

# Health Affairs

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At the Intersection of Health, Health Care and Policy

Cite this article as:  
Angus Deaton  
Policy Implications Of The Gradient Of Health And Wealth  
*Health Affairs*, 21, no.2 (2002):13-30

doi: 10.1377/hlthaff.21.2.13

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# Policy Implications Of The Gradient Of Health And Wealth

An economist asks, Would redistributing income improve population health?

by Angus Deaton

**ABSTRACT:** Men in the United States with family incomes in the top 5 percent of the distribution in 1980 had about 25 percent longer to live than did those in the bottom 5 percent. Proportional increases in income are associated with equal proportional decreases in mortality throughout the income distribution. I discuss possible reasons for this gradient and ask whether it calls for the redistribution of income in the interest of public health. I argue that the existence of the gradient strengthens the case for income redistribution in favor of the poor but that targeting health inequalities would not be sound policy.

**P**OOER PEOPLE DIE YOUNGER and are sicker than richer people; indeed, mortality and morbidity rates are inversely related to many correlates of socioeconomic status such as income, wealth, education, or social class. That economic deprivation is strongly related to ill health was perhaps first scientifically documented by René Villermé, who compared mortality rates and poverty across the *arrondissements* of Paris in the 1820s, although references to the relationship can be found in ancient Greek and Chinese texts.<sup>1</sup> A gradient of health with social class (defined through occupation) has been documented in the United Kingdom since the first census in 1851. In the United States, the landmark study by Evelyn Kitagawa and Philip Hauser merged census and death records to document the relationship between mortality on the one hand and education, income, occupation, race, and place of residence on the other.<sup>2</sup> The gradient persists in recent data. The National Longitudinal Mortality Study (NLMS) merged data from death records with responses from household surveys around 1980. People whose reported family incomes in 1980 were less than \$5,000 in 1980 prices are estimated to have a life expectancy around 25 percent lower than those whose family incomes were above \$50,000.<sup>3</sup>

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*Angus Deaton is the Dwight D. Eisenhower Professor of International Affairs; professor of economics and international affairs in the Woodrow Wilson School and Department of Economics at Princeton University; and a member of Princeton's Center for Health and Wellbeing.*

## What Is The Gradient?

The relationship between health and income is referred to as a “gradient” to emphasize the gradual relationship between the two; health improves with income throughout the income distribution, and poverty has more than a “threshold” effect on health. In the NLMS data the proportional relationship between income and mortality is the same at all income levels, which implies that the absolute reduction in mortality for each dollar of income is much larger at the bottom of the income distribution than at the top. The gradient is often assessed in terms of other variables; mortality declines with wealth, with rank, and with social status. One of the most famous of the current studies links ill health and mortality to occupational grade among Whitehall civil servants (in the United Kingdom); that none of them are poor further illustrates that the gradient is more than an effect of poverty.<sup>4</sup>

■ **Non-income differences in health.** There are also marked differences in life expectancy by race and by geography. In the United States there is a twenty-year gap in life expectancy between white men in the healthiest counties and black men in the unhealthiest counties.<sup>5</sup> These non-income differences in health are frequently referred to, alongside differences by income group or social class, as “inequalities in health.” Indeed, the most frequently cited correlate of mortality is simply “socioeconomic status” (SES). While this term is sometimes convenient, it is unhelpful for policy discussions. Quite different policies are called for to deal with health in relation to income, education, or social class.

■ **Addressing health inequalities.** Many people find it unjust that people should not only be unequal in the amount of goods and services they receive but also in the length and quality of their lives. They believe that addressing these income-related inequalities in health is an urgent task of health policy. The current British government sees the reduction of health inequalities as its primary health-related goal. Other commentators go further and see the economic and social structure of society—especially low income, income inequality, discrimination, and social exclusion—as the ultimate determinants, the “causes of causes,” of disease and death. From this perspective, a thoroughgoing redistribution of income and wealth is the key to improving population health. Focusing on “downstream” causes such as the control of health-related behavior or health delivery systems is likely to be futile if the “upstream” causes in the underlying socioeconomic structure remain unreformed. Britain’s Acheson report on health inequalities, commissioned by the first Blair government, is the leading example of a set of redistributive

policy prescriptions for addressing health inequalities through primarily “upstream” policies.<sup>6</sup> It subsequently formed the basis for a set of government proposals, including general income-support policies such as family and child tax credits, and increases in the minimum wage, which are justified on health grounds.

In this paper I review some of the evidence on the gradient, as well as its theoretical interpretations, and ask whether it makes sense to design policy to address health inequalities. I am particularly concerned with whether redistributing income will improve population health, something that is frequently taken as obvious in the public health literature. In the final section, which discusses policy prescriptions, I argue that the evidence on the gradient strengthens the case for redistribution toward the poor. When low income and poor health go together, the poor are doubly deprived and thus have a greater claim on our attention than is warranted from their incomes alone. But I also argue that the reduction of the gradient, or of health inequalities more generally, is an inappropriate target for health policy.

### **What Causes The Gradient If Not Income?**

Policy cannot be intelligently conducted without an understanding of mechanisms; correlations are not enough. Income might cause health, health might cause income, or both might be correlated with other factors; indeed, all three possibilities might be operating simultaneously. The relative importance of each story is almost certainly different at different times, for different causes of illness, and at different points in life. Unfortunately, there is no general agreement about causes. Worse still, what apparent agreement there is is sometimes better supported by repeated assertion than by solid evidence. I begin with a brief discussion of the most important mechanisms other than a direct causal effect of income on health: two-way causality between health and income, differential access to health care, and health-related behavior. The argument here is that the three nonincome stories, although important, do not provide a complete explanation of the gradient.

■ **Effects of health on income.** Part of the gradient comes from the effects of health on income. The main mechanism works through the ability to work and its effects on earnings; the effect of health on wealth through out-of-pocket costs of medical care is important for some people but is of relatively small importance overall.<sup>7</sup> If the effect of health on earnings were the major part of the story, the appropriate policy would be to address health directly using health-specific interventions. In addition, when calculating the returns to such interventions, we should also allow for the additional benefits

*“One of the clearest messages from the literature is that health and wealth are mutually determined.”*

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on productivity. It is unfortunate and divisive that much of the public health literature on the gradient takes the position that the effects of health on socioeconomic status—known in this literature as reverse causality, “selection,” or “drift”—are negligible. Yet economists and others have documented the effects of health on earnings in many contexts, perhaps most notably as a proximate cause of retirement.<sup>8</sup> Indeed, the relationship between income and health is much muted among retirees, among whom the effect of health on earnings has been removed. As recognized by insurance programs around the world, disability is a major cause of low income and poverty.

Some of the interactions between health and economic success operate over very long periods. Mother’s cigarette smoking during pregnancy predicts teenage educational achievements; height at age seven predicts subsequent unemployment; ill health, even poor prenatal nutrition, decreases the probability of ever being married, itself an aspect of socioeconomic status that is associated with good health; and prenatal nutrition affects cardiovascular disease and Type 2 diabetes in late middle age, exactly the sort of conditions that predict early retirement.<sup>9</sup>

■ **Effects of income on health.** That there are influences from health to wealth does not deny the reverse. The risk of becoming disabled is much higher among people who are poorer, less educated, and of lower social status. The illnesses that provoke early retirement are less likely among the rich and well educated, and the nutrition and risk behavior of pregnant women is conditioned by their socioeconomic status. One of the clearest messages from the literature is that health and wealth are mutually determined.

That the effects of health on earnings and education do not account for all of the gradient is supported by direct evidence from both human and animal studies that the manipulation of socioeconomic status affects disease. In addition, there is a series of nonexperimental long-term longitudinal studies, especially those from the British birth cohorts, in which the sequence of health and economic events can be studied, as well as the longitudinal evidence in the two Whitehall studies.<sup>10</sup>

Several studies find that socioeconomic status predicts health and mortality, not only contemporaneously, but many years after status is measured. The contemporaneous cross-sectional correla-

tion is magnified by the low earnings of those who are sick or about to die, and this source of correlation is reduced by waiting until those people either recover or die. Using the NLMS data, and controlling for years of schooling, doubling income reduced the probability of death by 27 percent during the first year of follow-up for those ages 25–59; the comparable effects for mortality in years 1–2, 2–5, and 5–9 after follow-up are 25 percent, 23 percent, and 17 percent, respectively.<sup>11</sup> While such calculations do nothing to remove the long-standing effects of health on earnings—for example, from damage in early childhood—the fact that the predictive effect of income is reduced by so little testifies to the importance either of very long standing effects or of a causal influence running from income to mortality.

■ **The access argument.** If better-educated, richer, or lighter-skinned people have better access to health care, and if health care has a major effect on mortality and morbidity, then education, wealth, or race will predict health outcomes. If access to care is the major cause of the gradient, the appropriate policy is to address the structure of the health care industry, including not only the provision of insurance but also the ways in which different groups of people are treated differently within the system. Once again, much of the public health literature tends to take a strong negative view of this argument, although there is an active and contested literature in the United States on racial discrimination in treatment.

Much of the public health literature on the gradient is deeply skeptical of the value of medical care, a view that traces back to Thomas McKeown's work on the determinants of mortality in nineteenth- and early twentieth-century Britain.<sup>12</sup> McKeown, whose work has been an important theme underlying much of the modern work on health inequalities, found that the decline of each of the major causes of death preceded the discovery of an effective preventive measure. He also argued (although on much weaker grounds) that the "sanitary" revolution in public health had little effect and, largely by elimination rather than any positive evidence, concluded that rising living standards, especially better nutrition and housing, were primarily responsible for improvement in life expectancy. Based on direct arguments about the availability of food, Robert Fogel has made complementary arguments about the primacy of nutrition in the process of economic development and growth.<sup>13</sup> So, if medical care has little effect on mortality—although perhaps more on morbidity—then differences in health cannot be explained by differences in access to it.

Even among those who accept a more positive role for health services and technologies, there is a good deal of skepticism about

the role of health care in explaining the gradient. If medical care does play an important role in driving the increase in life expectancy over time, it is possible that important new technologies are quickly disseminated through the health care system without ever generating a gradient. Moreover, the gradient exists, and takes much the same form, in countries with and without health care that is free at the point of service. Indeed, the failure of the mortality gradient to vanish after the introduction of Britain's National Health Service was an important stimulus to the recent literature.

■ **Effect of life-saving technology.** Yet none of these arguments is entirely convincing. It is easy to imagine that the same health care system, whether public or private, could provide very different care for patients whose educational background enables them to “work the system,” by calling on highly placed friends in the profession or by being both more compliant and more questioning patients. (It should be noted, however, that Whitehall II found a gradient in cardiovascular disease prior to hospitalization.) Furthermore, the gradient is steeper and the correlation stronger for cardiovascular disease than for cancer. For example, the Whitehall studies show little gradient in cancer other than in lung cancer, which is entirely attributable to differential smoking behavior across the occupational grades. There is also a marked similarity between the pattern in the gradients, substantial for heart disease and negligible for cancer, and the pattern in technical progress, with substantial gains in technique and associated lives saved since about 1970 in the treatment of heart disease and none at all in cancer. We know from previous work that new techniques and knowledge can generate a gradient, even when none previously existed. So while the public health literature contains sound arguments that differential access to medical care is not the root of the gradient, the literature probably assigns too little weight to the effectiveness of medical care itself and, beyond that, to the possibility that widening gradients are related to life-saving bursts of technical progress.

■ **Role of health-related behavior.** Health-related behavior involving the use of tobacco, alcohol, and drugs; obesity; and sex play an important part in determining the gradient. Poor people who are ill find it more difficult to conform to complicated and time-intensive treatment regimens, such as for diabetes, HIV, or multi-drug-resistant tuberculosis.<sup>14</sup> Harmful behavior of this kind is negatively associated with income and education, at least in rich countries, and so helps to induce and maintain the gradient. However, such behavior explains only a part of the relationship and, to the extent that it does, it does not necessarily follow that the policy implication is to alter the behavior, rather than to focus on income,

wealth, or education, or even on remedial health care.

The Whitehall studies again provide good evidence that the gradient persists when health-related behavior is controlled for. The gradient in cardiovascular disease across five Whitehall ranks is reduced from fivefold to fourfold if the calculations are confined to nonsmokers.<sup>15</sup> Controls for a wide range of risk factors, observed by physician examination, explain only a small fraction of the relationship between rank and health. More generally, if somewhat less convincingly, if we multiply the effect of smoking on the risk of death by the effect of income on the risk of smoking, the result is too small to explain the direct effect of income on the risk of death.

However, all of this health-related behavior is subject to measurement problems in self-reported survey data. Given our ignorance of the biological mechanisms, these are not resolved by clinical measurement of risk factors, which, although accurate in themselves, do not deliver precise estimates of the true underlying risk. The measurement error will generally bias downward the estimates of the effects of behavior on health and, in the current context, understate the contribution of the behaviors to the gradient.<sup>16</sup> That said, there also may be biases in the other direction—for example, if better-off people overreport the healthy behavior that is expected of them, or if the biological effects of risky behavior interact with income or social status.

Even so, if there were less risky behavior, the population would be healthier, and, given the distribution of the behavior by socioeconomic status, inequalities in health would be less. Yet arguments for not thinking about behavior as a fundamental cause of health inequalities exist in two very different literatures. In sociology and public health, especially among those taking the view that health is socially produced, it is argued that risky behavior is only a proximate cause of poor health and is itself a consequence of low income, education, powerlessness, discrimination, and social exclusion.<sup>17</sup> Directing policy toward behavior will only change the behavior without changing the fact that the poor are less healthy than the rich. Some evidence for these claims comes from historical changes in the patterns of disease. Heart disease and lung cancer used to be diseases of the rich but are now diseases of the poor. More recently, HIV infection in wealthy countries has moved from being a disease of the rich to a disease of the poor and is moving in a similar direction in poor countries. The gradient across social classes in Britain in 1851 was markedly similar to that of a century and a half later, in spite of dramatic changes in the pattern of disease, so that even if policy is effective against particular diseases, it may have little effect on the gradient.

Another argument against focusing on risky behavior comes from the economics literature, which emphasizes that given the constraints that poor people face, in terms of both money and time, risky behavior may be neither irresponsible nor irrational. Relative to everyone else, poor people have little human (educational) or financial capital and relatively more health capital, if only because everyone is born with one body and a single life to lead, and not everyone gets an inheritance or a fine education. While better-off people use their wealth and education as sources of income and consumption, poor people must make relatively heavy use of their bodies for both production and consumption, working in manual occupations and taking what pleasures they can in cheap but health-compromising activities, of which cigarette smoking is perhaps the leading example.<sup>18</sup>

### **A Direct Link From Income To Health?**

Suppose, finally, that there is a direct causal link to health from some aspect or correlate of socioeconomic status. There is good evidence that this is part of the story. In poor countries, income provides nutrition, housing, clean water, and sanitation and thus protects both adults and children from hunger and infectious disease. Although once again the causality runs in both directions, the nutrition from additional income will have little effect on nutritional status in the presence of disease, and susceptibility to disease is higher among those with poor nutritional status.<sup>19</sup> In rich countries, where chronic disease has largely replaced infectious disease as the main cause of morbidity and mortality, similar effects exist, albeit through different biological mechanisms. It has long been argued that stress increases susceptibility to disease, and a great deal of modern work has been directed at establishing the pathways through which repeated exposure to stress compromises the immune system.<sup>20</sup> Laboratory work with animals allows the experimental manipulation of health or status or both, and such experiments show how social rank within a monkey group acts to differentially protect individuals against experimentally induced infection. When the same monkey experiences a different rank, when the monkey groups are shuffled, the monkey's rank, not its identity, predicts the protection it receives; these experiments have been partially replicated among humans.<sup>21</sup>

So we have a correlation between socioeconomic status and health and evidence that the correlation is causal, at least in part. We have come a long way toward the "upstream" policy stance of (for example) the Acheson report, that population health is best addressed by income-support schemes for the poor, supported (pre-

*“Evidence from a range of rich countries shows that an additional year of education reduces mortality rates by around 8 percent.”*

sumably, although the sources of finance are never clearly stated) by increased taxation of the better-off. But the connection is much less clear than may at first appear. In particular, it depends on what we mean by “socioeconomic status,” a term that is convenient as a shorthand for a wide range of possibilities, including income, education, rank, or social class, but that is useless for thinking about policy in the absence of an instrument that acts on them all. Redistribution of income will be effective only if health is determined by income or by something determined by income. Whether or not this is true is something on which the evidence is decidedly mixed.

■ **Importance of education.** One line of thought is that education, not income, matters for health, so that the correlation with income is induced by the effects of education on income. In many economic models of health, education is seen as enhancing a person’s efficiency as a producer of health—a suggestive phrase, but not one that is very explicit about the mechanisms involved.<sup>22</sup> The empirical evidence shows that education is protective of health; evidence from a range of rich countries shows that an additional year of education reduces mortality rates (at all ages) by around 8 percent.<sup>23</sup> Since a year of education also increases earnings by about 8 percent on average, and since income reduces mortality independently of education in the NLMS, education reduces mortality twice over, once directly and once through additional earnings.<sup>24</sup>

It is possible that education is standing a proxy for something else: In particular, people who are more patient, more forward looking, and have more ability to delay gratification, are likely to be both better educated and healthier, even if the education itself plays no direct role, and there is some evidence for this position.<sup>25</sup> Yet there is also evidence that education is directly protective; those who were forced to go to school by U.S. schooling laws in the early twentieth century lived longer than those who did not receive the additional schooling.<sup>26</sup> One obvious possibility is that educated people have more information about health, and this is almost certainly the case during some episodes, such as immediately after the U.S. surgeon general’s report on smoking. But the news percolated to everyone over time, and yet the negative correlation between education and smoking remains. Indeed, survey evidence frequently shows that less-educated people understand the dangers and that the effects of education on smoking remain after controlling for that knowledge.<sup>27</sup>

■ **Income versus education.** It remains controversial whether income is protective of health over and above the effects of education. The best evidence in the United States again comes from the NLMS, where both income and education are separately protective. Yet there are studies in which income drives out education and studies in which education drives out income. Yet again, studies that work with aggregate data, either over time or at the state or city level, find no effect or even find a perverse effect of aggregate income on aggregate health. Over time, in the United States and Britain, there is no stable relationship between the growth of income and the decline in mortality rates. Indeed, the productivity slowdown in the United States after 1972 and the associated slowing in the rate of growth of real family incomes coincide with an acceleration in decline of mortality rates for all but young adults. Although Britain's pattern of income growth differs from that of the United States, the two countries' age-specific mortality patterns from 1950 to 2000 are similar. These patterns can readily be explained by technological changes, particularly in the treatment of heart disease and low-birthweight infants, but not at all by patterns of income growth.<sup>28</sup>

■ **Theory of relativity.** This conflict between the individual-level and aggregate studies remains unresolved, but it is consistent with the view that it is not income itself that matters, but relative income, or rank. Indeed, the animal experiments do not involve income, but social status or rank relative to those of others in the relevant reference group. Raising income is not the same thing as raising relative income or rank, although raising any one person's income might be so. For example, suppose that the government, in an attempt to improve public health according to Acheson, increases the marginal rate of tax on everyone and uses the proceeds to pay everyone a fixed monthly benefit. Because the poor have low incomes, they pay little tax, and because everyone gets the same benefit, such a scheme redistributes income from the rich to the poor. But it is clear that the scheme has no effect on anyone's rank in the income distribution. Although income is more equally distributed than before, the poorest person is still the poorest, the second poorest the second poorest, and so on. This is not just hypothetical; rank is more likely than income to be the determinant of the "sense of control" that is a crucial predictor in the Whitehall studies, and rank is likely to be the aspect of income that is protective if what is harmful to health is the psychosocial stress associated with low status.<sup>29</sup>

Yet the matter is far from closed. Absolute income, not rank, is important for buying things that matter for health, such as health care or nutrition, and for relieving the stress that comes from the struggle to make ends meet. Also, those who argue for the impor-

tance of relative income or rank need to explain why people who find their low rank oppressive do not move on to some other group where they can do better.

■ **Redistributing the wealth.** Suppose then that it is indeed income or wealth that matters. In this spirit, Vicente Navarro has recently argued that “the intervention that would add the most years of life to the population of Spain or the USA (or for that matter any other country) would be one that would lead to all social classes having the same mortality as those at the top. From this premise we can deduce that the most effective means of reducing mortality would be to eliminate social inequalities by redistribution of wealth.”<sup>30</sup> It is important to understand that the second sentence does not follow from the first. Redistribution of wealth increases the wealth of the poor but reduces the wealth of the rich so that if, as is often argued, the gradient is much the same among the rich as among the poor, the loss of health among the rich must be offset against the gains among the poor. If income is what matters for health, then its redistribution will only improve population health if additional income has a lesser effect on health among the rich than among the poor. While this proposition is plausible and is supported by evidence from the NLMS, it is far from being established. But even more is needed. As economists like to point out, redistribution through the tax system typically means that the rich lose more than one dollar for each dollar redistributed to the poor. This effect, known as “deadweight loss,” further raises the bar for any policy of improving population health through income redistribution.

Another important plank in the platform for redistribution comes from the argument that at least in rich countries it is not income that affects health, but income inequality.<sup>31</sup> In this context, income inequality means not differences in income across people, as when we think of income inequalities as a cause of health inequalities, but income inequality as a measure of the dispersion of income, measured so as to be unaffected by average income. The argument is that high levels of income inequality are associated with low levels of social support and cohesion and so sicken everyone, rich and poor alike. If so, income redistribution toward the poor, which narrows income inequality, will have a direct positive affect on population health. The hypothesis was originally supported by comparisons of life expectancy and inequality across wealthy countries and more recently by comparisons of mortality and income inequality across U.S. states and cities. However, the best recent data support none of the original international correlations, and the U.S. evidence is spurious: There is no relationship between income inequality and mortality once we control for the racial composition of American states

and cities.<sup>32</sup> More generally, inequality almost certainly affects health, but income inequality is not the key.

### Should Economic Policy Be Health Policy?

Should the United States follow Britain in deemphasizing health care or health insurance as the primary determinant of health and focusing more on the roles of poverty and education? Is it good health policy to raise the incomes of the poor? Is the current British focus on health inequalities well founded?

To answer these questions coherently, I need a framework for thinking about what is desirable. I have found it consistently helpful to think in terms of individual well-being within a broad, equity-preferring social objective, but also to follow Amartya Sen in noting that this welfarist approach by itself is insufficient and that we need to respect other considerations, one of which is process in access to health care.<sup>33</sup> Just what this means is best illustrated by applying the framework to the policy implications of the gradient.

■ **Components of individual welfare.** Perhaps the most important point is that individual welfare is neither health nor wealth but depends upon both. The gradient means that people who are deprived in terms of income and wealth are also deprived in terms of morbidity and mortality. If the urgency of redistribution depends on the degree of deprivation of the poor, as it surely must, the gradient strengthens the case for redistribution. When thinking about such redistribution, we need to think about improving well-being at the bottom, not just about improving health or income. While improvements in either are clearly a good thing, we must be careful about not improving health at the expense of income or improving income at the expense of health. A policy that does not involve any such conflict is one that improves the quality or quantity of education. More and better education improves both earnings and health, making it doubly attractive.

■ **Pareto criterion.** A second important issue is respect for the Pareto criterion: that a policy that harms no one while making at least some people better off is a good thing. Although such an argument seems obvious, it is often denied in the public health and epidemiological literatures, and it sharply divides economists from other writers on health inequalities.

Consider a technical innovation—for example, a new life-saving procedure or new health-related knowledge. Coronary artery bypass grafts or neonatal intensive care units are good examples of the former; for the latter, think of the surgeon general's report on smoking in 1964 or the application at the turn of the twentieth century of the germ theory of disease to personal and medical hygiene. Better-

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educated people will be quicker to adopt or benefit from the innovation; if the innovation is not immediately available to everyone, money might help, too. Because the innovations are beneficial to health, some people's health is improved and other people's health stays the same or is improved less. Because of the role of education and income, the gradient steepens; the health of the rich and well-educated improves more.

The Pareto criterion says that such innovations are beneficial and are to be encouraged. To many in the public health community, this is the wrong answer; inequalities are inherently bad, and innovations that increase them are to be discouraged. Policies based on such arguments are misconceived; they result in some people dying who could have lived, without preventing any other deaths. They also abort the start of what is often a diffusion of knowledge or technology that in most cases (hygiene if not smoking) will benefit poorer people too, albeit with some delay. Apart from the possible exception of sulfa drugs and antibiotics, whose introduction benefited the health of blacks more than that of whites in the United States, most innovations do appear to initially favor the better-off, so that a concern with preventing health inequalities is likely to be a real barrier to life-saving innovation.<sup>34</sup>

■ **Pros and cons of targeting the poor.** What about a more general policy that targets those whose low income, poor education, or social standing makes them more prone to disease? Such a policy is to be welcomed to the extent that it improves the lot of those suffering the greatest burdens of income and health deprivation. But it is not clear that such policies are likely to be effective. Most of the variation in health is within social groups, not between them, so that targeting according to position on the gradient is unlikely to be an effective way of reaching people in need of care compared with simply treating people who are sick or at the high risk of being so. Also, for some groups, notably the elderly, the gradient is relatively weak and offers little power as a diagnostic aid.

■ **Targeting specific diseases and groups.** We must also take care not to violate the process whereby people who are sick gain access to health care. Current British discussions on such policies provide disconcerting examples. It is hard to see why it is desirable to focus anti-smoking campaigns on manual workers or to focus on the mortality of infants of mothers whose spouses are manual work-

ers, as opposed to single mothers, whose infants are much more likely to die but whose social class cannot be established because they do not have husbands (whose occupation would define their social class).<sup>35</sup> We should not deny people care because their social status is too high, any more than we should deny them care because their status is too low. More generally, it makes no sense to focus on a particular disease only because its prevalence is higher among the poor or among “those suffering inequalities,” although there may well be diseases that are readily controlled and that fall most heavily on the poor. One of the most obvious and largest health inequalities is the longer life expectancy of women, yet it is hard to imagine public policy assigning priority in treatment to men.<sup>36</sup>

■ **Targeting the gradient itself.** If targeting the health of particular social groups has its problems, targeting the gradient itself is even less appropriate. Recent data from Britain show that the difference in life expectancy between the top and bottom social classes has increased from five to nine years, and to many this statistic calls for a policy response.<sup>37</sup> Not necessarily. The appropriate response, if one is called for at all, depends on whether such a policy would actually improve the lot of the most disadvantaged, whose life expectancy has also been increasing, albeit not as rapidly as that of the most privileged. As I have already argued, the gradient is in part driven by rapid technical progress in health knowledge, something that is good, not bad. An increase in the quality of education, for example, by improving teacher skills or providing more resources to schools, will benefit more those who have many years of schooling; those with higher incomes and better health. Once again, something that is clearly desirable will increase the gradient.

Nor do we have measures of the gradient or its rate of change that are adequate to support such policies. The gradient is usually measured by ratios of mortality rates for different groups. Yet it is far from clear why the ratio of mortality rates is a better measure of inequality than the ratio of survival rates; inequality can be measured for the living just as well as for the dead. It is quite possible, and indeed likely at current mortality rates, for the mortality measure to show a widening of inequalities while the survival measure is simultaneously narrowing.<sup>38</sup> Without an overall framework for judging improvements in well-being, the choice of measure of the steepness of the gradient is arbitrary, and the policy implications of targeting it are obscure.

■ **Directing policy at both wealth and health.** I come finally to perhaps the most important point, which is the need to frame policy in the light of wealth and health simultaneously. There is great danger from those who emphasize health without adequate atten-

tion to other aspects of well-being. One example is the current debate over smoking, something that is often seen as a “health inequalities” issue because smoking rates are higher among the poor and less-educated. Policies that rely on increases in taxation or prices to pay for settlements that ostensibly punish tobacco companies transfer income from those who continue to smoke to people who are more advantaged. Some people smoke because it is good for them in a broad sense, if not for their health, so that policies that raise the price of cigarettes, often justified in terms of improving the health of the poor, actually make them worse off to the benefit of those who would otherwise pay higher property and income taxes. The appropriate policy is to relax the constraints on poor people, by tackling low incomes and poor education. Health is an important component of well-being, but it is not the only component.

Another important case is the trade-off between income and health for the elderly. Victor Fuchs has recently emphasized that expansions of Medicare coverage, for example, to cover a wider range of pharmaceuticals, will be paid for, at least in part, by reductions in Social Security. As a result, at least some older people will find themselves health-rich but wealth-poor, entitled to expensive medical care but unable to afford everyday necessities that they might value as or more highly.<sup>39</sup>

It is not hard to imagine a policy in which health innovations, such as the availability of new procedures or new drugs on Medicare or Medicaid, would be vetted by a panel that examined the likely consequences. While it would be clearly an excellent idea for such a panel to consider whether such innovations were likely to improve the overall well-being of recipients, taking both health and other income into account, it would be an equally poor idea for it to turn back any innovation on the grounds that it would widen health inequalities. Policy should be concerned with well-being, not with health or income alone.

■ **Need for more general health policies.** What about more general health policies that refocus attention away from health care and health-related behavior and toward education and income? This seems a much easier case to make, and it is hard not to believe that the current U.S. system pays too much attention to health care delivery and to drugs and too little to the effects on health of the “upstream” social and economic arrangements. The case for education is surely stronger than that for income, at least in the United States, and it is time that the educational debate was more cognizant of health benefits. As for income, there is a very strong case in poor countries and among the poor in rich countries, for whom nutrition, nutritional-linked disease, and poor housing are impor-

tant determinants of adult and child health. These factors are directly affected by income, and a policy of income provision to the poor may well be more effective than spending the same amount of public funds on a weak health care delivery system.<sup>40</sup>

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 This paper was presented 4 October 2001 at the conference, "Non-Medical Determinants of Health," sponsored by Princeton University's Center for Health and Wellbeing. The author thanks Anne Case, Victor Fuchs, Jon Gruber, Sandy Jencks, Adriana Lleras-Muney, Michael Marmot, David Mechanic, Jon Skinner, Jim Smith, and three anonymous referees for comments and suggestions. He is grateful for financial support from the John D. and Catherine T. MacArthur Foundation and the National Institute of Aging through the National Bureau of Economic Research. He also appreciates the support of the Woodrow Wilson School, Center for Health and Wellbeing, at Princeton.

## NOTES

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