

To Dr. Leo Sigelard  
with greetings from  
J. M. Rogoff

COMPREHENSIVE PLAN FOR MEDICAL  
AND HEALTH EDUCATION:  
A "NEW SCHOOL" OF MEDICINE

*Condensed from a detailed report made in 1949 to the Trustees  
of the Rogoff Foundation by the President, J. M. Rogoff,  
Ph.G., M.D., Sc.D. (Hon.), L.H.D. (Hon.)*



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## PART I

# COMPREHENSIVE PLAN FOR MEDICAL AND HEALTH EDUCATION:

## A "NEW SCHOOL" OF MEDICINE

### INTRODUCTION

This thesis embodies a concept of medical education, health service, and implications that are pertinent to the problems which relate to functions of a medical school and the doctor, in modern changing civilization. The course and progress of medical education and practice during the past half-century indicate the direction of future trends in the practice of medicine. Evidence of regression exists but it may be viewed as an inescapable concomitant of a decadent era. Transition from empiricism to art in the practice of medicine is progressing rapidly under the influence of advancing science. This calls for a new and fundamental approach to those factors which will determine the proper course to pursue in effecting essential changes in institutions that are engaged in medical education.

Contemplation of the establishment of a medical school now ought to be premised upon a valid concept for so important an undertaking. Two reasons usually are given. It is believed that there is an impending or actual shortage of doctors and that there is danger of consequent impairment in amount and kind of medical care for the public. This, as will be made evident, is debatable. Another, perhaps less controvertible motive, is the desire to overcome the problem of limitation of opportunity for medical training that is due to religious, racial, or other prevailing discriminatory practices.

A much more fundamental motive can be given. Facts will be introduced here to support the concept that what really is needed is *a new idea in medical and health education*. This should be incorporated into the general education system. Preparation of personnel for the practice of medicine and surgery can still be specialized, yet be made an integral division in such a system. A plan to reorganize medical schools and related health agencies in accordance with this idea has, in my opinion, greater significance and importance for the solution of problems related to health and medical service than has an increase in the number of medical schools.

In view of the advantages afforded by scientific, economic, social and political progress that has been made within the past generation, there is need for the creation of a *NEW SCHOOL OF MEDICINE* rather than of *another medical school*. It is essential to provide not only increased and improved facilities for training young men and women to practice medicine, but to establish an institution and system that is based upon a *fundamental comprehensive plan of medical and health education*. This should include appropriate education for the public as well as for practitioners of the art. A more properly informed

public and more adequately educated and trained doctors would facilitate greatly the solution of existing problems that are related to health service and medical education.

Experience and observation during nearly a half-century of practice, teaching and research in medicine, surgery and the related sciences, has led me to realize the need of a *plan* for better medical and health education and service as well as for a more logical and fundamental approach to the solution of related social and economic problems. Some of the essential elements of the plan which was conceived by me may be said to exist. However, they are not organized functionally nor are they co-ordinated and integrated into a system, which could be much more effective, as will be apparent upon examination of the plan and its schematic illustration.

A basic plan for medical education and for proper dissemination of useful health knowledge for the public has not hitherto existed. Procedures for combatting disease, relieving physical distress, maintaining health, and preserving or prolonging life, developed gradually out of ignorance, superstition, chicanery, and religion, into a more or less universally adopted empirical system which evolved into the present day "practice of medicine and surgery". Now this is on the threshold of emerging from empiricism into an ART based upon SCIENCE. Each step in the slow evolution of the art has been retarded by retention and influence of undesirable characteristics of preceding stages and eras.

It is time to discard antiquated and inefficient ideas, methods, and practices. There is need for a new evaluation of the *health and life-preserving role* of a medical school and its corresponding relation to society. Its broadest purpose could be fulfilled much better than is now possible if its functions were performed according to a sound plan, one that is based upon an educational concept that is fundamentally correct in principle.

Such a plan, or the basis for one, is presented here as a foundation for elaborating a more satisfactory system of medical and health education. The concept upon which the plan is based involves organization of the medical school together with principal institutions and agencies that are concerned with health services and with general as well as medical education. This organized group should include all of the schools and institutions in the entire educational system.

Thus, health education would begin with properly planned instruction in the earliest period of learning, i.e., in kindergarten and grade schools, and continue throughout the course of the individual's education. The quality and quantity of instruction would be graded according to age and educational levels, as is the case with other branches of learning. Beyond the education gained in the school system, appropriate information in matters of health should be made available through organized, directed adult education. Possible functional interrelationships between the medical school, health agencies and educational institutions, which can be organized into such a comprehensive system are illustrated in the SCHEMA which follows the explanation of the PLAN.

It may be added that such a program represents a long range continuous development. It was elaborated originally as a suggestion for incorporation into the plans for the development of a health program for Israel. It would be valuable as part of the foundation for the educational system of a new democratic land. However, Israel has other, more pressing, problems with which to contend for the present.

The plan has special significance for any educational institution, especially if it is new and contemplates the incorporation of medical or pre-medical education. Perhaps it might be difficult to make it succeed in this obviously decadent period. But one can hope that a turning point in contemporary civilization is near and that the survival of permanent or new creative values will again be assured—at least in the United States of America.

#### PLAN

The plan is characterized by a departure from the prevailing manner of conducting organized activities that are concerned with health and education. In general, related functions are performed at present by various independent institutions or organizations each of which is governed by its own ideas, policies and personnel and each performing its role without special regard for its functional relations to other institutions. Every one of those institutions or organizations usually can be credited with performing very admirable and valuable services in its own capacity. Nevertheless, under existing conditions there often is duplication of functions and lack of co-operation, with a corresponding waste of effort and unnecessary increase of expense. Sometimes, indeed, various organizations find themselves working at cross purpose with one another. This would be overcome by proper authoritative organization of the institutions and agencies and by orientation of their functions into the proper channels, to serve the desired purpose. It can be accomplished without interfering with autonomy of component institutions or organizations insofar as that may be preferred.

The ultimate object of the plan is the organization of educational institutions and health agencies together with the medical school for the development of methods, procedures and mechanisms that are best suited to combat and prevent disease, ameliorate suffering, improve and preserve health, and protect and prolong life. The public is made to become primarily interested in this development of the institution that is engaged in medical education and in its relation to the community that supports it. It will have to be a more adequately enlightened public, one that can become properly apprised, to effect a system of medical education and corresponding health education that will serve it best. A new collaboration must be established between the medical school and the public and also with related institutions and agencies. Thus, the function of the medical school takes on not only greater but new significance. It must play the dominant role in the organization of a comprehensive system of medical and health education, i.e., it becomes the center in the plan presented for the crea-

tion of a *new school of medicine* or a *new idea in health education*. In this plan the related institutions and agencies are organized together with the medical school for the realization of an effective system. The medical school is not only a professional school for training doctors but it becomes the origin and source of all information for the layman. It plays the primary role in elaborating and disseminating medical knowledge and health information in collaboration with and as a part of the overall educational system.

The aim is by no means to make doctors of everyone. Giving this type of graded education in matters of health would no more make physicians out of us than does the arithmetic and mathematics that is taught make mathematicians, the history make historians, the music make musicians, etc. Yet, an "educated" or "cultured" person is supposed to know a certain amount of these and other subjects although culture or education does not require him to know at least a similar amount about *himself*. Each individual should and can know a *certain amount* if properly taught. Beyond that, i.e., special knowledge, is for the physician.

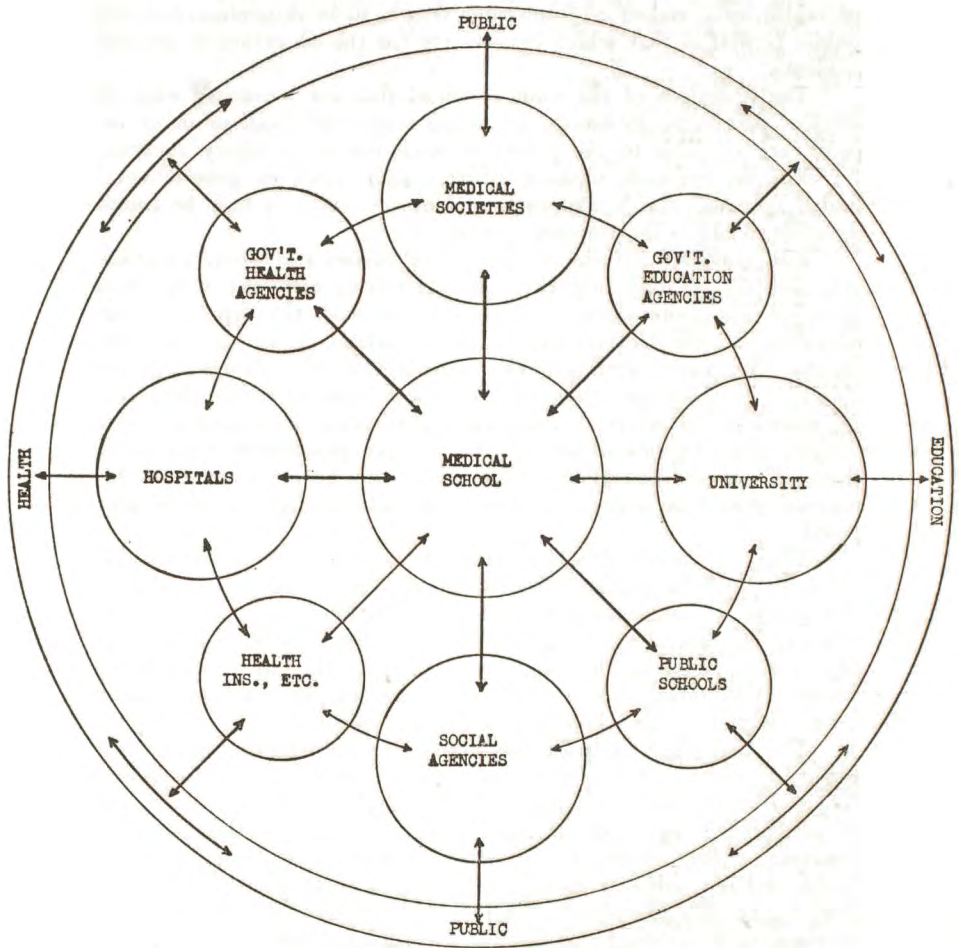
In addition to preparing men and women for the so-called "practice of medicine", the plan delegates to the medical school the function of organizing and directing the processes of education in matters of health for the rest of the population. This should be developed by specially capable and trained personnel on the faculty. It would be carried out in the educational system at all levels from kindergarten through University, and thereafter as functions of other agencies shown in the schema, for example, hospitals, medical societies, social agencies, health insurance organizations, etc. etc.

As indicated by the arrows in the schematic illustration, mutual interrelationships exist or are established between the functions of the various agencies, all of which originate in or are brought to the medical school. The outer large circle represents the public which is concerned with and served by the health agencies and institutions on one side and educational on the other. All are integrated, their activities are correlated and oriented into a system for these services.

If the basic concept of the plan which is illustrated by the schema is organized as intended, appropriate health education becomes a part of the information gained by each and every individual from the very beginning of the educational process in childhood and continues throughout life or, at least, up to if not throughout the period of adult learning. The type of health education that is now given in our school system is inadequate and often altogether worthless and usually misguiding. Still worse is the kind of information that is generally obtained from the lay press, radio, television, and magazines.

Not only does the plan involve a revision of the prevailing system of medical education and the function of the medical school but it embodies social, economic and other related implications for health and medical education.

SCHEMA FOR ORGANIZATION OF AGENCIES IN A FUNDAMENTAL  
 COMPREHENSIVE PLAN FOR MEDICAL AND HEALTH EDUCATION.





## EXPLANATION OF SCHEMA

The public, whose interest is embodied in the functions of all of the agencies and institutions which it has created for its benefit, is represented by the outermost circle, encompassing all of the others. As the ultimate products of those functions, HEALTH is placed on one side and EDUCATION on the other, within that circle.

Centrally placed is the medical school, as the origin and source of all information that relates to treatment of disease, preservation of health, etc., and of all knowledge that is to be disseminated to the public as well as that which is necessary for the education of medical students.

The functions of the medical school that are concerned with all services pertaining to health, including economic, social or other aspects, are available to the public through the intermediary agencies, for example, hospitals, medical societies, social agencies, governmental health agencies, health insurance, and others which it may be found desirable to add in the proposed system.

Educational functions of the medical school also would be available directly or indirectly through interrelated activities with those agencies. The more direct relationships are with the department of education of the University, the public school system and governmental educational agencies. The mutual interrelationships that are indicated by the arrows between the various agencies render the medical school the effective co-ordinator and director of a comprehensive system of health service and education by cooperation between all of them. All of the disciplines which are or can be made to serve this purpose should be incorporated into the educational system as proposed.

Thus, the medical school and its faculty becomes responsible for informing the public as well as conducting a professional school. The public, in turn, places authority and responsibility upon the faculty of the medical school to govern the amount and kind of knowledge that is to be oriented and integrated into the entire educational system. It becomes better informed and can thus be protected against false information, to which it is exposed at present.

The University is made the source of educational methods and processes which are directed and oriented into the corresponding function of the medical school. It should also organize the training of personnel in the medical school faculty for its special educational function. After synthesis of material concerning preservation of health and life with the educational principles evolved in the University, this is made available to the school system as indicated. Similarly, appropriate educational material for the public is processed and transmitted through the various other agencies that are interrelated in the system.

Problems concerning health which may arise with the public or in course of exercise of the functions of the different institutions and agencies are brought to the medical school and University via the same organized channels. Thus, a well founded comprehensive system can be created which unquestionably would be superior to prevailing

methods of effecting medical and health education. Further details and implications of the plan for such a comprehensive educational system will have to be developed together with the necessary curricular reorganization in the medical school, University, and school system.

#### THE MEDICAL SCHOOL

Fundamentally, the function of a medical school is, or should be, to engage in specialized educational processes and to train personnel for the accomplishment of the relief of physical and mental illness, for the preservation of good health, and for the prolongation of life. At present, the medical school trains men and women for the practice of medicine and contributes more or less scientific knowledge through research.

However, the ultimate purpose is not and cannot be realized fully by those activities alone. Relations between the medical school and the public are too remote. More intimate, even if indirect, guidance in matters of health should be made available to the public, for whom the institution exists primarily and by whom it is supported. This would greatly augment the essential processes for achievement of the desired goal.

The medical school of today is an outgrowth of the practice of medicine. It developed together with the gradual evolution of the art of healing. It became an offspring of the hospital, where the physician not only practiced his art but obtained additional information from the experiences of his colleagues and transmitted his knowledge to others.

The medical school was created by the doctor of the past who was trained in the ethics and principles that originated in the Hippocratic oath. This provides that ". . . by precept, lecture, and every other mode of instruction, I will impart a knowledge of the Art to my sons, and those of my teachers, and to disciples bound by a stipulation and oath according to the law of medicine . . ."

Information originating in the hospital was passed on to the medical school where the student of medicine was able to obtain his knowledge of the art and of related science. Up to this point the development of a medical school followed the course of evolution of the empirical practice of medicine and the hospital enabled the doctor to train young men for the profession. Now that the practice of medicine is ready to take its place as an art based on science, the medical school should become the source of science and the hospital should orient its functions around the scientific foundation that is created in the medical school.

There have been remarkable changes in the character and scope of activities in the medical school of this country during a little more than a half-century. It can be recalled that the M. D. degree was not even required as a prerequisite for registration by some state boards. An "examiner" on the Ohio State Board, in 1908, admitted that his education consisted of assisting a doctor for two years while attending lectures for five months during the first year and repeating them in

the second. It is a long way from that system to the present-day instruction in our modern medical schools. Nevertheless, doctors of fifty or one hundred years ago can be said to have been fully as competent if indeed not more so than those who are being developed today. We need only mention a few names such as Addison, Bright, Hodgkin, von Mering, Minkowski, Schiff, and more recently, Osler, Thayer, Freud, etc., to illustrate our point.

The facilities of a modern medical school can be utilized not only to train better practitioners of medicine and surgery but to become the basis for a much needed educational function for the public. Its teaching and research activities ought to be so organized that they can be the foundation for the planned system which has been suggested in the foregoing.

**RESEARCH.** All information pertaining to maintenance of normal health, combat of disease and preservation of life should originate in the Medical School. It would be very desirable, if possible, that all research in fundamental medical sciences, i.e., in physiology, pathology, pharmacology and physiological chemistry should be conducted by or under the immediate supervision and direction of authoritative and responsible members of the medical faculty. At least, the standards, methods, character, results, and interpretations of such researches should be subject to approval of members of the medical school faculty before the products of researches are permitted to be applied as bases for therapeutic application or for diagnosis in the practice of medicine and surgery.

In the interest of public welfare and safety, the medical school and its faculty should be held responsible for this and for proper publication of scientifically and clinically sound products of medical research. The medical faculty ought to assume responsibility for the character and dissemination of all health knowledge. It should also be charged with the duty of preventing the spread of false information. Thus, the medical school would become the centre of origin for scientifically reliable medical and health knowledge through controlled research and this should be one of its primary functions.

**TEACHING.** (A) *Professional school.* Medical school teaching lacks the basis of established and successful educational principles that are fundamentally sound. The medical curriculum and pre-medical instruction require considerable revision.

The medical student should receive instruction in the fundamental sciences at the source, i.e., in the laboratories of the medical school. This ought to be *correlated and integrated simultaneously* with its practical significance and application in the hospital which should be so organized as to constitute a part of the medical school, capable of orienting instruction in basic medical sciences into its clinical application.

A much more effective foundation for the practice of medicine and surgery as an *art based upon science* would be created if courses for medical students were begun by appropriate organization of pre-medical science instruction in the undergraduate college. For example, qualitative and quantitative inorganic and organic chemistry can be

extended and related to include biological or medical and physiological chemistry. This, in turn, should be correlated with courses in biology such as would constitute a substantial introduction to human physiology.

Cinematographic instruction in human anatomy ought to be included in the biology courses. This should follow comparative anatomy and zoology, which can be given in preparation for physiology of vertebrates. Morphology should include an approach to physiology and pathology by the inclusion of histology. Human embryology may also be incorporated into these courses.

Physiology of vertebrates should prepare the student for future medical studies by the inclusion of good instruction in mammalian physiology and this should be followed by adequate courses in human physiology. These ought to be organized to harmonize with courses in "chemical physiology" - "physiological chemistry" already having been covered in the previous courses in chemistry.

Thus, pre-medical instruction in the undergraduate college can be made in effect to constitute most or all of the pre-clinical education of the medical student which is now given in the first two years in the medical school. Furthermore, if much of this instruction is available to every college student in the general education program, perhaps in a lesser degree, regardless of whether or not he or she intends to study medicine, a much more intelligent lay public insofar as health knowledge is concerned would result. As stressed in the plan for health and medical education which is the primary subject of this discussion, many of the problems related to health service, etc., could be more easily solved or perhaps evaded entirely.

Pre-medical education can and should be made a part of organized medical education. Instruction in the medical school should begin at once with clinical medicine and the basic sciences should be integrated with that practical phase of medicine, concomitantly and as its corollary. With the preparation gained in college, advanced or practical instruction in the basic sciences can be better correlated in a significant manner if presented in relation to clinical experience. There ought not to be the separation of fundamental science from its clinical application as prevails in the existing system of teaching in medical schools.

In this way, the medical student soon learns to distinguish pathological from normal functions and processes and a better fundamental concept of disease is obtained. Although this idea has been expounded by me during many years as a member of a number of medical school faculties, it is now being given some thought under the name of "vertical" vs. "horizontal" system.

Regardless of geometrical, astronomical, or other nomenclature, the idea is consistent with the psychological principles which underly established educational concepts. Furthermore, as already suggested, corresponding organization of the curriculum in college would give much more substantial knowledge of health and disease for the layman if appropriate instruction became available in the general education science courses.

(B) PUBLIC EDUCATION. Health education for the public should be properly prepared and given or directed by the medical school and not by newspaper columnists or journalists. The law of medicine as elaborated by Hippocrates, states, "Those things which are sacred, are to be imparted only to sacred persons; and it is not lawful to impart them to the profane until they have been initiated in the mysteries of the science."

The faculty of the medical school should be held responsible to the public for the kind of knowledge that is made available. Indeed, it ought to be deemed responsible for consequences of any false information that might originate in the medical school. The public could thus be protected against harm from improper or sensational information that is so commonly spread by uninformed, ill-informed or careless journalists. Related ethical principles might well be established on the basis of those of a less decadent era.

The charge can be made that at present unauthoritative, careless or false, often dangerous, information is propagated freely not only to the lay public but to medical students and doctors as well. No institution, individual, group or organization is held responsible for the information that is disseminated, or for any of its possible or proven harmful consequences.

The medical school should be the central institution not only for the preparation of practitioners of medicine and surgery but also for the preparation and dissemination of reliable authoritative information and education for the public. Such education should be comprehensive and should incorporate related and interdependent disciplines that are essential for fulfilling all that is embodied in the concept of what is referred to here as a NEW SCHOOL OF MEDICINE.

Thus, in the schema, the medical school is placed to represent such a central institution. It is the source of all that is related to health and to medical education. The information which originates there is to be distributed to all of the principal institutions, organizations, or agencies that are related directly or indirectly to the complete function of the medical school. The functions of these agencies are interrelated and also are the intermediaries between the medical school and the public. All matters pertaining to health on the one hand and related education on the other are brought to the public under responsible direction of the medical school. Also, all such related problems, including social and economic, that do or may arise with the public pertaining to matters of health are brought to the medical school for solution through the interrelationships between the various agencies and the medical school, as illustrated.

The primary relationships between the public and the medical school would be mediated through the hospitals, medical societies and social agencies. Secondly, the relations between the medical school and the public would be concerned with the functions of health insurance organizations, governmental or other health agencies and similar institutions. Concerning educational functions, the primary relationships of the medical school are with the University, medical societies, and social agencies.

The medical school should be so organized that its relation to health education of the public would be mediated through the over-all educational system. This brings the medical school into relationship with the public school system. To sum up, the plan is to organize and orient the functions of all the various institutions and agencies so that through direct and indirect interrelated activities they constitute a basic organized system of health and medical education. This must include service and knowledge, of all phases, i.e., the preparation of medical and health knowledge, the education of practitioners, the organization of their service in hospitals, education of the public, and direction of health and social agencies as well. Through direct or indirect cooperation with health insurance agencies the economic aspect of health problems can be improved by such an additional role of the medical school.

No doubt other institutions could be incorporated within the proposed plan. The plan is intended to serve as a basis for elaboration of a program. It can be made elastic so that it may be modified readily to suit the purpose that might require changes in different communities or under different conditions. Obviously, the various functions which are represented as interrelationships will have to be more clearly defined and specifically oriented.

The total possible function of a medical school is by no means completely accomplished if it limits its purpose to the preparation of young men and women for the practice of medicine, alone. Even the extension of its activities to include research, does not effect completion of its role. Its place in the educational system demands that it assume responsibility for organizing, directing and otherwise accomplishing the proper education of the public, so that individual as well as communal health may be better protected. By proper education of the public and the physician, the number of doctors that would be required in a community should be in inverse proportion to the augmentation of their facilities for gaining reliable information.

## PART II

### SUPPLEMENTARY DISCUSSION

Despite the progress which has been made in the basic medical sciences in recent years, particularly chemistry and physics, retrograde phenomena have developed in the practice of medicine and surgery. This is true also, in a large measure, of corresponding medical research. Scientific progress has been too rapid for its proper orientation and integration into medical practice and research.

Consequently, the practice of medicine has not only reverted to a period of undesirable empiricism but it has become a repository for false values in science. A pseudo-scientific philosophy was introduced into medical science about a quarter-century ago. This has been reconstructed recently and converted into a pseudo-philosophical science. It has led to extensive dissemination of spurious information and to a disregard for well-established critical standards of scientific investigation and practice. It also is responsible to a great extent for some of the economic problems which have arisen.

In some places a change in conditions has been undertaken by governmental action, control or regulation. In the United States there is a strong division of opinion regarding so-called "socialization of medicine." It is evident that neither proponents or opponents of this issue really understand the full significance of the question with which they are concerned. Usually the problem is considered mainly as one having economic or political implications. The truly *social* aspect seems to have been overlooked or submerged. Proposed remedies for the situation do not appear to be basically sound. The demand for so-called socialization of medicine can be viewed as merely representing a desire for change in an unsatisfactory situation.

To be effective the remedy must be fundamentally correct in principle. The problem could be largely solved by the reorganization of educational systems so that health and medical education, practice, and related scientific research become a unified function of society and as such be properly oriented and integrated into the total educational system of the public. There can be little if any doubt that conditions can be greatly improved in the practice and teaching of medicine and in its corresponding service to society. The plan that is presented here is based upon the concept that function of a medical school must transcend that of being a mere *trade school*. In the discussion which follows we shall offer some facts and criticisms to support the validity of the proposed plan and to illustrate the basis for those criticisms.

#### SOCIAL AND ECONOMIC IMPLICATIONS

Considerable interest prevails regarding what is known as "socialization of medicine." This has timely significance for the concept and plan that has been presented here. Socialized medicine is quite prominent chiefly as appealing propaganda for politicians within and outside of the medical profession. Usually they are quite ignorant, ill-informed on the basic factors involved, or selfishly indifferent to the

interest of the public. Aside from its role in political ideologies, intrigues, or other motives, this matter can be recognized as representing an important *reaction of the present era*. The problem is one that basically transcends its apparent political significance.

Upon critical evaluation of reasons for the desire to have "socialization" of medicine, there appears to be only one logical conclusion. Agitation for such a system reflects dissatisfaction of the kind, cost and availability of medical care that now prevails and a corresponding demand or search for a remedy. *It is an indication of widespread public recognition of the unsatisfactory state of existing conditions in the practice of medicine, in the relations between doctor and patient, and in other important respects. It is the expression of an impelling need and demand for change.*... Proponents of socialization of medicine have not offered a concrete program to which serious objections could not be raised. Among these may be mentioned bureaucratic inefficiency, waste, and political favoritism. On the other hand, it would not be difficult to demonstrate that many of those who are amongst the most emphatic, ardent, vigorous, and persistent opponents are the very ones who can be held responsible for those conditions against which the public is reacting and struggling to effect a change. They are and will be responsible also if, as often is the case, the reaction is so great as to effect more radical changes than are desirable!

Those individuals can be found in places of leadership in medical societies and *super-societies* or self-styled "colleges" of physicians and surgeons, as editors or members of "editorial boards" of medical journals, as prominent staff members of hospitals and clinics, as faculty members of medical schools and universities, and as "scientists" or their associates in commercial drug houses. Some of them have constituted themselves as self-appointed and self-anointed demigods, dictating to whom shall be given the privilege of publishing products of scientific research, of practicing his professional skill and of exercising the right to treat his patients in our public supported hospitals.

Capable young graduates of medicine and surgery are restricted to limited practice. Often they are prevented from treating their patients in hospitals because they must "turn the case over" to a member of the staff. This does not inspire faith in the principles of a democratic system of "free enterprise". A greater danger lies in the *threat to the freedom of our scientific and medical press*. There are those who assume the right to suppress scientific information and to perpetuate their own ideas to the exclusion of contradictory evidence or opinions. When they are permitted to exercise dictatorial power in editorial capacity for medical and scientific journals, they are a menace to human life and health. These are but a few of the conditions which are responsible for an urgent demand for change. Any deviation from or alteration of existing conditions cannot be expected to afford satisfactory relief if the problem is entrusted to politicians in organized medicine or to those who operate in governmental and legislative capacities. This is a matter for an enlightened public to deal with.

Only by a process of education and by resulting correction of obvious faults in the existing system can it be expected that the kind, cost and availability of medical care could be made more satisfactory.



This requires an understanding relationship between the doctor and his patient or the public. It cannot be brought about by "passing a law." It is a matter for the public to accomplish by effective functions of its own created health agencies and educational institutions. Otherwise, if left to various "pressure groups", the matter can guide us into one or another form of totalitarian ideologies and practices that we are struggling to avoid in America.

A fundamentally sound plan for the organization of educational institutions and health agencies could effect the changes that must be made to improve our existing system. Objectionable features could be eliminated and essential ones introduced by an informed public. A system of education that is basically correct in principle can accomplish this.

#### IS THERE A DOCTOR SHORTAGE?

In recent years there have been alarming claims of a shortage of doctors and fear has been raised of an impending danger of inadequate medical care in the future due to an even greater shortage. That idea was given special prominence during the last world war when the supply of practicing doctors was diminished by their entry into military service.

However, ironical as it may seem, statistical evidence established that at the time when the alleged shortage of doctors was greatest the public was enjoying better health than had prevailed for some time previously. A good case can be made in favor of the idea that health was better because the public was deprived of some of its too easily available *modern miracle medicine and sensational surgery*. Lack of reliable information predisposes the public to pernicious medical propaganda which induces people to become subjects of ill-conceived, improperly tested and unjustifiable therapeutics.

A properly educated and well-informed public would require very much less medical attention and would not be subjected readily to the prevailing fads of "magic bullets", "miracle drugs", and neo-surgical experimentation. Under the influence of more intelligent guidance and with more substantial knowledge the public would not need a large increase in the number of doctors, especially if the doctors were better informed in the medical sciences and better trained in the practical application of the sciences. A more important and urgent need is the training of *better* rather than *more* doctors. In addition, there should be ways and means to create a *better informed* public. This claim will find support in the classification of disease which follows.

#### CLASSIFICATION OF DISEASE

GROUP I. *Diseases that are therapeutically responsive.* This group includes (1) specific infections and communicable diseases for which antitoxins, vaccines, or other proven remedies are available, (2) various acute, subacute, or chronic, non-specific ailments of organs or bodily systems which respond to sub-

stitutional therapy or medication with drugs of well-established therapeutic and pharmacodynamic efficacy, (3) conditions for which surgical intervention can be justified and constitutes effective therapy and, (4) such other physical or psychological affections as can be corrected by suitable readjustment of an underlying physiological or anatomical abnormality.

GROUP II. *Ailments that are therapeutically insignificant.* This group comprises the slight, self-limited, or imaginary illnesses for which doctors are consulted and for which medical and surgical treatment is not necessary or useful except, perhaps, in the nature of a placebo.

GROUP III. *Diseases that are therapeutically resistant.* In this category are the diseases of unknown origin and pathological processes or those presenting obscure physiological disturbances for which there is no known effective treatment at present.

Discussion of this classification will give particular significance to the plan for Health and Medical Education that has been elaborated and is described in the foregoing. The relative proportion that each of these groups might represent amongst all the diseases or ailments which constitute the total of medical and surgical practice cannot be determined accurately. On the basis of personal observations which agree well with those that were reported by responsible and capable investigators in a survey made on a national scale a few years ago, the following estimates and conclusions can be accepted with reasonable confidence. They can be considered sufficiently accurate to be pertinent to our discussion and purpose without the dubious support of statistical evidence.

It is not difficult to maintain the assertion that Group II by far constitutes the large majority of all cases. Excluding Group III, it is not unreasonable to estimate that Group II represents at least three quarters of all the rest. In other words, about seventy-five per cent of those in Groups I and II would not require the services of a physician if both doctor and the public were *properly informed*.

Many cases that are included amongst those in the category of Group I really will belong to Group II when medical education becomes established on a more scientific foundation. For, there is a multitude of evidence that slight or insignificant ailments often are given diagnoses by physicians which places those conditions into Group I instead of Group II. This will be avoided by more adequate fundamental, scientific education of doctors—or, perhaps, by improved ethics in a profession which should be made free from economic influences.

Unfortunately, it is quite easy to demonstrate willful disregard for available knowledge, by physicians, journals, medical societies and scientific journalists—all of which contributes to the suppression of sound medical information and to ignorance of doctors as well as of their patients. If and when Health and Medical Education becomes so organized that it will produce well-informed doctors who practice their profession among informed patients, Group I will diminish in size.

If an educational system is developed in which all individuals of a community are exposed to an adequate amount of knowledge about themselves through a well organized, systematic and progressive plan of suitable instruction, Group II will automatically decline in magnitude. A properly informed individual rarely becomes a victim of imaginary ailments. Furthermore, such an individual can better estimate the difference between a condition which demands attention of a physician and one that can be overcome by the exercise of common sense.

Finally, Group III must be recognized chiefly as the challenge to the scientist. In the present state of our knowledge the informed and trained doctor finds himself helpless and entirely defeated in attempting to understand or treat those cases. This Group belongs entirely in the realm of research. It constitutes the *raison d'être* for establishing laboratories for investigations in the fundamentals of the medical sciences together with the other divisions of a Medical School within a University. It must be the object of collaborative effort between the scientist and the clinician in the University, Medical School, and Hospital.

All indications point to the fact that the practice of medicine in the future, i.e., when it has fully developed as an ART based upon SCIENCE, will consist principally of keeping the public properly informed on prophylactic measures. Aside from necessary surgical therapy (which will be reduced in kind and amount by proper knowledge of physiological principles on the part of the surgeon and of the public) and communicable or infectious diseases (which can be controlled or almost completely eradicated by a well educated public) the doctor's business will be largely devoted to the educational aspects of his profession and the practices that are concerned with prevention of disease.

Meanwhile, more scientific training for medical students would produce better doctors. Ethical principles also should be stressed more in that training period and thereafter. The alleged shortage would be greatly minimized if doctors resorted less to promoting the use of "miracle medicines" and the performing of unnecessary, useless or dangerous surgical operations. The question may be asked, "Is there a real doctor shortage or a shortage of real doctors?"

## THE HOSPITAL

The hospital can play an important role in the education of the public in matters pertaining to health. Indeed, some hospitals perform a very valuable function in this respect through the activities of their social service workers and in the clinic. However, this could be much more useful and effective if it were part of an organized and directed system of *planned* health education. Furthermore, many large hospitals pay little or no attention to this kind of service. The educational function of the hospital should be interrelated with that of the medical school where the information for the public would originate and where responsibility of direction must rest.

The policies, practices and principles in the modern hospital are determined largely or entirely by specially trained business men or

doctors known as superintendents or medical directors. The chief concern of hospital administrators has become the speedy turnover of beds or rooms and the successful collection of bills contracted by patients. This plays a significant role in the rather indefensible practice which has been dignified with the name "early ambulation", a most unphysiological and often quite harmful procedure. The hospital can be charged with having become a party to the causes which are responsible for some practices by doctors that resemble those of tradesmen. The policy of most modern hospitals is such as has made them into *shops where doctors sell their wares*.

As "hotels" for sick people, accommodations and services in most hospitals have been improved considerably since the first world war. But, it is not obvious why the cost of medical care and hospital services have become so greatly increased as to constitute a major problem in the present day. This has developed despite very much augmented hospital income and sources of revenue. Perhaps a comparison with an ordinary hotel is not entirely applicable. However, it can be made if for no other reason than as a challenge to the business management of hospitals to refute the facts presented in the comparison. A hotel usually occupies land in the costliest part of a city; it has to pay taxes; it receives no philanthropic aid; it is operated for profit; etc. A hospital usually is built on cheaper land; tax free; is recipient of philanthropic contributions; is not required to make a profit for owners or stockholders.

Rooms and ordinary service in a hotel are considerably less expensive than in a hospital. Hospitals no longer have to carry the load of "charity" as in the past. They are compensated for care of the indigent from city, county or state funds; they are assured of pay from practically all others by personal responsibility or insurance organizations; they profit quite considerably from special charges, e.g., laboratory fees and charges for anesthetics, x-ray service, medication, etc. If a hospital shows its financial status to be in the "red", there appears to be a reasonable excuse to ask its business management to explain it. This should have free discussion, in the light of our problems of cost and kind of medical care.

The staff doctors of a hospital are governed by policies, orders, rules and regulations of the director or of a medical committee of the board that collaborates with the director. The hospital serves the staff doctor in the capacity of a *place for him to carry on his business*, generally to the exclusion of undesired competition. Instead of enabling younger colleagues, often possessing superior knowledge and ability, to develop their talents and opportunities for human service, staff doctors of hospitals too often retard their progress and are aided therein by the policies of the hospital administrators.

These and other possible criticisms have an important bearing upon the relationship of the hospital and its doctors to medical education and research. Despite the very good services that are rendered in many hospitals, regardless of the question of cost, their more complete and essential role in a well-organized society has not yet been realized or comprehended. It might be claimed that such a role is

performed by hospitals, but this can be contradicted. The full function of a hospital that is supported by taxation or by communal charitable funds should encompass no less than all of the following.

(1) A hospital should be a comfortable hotel or home where appropriate physical equipment and personnel are available for giving the best treatment that modern science can provide for sick people. (2) Its facilities and its professional staff should provide capable training for young doctors in the art and skills of preventing, recognizing and treating disease. (3) It should provide proper training for nurses to prepare them for their special service as aids to the doctor in the management and treatment of sick people. (4) The hospital should be a source of information on the clinical aspects of disease and should effect the proper application of the information that is obtained through fundamental research in the allied medical sciences. And, finally, (5) the hospital should be a place for directed education of the public in matters of health.

#### THE INFLUENCE OF TWO WORLD WARS UPON MEDICAL EDUCATION, RESEARCH AND PRACTICE

Benefits that history records as political, social, economic or cultural progress which follow wars are associated with retrograde processes that are inescapable consequences of war. Our knowledge of treatment of certain diseases and our surgical techniques have been enriched by the efforts of scientists and the experiences of doctors, as part of the war effort in recent years. But the aftermath of two world wars in our generation has been characterized by some disturbing retrograde changes in medical education, research and practice.

Like the developments in science, art, philosophy, music, literature and other creative forces in civilization, medicine reflects the characteristics of any era in which historical changes have been brought about by powerful revolutionary, economic, political, and social influences. Those reflections indicate the prevailing character of the values which determine human progress and which inescapably undergo alterations and fluctuations in the course of civilization.

Like other arts, the art of healing not only has retained some of the undesirable characteristics of the past but it has acquired some new ones in the present era, which may be looked upon as a reflection of the retrograde phenomena or consequences of a disturbed civilization.

The empiricism of the past in medical practice has received new impetus from the influences of two world wars. This can be identified by the increase in or preponderance of ardent and prominent exponents of concepts, philosophies and practices that bear a kinship to those of the older schools which sought an "elixir of life" or a "fountain of youth". Whereas development of the practice of medicine into a scientific *art* requires that all philosophy which is related to the art shall be based only upon factual science, prevailing medical science is leaning toward hypothetical or theoretical philosophy. Those influences have been associated with the creation of spurious values and a serious decline in the character of medical education and research as well as practice.

177 Evaluation of conditions which developed in the period beginning after the first world war, and which became aggravated after the second, reveals that much of the supposed progress is mostly propaganda and, indeed, harmful or dangerous to life and health. In the interest of public welfare those influences demand changes in the policy and character of teaching and research in medical schools and in the practice of medicine. Some of the more serious causes and effects of the influences that can be attributed to consequences of the wars will be obvious from the following discussion.

Financial gains of war were more than equalled by moral losses. Shortly after the first world war educational institutions were confronted by a windfall of easily available, substantial sums of money. Large funds, often referred to as "tax money", became accessible. Administrators of large and small institutions courted "donors" with avidity and their institutions were beneficiaries of the philanthropy and munificence that was afloat.

There was a mushroom-growth of buildings on campuses of Universities and medical schools. Many "research laboratories" or additional rooms became available. Physical facilities for medical education and research were expanded rapidly. It was inevitable that this too rapid expansion greatly exceeded the rate at which proper training of teachers and investigators can take place. Consequently, the expanded facilities were available largely to untrained or poorly trained personnel.

Those rapid changes inescapably were followed by a corresponding decline in scientific standards, values and ethics. This exercised a reflected influence upon the character of services that medical practitioners can give to the public. Prior to the wars standards for medical research were high. Many years of fundamental training and experience were required in preparation for teaching and research positions. Young men and women sought opportunities to work with or under direction of well-recognized, established, responsible scientists. This was altered as a consequence of the aftermath of war. The great leaders, masters, teachers and investigators who inspired and trained their pupils and collaborators were too sincere and preoccupied to be influenced by the material advantages which were bringing about the very antithesis of all the traditions and values that they represented. And, administrators had to convince the philanthropic donors, some of whom were also trustees, that their philanthropy is worth while or, in the words of one good business administrator of a University, is "paying off."

The expanded physical facilities were made available to a new type of "research worker" and a *production line* of medical scientists began to turn out the necessary *advertising* material for educational institutions in the form of *publications* in journals. Now, many of the representative journals are controlled by those people. Scientific articles which controvert their work and demonstrate inadequacy of their investigations, standards or conclusions drawn therefrom, too often are refused publication in journals which represent related scientific organizations or medical societies.

Freedom of scientific press is thus jeopardized. For example, the editorial board of a leading journal refused to publish an article reporting scientific, controlled experimental proof of invalidity of the concept of adrenal control of potassium blood levels. The reason given was that it would "reverse current thinking". Another editor, representing an outstanding medical journal explained a similar refusal by the statement, "of course, we must be guided by the consultants whom we have". Upon investigation, it appeared that the "consultant" was the very person whose concept was controverted in the rejected manuscript.

The graduate school has contributed to *mass-production of professors* and has developed or encouraged so-called *schools of thought*. Another source of medical teachers and investigators has been the laboratories of commercial drug manufacturers. Many, if not most of these, are equipped only with a Ph.D. degree and have not had medical education or training. Teaching of the pre-clinical sciences in medical schools is largely controlled by them. These and other similarly significant conditions can be held responsible for many of the retrograde manifestations in medical education, research, and practice which are directly or indirectly associated with the aftermath of wars.

#### MEDICAL PRACTICE IN THE MACHINE AGE

The mechanization of industry and standardization of its techniques that have come about in consequence of evolutionary progress of our civilization characterizes the "machine age". This has not been without a pronounced influence upon other phases of human activity. In the practice of medicine and surgery, that influence has been one which altered not only standards and techniques but has completely or almost entirely abolished the much desired and essential human relationship that hitherto has existed between doctor and patient.

Medical practice has become so specialized that the various sections into which it has been divided have each become mechanically distinct from one another. The different specialties are independent units in a system. The various specialists have become detached individuals in relation to the function of medical service as a whole. This not only has practically abolished the human relations factor but has contributed to a deplorable development of modern commercial practices among physicians.

Like the slot machine, where one can select his purchase, drop a coin, push a button and obtain his product, the modern clinic offers a variety of specialties and specialists. The patient is subjected to examination and treatment by people whose knowledge and skill in most cases are limited to their particular specialty. For an overall examination, diagnosis and treatment he must obtain the services of many different specialists.

Rarely does one of those specialists possess a comprehensive knowledge of the entire human organism. Nor, if he does, is he permitted by modern specialty organizations to give the patient all the benefit of his knowledge. For, should he overstep the limitations of his particular field and be found guilty of so doing, he would be condemned

by the Sanhedrin of his specialty. Usually a surgeon is not permitted to rely upon his own diagnostic skill as a basis for performing an operation. Nor has he the right to treat a post-operative "medical" complication of his patient. For violation of that regulation he may be excluded from membership in his specialty organization. His rights and privileges to practice his profession are jeopardized if he accepts responsibility for the care of his patient beyond the mechanics of surgery. He must share the care of his patients with the internist or other related specialists. All of these factors not only have altered the human relations between doctor and patient but have become a large factor in the unduly large increase in the cost of medical care.

The principles and practices of the machine age have had a decided effect on medical practice. Spokesmen for powerful medical organizations, who so commonly condemn the practices of labor unions, seem to fail to recognize the aforementioned practices of their professional organization as being no different. It often appears that specialization in medical practice has greater economic than professional significance.

#### SOME UNDESIRABLE CONSEQUENCES OF PREVAILING CONDITIONS

Many or nearly all recent graduates in medicine lack a substantial foundation in physiology, pharmacology, pathology and therapeutics. They are, therefore, easily led into the practice of promiscuous prescribing of highly toxic drugs. They are not competent to prescribe established, pharmacopoeal, galenical preparations and they lack a substantial knowledge of *materia medica*. They obtain much of their information from advertising material distributed by drug manufacturers. Their growing reliance upon empiricism includes an increasing practice of dangerous and unjustifiable surgical procedures. This also can be attributed to the lack of adequate understanding of the basic medical sciences, particularly physiology and pathology.

Finally, and perhaps most important of all, is the apparent decline in the regard for human life which can be attributed directly to the influence of war. Having witnessed wholesale destruction of human beings and the obvious futility thereof, many doctors seem to have acquired an indifference toward the value of human life. That attitude can be recognized as a characteristic of corresponding medical research as well as of practice. Whereas, in the past, all possible studies of the pharmacodynamic actions of drugs were made before their use as therapeutic agents was considered proper, most new remedies are distributed now on the basis of very inadequate, superficial, or positively contradicted scientific support for claims of their therapeutic value. Thus, also, can be explained the readiness with which so many clinicians undertake the performance of various dangerous surgical procedures before scientific investigations of their value or possible injury have justified or condemned them.

This latter seemingly incredible statement is proven by the alarming fact that surgical removal of the adrenal glands has become a recognized or accepted growing therapeutic procedure. *That operation can only result in a fatal outcome when it is performed!* The one fact that is thoroughly established and incontrovertible is that, even with



hormones and other treatment, bilateral or complete adrenalectomy is fatal in all species!

Insofar as unwarranted or dangerous therapeutic use of drugs is concerned, we need only cite some of the proven effects of administration of the popularized steroid compounds or "wonder drugs", cortisone, Compound F or hydrocortisone, ACTH, DOCA, etc. It has been amply demonstrated and published in available literature that, if a fatal outcome does not result from their use, the following may be induced.

1. Water retention, resulting in edema, ascites, anasarca.
2. Cardiac embarrassment and failure.
3. Toxic hypertension and other injurious blood pressure effects.
4. Serious changes in the cellular elements of the blood.
5. Aggravation of existing infections.
6. Muscle weakness, osteoporosis, interference with growth and healing.
7. Hirsutism, acne vulgaris, urticaria and development of painful nodules.
8. Serious disturbances in secondary sex functions and organs.
9. Schizoid episodes, frank psychoses, status epilepticus, convulsions and coma.
10. Production of Cushing's disease or its counterpart.
11. Acute perforation of duodenal ulcers or Meckel's diverticulum.
12. Production of cancer.

An unsuspected source of grave concern could be revealed by investigation of the extensive and growing practice of "clinical research" by doctors in hospitals. The use of patients for testing the supposed value of various new drugs and for elaborating techniques for new ideas in surgery is a prevailing dangerous practice. Furthermore, human beings are being substituted for laboratory animals by some clinical investigators, under the name of "medical research". For example, it has been reported that babies were deprived of sunlight in a large hospital, being kept in a dark room to study vitamin deficiency. In another hospital, children were reported to have been subjected to withdrawal of blood for chemical research until it was necessary to seek plasma for transfusion to save their lives. Other similar examples can be given. Such developments in modern "medical research" bear too intimate a kinship with recent practices in the Nazi concentration camps to be ignored.

There is a probability that undesirable features of modern medical practice may explain why some people, seeking some one in whom they can place confidence, resort to patronizing practitioners of healing cults, etc. Perhaps, also, there is some relationship between those features and the growing demands for socialization of medicine. In any case, they are developments which are directly concerned with fundamental problems of Health and Medical Education, Research, and Practice. They support the idea that a *new era* in medicine is inevitable if civilization survives and that a *new concept* alone can bring it about.