

Conclusions

We will briefly attempt to summarize the analyses of the case studies in this report by answering the series of questions that framed its development:

1. Does the choice of a measure of disparity matter for assessing disparity trends?

Yes. The 10 case studies showed a number of situations where substantively different interpretations concerning the level and trend in disparity resulted from using different measures of health disparity. Such differences in interpretation could not be reconciled without reference to consideration of which underlying dimensions of disparity are emphasized in the measures. That is, absolute vs. relative disparity; whether or not disparity measures are weighted by population size, and whether measures are sensitive to the direction of the social gradient in health.

2. How often does the choice of disparity measure matter?

Of the 22 separate analyses summarized in **Figure 38**, 9 (41%) revealed situations where the overall substantive conclusion about the trend in disparity was difficult to make without some apriori judgment about what dimensions of disparity are important. It is impossible to know what this percentage would be across all relevant cancer-related outcomes, but it is clear from these analyses that the issue is likely to be reasonably common.

3. Why does the choice of disparity measure matter?

It is crucial to reiterate the conclusions of our theoretical review of disparity measures, that different disparity measures often contain implicit or explicit value judgments about what dimensions of

disparity are important. These value judgments play an important role in understanding why different measures of disparity may give different answers to questions about disparity trends.

In particular, most of the cases of disagreement between measures of disparity depended on two issues. One is the scale on which disparity should be evaluated. In many cases relative measures of disparity moved in one direction, while absolute measures moved in the opposite direction. Thus, specifying whether absolute or relative disparities are more important prior to undertaking any analyses will assist in minimizing disagreement about disparity trends. The second issue is whether to weight social groups by population size. In several cases we found that population-weighted disparity measures differed in either magnitude or direction from unweighted disparity measures. In particular, and as might be expected, unweighted measures of disparity appear to be more sensitive to the movement of rates of disease, especially those of smaller population groups whose rates of disease may be less stable over time.

4. The Index of Disparity

As the Index of Disparity has been proposed as a measure of progress toward relative disparity goals for *Healthy People 2010*, we thought it important to comment specifically on its performance in the case studies. In general terms, the Index of Disparity was more volatile in cases where there are large differences in the population size of sub-groups across which disparity is being measured, such as in comparisons across different race/ethnic groups. When the size of the social groups is fairly similar, as in the case of socioeconomic disparities in smoking and obesity

(see **Figure 38** for a summary), the Index of Disparity is usually consistent with other relative disparity indicators. The instability of the Index of Disparity in cases where social groups differ substantially in population size is most easily seen in the example of stomach cancer mortality disparities across differing aggregations of geographic areas (see **Figure 37**). Among the four US regions, which are all relatively populous, there is generally agreement between the Index of Disparity and population-weighted measures. But using the same data measured across US states, which vary dramatically in population size, the Index of Disparity becomes much less stable and is inconsistent with population-weighted measures.

5. What are the limitations of applying measures of economic disparity to health disparity?

Part of the reason for this evaluation of measures of health disparity was the notion that the quantification of disparity is a phenomenon that has a long history in other disciplines, particularly in economics. We have thus attempted to evaluate some traditional measures of economic disparity (e.g., measures of entropy, the concentration index) as measures of health disparity. While these measures have much that is to be recommended, one potential limitation is that most measures of economic disparity use the population average as the reference point from which to measure disparity. This makes sense in economics because income is a fungible good, and disparity may

decline through the transfer of income from the rich to the poor, bringing the incomes of the rich closer to the population average. But health (i.e., health status) is not a transferable good. The analogous situation for health disparity, where declines in disparity come about by worsening health among the healthiest groups, is difficult to cast in a positive light. Other things being equal, it is hard to imagine policymakers viewing declines in health among the healthiest groups as positive, even if it reduces health disparity. Thus, applying traditional measures of economic disparity to health requires acknowledging and understanding this limitation. It should be noted that another proposed measure of health disparity, the Index of Disparity, overcomes this specific limitation by using the healthiest group as the reference group, but has other limitations as well. At present it appears that no currently-used measure of disparity is entirely free from limitations for monitoring disparity trends, as we pointed out in our previous review. While additional research on alternative measures of health disparity may bear fruit, we can, in fact, apply measures of economic disparity to health but should remember that, as the *Healthy People 2010* dual goals make clear, disparity is not our only health concern.

6. What are the implications for monitoring health disparities?

There is currently a strong emphasis in the US public health policymaking community on monitoring of

progress toward eliminating health disparities. The results of the case studies presented in this report demonstrate that it is easily possible to come to fundamentally different conclusions about the extent of progress toward eliminating health disparities using the same data but different measures of health disparity. The naïve use of summary measures of health disparity thus has the potential to lead to confusion among both policymakers and researchers as to whether disparities are increasing or decreasing, which cancer-related outcomes show the largest disparities, and which health disparities might be specifically targeted for increased study. Such confusion will be minimized and health disparity measurement will be advanced by increased debate and discussion of the issues that generate differences among measures of health disparity:

- How much weight should we give individuals of different social groups when measuring disparity? Counting each individual's health equally implies population-weighted measures of disparity among social groups. Counting each social group's health the same means using unweighted disparity measures (and implies differential weighting of individuals from social groups with different population sizes).
- How much to weight different parts of the health distribution? At any given time some social

groups are healthier than others. Over time health changes, and some measures of disparity weight health improvements among all groups the same, while others are more sensitive to health improvements among the least healthy or among the poor. Which of these perspectives is consistent with our concerns about social disparities in health?

- Should we be more concerned about absolute or relative disparities? Diseases and conditions that exact a large burden on the population, because of their high prevalence, often generate smaller relative disparities, while rare conditions can generate exceedingly high relative disparities. Which of these perspectives is the appropriate scale on which to measure disparity trends?

In sum, our recommendations from the original report, further clarified here, suggest giving priority to disparity measures on the absolute scale, that weight for population size and where possible consider the direction of the social gradient in health. That recommendation stands but it does not exclude consideration of issues of relative disparity or what is happening among smaller population groups. For those reasons it may always be useful to adopt a “suite” of health disparity indicators that make clear which aspects of health disparity are changing over time.