



The Physician as Humanist*

GEORGE T. HARRELL

Dean of Medicine, the Pennsylvania State University College of Medicine, Hershey

It is appropriate that this lecture should be given in a building which is devoted to the broader aspects of living and which is located on the campus of an institution which treats bodily ills. This institution began as part of a liberal arts college. This tradition in the state of Virginia started with Mr. Jefferson when the University was established at Charlottesville. He decreed that one of the first chairs should be in medicine, not as preparation for a professional career, but as a discipline which should be understood by all educated men. The faculty at this institution has recognized this principle, and this lectureship was endowed by a member of the faculty—a rather unusual occurrence. The medical college is continuing its interest in this field through the ecumenical program which is just getting started and which is broadly based in the health sciences as a whole.

Historical Role of the Physician

We live in a time of great change in the world. The industrial revolution, only 200 years old, was made possible by the harnessing of the sources of natural power, particularly the fossil fuels—coal, oil and gas. At the rate we are being so profligate with these fuels, we can anticipate that the supply may be exhausted in a hundred years, if not less. We are beginning to turn to nuclear power, developed for the purposes of war, but now being used for peace.

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Even this source is not inexhaustible, and in the long run we must look toward the harnessing of the sun. These changes in the physical world around us have resulted largely from the growth of science. We in medicine are proud of the fact that the sciences as we know them today began in the faculties of medicine in the medieval universities through the efforts of physicians to improve the care of patients under their charge. Roughly 90% of all the trained scientists who have ever received graduate degrees in history are alive today, and many of them are still working. This development has resulted in an explosion of scientific knowledge, most of which we use for the good of man.

Along with this change in the physical world has been an evolution in society. Man, so far as we know, has been on this earth somewhere in the general range of a million years. He has been organized into civilizations for something like ten thousand years, as best we can tell from archaeological studies. Before this time he moved in groups, which were essentially tribes. This pattern followed that of animals, which group in herds for mutual protection.

The family unit apparently began to evolve when man turned from the nomadic life to an agricultural one and thus became localized in a given area. Family units began to group together into towns and cities. The political units grew into nations which have been largely determined by geographic and economic factors. Now we are

seeing the evolution continue into supranational organizations involving continents. Indeed, with the rate of communication and the ease of travel, we are coming closer and closer to one world.

If we look at these factors in historical perspective from the point of view of the physician, we recognize that, in times past, life was short and quite perilous. The causes of disease were unknown. Epidemics swept across the land, and other diseases were endemic. Most people died of infections, and most of those who died were children. It is likely that more than half of the children ever born died before they reached their fifth year. Illness was cared for in the home by the family with the help of the shaman, witch doctor, medicine man, or physician. The first physicians, so far as we know, were probably specialized priests, because priests were the first educated men. They made observations on natural phenomena about them, and learned to predict the occurrence of eclipses and other celestial phenomena. We see the evidence of their accurate observations in such monuments as Stonehenge, in the temples of the Aztecs and Mayas, and in pyramids and other buildings in Egypt and the Far East. Because of their ability to predict celestial phenomena, particularly the coming of disturbing things like eclipses, the priests were surrounded by an aura of magic and miracles. As the priests moved more into the study of illnesses, I am sure they continued to encourage the feeling of people that

they were able to perform miracles. Even today many physicians are not averse to having their patients feel that they are, indeed, miracle workers.

As the physician evolved from the priest, he turned his observations from natural phenomena to human disease. The information observed was recorded, passed on to others, and often incorporated into religious laws. The Old Testament indicates the Hebrews accurately observed that whenever groups of people came together in an army, outbreaks of dysentery followed quickly. They noted the cats' habit of burying their excreta, applied this principle, and found that epidemics could be controlled. Each soldier was required to provide himself with a wooden paddle and deposit his excreta outside the confines of the camp. We now know, scientifically, that the control is due to the secretion by soil organisms of antibiotics which kill the pathogenic bacteria causing dysentery. The Hebrews also observed that, when people ate pork, muscle pains frequently followed; hence, they proscribed the consumption of pork by their religious followers. We know today that the cause of these symptoms is trichinosis, an infestation by a small, round, parasitic worm which lives predominantly in hogs. We see in many religious ceremonies, such as the communion service, the washing of hands by the priest. This act is a recognition that the contamination of food by hands soiled with excreta can pass on infections to others.

The physician in the past had few effective drugs. All he could do was give comfort to families and wait for the natural history of the disease to run its course. The few "drugs" he had to work with were chiefly natural products from plants. The poppy probably has been the most helpful plant with its product, opium, relieving pain or controlling increased gastrointestinal motility. Ipecac will alleviate

amebic dysentery, cinchona bark will control the chills and fever of malaria, and the products from the deadly nightshade or oleander will relieve intestinal cramps. The ladies extended these latter observations on the effect of deadly nightshade by chewing the leaves so that the belladonna would dilate their pupils and thus make them beautiful.

In any event, the physician and the priest have always dealt with people—with the human being—and, hence, have always been humanists. Their concern is with the interests, motivation, and reactions of people. We recognize that each individual is distinctly different from another. The individual variability of all living things is a basic biologic phenomenon. Members of families, as a group of individuals, react with each other and react to the normal stresses of living. Families live in a community, which has a personality, just as people do. The community's personality is determined largely by the cultural background of those who inhabit it. All of these factors affect the illness of the patient and are felt beyond him biologically, socially, and economically on the family.

Medical Profession

Professions have a responsibility to society to render service. Society, in turn, gives privileges to a profession. The practice of a profession is restricted to its members, and in return the profession as a whole is required to maintain its standards and to develop a code of ethics. We recognize that to practice medicine is to enter a highly confidential interpersonal relationship and, hence, requires professional and personal integrity of the highest order. This idea has been expressed in various ways, probably the best known of which is the Hippocratic oath. But similar statements brought up to date for this century have been put forth, as in the Declaration of Helsinki.

The medical profession is to serve the patient and society. In the Christian religion, Christ taught that we should help the sick and not cast them out as had been the custom in many primitive societies. Luke, the physician, was one of the early followers of Christ. He taught these humane practices which are also put into effect in many other religions. Previously, when people became aged and infirm or developed what was recognized as an epidemic disease, they were put out of the tribe, just as animals cast the weak out of the herd because they attract predators.

In the past, the sick have been cared for chiefly in the home by the family and the physician. The priest, however, has always visited the sick. During the crusades the religious orders—particularly the Knights Hospitalers—on their return from the Far East often came back with leprosy, so that they were required to stay outside the cities. This practice led to the development of the principle of quarantine. Because they were Knights Hospitalers, their habitation came to be known as a hospital, and we have kept this term to this day. The original hospital was an isolation unit to quarantine epidemics and to protect society, rather than a place to treat the sick. Later this idea was extended by the church which took the responsibility for providing a place for medical care. The original nurses, as you know, were called sisters since they were sisters in the church. This thread of the support of many hospitals by religious orders continues to this day.

We have seen the parallel threads of medicine and religion continued in the spread of our religious beliefs through missionaries who have learned that one of the most effective ways to get the attention and faith of primitive peoples is to establish hospitals and to render medical service. This pattern we have seen exemplified most strikingly in this century by Albert Schweitzer, who was a great hu-

manist interested not only in religion but in philosophy, music, and medicine, though he carried his philosophy for reverence of life to an extreme.

In any event, we have seen changes coming in society which affect these trends. We have seen increasing mobility in families, so that one family in five does not live in the same house it lived in five years previously and another one in five does not live in the same city it formerly lived in. This trend poses an increasing problem in medicine when the physician attempts to develop a close and continuing relationship with a family. In addition, the family itself is changing. In the past we saw several generations living in the same household, with the grandmother helping to mind the children, raise them, and care for their illnesses. Now families are essentially one generation families, and the parents and grandparents are living in separate households.

New Trends in Medicine

We have seen a great increase in the complexity of the instruments and types of machines with which we treat sick people. We have seen a growing centralization of medical care in institutions as our culture has become urbanized. This trend poses a real danger in the loss of the personal touch in the care of the patient.

We have seen changes in the character of illness. The infectious diseases which killed the majority of people as short a time as thirty years ago are now largely under control. The chief causes of death are no longer influenza, pneumonia, tuberculosis, and the enteric infections—typhoid fever and dysentery—but are now chronic illnesses—heart disease, stroke, and cancer. We have seen an increase in life span, which is greater now in women than in men. We have learned through preventive measures, the development of drugs

and the application of new techniques of therapy, to interrupt the natural history of disease. Science has had a major role in causing these changes.

In the past, the professions were theology, law, teaching, and medicine. The education of the professions has been in the hands of the professions, at least since the Middle Ages. As I have indicated, the faculties of medicine in the medieval universities were the places where observations on sick patients led to studies in physical sciences. You are familiar with the portraits of the physician in his velvet robe and hat, holding up a Florence flask of cloudy urine. He began to perform simple chemical determinations, and out of these experiments grew the sciences of physics and chemistry as we know them today. In biology, the whole science of genetics, which is probably the most interesting and exciting scientific problem facing the world today, was started with this thread of medicine and religion. The accurate observations of Mendel, a monk, were made on flowers which he grew in the monastery garden; and the principles he developed have been applied to the breeding of many other types of living things. We are seeing social and behavioral fields just beginning to evolve as sciences in their own right, comparable to the physical and biological sciences. An explosive growth of knowledge has occurred largely as a result of research. From our point of view, the most important scientific principle we have recognized is that of biologic variability—the fact that no individuals in a group are identical. No two of you look alike, behave alike; and if we measured any physiological parameters on you, the data would scatter. If we plot the data, whether height, weight, blood pressure, blood sodium content, urinary chloride excretion or anything else, we come out with a smooth bell-shaped probability curve. We recognize also

that the physiological measurements of an individual are variable from day to day. To develop scientific criteria in an essentially variable system, one must study large groups of individuals in order to smooth out the individual variations. The data on one individual, when applied to conclusions drawn from studies on a group, meet no scientific criteria that are acceptable. This is simply another way of saying that the practice of medicine as it applies to the individual patient is not a science, has never been a science, and can never be a science.

The practice of medicine is an art. The educational background of the physician and his training must take this fact into account. What the physician does in practice is to apply scientific and technical knowledge to the solution of an individual problem. Other professional people do the same thing. The architect, for example, talks to you about your sense of values, how you want to lead your life, what your cultural interests are, and then he designs an individual solution for your family, which is your home. This process is an exact parallel to what the physician does when he is faced with a diagnostic or therapeutic problem. The important thing is that, unless one takes into account the several factors that motivate people and drive them, one cannot be sure that the recommendations for care will be accepted by the patient and his family. Many times the failure to accept the recommendations of physicians is due to religious, philosophic, or economic factors outside the realm of science. For example, we need only call attention to child spacing when the mother has advanced renal disease and problems involving life and death are concerned. How do we carry these ideas over into the education of the professional man?

Historically, all professional men received a classical liberal arts education. Today we feel that in medi-

cine there should be parallel instruction in the sciences and in the humanities. Whoever commits himself to a life in the medical profession has committed himself to a never-ending process of self-education, which should be in both disciplines. The priest has always had a classical education, but more and more he is becoming involved in the behavioral and social sciences which are proving to be necessary for the practice of his profession.

In any event, those of us in medicine should see that we all work together for the education of the physician. All health scientists and workers will be better prepared to give patient care if they are trained together to work better together in the community. We recognize that the sciences on which medicine is based are not distinct disciplines but a continuum and that our designations are artificial when we call one science chemistry, one biology, and another physics. Take the simple problem of Mendel and his colored sweet peas, which is concerned with the study of genetic inheritance and the transmission of characteristics. We know now that this transmission is accomplished by a single chemical substance—DNA. But, if one studies DNA from the chemical point of view of the number of atoms and their arrangement, he may be called a biochemist since he uses biochemical tools. If a person studies this compound from the size of the molecule, its sedimentation gradient, its X-ray defraction pattern or uses some other physical technique, he is called a biophysicist. But if he studies its effect on living things, he would be called a molecular biologist. In effect, each person is studying the same chemical compound; but, the sciences are artificially separated according to the research tools applied to the solution of this scientific problem. Hence, in medicine, our education should be from as broad a multi-discipli-

nary point of view as we can devise, both in the basic and clinical sciences. If we extend this concept beyond the student years, we recognize that the physician in practice can begin to call on other people who have different backgrounds, such as the priest, who also have an interest in the motivation and reactions of people from a quite different point of view than the physician. Hence, the priest can be used as a professional colleague in the care of certain patient problems.

Current Problems

The major problems that face the world today, in my opinion, are not scientific, but ethical and moral. The basic scientific information on which we could arrive at workable solutions to these problems is largely known. We need to refine and extend our knowledge; but we have already learned that, even though we accumulate additional scientific knowledge, the acceptance by people of solutions to their problems on the basis of their beliefs and sense of values has not come about. Let us take one of the very practical problems which faces us today—the balancing of the food supply with the growth in the population. It does not seem likely that, even with the application of scientific principles we know, we can keep up with the increase in the food supply at the same rate as the population. We can turn to the sea as a source of protein; we can increase the use of chemical fertilizers on the land; we can increase the use of pesticides to improve crop yields. When we do the latter, it is not without danger; for when we use pesticides, we are upsetting natural ecology.

We have also learned how to control the rate of population growth. You know about “the pill” and the various intrauterine devices to control conception. The acceptance of these methods by people

is determined not by scientific principles, but by philosophic, ethical, moral, and religious values. People in all parts of the world have known for centuries how to cause abortions. We are faced with the problem—and you see it in the newspapers daily—where the legislatures will not face revision of archaic laws devised many years ago before safe, scientific methods of abortion were worked out. What is the ethical problem if there are known genetic factors which will lead to handicapped children or if there has been exposure to rubella virus in early pregnancy? Is it proper that this pregnancy should be aborted?

We look at the population problem in India, where cattle roam the streets, cannot be killed for religious reasons, and eat food which could be used for human consumption. Yet, when any suggestion is made by government that the number of cattle be reduced, riots and political turmoil follow. We have a problem all over the world with rats. Rats eat as much food as human beings do, and we can control the rat population using one of several techniques. We do not face this problem, which is not a scientific one but rather one of inertia.

We are beginning now through scientific means to learn how to manipulate genes. We have recognized that viruses and drugs can alter the development of organs at certain stages of pregnancy. With this beginning, one can see coming down the road not too many years hence the ability by other techniques to make definite changes in genes as one might desire. Already, we can interfere with the natural history of the transmission of characteristics. We see artificial insemination, started in cattle breeding, now applied to human beings. It is perfectly possible now for a woman in a childless marriage to select the characteristics she wishes her child to have. We have seen more recently the ability to transplant an ovum from one human

being to another. This accomplishment raises the possibility of a sterile, non-ovulating woman picking another to furnish the ovum which can be fertilized by her own spouse, be implanted in her fallopian tube, and result in a pregnancy. We recognize that application of these techniques may stop the genetic transmission of diseases which are usually fatal. Hemophilia is a perfect example in which we know the recessive gene is transmitted only through the mother. What are the moral and ethical implications of these things which we now technically can do?

We are getting more and more into the problems of organ transplantation. What is the proper ethic for use of this technique? We have seen the refusal of certain religious sects with fundamentalist beliefs to permit transfusion of children or of themselves when they need this life-saving procedure. Should we take society's power through the courts to require transfusion when it is against religious belief? What types of people should we select for the implantation of artificial hearts and for the use of artificial kidneys or dialysis machines, particularly when we know there is an irreversible biologic process? What is our responsibility as physicians to prolong life if we know there is a hopeless illness? Is the withholding of drugs or procedures which could prolong life for a while ethically and morally the same as giving a drug which would hasten inevitable death—euthanasia? This problem has been debated, of course; but we have no clear code of ethics on which to base our actions.

We are becoming more and more concerned with problems of human experimentation, since we are learning that we cannot always extrapolate from lower species to the human being. This problem is going to become more important if legislation similar to that passed in the last Congress is extended. The restrictions on the use of ani-

mals for experimentation of all types, if continued, will require us to go more and more directly to the human being. We have to recognize, also, that in many types of disease processes we have no model which we have been able to reproduce in lower animals. In these instances, we must do our primary experimentation on the human being.

We have learned to interrupt the natural history of disease. We have learned to control the vectors which transmit infectious diseases and the reservoirs which harbor them. We have seen the philosophy of the reverence for life extended in Schweitzer's hospital so that you could not swat a mosquito even if you saw it land on you and be about to bite. You could not kill the rats that were eating the food in the storehouse. How do we interpret moral values in the light of the world in which we live? We have seen the development of mood-altering agents and of penicillin, which is probably the most important single drug that has been developed. The mood-altering drugs have the greatest implications for moral, ethical and philosophic considerations, however. When we can control behavior, as we know we can with mood-altering drugs, what could be done with inclusion of these agents in food as additives? You are familiar with the novels that have been written on this general theme.

What about accidents, which are the third largest cause of death and most frequent in the most productive years of life, between the ages of ten and thirty? Accidents occur in individuals whom we call accident prone, and these accidents appear to be examples of reactive behavior. In any event, we need to consider what is society's responsibility and that of the physician in using the tools he has now at hand in these types of problems which he thinks may be soluble. We are contaminating our environment, as is written in the papers almost

daily. What is our responsibility to prevent man from harming himself?

Educational Programs

How can we put these points into educational programs for the future? The ultimate objective is the improvement of patient care. We believe that solutions may come in the study of the whole man, not just of his biological interactions, but of his functioning as a unit of society in his family and particularly in his community. It is there that the stresses of living cause him to react and produce symptoms which we cannot medically explain. These symptoms arise not only from the pace and pressures of living but from the frustrations of his job and from the normal stresses that occur within families. We think the educational process should stress continuing self-education of the physician from the beginning of his professional career. We recognize that the thread of human biology can start with other species but must go on to the human being. We believe that much more stress should be placed on behavior as a basic biologic phenomenon which is essentially variable. This study can start with group and individual behavior in animals and then extend into observations on man. We can then study the added impact of disease processes through all the years of the medical curriculum. To help in this program, we plan at Hershey a Department of Behavioral Science as a basic medical science which will teach through all the years and serve as a base for all the clinical disciplines.

We think there should be the parallel thread of the humanities through all the years of the curriculum. We have already appointed a man to our chair in religion, and we believe that the study of comparative religion is an important background for any professional man in the health sciences. Religious beliefs encompass the

personal, intimate, and emotional reactions of people to beliefs which they hold. As we have indicated, we feel that they affect the acceptance by patients and families of the physician's recommendations for care. We plan to incorporate teaching in the history of science to get the background on which the profession of medicine now rests, extrapolating into the future what we can see coming over the horizon. We think there should be another chair in philosophy and ethics. Unless the physician has come at peace with himself in a philosophy that is satisfactory to him, he cannot be the best physician to his patients. We believe that the interpretation of the changes in moral values that we see in the world, particularly in the community, is the responsibility of this field. We have called this area the Department of Humanities.

We feel the role of the family must be studied further. We must consider not just the care of illness after it has developed but the prevention of disease and the delaying of complications that we know are coming from the genetic background of the families. We must maintain health at its highest level and see that people have some joy in living. The family must be related to the community so that the resources available in the community can be used to achieve the best results in patient care. Accordingly, we are establishing a Department of Family and Community Medicine to teach throughout all the years of the medical curriculum.

All of these programs are designed to come together at a focal point—the patient in the family setting. Here we hope the physician will learn to bring colleagues in—the priest, the educator and others. The approach should be

from the multidisciplinary point of view, exactly as we started with the scientific aspects of education, but in a broader sense. If we can capture the religious zeal that we have had in the past in the educational process, we can improve the care of the sick. We should remember the dignity of the individual and emphasize the individual both as a student and as a patient. We feel these ideas can be designed into the physical facilities in which the educational process takes place. With the student, it is the medical sciences building and the hospital where patient care takes place. We have planned the hospital with all single rooms for patients, where dignity can be maintained most easily.

We see changes in the patterns of support, with third parties coming in to help care for the cost of illness. But, in this trend is the danger that more and more an attempt will be made to substitute an institution for an individual in what is in essence an interpersonal relationship—that between the patient and his physician. We are posed here with another philosophic and ethical problem. How much do we use machine techniques in data handling? What is the effect of this technique on the patient when he knows that his data have to be made available to a third party who is going to pay the bills for his illness?

Conclusion

These problems are all soluble. If we give thought to them, both in the educational process and in the application to patient care with the dedication of all those working in the health professions, we will increase our service to people.