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ABSTRACT

Medical scientists, doctors, and patients have different models of disease that cause doctor/patient communication problems. The patient model is reflected in the average American who is a high school graduate but who has little understanding of the human body and science. The model of the medical scientist is reflected in the typical graduate of medical school who decides to specialize in an area of research such as genetics. The exemplar for the doctor model is the medical school graduate practicing the art of healing medicine. Laypersons classify diseases very differently from the medical scientist/doctor and are not concerned with diagnosis of the disease. The medical scientist and doctor want a rational explanation of every worsening and bettering, but the patient does not. The patient is interested in results. Treatment is more important to the patient than diagnosis and etiology. The scientist's first concern is with the pathogenesis of the disease, the development of the morbid process. The patient's first concern is with a cure; the doctor's first concern is treatment. If doctor/patient relationships are to improve, there first must be awareness of the problem. Next, there must be awareness of the causes of the model variances: culture, world views, schooling, attitudes, values, and stances. The solution is a realization on the doctor's part that he or she must bridge the gap between theory and common sense and between the scientist's model of disease and the patient's model of disease. (HOD)

Three Models of Disease and their Influence on Doctor - Patient Communication

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No one would deny that the relationship between doctor and patient is suffering from a general malaise. A variety of signs is evident. Fewer young people, aware of the increasing number of conflicts between doctors and patients, are entering medical schools. Many do cors are switching from clinical practice to other areas of medicine because malpractice suits are soaring or because of unsatisfying doctor/patient relationships. Patients are demanding enforcement of their rights and demanding more general practitioners, nurse practitioners, humane doctors and humane hospitals. The basic cause for this deteriorating condition in the doctor/patient relationship is a breakdown in communication, and the medical communication experts have sorted these problems into several types. A problem of jargon interpretation results when doctors use medical terms that the patient cannot understand or when patients use jargon. For instance, a truck driver might use a new slang term with a doctor to refer to his venereal disease or a doctor might use the term NPO with a patient when he means nothing permitted orally. Because doctors are often busy, they often withhold information that a patient wants in order to understand his disease. Doctors fear patient reactions and tend to be overprotective, so they lie about terminal diseases, causing doctor/patient conflicts. A meaning problem often exists when doctors and patients both understand a general medical term, i.e., abortion, to mean something similar (therapeutic or criminal) but yet different. Doctors use a broad, general meaning but patients are familiar with narrow meanings. These are real problems which need to be remedied,

but a more basic problem is responsible for the communicative mismatches and subsequent breakdowns in the doctor/patient relationship.

Disease is not perceived or responded to in the same manner by all individuals and societal groups. It is perceived in terms of the value systems, belief systems, and attitude-sets prevailing in society and culture. The medical scientist, the doctor, and the patient--each has a different understanding of what constitutes disease and how it should be dealt with. Each has his own model of disease, based on his view of reality. The patient model is reflected in the average American who is a high school graduate but who has little understanding of the human body and science. He may have attained some education beyond high school, such as a vocational college degree, but he is not an intellectual and generally has had little or no background in biology. The model of the medical scientist is reflected in the typical graduate of medical school who decides to specialize in an area such as genetics. He may work in a research hospital or direct a research clinic. Although he may have a degree in a medical specialty, he is not involved in clinical practice. His ability to think abstractly and his years of training make him an expert in biology and scientific methods. The exemplar for the doctor model is the medical school graduate practicing the art of healing medicine. He may be a general practitioner or a specialist, but he is involved with clinical practice and sees patients daily. He also has a scientific background but differs from the scientist because he relies on intuition as well as study and realizes that the Latin word "doctor" means teacher. It is necessary to examine how the patient, medical scientist and doctor perceive disease

to understand how different expectations and perceptions can interfere with the doctor/patient relationship.

The Patient Model

The patient, unlike the medical scientist, is a passive watcher and waiter. He is, literally, "the patient," the one who receives the action from others and who undergoes change. In his disease model, disease is a drama with actors/agents, events, and a resolution, but he does not understand this drama and does not see its dynamics and complexities. What goes on during rehearsals, behind the curtain, and between scenes is not apparent to him and is not a matter of concern. He does not see himself as an active participant in the drama, nor does he see himself being able to control any part of it. Since he does not understand the plot or the motives for events and actions, he only sits and watches and senses the drama, feeling and reacting strongly to it, but not knowing exactly why or to what. He cannot reason it out. Disease is a drama, and his role is to be either the stage itself or part of the audience.

Purpose. The average person in today's technological society does not see much purpose in disease. Varying age groups attending Indiana Vocational Technical College in Fort Wayne, Indiana, fit the description of the average patient in the patient model. Asked about the meaning of disease, they responded with answers that illustrated how their culture had shaped their attitudes.

> "I guess God knows what the purpose of disease is, but I sure don't."
>
> "Disease works mostly through sickness, and its purpose is to get special treatment."

"I feel maybe God gave us diseases so that we would learn how to take care of ourselves."

"There isn't any purpose, for there is really no need for it."

"Diarrhea has no real purpose except to evacuate your intestines on a very regular basis."

"Disease is a punishment--it proves to me I'm a failure."

"There isn't a welcomed disease; all it can bring is grief and discomfort. Disease isn't like waking up on a bright sun shining day with fresh air; it is scary; it just isn't good."

The medical scientist, on the contrary, sees some good in the individual's disease. To him, the purpose of disease is to give cues to the doctor which help him generalize in order to diagnose. The disease experiences provide raw data which are the bases for all medical literature. Valid medical practice is determined by scientific literature which specifies the best therapy. This validity is necessary in legal situations and for insurance companies like Blue Cross. The most competent doctors are the ones who have updated their knowledge from medical literature or who have interned with physicians possessing updated knowledge derived from patients' raw data. Therefore, disease has no good purpose for the individual patient but has a general good purpose for the scientist.

Definition. When the average student at Indiana Vocational Technical College, a typical patient, defines the term "disease," he does not limit it to a biological definition for the human body, but extends it to include man's mind and soul, animals, inanimate objects, and the world.

"There can be a disease of the body, mind, or of the public: It puts these things in a disorder so they can't function right."

"I relate the word disease to many things we come into contact with in everyday life. Trees, animals, fish, lakes, oceans, environment, and humans can become diseased."

"Disease to me means anything that is abnormal, such as not enough platelets in the blood; or even rust on a car since this is not normal for a painted surface."

"Disease to me can be acquainted with humanity and with non-living aspects of life such as metal. Disease can be of mind, body, and soul. Disease of the soul is merely sins which you haven't asked forgiveness of from God."

Science is uneasy with disease of the mind since it cannot be measured and quantified precisely, but not the layman. He insists on including both aspects of disease in his definition and often indicates that disease of the mind is more serious than of the body. Patients' definitions are informal and often include incorrect information, illustrating the confusion that exists for them. But they do show their attitude toward disease.

The patients' latent model of disease is seen in the words that they use to discuss disease. Disease is an "it," not the "thou" it once was in earlier cultures. Disease is an invader, an attacker and destroyer--perhaps a lunatic and monster. People "get," "shake," "catch," "come down with," and "recover from," it. Disease "strikes," "attacks," "grips," "seizes," people. They suffer from "heart attack," "grippe," "seizures," and "bugs." People see themselves as helpless victims of disease with no control over their destinies. Disease enters the body as an outside agent and is contagious.

"A disease is a bug that enters the body and causes disorder in the body functions."

"Disease is something that is passed on, person to person."

"Diseases are things that come natural and can't be prevented."

"I see disease as a form of destruction with variable intensity. Disease can engulf its victim with a flick of an eye and then go on to suffocate life in less than a week."

"A disease is something you get from other people, animals, or your environment."

Laymen see disease as something that enters, spreads, and consumes; and as something totally random and observable such as a heart attack. They do not see it as a series of events linking together in a chain. Rather, they see it as a host of unconnected happenings occurring simultaneously at times. Laymen do not use the word process in their definitions and do not understand the disease as a dynamic process. For example, in a case of uremic poisoning, laymen do not understand the interrelationship that exists and see no connection between a low salt diet and kidney dysfunction and therefore often neglect the prescribed low-sodium diet. Without basic knowledge of anatomy and pathophysicological processes, laymen must rely only on mental images of destructive elements.

Laymen classify diseases very differently from the medical scientist. They do not consider inflammations, benign tumors, allergies, injuries, or nutritional disorders as diseases. For them diseases are mainly infections. They also believe many symptoms are actually diseases. Persistent cough, white blood cell increase, jaundice, cerebral palsy, dropsy, colic, rash, swelling, breathing difficulty, wheezing, dizziness, paralysis, coma, diarrhea, depression, anemia, and old age would be labeled by them as diseases. They may define anemia as "A disease that has something to do with the blood, where there isn't enough white blood cells." They consider anemia a disease and not a symptom and confuse white cells with red cells. Laymen's definitions are vague, informal, and often incorrect when they aspire to be scientific.

The self is involved in a patient's model of disease. Disease is a personal state of affairs for him and is more concrete than it is for

the scientist. Disease "attacks" him, and he has emotional feelings about it. He may try to suppress it and not face it, or simply ignore it. He may react angrily to disease and fight it with high blood pressure. Disease affects him in a unique way. It is his disease, and it is different from anyone else's disease. It is an enigma to him that needs interpretation. His interpretation will be idiosyncratic based on his earlier experiences in life.

Diagnosis. Laymen do not concern themselves with diagnosis. It is not important to them, and they think they can bypass diagnosis in the disease situation.

When a patient consults a doctor, it is usually because he has pain and symptoms, and he wants relief. A woman may have a yellowish discoloration of her skin and itching and seeks a consultation because of these symptoms. The doctor diagnoses a disease, infectious hepatitis. Her main concern is not the disease, however, but the symptoms, and since she didn't know what hepatitis means, she reacts to the term. She wants to know what effects hepatitis will have on her family and her life style. The word infectious is a threat to her because infections are bad, and she sees them in terms of being highly communicable and probably causing her to be isolated. What really matters to her is the yellow jaundice symptom--not the disease, infectious hepatitis. Yellow jaundice is a serious threat since she associates jaundice with cancer or other diseases having a jaundice characteristic. Her uncle was "yellow" and he died, so she is disturbed. Her whole attitude toward the symptom is based on her earlier experience with jaundice and the presuppositions she had

about it. The actual diagnosis and classification of her disease is unimportant. Alleviating the symptom is important.

In addition to the patient's treatment, he is also greatly concerned about the consequences of his therapy. To illustrate, a woman patient diagnosed as a high risk for heart disease because of her high cholesterol level commented to the doctor, "I'm not scared of the risk, only what it will do to my life. The diet restrictions are too great since my family really likes to eat at McDonalds." In contrast to the scientist, the diagnosis and classification did not concern her, but the consequences of the diagnosis did. When patients do classify diseases and symptoms, they tend to lump them rather than split them. They do not distinguish between the various types of diabetes, pneumonia, or heart disease and do not split anemia into iron-deficiency or pernicious anemia as doctors and scientists do--it is just anemia.

Etiology. The medical scientist wants a rational explanation of every worsening and bettering, but the patient does not. The patient is interested in results so he can accept an irrational explanation. He has alternative explanations such as religious, magic, and mystical ones. Therefore, he may stop seeing his doctor and turn to a quack, a hypnotist, acupuncturist, chiropractor, or a faith healer; and buy patent medicines, analgesics, drugs, and religious books for his explanations. A gout patient finds it difficult to understand what causes attacks of pain in his joints. The scientist knows there is a deposit of uric acid in the patient's joints and is interested in the urea elevation of his blood. When the doctor sees the patient, he says to himself, "There is the gout patient." Although the patient may have an extremely elevated serum

urea, he does not care about that. If there is no pain in the joints, then to him, there is no gout. If his joints begin to hurt--then he has it. Scientists know about cause and effects and care about them, but the layman does not. He does not need a rational explanation for the attack of pain in his joints, for mysteries are important to him. Just as diagnosis is not important in the patient's model of disease, neither is etiology.

However, patients do have some strange ideas of what causes diseases and symptoms even though etiology is not important in their disease model. Notice what the Ivy Tech students say about causes.

> "When you go in a woods with a friend, you can catch some kind of rash and later your friend gets it and this can be spread to different people if they are touched by you."
>
> "Diseases are bad germs which a person has received from unclean or unsafe habitations."
>
> "Mental disease is caused by changing your culture and environment: we have forced some animals out of existence."
>
> "Some of our diseases are airborne by our own culture."
>
> "For the last couple of months, the weather has never been the same from one day to the next. Last week I was caught in a big rain, and going from my automobile to my house I got wet and I've been coughing ever since."
>
> "Pneumonia can start from bronchitis and colds."
>
> "Diseases have no positive causes known to man."
>
> "Hypertension is caused by wanting attention and poor diet."
>
> "Hypertension causes prematurely gray hair and leads to ulcers."
>
> "Colic is caused by a draft or a chill, food not agreeing, or too much candy."

Patients obviously cannot determine causes and do not understand the concept of causality because of their lack of training in logic. They do not know that disease can be caused by congenital abnormalities, familial tendencies, intoxicants, and nutrition imbalance. For them, the agents involved in disease develop or originate outside the body. They do not understand that primary abnormalities in one organ cause effects in a secondary organ. Many of the causes that they attribute to disease are the result of faulty reasoning or no reasoning at all.

Treatment. Treatment is more important to the patient than diagnosis and etiology. But it is not as important as a cure. He sees himself as dependent on the doctor for treatment and seeks it out when the pain is unbearable, yet often considers the treatment worse than the cure. He is not always convinced that the doctor gives all the right treatments. For a cold, he may believe that a good gulp of hot whiskey at bedtime, although not very scientific, is the best treatment. He may go to a doctor ostensibly to get the best modern treatment available, but actually to get some old-fashioned friendship. The patient sees the doctor as a kindly man who can be roused from his bed at 3 in the morning to pull him through a crisis. The elderly patient may reject an order to go to the hospital, if his past experience involved friends or family who died in the hospital. "Hospitals are places where you go to die." Surgery is perceived in the same manner. Many patients today, concerned about taking too many drugs, will refuse to take medication prescribed by doctors; others will demand drugs as the only treatment for their disease, believing diet, exercise, and a good mental state to be deleterious. Patients view

treatment very subjectively; doctors view it objectively. Our technological society discourages self-treatment and encourages outside intervention. The patient feels that not only is he a passive recipient of disease but also a passive recipient of treatment.

Cure. Cure is what is important to the patient--that is what he wants, even if he has a rare genetic disease that requires expensive and extensive treatment. The patient thinks only of himself, not the world at large. He demands a science that will research to find a cure for his terminal disease. If he is aged, he wants a doctor who cares enough to cure at least some of his problems. Once a diagnosis has been made, he wants the doctor to go on--treatment is not enough. He believes the doctor is responsible for a cure, no matter whether it is a rational or an irrational one. The patient sees the doctor as a curer, even if the doctor sees himself as a diagnostician or a therapist. A cure for the doctor or scientist is a return to normal test results and a restoration of bodily functions to a functioning state. A cure for the layman, however, is not having any more symptoms. Everything to him is covert. If he does not see any symptoms or feel any, then he is sure he is cured. If, in the process of a disease, the symptoms in the early stage clear up and disappear, he is sure he is cured, only to be dismayed when new symptoms appear in later stages. The patient does not understand the important role that his own body has in a cure. He does not understand that healing is a process nor that factors such as age, nutrition, and condition of the body are very important for a cure. All these interrelationships escape him.

Some patients feel there are no cures.

"Right now there isn't much you can do if you get any kind of disease to cure it forever."

"A disease has no common cure known by man."

"A disease is something to live with the rest of your life, unless a miracle drug has been found."

"Disease can start at any age and will carry on through many long years."

If science cannot provide a cure, then the patient feels free to ask God for a cure or some magic potion or myth because for him faith and belief in miracles are important. No matter how it comes or who is responsible, cure is the most important part of disease for the patient.

In addition to the personal bias, there is also a holistic bias for the patient. He is emotional and irrational and constantly attempts to make gestalts. Notice what an average man has to say.

"I used to have physical hangups. I feel it was due mainly from the past--Vietnam Syndrome. My marriage had failed, I smoked and drank in excess, and I had some skin disease which they had developed no cure for.

"After about two years of sulking about what a schmuk I was, I decided to bend over and snap my head out of my rectal orfice. In doing so, I reached out to God for a little direction. Boy, did I ever get it. I found that if you harbored negative thoughts, you became negative. When you are in this negative state, you are very susceptible to sickness, disease, and even death, if you let it go that far. I made the transition from negative to positive. I also started running. I run between 6 and 7 miles a day. I cook a lot of good foods (wok cooking) and act as happy as I possibly can. And, I'm better."

Here is a man trying to make sense out of the world and his disease, using a non-scientific method. His view of the world and himself determines his model of disease.

The Medical Scientist/Doctor Model

Disease is also a drama for the medical scientist, and he sees himself as an active participant in it. All of the necessary dramatic components are present in disease--the setting, the plot with actors/agents, a sequence of events, a climax, resolution, and sub-plots all of which are interrelated, goals, foreshadowings, motives, conventions, and a director who understands drama. He is the director who knows dramatic theory and values it and can apply theoretic principles to the drama in order to interpret and improve it under his controlling guidance. The role of the medical scientist is the director who observes, records, and intervenes in the dramatic situation.

Purpose. Science is knowledge equated with research. It is a quest for truth. The purpose of science is to discover the laws that govern nature using scientific principles. Medical science is a biased sub-set of science, and its purpose is to find laws that govern natural things that will lead to treatment, amelioration, or prevention of catastrophes in nature. Science observes phenomena and records them but does not intervene. Medical science observes, records, and then intervenes. Science must be completely objectiv and unbiased; medical science is objective but is biased in regard to the human condition. Medical science is biased to spend large amounts of time and money on research concerning appendicitis in man but not appendicitis in animals. The purpose of disease in the scientific model is to better understand the nature of basic physiologic processes; the abnormal is used to understand the normal. Leon Rosenberg (1973), a medical scientist, points out how this is true for Vitamin-Dependent Genetic Disease. ". . . they (vitamin-dependent genetic disorders)

are worth reading about because as with so many genetic abnormalities, study of the abnormal has advanced our knowledge of the normal--in this case, the metabolic and biochemical functioning of vitamins." In addition, disease is to be investigated in order to be treated and prevented. Another geneticist, Charles Scriver (1973), reaffirms this notion: "In all forms of genetic disease, as in most areas of disease generally, medicine maintains a twofold interest. On the one hand it investigates the etiology and the biochemistry of these inherited conditions with a view to treating and/or preventing them; on the other hand, it examines the same phenomena for clues to the nature of basic physiologic processes, employing the abnormal (nature's experiments) to elucidate the normal."

Definition. Medical scientists define diseases variously. Dr. Patricia Badar, director of a genetic clinic, defines disease as "a bad effect or a disabling effect that leads to premature death. It is a morbid process that takes place in the body, including the mind and brain." A medical science textbook, Introduction to Medical Science, defines it as, "Any definite morbid process usually having characteristic symptoms and at times physical signs." By disease, science means an abnormal state of the body, in any part or as a whole, or a variation from the normal. Disease is a disruption of physiological balance, the consequences of a breakdown of homeostatic balance in chemical, physical, and functional processes. There are many physiological variations which are not classified as disease. A sudden fright, anger, or any other emotion may raise the blood pressure far beyond the average normal of 120 systolic pressure. As soon as the individual quiets down, the blood pressure will return to normal. A variation of this kind is not considered hypertension, but if the high

blood pressure persists over days, weeks, or months, actual hypertensive disease is present. Disease is characterized by change in the organism, with respect to structure or function or both. The scientist, then, has a very broad definition of disease; the following list illustrates the types and examples.

1. Infectious (Hepatitis, Chickenpox, Syphilis)
2. Inflammation (Appendicitis, Lymphopenia--decreases in lymphocytes)
3. Tumors (Benign and Malignant, Fibromas, Lung Cancer)
4. Allergy (Hay Fever, Asthma, Drug Allergy)
5. Injury (Abrasion, Incision, Heatstroke, Burn, Falls, Electrical Shock, Atomic Blast Injuries, Radiation Injuries, Drug Dependence)
6. Congenital Defects (Cleft Palate, Spine Bifida, Hydrocephalus)
7. Mechanical Obstruction (Wax in the ear canal, Bean in a nostril)
8. Circulatory Disturbance (Shock, Myocardial Infarction, RH Factors, Arteriosclerosis)
9. Metabolic Defect (PKU, Diabetes)
10. Nutritional Disorders (Protein-calorie Malnutrition, Starvation)

Science sees disease very comprehensively. It can be trivial or serious, it can be acute or chronic, and it can terminate in recovery (more or less complete), or in death. The function of an organ may be impaired and its structural elements unchanged, as is seen in many diseases triggered by psychic factors where there is no lesion in the brain itself or elsewhere. On the other hand, the normal structure of an organ may be altered but the function may not be impaired. For example, the heart of an athlete may be enlarged beyond that of the normal limits as a result of physical exertion, but the function will not be affected. In pregnancy, the uterus and breasts undergo physiologic enlargement, but it is not a pathophysiologic disease.

Illness and disease are often used interchangeably but, according to science, they should not be. Although all illnesses reflect diseases, not all diseases are illnesses. A person may have a disease for many years without even being aware of its presence. Even though he is diseased, he is not ill. Similarly, the diabetic person who has known disease and has received adequate insulin treatment is not ill. The cancer patient is often totally unaware of his disorder and is not ill until after long years of growth of the tumor, during which time it causes no symptoms. The term illness implies discomfort or inability to function optimally. Therefore, it is a subjective state of lack of well-being produced by disease. Diseases may either be associated with illness or be submerged (latent). If the disease is latent, it will be manifested at some later time or will make the individual more susceptible to illness. A fractured ankle, a disease, is an immediate illness; both form and function are impaired. A child infected with measles, however, does not become ill for approximately 10 days after exposure, the incubation period. Any departure from the state of health, then, is a disease, whether health be measured in theoretic terms of normal measured values (a normal temperature ranges between 98.4°F and 98.8°F) or in the more pragmatic terms of ability to function effectively in harmony with one's environment. The layman's concept of disease is closer to illness since he feels that a disease is something seen and felt. In the theoretic definition of disease, scientists use biological criteria of normality since science is concerned with precision, and defines disease formally.

Diagnosis. Diagnosis is an area where medical science applies scientific methods and principles because it is concerned with necessary

and sufficient conditions, rational thought, making generalizations from experience, hypothesizing, and searching for irregularities in nature. The physician/scientist cannot treat or intervene until he has a diagnosis, which is the distinguishing of one disease from another and the determination of the nature of disease. Diagnosis attracts the scientist. Just as a surgeon feels elated if the operation was a success even if the patient died, so too, does the diagnoser feel happy and satisfied if he has made a diagnosis and looked up available treatment. That is all that is required of him. Many get "hung up" on diagnosis because that is how the world judges them, especially the law in malpractice suits and their colleagues. The diagnostician is concerned with making a correct diagnosis, not with whether the patient lives or dies.

Diagnosis is dependent on nosology--the classification of diseases. According to a prominent nosologist, Victor McKusick (1979), nosology is the essence of theoretical, academic medicine. The scientist desires to know with certainty whether a particular pathologic constellation is filed in the proper pigeonhole. He must determine whether a certain phenomenon is a disease in its own right or merely a symptom that would be consistent with many distinct diseases. Jaundice, dropsy and anemia were at one time classified and treated as diseases but now are classified as symptoms. At one time anemia was considered one entity, but now science considers it a group of entities and splits it into pernicious anemia, iron-deficiency anemia, and sickle-cell anemia, or drug allergy, newborn and megaloblastic anemia. Since there are many kinds of anemia, it is important from the diagnostic point of view to determine the type present. Formerly, the anemias were classified as "primary," implying that anemia was due to

disease of the blood-forming organs, and "secondary," implying it was due to hemorrhage, infection, or kidney disease. This type of classification is now obsolete. At the present time there is a tendency to classify primary anemias according to the abnormality of the red cells with regard to size and hemoglobin content--this method defines type present and indicates the effective therapy.

Etiology. Etiology is the study of the causation of disease. With Hippocrates' (400 B.C.) rational concept that a series of symptoms would produce a certain disease and that disease is not a visitation of the gods but rather something caused by earthly influences, the quest began for the cause of disease. Scientists have since searched continually for the causes of disease. The concept of cause is important in medicine, for medical scientists are interested either in bringing about a certain state of affairs or in removing it. Scientists must be very careful and accurate in their diagnosis of causes, drawing upon a large fund of scientific knowledge. A rational explanation is required for worsening and bettering and for every degree on the scale. Medical scientists place a high value on rational etiology in their disease model.

Intervention/Treatment. Science believes there is a right and a wrong way to intervene or treat. The right way is to use scientific principles; the wrong way is not to use them. The right way is to be impersonal; the wrong way is to be personal. If a medical scientist were trying to intervene in hypertension, for instance, the right way would involve research using control groups. One group would be given a placebo, a second group would be given a reserpine drug, and a third group would be given only psychological support. If the goal is to lower the blood

pressure, he would find, typically, that the placebo and psychological support would lower the systolic pressure from 150 to 140. But to be really effective in treatment, the pressure must drop to 90. The drug given the second group is the only means of reducing the pressure to 90. Science, then, believes the drug effect to be the real treatment, not the effects of placebos or psychological support. Scientists do not value or accept non-scientific treatments. Science believes there are surgical procedures and dietary interventions that can cure certain diseases. The use of scientific principles makes the scientist's concept of intervention different from the quack's. A medical quack might provide psychological support, placebos, nostrums, or physical manipulations, none of which are based on scientific principles. Medical science considers prescribing laetril as an example of the wrong way to intervene because it is not rational therapy. Rational therapy is based upon a correct interpretation of symptoms and a knowledge of the physiological action of the remedy used. This type of therapy is the one scientists favor.

Cure. Treatment is not the same as cure. To the scientist, a cure is a restoring to a functioning state, but to the patient a cure is a restoring to the original structure and function. Correcting a club foot (with surgery) would be a cure if the foot were straightened and the person could walk, even if he limped and the club foot were a size or two smaller than the other foot. The patient would not consider this a cure since the foot doesn't look or function as he thought it would. Scientists also believe disease can be cured by nature or by man. When nature cures, it is called healing and it is a process. Scientists realize the importance of nature in cures, but patients do not, for they always picture a human

being curing them. The cures that man effects can be endogenous, using drugs, for instance, or exogenous, using surgery. Surgeons may cut, but the body heals; and factors such as nutrition, age, and state of health are important in healing. Scientists realize this, but patients do not. The scientist is concerned mainly with cure in general rather than cure for a specific person. He is not much concerned with symptomatic and supportive therapy and, in part, is somewhat critical of the doctor who treats only symptoms and stops there. The right way to cure is to use therapy based on scientific principles after accurately interpreting the symptoms and identifying the specific disease. Knowing the physiological action of the remedy is important. For him, cure is a process--a dynamic process.

The science disease model, then, would look like this:

1. Science —(scientific principles)— goal = truth

   Medical Science —(scientific principles)— goal = truth + intervention

   (apply scientific principles) (apply scientific principles)

   Scientist =

2. Disease → Diagnosis → Intervention/Treatment → Health

   A. → B. → C. → D.

A Linear Approach

The scientist interacts with disease, realizing that disease is a pathophysiological process. Everything involves chains of events, recurrent patterns, sequences, and relationships. The scientist's model of disease is the product of his education and his view of reality.

The Doctor's Model

The doctor sees himself in the role of interpreter/promoter in the disease drama attempting to understand the drama, the drama director, and the audience. He considers himself the means by which all three will be brought into harmony with each other. He must interpret the disease, the scientist, and the patient. The scientist/director role must be made clear to the patient/spectator and vice versa. Each must learn to take on the perspective of the other. The doctor's model of disease, then, sees disease holistically with the doctor as translator of the scientist's model and the patient's model. His goal is to challenge and promote a change in both models. He sees both models as static models but his model as dynamic. He will be the means by which the two parts will be made a whole. His objective is to focus on the patient/spectator, not the disease/drama.

Purpose. In the doctor's model of disease, the purpose is consistent with the purpose in both the patient's model and the scientist's model. He agrees with the patient that disease is not "good," but cooperates with scientists by giving them the data they need for their medical literature.

Definition. The doctor's definition of disease will include both the scientist's and the patient's. Disease is an abnormality--a change in form and function--a morbid process in body and in mind--also heart-break and suffering and an evil and a bother. Disease can be both a general good and an individual evil. His definition of disease must be a metadefinition descriptively, psychologically, and functionally adequate, a blend of the ideal and the idiosyncratic.

Diagnosis. Although diagnosis is the starting point for treatment of disease, it is not as important for the doctor as it is for the scientist, and his interest in diagnosis is governed by his array of treatments for disease and symptoms. Knowing whether secondary jaundice is an RH incompatibility, alcoholic cirrhosis, or infectious hepatitis, or whether an anemia is pernicious or iron-deficiency type is helpful and practical in therapy. Knowing the exact disease or symptom allows for prescribing the specifid drug or therapy needed for recovery. The doctor values diagnosis not in itself but only as a means to an end--therapy and cure. He understands the nosologist's elation at finally solving the mysterious disease problem when he has finally determined the cause and the nature of the respiratory disease which struck the Philadelphia convention in 1976. To have a newly recognized disease occur in the United States, one which almost certainly had been here for a number of years, is remarkable and enlightening to the scientist. It is also surprising to find that a newly recognized bacterium caused the disease. The nosologist is pleased--a new disease to pigeonhole and a new bacteria, also. But the doctor is more relaxed about precise classification. He knows that Legionnaires Disease has been prevalent and that doctors have treated it--successfully, too, most of the time--without knowing its name or the name of the bacteria. They were lu. ky, perhaps, and they realize it is nice to know that the exotic antibiotics used in Philadelphia weren't needed--and that just a simple drug, ERYTHROMYCIN, will effect a cure. Diagnosing, nosology, etiology--all of these help the doctor treat the patient's chief complaints, which may or may not be a disease entity. The doctor is concerned with classification, however, when he fills out

an insurance form because he must correctly identify the disease. If a patient has a problem of impacted ear wax, the doctor must know what to call it and put the correct scientific name, impacted cerumen, on the insurance form. Also, when the doctor bills the patient, he must know how to refer to the entity that cost the patient $35. Doctors need to apply scientific principles as they try to prevent or treat disease, and diagnosis is important for that; but his main concern is treating the patient. In the doctor model, medicine is the art of recognizing symptoms and treating patients accordingly.

Etiology. Unlike the scientist, the doctor is not oriented toward causes and so he is not overly concerned with what causes arteriosclerosis or other scleroses. The doctor's emphasis is on relieving the patient of his chief complaint with scientific knowledge. His definition of disease must not be just descriptive but also explanatory. If his role is translator of models, interpreter of disease. then he must explain and educate, and be interested in the causes of misunderstandings between the scientist's and the patient's models. He needs to understand and be interested in etiology to the extent that he can be a better curer for the patient and a better example and promoter of the scientist. He needs to use reason and scientific principles in explaining causes of disease and death, but he also needs to admit other explanations that are not biologic and scientific. Maybe there was a miracle involved in a cure--maybe God did intervene when science tried but failed. Maybe people do die from a broken heart or die because of loneliness. Maybe there are mysteries in the causes and effects of disease that science will never be

able to explain. Etiology is important to the doctor in understanding both disease and the patient, but the doctor needs an etiology that goes beyond reason and scientific principles at times.

Treatment. Evidence of a doctor's main concern is the reference materials in his office library devoted to treatment. Instead of books on nosology, he has books on diagnosis and therapy such as the 1979 edition of Current Therapy and A Manual of Medical Therapeutics. The tall stack of magazines on his desk are medical journals filled with articles of the most current treatment methods.

In the United States the stereotype of the family doctor is one who does little diagnosing but much relieving of symptoms using a whole group of alleviating drugs such as decongestants, analgesics, and anti-inflammatory agents to relieve everything from coughs to arthritis to hemmorrhoids. If the patient buys patent medicines over the counter, the doctor tells him he has some a little more effective. The general practitioner is seen as a dispenser who does not really enter into what is behind the symptom, and who prescribes treatments that are not disease-specific. He sees his job as "keeping people from . . ." He keeps eyes from watering, people from itching, from being nauseous, from constipation, from vomiting, from eye drainage. He puts on "Band-aids" and the patient accepts it. The patient wants and needs this approach from a doctor and will change doctors if he does not have it. The patient's attitude is based on fear--emotions, not reason. Therefore, because of the patient's allegiance to symptomatic therapy and the scientist's allegiance to rational therapy, doctors experience conflicts in their personal belief systems, and many "dispensers" decide to enter a more discrete field in medicine. If a doctor is to stay

in business and be considered a success according to patients, he must cure symptoms. Dr. Gerald Miller, a general practitioner, related that when he first left his residency to begin practice, an older, very wise doctor told him never to dismiss a patient until his chief complaint was dealt with. He has followed this advice and found it to be necessary. When a new patient enters Dr. Miller's office, he is given a self-history to complete. He must check all the symptoms that apply to him and indicate which is his chief one. The nurses and the doctor then reaffirm that this symptom checked is his chief complaint. The doctor must deal with it, minimize it or maybe cure it, but never dismiss the patient as long as he still complains about it. The doctor may discover that a patient is diabetic and has high blood pressure, but the patient is concerned only with the first thing on the chart, what it is that bothers him, such as headaches, backache, or tiredness. The doctor will treat the diabetes and blood pressure and do the best he can with these disorders, but he can never forget to treat the symptom and must not consider it insignificant. Science wants to know the status of a patient's kidney or liver and that is all. The doctor needs to know that and the status of the chief complaint, also. Doctors must see disease scientifically, but they must also see it unscientifically if they are to treat and cure successfully. They must try to keep the personal touch, to balance the personal with the impersonal, trying to understand the effects of the disease and their treatment from the scientist's model and from the patient's model of disease.

As a doctor attempts to treat infectious hepatitis, for instance, he is not concerned with the full ramifications of the disease. He knows he

must limit hepatitis down to its particular type, infectious, but he is not interested in the cells. He is interested in the patient. He needs to be concerned with preventing its spread to others, so he is involved with patient care, sanitation, knowing the severity of the hepatitis, knowing the correct treatment, prescribing diet and rest. He is concerned that it clears up and does not become chronic, but he will not be concerned about the infectious part of the disease. Infectious is only a term used to differentiate this hepatitis from serum hepatitis; it is not highly contagious and is low grade. When a doctor deals with infectious hepatitis, he starts at a different point than the medical scientist does. He accepts it as being already there in the body, and hence its causation is relatively unimportant. Scientists are concerned with the exact organism causing it. They want to know how it migrates or transports from some point to the liver and will use research to find out. A doctor sees a patient holistically. To him, diabetes is a middle-aged woman, overweight, with high blood pressure. It is more than the high blood sugar self-concept that the patient has, and he attempts to see the person as a whole, while the scientist sees him as a part.

Cure. Bernard Baruch in a speech said, "There are no such things as incurables, there are only things for which man has not found a cure." Although medicine has made tremendous strides in finding cures for diseases, many are still without cures. Patients find this hard to accept. They want their doctor to be a curer, not just a treater. They often leave a doctor's office frustrated, alienated, fearful, and angry when the cure does not materialize. Frequently, they file malpractice suits because the hoped-for cure did not happen. Sometimes the angry feelings

are a result of the patient's not understanding that when cell necrosis happens, nothing can regenerate the cell--it is dead. Complete cure is then impossible, but the lack of physiological knowledge causes misunderstanding in the patients. Often they do not cooperate with the doctor, failing to take the prescribed medicine or to stay on a diet because there are no more symptoms. A cure for patients is the relief of symptoms, complete relief. For doctors, a cure is usually a complete restoration of health; eradication of the disease. At times doctors are satisfied with a partial cure, a minimizing of a disorder, but patients are not. Many doctors feel that their only roles are diagnoser and treater. Misunderstandings develop because patient and doctor each has a different concept of cure. Normal test results and a leg amputation may be cures to doctors, but they are not to patients.

The scientist's first concern is with the pathogenesis of the disease, the development of the morbid process. The patient's first concern is with a cure. The doctor's first concern is treatment. Each has a different perception of disease based on his schooling, his attitudes and values, and his culture, and a different set of expectations. The scientist, with his abstraction of theory from practice, puts emphasis on the physical and has abstract and general points of view in his view of the world. His model of disease is the antithesis of the patient's model. The practical demands of individuals are for the concrete and the particular. Patients value decisions based on an individual basis, on their needs, and they do not believe universal rules can be applied. They value lack of pain. Doctors value the art of medicine and practical wisdom, along with theoretical knowledge. Their model stands midway between the other two models.

If doctor/patient relationships are to improve, then first there must be awareness of the problem: the existence of very different models of disease. Next, there must be awareness of the causes of the model variances: culture, world views, schooling, attitudes, values, stances. The solution is a realization on the doctor's part that he must bridge the gap between theory and common sense and between the scientist's model of disease and the patient's model of disease. Since each model has been transmitted through education, it is subject to change with further education. Therefore, the doctor must act as interpreter, promoter, and educator, to encourage enough change in each disease model to make each one comprehensible, complementary, and beneficial to the other. When this happens, the doctor/patient relationship will be healthier than it is at present.

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