DISCUSSION

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Dr. Bush's paper entitled "An Index of Functional Status and Prognosis," describes one approach for measuring health status. He classifies functional status into 31 levels, with optimum functioning as the highest level and death the lowest level. The functional status of a population is simply the weighted average of the functional levels given values between 1 and 0. The index of health is simply the function index with the addition of the prognostic factor in the form of transitional probabilities of a cohort of subjects remaining in the same functional level or migrating to different functional levels over time, using the first-order discrete-state Markovian process. The probabilities are to be estimated from survey data.

Undoubtedly this approach has its value in that it can be used in monitoring the health status of a population, provided that the functional levels can be accurately differentiated and that accurate data are obtainable. An examination of Table 1 reveals, however, that there are four or five inversions in the values of the function levels; that is, some lower function levels have higher values and vice versa. Furthermore, it does not appear that the three components of social activity, mobility and physical activity are truly mutually exclusive, as the author claims. I would think that physical activity in the form of walking is a subset of mobility: I find it hard to believe that a person who cannot walk freely can travel freely.

My basic objection to the approach is that it is oriented toward the provider or the third-party payor rather than the consumer. The indices deal with expected values and averages rather than individuals. This approach is useful from the actuarial point of view, but it does not help the individual consumer who is interested in his own health status. The functional status index and the health status index are based on expected values of the distributions of cohorts. If the variances of the distributions are large, the expected value or mean has little meaning for an individual who is three standard deviations from it. It may be argued that homogeneity within cohorts can be achieved by subdividing a cohort into sub-groups, but if this process is kept up, the branching can become so unwieldly that even the largest computer cannot handle the immense transitional probability matrix.

The paper by Dr. Yordy, "Why Health Indicators?", provides a comprehensive picture of the interplay of the political process and design of health indicators. Dr. Yordy traces the intricacies of political decision-making in relation to the requirement of evaluation of health intervention programs. His prophecy that policy-makers will in the future prefer outcome indicators to input indicators in the evaluation of health programs is both reasonable and encouraging-encouraging in the sense that such a shift in emphasis will mean the inception of the maturing process of politicians concerned with the health of the American people. In the final analysis, what really counts is the improved health status of the people, not the number of hospital beds and/or clinics that are made available to them.

An insightful observation made by Dr. Yordy relates to the establishment of causality between program intervention and outcome. This is an experimental design problem that is perhaps as difficult as the sesign of health indicators itself. This is an area in which the greatest contribution has come from Dr. Donald T. Campbell of Northwestern University. It is possible that, through his work and that of others in the quantitative sciences a solution or a series of solutions will be found to the problem of establishing a logical nexus between program input and program outcome in an open system full of unknown and therefore uncontrolled extraneous influences.

Dr. Lerner, in his paper entitled, "An Approach to conceptualizing Levels of Health," addresses himself to two key issues: the advisability or inadvisability of aggregating quantitative and qualitative indicators in a single index of health and the need for precision in health meansurement. There is no doubt that problems exist in trying to combine quantitative and qualitative indicators of health in a single quantitative entity. First of all, it is difficult to quantify qualitative information. But even if a way were found to quantity the qualitative information, the problem of comparability of units of measurement would still remain. One could not aggregate quantitatives that were in different units of measurement.

In spite of these difficulties, there will be political pressures on health administrators to develop a single index of health that can be used in monitoring the health of the people. This single index, when developed, can be used in the same way that the GNP is used in monitoring the nation's economic health.

I do not agree with Dr. Lerner that precision is not an important consideration in the development of health indicators. I believe that scholars who are working in this area are trying to make a science out of the art, and without precision we cannot have a science. A health indicator that is imprecise serves little useful function. For example, if we compared two communities in terms of the health indicator, any true difference that exists would be masked because of the large components of error in the indicator. Such an indicator would not be worth the time and energy devoted to its development

Dr. Lerner appears to endorse the WHO definition

of health whole-heartedly. This definition, that "health is not only the absence of disease, but a complete state of physical, mental and social wellbeing" is intuitively appealing because it is comprehensive and covers all the essential aspects of what may be called "the quality of life." But how does one define complete physical, mental and social wellbeing? And if one could define these terms satisfactorily, what kind of data would one collect? There is no doubt that conceptually the WHO definition is superior to many other definitions of health, but there does not appear to be any solution, at least for a few years to come, to the problem of operationalizing the concept to the satisfaction of health measurement specialists.