

Gene Stead Looks at Doctoring

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Editor's note: The following was adapted from the Frank R. Lecocq Lecture delivered at Duke University Medical Center on April 23, 1993.

Well this is my swan song. I want to begin with a word about Joe Greenfield, the current chairman of the Department of Medicine. His successor will be selected soon, and I think the most fascinating thing about it is that the people doing the selecting will have absolutely no notion as whether the new professor has any ability as a teacher or leader. You would be surprised I think to discover that that will happen, but it really will. And I don't think many of you know how you've been blessed in these past years with a person who is a scholar, a scientist, a physician, and beyond all else a developer of young people. I've only one quarrel with Joe and it is that he somehow never set the stage so that all of you could actually see him in action at his very best. I know because, if you went as I did for seven or eight years to the Friday conferences where he meets with his junior residents, you would see a leader watching young people learn. In the course of the learning (and this is one of the things that Dr. Greenfield is very conscious of) he learns. The Friday conferences are not organized as Greenfield teaching residents but as residents learning and Greenfield learning in the process. It's the one experience that I really miss most because of my necessary withdrawal from the Medical Center. But, I want to tell you, on the basis of long experience and careful observation, that the people sitting in this room have been unusually blessed these past 10 years. I wish that a committee could be formed that would know how to pick another Joe Greenfield. I confess I have great skepticism in their ability.

1. Playing the Education Game

Now, I've got four talks. The first one starts off "How the game was played." I really was impressed with my mother and father.

Dr. Stead served as editor of the *Journal* from 1983-1992. He was chairman of the Department of Medicine at Duke University Medical Center in Durham from 1946-1967.

They had five children. They didn't have much money. We always told them that if they had been bright they wouldn't have had five children, but they always said they thought they were bright and they were very pleased with their five children.

The first thing I learned was that the game had to be played in a way that made me honest. My mother and father never questioned my word. If I had an altercation with somebody else or if I had a disagreement with my teacher, my mother and father never raised a question of who was correct about what had happened. I was supposed to tell the truth. I found this somewhat burdensome but, in the end, it was helpful to me.

The second thing I learned-and it is one of the things that the Duke Medical School needs to learn-I learned from my father who taught me how important communication is. One of the ways in which all of us keep stumping our collective toe is that we really don't know how to pass on information about what we're doing, and what we're trying to do, in ways that cue others in on our activities. As youngsters, my sister and I both had very severe illnesses-illnesses that completely eliminated all of the money in the family. I was about five years old. My father was fairly hopelessly in debt, and had quite a struggle for the next few years. Nevertheless, he always kept a good credit rating by communicating with his creditors. He simply responded clearly when the inevitable questions came about how he was going to handle the finances and when the bills were going to be paid. The information was presented in a believable way, and in due time he worked himself out of the financial problems his children had created. I learned this lesson: always respond, communicate, and keep the channels wide open.

Another fortunate thing was that I didn't have too much schooling. When I went to school we had just changed from a one-room schoolhouse to a structured, graded system. My sister, who was a year and a half older than I, took me to school and she enrolled me in the second grade. She said: "I've taught him all that he needs to know in the first grade," and actually no one asked any questions. Another break was that the school program consisted of seven years of grammar school and four years of high school. That's really enough; I never knew why they put in that extra year in junior high school. But overall I had the good fortune to save two years. I got to college two years

earlier than I would otherwise, then I got through college in three years and so, at a relatively young age, I was "finished" with **formal** education.

Now I'm not short on education. After all, I spent seven years in a white suit and I had a good time. But I am a believer in the fact that the sooner you can satisfy the terms of the bond and stop being told what you "must" learn and start learning on your own, the better off you are. Based on my own experiences, I've always believed 100 percent in shortening someone's formal education and leaving time for informal education whenever possible.

I'm essentially a crammer. I never did anything until the last two days of school, and then I kind of said "I wonder what this course is about, and I wonder what the professor is going to ask on the examination?" I got out my pot of coffee, I went to work, and 48 hours later I usually turned in a pretty good account. That's one way to learn. Most people don't recommend it, although I kind of enjoyed it. I had a lot of fun while everybody else was doing something else. The best thing was that it taught me about the forgetting curve because three days after the final examination I couldn't pass the same examination again. I was a phenomenally good forgetter. I've watched this among other people who are nearly as good forgetters as I was. Maybe not quite, but they're not bad.

11. The Limits of Happiness

My next talk really has to start with a word about happiness. Frank Lecocq, for whom this lecture is named, was a happy person. He was just fun to be with. As with any doctor who comes to Duke and is extraordinarily successful, everybody began to claim credit for recruiting him. Ike Robinson said: "I worked in the Air Force with Frank Lecocq, I did research with him, and I got him to come to Duke." A lot of other people claimed Frank, which is understandable because he made the most rapid in-roads into the Duke community of any person that ever came here. He really was remarkable. He enjoyed the day and the practice of medicine, and if you needed help he gave it to you. He was a great, great person. But now I want to tell you who was responsible for Frank Lecocq coming to Duke—it was Gene Stead who got him here.

I said that Frank was a happy person, and I will say just one word in particular about happiness. Happiness is a finite phenomenon. It is not infinite. I see people who really have what they want, and are in positions that can maintain their happiness, but they think happiness is infinite and, therefore, they try to grab for more. If you try to grab for happiness instead of stopping to enjoy what you've got, the world doesn't turn out so well. You will find it helpful if you can remember that happiness is finite and when you have it, enjoy it.

I discovered this because I have some biological variations,

and I have learned from living with them. For instance, I am tone deaf. That's a liability. I look at the fun people have with music but the whole world of music is absolutely blank to me. Another problem is my inability to clearly define facial characteristics. I cannot identify or draw in any way a picture of my wife. As a matter of fact, I have learned always to let her speak first before I say "hello" because I never liked to pick up strange women.

Such variations have always interested me and I think they account for a remarkable amount of the complaining that occurs in the world. People wonder why they are different from other people. They know they are different, but they don't quite know what to do with the differences, and if they go to the doctor, the doctor doesn't either. I don't think I've ever been to a physician who had any interest in the fact that I am tone deaf. If it were something familiar, like if I was color blind, the doctor would say: "Okay. I'll tell you how to handle the traffic lights so you won't be at a disadvantage with your color blindness."

Physicians ignore normal variations most of the time. They interest me because I have been involved in watching young people determine their careers and figure out what they are going to do with their lives. Most young people can identify with someone like Dr. Greenfield. They decide they will be like

him without ever determining how much they are like him and how much they are different. Usually they discover that they are very different and, therefore, turn out to be quite different. One has to be very careful, when advising young people about careers, to have them

look at themselves very honestly and really determine what they want to do, where their opportunities really lie, where their satisfactions really come from, and how they can arrange their lives.

In my time, young doctors were never very well paid. Duke residents were paid \$25 a month but, of course, I hadn't earned anything, so I thought the residents were kind of splurging on the system. Still, I think it's important to discover that there's no relationship between happiness and wealth. I know of no more useful information for a young doctor with any kind of ability than to look around and discover that without money it's difficult to arrange a happy life. But if you spend your life accumulating material resources with little attention to your spouse, children, or anyone else, great wealth will pave no road to happiness. That's very important information to get early into your head.

111. Disease, Biological Variation, and the Doctor's Job

I'm trained as a practicing doctor, trained in an era in which practicing doctors knew no science. The people who educated

me in clinical medicine were always puzzled about why we had the first two years of medical school because there was a kind of complete disconnection between biological sciences (even in their embryonic stages) and the actual practice of empirical medicine. When I grew up, my job was to take care of patients and their diseases. Of course, I immediately ran into a quandary. It is very difficult to define disease. I didn't-and still don't have a very good definition for it. I think of disease as something that is painful to the individual, is frequently harmful to his or her body, and, in general, progresses. The progression can go two ways: either the patient gets well, which is the most common progression, or he or she doesn't and the body has continual trouble with whatever the process is. In this sense, one has to distinguish disease from the biological variations I alluded to earlier-variations within the spectrum of biological possibilities in people. I have never known, for example, whether a man born with one leg has a disease. I would have thought that, in the sense that I use the word, he doesn't. He certainly has a liability; he wishes he had the other leg. He has problems getting around and lots of things can be done to help him. But whether he has a disease or not remains to me an open question. If you look at the spectrum of patient complaints and the reasons why people come to doctors, you discover that variations in individuals are a much more common cause of symptoms than what I call disease is. This is one of the complex problems in the practice of medicine.

It's difficult to find a physician who is comfortable identifying biological variations that are not classified as diseases. One of the reasons that patients aren't satisfied with medical care is that physicians are always looking for disease. And most people who come to see doctors either have a disease from which they recover spontaneously or they don't have a disease-they have problems related to the fact that they use their bodies in unhealthy ways. Then the body complains to the patient, the patient complains to the doctor, and the doctor looks for disease. But often disease simply isn't there. It's like the problem of the Cadillac and the tractor. If you take a tractor that can do anything in a muddy field and put it on 1-85, you'll get the driver killed. On the other hand, if you take that Cadillac that performs so beautifully on 1-85 and put it in a muddy field, it doesn't work at all. In the end we find that when people do not fit their body to the environment, to the aspirations of their job and what they're trying to do, the body complains and the patient comes to the physician. So how does the physician help the patient? Most doctors aren't interested. They have been trained *only* in taking care of diseases, and when the patient comes without disease the doctor is at a loss.

Of course it's foolish to go to a physician who doesn't know how to take care of disease. You want a physician who has

seen a lot of illness; knows what illness is, what kind it is, what's health, and what's not recognized as health. That takes a certain amount of experience, and I don't know any way to get this very rapidly. I think most physicians are fearful of patients until they can identify whether scientific medicine is going to be useful. Until they reach that confidence, doctors will always be fearful-ordering a lot of things that don't need to be ordered, or getting unnecessary consultations. They will flounder until they learn to know whether or not disease is present and can be approached by scientific medicine.

There's no way to make confidence develop instantaneously. I think that if you want a young doctor to grow professionally it has to be in the presence of a lot of disease. Other people think you can grow where disease is diluted by non-disease, but I don't think you can do it well. We tried it a few times. I selected a few bright people who thought Duke Hospital under Gene Stead was just too tough. We tried to educate them in the clinic. They didn't turn out too well. They simply didn't know for sure who was going to die and who wasn't going to die and whether they could do anything about it. They were kind of nervous doctors. Other people believe you can train doctors in a disease-diluted situation, but I'm still a city hospital man. I lived through Grady Hospital; I lived through Cincinnati General Hospital; I lived through Boston City Hospital. I saw half the patients who came in the door in the autopsy room 10 days later. You know, we saw a lot of disease. I still believe

that's the best way to train a doctor.

There is a termination point though, and there comes a time when you have learned that kind of medicine. It belongs to you. You know disease. You can spot alcoholics because you've lived with them. You have also come to face the fact that, when the social systems have broken down and education, housing, food, and jobs are absent, doctors just don't do much good. We might spend all night sewing up the belly and the chest and the penetrating ice-pick wound to the heart. Then everybody finally goes to bed exhausted, all the supplies used up, only to be back in the same room with the same patient a month later doing the whole thing over. Physicians working in disease-saturated systems with poor, uneducated people and little economic support become good doctors. Unfortunately, they don't do any social good because the system is unapproachable by medicine.

After young physicians have been saturated with disease, they must learn how to take care of patients who are able to work, who can get another doctor if they don't like you, and who are financially independent. In this setting the doctor has to transfer his or her daily activity from taking care of disease to taking care of a working population in which disease has been progressively diluted out. That's a difficult transition because

the doctor has to take care of patients, not just diseases. The job is complex because of all the differences among patients and because the doctor has not been trained to take care of this population. At Grady Hospital, a very devoted group of people graduated from our program. When they went into practice I said: "You can't come back to Grady Hospital." They went out to a practice that they could not enjoy. I had excluded them from the one thing they knew how to do and did extraordinarily well-take care of the sick and the dying. I struggled with this and never really solved the problem. Very bright, dedicated people who worked very hard in their residency training simply weren't getting a kick out of living and practicing medicine. I came to Duke in large part because it had a private service that would let young people see what doctors could do and what doctors could not do.

So, when I came to Duke, I had great enthusiasm for private patients and the private service. My interns and residents thought I was kind of nuts. They said: "Look, I don't want to be on the private service. I can't do what I want to do. I can't behave like I behave on the public service because if I did, the patient would leave the hospital. I don't like all those restrictions that the private service makes." The private service never was the most popular part of training, but after those young doctors left, they came to appreciate what they had learned on the private service. Remember, no matter what students say they are going to do, most of them end up in medical practice. They may do things along the way and have quite a

good time doing them, but in the end the practice of medicine has tremendous appeal. Not everybody can think great thoughts indefinitely. After a while you begin to say "I've thought my last great thought. I think I'll go be useful." And when those young people came back after they had gone into practice they would say: "You know, I thought Dr. M was kind of a quiet man and I wasn't quite sure of what I was learning from him on the private service. But now I know what I learned from him and I'm very grateful that I had the experience." It takes time to make a doctor. There must be a lot of experiences along the way. There must be a lot of patients, and you've got to realize that you're going to get a lot of diversity in doctors.

IV. Is a School for Teaching or Learning?

I was one of the professors of Medicine who never worried about something that always paralyzed my colleagues. I never worried about the lower third of the medical student class. If you ask any professor of Medicine why they didn't do a better job training doctors, they will say "Because I've got *those* students

dragging me down. I've got to fuss with them and fight with them and be sure they know enough when they get out of here." I never had any of those problems. I just looked at the population. Do you realize how many cults there are in this world? Do you realize how many people don't have the slightest interest in scientific medicine? Do you realize what a large part of the population will never be touched by science in any way? Why should I produce only scientific doctors who will practice only "scientific" medicine? I produced all kinds of doctors. They practiced any kind of medicine they wanted, but they weren't any worse than the people already practicing.

Should I have worried about it? I never did. I aimed at the top of the class. That's where the gold is. That's where the opportunity lies. That's where the reputation of Duke Hospital lies. That's where the greatest satisfaction and the greatest happiness from being doctor lies. So I let the lower third of the class roll along and didn't worry about them. In the end they did pretty well. Surprisingly enough, if you look at who contributes money to Duke Medical Center, the lower third of the class frequently does better than the top third of the class. So don't worry about the medical students. You really can give them a opportunity to learn, kind of leave them alone, and see what

happens. You'll discover that lots of good things do happen.

Now, I come back to a question that always has dogged the system. Do we have a school or not? In many ways that's a puzzling question, but I happen to be more interested in it than puzzled by it, and I have

more time to worry about these things. It turns out that what we need is a learning organization, not a teaching organization. It took time for some of us to get that through our heads-and I don't think it's through the heads of most Duke faculty yet but I know you've got to have patience.

One corollary of this is that I've always advised students not to come to Duke. I never recommended the place. I think it's overpriced. In the end who's got to do the work of learning? It ain't the faculty. When the faculty works they get smarter but the student doesn't get any smarter. Only when students work do they get smarter. If a medical school is a learning system and the student is going to do the work, then I conclude that you ought to go to the cheapest medical school. The reason is simple. You won't be in debt when you get out and you will be just as well educated. I went to Emory at a time when it was on the accredited list one year and off the next. Fortunately, it happened to be accredited the year I graduated. It had no paid clinical faculty and a basic science faculty of 15 people. It turned out a surprising group of students. In my class, six or seven of us set up our own curriculum. We discovered that the books the faculty recommended to Emory students were more suitable for the nursing school. We found out what our friends

who had gone to more illustrious schools were reading, got those books, and set up our own study group. I was kind of surprised to discover, when I went to Brigham Hospital, that I was the only person there from a small school, but I was the best-read intern. I wasn't the most knowledgeable because I had not taken the math, physics, and chemistry courses that I would have taken if I had been bright enough to know what college was supposed to do for me. But I was much more widely read in clinical medicine. I-Dr. Greenfield doesn't believe this-was the only intern who could interpret an ECG. So there were some advantages in "learning" rather than being "taught."

Now, the medical faculty does have a role. They can get buildings put up; they can make some laboratories; they can get some books in the library; they can put in a few computers. They can offer some guidance to students about where they think the world is going and where, were they coming along today, they would put their energy. And the faculty, for better or worse, selects the student body. You would have thought that the faculty, having spent a lot of time on and given a lot of thought to this, would have come up with a superior way of choosing students. But, in fact, the faculty has a simple way of selecting students. It's a method universal to all schools; Duke's no exception. They select students who won't cause the faculty any trouble. This is the reason that organic chemistry, which in my day was purely a memory system, used to be so important. If you could memorize organic chemistry, earn an "A," and tolerate, not rebel against the memory system, you clearly weren't going to cause any trouble in medical school. Well, when you get these memorizers here how can you get a learning system to work?

These thoughts made me pleased with the changes we made in the Duke curriculum in 1966. I thought they contained the seeds of something good. I had watched other medical schools mess with curriculum and never make any difference. You know, it honestly doesn't matter whether you teach physiology before anatomy or bacteriology before oncology. You can wiggle those things around but you don't really change anything. To make a change in the education of a doctor you have to do it at the clinical level. In the end that's what doctors do. Duke is the only school I know that's ever really done anything to change its clinical curriculum. We did it by simply saying that you can't hold in your mind all the basic science. No matter how long the curriculum lasts you'll still end up with lots of things you don't know. You might as well shorten the whole business-say what science can contribute to the practice of medicine, how it can prepare one for a variety of careers, and let patients show the students or learners what medicine really is. By getting students into the patient arena sooner they might discover that doctors really don't know much and can't do much

about most diseases. After that they could figure out how to handle their education so that they would be different from those doctors who don't know anything.

Medicine still attracts very smart students who, if you inspire them with the learning habit, will do a great many things. The tragedy has been that the basic science faculty never really figured that what students are taught in year one is kind of irrelevant to what they're going to do in year 15. They never determined how to make a difference in what the students thought. It's an unfortunate situation because faculty have an opportunity to interact with a very bright group of people.

I would have preferred to teach the basic sciences as though they were languages. Take biochemistry, for example. If we said we're going to look at biochemistry and decide what students really need to know in order to be able to read a biochemical journal-and if we did the same thing with the other sciences-we would have a group of students prepared to continue their education. Then we could say that the basic science year was a learning year, not a memory year. The basic science faculty would have had the opportunity to enjoy being with a bright group of people who now seem to only irritate their teachers. It's unfortunate, given all that talent and potential excitement, to end up with irritation. Students don't need eight more lectures on material that they will promptly forget and never use again. We could just enjoy the adventure and say: "Let's go! These are the areas you ought to be thinking about. These are

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the things you ought to be doing. This is the learning you ought to be getting." If the basic science faculty did that students would flow back to them in the elective third year. But as long as they stick to the task of cramming in the most facts in the shortest time and the hell with you, very few students return.

One of my residents is now a distinguished professor of Medicine on the West Coast. He called me a few years ago and said, "I really am sorry the Duke curriculum change turned out to be such a failure." I said, "Well, that's kind of interesting. You live a long way away. How could you tell it failed?" He said, "Well, nobody else has ever adopted it and, therefore, it had to be a failure." And, I said, "Well, wait a minute. You go look at the structure of all the other medical schools and you'll see they have an extraordinarily diffuse power base. At the time the curriculum was changed, Duke had a very narrow instructional power base. We weren't diluted out by separate departments of Orthopedics, Neurology, or Dermatology. We had Medicine, Surgery, Pediatrics, Psychiatry, Obstetrics and Gynecology, and that was it. We could do things that no other medical school could do and we did them." The reason no other medical school has followed course is because we accepted the fact that we would graduate students who didn't know every-

thing. You will be amazed to learn that other schools don't do that. They couldn't afford to have students leave medical school without those long, arduous memory courses to protect them against all contingencies in the future.

One of the things I'm the proudest of is that in the third year a Duke student can go into a laboratory and think about how knowledge is created and what it means. That student can learn to say "I don't know," and say it comfortably. My thesis, of course, is that the only safe doctors are those who can say "I don't know, but I'll go find out and if it's important I'll learn it and use it." Doctors who can't say "I don't know" comfortably are dangerous. It doesn't matter how many lectures they have sat through. You can't protect yourself by the memory system, you've got to protect yourself by enjoying yourself and saying, "I want to learn. I want to use what I know. I want to discover what I don't know that I should know."

We gave oral examinations at Duke for many years. The students wondered why we gave them. They thought Dr. Stead had sadistic instincts. But, in all honesty, the faculty felt that students should become comfortable with authority figures, and that being able to answer simple questions orally was a part of growing up. Now, I was tremendously bored, but I participated for 20-odd years without telling anybody. My one rule was to always ask the simplest questions because I knew that they were the ones nobody was going to be able to answer. The

rest of the faculty thought that every student would know those answers. I knew no one knew them because I wandered around the hospital and asked students these questions. I visited other medical schools from time to time and talked to other professors. They would tell me what they were doing and how they were doing it and I was always curious how they knew what their students knew. They said, "Well, we've taught them. They have to know this." We always had a lot of people around Duke who thought they'd been teaching too. But do you know what happened when I went out on their ward, picked up a few of their students, visited patients, and asked a few simple questions? Their students didn't know any of the answers either—they had been "taught" but they hadn't learned. So my role in those oral examinations was to keep the faculty from thinking that the students had a knowledge base that they didn't really have. We needed to come to grips with this.

Over the years I've really enjoyed the mix. I enjoyed getting out among the patients. I enjoyed seeing those patients that the resident told me were "boring." I wanted to see them because I discovered that they were extraordinarily interesting. And the resident wished he had never made that statement. It's been a great adventure, and you've been very patient to come to listen to what clearly isn't either science or education, but Gene Stead who's enjoyed being with you. O

Commentary

By Joseph C. Greenfield, Jr., M.D., James B. Duke Professor, and chair, Department of Medicine, Duke University Medical Center, Durham

Dr. Stead is a unique and remarkable man; we'll "not look upon his like again." Although he made numerous seminal contributions to the development of Duke University Medical Center, he is remembered primarily as an educator. He devoted an enormous amount of time and effort to this endeavor.

Currently the standard teaching assignment for Duke University Medical Center faculty is one month per year as general medicine ward attending. Many of my colleagues complain that this is an excessive burden. Dr. Stead functioned as an attending physician 11 months each year. Because of this dedicated effort he had a major impact on the training of young physicians throughout the time he was the department chairman. His approach was to always challenge the learners to not only understand the disease process but also how the disease affected the individual.

There are many "pearls" of wisdom in the Lecocq Lecture, and it should be read and studied by anyone interested in the training of physicians. His insight regarding the necessity for

young physicians to be comfortable with disease as the initial point of training is, in my opinion on target and extremely important. The current, "politically correct" concept that students and house staff should be trained in an outpatient setting (since that is where they will practice) is unlikely to produce a confident physician. Educators who think otherwise should heed Dr. Stead's wisdom.

The distinction articulated by Dr. Stead between teaching and learning is an important and frequently forgotten concept. There is a vast difference between providing a basic framework for lifetime learning and the teaching of a multitude of soon-forgotten facts. Dr. Stead championed the development of strategies to augment learning both during medical school and house staff training.

Although this lecture was billed by Dr. Stead as his "swan song," it is certainly my hope and expectation that he will continue to enlighten us for many years to come. O