My assignment for this discussion was the two papers, by Mooney and Rives 1/ and by Hogan and McPheters 2/. Both are excellent and hard to criticize negatively, and I shall not attempt to do so. Rather, I will summarize their presentations, selecting the points most salient to me, and propose some rather simple-minded suggestions for the authors' consideration.

Mooney and Rives

The National Health Planning and Resources Development Act of 1974 (P.L. 93-641) mandates that Health Systems' Agencies (HSAs) assess the health status of residents of their planning areas; to satisfy this mandate, they must be able to measure health status empirically. However, at least two major barriers to empirical measurement exist: 1) The dimensions of health status are not specified, and 2) Since data-collection activities of HSAs are necessarily restricted, measurements will have to be made with routinely available data. This paper examines six possibilities or approaches to identify the dimensions of community health status characterized as feasible and/or practical for HSAs.

These are:

1. Use mortality data to summarize the risk of dying.

2. Use mortality data to infer morbidity.

3. Use morbidity data to measure incidence and prevalence.

4. Use utilization and treatment data to infer morbidity from specific conditions and/or in selected population segments.

 Use uni-dimensional indicators to represent the multi-dimensional concept of health status.
Use synthetic measures of health status.

The pros and cons of each approach are reviewed very competently by these authors and their conclusion is that none by itself does the entire job. Therefore Mooney and Rives suggest the promulgation, in the near future, of a minimum basic set of health status measures, i.e., a national standard involving appropriate definitions, uniform data sources, and standard methods of computation for a variety of measures. Presumably each would be derived from available data. Some would be calculated for all HSAs, some not, but all would be comparable across areas.

They suggest also paying particular attention to synthetic estimation, a technique for using national data to make sub-national estimates, at the same time that they caution about the hazards inherent in its use. Finally, they suggest that the construction of social indicator models at the county or HSA level for the measurement of health status is a desirable long-run objective.

1/ Anne Mooney and Norfleet W. Rives, Jr., Indicators of Community Health Status for Health Planning.

2/ Timothy D. Hogan and Lee R. McPheters, Economic and Environmental Determinants of Urban Mortality. Overall, this paper very competently illuminates the framework within which HSAs will necessarily have to operate, and in so doing it makes a real contribution by synthesizing knowledge in this currently very salient area.

If one single, most important, suggestion may be made, it is this: I would have liked some greater recognition that health status today, in response to changing health problems, is best considered as multi-dimensional, including both the quantity and quality of life and, under quality, physical, mental or emotional, and social well-being. The implication is that the authors' review of problems facing HSAs in developing indicators of community health status provides too little discussion of the dilemma that, even as social well-being increases in importance relative to other dimensions of health status, HSAs are nevertheless unlikely to measure it. This is in part because the technology does not as yet exist, in part because the health field lags widely behind some social science investigators in recognizing that social well-being is today properly a component of health, but also because the organizational structures of the health and social welfare fields remain largely separate and distinct, reflecting the development of separate professions to deal with the major problems of man-physical, mental, social (and moral) - rather than one profession treating him as a whole human being.

By thus omitting measurement of social well-being, HSAs will omit measuring an important dimension of health status, and one not necessarily highly correlated with other dimensions. As a consequence, if this continues long enough, their partial definitions may become "frozen", i.e., locked into the process of health status measurement, and the field may be set back substantially; alternatively, measurements under the limited definition may subsequently require substantial revision, thus making them less than optimally useful. Planning meanwhile on the basis of this partial definition is sure to be correspondingly inadequate.

Perhaps one other point may be made, underscoring what the authors have said. One of the most frustrating experiences is to be told that some aspect of life-health, intelligence, socioeconomic status, etc.—is so complex that no single definition or measurement is adequate in capturing it. Yet our investment to improve or at least maintain it, e.g., health, is enormous, and costbenefit analysis and/or planning cannot proceed optimally without some measurement. The pressure to aggregate into a single, summary measure will properly be enormous, but it isn't clear how HSAs will derive this measure. Imperfect measures will be employed, perhaps differing among HSAs, and these may even be empirically quite useful. At the same time, work on the theoretical aspects of the measure will continue. The parallel to developments in measurement of intelligence are obvious.

Hogan and McPheters

The second paper examines the influence of

urbanization on age-adjusted mortality rates for the 64 largest U.S. SMSAs for 1970. Using an econometric model, the authors test also for the influence of population density, income level, housing conditions, air quality, and health services' expenditures on mortality for blacks and whites separately. A principal components' analysis prior to the use of two regression equations reduces 29 original variables to nine factors.

The authors find that for whites the most important determinant of mortality is their measure of suburbanization, a construct including low population density, low housing dilapidation, high median education, and a high proportion of owner-occupied housing. This construct is negatively related to mortality.

Their second most important determinant of white mortality is their construct measuring general urban character, with a negative sign, suggesting that newer, rapidly growing SMSAs may have a more favorable mortality in spite of the high motor-vehicle density characteristic of these cities. The following three factors were also found to be significant: medical facilities, with a positive sign, perhaps indicating only that high mortality areas require a large stock of medical facilities; non-labor or property income, negative sign, indicating that increases in income may be beneficial to longevity if not directly leading to additional stress; and pollution, positive sign, detrimental to health. Not significant, at the .05 level, were economic level, health services, and unemployment.

Results for black mortality are substantially weaker than for white. The most significant variable here is the factor highly correlated with proportion of population above the poverty level, suggesting that mortality gains from increasing affluence are still accruing to blacks, not so for whites. Also for blacks, the health care services' index was significant, and again not so for whites.

Intuitively the results make considerable sense. Nevertheless, as in so many analyses of this type, and especially here where principal components' analysis and econometric models are used, the results often seem forced. For example, some of the factors, combining quite unlike items, represent "artificial" constructs. possibly a consequence of the aggregate nature and crudeness of the original data on which they are based. The logic of their combination seems strained. As a consequence, even though the results make intuitive sense, policy implications should be drawn only with considerable care. This is particularly true of the conclusion that, for the reduction of white mortality, "effects should be concentrated away from the traditional medical approach toward broader life-style modification", while for blacks "continued emphasis on improved medical care and increased availability....would have significant impact on health status".

Data analyzed by me suggest that advances in medical technology in recent years have had a significant impact on heart disease and cancer. We see this in the reduction in recent years in overall mortality rates, but especially in the mortality rates from these two major diseases, while the end is, hopefully, not yet in sight. Much further work is clearly indicated, especially on socio-economic differentials in mortality within the major metropolitan areas and on differentials among central cities, suburbs, and nonmetropolitan areas especially by cause-of-death, age, race, and sex. Planning will proceed by identifying these differentials and their causes, and by locating the pockets of excess mortality and their causes.