W. L. Winters, Jr., M.D.

FROM CATHETERS TO VENTRICULAR ASSIST DEVICES: 60 YEARS OF CARDIOVASCULAR EXPERIENCES WITH WILLIAM L. WINTERS, JR., M.D.

Automatic typewriters, transistor radios, microfiche, black and white television...while considered high-tech in the 1950s, these technologies seem limited when viewed from the 21st century. The same is true for cardiovascular medicine, which back then relied on electrocardiograms and X-rays for most diagnoses. In the 60 years since, advances in medical capabilities have progressed at a staggering pace. Patient research that once required months poring over paper charts is now reduced to hours using electronic medical record databases. Diagnostic images that once took days to process can now be accessed instantly through ultrasound and magnetic resonance imaging. While a half-century ago no one would have imagined accessing any and all information with a 5-second Google search, so too would noninvasive heart surgery been considered unimaginable.

Since the 1950s when he graduated from medical school, William L. Winters, Jr., has been a first-hand witness to breathtaking innovations in cardiovascular medicine—both globally and in Houston. Author of *Houston Hearts: A History of Cardiovascular Surgery and Medicine at Houston Methodist DeBakey Heart & Vascular Center* and long-time medical editor of the *Methodist DeBakey Cardiovascular Journal*, Dr. Winters sat down with the journal editors this past April to share his insights from the last half-century of medical practice.

MDCVJ: Are there any advances in cardiovascular medicine that have been so extraordinary that you could never have imagined them when you started practicing?

When I graduated from medical school in 1953, there had been very little in terms of advancement in cardiovascular medicine, although something significant happened in 1929 to set the stage for future developments. A German physician named Werner Forssmann figured out how to put a catheter in his vein and advance it through to the right atrium. That was the beginning of cardiac catheterization. I know it sounds pretty simple now, but it evolved during my lifetime and opened up everything as we know it today. It allowed us to do physiologic studies of pressures within the heart and to obtain angiographic pictures by injecting contrast substances to both sides of the heart. This led to all manner of study of cardiovascular physiologic, anatomic, and pathologic entities. It opened the door to coronary angiography, cardiac and vascular surgery, coronary angioplasty, and now implantation of heart valves at the end of a catheter.

Alongside that was the development of cardiac ultrasound, when a Swedish cardiologist named Inge Edler collaborated with physicist Hellmuth Hertz to send high-frequency sound waves into the chest and record what happens as they bounce back off of various tissues. Being a dynamic moving organ, the heart provided a perfect target for bouncing sound waves. In the last 60 years, echocardiography has become an essential diagnostic tool along with the electrocardiogram and X-ray. It paved the way for further imaging devices such as CT scans, nuclear scans, and MRI—tools that nobody could have imagined 60 years ago. I don't think anyone had any idea that echocardiography would become what it is today.

The pharmaceutical industry is another area in which enormous advances have taken place. When I graduated from medical school, you could count the number of drugs available to treat heart disease on one hand. There was no way to treat hypertension except for the RICE diet and some very rudimentary forms of surgery. Since then, diuretics, cholesterol drugs, and heart failure drugs have emerged to revolutionize the way medicine is practiced.

The final advance I would include as the most unbelievable, and the most profound, is heart transplantation—the recognition that one could remove the heart from the body, put it back, and still make it work. In Houston, the first heart transplant was done by Denton Cooley, and the patient was referred by my partners, Don Chapman and Liston Beazley. Beazley was there during the transplant, and when they placed the new heart in the patient, removed the clamps from the circulation, and saw the blood surge through and the heart start to beat, he said it brought tears to the eyes of everyone in the operating room—tears and cheers.

MDCVJ: What do you think are the most positive and negative changes in medicine throughout your career?

There are so many positives. When my father graduated medical school in 1924, he completed a 1-year internship and then went into practice. I knew he called himself a cardiologist but I never knew how it happened. After he died, we found a picture of him in Boston with a group of other doctors including Paul Dudley White. He spent a month with White in Boston in 1931 and came home to Illinois where we lived, bought an electrocardiograph machine, and called himself a cardiologist. Since that time, there has been such a transformation in medicine it's almost difficult

to imagine. Back then we had an electrocardiogram, X-ray, and stethoscope, and that—along with the patient's medical history—is all we had to make a diagnosis. Now drug development and new diagnostic tools in all of medicine, particularly in cardiology, are extraordinary. This means that today's physicians have more options to offer and are more likely to involve the patient in the decision-making process.

Medical societies have become a more positive influence in supporting physicians' goals and education and addressing new regulations. So patient and physician advocacy have been very positive developments.

In terms of the negatives, the penalties for physicians not meeting or adhering to various regulatory processes is becoming a problem. Also, there are so many good diagnostic procedures that can be done in the office, and many of them are used by physicians who are not trained to use them. With that comes the unrestrained use of diagnostic and treatment capabilities that has become a negative. For some patients, there is also the high cost of medicine as well as uneven access.

MDCVJ: What do you feel are the most important values a physician needs to practice medicine, and are they different from those that were needed when you started practicing?

The values needed to practice medicine haven't changed and I don't think they ever will. I have on my desk an inscription of what I call the four rules of the road. We have published them in the journal in the past, and they bear repeating.

1. The first rule is attitude. A good attitude is imperative, while a bad attitude leaves people behind every time.
2. The second rule is to be the best you can be. You may not be able to be the very best, but you can always be the best that you can be.
3. The third rule is to have a learning experience every day, and that especially includes learning from your mistakes. Physicians tend to bury their mistakes at times, and that is a big mistake. We all do things out of order at some point, and it's an important learning experience.
4. The last rule is to live your faith, whatever that may be. One of my mentors in Philadelphia told me before I left there: "If you don't believe in anything else, believe in yourself."

I supplement these rules with what I call complements, some of which are honesty, integrity, and humility, perseverance, gratitude, and a sense of humor—especially the ability to laugh at yourself. These traits are timeless.

MDCVJ: Have you seen any significant changes in the way physicians practice or in their attitudes towards practicing medicine?

I went into medicine 60 years ago thinking I could graduate from medical school and hang my shingle just about anywhere I wanted because it was a sure way to make a living. I'm not so sure one can look at it that way today. There are so many more regulations and requirements to handle when setting up a practice, making it much more complicated to open your own office these days. One may be able to do it in a smaller town but certainly not in a large city, where the expectations are different. For instance, heart failure is a major disability and requires a team to manage it—doctors, nurses, physician assistants, social

workers, and home care professionals. This is difficult to manage in a solo practice.

New requirements such as mandatory electronic medical records, which I think is a good thing, can also be difficult for many physicians. The cost to implement into practice is significant, and often the systems are unable to communicate with each other, which can make it frustrating to use.

Physician certification and recertification also is becoming a burden. In cardiology, you have to be certified first as an internal medicine specialist, meaning that you have to pass medical boards, then cardiology boards, and if you want to further specialize, there are boards for echocardiology, interventional cardiology, nuclear cardiology, and every other area. Both the cost and time requirements can be significant.

At the same time, I don't think this has discouraged anyone from entering medicine. The newer generation of students learn about the barriers along the way and likely learn how to cope with them, and I don't think it bothers them nearly as much as it bothers the older generations. They may be exposed to different stresses and become more frustrated, and some of them won't make the kind of money that they expect to, but I think their core values are the same. They enter medicine with the same basic ideals of helping people. If someone is not interested in helping people, they shouldn't enter medicine.

Despite all the potential impediments along the way, I would never discourage someone from going into medicine. But they need to understand that how it will be practiced in the future will likely be different than how it is practiced today.

MDCVJ: What do you think are the biggest challenges faced by today's physicians?

I would say managing their personal time. Between their families, their practice, educational requirements, and personal time off, it really becomes a challenge to find time to do all the things that one needs to do. Many people are married to their profession as well as to their spouse. I told my wife when we got married that there would be times when I would have to take a call and the patient would have to come first, before the family. A lot of physicians don't see it that way, so they choose medical fields that allow them more control of their time than one has in cardiology or cardiovascular surgery.

The other challenge is anticipating what may happen to the future of medicine, how one's practice may change, and how best to prepare for it. Many physicians across the country are leaving private practice and joining hospital organizations to become employees of the hospital, and I don't know how that will affect them, or the delivery of care in the long run. So there are many big challenges ahead.

MDCVJ: Of all your patient interactions throughout the years, is there any one in particular that best exemplifies why you chose to practice medicine?

About 25 years ago, a woman in her late 30s showed up in my office. She had just undergone an angioplasty for coronary disease a month after she found out she was pregnant. Because she had been exposed to a heavy dose of X-ray, the medical consensus was that she should have a therapeutic abortion. She had been trying to get pregnant for 5 years and had finally succeeded, then this happened. We spent a few hours talking about the pros and cons of abortion, and she asked who would take care of her if she

decided to proceed with the pregnancy because no one back home was willing to take that risk. I told her I would take care of her. So she carried through with the pregnancy, and I managed to find a cardiologist closer to her home who would care for her while I continued to follow her progress. She had a baby girl, who is now in her 20s and finished college. I get a Christmas card from them every year with a picture of her daughter. That card always brings tears to my eyes.

Another memorable experience occurred in 1969, when early on in Houston I saw a young woman who had a congenital heart defect. I have followed her for 45 years, and during that time she has had heart surgery, now a pacemaker, and a variety of other treatments. Today she is living a perfectly normal life as a 64-year-old grandmother. I last saw her a few months ago, and she gave me an etched glass plaque that I have sitting on my desk. Part of its message reads, "Thank you for always being there." I look at it every day. There are many instances that any physician can recall as particularly rewarding, but for me those two experiences best confirm what medicine is all about.

MDCVJ: What aspects of your career have been the most fulfilling?

Without a doubt, the most fulfilling aspect of my profession is building relationships with patients. When I finished my medical training in Philadelphia, I stayed at Temple University School of Medicine as faculty for 10 years and found myself in charge of the cardiovascular and general research units and the coronary care unit. I was doing everything but taking care of people. It became apparent to me that I had to make a big decision. When the opportunity came to move to Houston and join a clinical practice, I took it because I didn't want to spend my career doing paperwork. I've been here now for 47 years, and I still take care of patients, some who I've known since I first started. Building long-term relationships with people is very rewarding.

I have also found it very rewarding to work with medical societies such as the American Heart Association (AHA) and the American College of Cardiology (ACC). Being involved with these societies and my peers has been a tremendous opportunity.

MDCVJ: Are there any events in cardiovascular medicine that surprised you over the years?

In 1978, I was at an AHA meeting with a group of friends listening to a young cardiologist from Zurich, Switzerland, by the name of Andreas Gruentzig. He was telling us about a catheter he developed that could be placed in a coronary artery and expanded to open up a blocked coronary artery. We looked at each other and thought, "This man is out of his mind." It was one of the most surprising and extraordinary things I had ever heard. But that was the day the concept of interventional cardiology was born.

Another surprising event happened after I finished my tour as president of the ACC and became a member of the AMA Cardiovascular Relative Value Update Committee, which advised Medicare on physician payments. One day we received a call saying that Congress had done away with payments for electrocardiograms. The electrocardiogram is a must for anyone who practices cardiology, even today. In truth, probably 90% of electrocardiograms are normal and can be read quickly...it takes about 2 minutes or less. But abnormal readings do require training, skill, and experience. It took a while to reverse that legislation, but it did finally take place. We just couldn't believe that this could even happen.

MDCVJ: Would you talk a bit about your relationship with Michael DeBakey—when you started working with him, what your interactions were like, and how your relationship changed over the years?

Dr. DeBakey was an extraordinary man. When I first came to Houston I had little contact with him. He worked with his own cardiologist. My partner, Don Chapman, worked with him a great deal in the '40s and '50s, but as their individual practices became busier, they went their own ways. In 1982, Richard Miller, who chaired the hospital's cardiology section, planned to move back to his hometown in California. Doctors DeBakey and Tony Gotto asked me to consider becoming chief of cardiology in his place. Then Dr. Miller decided to stay another few months before leaving. Dr. Bob Roberts was then recruited to become the cardiology chair. That was my first real contact with Dr. DeBakey. I started seeing patients with him at that time.

Eleven years ago when we started publishing our journal, I talked with him during the planning process and he was very supportive. He reminded me that there had been a cardiovascular journal at The Methodist Hospital in the 1950s but it had only lasted a short time, so he was very enthusiastic about reviving it. After that encounter, his sisters, Lois and Selma DeBakey, both experts in medical writing, volunteered to help us. At that point I began seeing more patients with him.

After Dr. DeBakey underwent successful aortic aneurysm surgery performed by George Noon, I became his cardiologist. So for the next 2 years, several other physicians and I met with him every week to assess his health and talk with him. We had such wonderful conversations you couldn't even imagine. Even at that age, his mind was still extraordinarily sharp. He was a very good patient; he questioned everything we recommended but ultimately went ahead with it.

He also was a lot of fun to be with. Based on stories I had heard of him years earlier, he was a tough attending when he was in charge of medical training. But he had mellowed a great deal over the years. He would argue and engage in intelligent discussions, but he was always a gentleman.

MDCVJ: The public has heard stories over the years about his demeanor with medical students and residents and the pressure he imposed on them. Do you think it was a result of his own drive for perfection that made him tough on those he trained?

That's exactly the way it was. The stories I've heard both before and after he died, stories from patients and doctors, have always said the same thing: he was the strongest advocate for his patients that you could ever imagine, and he was always polite to them and their referring doctors. It was residents and students in training who bore the brunt of his demands, but always because he wanted things to be the best. His two sisters have the same bright, clear mind as their brother. Selma passed away, but Lois is very much alive, and she defends his behavior to the hilt because she says he was training doctors to be their best and was always looking out for his patients. At the same time, his standards were so high that very few people could match him. It's interesting that his colleagues who worked with him all lived up to that standard. His crew was unassailable, an absolutely superb group of surgeons, and the cardiologists were the same. Don Chapman and Liston Beazley led the way, and they were all the finest people you could imagine.

MDCVJ: Given the hundreds of patients you've seen throughout your career, what can physicians do to build patient relationships?

For me the most important thing is learning how to connect with patients. I think it can be done easily and quickly—I do it by entering the room with a smile on my face and a strong handshake, and then sitting down and talking with them. You have to find a way to help the patient relax so you can develop trust. Then, once you identify the problem, you have to take ownership of it and decide that this is a problem you are going to solve with them. Patients admitted to hospitals today are exposed to so many different health care professionals, and they often don't know who they are seeing or who is in charge, because whoever has put them in the hospital either has not taken ownership of the problem or has handed it off to someone else. So it's very important that a physician take care of the patient if he or she has accepted responsibility for that patient.

MDCVJ: What lessons have you learned throughout your career?

My number one lesson is to be honest with people. It's easy to shy away from the hard issues, but if one can be honest with patients and with themselves, it helps. Another thing is to be aware of and face up to your mistakes. We all make them and sometimes don't face up to them when we do, and it's important to recognize that.

A third lesson is communication. Thirty years ago my younger sister was getting married, and our father was not there to escort her down the aisle, so she asked me. As we were waiting to walk down the aisle, she asked what words of wisdom I had about marriage. I told her, "Communicate, communicate, communicate!" I think there's nothing more important than being able to communicate with your spouse, your family, your patients, and especially with other doctors. We have so many ways to communicate and so many people to communicate with, so when patients are handed off from one physician to another, it's really important to hand off the information as well. Any form of communication is important, but for me person-to-person is the best way.

It's also important to congratulate people when they have done something well. Dr. DeBakey had more honors than anyone I've ever known, but honors don't come without someone recommending you for them. If you see someone who has done something worthwhile, be sure to recognize their accomplishment.

Finally, you have to find time for your family. People have told me that I'm a servant to my profession, and that is probably true. But I've tried never to neglect my family, and my wife and I have managed to survive 62 years together. We've grown old together... that's kind of nice.

MDCVJ: When you have patients who are challenging—maybe they are incurable or they have a difficult demeanor—how do you deal with them without becoming stoic or intolerant?

Being a doctor requires a great deal of patience, and you often have to put yourself in the other person's shoes to try and

understand them. Listening to them and communicating with them directly is the best way I know, and that is how you build a partnership. There are some patients who will never be convinced that they need a certain treatment, but you have to try, and that includes getting patients involved in making decisions. I think too often the doctor tells the patient, "Here are your options, what do you want to do?" That is often a very hard thing for the patient to decide, because they don't necessarily know what they want to do. So I think it is important at times for the doctor to make a recommendation.

I also think it's important to find some passion outside of medicine. Mine happens to be fly fishing. It helps to take your mind off of medicine every now and then to stay fresh. I don't know how some doctors do it when they're seeing 40 or more patients a day like some primary care doctors do, but you can be sure they are finding a way to make those patients believe in them, or the patients wouldn't be coming back.

MDCVJ: If you were giving advice to medical students today, what would you tell them?

It's important to keep your education current and stay abreast of what's happening in your field of expertise. As you go through your education and training, always remember that the patient comes first. Learn to identify with people, and think of how you would like to be treated if you were them. Engage with patients, their families, your community, and with medical societies, as they are the people who have some influence on government agencies and policies.

It is especially important for young doctors to find mentors and role models. They are not necessarily the same thing. A mentor can help you direct your career, while a role model you learn from usually by observation. I think this is how you learn the art of medicine. Throughout my career I was influenced by several people, three in particular. The first was when I was 19 and in the Naval Hospital Corps School in San Diego. The commander told us that the top 10% of graduates would have a choice of assignment and the other 90% would be assigned to the Marines. At the time, the Marines were landing on all the islands in the South Pacific and the casualties were awful, so it was clear that my goal was to be in that top 10%, and I did it. I did end up in the South Pacific but never in a combat role. This is something I tell my children: whatever you want to do, if you make your mind up, you can do it.

There were also two cardiologists in Philadelphia who persuaded me to become a cardiologist. When I left there to come to Houston, Louis Soloff, who was the head of cardiology there, said "Keep your head high; you're well trained, and you can work well with anybody in Houston."

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