



BRIGHAM AND WOMEN'S HOSPITAL

Bernard Lown

Interviewed by Peter Tishler, MD, September 2011

I am Bernard Lown. I'm a physician emeritus at the Brigham. I'm a professor at the Harvard School of Public Health and I'm the head of the Lown Cardiovascular Research Foundation.

It's a pleasure to be here today. My interview with you is going to consist of three parts. The first part concerns your training and early experiences in Boston. Why did you come to the Brigham for training in cardiology as opposed to remaining in New York or going back to Baltimore?

One compelling reason: my interest in the fact that many people were dying from digitalis poisoning, and what was contributing to that was the use of diuretics. Elderly people with heart failure were dying two days after receiving a diuretic. The work I did early showed that it was mobilization of potassium from the body, and that was totally unknown at the time, was contributing to this problem. The proponent of the then existent theory as to why this was happening was Dr. Samuel A. Levine, a leading cardiologist in the country and one of the distinguished physicians at the Brigham. I wanted to work with him, but I wanted to work with him for another reason. He was a legendary figure. He wrote one of the first textbooks in cardiology that medical students fell in love with, not only regarding cardiology, but with medicine writ large. That book was a phenomenal story of how to diagnose; it wasn't a didactic book, it wasn't dull, it read like a novel in many ways. He was the magnet that attracted me to the Brigham. But the problem was formidable. He never accepted anybody who wasn't in the Brigham already, a resident, or Harvard-trained, and I was neither.

You have stated that Sam Levine was and remains a lifelong role model. What virtues of Sam captivated you?

He captivated me by being a clinician unlike anyone I have encountered. He would walk into a room, and magic was emanating. He was unprepossessing looking, short, bald-headed, with a high-pitched voice when you first encountered him. Then you observed his eyes, his clipped sentences, his deep wisdom and his insight. He'd walk into a

patient, say a few words, and the patient was better. This was something that drove me up a wall, because I did everything right, including reading the latest medical journals, and my patient didn't get better. Levine's were always better. I was attracted also by his great respect for science. He was doing a lot of publishing, a lot of innovative clinical research, which were primarily observations, correlations, associations, and insights into what was going on at the bedside.

What other Brigham cardiologists did you interact with during your fellowship and early staff?

Well, I interacted with Lew Dexter, Dick Gorlin, Dr. Burwell--those were the outstanding cardiologists. Later with Gene Braunwald and others. The Brigham was very heavyweight in cardiology; at one time there were three different cardiology groups. There was the Dexter group, the Gorlin group, and the Levine group, and then later it was my group.

Why did you work at the Harvard School of Public Health rather than in a research laboratory at the Brigham?

It's an interesting question with an unfortunately long answer. In 1953, I was an officer in the Army. I was recruited to go back to service and I was drafted as a private because I refused to sign the Attorney General's questionnaire. I did sign my allegiance, my support of the Constitution, and thus being demoted during the age of McCarthyism, it really destroyed my career in medicine. That was an end, everybody said.

At that time very interestingly, Levine was grooming me to be the first Levine professor. I had a choice between being a Levine professor or being a nobody, and I choose to be a nobody. When I got back from that experience, so intimidated was institutional Boston that I couldn't get a job anyplace. I had enormous support from two people--Dr. Levine and Dr. Paul Dudley White. They knew me, they knew that I wasn't a KGB agent in disguise, ferreting out secrets about hearts of big political leaders and God knows what inanities that were around at the time. The only one whom I approached for a job was Dr. Fred Stare, the chairman of Department of Nutrition at the School of Public Health. When I came seeking a job, he was beginning work on cholesterol. He needed a cardiologist and I was just the person he was looking for. I said, "But Dr. Stare, you know, I'm on a blacklist. Nobody can hire me. It's prohibited at Harvard." And he said, "Nonsense. You're living; you're paranoid. Forget it. I couldn't give a damn about your politics. You're a good doctor, I know that. You have an impeccable reputation. You can have a job." He gave me 12,000 square feet of space. Furthermore, I couldn't get any grants. Here I had one of the hottest findings then in medicine: I invented the defibrillator. I needed money to convert it also into a cardioverter to change heart rhythms. Fred Stare invested a \$100,000 in my research and started the whole thing.

I want to switch now to another topic: achievements and innovations, some of which you've already mentioned. What are the negative and positive aspects of your nearly 60 year association with the Brigham, particularly as related to patient care?

The essence was that the Brigham, for me, an amalgam of institutions that seemed antithetical, namely a place for elegant research that was encouraged from its very inception. Everybody was doing research, it seemed. I thought that was incompatible with good medical treatment, and I found that not to be the case. At the Brigham I saw happy synthesis of good patient care with frontier-type research. That was a great attraction to me, because I embodied both in a sense. I was doing a lot of research in many areas.

One of the first breakthroughs at the Brigham, which I think was phenomenal, was that Levine and my getting heart attack patients out of bed. That saved more lives than any intervention in America since then. The mortality from acute myocardial infarction at the Brigham at that time was 35%. When we got patients out in a chair, it went down to 10%. That was one of the most important innovations in the 20th century, but it's forgotten for large measure that doctors want to forget about bleeding patients. Bleeding patients was a murderous atrocity. Keeping patients in bed was a similar atrocity. It led to phlebitis, embolism, shoulder-hand syndrome that you probably don't know about, Dressler's Syndrome, pericarditis, depression, constipation, despair and early mortality. That treatment, treatment was so obnoxious, and doctors weren't aware of it. Someday somebody should write about it.

Was the Brigham supportive of your innovations, of which this was a major one?

Yes. When I had the first cardioversion at the Brigham--it would have been in 1959 or 1960--I had a patient who was dying with ventricular. No drugs worked, and I said, "Let's use electricity." The doctor who was, one of the heads of the Brigham, Dr. Eppinger, said, "You can't do that." I asked, "Why can't I do that?" He said, "It's never been done before and we are going to be sued, and the hospital will face enormous damages." I mean, this an innovation that nothing been written about. So he says, "Talk to the Brigham lawyers." They said, you can't do it. I said, "I'm going to do it no matter what they say." They said, "Well then, that's your last day in the hospital." I said, "I don't think so." So at that point he suggested that I write a note in the chart, that the Brigham does not approve my doing that, but I do it on my own responsibility. And I did and it made medical history.

You were clearly a leader in developing methods to treat acute cardiovascular disease and prolong the lives of affected individuals. You've alluded to some of these things already. Among your many innovations, your book with Sam Levine on Digitalis, which I read as a house officer, developing the DC defibrillator, establishing a Levine Coronary Care Unit and popularizing the use of Lidocaine as an antiarrhythmic, all

stand out. Now most physicians lead less innovative lives. What underlay your achieving so much?

Well, in fact I have a type of brain that doesn't accept the given. I'm bored with what people accept, which is a function of contemporary culture that is not necessarily true or even does justice to truth, size, or common sense. Mine is a questioning mind, number one. Number two character for me is a fearlessness that is foolish because here I get myself in difficulty. I got myself tossed out of every institution I've ever been in-- Johns Hopkins, Yale, the Brigham all kicked me out in essence. Like a Russian doll, you know, one is down, but then jumps up. I jumped up again! It's partially related to my origin: my background as a Jew, and Jews were persecuted in Europe; my pride in knowledge; a very loving mother. I could do no wrong--all were elements in the structuring of personality.

And then of course my unbelievably important encounter with Dr. Levine. He was so formative. I would have gone in a totally different direction without him. He made me a clinician, something I did not want. I want to be a scientist, in a lab, at a bench, doing work. My mother predicted the Nobel Prize and told me to keep it up. That was my direction, but Levine broke that, saying, "No, no, no - far more interesting is to be a doctor, help people, heal people rather than cure people." After the first year of my fellowship with Levine, I was bored to tears rounding with him. I heard the same old stories I could recite in my sleep. I went out and did research and would go to my clinic, and I realized I wasn't a doctor. I didn't know the finest notion that I graduated from a first-rate medical school, I had residency training in medicine, when I compare to Levine. I went back and was his fellow for the next 10 years without pay. I would round with him from 10 am to 12 six days a week, and I would be bored silly at times, but I listened and listened and watched and watched. He appreciated that because it was the ultimate compliment, and I had learned and learned and learned. It was like Jacob who wanted to marry Rachael, but got Leah. He spent 10 years, but then he got her.

That was very moving. What motivated your establishing the coronary care unit, which was the first in Boston?

It was the first probably in New England and New York. Kansas City preceded us. What led me to that was the concept that emerged from our work that sudden death was an electrical failure of the heartbeat that was reversible and survivable. I found that in the dog laboratory. When you induce a coronary inclusion in an awake animal with a tight ligature around the coronary artery, there is an acute myocardial infarction and arrhythmias. If you shock the animal out of the arrhythmia they survive. Why wouldn't that be happening in human beings?

And at that time the feeling was that sudden death was an unremediable result of a massive heart attack. It was an act of God. I said, "Nonsense. It's not an act of God. These were hearts too good to die. We could do something." It happened early after the

onset of a heart attack. Thus we had to have a facility that can respond to it, and the important thing is to get patients as rapidly in the hospital as possible and then be prepared to act in resuscitation.

Once we built the coronary care unit and I began to see the multiplicity of arrhythmias that these patients were having, I proposed a different thesis: a successful resuscitation is a failure of the system. What we must do is prevent the need for resuscitation. How could we do that? We need a drug that could act instantly and without adverse effect. What is it? I didn't know. But then memory surfaced. Five or six years before at the Brigham I saw a thoracic surgeon by the name of Harrison Black do a pneumonectomy. As I was watching him he took a syringe and poured something on the heart. I asked, "What are you doing?" He said, "I'm pouring lidocaine on the heart." I asked, "Why are you doing it?" He says, "My professor at St. Louis did the first pneumonectomy. He used to do this. He says it quiets the heart." I said, "Fairy tale," and walked away. When I began to search for a drug, suddenly that image came up. Then I tried lidocaine in the dog lab. It was miraculous. After injecting it, the arrhythmia went away for the entire day. I took the lidocaine into the Brigham, and said to the nurses, "From now on, patients have a lot of arrhythmias, and you'll give lidocaine. You'll give a milligram per kilo," extrapolating this from dogs. There was no FDA approval, nothing. They began to use it and then we had no arrhythmias. Then the FDA appeared. By this time I had given a lecture, and all over the United States people were starting to use Lidocaine. The FDA came to me, pleading for me to apply for lidocaine's approval. I said, "No. I've proved my point. I'm not interested." It was the only drug accepted without an IND, without any research, and it's used all over the world.

Was Sam Levine involved in creation of the CCU either practically or spiritually?

Both. Funds for the CCU did not come from the Brigham. They came from two sources. One is Levine; I persuaded him to contribute half of his large research fund. He was a little hesitant at first, but I didn't tell him that we were going to name it after him. And secondly, I paid for it since I had a lot of funds from the defibrillated cardioverter. These funds were for instrumentation. All the monitoring equipment, defibrillators, cardioverters, the entire electrical circuitry was built free by American Optical Company as a reward for what I'd done. I refused to take out a patent because I thought a patent would inhibit the field and delay its opening. It was totally essential to get a defibrillator as rapidly as possible. People were dying. Harvard did a lot of pressuring me to get a patent and I said, "No way."

What role did the Brigham play in establishing the CCU?

It was an interesting crossroad. The Brigham was building the new hospital. They didn't want to innovate within the old building. It had no extra money, since most was flowing toward the new hospital. When I met with Dr. Thorn he said, "No way. We can't do that Bernie. I understand." Later I came in to see him about this again. I was persistent. He

said, "Oh my God. My good friend in Seattle, a professor of endocrinology, had a cardiac arrest . A defibrillator that you developed was used on him and his life was saved." This friend was Bob Williams. I said, "Well, Dr. Thorn, the same may happen to you." He asked, "What do you want?" I replied, "I want a coronary care unit." He asked "Well, what space do you want?" I said, "I want the room right outside A2 and the veranda." He said, "OK." I went to Bill Hassan, the director of the hospital, and said, "Bill, Dr. Thorn approved." He asked, "What's the space?" I described it. He concurred: "Oh," he says, "this whole space." And that's what we got!

What motivated your cofounding the Physicians for Social Responsibility in 1961 and the International Physicians for the Prevention of Nuclear War in 1980?

In 1961, a resident in psychiatry, Roy Menninger, whose father was the head of a very famous psychiatric clinic in Kansas, invited me to go to a meeting at which a recent Nobel Laureate, Philip Noel-Baker, will speak on nuclear weapons. My brain was preoccupied with sudden death. I wasn't interested in any nuclear issue. But he was persistent. He knew I was progressive. He said, "How could you ignore that?" And he was after me. So I went and I took with me my fellow Sydney Alexander, who founded Lahey Cardiology.

What Philip Noel Baker said, in the tone of an Asian Hebraic Prophet, was that that none of us will be alive by the year 2000. He laid out the essence of what's happening -- the accumulation of nuclear weapons was like a house of matches that has to collapse. When it collapsed, nothing will survive. There was enough overkill already for every man, woman, and child many times over. When I left the meeting, I had three young kids. I began to think that this sudden death that I'm concerned with is not cardiac, but nuclear. What will I do? I need to do something, otherwise I'm an accomplice.

So I call together young doctors at the Brigham, the Mass General, and the Beth Israel. There were about 20 of them here and I laid out the ideas. Half of them thought I was nuts and never came back. Half came back, including Victor Sidel, Jack Geiger from Boston City Hospital. And there were others, including residents and fellows. We began to meet to determine how we doctors can contribute. Ultimately we concluded that we could contribute by doing research on the medical consequences of a nuclear attack against Boston.

We wrote five articles thereafter. I submitted them to New England Journal, and the editor, Joseph Garland, said, "Nonsense, Lown. We are not a political journal. We are not going to publish it. If I published I would be fired from my job. The Mass Medical Society's a very conservative body." I asked, "Would you mind if I leave you the five articles?" This was Friday. On Monday I get a call from Dr. Garland: "Could you come over here? I want to talk to you." He said, "I read your articles. I'm going to publish them. You know, I might lose my job." I said, "Dr. Garland, I'll find you another one."

He published them and they made history. You can't imagine the impact of the articles. Nothing published in New England Journal equals them. They were all over the world. Doctors in Hamburg, Brussels, Pittsburgh began to emulate bombing their own cities, and to write up the results for the press. This had immediate impact in the United States. The shelter program that the Kennedy administration was promoting was halted because our studies showed that the most dangerous place to be at the time of nuclear attack was in a shelter. This was the case because the firestorms would exhaust the oxygen in cellars and such ground places so that one would asphyxiate before being burned. We were called before the Senate committee to testify, and that began the Physicians for Social Responsibility.

What did you experience when the IPPNW won the Nobel Prize?

It was a surprise. I had started IPPNW here with a Russian that I knew because we did joint research sponsored by the National Institute of Health. His name was Chazov and it so turned out that he was the doctor to the whole politburo. They were all old with a lot of cardiovascular disease. We had enormous influence in Russia by virtue of our collaboration started in 1981. By 1984 we had 150,000 members in 60 countries and we were being taken note of. At that time we won the UNESCO Peace Award in Paris, the Gandhi Award, and I won endless honorary degrees. I got the Medeiros, the Catholic Church Peace Award. The world was aching, frightened and looking for somebody with a voice of reason and of reversing the tide, and the doctors did that. When I got the Nobel Prize with Chazov, we were in Geneva. When we heard about it, and my mother was then in her 90s. We called our mother, and asked if she knew what happened. "Yeah I know what happened," she said, "6:00 this morning CBS calls me," she says, "Is Bernard Lown your son?" I got frightened. "What happened to my son?" They said, "He got the Nobel Peace Prize." Oh, that. "Too bad. I thought he should have gotten the Nobel Prize in medicine."

Tell about your transition from the Harvard School of Public Health to the Lown Cardiovascular Center that you created.

The Lown Cardiovascular Center was a response to a deep crisis in medicine. The deep crisis in medicine consisted of the doctor distancing from the patient as a human being, breaking up the patient into a liver or heart, kidney, or an organ system. The patient as a wholesome human being with a distinctive human narrative was no longer there, and to me that was a catastrophe, a tragedy because patients felt that loss but doctors didn't. The illusion was that the technology and size will substitute for it, but they couldn't substitute for it because they weren't in the same sector of reality. They were addressing different things and that was happening everywhere.

I couldn't take it and I thought I had to set up my own clinic of medicine where we hone the science but at the same time maintain the human dimension of medicine. Our number one principle is listening to the patient. Listening to the patient takes time so

we on average scheduled a patient an hour. How could we survive with a patient an hour and listening is not reimbursed? The result was that I established the Lown Cardiovascular Research Foundation to have the doctors do research one day a week, to reimburse them to make up for the difference. In 1972, when we couldn't meet payroll on the last day of the clinic, on Christmas I sent a letter to all my patients. I got a 30% response and roughly \$90,000 raised from one letter. The next year it was \$200,000, next year it was a half a million, next year it was \$700,000, next year it was more and that proved my point. Patients desperately want, need, and will pay for good medicine.

The other aspect is overtreatment. We immediately realized that all over Boston everybody was overtreating everything. Unnecessary medicine was assaulting every human being. We were doing roughly 10% of what any hospital in Boston was doing. Second-opinion patients came to us for bypass, for stenting; we do about 10%. Try to determine how much saving that is on a national basis, and then extend it beyond cardiology, and you recognize the crisis in healthcare and the meaning of what we did. It is a very complex and important story that we need a lot of time to dissect and analyze.

What are your associates at the Lown Cardiovascular Center doing to promulgate this nationally?

We have planned a national conference in April on treatment, trying to get the people from Dartmouth and all over the country to assemble and discuss that and bring up our experience. We're trying to reach out to the public increasingly. In part it is my failing that I haven't tried to promote public visibility, mostly because I was preoccupied with preventing nuclear war.

This may be a redo of what you just told us about with regard to the Lown Group, but I do want to quote a statement of yours from the Lost Art of Healing in 1996. You said, "During my professional life I have seen medicine rise to an apogee of respect, sometimes amounting to adulation and then watched in distress as it began a rapid downward slide. Healing is replaced with treating, caring is supplanted by managing, and the art of listening is taken over by technological procedures." I gather that you believe that this lament remains true today. But if so, do you think that the slope of this downward descent is worse, so that we are less attuned to total patient care than we used to be? And if so, what should we be doing?

I think the slope is down. I'm so pleased that the Brigham, having established a Lown Educational Award, gives to the recipient this book, which is a small but very important recognition. Yesterday I got a call from Berlin, and I heard that the Dean of the leading medical school told a friend of mine that she gives out this book in German to all 300 entrants. There is a resistance, but that resistance is very, very weak against the enormous tidal wave of new technology and new imaging.

Doctors don't know how to do a physical examination anymore. They haven't got the faintest notion how to examine a heart or lungs or a thyroid. It's just not so. Ask our good friend Marshall Wolf about it. The point of it is not only loss of physical, but loss of history taken, loss of communication.

And the result of it is that patients feel in some ways abandoned. The level of trust that is so essential for healing doesn't operate. There's a high malpractice suit rate and there's also development of paraprofessionals by the thousands, from yoga to hypnosis to touchy-feely to flower therapy. Why? It is a reflection of the failure of professional medicine, and that failure is doing away with the doctor as a professional. The doctor as a technician? Yes, they're prominent, competent beyond measure, beyond the imaginable, but they are not doctors anymore. That will rile up a lot of Brigham folks, some Mass General folks, and they'll picket this joint. I hope they do.

In the essay I have on my blog, the patient I describe is a 42 year old person from another city. Doctors tell him that in 8 years he will be dead, that he has a cardiomyopathy with atrial fibrillation and heart failure. He comes to see me. The doctor in the city complains, "Why are you wasting time? Bernie Lown can't help you. Nobody can help you." He does come to see me. He has an ejection fraction of 30%, he's really sick. He comes with his wife. His wife is a bubbly Italian woman and she talks to me and she says, "I don't believe what doctors say." I said, "Why not?" "Because many times my husband is his old self, then he gets into his old man act." She says, "When he gets into his old man act it's in atrial fibrillation. When not, he's in normal rhythm." I say, "Do you ever take a holiday?" I don't know why I asked her that question, "Away from New York?" she asks. "Strange that you ask. We were just in Tuscany for a month and the most amazing thing happened. Every day there were hills and valleys. He walked, he was short of breath, he was making an effort. By the end he could walk as well as we did and when he came back there was no old-man act for another month." I said, "I know what's going on. He was in atrial fibrillation; he was getting digoxin and a beta-blocker and was inadequately controlled. Hyperventilate for me for 30 seconds." He hyperventilated and his heart rate went up to 110. I said, "We'll fix you. You'll be well." I doubled his digoxin, his beta-blocker and added verapamil. Six months later they come back. "It's a miracle. There's no more heart failure. He's alive today." It's 29 years later.

Would that have happened at the Brigham? No way. Would that have happened at Mass General? No way. Nobody would have listened to the wife. They wouldn't have had time.

That's a somber message for those who are still training. I hope we can take that to heart.

It is possible to turn it around. You're a human being and human beings are ultimately malleable, susceptible to sound information. You know, when you enter Harvard what is so remarkable is the first-year students. They're so bright, they're so innovative, they're

so searching for a human answer. They want to do good, but do they end up doing well, you know?

Tell about your offspring. Have they followed your footsteps?

Yes they have, but not in medicine. My son is one of the best schoolteachers in Boston. I meet parents and they say, "Miraculous. He's such a great teacher." He's turned around children at a formative stage, he loves teaching, but teaching doesn't love him. My two daughters are social workers and have done enormously good work. My daughter was the head of a huge program in New York, one of the largest programs of foster care in New York City. I'm very proud of her. My other daughter is doing it in Boston. It's interesting, their mother was a social worker. So they followed their mother's footsteps, not mine. But in principle, they have followed our footsteps.

What do you foresee for the Brigham for the future and for medicine in general?

Firstly, I'm not a prognosticator. Anybody who predicts the future has some foolish gene operating. You know, the future is already here in a way and if we proceed on the present course, it bodes poorly for medicine. But, you know, it's possible to turn it around. I'm persuaded it's possible because the people at the Brigham are exceptional human beings. They're bright, they're committed, they're hardworking. I don't think any profession works as hard as the medical, or at least the way I work. I worked from 7:00 in the morning till 12:00 at night 7 days a week. That was my schedule. I wasn't forced to work; I loved it. I'd go in some nights when the housestaff will call me. I'd go in and never collect a penny for it. One or two nights a week I'd be at the Brigham and therefore I was the most popular teacher at the Brigham because when do you teach? Two o'clock in the morning around the sick patient.

I send two messages. One is that the present course has to be altered profoundly and drastically. The hospital has to play a different role in the community. Medicine can't be centered around hospitals because the aim of medicine is not to have a sickness system, but to have a health system. A healthcare system has to be based in the community, has to be focused on prevention, has to involve people of every walk of life, because health is not fractionated, and the health is everybody's responsibility. Health is the responsibility of the grocery store, of the policemen, whether you have a place to walk or play, whether it's a safe place.

Health is also related to social equality. The work of Richard Wilkinson of Britain in his monumental book, *The Spirit Level*, is the most important book published in medicine in my lifetime. In it, he shows that wherever you go where you have equality in society, you have fewer health problems, longer life, less obesity, less addiction, less crime -- you name it. That is true in the United States. One of the most interesting of his findings is that the rich suffer the same as the poor in an unequal society. If you have a poor society that is equal, that is better than a rich society that is unequal. What a powerful

message. And it's backed up by lots of data. The data show that if you want to save and have a healthcare system that works, you have to follow these principles of community, prevention, and social equality.