

Pan American Health Organization

PAHO/ACMR 17/31
Original: Portuguese

SEVENTEENTH MEETING OF THE
PAHO ADVISORY COMMITTEE ON MEDICAL RESEARCH

Lima, Peru
2-5 May 1978



STANDARDS OF EFFECTIVENESS AND EFFICIENCY

IN MEDICAL CARE

The issue of this document does not constitute formal publication. It should not be reviewed, abstracted or quoted without the consent of the Pan American Health Organization. The authors alone are responsible for statements expressed in signed papers.

STANDARDS OF EFFECTIVENESS AND EFFICIENCY
IN MEDICAL CARE*

If we are to be able to discuss questions of effectiveness and efficiency in medical care, it is essential that we first attempt to define their field of application as well as to clarify our own understanding of these terms. Medical care involves everything from diagnostic and curative procedures at the level of the individual to the complex ways in which health services are organized in a region or a country. The field of application of these notions assuredly implies modifications of this understanding. At the risk of over-simplification or unwarranted extrapolation, we shall attempt in this study to establish the different notions implicit in the field of application at only two levels, and to base our study on experience with the organization of medical care in Brazil.

Effectiveness and efficiency at the level of the individual

The first field in which these notions of efficiency and effectiveness may be considered is that of the level of the individual; that is, an attempt to examine the impact of specific medical and health measures on the biological plane, properly speaking. We shall deliberately avoid any attempt to evaluate such effects on the psychological and micro-social planes. Accordingly, we may agree with Cochrane⁽¹⁾ when he defines effectiveness of a diagnostic or therapeutic procedure in terms of its ability to make a positive alteration in the natural course of a disease, either by diminishing its lethal or reducing its incapacitating effects, or prolonging life. Efficiency is related to the way in which resources are organized for application of the procedure so that it becomes more economical.

*Prepared by Dr. Jose Carvalho de Noronha, Institute of Social Medicine, Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Brazil.

Effectiveness: Despite this simple and, we might even say, obvious nature of the notion presented, it is only in recent years that the medical profession has begun to display a more decided concern with this question. The clinical method has long predominated in the evaluation of therapeutic and diagnostic procedures, and drugs and surgical intervention have been proposed for certain illnesses based on "my clinical experience." The relatively recent discovery of random clinical testing, which still meets with considerable resistance among medical circles when it is a question of expanding its use, has only in the last years brought about any change in the traditional therapeutic procedures⁽¹⁾. Recent concern over the harmful effects of certain medical procedures⁽²⁾ has helped to reenforce the need for scientifically supported evaluation of both old and new health practices. Results of experimental testing of new drugs demand that controlled clinical tests be made before the drugs are authorized for general use. The obligation to prescribe medicine must give way to a critical evaluation of the benefits and the harm caused by a drug, and the indication of surgical intervention must be preceded by a balanced judgment of its suitability for the patient. Some results of research, as noted by Cochrane, such as that of the dubious effectiveness of oral hypoglycemic agents for the control of adult diabetics and the obese, or that of tonsillectomy, would appear to indicate the need for a thorough "house-cleaning" of the therapeutic arsenal available to the physician.

In Brazil at least a serious problem of therapeutic prescription, along with the use of drugs and surgical procedures of unproven effectiveness, arises from the application of certain procedures that may be effective in determined cases, because of extra-technical factors, in a general and indiscriminate manner.

The bombardment of advertising to which doctors are subjected (pharmaceutical laboratories in our country devote 25% of their budgets to advertising) makes it very difficult to arrive at a careful evaluation of a given prescription. Lack of laws regulating the publication of drug advertising and reports on their toxic effects (as, for example, is the case in the United States) lead to the proliferation in the specialized and mass media of stories on the absolutely harmless and almost miraculous effects of a great many drugs. Self-prescription of drugs, until only a short while ago freely sold over the counter (without a doctor's prescription) and now restricted only in a special category (vitamins, pain-killers and placebos), constitutes an additional source of therapeutic inefficacy as well ^{as} of enrichment for the pharmaceutical industry. As for the indication of surgical intervention, a classic example in our country is the epidemiology of Cessarean section, revealed in the study by Gentile de Mello⁽³⁾, in which the author proves the existence of percentages as high as 50 to 60% of births by this method. This is most probably a result of the way in which the professional fee for this type of procedure is handled in the hospitals utilized under contract by the Social Security System.

Determination of the effectiveness of therapeutic procedures, based on the use of random clinical testing, must be encouraged and extended to those traditional procedures that are not as yet proven effective, especially taking into account the pressures (as pointed out above) that must be considered, and, above all, when such procedures attain mass utilization.

Apart from the matter of drugs and surgical procedures, and given less attention in the specialized literature, Cochrane points out⁽¹⁾ certain therapeutic options that are more closely related to the "environment" for

treatment. That is, the organization of certain health services should be more carefully examined in connection with their therapeutic effectiveness. The example cited by Cochrane is the comparable effectiveness of treating patients with myocardial infarction in specialized Coronary Units, or in their homes. The risks associated with hospitalization should be weighed in recommending hospital treatment. The debates concerning over-specialization in medical practice as opposed to the general type of medical practice is beginning to reenforce the need for a more precise definition of effectiveness from the viewpoint of the ideal locale for treatment. For countries in process of development, such as Brazil, a choice of these alternatives could represent either a savings or a waste of vast amounts of resources. But we shall return to this point later. In much the same way that the pharmaceutical industry influences standards for prescription drugs, the evaluation must take into account the place of treatment and the impact of the medical equipment industry as a specific factor of this "extra-technical" nature.

Another aspect in the degree of effectiveness of medical care at the individual level that must be considered is the question of diagnostic methods and techniques. The deterioration of clinical symptomology in the face of new and powerful diagnostic tools is not unknown. Again Cochrane calls attention to the poor use of the statistical arsenal in determining the parameters of normality of many diagnostic methods (the so-called normal values), which lead to erroneous diagnoses and intervention that is unnecessary and at times harmful⁽¹⁸⁾. The risks associated with certain diagnostic procedures should not be discounted. There is an increasing need for meticulous research seeking to define the parameters of normality as those within which the possibilities of therapeutic intervention will bring more benefits than damages for the patient, and

establishing clear options for successive diagnostic steps that may be followed by adequate and effective treatment.

Up to this point we have avoided introducing into this discussion of effectiveness the question of the cost of each therapeutic or diagnostic option. Before turning to this consideration, it is necessary with regard to the notion of efficiency to emphasize the point that adoption of ineffective methods and procedures, especially for countries with rather limited resources, may result in serious prejudice. The option of hospital treatment, for example, which is considered falsely--or disproportionately--effective, implies higher investment of resources that will thus not be used in other sectors. The indiscriminate use of certain diagnostic examinations, such as chest x-ray, for example, also results in a waste of resources. To what point it is possible to disassociate one analysis from the other is questionable; however we shall do so for clarity of exposition.

Efficiency: The notion of efficiency at the level of the individual, for purposes of this study, implies a choice of diagnostic and therapeutic options that are proven effective from the biological standpoint, and that result more economical from the standpoint of utilization of resources. The most commonly cited example may be given as the choice of the less expensive of two drugs, having equal efficacy and side effects, in the treatment of a disease, or one more economical diagnostic method among others of equal reliability. Certain combinations of resources may be more economical than others for such things as an immunization program using intra-dermic BCG or emergency treatment. Although such questions would appear to be obvious, it is only in recent years (mainly, following World War II) that scientific knowledge has begun to be applied to administration in general, and even more

recently to health administration. Application of techniques such as systems analysis, critical path analysis, administration by objectives⁽⁴⁾ is not more than twenty years old. In Brazil, and specifically in the health field, efforts toward a careful examination of these questions are rare, if not non-existent. The need to hold down costs on the part of the governmental agencies, along with the need to maximize profits on the part of private enterprise, has imposed the necessity of applying such management methods in the developed countries, to an increasing extent. We shall see below that some extrapolation of these methods may be risked for the global levels. Meanwhile, we cannot deny their validity for the specific and concrete programs that will be examined below.

The work of Grundy and Reinke⁽⁴⁾ presents a good review of the methods that may be utilized for research in health practice. The use of operations research, simulation and construction of models, linear programming, functional analysis, etc., etc., are well documented and illustrated in that text.

We do not pretend here to review all of these methods and techniques, which would assuredly be beyond our competence and would be unduly lengthy. We shall attempt simply to touch on some of the difficulties with these methods and discuss the importance of their use in the Third World countries, specifically in Brazil.

There is no question that countries with limited resources must attempt to optimize use of such resources. At the micro-level this certainly means that the choice of techniques to attain a given objective must be rationalized to the greatest possible extent. The choice of techniques at the micro-level must be based, whenever possible, on the maximum knowledge available when the choice is made. As has been previously pointed out, it is also necessary that

the alternatives offered must be of equal efficacy, or that different standards of efficacy be taken into consideration. If we take as an example the organization of an ambulatory pediatric unit, applying the theory of queing, of simulation, will permit us to arrive at an ideal number of consultations, of doctors, of nurses, etc., but for this it is necessary that we have a careful evaluation of the comparable effectiveness of these elements. To select one element, let us take the duration of the medical interview: from the standpoint of the patient's health, is an interview averaging 20 minutes more effective than one that averages 10 minutes? If so, this would imply no less than the need to double the number of doctors and consultations. Normally, an average is taken of the consultations in effect and in this same example establish that the average pediatric consultation must be 10 minutes. However, if we were to take the customary duration of the consultations in our country, they could vary from 2 minutes (as is frequently the case in the emergency service in Rio de Janeiro) up to 40 minutes in a private doctor's office. The arbitrary nature of such evaluation is flagrant. In very specific circumstances, however, the degree of arbitrariness involved in such decisions may be minimal: for example, in programming mass inoculation for poliomyelitis.

Having in mind difficulties of this type, we must observe that procedures seeking to establish greater efficiency with the maximum precision, in the present state of knowledge on the subject, acquire great urgency, especially in the Third World countries.

An additional difficulty, of special importance for efficiency studies and, above all, for their application, has to do with the treatment of the question in terms of costs and especially when these involve expenditures for

personnel. There are two basic reasons for this: first, given the weight represented in the health sector by personnel costs (68% of the expenditures in the Brazilian public sector for the year 1969, according to Silva & Mahar);⁽⁵⁾ and, secondly, that such expenditures represent salaries. Consequently, the more economic alternative may simply mean lower salaries for the personnel in charge of these tasks, and we would then be entering onto ground not clearly scientific.

Finally, at the same micro-level, the question of technological options that we shall discuss below makes itself felt. It is an entirely different thing to analyze, assuming equal effectiveness and emphasizing this aspect, the best composition of resources for the treatment of patients suffering from infarctions in the Coronary Units than for the treatment of the same patients in their homes.

Effectiveness and Efficiency at the Level of the Collectivity

Even though certain links are maintained with what has been said above, discussions of notions of effectiveness and efficiency at the collective level raises questions of a different nature, that must be answered in a different manner. Effectiveness of medical care can no longer be considered as the ability to make a positive alteration in the course of a disease in the individual. Here, effectiveness must be evaluated as the ability of a program or of a given type of medical care organization to raise the level of health of the population. The existence of measures effective on the level of the individual does not necessarily mean their effectiveness on the level of the collectivity; and, further, the lack of effective therapeutic measures does not necessarily imply that extra-medical measures may not be effective on this collective level.

The example of tuberculosis, for which mortality rates registered a substantial decline before any effective therapeutic measure was known, is sufficiently convincing.⁽⁶⁾ Similarly, to evaluate the efficiency of medical care in terms of the collectivity means going beyond the field of administration and its techniques to reach the ground of great economic, social and political questions. When a nation devotes a part of its resources to medical care activities, this necessarily implies a smaller investment in other sectors that may have a more decisive impact on health. Given specific programs of equal effectiveness, the choice at the collective level begins to involve questions of technological options that immediately touch on strategies for economic and social development. Obviously, questions of such magnitude cannot be treated in a text of this nature and go far beyond the competence of the author. However, we shall attempt to pose some questions that we believe to be relevant.

Effectiveness: In the framework set forth above, the first point to be discussed on effectiveness at the level of the collectivity deals the understanding of the notion of improving the general level of health. For Third World countries that have large contingents of their populations living in the most precarious state of health and life, I believe this does not represent a great problem. While questions are already being raised in the industrialized countries on the need for new health indicators, for a definition of social well-being, of priority of medical "care" in relation to "cure" I firmly believe that the old health indicators, such as infant mortality, life expectancy at birth, mortality from infectious diseases, maternal mortality, etc., are still satisfactory: I believe that well-being may be measured in terms of better housing, access to education, opportunity for adequately compensated employment,

water supply and sewerage systems, clothing, etc., and that the notion of cure still carries the maximum priority among problems of the Third World. These questions are central to the debate on the effectiveness of medical care. Improving the health level, as a theory, does not therefore constitute any special problem to be resolved by these countries.

Having said this, one reservation should be noted: if, in fact, as Illich contends, "the medical industry menaces health" and "medical colonization of daily life alienates the means of care," it would be better that we call a halt to our work, or better still that we should never have begun it. All in all, I believe that the complaint of Illich should only be taken as a warning on the need for continuously examining and defining the scope of medical care measures, as we did at the beginning of this study. I believe that Navarro's critique, "The Industrialization of Fetishism,"⁽⁷⁾ puts these points in proper perspective.

Accordingly, I shall take as a point of departure the fact that the central question on effectiveness of medical care lies not so much in the "medical industry" in general terms, but rather in the types and ways that this "medical industry" is organized in concrete situations, in specific countries.

One further step is essential before we consider the question of effectiveness: an understanding of the more general mechanisms through which the society operates. I shall follow the outline suggested by Nell in his study, "The Revival of Political Economy,"⁽⁸⁾ (for a discussion on the explicatory superiority of this outline, the reader is referred to the text) Nell proposes that an examination of a capitalist society be based on the question of ownership

of the means of production, and the division of this society into classes. In simple terms, the pyramid of social hierarchy can be divided into two sections: "a small upper class of owners, and a large lower class of workers." The owners possess the industry and receive the profits; the workers work for industry and receive salaries or wages. The workers consume but do not save in this simplified model; the owners consume and save in order to invest... Labor is considered the only "factor of input" as the other inputs are produced by industry itself, which is assumed to have access to the land, mines, etc.... The net social product is traded for the Total Receipts and consists of all goods in excess of those necessary for replacement. These goods (for convenience) may be divided into necessities, luxury goods and new capital goods. Necessities go for consumption by workers, luxury goods for consumption by capitalists and capital goods are installed in the factories in lieu of investment payments." For purposes of the present discussion, I should like to extract from this outline the consumption differential between the two groups, the workers and the owners.

The next step is an attempt to examine the distribution of medical care in a dependent capitalist society and to identify the different ways in which it is organized for the two social classes. (It is important to keep in mind the deliberation reduction, for purposes of this analysis, of the examination to only two classes). Consumption of medical care by workers is based on the criterion of satisfying needs (reproduction of the labor force). Consumption by the owners is based on a criterion of luxury goods. For the workers, it is important that their reproduction be assured, that they are returned to the working force, that they avoid disability, that their future productivity

is assured. For the owners, it is a question of being assured of a continuously more comfortable life, according to their customary standard of consumption (of goods in general) and prolonging their lives. Accordingly, for the worker an effort is made to provide expeditious, prompt and effective medical care in terms of returning them to production; from the organizational aspect, this is preventive medicine. For owners, it is a question of providing careful, sophisticated medicine, effective from both the biological and psychological aspect; in organizational terms, this is private medicine (fee-for-service), and comfortable hospitals. For the former, it is only necessary to assure a "cure"; for the latter, it is "cure and care." A third social group still remains to be studied--the unemployed and the under-employed. For this group, the reserve labor force, it is terminal and emergency medicine, effective in preventing death; from the organization aspect, this is public medicine provided by the State.

Based on the foregoing, it is not enough for the researcher to study the question of effectiveness through these different prisms. It is even more important that he be aware that the roots giving rise to these different types of effectiveness are the identical roots that determine the miserable living conditions of vast population groups all over the world, and that consumption of the "luxury" health services are possible only because of the under-consumption of the working populations and the masses of unemployed and under-employed, not only of health services but of all goods. Navarro, V. "The Political and Economic Origins of Underdevelopment of Health in Latin America". (9)

Such considerations do not eliminate but rather reenforce the need for an examination of alternatives of effectiveness of medical practice that will

serve the objectives set forth in the first paragraph of this topic. As Steudler points out: ⁽¹⁰⁾ On the one hand the "evolution of the health system seems to be governed by the exigencies inherent in the economic structure...; on the other hand, by a relation of forces that is established between the different social groups and the State to obtain improvements in health." According to Steudler, from the workers' viewpoint, there is "on the one hand the development of health protection aimed at returning the patient to production, and on the other a social struggle to obtain such protection for the worker and an awakening of a collective conscience." An examination of the effectiveness of the therapeutic alternatives necessarily demands an evaluation of the social forces capable of promoting them, along with the scientific knowledge to do so, at the risk of falling into the paradox of an effectiveness that is not effective--because it is not obtainable.

It is all too well known that from the viewpoint of Third World realities the basic health problems of their populations continue to be those associated with malnutrition, infectious and parasitic diseases, on-the-job accidents. It also appears to be the general consensus that these problems might be better faced through the use of technically prepared personnel rather than by enormous investments in sophisticated technology. The need to extend basic health services to the unprotected populations lacking such care is also no polemic. The effectiveness of these measures, in a general way, is already sufficiently demonstrated. What needs to be studied, and acted upon, are the ways of implementing them.

Efficiency: Two approaches are possible in the discussion of medical care efficiency at the level of the collectivity: the first has to do with

the overall efficiency of the sector; that is, to attempt to establish which programs could be developed with the greatest economy of resources, within a national or regional policy for distribution of resources, having as objectives the improvement of the health level (see the preceding discussion) of a given population group and assuming comparable effectiveness between medical care programs and other economic or social programs (assuming such determination is possible). The second approach would be internal to the sector; that is, given pre-determined objectives and known effectiveness of the different medical care programs, to attempt to establish the most economic alternatives (or for a given program, the best combination of resources). We shall attempt a brief examination of each of these approaches.

Global Efficiency of the Sector

In discussing the global efficiency of the sector, the first problem to be faced is the scarcity of available information on the relative importance of health programs within the framework of social and economic development.⁽¹¹⁾ Unless conclusive elements are available on comparable effectiveness of the various programs in the sector having a definite impact on health conditions, it becomes extremely difficult, if not impossible, to establish objective criteria for the evaluation of the efficiency of such programs. For example, the difficulty of evaluating the effective contribution of a water supply program and that of a maternal and child health care program to improvement in the health level, except through arbitrary approximations, would virtually obstruct any "rational" evaluation for the distribution of human resources between the two programs.

The second major problem lies in the difficulty of selecting indicators to measure such improvement in the health level that permit a quantification of

the results obtained. This is because the selection of such indicators, assuming that we might be able to construct them with any validity, would certainly involve value judgments. I believe this will become clearer in the following paragraphs.

One of the ways found for examining the efficiency of the medical care sector has been through application of cost-benefit analysis, systems analysis and other methods of rationalizing budgetary choices. These methods originated in the evaluation of specific projects, where their contribution is undeniable. However, at a higher population level they proved to be deficient⁽⁵⁾. To give an example, cost-benefit analysis presents serious difficulties on two sides--evaluation of costs for the purpose of comparing them with results obtained implies an assumption "that all costs and all benefits may be measured in real prices, which is impossible given the nature of international prices, the influence of monopolies, etc., and that all costs assumed and benefits obtained may be compared as of the same given time, by applying a discount rate that will compensate for future depreciation."⁽¹¹⁾

Bryant,⁽¹²⁾ citing Taylor, warns that there are three important limitations on the use of economic criteria in analysis of health programs. First, from the standpoint of the consumer, it seems to him that "medical care decisions, especially when they affect human life, are consciously detached from questions of profit and loss." Second, that "if personal decisions on health, made solely on the criteria of human capital, do not seem entirely satisfactory, the same thing happens with governmental decisions," since programs of aid to the elderly, for example, cannot be examined in such terms. And, finally, use of this method does not take into account the preferences and demands of the consumer (political pressures).

Apart from the considerations advanced by Taylor, it is a fact that either explicitly or implicitly decisions are being made that involve a "price" on human life. As Steudler⁽¹⁰⁾ observes, "even when a decision relative to a health program did not a priori define a price that would justify the investment, the price implicitly attributed to human life may always be calculated a posteriori." And it will not be hard to establish the fact that the "price" for the life of an unemployed worker is less than that of an owner and that, assuming equal costs for a given program, the "benefits" will of necessity be greater from the recovery of the owner. Again Steudler observes, "in fact, political choices are invariably implicit, both at the level of the limited decision to develop a medical activity, the economic justification for which may or may not be demonstrated, and at the global level to the extent that the "price" of the human life invariably reflects what the collectivity agrees to dedicate to the battle against vital risks."⁽¹⁰⁾ Steudler says later, "different methods, that seek to rationalize decisions with the help of mathematical techniques and complex economic calculations, run into countless difficulties to the extent that political and sociological elements--difficult to quantify and integrate into an operations model--may intervene."

In synthesis, evaluation of a standard for global efficiency in medical care involves questions of an economic, political and social nature and must be resolved with the help of these areas of knowledge. Meanwhile, and most importantly, it is essential for their study that the point of departure of the researcher be clearly defined, given the fact that highly divergent conclusions may be reached depending on such point of departure.

Intra-Sectoral Efficiency

While some of the questions discussed above enter into the analyses of intra-sectoral efficiency, here the problems raised are somewhat different, since we would have to assume that questions of global efficiency and effectiveness are resolved if we are to deal adequately with the internal efficiency of the sector, even without eliminating reciprocal determinations. The choice is no longer to be made between large social and economic sectors but among the various medical care programs and, among such programs, the best combination of resources.

The first problem to be considered in such case is probably the choice of technology. This choice is made on two levels, that of the problem that must be resolved and that of the way in which it is approached. To give an example: It will be necessary in order to make a choice of technology to determine the objective to which it is directed. A maternal and child care program will require a different technology from that suitable to a cancer control program, hospitals or health centers, doctors or auxiliary personnel, etc. The relationship of this choice to utilization of resources is quite obvious. A discussion of this topic would be extensive and, as previously noted, it is my intention to point out in this paper only some of the points that seem to be to be pertinent to it.

"Basic health care requires a basic health technology that individuals may understand and that may be applied by non-specialized personnel. Identification or development of such technology forms part of the revolution in the health sector of the community...In an epoch in which the struggle goes on to banish political colonialism, it would be unthinkable for us to continue tolerating

technological neo-colonialism in the health sector. We must break the chains that make us depend on a health technology, of debatable social benefit and excessively complex and costly, and to develop another type of technology that is more adequate, that is technically sound, culturally acceptable and feasible from the financial point of view." These were the words of Dr. Mahler, Director-General of the World Health Organization, in a recent editorial published in the PAHO Bulletin.⁽¹³⁾ Meanwhile that we may observe in Brazil does not move in this direction. It seems to me that it would be important to understand why this takes place, if our desire to seek more efficient means of medical care is not to be merely "wishful thinking," And first of all that the required research may be properly oriented.

I believe that here again we cannot evade a definition of the kind of society in which we live, without the risk of setting out on a dead-end street, or one that leads in the opposite direction to that suggested by Dr. Mahler. In this case, the comment that "health technologies of debatable social benefit and excessively complex and costly" are more of a burden for the majority of the Third World countries such as those in Latin America that depend on the more developed economies, simply reinforces the necessity. For "technological neo-colonialism in the health sector" is nothing more than an extension of the relationship of economic dependency. Available technological choices in our country follow the model of medicine practiced there and are closely adjusted to it. As pointed out in our discussion of effectiveness, the technology is adjusted to three types of medicine: the sophisticated medicine for private practice, adequate, for the Social Security System, and negligible, for Government-supplied care. The choices are oriented to the model of private medicine, while the other types are deficient in relation to this standard

(This is an over-simplification of the problem, since in Brazil the very expensive technologies are supported by the Social Security System, even though they are destined for luxury consumption), and any study of their level of efficiency, and the appearance of effectiveness, becomes quite different for each social class. However, if we take the interests of the majority as our point of departure, we would have to take into account the fact that the "technological invasion" tends to contaminate medicines proposed for popular consumption. It is important to differentiate among the effective technologies on the basis of their level of efficiency. In other words, it is essential that the different technological options be examined with regard to their degree of deficiency and their degree of "distortion." To give an example, the requirement for extension of basic health service coverage cannot mask the need for well equipped emergency units, in the same way that the widespread installation of coronary units must be balanced by home-treatment programs (assuming equal effectiveness).

The field of technological alternatives is perhaps one of those most requiring study, even though it is necessary to keep in mind the fact that it is also in this field that what is at issue are development alternatives. (15,16)

Finally, one additional comment on economic efficiency is appropriate as it relates to the disposition of human resources. Customarily when this question is examined, the intensive utilization of unqualified staff may be obscuring the question of the distribution of internal yield of the sector, and fostering a still greater exploitation of the vast contingent of auxiliary personnel that already constitutes the great bulk of health workers. (17)

One final observation--This paper was an attempt to present some of the broad lines on which development of research on efficiency and effectiveness in medical care is possible, and is becoming necessary, and to point out some of the obstacles that may be encountered in each instance. The multiplicity of topics and the author's capabilities will assuredly lead to approaches that may at times be superficial and perhaps to some hasty conclusions. But I believe that he has presented some of concerns of one who began his fight in the field of changes in the health system of a country such as Brazil, and that these concerns are most probably shared by others of his colleagues in Latin America. "Any health policy is seen to be linked to social relationships, and the future of the health system depends on these relationships between the different groups." And it is always essential to choose what side we are on...

REFERENCES

- 1) Cochrane, A.L. Effectiveness and Efficiency. Random reflections on health services, The Nuffield Provincial Hospitals Trust, London, 1972
- 2) Illich, I. Nēmēsis Médicale. L'expropriation de la santē, Editions du Seuil, Paris, 1975
- 3) Gentil e de Mello, C, A Epidemiologia da Cesārea in Saūde e Assistēncia Médica no Brasil, CEBES-HUCITEC, São Paulo, 1977
- 4) Grundy, F. & Reinke, W.A. Health Practice Research. and Formalized Manageria l Methods. Public Health Papers, WHO, Geneve - 1973
- 5) Silva, F.A.R. & Mahar, D. Saūde e Previdēncia Social. Uma anālise econōmica, IPEA/INPES, Rio de Janeiro, 1974
- 6) Dubos, R. & Dubos, J. The White Plague, Little Brown ,1952 Boston (citado e em 2)
- 7) Navarro, V. The Industrialization of Fetishism: A Critique of Ivan Illich in Medicine Under Capitalism, Prodist, New York,1976
- 8) Nell, E.J. The Revival of Political Economy. Social Research - 39:32,1972
- 9) Navarro, V. Medicine under Capitalism, Prodist, New York, 1976
- 10) Steudler, F. Sociologie Médicale. Librairie Armand Colin, Paris, 1972
- 11) OMS - Relaciones entre los Programas de Salud y el Desarrollo Social Economico. Cuadernos de Salud Publica nᵒ 49, Ginebra, 1973
- 12) Bryant, J. Health & The Developing World, Cornell University Press, Ithaca, 1969
- 13) Mahler, H. Las necesidades humanas fundamentales como objetivo mundial de salud. Bol Of Sanit Panam '83:187, 1977
- 14) Navarro. V. The political and Economic Origins of the Underdevelopment of Health in Latin America in Navarro, V. op. cit. 9
- 15) Vidal, C.A. Aproximaciones a Tecnologia y Salud Bol Of Sanit Panam 83:197, 1977
- 16) Varsavsky, O. Por uma Política Científica Nacional, Paz e Terra, Rio de Janeiro, 1976
- 17) Navarro, V. An Explanation of the Composition, Nature and Functions of the Present Health Sector of the United States, in Navarro, V op. cit. 9
- 18) MEADOR, C. The art and science of Non-disease Nex Eng J. Med ' 272:92, 1965