choose monthly between buying food and paying for heat or other essential utilities. As a result, over 14 percent of individuals in the United States who seek emergency food assistance are over 65. Within slightly more than a decade, the number of seniors experiencing food insecurity is projected to increase by 50 percent when the youngest of the "Baby Boom Generation" reaches age 60 (Coleman-Jensen, Nord, Andrews, & Carlson, 2012).

Growing hunger and poverty merely constitute the tip of the iceberg. They reflect the widening gap in income, wealth, education, employment, and health status between classes and races in the United States. The relationship between family income and the lack of opportunity to escape poverty and its lasting consequences is clear. Yet, while there is a clear connection in the United States between poverty and unemployment, the possession of a job itself does not eliminate the risk of hunger. According to the Census Bureau, in 2010, nearly 10 percent of all American families, almost 21 million people, who are officially poor have at least one family member who is working (De Navas-Walt, Proctor, & Lee, 2011). Their poverty is a direct consequence of wage stagnation. From the late 1950s through the 1970s, a full-time worker earning the minimum wage could maintain a family of three at or above the poverty level. Today, this is no longer true (Economic Policy Institute, 2012; Mishel & Shierholz, 2011).

POVERTY AND HEALTH

Adults who are poor are more likely to have higher rates of heart disease, cancer, diabetes, and virtually every other major illness and cause of death (Kaler & Rennert, 2008). Among adults, poverty leads to higher incidences of diabetes, hypertension, cardiovascular problems; depression and other mental health problems among women, and, among pregnant women, more premature births, low-birth-weight babies, and birth complications. For them, poverty and hunger are not merely statistics. They are, in the words of the Chilean poet, Pablo Neruda, "the measure of man."

Compounding these problems, people in poverty experience a wide range of disparities in health and mental health care. These include: (1) *absence of care*, especially preventative and primary care, rehabilitation services, long-term care, oral health, and the availability of affordable prescription medications; (2) *poor access to care*: over 20 percent of African-Americans and over ⅓ of Latinos have no health insurance and there is a maldistribution of health care providers in urban and rural

areas; (3) *inability to afford adequate care* as health care costs rise faster than inflation and States cut back funding for Medicaid; (4) *inappropriateness of care*, particularly a lack of sensitivity to the specific needs of impoverished persons among health care providers; and (5) wide variations in the *quality of care*. Today, the typical (or median) State provides medical assistance to working parents who make less than 63 percent of the poverty line ($12,790 a year for a family of three) and non-working parents with incomes below 37 percent of the poverty line ($7,063 a year). Only a handful of States provide coverage to any low-income adults without dependent children, regardless of how far below the poverty line they fall.

Let me illustrate these problems with some statistics from the Baltimore area where I live and work. In Baltimore, less than half of the population has a college education, the lowest percentage in the State of Maryland. Only 58 percent of city residents have incomes twice that of the poverty line. If 5 percent more people attended some college and 5 percent more had incomes higher than twice the Federal poverty level, we could expect to save 247 lives, prevent 27,000 cases of diabetes, and eliminate $202 million in diabetes costs every year. In Baltimore County, if 5 percent more people attended some college and 3 percent more had an income higher than twice the Federal poverty level we could expect to save 266 lives, prevent 305 cases of diabetes, and eliminate $2 million in diabetes costs every year.

The lack of mobility out of low-income neighborhoods, particularly for racial minorities, compounds the health effects of poverty. Nearly half of African-Americans who live in high-poverty census tracts, for example, still reside in a high-poverty census track 10 years later Quillian (2003). In addition, 72 percent of African-American children who grew up in impoverished neighborhoods live in similar neighborhoods as adults. The absence of social mobility, generally associated with the American Dream, demonstrates that neighborhood poverty has prolonged and lasting consequences on the health, well-being, and life expectancy of poor children, particularly children of color.

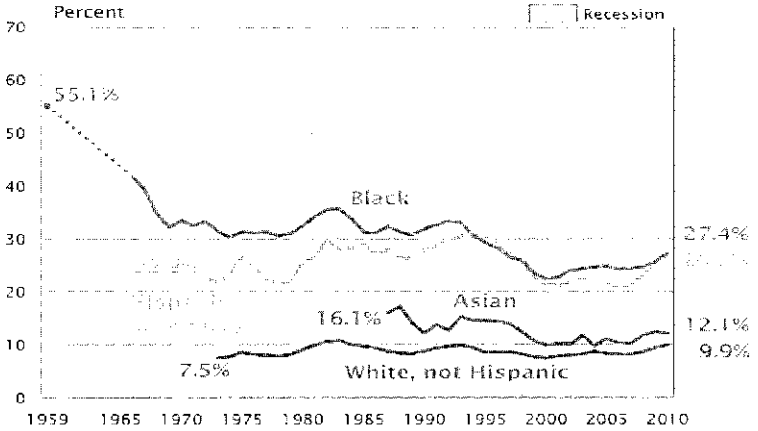
These consequences, however, are not limited to impoverished children. Each night an estimated 1 million Americans have nowhere to call home and over the course of any year 3 million Americans experience homelessness for an extended period (National Coalition for the Homeless, 2012). The U.S. Conference of Mayors' annual survey of homelessness and hunger found that homelessness among families increased by 16 percent from 2010 to 2011, with unemployment, lack of affordable housing, and poverty being cited as the leading causes (U.S. Conference of Mayors, 2011). For over 30 years, the impact of sub-standard housing conditions and homelessness on people's health and life expectancy has been well documented. In 2005, the National Health Care for the Homeless Council reported that people experiencing homelessness are three to four times more likely to die than their housed counterparts, with the average age of death between 42 and 52 years of age (O'Connell, 2005).

Individuals who are homeless are the most desperate of the over 20 million households (17.7 percent of all U.S. households) who pay more than half of their income for housing (Joint Center for Housing Studies, 2012). The absence of a sufficient supply of affordable housing contributes substantially to the high rates of poverty and near poverty in the United States and to the millions of Americans who are homeless, at risk of homelessness, or live in substandard, unhealthy, and often dangerous housing. *To illustrate:* A family of four with an income at the Federal Poverty Level ($23,050) has only 60.7 percent of the income necessary to afford a two bedroom apartment at the Fair Market Rent of $949/month; a single adult whose income is at the Federal Poverty Level has only 39.6 percent of the income required to afford an efficiency apartment at the Fair Market Rent of $705/month. To state this situation another way, a renter earning the minimum wage must work 101 hours to afford a two-bedroom unit at the Fair Market Rent (Bravve, Bolton, Couch, & Crowley, 2012). Even an efficiency apartment is out of reach for the minimum wage worker, who earns 53.4 percent of the amount necessary to make market rate housing affordable.

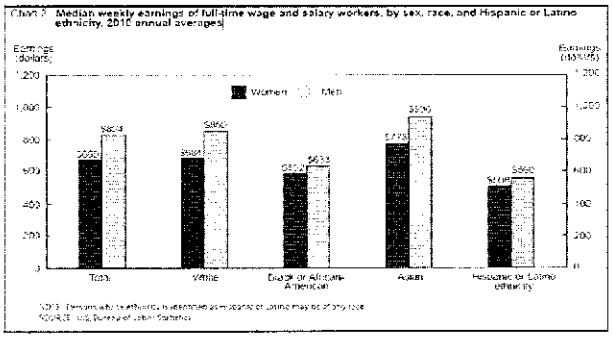
The impact of poverty on the health and life expectancy of millions of Americans illustrates the growing importance of our fraying social safety net. Without unemployment insurance, food stamps, Social Security, and the Earned Income Tax Credit millions more nationally would be vulnerable to the consequences of poverty outlined in my testimony. In 2011, these programs lifted 40 million people out of poverty, including nearly 9 million children. They lowered our official poverty rate by almost 14 percent. Given the long-term effects of poverty on people's life expectancy and the damage it does to the well-being of our communities and our Nation, this is a time to expand and not reduce these essential life-giving programs.

Thank you for your attention.

Poverty Rates by Race and Hispanic Origin: 1959 to 2010

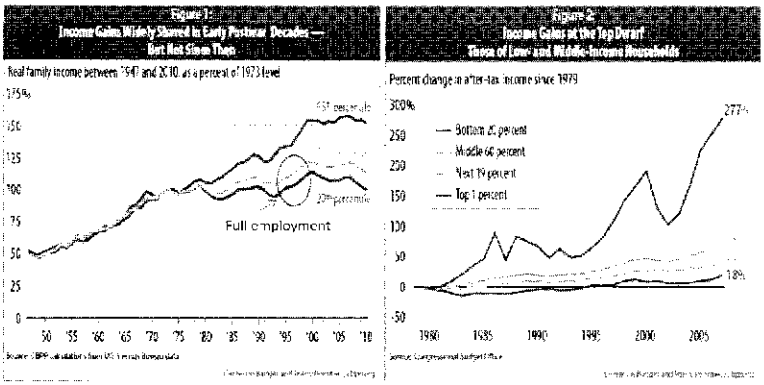


Greater Income Inequality

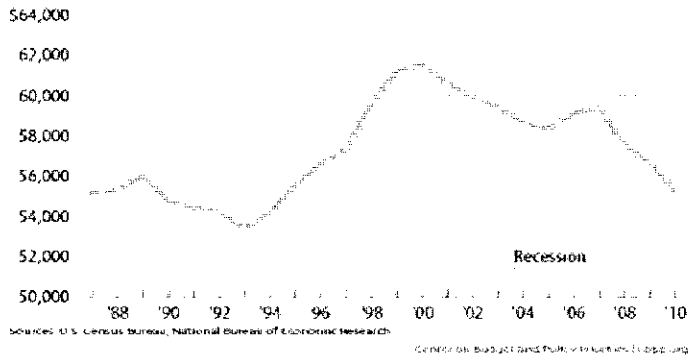


Growing Inequality Among Middle Income Households and Higher Poverty

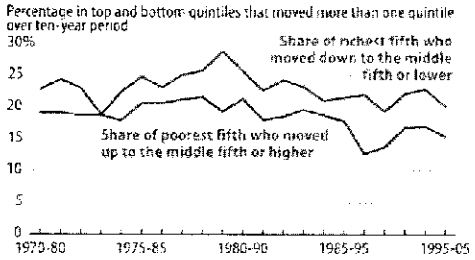
Changes Have Occurred Primarily in Past 3 Decades



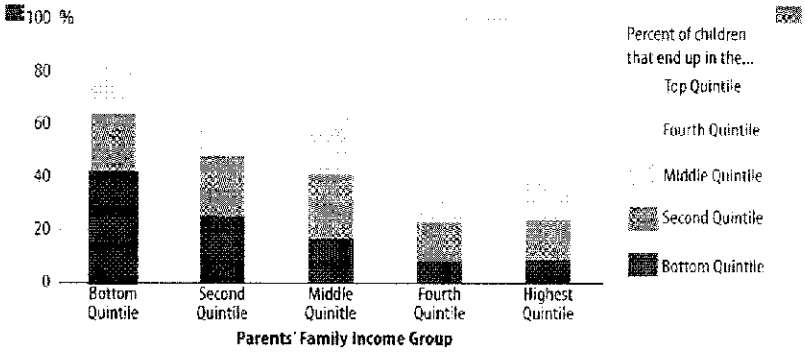
Real Income for Working-Age Households Reaches Lowest Level Since 1994



Declining Social Mobility

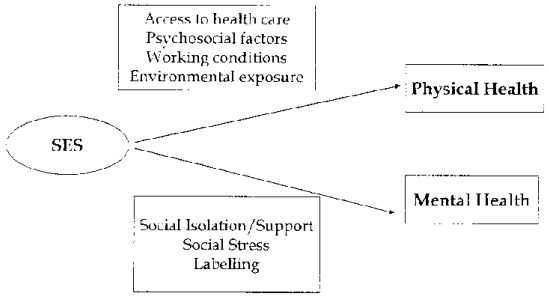


Children's Chances of Getting Ahead or Falling Behind by Parents' Family Income

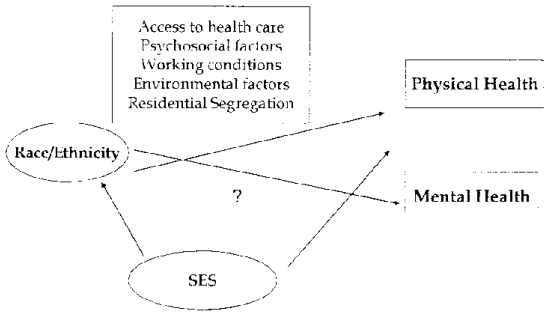


Source: CBPP based on Pew Economic Mobility and the American Dream Presentation

Poverty Affects Health in Multiple Ways



These Effects Are Compounded by Race



REFERENCES

Abel, L. & Chaudry, A. (2010, April). *Low-income children, their families, and the Great Recession: What next in Policy?* Paper prepared for the Georgetown University and Urban Institute Conference on Reducing Poverty and Economic Distress after ARRA. Washington, DC.

Aber, J.L., Bennett, N.G., Conley, D.C., & Li, J. (1997). The effect of poverty on child health and development. *Annual Review of Public Health,* 18, 463–83.

Acs, G. & Nichols, A. (2010, February). Changes in the economic security of American families. *Low Income Families Paper 16.* Washington, DC: Urban Institute.

Allard, S. (2009). *Out of reach: Place, poverty, and the new American welfare state.* New Haven, CT: Yale University Press.

Annie E. Casey Foundation (2012). *City KIDS COUNT: Data on the well-being of children in large cities.* Baltimore, MD: Annie E. Casey Foundation.

Braveman, P.A., Kumanyika, S., Fielding, J., LaVeist, T., Borrell, L.N., Manderscheid, R., & Troutman, A. (2011). Health disparities and health equity: The issue is justice. *American Journal of Public Health 101*, S.1, 149–56.

Bravve, E., Bolton, M., Couch, L., & Crowley, S. (2012). Out of reach 2012. Washington, DC: National Low Income Housing Coalition.

Bureau of Labor Statistics (2012). Characteristics of minimum wage workers, 2011. Washington, DC: United States Department of Labor. Available online at *http://www.bls.gov/cps/minwage2011.htm* (accessed 21 March 2012).

Buss, J.A. (2010). Have the poor gotten poorer? The American experience from 1987–2007. *Journal of Poverty 14*(2), 183–96.
Byrd, M.W. & Clayton, L.A. (2003). Racial and ethnic disparities in health care: A background and history, in Smedley, B.D., Stith, A.Y., & Nelson, A.R. (eds.), *Unequal treatment: Confronting racial and ethnic disparities in health care* (pp. 455–527), Washington, DC: The National Academic Press.
Cancian, M, Meyer, D.R., and Reed, D. (2010). Promising antipoverty strategies for families, *Poverty & Public Policy*, 2(3), 151–69.
Case, A., Fertig, A., & Paxson, C. (2005). The lasting impact of childhood health and circumstance. *Journal of Health Economics*, 24(2), 365–89.
Children's Defense Fund (2006). *Statistics on child poverty in the United States.* Washington, DC: Author.
Cohen, R., Mabli, J., Potter, F., & Zhao, Z. (2011). *Hunger in America 2010.* New York: Mathematica Policy Research, Feeding America.
Coleman-Jensen, A., Nord, M., Andrews, M., & Carlson, S. (2012). *Household food security in the United States in 2011.* Washington, DC: U.S. Department of Agriculture.
Cooney, K. and Shanks, T.R.W. (2010). New approach to old problems: Market-based strategies for poverty alleviation, *Social Service Review*, 84(1), 29–55.
DeNavas-Walt, C., Proctor, B., & Lee, C. (September 2011). *Income, poverty, and health insurance coverage in the United States: 2010.* Washington, DC: U.S. Bureau of the Census.
Diez-Roux, A. & Mair, C. (2010). Neighborhoods and health. *Annals of the New York Academy of Science 1186*, 125–45.
Drake, B., & Rank, M.R. (2009). The racial divide among American children in poverty: reassessing the importance of neighborhood. *Children and Youth Services Review*, 31, 1264–71.
Economic Policy Institute (2012). *The state of working America.* Washington, DC: Author.
Edelman, P., Golden, O., & Holzer, H. (July 2010). *Reducing poverty and economic distress after ARRA: Next steps for short-term recovery and long-term economic security*, Washington, DC: Urban Institute.
Eisenbrey, R., Mishel, L., Bivens, J., & Fieldhouse, A. (2011). *Putting America back to work: Policies for job creation and stronger economic growth.* Washington, DC: Economic Policy Institute.
Evans, G.W. (2004). The environment of childhood poverty. *American Psychologist*, 59, 77–92.
Families USA. (2009). Health Coverage in Communities of Color: Talking about the New Census Numbers: Fact Sheet from Minority Health Initiatives. *Families USA.* Retrieved March 18, 2012, from *http://www.familiesusa.org/assets/pdfs/minority-health-census-sept–2009.pdf.*
Fertig, A.R. & Reingold, D.A. (2008). Homelessness among at-risk families with children in 20 American cities, *Social Service Review*, 82(3), 485–510.
Food Nutrition Service (2011, September 1). *SNAP monthly data.* Retrieved April 2, 2012 from *http://www.fns.usda.gov/pd/34SNAPmonthly.htm.*
Galea, S., et al (2011). Estimated deaths attributed to social factors in the United States. *American Journal of Public Health 101*(8), 1456–65.
Gornick, J., & Jantti, M. (2012). Child poverty in cross-national perspective: Lessons from the Luxembourg Income Study. *Children and Youth Services Review,* 34, 558–68.
Heinrich, C.J. & Scholz, J.K. (eds). (2009). *Making the work-based safety net work better: Forward-looking policies to help low-income families.* New York: Russell Sage Foundation.
Holzer, H.J., Schanzenbach, D.W., Duncan, G.J., & Ludwig, J. (2007, January 24). *The economic costs of poverty in the United States: Subsequent effects of children growing up poor.* Washington, DC: Center for American progress.
Homeless Resource Exchange (2011). *The 2010 annual Homeless Assessment Report to Congress.* Washington, DC: U.S. Department of Housing and Urban Development. Available online at *http://www.hudhre.info/documents/2010HomelessAssessmentReport.pdf* (accessed 21 September 2012).
Inequality.org (nd). Inequality and health. Retrieved March 28, 2012 from *http://inequality.org/inequality-health/.*
Isaacs, J., Sawhill, I.V., & Haskins, R. (2011). Getting ahead or losing ground: Economic mobility in America. *Economic Mobility Project*, Washington, DC: The Brookings Institution.
Jencks, C. (2002). Does inequality matter? *Daedalus*, 131, 49–65.
Johnson, N., Oliff, P., & Williams, E. (2011, February 9). *An update on state budgets.* Washington, DC: Center on Budget and Policy Priorities.

Joint Center for Housing Studies (2012). *State of the Nation's housing, 2012.* Cambridge, MA: Harvard College.
Kaler, S.G., & Rennert, O.M. (2008). *Reducing the impact of poverty on health and human development: Scientific approaches.* Boston: Blackwell.
LaVeist, T., Pollack, K., Thorpe Jr., R., Fesahazion, R., & Gaskin, D. (2011). Place, not race: Disparities dissipate in southwest Baltimore when Blacks and Whites live under similar conditions. *Health Affairs 30,* 1880–87.
Lin, A.C. & Harris, D.R. (2008). *The colors of poverty: Why racial and ethnic disparities exist.* The National Poverty Center Series on Poverty and Public Policy. New York: Russell Sage Foundation.
Luhby, T. (2011, November 7). Poverty rate rises under alternate Census measure. Retrieved March 7, 2012, from *http://money.cnn.com/2011/11/07/news/economy/poverty_rate/index.htm*.
McNichol, E., Oliff, P., & Johnson, N. (2012). *States continue to feel recession's impact.* Washington, DC: Center on Budget and Policy Priorities. Available online at *http://www.cbpp.org/cms/index.cfm?fa=view&id=711* (accessed 3 March 2012).
Mishel, L. & Shierholz, H. (2011, March 14). The sad but true story of wages in America. *Issue Brief #297.* Washington, DC; Economic Policy Institute.
Monea, E. & Sawhill, I. (2010). *A simulation on future poverty in the United States*, Washington, DC: Urban Institute.
National Coalition for the Homeless (2009). *How many people experience homelessness?* Available online at *http://www.nationalhomeless.org/factsheets/How_Many.html* (accessed 15 October 2012).
O'Connell, J. (2005). Premature mortality in homeless populations: A review of the literature. Nashville, TN: National Health Care for the Homeless Council.
Pavetti, L. & Rosenbaum, D. (2010, February 25). *Creating a safety net that works when the economy doesn't: The role of the Food Stamp and TANF programs*, Washington, DC: Center on Budget and Policy Priorities.
Quillian, L. (2003). How long are exposures to poor neighborhoods? The long-term dynamics of entry and exit from poor neighborhoods. *Population and Research and Policy Review*, 22, 221–49.
Rank, M.R. (2004). *One nation underprivileged: Why American poverty affects us all.* New York: Oxford University Press.
Rank, M.R., & Hirschl, T.A. (2009). Estimating the risk of food stamp use and impoverishment during childhood. *Archives of Pediatrics and Adolescent Medicine*, 163, 994–99.
Rank, M.R., Hirschl, T.A., & Foster, K.A. (in press). *Chasing the American dream: Understanding the dynamics that shape our fortunes.* New York: Oxford University Press.
Sandoval, D.A., Rank, M.R., & Hirschl, T.A. (2009). The increasing risk of poverty across the American life course. *Demography*, 46, 717–37.
Sherman, A. & Stone, C. (June 25, 2010). *Income gaps between very rich and everyone else more than tripled in last three decades, data show*, Washington, DC: Center on Budget and Policy Priorities.
Smeeding, T.M. (2005). Public policy, economic inequality, and poverty: The United States in comparative perspective. *Social Science Quarterly*, 86, 955–83.
Soss, J., Fording, R.C. & Schram, S.F. (2011). *Disciplining the poor: Neoliberal paternalism and the persistent power of race.* Chicago: University of Chicago Press.
Turner, M.A., Oliff, P., & Williams, E. (2010, May 25). *An update on State budget cuts: At least 45 States have imposed cuts that hurt vulnerable residents and the economy,* Washington, DC: Center on Budget and Policy Priorities.
U.S. Bureau of the Census (2012a). *The research supplemental poverty measure: 2011.* Washington, DC: U.S. Government Printing Office.
U.S. Bureau of the Census (2012b). *Statistics on poverty in the United States.* Washington, DC: U.S. Government Printing Office.
U.S. Bureau of the Census (2012c). Income, poverty, and health insurance coverage in the United States: 2011. *Current Population Reports,* P60–243, Washington, DC: U.S. Government Printing Office.
U.S. Conference of Mayors (2011). *Hunger and homelessness: A status report on hunger and homelessness in America's cities.* Available online at *usmayors.org/pressreleases/uploads/2011-hhreport.pdf* (accessed 3 March 2012).
U.S. Department of Agriculture (2012). Participation in the Supplemental Nutrition Assistance Program. Washington, DC: U.S. Government Printing Office.
U.S. Department of Agriculture (2012). *Statistics on the Supplemental Nutritional Assistance Program.* Washington, DC: U.S. Government Printing Office.
U.S. Department of Labor (2013). *Unemployment in the United States.* Washington, DC: Bureau of Labor Statistics.

Vroman, W. (July 15, 2010). *The Great Recession, unemployment insurance, and poverty—Summary*, Washington, DC: Urban Institute.
Wacquant, L. (2009). Punishing the poor: The neoliberal government of social insecurity. Durham, NC: Duke University Press.
Williams, E. (2012). Strengthening State fiscal policies for a stronger economy. Washington, DC: Center on Budget and Policy Priorities. Available online at *http://www.cbpp.org/cms/index.cfm?fa=view&id=3675* (accessed 3 March 2012).
Witte, P. (2012). The state of homelessness, 2012. Washington, DC: National Alliance to End Homelessness. Available online at *http//www.endhomelessness.org/. . ./the-state-of-homelessness-in-america-2012* (accessed 21 September 2012).
Wolff, E.M. (2010). Recent trends in household wealth in the United States: Rising debt and the middle-class squeeze—An update to 2007. Working Paper No. 589, Annandale-on-Hudson, NY: The Levy Economics Institute.

Senator SANDERS. Thank you very much, Dr. Reisch.

Many questions come to mind, but let me start off with Ms. Shrader. You grew up in a very poor county and in your testimony, you talked about some of the travails, some of the problems, some of the terrible things that happened to friends, and acquaintances, and family members who you grew up with.

Can you say a few words about what life was like growing up in McDowell County? What happened to some of your classmates and family members as a result of the isolation and the reality of life in McDowell?

Ms. SHRADER. Thank you. Drug abuse is a problem that is going on in that whole State of West Virginia, but I have seen family members and friends and classmates, a lot of them, get on drugs. All these people were born into poverty and fight to survive every day. They fight every day to get food, to pay their bills, and to have heat in their home.

Senator SANDERS. OK. Thank you.

There has been a recurring theme, I think, from almost all of the panelists that poverty for our country is, in fact, very expensive. That while some of our colleagues can say,

> "We can save the Federal Government. Why do we not cut the TRIO program? We will save billions of dollars doing that. Why do we not cut Medicaid? We could save hundreds of billions of dollars."

I think what some of you are telling us is that that may not be the wisest course of action for some people. If they do not have access to healthcare, if they do not have access to education, if they do not have access to jobs and affordable housing, we end up paying not only in terms of human suffering and the shortening of life expectancy, but in actual dollars.

Dr. Woolf, do you want to elaborate on that point, please?

Dr. WOOLF. Senator, it is a key point.

When we think about the burden on the Federal Government spending brought on by Medicare and Medicaid, children's health insurance, and so forth, most experts recognize that a lot of that is being driven by the escalating epidemic of chronic diseases—diabetes, heart disease, and so forth—which accounts for the vast proportion of that spending, and those are diseases that are directly correlated to socioeconomic conditions.

Another example similar to my colleagues' presentations, we know that diabetes mortality rates for middle-aged adults are 3 times higher if they have not graduated from high school compared with if they have some college education.

Those huge differences in the prevalence of these expensive chronic diseases cannot be ignored. Dealing with these socioeconomic conditions that affect educational attainment and socioeconomic status can markedly——

Senator SANDERS. Can I interrupt you?

Dr. WOOLF. Please.

Senator SANDERS. I am chairman of the Veterans Committee, and the V.A. actually does a fairly good job in addressing some of these issues.

Is it fair to say that we know how to prevent, or at least cutback, on the incidence of diabetes if we invested in programs to do that?

Dr. WOOLF. There is excellent research on important behavioral strategies.

For example, the diabetes prevention trials have shown that intensive exercise and physical activity can reduce the incidence of new cases of diabetes by 15 percent. There are other strategies that we need to think about outside of the healthcare domain which is the focus of this hearing that can also exert tremendous leverage on the prevalence.

Senator SANDERS. In other words, investing in those programs and cutting back on the incidence of diabetes may actually not only ease human suffering, but save money as well.

OK. Let me ask. Several of you have made the important point that, shamefully, the United States has, by far, the highest rate of childhood poverty of any major country on earth; it is 22 percent. Given all that we have heard this morning, what do we look forward to? What is the future of this country when so many of our kids are living in poverty? When youth unemployment, an issue that is not discussed very much; we talk about real unemployment. Do you know what youth unemployment is? It is close to 20 percent in this country. Kids who leave high school, do not have a job, what happens to their lives?

What does that mean in terms of life expectancy, human suffering, and the cost to the Federal Government? If a kid, a low-income kid, drops out of school as a junior in high school, what happens to that kid?

Yes, Dr. Kindig.

Dr. KINDIG. As I mentioned in my testimony, we know the effects of poverty and stress. There is a growing field in biomedical science about how early these conditions affect even within the womb, beginning with brain development. These things get set into life so early that it is such a compelling reason to start early because otherwise today the map for 20 years from now is being set in stone.

I would just like to mention one other thing, Senator, that has not come up. Dr. Woolf and others have also shown in their work that in addition to our poor health outcomes in relation to other countries, we spend about one-third more in medical care than many of those that do better than us. We always wonder, "Where is the money to come from?" But I am one of those who believe, with Dr. Berwick, who used to run the Center for Medicare and Medicaid services, that waste is theft. It is theft from these other kinds of investments that we know would be most health-promoting. There is a lot to be done there as well.

Senator SANDERS. Doctor, it is actually in many cases, more than one-third; it is almost double what other countries are spending.

Senator Warren.

Senator WARREN. Thank you, Mr. Chairman.

I just want to pick up on the same theme. Let us start with the trend lines; where we are heading right now. According to the Commerce Department, inflation-adjusted incomes for middle-class families have dropped 6 percent just in the last decade. Meanwhile, the tax data show that nearly 20 percent of income in the United States last year went to the top 1 percent of earners. That is the largest share of income going to the top 1 percent since 1928; the Roaring Twenties.

Now, economists agree that this kind of inequality is bad for growing an economy, but doctors, scientists, and health researchers are now teaching us that this kind of inequality is literally deadly for our families.

What I wanted to start with is a question about what happens if these trends continue. If we continue to have an increase in financial inequality, what would be the impact on the health of families who are struggling to get into the middle class, or families who are trying to stay in the middle class?

Dr. Woolf, could you start us on that?

Dr. WOOLF. I am glad you brought it up, Senator Warren. The focus, obviously, in the last few comments has been on poverty, which is obviously a great concern, but these economic trends across the entire middle class of the United States also carries significant health implications.

This trend of increasing income inequality and decreasing median household income has been going on for some years now. It is getting worse. And we know from a public health standpoint that that carries important health consequences. What it means to Senator Sanders' point is that our children that are growing up under these conditions—we are raising a generation that is going to be sicker.

When we think ahead to what the implications are, besides the obviously important human toll that that will inflict on that generation of higher chronic disease rates, that means a sicker workforce, a less well-educated workforce, and for American businesses greater difficulty competing against other countries where they have less expensive healthcare costs and healthier populations.

Senator WARREN. Is there anyone who wants to add that?

Mr. Reisch.

Mr. REISCH. Yes, I think we are talking about a situation right now which is creating a lack of mobility, both physical mobility and social mobility for millions and millions of people.

For example, it is harder and harder for low-income and working-class families, and even middle-class families, to go to college today. The cumulative amount of college debt now is higher than the total credit card debt in the United States. This is locking people into a lifestyle and physically into communities which we know are less healthy and less able to access all the benefits of our society.

Three-quarters of all African-American children who grow up in low-income neighborhoods will remain in those neighborhoods as

adults. We are talking about creating a permanent social stratification in our society which is socially unstable, politically unstable, and economically damaging for our country because we are depriving our Nation and individual people of being able to contribute to the economic growth, prosperity, and well-being of our whole society.

Senator WARREN. Thank you.

Dr. Berkman, did I see that you wanted to add to that?

Ms. BERKMAN. I was just going to say that to increase this, that the trend lines are bad and we see this evidence in health and retirement survey, where we see cohorts have increased morbidity, higher rates of diabetes, higher rates of heart disease, higher rates of blood pressure. We see it in children as well, who seem sicker, are more likely to be obese than their counterparts a cohort or two ago.

I think the most important thing when we think about this is that—and what you are onto—is that the social and economic policies that Government has developed over years that may be health-promoting are not counted as being health-promoting. We do not think about that and the benefit side of the equation.

We only think about them in terms of the short-term economic turnaround, or employment, or labor. When, in fact, the spillover to health may be enormous and kind of trumps many, many other health policies that we have.

Senator WARREN. Let me pick up on this, then, because what I am hearing from all of you is that we seem to be caught in a vicious cycle here. That we have got struggling families who are more likely to get sick and once someone is sick, that puts even greater strain on the family. So that that puts more strain on the family budget. It reduces the ability of parents to work. It causes further financial struggles and we get a real downward cycle here.

So the question is: how do you break out of that cycle? What are the options available to us to move away from this? Dr. Berkman, you have identified one. If we change that calculation on how we understand costs and benefits, that we could make different kinds of investments that would be financially sensible investments, but we have to do the full accounting.

What other ideas should we put on the table to address?

Dr. Woolf, did you want to add something more?

Dr. WOOLF. We have an initiative at our Center that we call Connecting the Dots, and it is basically this notion that Dr. Berkman is mentioning of understanding how these policies—that are not conventionally thought of as health policies—are vital levers for affecting health outcomes.

One example I will talk about is education reform. Our efforts to try to improve education beginning with preschool or early childhood education, all the way from K–12, in helping our young people achieve a college education and a graduate school education are vital in a knowledge economy that are also key levers in improving health outcomes.

A lot of the socioeconomic problems that we are talking about here would be powerfully addressed by improving the educational success of our young people. The U.S. rankings on education are slipping behind other countries. We used to be the most educated

population post-World War II. Now our seniors are the most educated seniors in the world, but our young people are falling behind not only industrialized countries but emerging economies because of our shortcomings in education.

Senator WARREN. Mr. Chairman, can I have just another minute to let others respond? Is that all right? I think Dr. Eberstadt wanted to respond and I wanted to give him a chance.

Mr. EBERSTADT. Thank you, Senator.

It is important to understand the role of social forces in health outcomes in the United States and elsewhere. But it is also important to understand the role of human agency: of lifestyles, and behaviors, and practices, and outlook, and attitudes, and objectives.

If social forces were really the determinative, the Latino health story in America could not have occurred. We should want to understand how disadvantaged groups in America—how people with less privilege, less education, less income—sometimes have excellent health outcomes. I think this is some of the low hanging fruit in our situation today.

One of the reasons, perhaps, that we do not know as much about this as we might has been that we have skimped on investments in social and economic data systems for our country as a whole. We were once not just the envy of the world with our educational results; we were the envy of the world with our statistical system. That is not true anymore.

We have held back on the investments in these data systems that, I think, would help explain much more what is going on in America.

Senator WARREN. That is very valuable. Are we still OK or do you want me to do another one?

Mr. Kindig.

Dr. KINDIG. Just to build on that.

Senator WARREN. But be really short here.

Dr. KINDIG. Yes. Not only are the data systems, we just need the dollars to invest in research and understanding what are the most important factors.

We are pouring zillions of dollars into studying which kinds of medical care factors are better than others; which drugs, which procedures. That is important work to do. I do not mean to bash that. But we spend almost no money on the questions before you here.

What are the most cost-effective relative investments across the determinants so that we can get a balanced investment portfolio that will change the colors of these maps?

Senator WARREN. Thank you very much, Mr. Chairman.

Senator SANDERS. Very important point. Let me change gears a little bit and Ms. Shrader, I am going to get back to you, but I want to ask the doctors here a question. What is the physiology of stress and poverty?

In other words, when most people think about poverty, they say,

> "Well, it is too bad. You have a broken down car; I have a nice car. You live in a small apartment; I got a really nice house. That is my advantage over you."

But stress and poverty, wondering how am I going to feed my family tomorrow, pay my bills, get the income I need to survive takes a toll on human life, does it not?

What is the physiology between somebody who has a meaningful job, is earning a decent income, is married, has good social relationships and somebody who is in a very different position? What happens physiologically, if you like? What does that do to the body? Who wants to comment on that?

Dr. KINDIG. I will be happy to start and I am not an expert on this, but there are really two pathways through which these income and educational disadvantages get under the skin. The one is obviously if you do not have education or income, you cannot get a good job. If you do not have income, you cannot get health insurance, you cannot go to the fitness center. Those sorts of things that you cannot do.

But more and more research these days, high quality research is showing what you said, Senator Sanders, the stress pathways independent of those other factors, that operate really through neural endocrine mechanisms and neuro-immunological mechanisms that really puts the body under stress that produces some of these impacts on length of life and on disease.

That is really a body of research of the last 10 or 15 years that is becoming unimpeachable and it happens early. That is another matter. It begins to happen early.

Senator SANDERS. Dr. Reisch.

Mr. REISCH. Yes, thank you.

I am not a medical doctor, but the studies that demonstrate that the lack of choice and the increased stress that low-income people experience increases their level of cortisol, and we know that higher levels of cortisol are correlated with cardiovascular disease and other chronic illnesses including diabetes.

There was a study done in Louisville, KY, for example, which did a very interesting analysis of the city based upon the quintiles of income level. It demonstrated that morbidity and mortality rates varied in exact correlation with social stratification in that city. And I think the same thing applies in places like Baltimore and Washington as well.

Senator SANDERS. Yes, Dr. Berkman.

Ms. BERKMAN. I would just add that I think there are multiple pathways that lead from socioeconomic conditions to poor health outcomes. One of them is behavioral.

People tend to smoke more. They tend to consume more alcohol. They tend to be more overweight. They make harder food choices in part because of transportation needs and food. But these stress pathways are also independent of that. It is very clear that these behavioral pathways only explain a part of that.

The stress pathways influence such things as inflammatory markers, as other people have said, cortisol responses, inflammatory markers and works with things like people sleep less. People when they are stressed sleep less. We now know that less sleep is related to metabolic function. It is related to depression. These things also influence diabetes, cardiovascular disease, hypertension, and a host of other chronic diseases.

They also put you at risk for a whole set of mental disorders that are very important and often underestimated in these set up equations.

Senator SANDERS. I think, as Senator Warren indicated, we have a chicken and egg situation. When you are under stress, it's hard to get a decent job. When you do not have a decent job, hard to have an income to alleviate the stress again, so housing and healthcare and everything else.

Let's jump a little bit. Dr. Woolf, you may have done the research on this. How do we do as a Nation? Why is it that a Nation which is as wealthy as we are does not do particularly well compared to many other countries around the world in terms of life expectancy? How does that relate to this whole discussion?

Dr. WOOLF. To repeat the point that has been made earlier, we have higher poverty rates and higher income inequality levels than they do in those other countries. That is certainly part of it.

But in our analysis, comparing the United States with the 16 other high-income countries, it is also clear that, obviously, they have poverty in other countries too, but there appears to be more programming and policies in place in those other countries to buffer the impact of material deprivation on families. So that, in effect, children growing up in poor families in these other countries are more protected from the adverse health effects than American children are.

Our relative investment in those social programs, social services, is quite striking. Elizabeth Bradley and her colleagues at Yale University have compared the United States with these other countries and find that we are an outlier in the proportion of our dollars that we spend on healthcare relative to those social programs. Whereas the countries that spend much more on social programs than on healthcare are the ones that are living longer.

Senator SANDERS. And presumably saving money on healthcare as well. Other thoughts on that?

Senator Warren.

Senator WARREN. I just wanted to dig-in to this point a little bit more. Thank you.

And that is, I was thinking about this, so healthy people have stable, safe, clean housing. They live in safe neighborhoods with sidewalks. They have lots of outdoor spaces. Healthy people can afford nutritious food. Healthy people have clean air to breathe. For many Americans, these necessities of good health are luxuries they cannot afford.

If we have a system that is not investing in these cost-efficient ways to keep people healthy, and a system that wastes far too much money treating people after they become sick, it is no wonder in this system that Americans are less healthy and die younger than people living in other wealthy Nations.

But I wanted to dig-in to that just a little bit more, Dr. Woolf, if I could. Can you tell us about the basic investments that other countries in the Institute of Medicine's study make outside direct healthcare investments that have helped them achieve better outcomes?

Dr. WOOLF. Well, due to the paucity of data that Dr. Kindig mentioned, it is really hard to prove cause and effect.

Senator WARREN. Fair enough.

Dr. WOOLF. But we can see that these other countries that have better health outcomes have different policies with respect to some of the areas that Dr. Berkman mentioned, such as parental leave, maternity leave, early childhood education. We are outranked by other countries in the amount of resources they invest in early childhood education. Job support and workforce support for workers are more extensive in these other countries.

Again, these are programs and services that help buffer the potential adverse health impact on families that we think might produce potential health benefits. But if I may step back out of my medical roles, those are also policies that help people achieve a stronger economic footing and increase their economic prosperity so that they could be more productive workers, more affluent consumers and so forth, and therefore boost the economy. So it is a win-win improving their economic footing and their health outcomes.

Senator WARREN. The virtuous circle instead of the vicious cycle.

Dr. WOOLF. Exactly.

Senator WARREN. Maybe I can ask this in a more detailed, in another way. Dr. Kindig, I think in your written testimony, you talked about Cambridge and Fall River, MA—you knew you would catch my attention with that—how they made smart, community-based investments.

I am going to ask you just to say a bit more about it, and talk about how we could apply some of those same strategies to the broader population, and what the major barriers are that stand in our way right now.

Dr. KINDIG. Right. Thank you for bringing up that point. The time limitation, I could not say everything that I wrote, but I was actually calling attention to a new program that we work with at the University of Wisconsin along with the Robert Wood Johnson Foundation. It is called the Roadmaps to Health Prize. It sort of is a companion to the County Health Rankings work that I mentioned before.

We are, the Foundation and with our staff, are every year looking for those communities, not just the highest ranking communities. That is what our rankings do. They are the highest because they have all these things going for them.

We are actually looking for American communities that have shown that they can be improving their health outcomes with a balanced approach like we have just been talking about. Not just in medical care, but actually in order to get a prize, you have to show excellence in the behavioral area, in the socioeconomic area, in the healthcare area, and particularly looking for multi-sectoral approaches.

So the two places in your State, that was a little embarrassing to give two to the one State, but sometimes——

Senator WARREN. We are working on it.

Dr. KINDIG. Yes, I know. But both of them, very different communities as you know.

Senator WARREN. Yes.

Dr. KINDIG. But very remarkable partnerships coming together with the healthcare community, the public health community, the

business community, community nonprofit organizations, United Way, sort of come together and say, "We got a problem here to solve and how can we pull together to do it?"

Over time, this will be an ongoing, very high profile program with the Robert Wood Johnson connection, over time with six every year. When we get 20, 30, 50 of these type communities, there will be little stories there that other places can emulate and these are not the best-off places. Many of these are challenged, as Fall River, for example, is a challenged community for many historical reasons, but they are finding a way to do it. There are stories that we can look to, to make progress, and thank you for bringing attention to that.

Senator WARREN. Well, thank you. Thank you, for your bringing attention to it because I think it is a reminder. We can do this in the United States. We have little pockets of where we have begun to build on the research that you all and the advice that you all have given. We just need to find ways to support it and extend it across the country.

Thank you.

Senator SANDERS. Let me ask, start with Dr. Kindig to elaborate a little bit on a paper that he wrote earlier this year which showed that female mortality rose in 43 percent of U.S. counties between 1992 and 2006, and that is almost incomprehensible. We talk about all of the advances we are making in all kinds of areas, and yet in 43 percent of the counties in America, women are living shorter lives.

What is that about? Why is that taking place?

And then I want to ask Ms. Shrader if she could, again, coming from a county where life expectancy is low, to maybe talk a little bit about women in those counties and how Dr. Kindig's statistics are reflected in the real life that she may have observed.

Dr. Kindig.

Dr. KINDIG. Yes, thank you, Mr. Chairman. I have to tell you honestly that when I saw that map, when my colleague Erica Chang, one of our doctoral students, brought that map in, I said, "I do not believe this." We did two things that are different.

One is we looked at change over time and that is not often looked at. This is a change over time thing as opposed to how it is in a certain time.

We also looked at the county level. When you look at Nations and States, almost always mortality and life expectancy go up because you average in the poor and the—but when you go to the county level and look at change over time, these are the kinds of results that you get, and we were shocked. We are not the only ones that have found that.

Chris Murray and his colleagues at the University of Washington have looked at also declining life expectancy, showing also not quite as—it was a different data set in a different time period.

Senator SANDERS. But as I looked at that map, sorry to interrupt you, if I look at that map, there is a lot of red in the southeastern part of the country. Out in California and southern California, it is all blue.

Dr. KINDIG. Yes.

Senator SANDERS. What is that about?

Dr. KINDIG. In all of those counties, all the poor performing counties have high rates of smoking, high poverty, children in poverty, low high school graduation rates. They have all those factors.

One of the striking things that we found and, actually frankly, Senator, that I do not understand, when actually you control for all of those factors, there still are regional effects in the South and parts of the West that we do not understand. We say in our paper there must be other cultural or other factors that even go beyond the disadvantage that these counties have from poor rates of the factors that we know about, and it needs to be—I am quite interested in why that is.

I have to tell you, most of the reports—and we have paid a lot of attention to this—ask, "And why is this more for females than for men?" We do not honestly know the answer to that, but I know a lot of people are trying to dig-in to it and that is why we need more research funding to answer these kinds of questions.

Senator SANDERS. Ms. Shrader, do you have any thoughts on why that might be the case? Why is it conceivable that in America—and in West Virginia among other places—women are actually living shorter lives than used to be the case? Any thoughts?

Ms. SHRADER. Basically, they are working so hard and while they are working so hard, they are suffering to make their basic needs and to make their family's needs such as food, clothing, and shelter. They do not have what they need to succeed. They are stressed and overworked, but it is not their fault. They need services and programs to help them improve. Examples of how they are working so hard as they are trying to be mothers, they are trying to work jobs, they are trying to get an education. They know what the research says.

The research teaches children what you need to succeed, but if you do not have it, you have to improvise and utilize all of the resources and all of the people that is in your community and your churches and in your family to try to do your best with what you have, and hope that you are going to succeed.

Senator SANDERS. Let me ask you maybe a dumb question here, but is it your observation that a lot of folks are smoking and not eating well in these communities? Is that something, too?

Ms. SHRADER. There are a lot who are. However, farm to school programs are coming into play in West Virginia. I have seen them come into play in the northern-central parts of West Virginia. They have yet to be big and booming in the southern parts, but they are getting there. It takes time.

Senator SANDERS. You made the point earlier, that just programs like the TRIO program or Upward Bound giving kids the opportunity of even knowing what a college is. You made an interesting point that there are many kids that you have grown up with who have never seen a college campus in their lives. Exposing them to those opportunities has an impact on young people's lives, would it not?

Ms. SHRADER. It definitely does. When you are not exposed to opportunities, period, in the world, you only know what exists by what you see. There are all kinds of things on TV that are not real, but they just may not know what they can do.

Also, sometimes you get told things that are not true. You get told, "You are stupid." Or, "You are not going to amount to anything." A lot of times kids are told this when they are kids, and they end up believing these things, and it ends up becoming a self-fulfilling prophecy. They do not believe in themselves. It is real hard for them to try to do better.

Senator SANDERS. You mentioned to me last night when we chatted, Ms. Shrader and her husband and I chatted a little bit, that there are a lot of kids who have never left their county or left the State to see the rest. Well, it is true in Vermont, as well, by the way. Elaborate a little bit on that.

Ms. SHRADER. Well, there are a lot of people in McDowell County statistically that do not have transportation. It is not that their parents do not want to show them other parts of the world, or other parts of the West Virginia, or other parts of the country; they may not have access themselves to teach their kids what is out there.

A way that they can learn about it is if other family members have traveled, been in the military, for example. They come back and they tell their stories. We all try to teach each other about what is going on in the world.

Senator SANDERS. Let me change gears a little bit.

Dr. Woolf made the important point, I think, that diabetes is much more prevalent among lower income people at great cost to the individuals and financial cost to the country. Go beyond diabetes in terms of obesity, in terms of smoking, in terms of child abuse.

How does class impact those factors, which play such an important role in our lives?

Dr. WOOLF. It is a pervasive issue. There are some diseases where we do not see it quite as dramatically, but a very broad spectrum of conditions that have these strong socioeconomic determinants.

In addition to diabetes, I had mentioned cardiovascular disease, pulmonary disease, arthritis, mental illness, depression, for example, much higher rates. Studies that have looked at disability rates and the productivity of workers also find striking differences by educational attainment.

So that, again, is a factor that is affecting life expectancy, it is affecting health burden.

Senator SANDERS. Something as simple as, say, smoking—and I do not know the answer to this—is it fair to say that working-class people are more likely to smoke than upper income people?

Dr. WOOLF. There is a strong gradient in smoking rates based on socioeconomic status since the release of the Surgeon General's Report in the 1960s that revealed the role of smoking. We see that in upper educated Americans, there was a striking decrease in smoking rates. But in Americans with less than a high school education, smoking rates are about triple of those with more advanced education.

Senator SANDERS. Which is going to lead to a whole host of health problems, obviously.

Dr. WOOLF. Exactly.

Senator SANDERS. Senator Warren.

Senator WARREN. Thank you, Mr. Chairman.

I would like to go back to a point that, I think, several of you have emphasized, and that is one way to decrease the health disparities between high-income and low-income people is to look at the environments around them.

I am proud that in Boston, we have a model program, the Asthma Prevention and Control program that is run by the Boston Public Health Commission, and it has demonstrated success in reducing asthma in our struggling neighborhoods by doing exactly that. I just want to talk about the program for a minute.

The Boston program addresses environmental triggers of asthma by eliminating the pests that trigger asthma in our homes, and by ensuring that the pesticides used to control the pests are not themselves toxic.

The Boston program does home inspections to make sure the property owners are keeping the residences up to code. The Boston program performs home visits to teach families how to reduce asthma and they teach in the language that the family speaks. They give them the tools to prevent allergens in the home.

The Boston program has been under the leadership of the executive director, Dr. Barbara Ferrer, and the director of Healthy Homes and Community Support, Margaret Reid and it has just been an incredible success. I want to tell you about some data that are not yet published from this.

A forthcoming report shows that the number of families who have recently visited an urgent care for asthma dropped from 80 percent to 20 percent after participation in a home visit program. In the public housing that was eradicated of pests, the number of adult residents with asthma symptoms was cut in half.

We are working to expand this initiative across Massachusetts because we have seen it work. So what I want to ask you to do is talk to us about how we implement programs like this on a larger scale, not just for asthma, but for the many diseases where we know that if we can improve environmental factors, we can get better health outcomes at lower costs for our citizens.

Who would like to do that? Dr. Berkman.

Ms. BERKMAN. First of all, I would like to congratulate you on congratulating Barbara Ferrer, who has done an amazing job.

Senator WARREN. Is she not fabulous?

Ms. BERKMAN. A completely amazing job in Boston city in terms of understanding, really, the social determinants of health approach. She is an enlightened person in terms of doing this.

I think the point of it is that once you understand that the determinants of health fit in neighborhoods, in schools, in worksites, and you start turning your attention to what it takes to improve those settings, there are millions of things to do. There are sets of things in housing that get turned around. There are sets of things in schools that we could be doing.

And worksites, I think, are enormously hopeful because people think that this is costly when, in fact, most companies actually once they realize what is going on, think that it is better for the bottom line. Our nursing homes, for instance, think that turnover and sickness absence is devastating their bottom line. And that

these workplace policies will improve their bottom line and be good for the health of workers and their families.

I think if Barbara were multiplied times 100, that you would like to get that kind of message out.

Senator WARREN. So there is one strategy. We multiply Barbara times 100.

Ms. BERKMAN. Yes.

Senator WARREN. Again, I very much get the point. I think it is a really powerful one.

Dr. Kindig, do you want to add?

Dr. KINDIG. I would like to add to that. A lot of this work is going on. That is the really wonderful example. But a lot of this work is going on in communities in different places, public health departments, but the resources that support it are idiosyncratic, and fragmented, and come and go so that it is not a sustainable model to scale.

I really think we have to find the same kind of resources that deliver on this as we do in our healthcare programs. Every Medicare patient that is treated, there is a little bit of dollar that goes into graduate medical education, as you well know. You do not have to put in a grant. It just happens every day.

We need those kinds of resources. Hooking back to my other comment about waste in healthcare, as we squeeze the waste out and find the savings. So what is going to happen? Let us say we are successful at that. We will see. So who gets the savings, you know?

Right now in accountable care organizations, they are talking about shared savings between the insurers and the providers. There is nothing wrong with that, but a number of thoughtful people have been talking about what about a community part of the shared savings to go to these other nonmedical care programs like you mentioned, housing lead abatement or roach abatement that are, undoubtedly, health-promoting. But where are the sustainable resources to sort of deliver a dollar every day to the places that need it?

Senator WARREN. Dr. Reisch.

Mr. REISCH. Thank you. I think it is also important, as you suggested in your description of the program in Massachusetts, to focus on community investment and community involvement, and not just focus on individuals.

Individual and community behaviors are clearly linked, and let me give you an example in terms of Baltimore, where there has been an effort to reduce or eliminate the number of food deserts in the city, which has been shown to be a major cause of people's poor diets, which in turn, leads to obesity, which in turn, leads to diabetes and cardiovascular disease.

There have been efforts, for example, to involve the community in helping to site supermarkets, which bring healthy food choices, to establish food co-ops, to establish farmers markets in the community, to create community gardens, and so forth. Well, those things not only have a positive effect upon people's health individually and collectively, but also by involving the community in it, it builds the community's capacity to produce future changes and improves their psychological well-being as well.

Senator WARREN. Thank you very much.

Thank you, Mr. Chairman. I just want to say, since this is my last round of questions, when we look at data like this and we see that just cleaning up the environment means that we cut visits to the emergency room for children with asthma from 80 percent to 20 percent, that is not only economically sound. That is a lot of little kids who stayed in school those days, or who were outside playing, or who were having fun instead of spending their time in very expensive and very scary emergency rooms struggling to breathe.

If those are not the investments we are willing to make, what kind of a people are we? We have opportunities here. We just have to seize them. Thank you.

Thank you, Mr. Chairman, for doing this.

Senator SANDERS. Well, thank you very much, Senator Warren.

I did not want to leave Dr. Eberstadt out of the discussion here because I think you made some good points. I think your point was that we should take a hard look at why it is that Asians in this country, Hispanics in this country have better life expectancies than their socioeconomic conditions would allow us to assume.

Do you have any guesses as to, in fact, why that is the case?

Mr. EBERSTADT. It is a really important question, Senator. It is a really, really under-researched question. I hope that you all can encourage some more research in this area. As Dr. Kindig mentioned, this is a very underfunded area also.

I am just so struck by this Figure 8 in my prepared testimony, which shows life expectancy in New York City by ethnicity and by neighborhood status. You see on here that the healthiest group in New York City, according to the New York Department of Health study, are Asian-Americans who live in the very poorest neighborhoods.

Senator SANDERS. By "healthy," do you mean life expectancy?

Mr. EBERSTADT. I am using that, yes, as a proxy.

Senator SANDERS. Life expectancy.

Mr. EBERSTADT. I am using that as a proxy.

Senator SANDERS. Would you guess that maybe it has something to do with family structure and so forth?

Mr. EBERSTADT. That is the ghost in the room that has not been mentioned yet, sir. There is, I think unfortunately, a wealth of evidence that suggests there is a correspondence between family structure and health outcomes, family structure and poverty outcomes.

The fraying or disintegration of the U.S. family structure for all ethnic groups over the past 50 years, has had really frightening consequences. One of them is that a child in the U.S.A. is more likely to live with just one parent today than in any of the OECD countries, or at least the never-communist OECD countries. We have a higher proportion of children living with one parent than famous Scandinavia.

Senator SANDERS. I think that is a good point.

If I can, because Senator Warren and I are the only people here, we have all the time we want. I wanted to throw out another point.

Dr. Kindig, the word "community" came up a whole lot, and I think how we relate in the community, whether we feel isolated or alone, or we are part of something larger than that, I suspect plays a role in everything that we have been talking about.

I have worked very hard, with some success, to expand community health centers in the State of Vermont and throughout this country.

Just as an example, just a couple of weeks ago HRSA, HHS, announced they were going to spend $150 million—which around here is not a lot of money—in starting up 236 new community health centers in almost every State in this country providing healthcare access to about 1.3 million people.

We talk about community. What impact does it have? The basic point is made over and over again is that healthcare is a lot more than health care. Right?

But on the other hand, if you have a community health center where people can walk in the door and get the healthcare they need when they need it, not delay going to the doctor, get low-cost prescription drugs. Get mental health counseling when they need it. Get dental care when they need it. To give you an example.

Northern Vermont has a community health center, I visited them during the summer. You know what they were running? They were running a summer camp for virtually all the kids in the town because they do not want kids hanging out on street corners.

I was in the Bronx, NY at a community health center. They are involved in food, making sure that kids are eating well. They are involved in pregnancy prevention. They are dealing with how to prevent AIDS, et cetera, etc.

I understand, again, that the main point of today is healthcare is more than health care. But what would it mean to this country if in every community in America, people could walk into their doctor's office when they needed to and get the broad counseling that they needed regardless of income?

What impact would that have on longevity?

Dr. Kindig.

Dr. KINDIG. Yes, I really want to take this because I think I told you in my testimony that I actually came of age and I am probably the only one here who knows what OEO was, the Office of Economic Opportunity.

Senator SANDERS. Not the only one.

Dr. KINDIG. I came of age in an OEO neighborhood health center in the South Bronx and even before federally qualified status. Your point is so well-taken, Senator. Not only at the time, at that time, were those health centers innovative ways of getting access to medical care which, of course, is a determinant of health. We are not saying medical care is not a determinant of health. It is just not the only one.

At that time those centers, particularly in that time, were actually the hubs of other kinds of social services like school programs, job training, and legal advocacy. It was just part of the package.

I believe as over the years, particularly as OEO funding went away, some of those other services fell off a bit, quite a bit, even though the medical care role remains. I think many health centers do, like you say, do-do that.

If you have another $150 million, I think you ought to not only expand those health centers, particularly in the under-served communities that need it, but make sure that they have the resources to be a focal point, at least in those communities, for this broader

range of services like your asthma program, or school health, or whatever that would be responsive to the issues that we are talking about here.

Senator SANDERS. Many of them do an extraordinary job, and they are all different. The one in the Bronx was different than the one in northern Vermont. But they look at the community as a whole and they say, "How do we keep people healthy? Yes, we are going to treat them when they get sick. But how do we keep them healthy?" How can you ignore when the school down the block is not doing a good job? Where there is not a grocery store that people can buy decent food?

I think having professionals and having that kind of community health center means a lot. But does anyone want to elaborate on that? Yes, Ms. Shrader.

Ms. SHRADER. Thank you. I just wanted to point out that I am a fish-eating vegetarian. I lost 80 pounds in the past year. This was after I watched the documentary on Netflix called "Forks Over Knives."

Research was done in Asia. These doctors saw where the people in Asia were not dying from strokes, heart attacks, and diabetes. And what they found is that they were so poor, they could not afford meat. Once they made it into the middle class, and they started eating meat, they started dying from high blood pressure, all those issues. Thank you.

Senator SANDERS. Dr. Reisch, did you want to?

Mr. REISCH. Yes, I think it is also important to add that access means more than just physical proximity. It also means the likelihood that the services that are provided are going to be more culturally compatible to the needs of the community because the community is involved in determining what those services should be and what constitutes an appropriate service.

When I was growing up in public housing, we had a public health nurse who was located on the grounds of the housing project. That is where I got my childhood immunizations. The startling statistic, which I think my public health colleagues can validate, is that fewer children in the United States today are immunized than that in Mexico, and that is something that we should be totally ashamed of.

Senator SANDERS. Yes, Dr. Kindig.

Dr. KINDIG. Just building on the other point about the health centers, and I cannot support it more than I did. But it is a big country and I think we are going to find that different solutions, even from where the organizing principle is, maybe take place in different ways.

When the two communities that Senator Warren mentioned that won the prize, one in Fall River was a very unusual, just sort of a grassroots community organization that has grown over time and they seem to have the leadership. The other one in Cambridge is a combination of public health and innovative healthcare system. One in Santa Cruz, CA, it was a United Way that actually was the glue that pulled the partnership together to make this happen.

I think centers, community health centers, can play a real important role in many places. But there may be other ways in other places given the history and the nature of the community efforts.

Senator SANDERS. Senator Warren. All right. First of all, thank you so much, Senator Warren, for staying here throughout.

I think this has been a great discussion, I really do, and I think you have shed light on issues that we just do not talk about often enough. I think the point that you have made, if we invest in our people, create a healthier, more loving society, we end up not only creating a happier society with people that are going to live longer lives. But you know what? We end up saving money as well. We end up saving the taxpayers' money.

You guys have just been terrific and we appreciate, very much, all of you for being here.

The record will remain open for 10 days to receive any additional comments.

Thanks very much.

[Whereupon, at 11:40 a.m., the hearing was adjourned.]

○