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US Senate Committee on Health, Education, Labor and Pensions
Subcommittee on Primary Health and Aging
"Dying Young: Why Your Social and Economic Status May Be a Death Sentence in America"
November 20, 2013

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 important 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% of American adults have an income that is more than twice the poverty level. Suppose we boosted that number just slightly, from 68% to 70% 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 US with 16 other high-income countries and found that Americans die earlier and we have higher rates of disease and injury. This US 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 US 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 studies 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% 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% 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.

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

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

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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.[6–12] 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 US 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]

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]

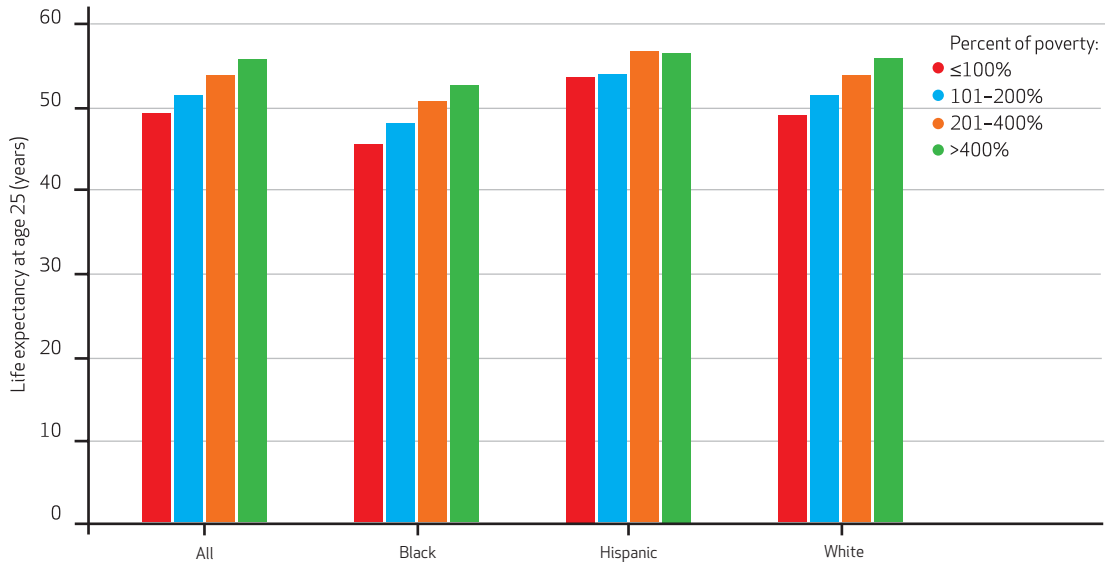
Such estimates rely on certain assumptions and do not prove causality. However, the consistency of the evidence supports the conclusion that income, or the conditions associated with income, are important determinants of health.

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 sixty-five.[16] The average twenty-five-year-old with less than twelve years' education lives almost seven fewer years than someone with at least sixteen years' education.[10] Children's health is also strongly linked to their parents' education.[10]

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 US adults the mortality rate of adults with some college education would save seven lives for every life

EXHIBIT 1

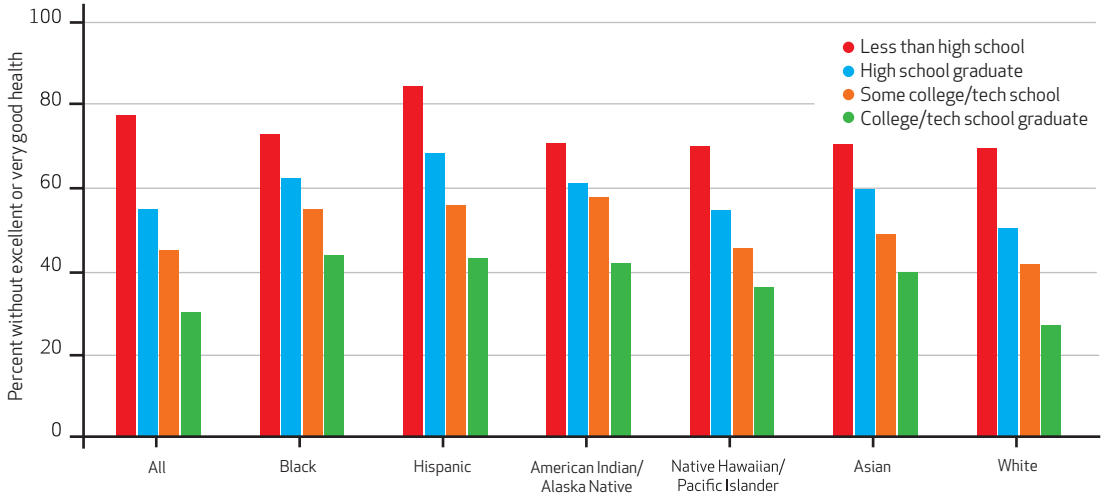
Disparities In US Life Expectancy At Age 25, By Income And Race Or Ethnicity



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.

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.

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 seven years of elementary school education is twenty 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 twenty 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 US 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 fourteenth in life expectancy among industrialized countries, the US ranking has been declining. By 2008 the United States ranked twenty-fifth 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 US health care system. However, a persistent question is whether US 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 decision makers outside of health care who are in a position to strengthen schools, reduce unemployment, stabilize the economy, and restore neighborhood infrastructure. Policy makers 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 twenty 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 policy makers understand the health impact of social determinants, the general public and other policy makers 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 investment. 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 policy makers con-

cerned 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 policy makers 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 US 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 policy makers 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 policy makers 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. ■

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In this month's *Health Affairs*, Steven Woolf and Paula Braveman discuss the root causes of health disparities: social and economic determinants ranging from low income to the unhealthy characteristics of communities. The authors note that these can harm health through complex pathways, and they warn that a shortsighted political focus on reducing spending in such areas as education, housing, and economic revitalization could exacerbate these root causes and magnify disease burden and health spending.

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Public Health Implications of Government Spending Reductions

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 4 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%, more than double the prevalence among adults with a bachelor's degree (6.4%).[2] In 2008-2009, the risk of stroke was 80% 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.

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 policy makers 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% 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.

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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 7 times as many lives as those saved by biomedical advances.[8] It has been estimated that 25% 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% of their income on housing) increased from 13% in 2001 to more than 18% 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% in 2000 to 14.3% 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 US 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, policy makers 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.

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