

Introduction

The goals of this report are to:

1. Highlight major issues that may affect the choice of disparity measure.
2. Systematically review measures of health disparity.
3. Provide a basis for selecting a “suite of indicators” to measure disparities in screening, risk factors, and other cancer-related health objectives.

Initiatives to Eliminate Health Disparities

In 1979, U.S. Surgeon General Julius B. Richmond first conceptualized the idea for national public health goals (3) and established specific public health objectives for reducing mortality and chronic illness in five age groups, which later were to be implemented in 15 strategic areas during the 1980s (4). Building on this foundation, *Healthy People 2000* subsequently replaced the age-specific goals of 1990 with three overarching goals for the year 2000: increase the span of healthy life, reduce health disparities, and provide access to preventive health services (5). The explicit focus on reducing health disparities in *Healthy People 2000* represented an important step toward establishing health disparities as a part of routine public health surveillance. Establishing different health targets for different social groups, however,

could be construed as implying that a group’s health potential was somehow constrained by its social-group membership, a factor over which group members may have little or no control. For example, the year 2000 target rate (per 100,000) for cancer mortality was 130 for the total population, but it was 175 for blacks.

The implication of setting different targets for different social groups was not lost on public health policy makers or politicians. In a 1998 radio address that celebrated Black History Month, President Clinton put forth a somewhat more radical national public health goal: “By the year 2010, we must eliminate racial and ethnic disparities in infant mortality, diabetes, cancer screening and management, heart disease, AIDS, and immunization.” Racial and ethnic disparities in these and other areas are extensive and well documented, and given the context of their origins in the United States, there is ample reason to focus attention on their elimination. Similar health disparities, however, are evident not just between racial/ethnic groups but also between other social and demographic groups, a fact that now is reflected in the goals of *Healthy People 2010* that specify eliminating health disparities by gender, income and education, disability, geographic location, and sexual orientation in addition to race and ethnicity (1). Similar health disparity targets also have been adopted by a number of state and local health agencies (see 6,7,8). The *Healthy People 2010* policy goals thus

represent an important shift toward “elimination,” and not just “reduction,” of existing health disparities.

The goal of eliminating health disparities also implies that a systematic scientific framework exists to measure health disparities and to monitor them over time across multiple social groups and measures of health status. We argue that no such clear-cut consensus framework currently exists in the United States, within either the research or the policy communities as to how health disparity should be measured. An important first step toward the elimination of health disparities is to carefully consider the conceptualization of health disparity to better understand what we mean by the term “health disparity,” how we operationalize the concept of “eliminating health disparity,” and how then to apply appropriate health disparity monitoring strategies.

Cancer-Related Goals of *Healthy People 2010*

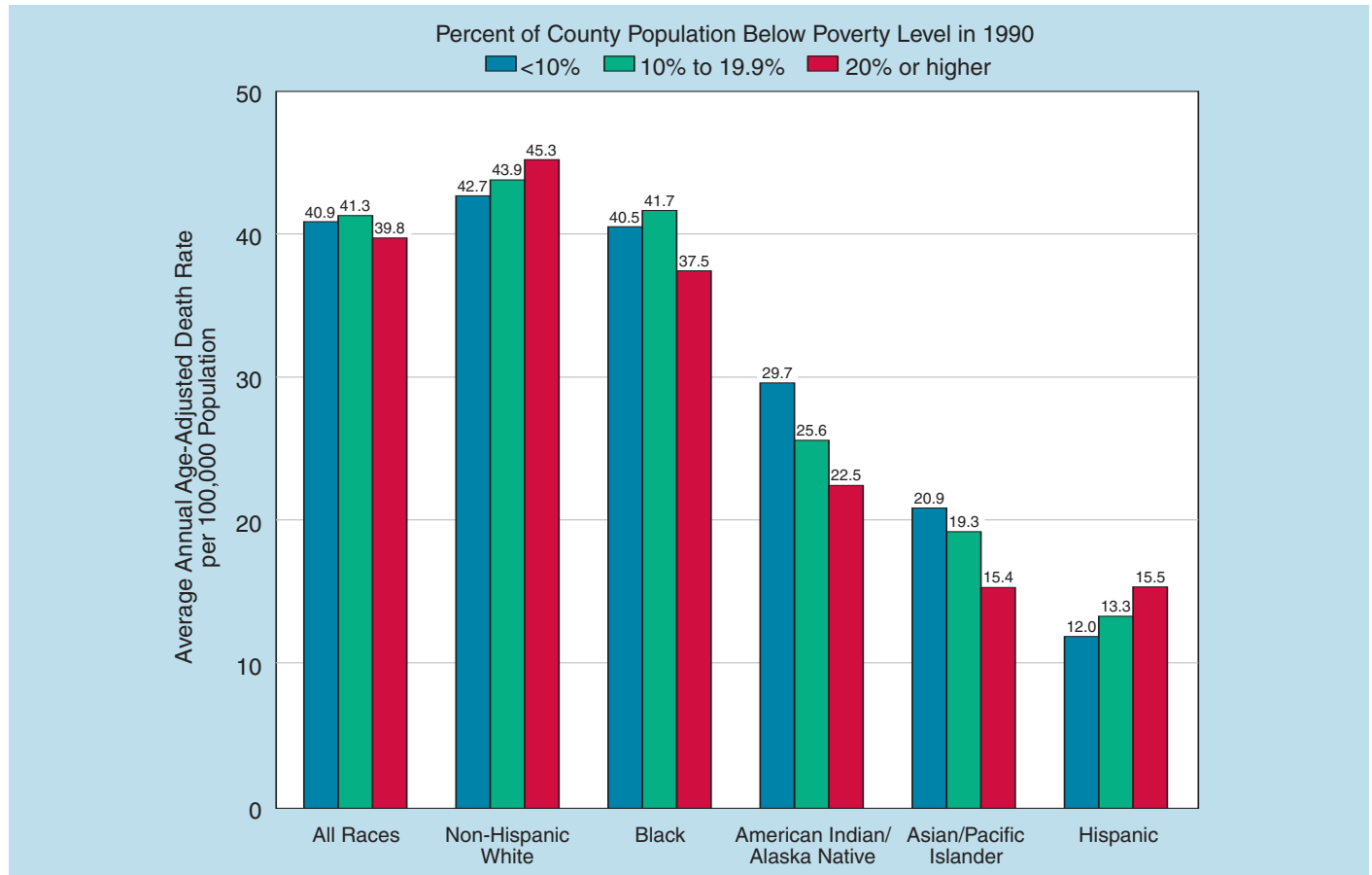
The specific issues that motivate this project are related to the *Healthy People 2010* framework for cancer-related goals, of which the overarching goal is to “reduce the number of new cancer cases as well as the illness, disability, and death caused by cancer” (9, page 3-3). The objectives for specific cancers are to reduce the rates of melanoma, lung, breast, cervical, colorectal, oropharyngeal, and prostate cancers, and, in keeping with the goals of *Healthy People 2010*, disparities in the above cancers and their major risk factors also should be eliminated. Thus, this report focuses on social-group and geographical disparity in cancer-related outcomes such as risk

behaviors, screening, incidence, survival, and mortality.

Figure 1 (page 7) is typical of the sort of cancer-related data that motivate this project. These data show socioeconomic and racial/ethnic disparities in lung cancer mortality among U.S. females for 1995–1999. Although these data help to characterize disparity, they do not explicitly quantify the extent or variability in disparity. Several questions may be asked about this data. For instance, is the socioeconomic disparity in lung cancer mortality larger among Asian/Pacific Islanders or blacks? Or is the racial/ethnic disparity between non-Hispanic whites and blacks larger than the socioeconomic differences within each group? Additionally, variation exists in the direction of the socioeconomic disparity in different racial/ethnic groups. Among Hispanics, the age-adjusted death rate increases as area poverty decreases; among American Indian/Alaska Natives, however, rates increase as area poverty increases. Casual visual inspection of such graphs reveals that there are differences between and among groups. The challenge is whether we can move beyond the simple recognition of such differences (disparities) toward a strategy to quantify their magnitude in a scientifically reliable and transparent way that can be understood by all stakeholders. This will be even more important when monitoring changes in disparity over time.

Figure 2 (page 8) shows the annual rate of lung cancer incidence by race and gender for the period 1992–1999. How should we summarize the disparity in trends in lung cancer incidence? We might focus on comparing pairs of rates over

Figure 1. Lung Cancer Mortality, Females, U.S., 1995–1999

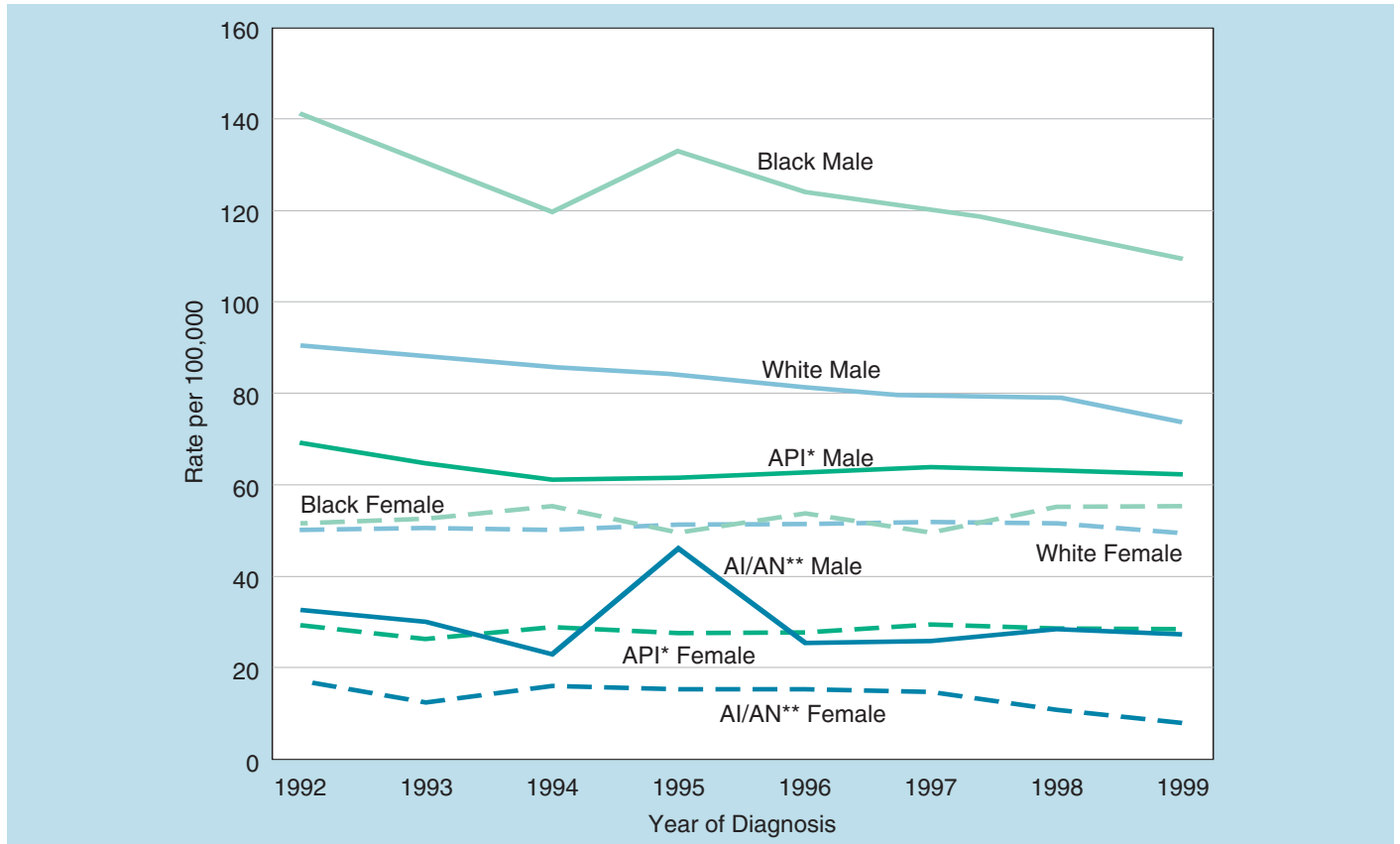


Source: Gopal Singh et al. *Area Socioeconomic Variations in U.S. Cancer Incidence, Mortality, Stage, Treatment, and Survival, 1975–1999*, 2003.

time—e.g., the gap between white and Asian/Pacific Islander females or between black males and black females. As the number of groups and years of data increase, however, there are diminishing returns to such a strategy because of the large number of possible pairwise comparisons and the inherent difficulty in summarizing them. For example, from Figure 2 in 1992, one could calculate the following incidence ratios: black to white males, 1.55; Asian/Pacific Islander to American Indian/Alaska Native males, 2.11; black to white females, 1.03; and Asian/Pacific Islander to American Indian/Alaska Native females, 1.71. The same comparisons in 1999 provide respective

ratios of 1.48, 2.29, 1.12, and 3.33. What can we conclude about the racial disparity in lung cancer incidence, given that incidence ratios are decreasing for some comparisons (e.g., black vs. white males) but increasing for others (e.g., Asian/Pacific Islander to American Indian/Alaska Native males)? There is no clear way to summarize the changes in these relative pairwise comparisons. Therefore, in addition to seeing how a particular social group’s cancer-related health outcomes change with respect to another group, we also may be interested in whether we are making progress toward eliminating disparities across all racial/ethnic or socioeconomic groups,

Figure 2. Lung Cancer Incidence by Gender and Race/Ethnicity, 1992–1999



*API = Asian/Pacific Islander

**AI/AN = American Indian/Alaska Native

Source: Surveillance, Epidemiology, and End Results (SEER) Program (www.seer.cancer.gov) SEER*Stat Database: Incidence—Seer 11 Regs Public-Use, Nov. 2001 Sub for Expanded Races (1992–1999), National Cancer Institute, DCCPS, Surveillance Research Program, Cancer Statistics Branch.

which is consistent with the overarching goals of *Healthy People 2010*. That is, we may want to know whether the disparity in lung cancer incidence across *all* racial groups is decreasing. How should we answer that question when there are a multitude of pairwise and time-related comparisons that can be made? Pairwise comparisons have been the mainstay of epidemiological effect measures and clearly are central to disparity measurement, but there also is a place for summary measures of overall disparity.

Brief History of Measuring Disparities in the United States

Measuring Disparities in Public Health

This section briefly reviews selected historical studies of social-group disparities in health outcomes. Generally, the strong reliance in the past on pairwise relative and, less frequently, absolute disparity, and the difficulties such a

strategy may raise for a broader, more population-focused understanding of health disparities and their assessment over time, are emphasized. The task of measuring disparity in public health outcomes usually has been taken on by epidemiologists, who tend to rely on relative risk measures to characterize effect estimates (10). It is interesting that few references can be found to measuring health disparity per se in standard epidemiological texts. In some ways this is not surprising, but it helps to explain why standard epidemiologic metrics, such as relative and absolute risk differences, have been the general method of choice applied to measuring health disparity. A brief guide to health disparity measurement can be found in a recent textbook on epidemiologic methods in health policy (11), but this topic is not addressed in more recent foundational texts in either general epidemiology (12,13) or social epidemiology (14). This is not to suggest that more traditional epidemiologic measures are not applicable to the measurement and monitoring of health disparities, but that, before choosing the methods to best capture social concerns over the extent of health disparity and before attempting to devise policies to reduce/eliminate such disparities, one should be aware that such measures have certain limitations. These issues will be discussed in more detail later in this monograph.

Trends in Social Group Health Disparities

Are health disparities increasing in the United States? Despite consistent interest in social-group disparities in public health, limited data provide information on both social-group characteristics and health at the national and local levels (15–17). This in turn has resulted in a relatively

small number of studies of health disparity trends for the United States as a whole. The landmark study in the social epidemiology of mortality by Kitagawa and Hauser (18), which involved a special matching of 1960 death-certificate records to the 1960 U.S. decennial census, serves as the benchmark against which most socioeconomic disparity trends are referenced. In that study, Kitagawa and Hauser measured disparity in terms of the *standardized mortality ratio (SMR)*. The *SMR* is calculated as the ratio of the number of observed deaths to the number expected based on the mortality rates of the United States as a whole. If, for example, there is no educational disparity among white males ages 25–64, then the number of observed deaths in each educational group should equal the number expected based on the mortality rate for all white males ages 25–64, corresponding to an *SMR* of 1.0. Kitagawa and Hauser found, however, that the *SMR* for white males ages 25–64 with less than 5 years of education was 1.15 (i.e., 15% more deaths were observed than were expected) and was 0.70 among those with a college degree (i.e., 30% fewer deaths were observed than were expected). Generally, Kitagawa and Hauser found that higher socioeconomic position—whether measured by income or education—was associated with lower mortality and that mortality was higher among nonwhite and nonmarried individuals. Interestingly, they also reported that education and income had independent effects—income disparities existed within education groups and educational disparities existed within income groups. It is important to note that, in terms of measuring disparity, this important study relied on pairwise comparisons of specific groups to the population average and did not use any summary measure of disparity.

Health Disparities According to Income

Pappas and colleagues (19) used the National Mortality Followback Survey (NMFS) from 1986 to evaluate trends in education and income disparities since Kitagawa and Hauser's 1960 study. To use the information from all socioeconomic groups, Pappas and colleagues created a summary disparity measure. Similarly to Kitagawa and Hauser, they calculated an *SMR* for each socioeconomic group within gender and racial categories based on the sex-race-specific mortality rates for the entire United States. They then took the absolute value of the difference between each socioeconomic subgroup's (e.g., those with <12 years of education) *SMR* and 1.0 and weighted it by the respective proportion of the population in that socioeconomic subgroup. Their index was the sum of these weighted absolute differences across all subgroups; thus, a value of 0.5 would be interpreted as the weighted average deviation of the socioeconomic groups' *SMRs* from 1.0. Pappas and colleagues found that mortality disparities had increased since 1960 for both whites and blacks, with steeper increases for income as compared with education as the measure of socioeconomic position. Thus, because the sum of population-weighted *SMR* differences for income increased more than for education, they concluded that income-related disparities increased more than educational disparities. Note that because each group's *SMR* was weighted by its population share, an increase in disparity when using this index could be observed even in the absence of changes in subgroup-specific mortality rates if the subgroups with the largest *SMR* differentials increased their share of the population.

Duleep (20) used data linking the 1973 Current Population Survey (CPS) to Social Security longitudinal mortality data up to 1978 and also measured disparity by *SMRs*. Unlike Kitagawa and Hauser, however, she used her entire CPS sample—rather than the total U.S. population—to generate the expected number of deaths in each income group. She also concluded that socioeconomic disparities had not narrowed because the ratio of observed-to-expected deaths for most but not all income groups was further from 1.0 in 1973–1978 than it was in 1960. For example, the *SMR* for individuals earning \$10,000 or more (the richest group) decreased from 0.84 in 1960 to 0.71 in 1973–1978. Schalick and colleagues (21), using the 1967 and 1986 NMFS, investigated disparity trends in mortality by income with different measures of disparity, the slope index and relative index of inequality. These disparity measures are similar to the index used by Pappas and colleagues (19) in that they weight each socioeconomic group by its population share, but the index is not based on *SMRs*. Rather, income groups are ordered from lowest to highest, and a line is fitted to the data using weighted linear regression. The slope of this line is the resulting “slope” index and is interpreted as the absolute difference in mortality across the entire range of income. Dividing this slope index by the actual mortality rate in the population gives the “relative” index and is the percent difference in mortality across the entire range of income. Similarly to Pappas and colleagues (19), Schalick and colleagues found that relative mortality disparities increased when measured by the relative index of inequality, particularly for males; they also found that absolute disparities decreased during the same period when measured by the

slope index of inequality, primarily because the absolute declines in mortality were greater for the least well-off groups.

Finally, using a different measure of disparity, the Population Attributable Risk percent (*PAR%*), Hahn and colleagues reported that the share of mortality in the United States due to poverty had increased from 1973 to 1991 (22). The *PAR%* essentially is a summary index designed to estimate the population health impact of eliminating health-damaging exposures and is a function of the prevalence of the exposure and its associated relative risk. In this case the exposure is poverty, and the interpretation of the index is the percent by which the population death rate would decrease if poverty were eliminated. Thus, the *PAR%* is a population-focused disparity index in that it measures the impact on the total population of eliminating the health disparity between the poor and the nonpoor. If the poor represent a small fraction of the population, or if the health effects of being poor are small, then the *PAR%* will show that the elimination of the exposure—poverty—will have a marginal effect on population health. Hahn et al. report that, from 1973 to 1991, the *PAR%* increased from 16.1% to 17.7%, indicating that the population health benefit of eliminating mortality disparities by poverty status increased. The increase, however, was due entirely to an increased *PAR%* among men, as the *PAR%* decreased for both black and white women.

Health Disparities According to Education

Feldman and colleagues (23) investigated trends in educational disparities in mortality among whites between 1960 and 1971–1984 using the

matched data of Kitagawa and Hauser and the first National Health and Nutrition Examination Survey Epidemiologic Followup Study (NHEFS). They measured disparity using a standard epidemiological “rate ratio”—the mortality rate in the least-educated group divided by the mortality rate in the most-educated group (i.e., a pairwise comparison of extreme socioeconomic groups). The researchers concluded that educational disparities increased, but this effect was primarily seen among white men. Interestingly, in their discussion, Feldman and colleagues noted that the distribution of education changed enormously over the period of study but concluded that the magnitude of the increase was “probably not large enough to have a major impact on trends in differentials” (23, page 929). The researchers, however, did not empirically examine this assumption, which perhaps is why Elo and Preston revisited this question using the same data (24) and conducted a similar analysis of trends in educational disparity in mortality using multiple measures of disparity (slope index of inequality, relative index of inequality) that account specifically for the changing distribution of education over time. Similar to previous analyses (19,23), Elo and Preston found that the educational disparity had increased among white men. Whereas Feldman and colleagues found no change or a small disparity increase for white women, however, Elo and Preston found that both absolute and relative disparities had decreased for white women of all ages. These studies highlight the important issue of whether measures of health disparity should be sensitive to changes in the size of the “exposed group”—in this case, the most disadvantaged in terms of income or education. The issue of the effect on health disparities of the movement of individuals

into and out of different social groups over time also is important and has been neglected somewhat in the United States, despite having received consistent emphasis in the health disparities literature (25–27).

The above studies indicate that relative mortality disparities generally appear to have increased since 1960, but the extent of disparity differs with different measures of disparity and socioeconomic position. Because all of the above analyses use different data sources and different measures of health disparity, it is difficult to reach a firm conclusion as to how much the socioeconomic disparity in overall mortality has increased or decreased over time. This perhaps is not surprising given that, even for simple disparity measures such as the relative comparison of the lowest and highest social groups, different national data sources can provide different estimates of the size of the same health disparity (28).

Health Disparities According to Race/Ethnicity

Despite the longstanding interest in health disparities between racial/ethnic groups in the United States, surprisingly few studies have analyzed racial/ethnic disparity trends. Additionally, the major racial/ethnic focus in the United States has been on disparities between blacks and whites (or nonwhites and whites), which makes understanding trends somewhat less difficult because the inequality between two groups may be summarized easily with either a simple difference or ratio measure. The continuing increase in U.S. racial/ethnic diversity and the growing need to compare multiple racial/ethnic groups and to examine individual

populations that usually are grouped together (i.e., Chinese with Japanese or Mexican Americans with Puerto Ricans), however, make the use of pairwise comparisons for summarizing inequality trends more difficult to understand and communicate. The inherent difficulty of talking about trends in health inequality by reference to several relative risks is one reason for attempting to summarize inequality with a single index. One potential summary measure, the Index of Disparity (ID_{isp}), was introduced formally by Percy and Keppel (30) and was applied to 17 health status indicators during the period 1990–1998 for five racial/ethnic groups: non-Hispanic whites, non-Hispanic blacks, Hispanics, American Indian/Alaska Natives, and Asian/Pacific Islanders (31). The ID_{isp} measures variations in health across dimensions of a social group (e.g., race/ethnicity) relative to some reference point—in this case, the total population rate. Thus, a decline in the ID_{isp} indicates that the variation in health across racial/ethnic groups declined relative to the total population rate. From 1990 to 1998, the researchers found that the ID_{isp} decreased for most mortality measures and infant health outcomes (i.e., racial/ethnic disparity decreased), but increased for teenage pregnancy, motor vehicle deaths, suicide, work-related injury deaths, and tuberculosis case rates. It is important to note that, unlike some disparity measures mentioned previously, the ID_{isp} does not weight social groups by their population share. That is, the ID_{isp} takes a perspective on disparity that what matters is the difference in subgroup *rates* of health, regardless of the number of *individuals* that may be affected. Thus, it is more focused on strict equality of health status measures, regardless of social-group size and the extent to which social-group health differences may impact population health.

Socioeconomic Disparity Trends in Cancer

In general, there have been fewer studies of socioeconomic disparity trends in cancer incidence and mortality. One of the difficulties in monitoring disparity trends in cancer with respect to socioeconomic groups is that the major source of data on cancer incidence and survival, the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) Program, does not collect socioeconomic data on individuals (17). A number of studies, such as those by Singh and colleagues (32) and Krieger and colleagues (33), however, have used information on residential location collected on incident cancer cases to create a measure of socioeconomic position. This is accomplished by linking the neighborhood or county in which an individual cancer case resides to the U.S. census to get a measure of the socioeconomic status of that area—for example, the poverty rate. Such “area-based” measures of socioeconomic position certainly are an improvement over having no measure at all, but they also require additional assumptions that may hinder their utility for monitoring cancer-related disparities. For example, the use of area-based measures assumes that the average socioeconomic status of the area is representative of the status of the individual, and that, because the census is conducted only every 10 years, the socioeconomic status of an area in, say, 1990 is an accurate representation of the same area for a cancer case diagnosed in 1997.

Using area-based measures of socioeconomic position (e.g., census tract poverty rates), Singh reported a reversal in the socioeconomic gradient among men in overall cancer mortality from 1950

to 1998 (34). Singh used relative pairwise comparisons of the highest and lowest socioeconomic groups and showed that, in 1950, mortality rates were 49% higher in higher socioeconomic areas; this disparity decreased over the next 30 years and, by the late 1980s, cancer mortality rates were 19% higher in *lower* socioeconomic areas. Thus, over the past 50 years, the pattern of higher cancer mortality among individuals in higher socioeconomic areas disappeared and was replaced by a pattern of higher cancer mortality among individuals of lower socioeconomic position. A similar pattern of reversing gradients also was evident for lung cancer and colorectal cancers (35). With regard to cancer incidence, from 1975 to 1999, the trend in socioeconomic disparity for all cancers among both men and women was inconsistent (32) as measured by the incidence rate among those living in areas with >20% of the population in poverty relative to the rate in areas with <10% in poverty (i.e., relative pairwise comparison of extreme groups). This likely is due to differing disparity trends for specific cancer sites. Compared to the highest socioeconomic group, cancer mortality rates were higher among the lowest socioeconomic group for lung and prostate cancers among males, and the ratio of the lowest to the highest socioeconomic area widened from 1975 to 1999. Incidence of melanoma was higher among males in higher socioeconomic areas in 1975, and this relative difference increased by 1999. Colorectal cancer was more frequent among males in higher socioeconomic areas in 1975; the relative difference decreased by 1999. Among females, women in poorer socioeconomic areas had higher incidences of lung and cervical cancers in 1975; the disparity in lung cancer incidence

remained relatively constant, whereas the disparity for cervical cancer declined. Women living in higher socioeconomic areas had a higher incidence of melanoma, colorectal, and breast cancers in 1975; by 1999, this disparity narrowed for colorectal cancer and widened for breast cancer and melanoma. This analysis highlights the importance of examining site-specific rather than overall cancer trends, as the overall cancer rate is a diverse amalgam of specific types of cancer that differ in their etiology and, therefore, their social distribution.

Few studies have assessed trends in educational disparities in cancer. Steenland and colleagues (36) analyzed trends in educational disparities in cancer mortality using data from the American Cancer Society's Cancer Prevention Study cohorts (CPS-I and CPS-II). They used ordinary least squares regression to calculate a regression-based relative effect of education. Instead of simply comparing the most- and least-educated groups, this disparity measure uses the mortality rates for all educational groups and is interpreted as the increase in cancer mortality for each 1-year decrease in the number of years of education. The study found that educational disparities increased from 1959–1972 to 1982–1996 for lung and colorectal cancers and decreased for breast cancer. The researchers did not, however, account for changes in the social distribution of education during this period and were forced to conclude that “the educational categories were not comparable between the two populations.” (36, page 20). Thus, their conclusions were less than clear. If the education categories are not comparable, and this fact is not accounted for in the disparity measure, then it is

difficult to know how to interpret the reported disparity trend among these cohorts.

Racial/Ethnic Disparity Trends in Cancer

Although racial/ethnic disparities in cancer have received significant attention, especially with regard to treatment (2,37), relatively few studies have assessed long-term trends in these disparities. Again, the general lack of detailed historical racial/ethnic information in cancer-related data sources often limits analyses of long-term disparity trends to a pairwise comparison of whites and blacks or whites and nonwhites. Within the last decade, focus on and efforts to promote population health data for major ethnic groups have increased. Ten-year trends now are available for some groups. For subgroups within major racial/ethnic groups, this is complicated further by the lack of inter-censal estimates of population size as well as issues of comparability of reporting for numerator (incidence) and denominator (population size) data. Other issues that arise in comparing groups by race/ethnicity include differences between subpopulations commonly grouped together, such as differences in cancer incidence rates between American Indians and Alaska Natives and between various American Indian tribes.

With regard to mortality from all cancers, whites had higher mortality rates than nonwhites until the middle of the 20th century, after which nonwhites have had higher mortality rates. The gap between whites and nonwhites increased from the mid-20th century until the early 1990s, after which it declined (38,39). The primary reasons for the widening gap between white and

nonwhite cancer mortality since mid-century were relatively larger increases in nonwhite mortality from lung, prostate, colorectal, breast, and ovarian cancers (39).

Still fewer studies have attempted to use any summary measure of health disparity across several racial/ethnic groups. Keppel and colleagues used the Index of Disparity to compare lung and female breast cancer mortality rates in 1990 and 1998 across five racial/ethnic groups: non-Hispanic whites, non-Hispanic blacks, Hispanics, American Indian/Alaska Natives, and Asian/Pacific Islanders (31). Racial/ethnic disparity declined for both cancers—significantly so for lung cancer.

Health Inequality and Health Inequity

The language of “eliminating health disparities” seems simple and straightforward—something that everyone understands in the same way and can agree on. When we say we want to eliminate health disparity, do we really mean we want everyone to have the same level of health? Is the goal that all individuals/social groups should have the same health, regardless of how healthy or sick they might be? Or do we mean that it is improving the health of the most disadvantaged individuals/social groups so that they approach the health of the more advantaged (i.e., priority to the worst-off/least healthy)? In regard to reducing income disparities, we are comfortable as a society in considering the need to reduce the incomes of the advantaged via taxation in order to increase the incomes of the impoverished. In other words, we are willing to engage in policy discussions focused on income redistribution from the rich to the poor. It is not clear that this idea applies to

health disparity. That is to say, in public health we generally are not willing to accept health declines in a healthier or more socially advantaged group to foster improved health in those who are less healthy or socially disadvantaged. Yet, it is plausible that, for example, the health of the rich and the poor both improve, but the rich improve at a better rate, therefore increasing the relative disparity between the two groups. This situation highlights the possible tension that may arise in designing policies to simultaneously achieve the two overarching goals of *Healthy People 2010*—improving average health and eliminating health disparities. Such questions only scratch the surface but underscore the potential implications of a literal interpretation of the language of the *Healthy People 2010* initiative to “eliminate” health disparities (1).

The health disparity concept involves both descriptive and normative elements. The task is to understand what the elements are and to develop sensible measures of disparity that capture both of these dimensions (40,41). In the United States the use of the term “disparity” implies two core concepts. First, it suggests that there are health “differences” between individuals or social groups; second, it suggests that such differences in some way are unfair and an affront to our moral concepts about social justice. Thus, the term “disparity” often mixes ideas of “inequality” and “inequity.” The term “inequality” literally means difference—that two quantities are not the same—but the term “inequity” implies an ethical judgment about those differences. Inequality is a measurable, observable quantity that can be reasonably and unambiguously judged; inequity relies on a moral, ethical judgment about justice

and thus is not unambiguously measurable or observable. The classification of health differences as unequal is a relatively easy task compared to the classification of health differences as inequitable. Judgements concerning inequity rely on social, political, and ethical discourse about what a society believes is unfair (42).

Another crucial dimension to ideas of inequity and concepts of justice comes from discussions about disparities in health that are avoidable and those that are unavoidable (43,44). Both types contribute to health disparities, but only potentially avoidable determinants contribute to inequity (45). Thus, “avoidability” implies a capacity to intervene (via social policy, medical care, etc.) with respect to the

determinants of disparity. It often is difficult to identify the determinants of disparities or to distinguish between avoidable and unavoidable determinants. Determinants of disparity may be unavoidable in the short run and avoidable in the long run. It is easier to measure disparity between groups than it is to identify the determinants of the disparity or to decide which determinants are avoidable and which are unavoidable. To eliminate disparities in health between groups, however, the determinants of disparities in health must be identified and avoidable determinants modified. The first task, though, is to arrive at methods to identify and quantify health disparities over time as the basis for evaluation and action.