Disadvantage, Inequality, And Social Policy

Major initiatives intended to improve population health may also increase health disparities.

by David Mechanic

ABSTRACT: Eliminating disparities in health is a primary goal of the federal government and many states. Our overarching objective should be to improve population health for all groups to the maximum extent. Ironically, enhancing population health and even the health of the disadvantaged can conflict with efforts to reduce disparities. This paper presents data showing that interventions that offer some of the largest possible gains for the disadvantaged may also increase disparities, and it examines policies that offer the potential to decrease disparities while improving population health. Enhancement of educational attainment and access to health services and income support for those in greatest need appear to be particularly important pathways to improved population health.

It has long been established that individuals' location in society predicts their life chances, health, and longevity. This observation now is the focus of a growing and sophisticated literature in the United States and abroad seeking to understand more precisely the pathways through which income, wealth, education, occupation, and other features of social rank influence health status and mortality. The observation itself is unassailable, but good social policy requires detailed understanding of the dynamics through which these outcomes occur. Knowing, for example, that income is associated with positive outcomes does not assure that giving people more income will improve their health status.

Some facts are clear, while others remain highly uncertain. Income, education, and occupation have independent effects on health status. Race in the United States also in many instances has an independent effect on health; that is, the effects of race cannot be fully accounted for by the other indicators of rank. Moreover, there is a health gradient by socioeconomic status that extends well into the upper reaches of the status hierarchy. Importantly, the magnitude of the health gradient is much larger at lower income and

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education levels. Qualitative observations indicate, also, that some ethnic groups in the United States and some very poor countries around the world have much better health outcomes than would be expected on the basis of their income and wealth. Understanding the influences that result in these positive effects could make an important contribution to social policy.

One line of thinking that has received much attention in recent years is that inequality itself, independent of the level of income, has negative health consequences. Research in this area is based largely on aggregate data analyses across countries and among states and regions in individual countries. Such analyses are limited by poor data and measures, difficult statistical and analytic issues, and the inability to capture unmeasured factors that may confound the relationship. The existing studies yield conflicting conclusions and interpretations. Part of the observed effect is a statistical artifact that is due to the larger association of income and mortality at the low end of the income distribution. The size and plausibility of the effect also depends on the specific mortality indicator. There seems to be a stronger case for the effect of income inequality on homicide, for example, than on cardiovascular disease or cancer. In any case, the evidence for the inequality effect itself is too weak and equivocal to be the basis for health policy, although a case could be made on the basis of social justice.

There is much evidence demonstrating large health disparities between the disadvantaged in the United States and those who are more privileged, especially regarding the gap between whites and blacks. The federal government and some states have made closing disparities a major priority. For example, the U.S. Department of Health and Human Services has stated:

One of the three overarching goals for the Healthy People 2000 prevention initiative was to reduce health disparities among Americans. The proposed framework of Healthy People 2010 has taken this a step further by proposing to “eliminate health disparities” as one of the two primary goals for the next decade.

The Policy Challenge

Most Americans probably agree that health disparities are undesirable and should be eliminated. Few, however, have thought through the price they would be willing to pay to do so. Most Americans probably would find it absurd to reduce disparities by lowering the health status of the more advantaged, although a few have occasionally argued this position. Many would support a policy that disproportionately aids those who are less well off by bringing them closer to the outcomes attained by those who are more advantaged. It is generally assumed that reducing disparities means improving over-
all population health.

In thinking through the challenge, a theoretical perspective such as the concept of social class as a “fundamental cause” is useful. Bruce Link and Jo Phelan argue that persons in higher social positions have access to greater resources of income, wealth, knowledge, and power that allow them to take advantage quickly of opportunities to improve health such as new preventive health knowledge and medical technology. Social class is seen as “fundamental” in the sense that while risk factors change from one historical period to another, the association between social class and health remains robust. In each historical period those who are more advantaged capitalize on the opportunities available, thus producing new disparities. One hypothesis that follows from this thesis is that overall major initiatives intended to improve population health also may increase disparities.

Enhancing overall population health and reducing disparities are different objectives and are sometimes in conflict. As Amartya Sen has observed, “A conflict can arise between aggregative considerations (e.g., generally enhancing individual advantages, no matter how distributed) and distributive ones (e.g., reducing disparities in the distribution of advantages).” Concepts of justice might suggest sacrifice of some overall gains in population health to achieve a more equitable society. But what if policies that most enhance population health and increase disparities also bring large increments of improved health to those who are most disadvantaged? It is reasonable to accept disparities if the health of all groups is enhanced.

This dilemma is illustrated by examining progress in reducing U.S. infant mortality between 1950 and 1998. Black infant mortality in 1950 was 43.9 deaths per thousand live births, 64 percent higher than the white rate of 26.8. By 1998, black infant mortality fell to 13.8 deaths per thousand compared with a white rate of 6.0, a disparity of 130 percent. In every five-year period since 1965, more black babies than white babies were saved per thousand live births. A comparison of deaths in 1950 and 1998 indicate a reduction of 20.8 deaths per thousand live births for whites and a 30.1 reduction for blacks, an absolute change that favored blacks 50 percent more than whites. Ironically, this occurred while the magnitude of disparities in infant mortality increased, with the exception (discussed later) of the period 1965–1975, when blacks gained relative to whites.

If the derivation from Link and Phelan is correct, overall efforts to improve population health through new technological changes such as preventive screening, modifying smoking and other substance abuse, increasing exercise, improving nutrition, and many more may well increase disparities. Such initiatives, however, might improve
the absolute health of disadvantaged groups more than would initiatives directed specifically at reducing health disparities.

**Alternative Approaches To Intervention**

The infant mortality example is simply one case, and the implications are unlikely to apply to the entire range of possible population interventions. The hypothesis plausibly applies to interventions that require the motivation, knowledge, resources, and access to services enjoyed by persons who have to take necessary actions such as changing their diets or exercising more. It applies less to population policies that affect all people in the population independent of their behavior: for example, fluoridation of the water supply, pasteurization of milk, improvement of highway systems, and enhancement of automobile safety features. Individual circumstances may still be relevant in some of these examples; for instance, persons with less income usually own older cars with fewer safety features and may not have the resources to maintain them in good repair. However, to the extent that an intervention is independent of personal behavior and extends to everyone, it can have health effects without increasing disparities.

- **Interventions that depend on voluntary involvement.** Most health policy interventions, however, depend on voluntary involvement and participation, so the disadvantaged may face greater impediments. Public health workers have long observed that prevention efforts often attract those who least need them and fail to reach those most disadvantaged. Barriers may include lack of flexibility to take time off from work, transportation and child care problems, alienation, and fatalism. Health policy often seeks to target persons at greatest risk and those who face the largest barriers to implementation, as in prenatal care programs, childhood immunization, HIV prevention, and mental health treatment for the homeless. Programs attempt, for example, to overcome barriers through aggressive outreach, provision of transportation, and making access convenient. Such efforts sometimes pay off. The magnitude of population health improvement achieved, however, relative to alternative interventions, is often unclear. The cost-effectiveness of preventive and treatment approaches depends on efficiency in identifying the population at risk, the number of persons truly at risk relative to the size of the target group, the effectiveness and cost of the intervention itself, and the likelihood that it will be taken up by those targeted.  

- **Interventions directed at prevalent problems.** Interventions may improve population health without increasing disparities if directed at problems that are much more prevalent among disadvantaged groups and that offer a relatively simply executed and effica-
cious remedy. Walsh McDermott has presented data on age-adjusted death rates from 1933 to 1973 following the introduction of the sulfonamide drugs. Shortly after their introduction in 1937, both white and nonwhite mortality for males and females fell sharply, and the gap narrowed over time.\(^{12}\) Other factors may help to explain these observed patterns of change—for example, the introduction of Social Security (discussed later).

Desegregation. In examining the black-white infant mortality gap earlier, I noted that the period 1965–1975 was an exception in which black advances narrowed the gap. An intriguing analysis by Douglas Almond and colleagues explains this deviation.\(^{13}\) Large improvements among blacks in the South resulted from mandated desegregation following a 1963 U.S. Appeals Court decision invalidating a “separate but equal” clause in funding for hospital construction, Title VI of the 1964 Civil Rights Act, and implementation of Medicare in 1966, which required nondiscrimination in hospitals for eligibility for federal reimbursement. This had a dramatic impact, particularly in the rural South, where blacks who had been kept away from hospitals gained access to effective treatment of gastroenteritis, influenza, and pneumonia, the major causes of deaths among black infants. In Mississippi, for example, black postneonatal mortality fell 50 percent from 1965 to 1971. Whites already had achieved most of the advantages of such treatment, but desegregation brought comparable advantages to blacks.

Simpler, less costly medical treatments. Disproportionate advantage for blacks or other disadvantaged groups also may occur when highly complex and expensive medical treatments are replaced by easily administered and much less costly interventions. Recent examples might include antihypertensive drugs, antipsychotic drugs, and selective serotonin reuptake inhibitors (SSRIs) for treatment of depression. Such hypotheses need empirical examination. In mental illness, for example, before the introduction of reasonably efficacious medications, disadvantaged persons received little other than custodial care, while those who were more affluent received psychotherapy and more supportive institutional care in small and well-staffed hospitals.\(^{14}\) Disadvantaged persons with serious mental illnesses are still less likely to receive treatment than are more affluent persons, but new treatments make it more possible to narrow the gap.\(^{15}\)

In 1999 the ratio of the black-to-white, age-adjusted death rate was 1.3.\(^{16}\) Among the fifteen leading causes of death, the black-to-white ratio is particularly high for diabetes mellitus (2.2); nephritis, nephrotic syndrome, and nephrosis (2.5); septicemia (2.5); essential (primary) hypertension and hypertensive renal disease (3.0); and...
homicide (5.4). A major prevention or treatment innovation in these areas thus is likely to have a larger relative influence on blacks than on whites, assuming equal access to the new technology. However, because diseases of the heart and malignant neoplasms account for more than half of all deaths, important innovations in these areas (despite the smaller 1.3 ratio) are likely to affect both more white and black lives. For example, although the black-to-white ratio is highest for homicide, an innovation that reduced homicide by 20 percent would save four lives per 100,000 black persons. An innovation that reduced heart disease by a comparable amount would save 215 lives for every 100,000 black persons.

Research on illnesses that affect the poor. Reducing disparities may ultimately depend less on access to current treatments and more on decisions about future research and development (R&D). Within a world perspective, relatively little research attention is devoted to conditions, such as malaria and schistosomiasis, that are a major source of illness burden in the developing countries but not in Western societies. R&D focused more on illnesses that disproportionately affect the poor could enhance population health and also contribute to reducing illness burden. Drug development is predominantly a private, profit-oriented venture, and investments in R&D are closely linked to potential and lucrative markets. This issue has more relevance for the developing world than for the United States, however, since all major causes of deaths among U.S. blacks are sufficiently prevalent in the population overall to offer large potential markets for private R&D.

Insights From Cross-National Research

It is well established that some relatively poor countries have achieved levels of infant survival and adult longevity superior to those of other countries that are far more affluent. Among the regions commonly cited in such studies are Kerala in India, Costa Rica, China, Cuba, Sri Lanka, and Jamaica. Generalizations based on selective comparisons of countries that differ so greatly in their national development, politics, culture, and geographic circumstances are uncertain and must be regarded with great caution, but such comparisons provide useful insights. Three factors appear to differentiate poor countries with favorable mortality: emphasis on educational attainment; empowerment of women; and well-organized primary medical care systems. Richer countries with the poorest mortality tend to be those that have traditionally discouraged female education, contact between the sexes, and female social participation outside the household and that have inferior access to well-organized health care.
Kerala is a particularly interesting example because it conveys the opportunities but also the complexities of generalizing from one cultural and political context to another. Kerala has one of the lowest per capita incomes among Indian states but the highest life expectancy (seventy years in 1986–88 compared with fifty-seven years for India overall) and low infant mortality. Its infant mortality rate is a third lower than that of Brazil, which has four times its per capita income. Kerala also has a high level of general literacy (91 percent in 1991 compared with an Indian average of 52 percent) and high female literacy (87 percent compared with 39 percent). Kerala has a long history of public policy relating to education, community medical care, public support of food consumption, property rights, and public and political activism. These complex influences interact and are not easily disentangled or generalized.

- **Education of women.** There appear, however, to be two major routes that can be taken to improve population health. The first enables the population through education and personal empowerment to pursue informed action that promotes health. John Caldwell has observed that countries with a high proportion of females in primary school in 1960 had the lowest infant mortality rates and the highest expectation of life at birth in 1982. He believes that education elevates the position of women and, through education, their autonomy and social participation. Such activated mothers then participate more actively in the health system, seek prenatal care, and look after the health of their infants and families.

- **Primary care access.** A complementary approach characteristic of many of the poorer countries with favorable mortality experience is an aggressive and effective primary medical care system, easily accessible to the population and focused on evidence-based interventions. Such systems need not be sophisticated in a modern sense but can provide appropriate public health measures, immunization, prenatal and child care, and treatment of diarrhea and bacterial infections (which are a major part of the illness and mortality burden in these countries). Countries that have both encouraged educational attainment and provided well-organized, accessible primary care appear to have had considerable success in reducing mortality.

**Points Of Leverage For Reducing Disparities**

The large variety of causes of illness and death indicate a multiplicity of pathways through which disparities occur. Most research focuses on income, education, and occupation, and although these indicators are correlated, each also has independent effects on illness and death. Occupations, for example, differentially expose indi-
viduals to dangerous substances, risks, excessive stress, and the like in a way that is not fully captured by indicators such as income or education. Efforts to reduce such dangers require specific interventions at the workplace related to the specific risks in each instance.

**Education.** Most policy discussions of disparities focus on issues of income and education. As a matter of public policy, emphasizing educational opportunity has many advantages. First, it sets the stage early for improved life chances by empowering individuals to seek information, participate actively in their communities, and attain occupations that provide greater future income and other advantages. Second, education is a strong predictor of many of the important intervening variables that are more directly associated with good health outcomes, including self-efficacy, knowledge, social participation, control over work, cognitive complexity, and coping. Third, there is broad consensus that education is a valuable end in itself and that such investment would be worthwhile even if it did not have the expected health effects. Finally, unlike public debates about income redistribution, there is broad political consensus supporting further educational investment. This is no trivial advantage.

**Income support.** Nevertheless, there is abundant evidence that income support to the most disadvantaged that brings them to adequate living levels provides opportunities for improved health. Numerous programs are in place that support a safety net, including Social Security, Social Security Disability Insurance (SSDI) and Supplemental Security Income (SSI), the Earned Income Tax Credit, Temporary Assistance for Needy Families (TANF), and many categorical programs such as food stamps, Section 8 and other housing programs, programs for the homeless, and community health centers. While there is much support for a safety net, there is little consensus on how extensive or intensive such programs should be and much skepticism that once programs extend beyond those who are most poor, they yield benefits relative to costs.

It is difficult to demonstrate that macro social and health policies greatly affect health status and longevity, since the range of concomitant factors is large and alternative explanations are possible. There are, however, descriptive analyses that suggest large health effects of such programs (for example, the desegregation of hospitals in the South discussed earlier). As McDermott noted, the large reductions in age-adjusted death rates that occurred between 1930 and 1955 were largely the result of the introduction of antimicrobial drugs. Mortality then stabilized for approximately ten years with little further progress. Beginning in the late 1960s, however, mortality resumed its relatively large downward course across a range of
dissimilar diseases. Although there were many hypotheses, there was no credible explanation that adequately fit the data. Commenting on this pattern, McDermott noted:

We are no longer dealing with identifiable, scientifically specific influences or interventions, and we lack information as to whether even the various hypothesized influences have been widely applied. (Here he refers to a brilliant paper by Reuel Stallones that illustrates the lack of plausibility of dominant explanations of the reduction of mortality from ischemic heart disease.) This also applies to an innovation that surprisingly does not seem to have been cited as a significant influence, namely, the introduction in mid-1965, two and a half years before resumption of the decrease in death rate, of extensive financial support for the personal physician system in the form of Medicare and Medicaid. About all that can be said is that there is an intriguing coincidence of that particular innovation and the phenomenon of a decreased death rate across a wide spectrum of diseases.

Health insurance for the elderly. A related suggestive analysis comes from a paper by Kenneth Manton and James Vaupel that examined survival after age eighty in the United States, Sweden, France, England, and Japan. Each of these non-U.S. countries has life expectancy at birth superior to that in the United States and considerably lower mortality below age sixty-five. Although there are serious limitations in the data because of questions about the reliability of age reporting at older ages, the study found that the United States had a life expectancy at age eighty and survival from ages eighty to one hundred that greatly exceeded such life expectancies in the other four countries. Stating the result conservatively, even if the study found no differences among countries, it would be necessary to explain why older Americans fared so much better than their younger counterparts. The authors believe that a plausible explanation is the almost-universal coverage of the elderly population by Medicare in contrast to the greater gaps in insurance coverage among younger Americans.

Social security benefits. Jere Behrman and colleagues analyzed data from the Retirement History Survey of a national random sample of household heads ages fifty-eight to sixty-three in 1969 for whom deaths were determined from Social Security records. They estimated hazard models for mortality between 1969 and 1979 and found that an additional $1,000 of Social Security or pension benefits for men lowered the hazard of death by 10–20 percent. SSI, a program of support directed at the poor and disabled, had an estimated effect five times as large as the effect of Social Security benefits overall. Similarly, Social Security benefits, SSI, and pension income were all associated with lower hazard rates among women.

Peter Arno and James House also present provocative descriptive data examining deaths per 100,000 population in the United States between 1900 and 1995 for the age groups 55–64, 65–74, and 75–84. They hypothesize that if income was important, mortality reduc-
tions should have followed the introduction of Social Security in the late 1930s, which reduced the poverty of the elderly, and the indexing of Social Security to inflation in the late 1960s and early 1970s. They show large reductions in mortality for the elderly, particularly for the oldest age group, compared with the younger population following these events. There are alternative explanations for these patterns, and such data cannot conclusively demonstrate the hypothesized pathways. But such descriptive analyses provide credible circumstantial evidence that increasing the income and care access of those who are relatively poor can bring large health gains.

Reducing health disparities is a complex task involving important considerations as to how to achieve the largest gains for disadvantaged persons from the investments made. The irony is that some of the largest gains possible for disadvantaged persons through population initiatives may have the effect of increasing disparities because of the dynamics of advantage. Health disparities impress many of us as fundamentally wrong and undesirable, but a compelling case could be made for policies that maximize population health at the cost of disparities when they provide large life and health benefits to disadvantaged groups as well as to others.

Strategies to redistribute income to the poor will remain contentious, although there is strong support for policies that help persons to attain health insurance and medical care access and for helping workers achieve a livable wage. Most thoughtful persons also understand the importance of maintaining a reasonable safety net for persons with disabilities and persons who are homeless, sick and uninsured, or temporarily down on their fortunes. Disagreements continue on how to respond to the more long-term welfare population who exhaust their eligibility. However this issue is resolved, there is much to be said for aggressive policy efforts in areas such as education, where positive outcomes can be expected and where there is much public support.

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NOTES
might affect inequalities. He explores the concept of freedom to achieve and endorses a definition of equality as a capability to function. One implication is that under some circumstances, “attempts to eliminate that inequality would lead to worse consequences, e.g. worsening the position of all (or most people)” (p. 139).


10. Clearly, the growth in inequality ratios reflects the fact that blacks with much higher rates had a much greater distance to fall. This confusion pertains to many social policy issues, as discussed in J.P. Scanlan, “The Perils of Provocative Statistics,” Public Interest (Winter 1991): 3–14. Scanlan notes that “the increase in ratios is simply what one would expect to accompany a general reduction in mortality from the disease, and it is where a disease has been almost entirely eliminated that the black-white ratio often will be the highest. When society sets about ordering its health-care priorities—and particularly when it orders them in hopes of reducing racial disparities in mortality from various diseases—a thoughtless emphasis upon increasing black-white mortality ratios could lead to grave error.”


17. Ibid.
18. Sen, Inequality Reexamined.
20. Sen, Inequality Reexamined.
22. Multivariate studies of the effects of primary care on population health in developing countries often yield mixed results. While thoughtful and well-organized primary care can have impressive influences on health, public primary care services in many countries are often abysmal, with poorly trained and motivated personnel, lack of needed supplies, and undignified treatment of patients. The distinction between known efficacy and implementation (effectiveness) is central. See Filmer et al., “Weak Links in the Chain.”
25. Mechanic, “Socioeconomic Status and Health.”
26. Some observers remain skeptical because even those who are poor in the American context have material advantages that exceed those of most people in the world. Sen has usefully addressed this issue in promoting the concept of a functional capability. As he notes, “A person less able or gifted in using primary goods...is disadvantaged compared with another more favorably placed in that respect even if both have the same bundle of primary goods.”
33. This unpublished work by Peter Arno and James House is briefly discussed in J.S. House and D.R. Williams, “Understanding and Reducing Socioeconomic and Racial/Ethnic Disparities in Health,” in Promoting Health, ed. Smedley and Syme, 81–124. Further unpublished data and analyses were made available to the author.