WHY HEALTH INDICATORS

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The perspective of this paper is the use of health indicators in the context of policy formulation and decision-making, with particular reference to the U. S. Government experience. I leave to others the important technical issues involved in the generation and use of health indicators. This policy perspective will not emphasize those valid motivations for health indicators that are related to long-range research objectives or man's innate curiosity. If the pursuit of social research were the main motivation for developing health indicators, I suspect that the course and pace of their development might be quite different. This paper also considers policy formulation in its entirety, including the political process. This carries beyond the domain of many policy analysts who consider their task completed when rational alternatives have been presented to the decision-makers. I believe that the scope of this perspective is important since no discussion of why health indicators are desirable is complete without including the political dimension of decision-making. If health indicators are to have a real role in affecting decisions, they must be a factor in the final formulation or re-formulation of policy, not just in the presentation of the issues.

Let us start then with the basic question of why the policy maker or manager should be interested in supporting the development and use of health indicators. From the perspective of the policy maker, we should accept Kenneth Land's definition of a social indicator which emphasizes "that the criterion for classifying a social statistic as a social indicator is its informative value which derives from its empirically verified nexus in a conceptualization of a social process." 1/ The policy maker's conceptualization is based on his defined responsibilities. He will be interested in data to the extent that he can perceive that data as helping him to carry out these responsibilities. He therefore looks for data that will be useful in predicting the future course of events, in assessing the impact of policy alternatives, in justifying a decision to others who must approve, and in evaluating the results of those decisions over time. All of these uses press him toward a concern for measurement of output and establishing a cause and effect between inputs and that measurable output.

This ideal statement of policy maker's concerns, however, is usually modified substantially amidst the pressures for immediate decisions based on very imperfect information. The recognition by both government officials and social scientists that decisions are too little informed by relevant data has led in recent years to a rising interest in the development of social indicators. Often the economic policy arena is cited as an example to be emulated. One specific example of this interest was the effort of the Department of Health, Education, and Welfare several years ago to develop a social report. That effort had very limited success, but the potential usefulness was described as follows:

"A social report with a set of social indicators could not only satisfy our curiosity about how well we are doing, but it could also improve public policy making in at least two ways. First, it could give social problems more visibility and thus make possible more informed judgments about national priorities. Second, by providing insight into how different measures of national well-being are changing, it might ultimately make possible a better evaluation of what public programs are accomplishing." 2/

The field of health is a particular case of this general interest, and the pressures to better inform the health policy process are steadily growing. I believe that most policy makers now view health as one of the desirable end results of the society, not just as an intermediate contributor to other social ends such as economic prosperity. This view of health, however, is usually a general feeling rather than a quantifiable definition. The realization of how ill-defined the objective is becomes one of the strong motivations for the policy maker's interest in health indicators.

There is a recent urgency in the policy maker's desire for quantifiable indicators of health, direct or indirect. This heightened concern results from a change towards interventionist public policies in the health field. How health services are organized, financed, and distributed, the impact of environmental and social factors on health, and our understanding of disease processes and their cures have all become specific public policy concerns in recent years. The fact that deficits exist in the health data now recognized as necessary for sound decision making, should come as no surprise when we consider how recent is this intensity of public interest in health policies. Prior to the last ten

to twenty years, the narrow scope of public responsibilities generated relatively little demand for policy-relevant health data. Without that need to know, there was insufficient motivation to incur the costs associated with requiring relevant information and to overcome those political pressures which often make a virtue out of not knowing. Some concern for public policies affecting health existed for many years, especially in the control of communicable disease, the support of medical research, and some limited concerns about safety and environmental hazards. However, dramatic changes in public policy took place during the middle 1960's. Some illustrative highlights are: the community mental health centers program; Medicare and Medicaid; the establishment of neighborhood health centers focused on the poor; organized comprehensive health services for mothers and children; regional medical programs to combat heart disease, cancer, and stroke; comprehensive health planning; and the establishment of the National Center for Health Services Research and Development. This was a period of identifying deficits in the health of the nation and of high expectations that those deficits could be overcome by explicit public action.

It is instructive to look at the use of health data during that period of rapid policy formulation. Data was used extensively in the justification of the new health service programs that I have mentioned, including much use of data on morbidity and mortality from the National Health Survey and the Vital Statistics System. That such data existed at all is due to the foresight of those health data gatherers who anticipated the desires of policy makers and the changes in the political and social climate which permitted legislative action. To cite just a few examples of the use of data in identifying problems:

-- the higher infant mortality rates in areas of concentration of poor people;

-- higher morbidity rates among the poor for many diseases;

-- lower utilization of services by lower income groups;

-- the rising toll of deaths from heart disease, cancer, and stroke;

-- the burden of health care costs for the elderly.

The use of extensive data in justifying these actions breeds a future demand for more data and for a refinement of that data. Once interventions have been undertaken the pressures to document results, to indicate quantitative changes in identified social problems, and to create at least the perception of success or failure is inevitable. The data has now become the currency of the policy and political process, and the need to allocate scarce resources and justify policy decisions focuses attention on the data and forges them into indicators.

A precursor of this demand for more data was passage of Comprehensive Health Planning legislation in 1966 and broadened authority for health services research in 1967. These actions were concrete expressions of faith that data and analysis could help bring solutions to health problems, but an important effect of implementing these programs was to reveal the inadequacies of current data sources and to increase further the policy maker's appetite for relevant information about the nation's health.

If this is a reasonable historical description of the rise in interest in health indicators, what is the nature of that heightened interest likely to be? First, there will be a demand for specific indicators that are relevant to the social values singled out in the policy process. This demand may not be for a balanced view or even place much emphasis on the technical soundness of the data. The demand may even be quite unreasonable in its expectation that those designing data-gathering instruments anticipate the interest of the policy makers. The strength of the policy maker's interests may also lead to intervention in the actual nature of the indicators. For example, the strong public concern over the nutritional status of the American population led to an allocation of always scarce statistical resources to the inclusion of additional nutritional data in the health examination survey.

The strengthened interest of the policy maker also presses toward a definition of quantifiable output data. The competition for public resource inputs leads to continued pressures to define output measures and to relate the input to the output. Since I believe that health is increasingly defined as a social end in itself, resource allocations should reward those programs which, over time, are more successful in defining measurable outputs and the relationship of input to output. That conclusion may appear naïvely optimistic, but my observation of the policy and the political process indicates that a good output indicator, such as a reduction in infant mortality or the restoration of normal functions, will eventually overcome rhetorical justification of the desirability of an input,

such as more hospital beds or more health manpower, especially as ultimate resource limitations are perceived more sharply.

Another effect of the policy maker's interest in health indicators will be a strong pressure for simplicity and the ability to explain the meaning of the indicator to a person not trained in statistics or mathematics. Since I have already indicated the willingness of policy makers to intervene in the nature of data gathering processes, the virtue of simple explanation deserves attention among those who are developing health indicators.

The policy maker will also exert strong pressure for timeliness and fine-grained geographic detail in the health indicator. The policy maker is likely to be willing to trade off precision for timeliness, and the local variations in this diverse country make the ability to provide geographic comparisons a highly desired data characteristic. The strength of both of these concerns grows with the specificity of the policy intervention to overcome deficits in health services and the need to relate effect to that cause.

The policy maker's interest in the use of health indicators also leads to a growing tension between knowing and doing. After the success of using indicator data to identify problems and to justify new actions, there is a growing frustration not only with the seeming lack of results from many of these interventions but also with the difficulties in developing more refined indicators of output. Those difficulties were acknowledged by those involved in the very limited effort within HEW to develop a social report. 3/ The recent strong advocacy of well-designed social experiments as the basis for policy formation by such knowledgeable persons as Alice Rivlin would seem to be a reflection of this frustration and an expression of doubt that social indicators of sufficient precision can be developed to be the sole guides of public action. 4/ Such deliberate social experimentation is unlikely to bring a halt to wide-scale social action decisions until the results of the experiments are in. For example, the recent OEO contract to the Rand Corporation for a carefully designed experiment of consumer response to different configurations of health insurance will not delay the legislative action on some form of national health insurance. However, such social experiments may play an important role in defining and refining relevant measures of output by establishing clearer understanding of cause and effect. Both social experiments focused on a limited population and improved health indicators giving information about changes in the entire population should contribute to the development of what Donald T. Campbell has called, "the experimenting society." 5/ The policy maker is not afforded the luxury of a choice between knowing and doing. He must act, usually on the basis of very imperfect information, but the more he acts and is judged for those actions, the more he will come to demand information both prior to decisions and as a feedback on the results. Enthusiasm and firm belief can carry him a long way but the increasing level of frustration about the results of public actions and the considerable disillusionment with earlier attempts to make decision-making more rational are often attributed to the lack of relevant and timely information.

All of these pressures from the policy makers can be viewed by those responsible for generating health indicators as the price of success. As data is used in the policy process, decisions about the generation of that data increasingly become policy decisions rather than purely statistical decisions. Some of these policy decisions will involve compromise, including pressures to leap ahead of sound statistical methodology. As statistical indicators become linked to specific policy and managerial decisions, we will have to learn to cope with open policy and political debate over the desirability of changes in statistical series, a debate which may often pay little attention to methodological arguments and concentrate instead on the policy impact of changes in the indicator numbers.

In spite of this view that the policy maker's interest in health indicators is not an unmixed blessing, I would strongly advocate that these prices of policy relevance be paid and that the pursuit of the development of health indicators be vigorously pursued. The policy process is too often ill-informed, and the crucial role of the political process in adjudicating value conflict is often confused and diluted by the lack of sound descriptive information. These are the vital roles that health indicators must play in the policy process:

First, health indicators are useful in identifying problems, both in terms of health status and in the use of resources. Existing health data has been used extensively by policy makers for this purpose.

Secondly, health indicators can be used to monitor changes over time. This information is often useful to the policy maker whether or not he can attribute cause to the change. For example, if objective measures of nutritional status improve, especially if there is a lessen-

ing in the differences among population groups, that information is useful to the policy maker per se.

A third function for health indicators is to provide a context for the evaluation of operational statistics. There is a clear trend toward more explicit planning, regulation, and management of health services and other health related activities. Most of these activities will generate operating statistics upon which important decisions are based. But operating statistics are too narrow an information base for many types of decisions. The decision maker often needs to compare operating statistics concerning particular program beneficiaries with patterns for the population as a whole. For example, the operator of the health care program providing comprehensive services should be interested in whether the patterns of disease incidence or mortality in the population being served by his program vary from those same characteristics in the whole population for that geographic area.

Another important function of health indicators is to put pressure on policy makers to refine the objectives of their programs in terms which can be related to expected outcomes. It is easy to underestimate the difficulty of this task, both technically and in terms of organizational behavior. But the increasing use of health indicators by policy makers, often in adversary positions during the political process, creates strong pressures to justify the performance of programs in terms of outcomes. Many decisions will continue to be made in terms of inputs, but we should stress the need to specify the assumed models of cause and effect which transform inputs into outputs. Without the availability of appropriate health indicators, we have little basis to press for specification in these models of transformation. Land has referred to the specification of these models as "the major unsolved problems in social indicators." 6/

A further role of health indicators is to contribute to the evaluation of the effectiveness of particular programs or policies. Program evaluation is often cited as a reason for health indicators. However, it should be noted that unless the specification of objectives, which I have just discussed, has taken place, the link of health indicators to program evaluation will be much more difficult. Indeed, it is unlikely that general health indicators alone can be the basis for determinant program evaluation. But health indicators should provide invaluable assistance in designing the program evaluation studies by providing clues to cause and effect relationships.

I believe that much can be achieved by continued improvements in the current types of health data. However, it is clear that the development of an index of health that can be used as a common output measure will be highly desirable for some kinds of decision-making. An index will make explicit the value weighting of different types of indicators and will further focus policy debate on results in terms of health as an ultimate objective of the society. The development of a health index is also a methodological necessity in applying certain rational techniques of resource allocation. The index clarifies the imperative for difficult choices amidst the strong advocacy for various health programs. The work of Fanshel, Bush and others shows excellent progress in this direction. 7/ The development of a health index now needs to be subjected to the heat of the policy process, especially since such an index will only be accepted by the policy makers if they understand the values contained within it.

Finally, at this stage of major public debate on future health policies, a fundamental usefulness of health indicators is to focus that debate on changes in health status, or at least on such social goals as equity of access, rather than just inputs and costs. To the extent that we can define health status indicators and the relationship of our actions to those indicators, we will not only shape the nature of the public debate but we may have profound impact on the way policy decisions are made and on the actual conduct of medical care and other health related activities. There is a curious and disturbing dichotomy in much of the current discussion of health policy. Many of the important policy decisions focus on cost, utilization, distribution of resources, and concerns about efficiency. These concerns are prominent in the current debate over national health insurance and health maintenance organizations. But much of the actual performance in the health care system is focused on concerns about quality and effectiveness. In fact, health care providers are strongly criticized for a lack of cost consciousness or conern with the efficient use of resources. There is clearly a gap of understanding and action -- a gap often filled with ideological debate.

I believe that this gap should be filled by wider use of health indicators in policy formulation, planning, regulation, and management of health activities. Much of the efficiency debate is empty without an agreed upon measure of output unless one adopts a totally nihilistic attitude about the effectiveness of health services. On the other hand, health pro-

viders often show too little concern for the use of resources as they pursue the goal of effectiveness, and indeed there is often little concern for true measures of effectiveness in terms of changes in health status. A. L. Cochrane has dealt with this lack of relationship between efficiency and effectiveness in health care in his recent book and he concludes with an assessment that there is too little use of scientific evidence in the operation of the British health service, causing much wastage of resources and deficits in effectiveness. 8/ That conclusion is certainly transferable to the U. S. health care system. While Cochrane places his hopes on increased use of randomized control trials, I believe that better use of health indicators in the development of a health index could move us strongly in the same direction.

Unless we emphasize output indicators, we will continue to have attempts to limit cost per se, with very unequal results. We need more precision and rigor in our decisions, based on evidence, and an increase in policy debates on the nature of that evidence. Only in this direction lies progress.

1/ Land, Kenneth C., "On the definition of social indicators," The American Sociologist, Vol. 6, November, 1971, p. 323.

2/ U.S. Department of Health, Education, and Welfare, Toward a Social Report, Washington, 1969, p. xii.

3/ Ibid., p. xiv.

4/ Rivlin, Alice M., Systematic Thinking for Social Action, The Brookings Institution, Washington, 1971.

5/ Campbell, Donald T., "Critical problems in the evaluation of social programs," a paper prepared for the annual meeting of the Division of Behavioral Sciences, May 19, 1972, processed, p. 39.

6/ Land, op. cit.

7/ Fanshel, Sol and J. W. Bush, "A health-status index and its application to health-services outcomes," Operations Research, Vol. 18, Nov.-Dec. 1970, pp. 1021-1066.

8/ Cochrane, A. L., Effectiveness and Efficiency, The Nuffield Provincial Hospitals Trust, London, 1972.