

## GLOBAL PERSPECTIVES IN HEALTH

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## Summary

Health represents more than merely the absence of disease. It is a multi-dimensional concept, in which “physical, mental, and social well-being” need to fit harmoniously within the global ecosystem.

This article discusses major concepts and topics in health, with special emphasis on quantitative perspectives and interdependence between health and related sectors. Essential issues are grouped in a separate section entitled “synopsis,” which constitutes a synthesis of the contributions to be expounded in EOLSS on-line.

## 1. Introduction

It is widely recognized that health is more than the absence of disease: it is a state of “complete physical and mental well-being,” experienced by disease-free people living in harmony with their environment and with one another. This concept promotes to authorities and the public the understanding that health is not something that can be achieved exclusively by the traditional health services; it is profoundly influenced by the conditions of life. The value of this interpretation lies in its vision of a long-term objective whose successful achievement depends largely on advances beyond the control of health administrations: elimination of poverty, universal education, full and rewarding employment, and avoidance of destruction by war.

This article is an overview of concepts and major topics in health, with emphasis on global perspectives. Given the largely subjective nature of health, special attention is given to alternative approaches for measuring it. Measurement plays a major role in medicine, as indicated by the armory of diagnostic methods now available. In public health and health services research, too, measurement techniques are widely used.

Health care management, from primary to tertiary care, relies on a large volume of information. In most cases this is derived from measurement of service structure and process, if not of patient outcomes. A distinct section in this essay, the “synopsis,” is devoted to a discussion of the essential health issues that constitute the main body of the health theme.

The World Health Organization (WHO) is a leading player in the field. It is made up of nearly 200 member states and is ruled by a World Health Assembly, which determines the policies of the Organization, elects the Director-General, and reviews and approves the proposed program budget. It also considers reports of its Executive Board, which it instructs on matters which require further action, study, and reporting. The WHO Secretariat is staffed by some 3,500 experts and support staff working at headquarters in Geneva, in six regional offices, and in member states.

Following traditional practice in medical literature, male gender words are used throughout this article to cover both sexes.

## 2. Definitions and Concepts

Health, like happiness, cannot be defined in exact measurable terms because its presence is so largely a matter of subjective judgment. About as precise as one can get is to state that health is a relative affair that represents the degree to which an individual can operate with effectiveness within the particular circumstances of his heredity, and his physical and cultural environment. Definitions that embrace the concept of “the absence of disease” in reality are misleading, for all living things are “diseased.” Our crops, our lawns, our household pets, and ourselves – even our microbes are themselves diseased with still smaller microbes, the bacteriophages. As a concept, therefore, a disease-free society would be biologically unreal, and hence hardly something to be set as a goal. It is a realizable goal, however, to modify significantly the pattern of disease

within a society, and certain disease patterns are clearly preferable to others. “For disease is measurable, and to a surprising extent in any society the particular disease pattern that is present is a reflection of the overall forces we set up or tolerate” (W. McDermott, in: “Human Ecology and Human Disease”; *Human Ecology and Public Health*, Macmillan, 1969).

J. Last (2001) prefers the notion of “sustainable health,” which he defines as “a sustainable state of equilibrium among humans and other living things with which we share the earth.” In this perspective equilibrium, or “harmony,” is considered to be the critical concept, while cultural elements and belief systems are also essential features of this description of health. In essence, there is general agreement that health is a multi-dimensional and complex, value-weighted concept, which should not be reduced to the simple notion of absence of specific diseases.

### **3. Critical questions in health**

It is necessary to address three major questions. Which factors determine health? How should we care for health? And what is the global outlook for health?

#### **3.1. Factors that determine health**

Last (2001) recalls that the word “determinants” is widely used to “cover the many varieties of factors that can influence individual and population health.” He argues that purists might find “influences on health” a more acceptable term. Individual and population health is influenced by physical, biological, behavioral, social, and cultural factors. Most of these factors are discussed in more detail in a subsequent part of this essay.

#### **3.2. How to care for health**

Health services are designed to promote and protect health, as well as to correct health impairments. Public health services are managed by public administrations, whereas personal health care services are usually privately run, or supported by insurance or tax-linked programs. It is customary to distinguish three levels of care: primary, secondary, and tertiary (see section 6, below).

#### **3.3. Global health outlook**

Given the importance of economic, environmental, and socio-cultural determinants, health is a sector where global interdependence is particularly evident. Furthermore, advances in science and technology are bound to influence current and future health status, and help determine the rate at which health problems can be resolved at local, regional, and global levels. Such issues deserve special attention (section 6).

### **4. The measurement of health**

It is now widely perceived that “health” involves many aspects beyond the simple presence or absence of overt or covert disease: well-being is relevant and has many dimensions; “health” is a complex concept. This perception complements the recognition that the health of an individual is influenced by factors of a social, economic, and environmental nature. Correspondingly, measurements intended to illuminate health issues need to take account of these wider factors: potent non-health sector variables must enter consideration. There is little argument that income, education, economic pressures, unemployment, poor housing, and poverty itself all have significant consequences for health, although interactions between health and non-health sector variables may occur in an unpredictable way. In the context of monitoring health, since it is necessary to monitor all factors that affect health, it follows that changes and variables outside the health sector are a proper concern. Furthermore, with this expanded view of health determinants, it should be recognized that some problems may produce health impacts occurring in the future, rather than immediately: the effects of chemical pollution of soil or water, for example, or of the pollution of fatty tissue in fish. In short, monitoring of non-health sector variables and indices should be both prospective and pro-active.

The complexity of health also needs to be regarded from another perspective. The concept of “well-being” – positive health – does not stand alone but coexists with ideas of disease, which are changing. The meaning of disease is also being re-thought, and the idea that health is merely equivalent to the absence of disease is no longer acceptable. Even the accepted WHO definition is far from adequate. Health also carries the implication of an element of “protection”: against the effects of elements that might initiate pathological changes, reduce resistance against morbidity, or reduce capability to cope with stressor situations or other causes of illness. But even these factors are, again, only one component of what is implied by “health.”

#### **4.1. The concept of “health”**

As an individual concept, distinct from that of the “health sector,” “health” itself is not readily definable, although it might be possible to identify bounds to the “health” concept. In any useful sense, “health” – even from a simplified viewpoint – forms a continuum of states from “bad” to “good,” concerns many elements simultaneously, and can be regarded in a variety of ways. It might be viewed as a family of concepts, drawing upon such ideas as clinical definitions and the presence or absence of “disease”; or in “somatic” terms; or as an epidemiological probabilistic model focused on risk prevention; or in systemic terms looking at health support services; or alternatively with a social focus; and so on. In short, our concepts of health must:

- integrate ideas of well-being, functionality, and resistance to disease
- encompass the origins of disease, and the risk factors associated with it
- be regarded in molecular, clinical, or social (in other words, community or public health) terms
- take account of what is regarded as “health” and “ill-health” in the culture concerned, along with other socio-economic and political viewpoints.

Developing this concept involves understanding the pathways that link outcome back to risk factors, and exposure to trauma or pathological agents. It embodies description, explanation, ideas of well-being, behavior patterns, and culture. It involves the structure of health care services, and the nature, accessibility, and efficacy of the services they provide. It also involves national policies related to the provision of health care services. Consequently, the term “health” is used here to mean “the health sector,” or the “field of health,” except where it is explicitly restricted to a specific meaning.

Considering this situation in theoretical terms it is useful to regard health as a conceptual “object,” integrating the components mentioned above: in short, as a *health–disease–care integral*. This “object” has the properties of mapping the different elements and representing disease: for instance, as epidemiological structures, chains of causation, or relationships of risk generation, thus taking account of epidemiological, clinical, and social facets.

#### **4.2. Measurement and decision-making**

Decision-makers planning interventions to support health development need to take account of the wider influences on health, and to be aware of the possible long-term, time-dependent consequences on whatever is targeted, and on related variables. In addition, interactions are not always simply two-way processes of cause and effect: interventions within the health sector may have consequences in non-health sectors.

Information is the basis upon which judgments and decisions are – or should be – made. The value of information, including information obtained from “measurements,” depends on how much it improves decision-making. “Measurement of health” is bound up with the issue of allocating “resources for health”; ineffective distribution of resources vitiates effort expended in obtaining the measurements on which decisions were made. Equally, if no action can be taken, then the information obtained by “measuring” is of no immediate value.

The answer to “why measure?” is therefore, in the first instance, to support decision-making. This, in turn, calls for monitoring of “health status” to assess the progress of health development actions, to identify relationships affecting health, in order to plan useful interventions and reduce the risk of unexpected consequences, and to help focus research effort.

Attempts to improve the use of information and knowledge in medical care have led to the current trend of promoting more “evidence-based” medicine. It is important to question to what extent health policy making can also be made more evidence-based. In medicine the term implies the use of information obtained from rigorous studies, ideally based on randomized clinical trials. When available, information from these studies can be valuable in improving the quality of health policy making. Viewing the situation globally, however, the information that can be obtained directly from clinical trials represents far less than even the tip of the iceberg. From this perspective it is clear that, as a rule, health policy making is far from being truly evidence-based, even in countries with the most developed systems for collection, analysis, and diffusion of health data

and information. The opportunities for scientifically based real-life trials of particular policies are obviously limited although, if sufficient information and understanding were to become available, the prospects for modeling and trial simulations might eventually improve. At the very least, the possibility exists of collecting and utilizing appropriate health information for policy making.

### 4.3. The concept of the indicator

When a required assessment of some aspect of health cannot be made directly or indirectly by measurement, there may be a role for an *indicator*. This applies most forcefully when what is to be assessed is “conceptual,” rather than “concrete.” An example of the former is “access to health care services”; an example of the latter is “frequency of road traffic accidents.” The former is a concept that might be assessed in terms of the practicability of visiting a primary health care clinic, say, taking into account the travel time/distance between dwelling and clinic, the frequency of health personnel attendance at the clinic, and perhaps also the cost of services. The latter is a variable, obtained indirectly by calculation as an explicit numerical value. On the other hand, road traffic accident frequency might be used not as a variable, but as an indicator itself: for example, of levels of community adherence to social regulation. This illustrates that an indicator is defined by its use, not by its structure. Another example is infant mortality, which can be used as an indicator of infant health within the age group in a direct way, or as an indicator of the supply of health services. As can be seen when the question arises of what to do about any situation thus indicated, the latter cannot offer an adequate picture of where a need for development in health care services is most acute. For that purpose, a group of such indicators would be necessary. Again, it is the *use* of the indicator that defines its nature and value.

Indicators have been categorized in a variety of ways, and it is convenient to class them as “tactical” or “strategic.” *Tactical indicators* are intended to assess something quite specific that is not directly measurable. “Life expectancy with disability” is an example of a tactical indicator. This concerns a quite specific concept that does not, however, exist as a concrete variable; it must be calculated from indirect data, using simple assumptions. *Strategic indicators* are intended to express more complex relationships involving the operation of, and perhaps interaction between, more than one factor. As such, they often involve a hierarchical structure that draws upon inputs from a variety of sources, and may be multi-dimensional. The purpose of strategic indicators is to allow or support decision-making addressed at solving a problem: it is the requirements of decision-making that define the need for strategic indicators.

When there is intent to intervene to promote health development, two types of decision-making can be recognized: where to put resources, and what intervention is appropriate. The former issue is linked to priority setting. The latter needs to take account of any problems likely to be met and the possible consequences, both short-term and long-term, of any action considered: these consequences may also involve matters outside the immediate “target area.” Identifying these consequences in a systematic way requires access to a model of the system in which intervention is planned. Such a model can only be developed by careful analysis of many relevant variables.

Strategic indicators should not only address the problem: they should also provide information on the basis on which appropriate actions can be identified. “Health status rank of the elderly” is an example of a strategic indicator (discussed in section 5). However simply it might be categorized – perhaps using general quality terms such as poor, fair, or good – behind these general descriptors lie a series of factors, including functionality, clinical status, stability, nutritional reserves, the culture of family or society support, and family circumstances, which combine and interact to produce good or poor health status in the elderly. In this situation, the strategic indicator should serve as a (perhaps simplified) pointer to the parameter under study (for example, health status), drawing upon inputs in various parts of the system in order to construct the parameter. Because it does so, and because of its multi-dimensional nature, it should also be designed to be linked to the system model, and so help to indicate various consequential results of the proposed intervention. In this sense, a complex strategic indicator can itself serve as a model of the way the various relevant factors are judged, by the designer, to create the parameter sought. Equally importantly, in using a strategic indicator it must be possible to track back through the contributory pathways to the various primary elements that are responsible for the value assumed by the indicator, in order to understand the potential of intervention.

A designer’s perception of the various elements of a strategic indicator, or of the model it represents, is linked to his understanding of its structure. In the complex world of health policy, “modeling” implies assumption, inference, and interpretation. This shows that there is a need for cognitive analysis in devising the indicator. It also shows that there is a need to appreciate the implicit “knowledge” held by the designer, some of which cannot be expressed in numerical terms. Therefore, major opportunities can be recognized for capitalizing on expert knowledge and perceptions in describing aspects of health. Indeed, it may be suggested that research on “knowledge-based” indicators is a top priority for developing new indicators.

Strategic indicators are often composites, representing either multi-component or multi-dimensional (multiple profile) constructs. Multi-component indicators result from the aggregation of similar types of data into a single number. Multiple profile indicators combine elements of different kinds that cannot simply be aggregated; the separate identity of the contributory elements must be maintained as separate “dimensions” of the indicator. Naturally, this raises the difficult problem of handling, displaying, and interpreting an indicator that is structured in this way. New thought is needed on this problem, but the research community has suggested some imaginative solutions.

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## Biographical Sketch

**Dr. Boutros-Pierre Mansourian** is a medical graduate from the Universities of Cairo and Lausanne. He pursued his postgraduate training in the University of London (biomedical engineering, neurophysiology, and epidemiology) before joining WHO in 1969, with the Division of Research in Epidemiology and Communication Science. A few years later he was appointed to the Office of Science and Technology, an advisory unit to the Director General. He continued with that office (subsequently renamed Research, Promotion, and Development), serving as its Director from 1994 until retirement (1998). He published original work in a wide range of fields including neurophysiology, medical informatics, systems analysis (transfer function of the vestibulo-ocular control system), and epidemiology (digital filters and pattern recognition techniques in epidemiological variables). He served as Secretary of WHO's Advisory Committee on Health Research, and participated closely with that body in the formulation of research strategies and policy principles for the Organization during the 1980s and 1990s. In his co-ordinating roles he has been instrumental in promoting new methodologies such as remote sensing, systems modeling, and artificial intelligence in various WHO programmes.

Dr Mansourian is an elected member of the US Institute of Electrical and Electronics Engineers (1968), the Belgian Royal Academy of Overseas Sciences (1998), and the City and Guilds of London Institute (1999). He is also a member of the Royal Society of Medicine, the New York Academy of Sciences, the American Public Health Association, and the International Epidemiological Association.