VOICE EXPEDITION INTERVIEW TRANSCRIPT

The Oral History of Nephrology

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Interviewed by Dugan W. Maddux, MD

September 22, 2009

DWM: It's Tuesday, September the 22nd, 2009, and I'm at the Fresenius Medical Care office in Waltham, Massachusetts with Dr. Michael Lazarus. And I thank you for letting me come today to talk to you about --

JML: Glad to be here, Dugan.

DWM: -- about the history of dialysis. I want to start with where you were born and raised, which will hopefully take us to your education and how you got interested in medicine.

JML: Yeah. Born in Sanford, North Carolina in 1937, which makes me 72 -- probably the youngest of your interviewees.

DWM: Definitely on the younger side, yes.

JML: Yeah. I went to the University of North Carolina in 1955, graduated in '59. Went to Tulane School of Medicine.

DWM: How did you get interested in medicine? Why did you decide you wanted to go to medical school?

JML: I'd always been interested in medicine. My dad was a druggist, a frustrated physician who never got to med school, promoted, prompted me to go to med school. I went through pharmacy school, got a degree in pharmacy --

DWM: At Tulane?

JML: At… No, no, at --

DWM: At UNC.

JML: -- UNC. In fact, worked my way through med school doing locum tenens in the summertime. So I got to see a lot of drugstores as I went through med school.

DWM: And what took you to Tulane?

JML: I had an uncle that went there, an uncle that was a physician, went to Tulane in the '20s, and had some family there. So I really went down to New Orleans because I thought it would be a great weekend. Turned out I liked the school. I liked the city, and ended up going back. So I went to Tulane, graduated there in '63.

DWM: OK.

JML: Went to Emory to do my internship, straight medical internship. Then got drafted. Could not get in the Berry Plan, so went into the Navy. Was a Naval flight surgeon, 'cause that was the only way at that time you could keep from going to the West Coast. If you were a physician you went to the West Coast. You went to Vietnam. So a number of us said, "How do we keep from going to Vietnam?" They said, "Well, you stay on the East Coast." And we asked, "Well, how do you stay on the East Coast?" "You get in a flight school or submarine school." So everybody was, was clawing and fighting to get in one of these schools. And the higher you got in the ranking of the school, the more likely you were to get an East Coast billet. So it was the most competitive six months I ever spent.

DWM: That's very interesting.

JML: Everybody was studying very hard --

DWM: Right. Where --

JML: -- to do well.

DWM: -- where did you have to go to go to flight school?

JML: I went to Pensacola, Florida.

DWM: Pensacola?

JML: Yeah. It was in a -- it was a nice time. It was a nice break, get away from medicine.

DWM: Yeah.

JML: And we did -- actually, it was six months of public health, which served me very well at the time, and, and probably has since.

DWM: Yeah.

JML: But I ended up going back to Cherry Point, so I stayed in North Carolina, stayed on the Eastern Coast. Then went back to New Orleans, to Charity Hospital.

DWM: Was that two years in Char--

JML: No, I was three years in the service.

DWM: Three years in the service, OK.

JML: Then went back to Chap-- to New Orleans. At that point I was married, had a couple -- one, one child, not two. One child. Worked two years in my medicine residency. I met a person called Jim Johnson, who was a senior resident then, who was on his way to Boston. And I said, "How do you know somebody in Boston? How did you do this?" And he said, "Well, my predecessor was a guy named George Bailey, and George is up at the Brigham, and I know George well, and I'm going there to do a fellowship." So subsequently during my training, I met both Jim Johnson and George Bailey. And George, who was on staff at the Brigham, said, "Well, you ought to come up to the Brigham, meet John Merrill, and learn about this thing called dialysis," which was pretty new. This was 1967, '68. Dialysis was just getting started, and I -- up until then I intended on being a cardiologist.

DWM: So at Charity, had you been exposed to dialysis at all, and...?

JML: Yeah. There was a man there named Dale Lindhome. Dale trained with Scribner, had come from Seattle, was there a couple of years. New Orleans had two dialysis units. They had one at Charity, and they had one at the Baptist Hospital. Baptist Hospital was treating two patients, and we were treating three at Charity. One was a child, and two were young, as you might expect at that time, working Caucasians who were waiting for a transplant.

DWM: So they were beginning to do chronic dialysis, and then --

JML: Beginning to do small --

DWM: -- doing it --

JML: -- in support of transplant.

DWM: In support of transplant.

JML: Yeah.

DWM: OK. And were you involved at all in acute dialysis, also? And was that happening very often?

JML: Yeah, it was a fair amount. Dale was a Kiil dialyzer, 'cause he came from Seattle. So my job as a senior resident was to build Kiils. So for a couple years I built Kiils with the technicians, and…

DWM: Tell me what it was like to build a Kiil dial-… What does that mean, to built a Kiil dialyzer?

JML: Well, you lay the layers down, and you have these cranks and screws that you put the layers, the sideboards on, and you put the layers through, and you would sterilize it. It was an interesting, but menial, task.

DWM: How long did it take you to put together a Kiil dialyzer?

JML: Oh, probably 10 to 20 minutes.

DWM: OK.

JML: Not long.

DWM: And then I suppose you had to test it before you used it, 'cause they had --

JML: You had to test it for leaks.

DWM: -- they had a leaking issue, didn't they?

JML: I tested for leaks, and --

DWM: Yeah.

JML: -- we did that -- I don't remember all, as much as I should about this. It's been a while. But we tested for leaks. I would put the patients on, so I got to be, do some nursing activity.

DWM: So what -- and what access were they using?

JML: Oh, at that time it was a shunt. Everything was a Scribner shunt.

DWM: Scribner shunt.

JML: Yeah.

DWM: And were they functioning pretty well?

JML: Well, as well as shunts worked. I don't, I don't recall the problems in New Orleans that I recall when I was a fellow in, at the Brigham where there were a lot of shunts. And as you may or may not know, fellows in the early '60s, that's what we did is de-clot Scribner shunts. So we all learned to hate shunts severely. About the time I got to Boston was the first of the fistulas I saw, which was about '68, when the Brescia-Cimino was first described. So we, we saw a couple as I got up here. Had none in New Orleans. We didn't, we didn't know what a fistula was down there.

DWM: And were they taking patients to a certain part of the hospital to dialyze them? Did you…?

JML: Oh, I don't remember. It was… It was… Charity Hospital, as you know, is an enormous, large building.

DWM: Yeah.

JML: And as I recall, we were up on one of the upper floors, and we had a small unit, but it was only one Kiil machine, and there were only three or four patients that we treated.

DWM: And you were in a, like, the general medicine residency.

JML: Yeah, I was a --

DWM: So how did you get involved in that?

JML: Well, I had been talking to these two guys, Jim Johnson and George Bailey, and they were telling me about dialysis, and so I said, "Well, I better go learn about this."

DWM: Learn a little bit.

JML: "I want to, I want to see." This was right after the time of the death committees in Seattle, and so there was a lot of, there was a lot of news about that. But it was, it was almost unheard of in the South -- or the Deep South, anyway. I didn't know any other places doing dialysis except New Orleans. Maybe Atlanta.

DWM: Yeah, Emory --

JML: There was not much going on.

DWM: I think John Saddler probably would've been at Emory --

JML: Yeah.

DWM: -- and they were beginning to do some dialysis.

JML: Doing some there.

DWM: Yeah. And Richmond.

JML: Richmond I don't know about, but probably.

DWM: 'Cause they were interested in transplant in, in Richmond, and…

JML: As I came up here -- oh, I can remember vividly they had a chronic renal failure clinic when I moved up here, and that was one of the things we did. There were two fellows at the Brigham, two clinical fellows, and there were about five or six research fellows, and I was one of the two clinical fellows. The other clinical fellow was Esteban [Valles?] was his name, and Esteban spoke no English, zero English. So nobody could understand him, and he couldn't understand us, and so I was basically on call for the first six months until he learned some English. And it was a, it was a very difficult six months. My wife was pregnant and I had two children. Moving from New Orleans to Boston was a severe culture change, but one we enjoyed. It was a nice change. Oh, Karen will disagree with that. She's still delighted that we're going back to the South. So she's been a, an interim Northerner for many years now. But it was a difficult year, because there were a lot of patients -- well, it was 60 to 80 patients --

DWM: Already.

JML: -- which was enormous.

DWM: And this was late -- and this is '67?

JML: This is sixty... Sixty-nine when I got here.

DWM: Sixty-nine. So that's a lot of --

JML: Lot of patients.

DWM: -- dialysis patients.

JML: These people were from all over. It was -- there was nowhere else. I mean, we had patients from all over Maine, Connecticut, people coming from New York, people as far away as Virginia. We had a couple -- one of the first home patients I ever met was a couple in their seventies, delightful couple that lived -- relatively wealthy -- lived in western Virginia and were doing their own home dialysis, both in their seventies. He was the patient, she was the caregiver. Delightful couple. I will never forget them. And -- but people came from all over. It was the only -- one of the few medical centers. The closest centers were in New York. There were a couple there, but not nearly as big as Schreiner. George Schreiner's program in Washington was the nearest big one. In fact, there were three programs when I was looking for fellowships: Schreiner's program, Merrill's program, and Scribner. Those were the three big training programs back then. And, and they were, they were well delineated. They all had different philosophies, which you've probably heard by now.

DWM: Well, talk to me about the different philosophies. How would you characterize the different training programs?

JML: Well, certainly it was passive flow Kiil. The Merrill contingent was Kolff -- was the Baxter twin coil Kolff machine that we used primarily. It was pumped blood; we didn't do any passive blood. There was a large home program here. I don't know how the East got identified as being in center. I think later on we led the, we led the, the -- not the charge, but led the development of in center dialysis as opposed to home. Seattle always stayed home, stayed strongly a home program, and Schreiner was kind of in between. His program was mostly metabolic. As I recall, there was a lot about bone disease in Schreiner's group, and that's kind of where they focused. The program here was heavily oriented towards transplant, and I think that's why the in center became so predominant, is because everything was really focused on transplant. Everything was in support of transplant.

DWM: Yeah, it does sound like Scribner, I mean, really believed that chronic dialysis was a therapeutic end in itself.

JML: Yeah, yeah.

DWM: But that Merrill --

JML: Here it was always --

DWM: -- yeah, was very committed to transplant.

JML: To transplant. And so everything was in support of transplant. Everything was transient to get to transplant. We had a very large home program -- I guess there were probably 30 to 40 patients when I first walked into the program.

DWM: On home hemo.

JML: On home hemo. PD was nonexistent then. Nobody was doing PD, except for acute, 12 hour, in hospital PD, and it was never a big program, at least at -- not at that time. But they had a really large home hemo program, but it was unusual because there was nobody in Boston. All the home hemo patients were off somewhere. We had a wealthy patient who had a hemodialysis machine on the back of his boat, and he would pull into the Boston Harbor, and I can remember that we had to go down to his boat to do an office visit. That's where we saw him, is on the back of his boat, which was much more pleasant than the hospital. So I and a nurse would go down to ______________boat and jump on the back, and have lunch, and have a visit, and he did remarkably well for a number of years. But all the home patients were like that. The one in Virginia -- they were scattered all over the place.

DWM: You know, listening to some of this, it sounds like there were definitely -- some of the people on home hemo and on dialysis were people who could afford to be --

JML: Oh, they were all wealthy. I mean, it was very clear. There was… Well, this was before Medicare, clearly --

DWM: Right.

JML: -- before the bill was passed. And so all of these were very wealthy patients. In fact --

DWM: They were essentially funding their own dialysis.

JML: Yeah.

DWM: Yeah.

JML: George Bailey used to make the joke that renal disease was obviously the disease of the very wealthy, because only very wealthy people were getting dialyzed. But it was clearly a selection phenomena. And the patients that were being treated here were largely, largely Caucasians, relatively wealthy, certainly youngish, certainly all working people. I mean, that's who was being selected. I was extremely frustrated. I can remember one of the first conversations I had with Gus Hampers is that he'd put a 60 year old woman on dialysis in one of our clinics, and I said, "She's 60 years old, Gus. You can't do this." And he says, "Why can't I do this? We have a machine. A lady needs treatment, and we're going to put her on." I said, "Well, I know all of these young, black men down in New Orleans who are much younger. They got a full life ahead of them." And he looked at me and he said, "I'll tell you what: every one of those black men that you can get up here into this clinic I will put on dialysis." And I immediately saw the frustration, that yeah, that they maybe were better candidates that maybe should've been treated, but there was no way I could get them to what was being done here. And so I kind of gave up on that and said, "OK, we'll treat everybody we can." So we were treating people in the early, late sixties -- in their, in their sixties, even approaching seventies. I said the home patients in Virginia were in their seventies. So we'd already passed the age barrier by 1970. And started doing some diabetics, and that was just absolutely, totally unheard of.

DWM: Right.

JML: To put a diabetic on dialysis was craziness. In fact, we had a paper we wrote in 1974 that reported our history of about 40 to 50 diabetics with us and the Joslin Clinic. Of course, the Joslin being right here --

DWM: Right.

JML: -- there were a lot of diabetics to, to choose from. But, but the criteria had started to break down at that point. One of the things that -- I'm sorry you don't get to talk to George Bailey. He was a very, very interesting man. He was from -- native of Louisiana. Very bright man. Very energetic. Very dedicated to ESRD and the patients. And George was one of the leaders, along with Hampers, to look at funding, and to push for funding. I can recall -- the first case in New Hampshire was a young boy, was a 12 year old boy that was brought down to our clinic, and he clearly had GN, progressive renal disease, and it was clear he was going to need dialysis. And his mother and father had no money. They had no money. He's 12 years old. Father was a potential donor, and we were working towards trying to get the father worked up and get him donored, but the kid needed dialysis. So George said, “I'm going to go up to the governor in New Hampshire and see if we can't raise money for this kid to keep him on dialysis until we can transplant him.” So George went up, tried to get in to see the governor. He couldn't get in the door, couldn't get there. So he came back, and a couple of days later -- the young boy's getting sicker and sicker and sicker and sicker. So he said, “Michael, put the kid up, put him in a blanket, put him in my car, get his mom. We're going back to New Hampshire with the patient.” So we get this young 12 year old who's throwing up. He's sick as he can be. His mom's in the car. She's very upset, so she's not quite sure what we're going to do. So we go up to the governor's office, and we walk into the governor's outer chamber, where his secretary is, and George says, “I'm here to see” -- I can't remember who the governor was at the time -- “Governor So-and-so. This is a New Hampshire citizen who needs treatment, and we want to talk to him about what's going on and what we need to do.” Secretary gives us kind of a runaround. “We'll find the governor. We'll talk to him.” Phone calls are made. Nothing's happening. We're sitting in this anteroom. Lot of people there, you know, other people moving in and out. It's the capitol building. So this young boy starts to throw up -- I mean, starts to get violently ill, and he's throwing up, and he's looking bad, and, you know, I'm working on him, trying to keep him comfortable, doing what we can in this office, and the secretary is getting frantic, 'cause she sees this kid's gonna die. I mean, he's really, he's really ill. So finally she starts calling. They have a couple of police come. George refuses to leave. He says, “No, no, we’re not leaving ’til we talk to the governor.” Finally the governor comes out, meets the mother, looks at the kid, and says, “Whatever he needs, get it for him.” It was a wonderful story. So we got -- that was the first funding of a patient in New Hampshire. And they started an ESRD program after that for patients. Wasn’t a lot of money, but it was the first one. I mean, Bailey was just terrific. He did some wonderful things for patients to get ’em started. Kid came back, got transplanted -- unfortunately didn’t do very well and died after a couple of years, but it was, it was an interesting tale of how funding got started.

DWM: Yeah, and there are these repeated tales of physicians and nurses and patients and families having to advocate for themselves --

JML: Oh yeah, oh yeah.

DWM: -- to get this funding so they --

JML: The State of Massachusetts was pretty aggressive, was pretty progressive. They had a program -- there was some small amount of funding, so people in Massachusetts could, could actually get dialysis -- not large numbers. And there were criteria. There were no blacks. There were no minorities, that you all -- everybody had to be educated with three degrees, and you had to have some worthwhile value. It was kind of like the death committees that occurred in Seattle 10 years earlier.

DWM: That social worth was definitely a part of the --

JML: It was still a part of it.

DWM: Yeah.

JML: In ’73, when -- what is it -- I’ve forgotten the number -- 4063, 4062 -- I can’t even remember the bill --

DWM: Right.

JML: -- was passed, then it just blew open here. I mean, we were fairly far advanced, and once the funding came, I mean, the program just grew enormously. And that was about the time that Hampers and Ted Hager and Gene Schupak started the company National Medical Care.

DWM: Right.

JML: Once the funding came… In fact, they had started the company before. They thought that they could develop a company and get funding for a company prior to the government getting involved. So they had actually started National Medical Care before that time, as I recall.

DWM: What, what caused them to step out of the Brigham and start this company?

JML: Well, if you read Gus's book, it's a pretty good story. It's -- I think he's pretty factual about what happened. It was actually -- they tried at first to get the Brigham and Harvard to do this. They went to the school and went to the hospital and said, "This is important. You can do this. You can turn this into a business." For profit was, was really a dirty word -- still is, but was back then a really dirty word, and nobody wanted anything to do with this. And so they went up and down. They went through the hospital hierarchy. They went to Harvard. They tried every way they could, and reluctantly -- and I think it was a very reluctant move to go outside to raise commercial money to try to get this company started.

DWM: And the idea was that the, within the Brigham there were, there were not enough dialysis spots for the people who needed to --

JML: Oh, not even close.

DWM: So they just -- there was a huge need, and they couldn't get, figure out any other way to get --

JML: Not enough beds. I mean --

DWM: Yeah.

JML: -- the Brigham at that time was a small -- it was a 350 bed hospital. It was not a big hospital. It was clearly a cardiovascular endocrine Mecca. The renal, renal program was kind of called cardio-renal, because Merrill was basically a cardiologist at heart. And it was a small division. We had -- the dialysis unit was -- the first dialysis unit was only four beds --

DWM: Four beds.

JML: -- so it was not, not a big dialysis unit.

DWM: So when you came here in '69 --

JML: Well, they just built the second unit --

DWM: OK.

JML: -- which was then eight beds --

DWM: Eight, woo!

JML: -- so it went from four to eight. It went around the clock. It was 24 hours. We dialyzed day and night.

DWM: How long were people dialyzing? How often were they dialyzing?

JML: Well, again, this was entirely in support of transplant. All we were doing was in support of transplant. If you could get home and if you had enough money to buy supplies, and there was a, there was a significant grant process for Baxter. Back in those years, Baxter was supporting a lot of grants. So for selected patients, if they could somehow get a grant, get local money, could buy a couple of twin coils… We were reusing twin coils in those years, and what -- and again, George Bailey had developed this. In fact, there's a paper of a washtub -- it was a plastic washtub that was the tank. We were reusing, sticking the twin coil kidneys down in a brine, which is a very salty solution to store them. They weren't sterile. Then we'd run formaldehyde through them, run saline through them. They would leak like crazy. Patients would get pyrogenic reactions. I mean, it was awful. But, you know, we could keep a family with one or two or three twin coils being reused going, and it would cost, you know, maybe four to five to 10,000 dollars for a year for somebody reusing everything, cutting corners -- not great dialysis, but they weren't bad. And so a lot of that went on, but they had to go home. There was no choice. You had to go home. The first out of hospital dialysis unit was started, oh, after I'd been here about six months, so it was about late 1969, early 1970 when they put four dialysis machines in a nursing home up in Melrose, Mass. Ed may have talked to you about Melrose. Melrose is a community that's about 12 miles north of here. And Gus and George Bailey had found this administrator for this nursing home and convinced him that they would rent two rooms and put two machines in each room, and they would be able to pay him for the nursing home. So it was strictly a business venture for this guy that ran the nursing home. But they put two machines in two rooms, so we had four machines.

DWM: And what kind of machines were they using? Were they…?

JML: Those were twin coils.

DWM: Twin coils?

JML: The old tanks -- I don't know if you've seen those silver tanks --

DWM: Yeah.

JML: -- where you stir it with a paddle, and had bicarb that was piped through to get the pH correct. And the concentrate was just poured in. The water was running right out of the sink. We didn't have chloramine, didn't have to worry about chloramine then. But the water was certainly not sterile, let me tell you, because people would put their hands in it and swish around the, the concentrate. Had large paddles which we'd stir. Anything could fall in the tank, or spill in it. It was just very, very, very, very, very basic equipment. But they had four of those. I had -- they hired a couple of nurses, and started the first -- at least I think it was probably the first -- out of hospital dialysis unit. So it was about 1970. After about six months the nurses struck. They didn't want to do this. They wanted more money. I can't remember what the reason was, but all the nurses quit. So in the middle of my fellowship, Gus called up, and George, and said, "You've got to stop what you're doing. Quit making rounds. You've got to come up here and dialyze people." So at that time Ernestine Lowrie, which was Ed Lowrie's wife, Ernestine was the head nurse at the Brigham. She and I and two other fellows -- and I think Ed was back from the Navy then, so maybe Ed was along with us; I can't remember -- but a couple of renal fellows and two nurses dialyzed around the clock for about four days.

DWM: So it was handy that you knew how to actually do a dialysis treatment. Like, fellows today I'm not sure could do it.

JML: Oh, you had to do dialysis. Yeah, you had to do dialysis. In fact, in the first, at least the first five years when I was on the staff, we made all of our fellows do dialysis. They had to do dialysis. They had to put on an apron. And the nurses had to tell me, "This fellow knows how to dialyze." The nurses came there --

DWM: Set up the machine.

JML: -- set up the machine, put 'em on, run the whole treatment. So that was part of what fellows had to do in the early years. We stopped doing that in the mid 1980s, but up until then, if you find any of the fellows that went through the Brigham program early, they all knew how to dialyze. We all learned how to do that.

DWM: So you trucked over to Gus Hampers' unit and…

JML: Went over there and did dialysis for about four days. We had to do that until they could get other nurses to come and retrain the nurses again. And that unit then went to one in Brookline, which was called the Babcock Street, which was the name of the street. And that was the first large dialysis unit. That was a 30 station dialysis unit.

DWM: What year would that have been?

JML: This was about 1972. It was the first central delivery system. And I can remember the first night -- I happened to have the night shift that night. We put these 30 people on, and hoped to God that this machine in the back was going to deliver all this concentrate right, which it did. But I can remember leaving that night, and the young nurse -- she was a young woman; she'd been in nursing about four or five years -- was the charge nurse that night, and I was going home. I said, "I've got three kids. I'm going home. I'm going to leave you with these 30 people here, and this machine." And I can -- I, I will never forget the look on her face as I was walking out the door, of "I'm being left here with all of these people." And I've always admired nursing staffs since then. Doctors have always left the nurses in the lurch of "We're leaving it with you. Here I -- I'm gone."

DWM: Now, you were dialyzing patients at night? What was the schedule for dialysis?

JML: Oh, it was… Well, from the very beginning -- Melrose was around the clock. In those years, everything was around the clock. I mean, if you had a station --

DWM: So how many shifts would you get in a…?

JML: Four.

DWM: Four?

JML: Yeah, four hours, times four, with a quick turnover. At one point, the Babcock Street was 30 stations. The next dialysis unit that was built was built about four years later. So we're in about mid 1970s, late 1970s. And they built at that time the kidney center, which was the first big dialysis unit. It was 47 stations. And we went around the clock. At one point we were doing 400 treatments -- 400 patients in various forms. We had 80 patients on home. PD was just beginning at about that time. It was an enormous program, but again, the only one in town. At that point we had then incorporated Ted Steinman, who was a good friend of mine in training. Ted trained at the Beth Israel. They had one machine that wasn't doing much, so Ted said in his fellowship, "Can I come over and train with you guys?" And we said, "Sure, jump in. Come on over." And so he trained -- Ted sent all of his patients from the Beth Israel to the kidney center. There were guys -- Tony [Kildonny?] and a number of people who were at the Deaconess, and their patients there. So in the early years, the kidney center had Boston University. New England Medical Center never sent anybody over, but we had the general sit-in patients, Boston University, the Deaconess, the Beth Israel all sending their patients to this one dialysis unit. So there were 15 nephrologists on the staff, and we all had to agree -- and in those years it was not like… I understand there are large staffs and dialysis units now of disparate nephrologists, but back then it was -- everybody had their own special way to do dialysis. And we used to have some real knock down, drag out fights about what the K+ (potassium) should be, how long the dialysis should be, what the blood flow should be, and there were all these intricate parts that we used to do battle about.

DWM: Because there had to be some uniformity. I mean, with --

JML: There had to be uniformity.

DWM: -- within the unit, I would guess, yeah.

JML: Yeah, yeah, yeah. That was about the time that Network started, at about that time, and then dialysis units began to blossom. Others were built. I think probably in Boston now there are probably 35 to 40 dialysis units. But in those years it was, it was just totally different. I cannot express how different it was.

DWM: If you look back to where you started in sort of the late 1960s, and then the law, the amendment to the Medicare Act passes in 1972, in your sort of recollection, what difference did that make in the short term with you?

JML: Oh, it was enormous. I mean, when, when… It was really selective. I mean, Massachusetts was a very progressive state. They were putting people on. So there were black patients on dialysis before the Medicare Bill. There were some, certainly some older people. We had done some diabetics. So we were fairly liberal, but the numbers were small. What happened in '73 was those barriers went down, and Medicare paid for everything, and it was a very lucrative reimbursement. At the time we thought it was not very good, but it turned out that $300 per treatment is really pretty good. Costs were very high then. We had not figured out how to get the cost down. And that came in the subsequent years of, well, you don't really need a full time nurse to be there. You don't need a doctor to be there the whole time.

DWM: Was the cost really staff related, the high cost of…?

JML: It was all staff related.

DWM: Yeah.

JML: We'd gotten rid of most of the overhead when we moved out of the hospital. Moving out of the hospital got rid of your expensive overhead. The equipment was very expensive back then. The cost of equipment has come way down. But it was really staffing. It was a full time nurse, one on one nursing, and a doctor there most of the time.

DWM: Yeah.

JML: We stayed right there the first couple of years. And at the very least, we didn't -- we always had a doctor in the building. We did not leave the building, and so somebody had to be staffed to stay there.

DWM: How were the patients doing on dialysis in those early -- late 1960s, early…? Were they tolerating treatments pretty well, and…?

JML: Well, I mean, it was certainly not like it is now. In my mind's eye back then, they were great. Of course, the alternative was watching them die, and helping people die with uremia, which is what I'd done as a resident most of my career, is uremic patients -- you were just trying to figure out a way to help them die easily. So it was a real step up. But there was a lot of vomiting, lot of unstable blood pressure. Enormous problems with access -- still a problem, but worse then. It really was worse, 'cause we didn't have many fistulas. And graphs were not, had not started yet. So staying up night, getting, getting shunts open. I can remember working hours and hours to get --

DWM: What did it take to open up a clotted shunt?

JML: Well, a lot of Heparin, willingness to push on a catheter that was in an arterial -- I mean, really with a lot of force to push a clot backwards into the arterial system. I'm absolutely certain that I have sent many septic emboli patients lungs in other places opening up shunts in the early years. You know, we tried to do it aseptically, and we would try to do it properly, and we would try to suck lots out, but when it was the last shunt and patients were not going to get dialyzed if you didn't get it open, you did whatever you had to do. And then they would move them inch-wise up. There was a guy here named Fred Morgan, who was a surgeon. And he spent a lot of -- he and I spent a lot of time together at the bedside, trying to get shunts open. And he was an excellent surgeon, and he, he would move the, the silastic tubing up two millimeters, get past the current stenosis, and we'd move 'em up the arm until we ran out of room. Put

’em in ankles. One of the worst thing that ever happened was the Thomas shunt. I don’t know if you ever saw one of those.

DWM: No, tell me about a Thomas shunt.

JML: Thomas shunt was a, was a regular Scribner shunt except it was put in the femoral artery and femoral vein and came out on the thigh, so you had this gigantic loop hooked to the femoral artery. So when you opened this thing up, blood would just -- you know, if you, if you didn’t have a clamp on it -- would shoot across the room. Enormous pressure. You could get great dialysis, but they all got infected because they were in the groin. It was not a, it was not a loop graft or a loop fistula. It was a prosthetic device. And as I recall, there was a patch that they patched onto the artery and veins, so the patches would get infected, and if they got a groin infection… You know, I saw more than a few disarticulated hips, because we had -- we lost the leg from a Thomas shunt. Nothing I’d ever like to revisit again.

DWM: No. The Scribner shunt, if you -- it had the loop that you had to remove to put somebody on, and --

JML: Yeah.

DWM: -- did you clamp the…?

JML: Yeah, there was a little clamp, so you’d clamp the artery and vein, and there was a silastic connector in the middle.

DWM: And you’d --

JML: There were tools for that. There was a, there was a device that you could clamp the little connector in between and pull the silastic tubes apart, and then put ’em on the bloodline. I recall we stuck that little connector in a bowl of formaldehyde that sat next to the --

DWM: Patient during the treatment.

JML: -- next to the patient during the treatment. A lot of formaldehyde being used. We sterilized everything with formaldehyde, so it smelled like the old --

DWM: Anatomy lab.

JML: -- gross anatomy lab. Every dialysis unit smelled awful. They were, saved a lot of lives, but boy, they were, they were a fellow’s nightmare. I recall just spending a lot of time working with shunts, trying to get accesses open. The first remembrance I have of my first week in the transplant program -- small, it was a seven bed transplant program. We were one of the few places doing transplants in those years, and we were doing a lot of transplants. They were -- not a lot for now, but back then we were doing two a week, which was a lot of transplants back in the late '60s, and none of them did well. I mean, if you had a really good match they did well. Otherwise, they did not. The only immunosuppression we had was Imuran and megadoses of Prednisone. They were learning how to use Prednisone then, so we were given seven and eight grams of Prednisone. Patients would get infected. They would get severely Cushingoid, or it was just... In the first week I was on I had four patients die. I was just beside myself because, you know, they just didn't survive. Those that did, did well, but we had a lot of patients that did not do well. And it was, it was a very difficult time. Very depressing, but very rewarding at the same time, because these patients at that time were coming from all over. A lot of Europeans were coming over. Met a lot of Greeks. For some reason, the Greeks had gotten into the Brigham, and patients -- wealthy Greeks were coming over, and we were transplanting a lot of Greek citizens. Had a lot of patients from the Middle East with money that were coming over then. And they were, they were all wealthy people, all related donors. We did a few cadavers, but at that point cadavers weren't doing too great, and unrelated living was just something we didn't talk about in those years. Didn't do that.

DWM: You know, listening to the transplant story a little bit, I do, as I talk to people, hear that there was a lot of trial and error.

JML: Oh, yeah.

DWM: I mean, it's not like there were a lot of trials, randomized control trials going on.

JML: No.

DWM: I mean --

JML: We were just doing anything anybody could think of.

DWM: "Well, that didn't work out too good, and let's try this, because intuitively, that might work better, and..."

JML: Absolutely. First antibodies were raised in mice, and we were doing these antibody drugs, were developed in mice, and people would have enormously bad reactions to it.

DWM: And as I've talked to people about the innovation that happened with dialysis, and transplant, in the '60s -- '50s, '60s, early '70s -- they just say without the freedom to just make changes, it would none of -- it would never have happened.

JML: You couldn't do it now. I mean, with the constraints that are in medicine now… Stuff that we did was just -- I mean, it was just off the wall. Dialysis, the same way. I mean, for us to take a plastic tub and to stick a dialyzer down in a brine solution and reuse the lines… I mean, we did stuff that nobody would ever, ever, ever think of doing now, but back then it was either you did stuff like that or people died. And the attitude was, "Well, they're going to die, so you've got nothing to lose, and we have to go do this." I can recall the one -- the first person I did PD on was a young, black man in one of my rotations in Louisiana. We had to go to a place called Alexandria, Virginia -- or Alexandria, Louisiana, which was an outpost for the Charity Hospital system. And this young, black guy was -- had advanced, severe renal failure, was gonna die. And I had just read Morton Maxwell's paper in JAMA about peritoneal dialysis. And so, you know, I and a pharmacist make up the solution. We got some lines, put a trocar in his belly, and did peritoneal dialysis. I had never done it before. I'm reading the JAMA article and putting lines together, and had the pharmacist make the solution for me, and ran fluid in and out of this guy's belly. It was just a catheter sticking -- a trocar. It was a metal trocar. It was just enormously crude, but I kept him alive for about seven days. Finally the hospital administrator came down and he says, "Well, what are you doing?" I said, "Well, I'm dialyzing this guy. I'm keeping him alive." And he said, "Not anymore." He said, "This is not going anywhere. You can't transplant him. This is very costly, and you have to stop." But, you know, other than the cost, nobody hears a resident doing crazy stuff like that. But it was… Medicine was different then. I must say, I liked it a lot better. I'm not sure the patients did, but, you know, the freedom to try things, to do things, to innovate… That's all gone away. I mean, none of us do that now.

DWM: Yeah.

JML: You, you… I can do this, and I can do that, and the FDA says do this, and… People just don't go out on the edge and do stuff and try stuff anymore, which I think is really unfortunate.

DWM: Yeah. It really made possible a lot of the --

JML: A lot of things that --

DWM: -- things that we have today.

JML: Yeah. I mean, there's a -- I wish I had that slide -- I'd show you -- of a picture of a kidney on, sitting on a leg. John Merrill, before he did the transplant, had transplanted a kidney to -- didn't transplant, but they hooked the kidney up to the femoral artery and femoral vein of a patient, and then did an IVP, and you could see the urine coming through this kidney, sitting on this guy's lap. And so you have the picture of the kidney on his lap, and then there's an X-ray of the blood coming down from the femoral artery into the kidney, and urine coming out (inaudible) which went nowhere.

DWM: Yeah.

JML: But, you know, nobody would ever do that kind of stuff now.

DWM: No.

JML: That sort of innovation of, "Well, we'll hook a kidney up to somebody's femoral artery and veins, see how it works."

DWM: Well, and it also sounds like in this period of innovation that patients participated in it, too.

JML: Oh, absolutely.

DWM: I mean, in the sense that they were dying of their kidney disease, and --

JML: They were going to die anyway.

DWM: Yeah.

JML: And I suspect that goes on in some areas of medicine now -- probably in oncology, where people come up with -- "We have a new drug. It's not been tested. We've tested on an animal. Your likelihood of surviving is zero unless we do this." Yeah, probably patients… I would do that, I suspect. But not to the degree it was done then. I mean, there was a lot of different -- and only in nephrology. I mean, cardiologists were very staid. They only did what cardiologists do, and nobody else was out. Nephrology in those years was a very exciting profession. I mean, we were on the cutting edge. We were doing different, bizarre stuff. And mainstay, mainline nephrologists were not very happy. I mean, there were a lot of people in Boston here who thought dialysis was awful, and what are you doing, and you should be doing research. You should not be doing this. And there was a real division between those of us that were doing dialysis, and those at some of the other institutions at town that thought this was awful.

DWM: Yeah, something looks --

JML: Fluid and electrolyte GM guys, it just --

DWM: Yeah.

JML: -- shouldn't be doing this.

DWM: So dialysis nephrologists were sort of second rate citizens, and --

JML: Yeah, exactly, exactly.

DWM: -- the really smart folks were doing --

JML: Were doing --

DWM: -- renal physiology.

JML: Yeah, renal physiology.

DWM: Yeah.

JML: And that was a big divide in this town. That was a real issue, and probably led to some of the decisions about why Hampers eventually left academia to do this. It would've been a totally different story had Harvard and all the other universities here embraced that, said, "All right, we'll do it within the system rather than doing it outside the system." And I think dialysis has always been outside the academic system. It's -- the academics do a little dialysis, but it's done with disdain. It's kind of dirty money, and "We'll do this, and we really want to get to the lab." It's had a profound, in later years, negative impact on academic programs.

DWM: Yeah.

JML: 'Cause they can't raise money, they can't keep young, talented people who want to go out and do therapy. And so it's created its own problem. And PD is a good example of that now. I mean, there's not enough PD and training programs for renal fellows to be trained. So they don't get trained. They come out. They don't know how to do it. And the academic programs are not making any effort to go to us on the outside and saying, "Can we do this jointly? Can we use your PD program? Can I send fellows over to you?" I was a big advocate of taking fellows over to all the hospital units, because I thought it was really important for them to be exposed to that. In fact, we had a very active and aggressive moonlighting program, which Merrill endorsed. I said, "I want to pay these fellows. It's sinful for me to make them go make rounds as part of their measly fellowship program, so I want to pay them, and I want to pay them well, to go see patients and cover shifts." And so the fellows at the Brigham used to vie to get shifts, because they could make good money. Most of them were married, had kids. It's a good source of income, and they got great training.

DWM: Also, it sounds like during this time the nephrology dialyzing community was pretty small, and there was a lot of interaction from --

JML: Very close.

DWM: -- there was a lot of information flowing.

JML: Yeah.

DWM: And that if people were trying things and they weren't working, they were very upfront. "Don't try this. This didn't work too well." And so there was a lot of good communication about everything.

JML: The government had this -- oh, well, I've blocked the name of the program -- in Washington, which was you could get grants. You could get a $25,000, $50,000 grant.

DWM: The Demonstration -- was it the Early Demonstration Project?

JML: Yeah, the Demonstration Project.

DWM: Yeah.

JML: And you had to go and present your data. It was only one year of data. I mean, it wasn't a long, five year program. It was, "This is what I did last week or last month or this year." And you had to give your data, and it was published in ASAIO --

DWM: Yeah, the American Society for Artificial…

JML: -- and they were soft back books. You can still -- I have them somewhere around here. But you can go back and read these early, very crude reports of "This is what the problem was, this is what we did, and here's our outcome." But it was, it was held yearly. Everybody went. We all talked about what was going on, and what are you doing. And that's where I first met Frank Gotch. I mean, Gotch was a big, a big deal back then, 'cause Frank was an engineer, and way out in front of everybody else. And I can remember seeing Gotch -- Frank was probably 10 years older than, maybe more than 10, than me. And so, I mean, he was somebody that was a star back then. But, I mean, I could sit beside him, and see his papers, and talk to him about what he was doing. And it was a small community. It was a very close-knit, small community. Everybody knew everybody. Lot of competition, particularly Seattle and Boston. Big competition there. Later competition with Schreiner. But the other big programs started coming. Everybody was really competitive, but competitive in a nice way. It was a nice, "Here's what I've done. Here's how many cases I have." And, "This is our result with this." And, "Well, how'd you do that?" And a lot of sharing of information.

DWM: Yeah, it does sound like ASAIO was a very big, important firm for dialysis.

JML: It was. It was.

DWM: Yeah.

JML: Much bigger, and much -- at least in my view -- in early years, bigger than ASN. I mean, ASN was a big meeting, but it was all nephrology. ASAIO was just dialysis. It later became a lot of other artificial organs -- pancreas, heart -- and eventually cardiologists took it over and ran away with it. But in the early years, it was all renal. It was all about new renal devices, new approaches for renal failure. And it was a really wonderful, warm, collegial meeting. It was a different meeting. Much smaller. Kidney spring meeting used to be that way, and that's changed a little bit, too.

DWM: Who were…? You've mentioned Frank Gotch, and certainly, I mean, he, he's -- he, of course, was involved in the hollow fiber --

JML: Development.

DWM: -- dialyzer, with Ben Lipps --

JML: As well as Ben here.

DWM: -- yeah, and John Sargent, and… Yeah, so was he involved -- working on -- I guess they were working on the hollow fiber dialyzer probably in the late 1960s, early 1970s?

JML: Yeah, came out, came out to -- we began to see those in the late '70s. Eighty-two, I think, was the first time we had mass production in large numbers, but I'm sure they were working on them in the late '60s. I think Ben was here -- he was at MIT at about the same time I was at the Brigham, maybe a couple of years ahead of me. And then he came back to do his work on the hollow fiber. So it was, it was the early '70s that they were doing that work. And I can remember when Dow Corning first came out with -- and they were the first to make a commercially available cupraphane dialyzer. And they invited me down to Miami, which was where their plant was. So I went down to Miami to this hollow fiber plant to see them spin these fibers, which was really, really remarkable. And when I walked into the plant -- this was before espionage, or industrial espionage -- there must've been 100 Japanese, all with cameras, taking pictures of every step of the Dow Corning plant. And I remember so vividly all the Japanese with cameras. Well, about three years later the Japanese are making hollow fiber kidneys, and doing it much better in much greater quantities than we ever did over here. But I remember -- I bet Dow Corning really regrets the day that they --

DWM: Let cameras in the building.

JML: -- let all those cameras go through!

DWM: The dialyzer technology made a big difference over that time.

JML: Oh, it was enormous.

DWM: I mean, going from the twin coil to --

JML: To the -- hollow fiber wasn't -- I mean, blood leaks were just awful. One of the things you do is when you walk to the dialysis unit you'd look at the ceiling, because when the hollow fiber -- it was under enormous pressure -- when it ruptured the blood would shoot up to the ceiling. I mean, blood would go everywhere, and it would leak into the tank, and you'd look at this big tank, and it looked totally bloody. It could've been more, no more than 100 CCs of blood, or 200, but, you know, you put blood in water --

DWM: It looks bad.

JML: -- it looks… It looks like a lot of blood! But leaks were a real problem. And you didn't have good control of ultrafiltration. I mean, you'd intend to take off two kilos and they would take off four or five, or you wanted to take off four or five and it would take off one. You didn't have really good controls of ultrafiltration -- better than none, but not as good as now. And you know, I mean, we don't ever worry about leaks anymore. Nobody talks about leaks, but, you know, I -- people exsanguinate from a leaking dialyzer.

DWM: Yeah.

JML: It was… And the improves weren't dramatic. I mean, going from acetate to bicarbonate -- not many people understand how bad, when you were using all acetate as your buffer, it was an enormous vasodilator, and a cardiac depressant. So you put people on an acetate dialysate and they would just go hypotensive and feel bad, and poor cardiac output. And when bicarbonate came along, it was like, "Oh, this is wonderful!" I mean, something as simple as going to bicarb was a really, really, really big deal. Having vitamin D, I mean, and how much better… You know, and with all the crap we've had with EPO and all the problems, those of us that practiced before EPO and after, just -- it was night and day. It was just night and day about how better our patients are. And if anybody wanted to go back to those days, they'd be crazy. It's just… So those small steps --

DWM: Because you must've been transfusing people all the time.

JML: All the time. We were averaging -- in our program we transfused liberally, and I averaged probably in most patients two units per month, to keep them in the nine to ten range --

DWM: Yeah.

JML: -- eight to ten range. And they all became blue. I mean, you walked in the dialysis unit, everybody was a… Because they had iron overload so severely that they were bluish color, and they were anemic, and felt awful. The first paper that I wrote after EPO was released was how to get rid of iron, and we were bleeding them. We were giving them large doses of EPO and taking off two units of blood, and simply getting rid of all the… We were lavaging them of iron by giving them EPO, driving the hematopoietic system and taking off all the iron out of blood, get 'em iron depleted, and so we would get the iron down in a hurry. Didn't take long before we got rid of all those folks, 'cause we'd get rid of the iron real quick. It worked, worked very well.

DWM: Yeah. Yeah.

JML: The, the fistula was a big step. The hollow fiber was a big step. Bicarbonate. The automatic mixture of concentrate in the central delivery system. I mean, nurses used to carry jugs around and pour concentrate. We used to spike -- and I saw, oh, probably 10 deaths of people who did not understand spiking well, or they were not educated or prepared, and would mix up calcium and potassium so when they'd spike the baths they'd put calcium in rather than potassium, or vice versa. Human error, because we were manufacturing our own dialysate, basically. So stopping spiking, to me, was a, was a big deal, to have nurses stop spiking solutions. One of the big things that's happened in the company is when you do a lot of dialysis, and you collect adverse events, you very quickly see adverse events that nobody else sees. For instance, the one that was most impressive to me was the separation of a central venous catheter in the line. This was 19, late 1990s. We had about 12 deaths in one year of separation of catheter line. And it turned out that the flanges of the different catheter were different so that you would not get a good connection to the bloodline. And patients would cover up, and people would cover up with the blankets. They'd get in a blanket, come loose. They wouldn't know that they'd come loose, and exsanguinating is a very silent way to die. So we had a number of patients that died until in our collection summary of adverse events I was seeing all these exsanguinations, exsanguinations. So we did a little root cause analysis, and found out what the problem was. And Ben Lipps said, "Well, what we need is a safety connector that clamps onto the line and to the catheter to keep them separating." And he developed that in the late 1990s, and we started using them in 2000. And since then, we've only had two deaths from exsanguination, and both of them were the technician forgot to put the safety clamp on. So little, simple steps like that, that you -- I would've never, ever figured it out, had I not had a lot of patients with collection of safety data. So one of the things that I believe has to happen -- and we're starting a patient safety program here, patient safety organization -- is for all the dialysis providers to be in a position where they can share adverse events. Because when you take 400,000 and look at adverse events, we'll really pick up --

DWM: You'll see 'em pretty quickly.

JML: You'll see 'em quickly.

DWM: Yeah, yeah.

JML: And can stop them. But you, you require that some sort of litigation, protection, tort reform, or safety program where people cannot invade your, your safety data collection, so…

DWM: Yeah, and that's one of the things that I think was real remarkable about talking to people from those early days. I mean, they were not concerned about being penalized --

JML: That was not a concern.

DWM: -- for discovering bad things.

JML: Yeah, it was not --

DWM: And there's a lot of penalty for that now.

JML: -- not… And it never crossed my mind that I would ever be sued for the stuff we were doing, because it was well meaning, and did not always turn out right, but the, the intent was right. What we had was patient buy-in. I mean, the patients said, "Whatever you need to do. Whatever you can do. I'm gonna die otherwise." And there was never any thought, or never any conversation of "If it turns out bad, I'm gonna sue you." That just was not present back then.

DWM: Yeah.

JML: It was an exciting time. That's the word I remember about my early years in nephrology was everything was exciting. Everything was new. We were making changes every year. It was a good, it was a good field to be in. It was far better than cardiology.

DWM: When did you actually leave the Brigham and go to join NMC?

JML: Nineteen ninety-six. I was --

DWM: And how did that take place?

JML: Well, the… I actually got a… I had consulted for NMC. I was a medical director for them off and on over the years, but Gus Hampers and Ed Lowrie had asked me would I consult with them when they had a problem facility somewhere. I was an academician at the Brigham. I wore a different title, and I could go to some dialysis unit and tell a doctor what to do, because I was a professor. Nobody else in business could do that. So I did some consulting for them, and then I began to run Ed's annual medical director meeting, so I would develop the program and put it on. I'd done that for a couple of years. Ed and Gus Hampers had a falling out, and I got a phone call from Hampers -- it was in the early part of 1996 -- and he said, "You want a job?" And I said, "Well, what's the job?" He says, "Be my medical director." And I said, "Well, I need to think about it." And he says, "Well, I'll give you 48 hours to think about it. I need a medical director next week." So I talked to Karen, who -- at that time my kids were grown pretty much… They're not all grown and all through, but theoretically they should've been through and gone. But it was a time in my life when I said, "I need a change. I need to do something different." And this was a totally different direction. So we talked about it, and I said, "Well, you know, I've done all I can do in academia. I've taught. I'm tired of teaching." Really regretted giving up patient care, but it was… It was an opportunity, in my mind, to affect a lot of patients, 'cause I really thought I could affect patient outcome in a big way. So we decided to do that. So I told the Brigham, "Goodbye, thank you very much, I'm leaving," and came to the dark side to do this, which I have thoroughly enjoyed. It was a really nice change for me. The people on the business side are wonderful to work with. I -- I don't -- I've not found ever that anybody's said to me, "You cannot do that because it's too expensive." If I thought it was important medically, somebody here always said, "If it's important, we'll figure out how to do it." That's always been the attitude. So I've been pleasantly surprised with my adventure into, well, for profit commercial medicine with a product company who has been very responsive. When we say, "Gee, if you could do this," or "You need to change this to do that," or "We need this. We've got product people who are interested in what we have to say." Now we're into the IT realm of that, which is even bigger to me. And I think Frank is in the right place, because this is what it's all about. And I have the same thing going on this. "We need this. This is really important for us to do this." And have IT guys that are saying, "OK, we'll, we'll figure out how to do this." And it's going to be enormously expensive. It already is enormously expensive. But to me, that's the next big step. I mean, we've made all the steps with the transplant, and fixing machines, and fixing the dialysate, and fixing approaches, and fixing fistulas, and now, to me, we get to the part where we get better record keeping and better information exchange. I just think this is really a real important time in not only nephrology but medicine.

DWM: Yeah.

JML: I just hope Obama doesn't screw it up. I think he's said the right things, that we have to, but --

DWM: Right.

JML: -- their example that they've down with Crown Webb has been a disappointment. I don't know if you know much about Crown Webb.

DWM: I know a little bit about Crown Webb. Not a lot.

JML: Yeah. They don't have enough -- I don't think they understood what IT is about, that it requires more than 40 people. And they had a, they had a -- you know, when I talked to the IT that work for the government they said, "You know, he gave us no money, no support, and wanted us to do all this." It requires a lot of people and a lot of money to do this. I think government's gonna really have to make a commitment to get medicine up to the, to the rest of the world. I mean, you go into a hardware store or a Walmart, and you can track things --

DWM: Why is medicine so far behind?

JML: So far behind. It's really, really --

DWM: I don't really understand, yeah.

JML: -- frustrating to me.

DWM: Yeah.

JML: We can't barcode. I mean, you should be able to walk in a dialysis unit and barcode the patient, the machine, the drugs, the dialyzer. I mean, everything should be… And there's no reason that these mechanical machines shouldn't be automated better. Part of the problem is the FDA. You know, I think they're so hard on these guys about… And they're so worried about biologic feedback -- I mean, if you go there and talk to 'em about, "Well, if the machine can measure the pressure, and I know at certain pressures I want this much saline given back; can I have the machine give it back?", I mean, they go berserk. They just… They are 50 years away from any kind of biologic feedback, I think, which is really unfortunate, because I believe computers will do it better than we ever will.

DWM: Yeah. I mean, human error's got to be --

JML: Just way up there.

DWM: Yeah.

JML: Our first encounter with the networks and with the government was when we were downloading batch data from the company to, to Medicare, we now batch load everything down to them. We give them all the information they want, on every patient -- not a 5% sample, but everybody, everything. And the network said, "Well, you know, the lab is coming from Spectra, and it goes right into the system, and goes right to the government, and we want the nurses to validate that the lab is right." I said, "Well…" They wanted the nurses to take the lab and put it in to make sure it was right. And I said, "You gotta be kidding me!" That was our first encounter with them. I said, "You know, the nurses are going to make errors all over the place. The computer going from the lab to the government is direct feed. I mean, there's no error there."

DWM: Right.

JML: And it took us a long time to get them to not make the nurses go validate that the lab was being correctly sent over. We have a way to go, but a, but another exciting time. I think this is really going to be a… As we roll out this information system, I'm extremely excited about it. I just, I just think it's going to be terrific. The thing I'm worried about is older docs. I mean, to get doctors to do direct order entry, and…

DWM: Well, all of this movement to electronic health records has been -- definitely impacted the generation gap between the older physicians and the younger --

JML: Oh, it's enormous.

DWM: -- younger physicians who totally take it for granted, and the older physicians who don't quite know what to do.

JML: Struggle with it.

DWM: Yeah.

JML: Yeah, yeah. But once you do it -- I mean, when I came here, I did very little with computers. I mean, I just was a pencil and paper guy. And, you know, they said, "There's your computer, and that's how we communicate, and if you don't learn to use that thing and do everything yourself…" And I said, "Well, who's going to make my slide for me?" And the laughed. They said, "Hey, you make your own slide. There's PowerPoint." So, you know, older doctors, when get thrown into it, you're mandated to do it… I'm delighted that I did, 'cause I can't imagine going back to paper now.

DWM: Yeah.

JML: Cannot even imagine it.

DWM: It's a powerful tool, that's for sure.

JML: Oh, yeah. Oh, yeah.

DWM: Part of this -- since I've interviewed people, there are people that have died that have been a very important part of this history of dialysis, and I've been trying to talk to people who've known them. For instance, Ernie Lowrie we've lost.

JML: Yeah.

DWM: Can you tell me about Ernie?

JML: Ernie was a… She was a wonderful nurse. I mean, she was the head nurse at the Brigham, and when I was a fellow. And so all the dialysis I know, I learned from Ernie Lowrie.

DWM: Yeah, what was the role of the nurse, the head dialysis nurse, at that time?

JML: She was in charge of everything. I mean, the head nurse ran the dialysis unit, ran the nurses… The nurses taught all the fellows in those years everything we know. Gus Hampers didn't teach me. George Bailey didn't teach me. They taught me some medicine, but how to do dialysis, how to ultrafilter, how to understand about all those things, how equipment works, was all nurses. And Ernie was an extraordinarily bright one. She was just excellent. And I can remember she had a pair of hemastats that she kept all the time, and if I did anything wrong, she'd thwack me on the hands. I remember very vividly being whacked a lot with those clippers. They'd… And she and Ed were both divorced at that time, and were dating, and Ed was my co-fellow. So, I mean, it was a, it was a strange relationship. But she was an excellent nurse, and when Gus opened his dialysis units, he took Ernie. She left the Brigham and went to work for Hampers at NMC, because -- I don't know, whatever that eventual title was, but president of the dialysis services. I mean, she went way up in the company, and was the first nurse executive that I knew that had gone to the top of a company like that. Very bright woman. A very capable leader, in addition to being a good nurse. I mean, she knew how to lead people. She had a good vision, and was just an absolute, total, patient-dedicated, OCD person. I mean, everything had to be exactly right. I mean, she was meticulous, and just a very, very excellent leader and nurse. She did a great job. She retired, and, and, as you may or may not know, within six months of retiring had pancreatic cancer and died a very quick death, which was very unfortunate.

DWM: Yeah. I knew she had died pretty soon after, but I wasn't sure of the details.

JML: Yeah. Yeah, it was within six months of having retired.

DWM: Yeah, it's interesting you use the term 'nurse executive', because she had, I gathered, just a two year nursing degree.

JML: Correct.

DWM: And then, you know, really, at a time where that would probably have been very unusual to become a nurse executive…

JML: Yeah, she bootstrapped her way right up. And we, we've now had a lot of nurses that do that, most of them with degree. But if you look at this company, two of our division presidents are nurses --

DWM: Yeah.

JML: -- who came up. A lot of the leadership at this company is nursing. And if you look at DaVita or any of the big chains, they have, they have nurses that have come up the ranks and have taken leadership positions. Donna McCarthy, who is our divisional vice president of the West Business Unit, was a technician in the kidney center back in the early years. I can remember her when she was a technician. Went to nursing school, got her nursing degree, went up the ranks through nursing to be a head nurse, and then an area manager, and then went up the, the business end of this, and over a 40 year period has gone from a technician to a divisional president.

DWM: Yeah, that's remarkable.

JML: Big job.

DWM: It also sounds like some of the nurses in the sort of 1950s, 1960s -- the role of the nurses in a lot of situations in the hospital was sort of, you know, tuck the bed in, bring a little something to drink, pat the patient on the shoulder, but not really having a lot of responsibility. And then a lot of these dialysis nurses were pretty young, and --

JML: Enormous responsibility.

DWM: -- were given a lot of responsibility --

JML: Enormous.

DWM: -- yes, very much different from their sort of nursing.

JML: Yeah, I remember the young woman that I left at the Babcock Kidney Center that night. I mean, I will never, ever forget the look on her face as I departed and said, "You know, call me at home if there's a problem." I mean, this machine that nobody knew how to work… And she was, she was left with that responsibility. I don't… I, I don't think… I don't… There are not many nurses that could do that nowadays. They were pioneers as well as everybody else. Nursing was a real pioneering profession in those years. And I think there are a number of wonderful, excellent -- you know a lot of them -- nurses that have been in this field for 20, 30 years, and they are very different nurses than the nurses I meet in hospitals. They're confined to this particular specialty. They know how it works. They know the industry. They know the patients. They know the systems. And they're just wonderful people. I enjoy talking to nurses that have been in dialysis a long time. They all have great stories.

DWM: They do. It's true.

JML: Actually, I just interviewed Joann Albers out in Seattle, and I'm beginning to collect a group of names to talk to nurses. Joann Albers opened Scribner's kidney, outpatient kidney center in Seattle in the early 1960s, so…

DWM: Yeah. They've, they've got a different view, but a great view of that.

JML: Yeah, absolutely. How about Peter Merrill? Can you tell me what kind of fellow he was?

JML: John Merrill?

DWM: I'm sorry, John Merrill.

JML: John. Peter is his son.

DWM: Yeah, John. I'm sorry.

JML: John Merrill was a -- he was a Harvard professor. He was… He'd written books. I mean, he was very famous. I mean, John Merrill was like God to me. So was Scribner and Schreiner. Those, those were three really big names back in the late '60s. I mean, that's where everybody wanted to go. Those were the three programs everybody wanted to get to. Merrill had come along the Harvard system, had gone to -- after he was in the Second World War, in the Air Force, was sent back by Harvard to go when [Pimkoff?] described his machine. Merrill --

DWM: He came to New York, I think, and Merrill saw him there.

JML: And Merrill saw him. Then Merrill went back to Holland, spent some time with him, and, jointly with Kolff, developed the Brigham Kolff Kidney, which was done by Fenwal, which was a company that subsequently became Baxter. And I can't think of the engineer's name… There was a third person that was involved in the development of the Baxter Brigham Koff machine, which I have a picture of. Sometime I can show it to you --

DWM: OK.

JML: -- if you haven't seen it.

DWM: Yeah.

JML: But then they developed the twin coil kidneys, and Merrill was at the forefront of, of a lot of this engineering. He was really, though, a transplant nephrologist. That was his true love, his true interest, and dialysis was just kind of this thing he did to support his transplant program. But he was, he was -- suave would be the word I would use for Merrill. Very intelligent man. Wrote a lot of books. Would have rounds on Saturday morning. All the fellows would come -- and there were 10 or 12 of us -- and he would eat breakfast. He would invite all of us to eat breakfast, but none of us did. We'd sit there and watch Merrill eat fried eggs. Now, if you've ever tried to eat a fried egg with 30 people watching you, it's a very difficult act to carry off, but he did it with great aplomb. He was a very musically talented, very smart man. Spoke French. Was widely traveled. So he was quite, quite the leader. As he got into the politics of Harvard, it got nasty in his later years. Braunwald came. He and Braunwald had some conflicts about a lot of things, I suspect, but Merrill got kind of pushed aside, which began his downfall. He, he did not do well with being pushed aside, 'cause he was one of the, one of the leaders of the Brigham with George Thorne and, and the three cardiologists. I've forgotten the cardiologists that were there, but all three very famous cardiologists, and Merrill. They were the leaders of the Brigham, and Harvard at that point. And he was pushed aside, did not do well. And then his health began to fail. He had cataracts, did not have a good cataract operation, then had a hip replacement, had profoundly severe arthritis. He died at an early age -- early to me. It was in his sixties when he died. And it was, it was really unfortunate, 'cause he was a charming, delightful man, and was a, was a visionary. I mean, he, he, I think more than anybody else, pushed the related donor transplant and the twin transplant. That was kind of -- he got into the genetics, and said, "You know, there's no reason that these twins need any immunosuppression." So he was at the forefront of that.

DWM: Yeah, you know, a lot of the sort of early ideas took a lot of courage to --

JML: Oh, yeah.

DWM: -- not only think --

JML: Put your name on the line.

DWM: Yeah, yeah, absolutely.

JML: Your career was on the line.

DWM: To pursue them, yeah.

JML: He did that. He did that very well. But there were three… The urologist… The urologist, Merrill, and the surgeon were the three that pioneered that related donor and twin transplant. And Merrill had some great ideas about the fluid and electrolyte. He was really a basic cardiologist with some fluid and electrolyte and genetic history. And he gave us a lot of great ideas along the way. We used to sit and talk with him about research projects, and about doing this, and just a lot of good engineering, and he was not an engineer. The other thing he did -- he got very bright people around him. He would select people from -- had a lot of foreign fellows here. When I came, there were at least half the fellows from foreign countries. And you might imagine, they were very bright and very talented people that he brought over. Some of those are, have been leaders in foreign countries when they went back home for years since then. He was a very interesting man, and a real pioneer, I think, in his field.

DWM: Yeah.

JML: George Bailey, who I've mentioned a couple of times --

DWM: Right.

JML: -- George died. He went back to New Orleans, ran the program at Tulane and at Charity Hospital, and died at… He had, he had awful hypertension. He had hypertension when he was here. All of us tried to help treat him, and he would, he would take no doctor's advice. He loved to eat. He was… He loved life, and he ate wrong -- salt, fat, everything. He was severely overweight, had bad hypertension. He died when he was 52, which was really unfortunate, 'cause he was a, was a real patient advocate, more than anybody else I've ever met. George cared about the patients and did everything he could to promote patient care. He was a real early pioneer in patient advocacy. Not as well known as the rest, but if you look at some of the old papers, and there are a couple of old books that Bailey published. I mean, he was around a little bit.

DWM: Yeah. I've, I've certainly heard his name --

JML: Yeah.

DWM: -- also. And as much as John Merrill was over here, Scribner was over on the other side.

JML: On the other side.

DWM: Did you know Scribner personally?

JML: I met Scribner a number of times, but I did not ever know him well. I knew Chris Blagg very well.

DWM: Yeah.

JML: And I knew John, Joe Eschbach very well.

DWM: Yeah, and Joe's, of course, died since --

JML: Died, yeah. It was really unfortunate.

DWM: -- yeah, in the last couple years.

JML: He was a, he was a wonderful man. So I, I knew the disciples that came out of Scribner, and I, I had been early trained by Dale Lindhome, who had come out of that program. So I knew very well about Seattle and what went on there, the differences in the dialytic approach. And there was a, there was a social, cultural difference. I mean, they were clearly home dialysis, nonprofit, profit is bad. The East Coast was for profit, pump dialysis, hollow fiber, outpatient dialysis facilities, get as many people on as you can, put 'em on any way you can -- although we got tagged as being not home dialysis. There was an enormously large home program here. We never were as big in PD as other places.

DWM: Yeah, and of course, they had Henry Tenckhoff and Fred Boen, and they were doing, you know, certainly some of the early PD work, and…

JML: Yeah. So I, you know, I think Hampers got blamed for not doing PD, 'cause it didn't fit in with his outpatient dialysis program and company, but that was really not it. I mean, it people wanted PD, he was perfectly fine with it. We just did not have the experience and the wherewithal to do it very well --

DWM: Yeah.

JML: -- and never did it as well as they did on the West Coast.

DWM: Yeah.

JML: But trying hard to catch up still.

DWM: And then there's Gus Hampers, who must be pretty thick skinned, 'cause, I mean, he took a lot of -- he -- stepping out of the academic center to start…

JML: He's the toughest person that I have ever worked for. I've worked for a lot of tough people -- Barry Brenner and Gene Braunwald. Hampers by far and away was the most difficult, hard, driven person that I ever worked for. When I came up as a fellow, you know, the first day I got here, he said -- he was over in Europe -- I don't know what he was doing in Europe, but he was coming back, and left word with the secretary to the new fellow. Says, "I plan to have rounds at seven o'clock tomorrow morning. That means you will have seen all the patients by seven o'clock." I'd gotten in, driven in that night before with my wife. Karen and I were trying to find a motel. I had two kids. She was pregnant. I says, "You know, I gotta get up at 4:00 in the morning to get in there and see patients." And she says, "No, he must -- you must've misunderstood." And I said, "Well, I'm not gonna try to find out the hard way. I'm gonna go in and see 'em." So I got in four o'clock, saw all the patients, and was standing there bushytailed and bright eyed. He came in at seven o'clock, and was all business. He says, "OK, let's see these patients. I gotta get out of here. I gotta go to the lab." So we were through rounding by 8:30, and he was off to his lab. And he gave me instructions for what to do, and it was, "See you tomorrow morning, seven o'clock." I said, "I gotta find a place to live." He says, "You do it on your own time. Seven o'clock, you be here, be ready." And about the second week I said, "You know, [Luis Esteban?] is my co-fellow. He's not speaking English. He's not taking a night on, and I've been on, you know, 10 nights in a row here, Gus." He says, "Well, when he learns to speak English you can get some relief." I told Karen. She said, "Would you sent Esteban home? I'll teach him English." But he was a, he was a very, very driven man, and he does, indeed, have thick skin. He were --

DWM: He does all of this for profit and nonprofit… I mean, it was very public --

JML: Oh, it was very public.

DWM: -- a lot of public debate and acrimony, and…

JML: Acrimony. I can remember the -- there was a *Boston Globe* article. It was five pages, of… There was a cartoonist back then for the *Globe*, very famous cartoonist, and he had a picture of Gus Hampers and Ted Hager, who were the two principals, with a meat grinder, grinding this cartoon meat grinder. Patients were going in the top, and money was coming out the bottom. It was on the front page of the *Boston Globe*, and it was a -- it was just an awful article about these doctors who had taken advantage of their Harvard position, making millions of dollars. They'd made a lot of money. I mean, they are -- they were wealthy beyond belief, but they also took care of a lot of patients. They really… I think those two people, more than anybody else, accounted for so many people being cared for now. A lot of people look at that and say, "Well, that's all bad. I mean, you've got, you know, people that shouldn't be dialyzed. You're dialyzing the 70 year olds, 90 year olds. You're dialyzing drug addicts. You're dialyzing AIDS. What are you people doing?" So a lot of people looked at that as bad. I looked at it as they made sure everybody got dialyzed. They made a lot of money doing that, but Gus was always interested in making sure patients got taken care of, had... And he started out not with the intent of making money. It was only after he got into it that the business people said, "Hey, you can make a lot of money here." He started out by, "I've got to get these patients cared for," but he became... He's a ruthless... I mean, he is a, he is a ruthless man. He would just run right over you to get where he was going, without hesitation. But, you know, he is good at heart. He is a very nice man. I took care of his sister. His sister had, I think, a brain tumor, or some cancer. Young. When I got here I was a, my second year of my fellowship, and he said, "I'm traveling a lot. I need somebody to go by my house and give my sister morphine shots. And Michael, I need you on your way home to go by and give my sister a morphine shot, and make sure that things are all right." So I helped take care of his sister. His sister was from Pittsburgh, and he moved her and his children to his house so that he could care for her in her dying years. So he was a very family oriented -- had three sons who he dotes on. All three are physicians. One's an emergency room physician. One's a pediatrician. I've forgotten what Louie is, the third one. But he sent them all back to get an MBA. They all finished med school. He made them all go back and told them, "I will leave you no money unless you go get an MBA." He says, "If I'm going to leave you money, you need to know how to handle your money." So they all three have an MBA. It was an interesting... But he is -- he would be a wonderful person to talk to, if --

DWM: Yeah.

JML: -- if you can get to talk to him. He has a very different view. I haven't seen Gus in five years. He's five years older than I am, so he's about 78, 79. In good health, as far as I know.

DWM: I'll put him on my list and see if I can work up...

JML: Yeah, he's a very different person. Very different person.

DWM: Are there any other mentors, people that you can think of who were really important to you during that time, that early time, and…?

JML: Oh, Merrill mostly. George Bailey. There were only, you know, two people between me and, me and the masses, so… A guy named Norm Hollinberg, who is still at the Brigham. He's in his, got to be in his eighties, who was a hypertension guru. He was a very bright man, and was, was good for guiding my career. He would tell me, "Don't go there. Do this. Do that." And he was -- didn't -- he did not teach me medicine, but he taught me about survival in the academic world, which was an important lesson.

DWM: That's right.

JML: A couple of surgeons I was closely… Fred Morgan, who I'd mentioned before, and there was a Japanese physician who was not at the Brigham -- he actually was at the Baptist -- who was the most meticulous, politest, nicest guy, who did fistulas. That's all he did was AV fistulas and grafts. And he was the most remarkable craftsman. I mean, he would've been a Japanese that did some sort of intricate art, artwork. But he did this intricate work on fistulas. He could create a fistula in anybody. There was nobody he couldn't create a fistula in. And he was such a pleasant, wonderful man -- we used to have a lot of conversations sitting around in waiting rooms talking. And so I remember him greatly and fondly.

DWM: Yeah. You needed more surgeons who were --

JML: Dedicated.

DWM: -- dedicated to great fistula creation.

JML: That was… That was… I mean, he was looked down upon. His colleagues -- "He does fistulas. What is that?"

DWM: Yeah.

JML: He was… He could've been doing aortic aneurysms, but this is what he elected to do, and, and he was a master at it. When he left here, I mean, the, the, the dialysis community mourned when [Al Ishihara?] left and went to California to retire, but he was, he was a wonderful man and a wonderful colleague. And a guy named Kirkman, who was a transplant surgeon at the Brigham, and we were very close together. And although he was younger than I was, I saw him as a, as a colleague and a mentor. Those were the big names, but there weren't many, many training people. We all trained each other. I mean, that was really… It was not so much Merrill. It was the colleagues and the community of sharing that so important back then. I've met John Sadler later on. I met John much later than that. We've had our paths crossed at many of the institutions we've both been in -- Carolina Duke, Emory --

DWM: Emory, yeah.

JML: -- and we... I consider John a close friend, although we're, we're a long way apart. I just like him as a person. He's just a very nice man, and has a very different view. We spent a long time when we did the Institute of Medicine review of the ESRD program, we were both on that committee. That was a very interesting and great learning experience for me to do that. Dick Rettig is the other guy, that if you ever get a chance to talk to Dick Rettig.

DWM: Yeah, I read his RAND paper, the 1976 article, I mean, and it does sound like he had a very deep understanding, good (overlapping dialogue; inaudible) --

JML: He's an economist, but he was, he was --

DWM: Yeah.

JML: -- very knowledgeable.

DWM: I need to find him.

JML: He really is an interesting man, and has a, an economist's viewpoint of things that I thought was just really remarkable.

DWM: Remarkable, yeah. You talked a little bit about information systems and how you think they're really going to impact, you know, the care of patients. Aside from that, what do you think, technology-wise, will really make a difference for dialysis patients in the near future?

JML: Well, I don't see anything great happening, except for, you know, getting people back home. One of my key issues is the reason I think people don't go home is because of the helper. I had too many bad experiences... I had a young woman whose father had renal failure. She was a sophomore in med school. Dad got renal failure. He had to go home or he was not gonna get treated. She dropped out of med school to treat him, thought he would get a transplant, so she dropped out. She said, "Well, I'll do this a couple years. You'll get your transplant. I'll go back to med school." Well, he didn't get a transplant. He lived for eight years. She was the only family member to do his dialysis, so eight years later, when he died, she never got back to med school. I saw a number of families in which the helper became the caregiver, and, you know, that doesn't work, and they would get divorces, and so… I had one case that I'm absolutely certain that the woman murdered her husband. He died suddenly during dialysis, and we taught them is, "If your husband or wife dies, leave everything on. Don't do anything. We need to go find out what happened." When I got there, the tank was drained. Everything was immaculate. Everything was just pristine. I said, "I asked you to not change anything. We need to find out why he died." And she gave me some excuse. Well, we looked into the, into the, one of the lines, one of the dialystic lines that was left over, and I just took the sample and sent it in -- never reported this to anybody -- but the potassium was eight. So I think she dumped potassium in his. They weren't getting along. In any case, the helper is a problem. I mean, when you disrupt to go do dialysis, it's the biggest hurdle. So I've been telling the product guys that you can do dialysis, we know we can do dialysis, except for one thing. There is one glaring gap that we have not -- safety issue we've not been able to, to correct, and that is a venous leak. If you have a venous leak, there's no good alarm for that. I said, "If you get a venous leak, and you get me an absolutely foolproof alarm, we can tell people that we have enough alarms in the system that they can go home alone, and go to bed, put the machine on, go to sleep, and wake up the next morning." I said, "We could get 50% of the people at home." We'd have to convince the FDA we could do this, but that was, that was my thought. And I tried for years to get the products guys. They've not been able to come up with a good venous side leak detector. Now, to have these now leak detector -- what are the diaper things called, where you…? Wetness detector.

DWM: Right, right.

JML: Where they put underneath the needle and put in the bedpan. But I -- it's not the same.

DWM: That's not… Right.

JML: And I said, "It's not gonna really do the job."

DWM: Right.

JML: You need some way either to seal it so it can't come loose, or make sure… 'Cause everything else we can do. Blood pressure drops, an alarm goes off, arterial side leak, the pump starts… Everything else we've got alarms for. And we, in fact, had eight patients that I had sent home with a diaper leak detector under the arm, hooked up to a phone. All of the apparatus was hooked to a connector to a computer system, through the web, that went to Pittsburgh, where we had an office of technicians that monitored all the patients. We had eight -- all men -- that I had sent home, dialysis in home, without a helper. And doing all right. We had one death, and that was not related to anything that went wrong. The FDA found out we were doing it. Well, they couldn't tell me not to do it, but they told the products guys, "This guy Lazarus is using your equipment. There's not a helper at home. You must stop doing that immediately." So products called me and said, "You can't send 'em home anymore." I had to take those eight guys and bring 'em back in the center.

DWM: Back in the center. What is --

JML: And it was working perfectly fine.

DWM: What is it about going home you think would be better? Is it the independence of being at home? Is it that they can dialyze longer, more often?

JML: Well, longer overnight. I mean, if you look at our people that are -- you can look at the Toronto people, and they're eight hours six days a week, and clearly they, they're better. But even the three times a week -- and what we were doing at home was every other night. It was Monday, Wednesday, Friday, Sunday. And so we -- it was every other night. they were substantially better, even just skipping that two day stretch. And the people at home, we don't have any weight problems in any of the nocturnal programs. They go eight hours. You get all the weight off of 'em. They're bone dry. Their medications haven't dropped. Their EPO dose is the same. Everything's the same, except weight. And that is the one area that I think we've been remiss in, in dialysis. We talk about KT/V, and we really don't focus on weight, which there are no outcomes. There's no, there's no KDOQI dry weight optimum that I can… You know, nurses ask me is, "Why don't you have a goal?" I say, "Well, I don't know what the goal is. I don't… I don't know how to express a weight goal to you. It can't be blood pressure." So we don't really have a good goal. And if, if… Longer dialysis I clearly think is better. I really believe in longer dialysis and forget the KT/V. If I could dialyze everybody five hours, forget measurement of anything… But if we can get 'em home so they get longer dialysis that interferes less with life… But the independence to me is… Of course, the home patients I had were all selected. They were all --

DWM: Right.

JML: -- terrific people, motivated, wanted control, wanted independence, and they just, they just did so much better. Well, I could take some of those bad patients in the center we all have, and make 'em go home and get better. I don't think so, probably. But I -- that's the one area that I think we could do something technically. I think there's a lot of room in transplant. I kept waiting for the xenographs to work, and I thought surely by now that they would have xenographs, but not yet.

DWM: Yeah. Ultimately, a transplant, I guess, would be the best --

JML: Oh, absolutely.

DWM: -- option.

JML: I don't think there's any question a transplant's the best option. Not a lot to do with the mechanics of dialysis, except get 'em home. PD could get better, I guess, but I'm not quite sure how. Maybe rapid inflow, outflow, but I don't think many people will do PD, personally.

DWM: So you're about to wind up. You're --

JML: Wind up…

DWM: And what are you going to do with yourself?

JML: Well, I, I get to stay here and do whatever I want for a couple of years. I look forward to working with Frank, because I think the information system and the rollout is something I've been waiting for for 10 years. And so I'm really anxious to see this, and would like to join him to make sure we roll this out.

DWM: Yeah.

JML: I'd like to see every dialysis unit with this system in place. So that's one of my --

DWM: It would make a big difference, yeah.

JML: -- big goals. The other is… The other is to start this patient safety organization, which I really think is important, that we can collect outcome data, collect it safely, without concern of litigation. And then what we don't do, and what I'm trying to convince the lawyers to do -- which we can do with a PSO -- is to show people errors. I mean, we get errors here.

DWM: Yes.

JML: We cover 'em up and we tell people, and my view is… [Crotco?] does this. I don't know if you know Crotco. It's the Harvard insurance system. And they are -- they're blatant with their patency. They publish things about this many lawsuits and these lawsuits, and I read these things, and I go, “Oh, Jesus, that could be me. I’ve done that before!” It’s so eye opening to read about the particulars of these adverse events and say, “Well, I’m going to do that differently.” So I really think that’s important --

DWM: Important to have that out in the open, yeah.

JML: Yes. Yeah, somehow get to tell a nurse… We’re now tracking near misses, and in our first near miss meeting we found a facility in which the nurse forgot and left the two syringes left on the catheter and sent the patient home, two syringes hanging out. Now, how in the world did that ever happen?

DWM: Right.

JML: And I started --

DWM: But you’ve got to be able to talk about that to prevent that from happening again.

JML: Yeah! Tell people, “Listen…” And we found out after we started talking is, “Oh yeah, I had one of those. Oh, I saw that once before.”

DWM: Yeah.

JML: That it was not one time, it’s happened a bunch of times.

DWM: Right, right.

JML: So here was a near miss that I think is gonna make us change as… OK, what do we do to stop that from happening? And the people that saw it said, “Oh my God.” So I -- that is so important, that we take that PSO and get bad events and say, you know, they did this and this. And we’ve got this wonderful picture of two -- there’s this drug company that puts all of their bottles the same size with the same label and just changes the name. Can you imagine a pharmaceutical company doing that? So all the pills -- the bottles look the same. And we had Lidocaine and Benadryl mixed up in a shelf. They put ’em side by side, and the nurse picked up the Lidocaine thinking she was giving Benadryl. Fortunately --

DWM: She didn’t --

JML: -- nothing happened to the patient, but…

DWM: Yeah, yeah.

JML: She -- after she gave it, she says, “Oh my God, I just gave this guy a large dose of Lidocaine.” But that -- just simply telling nurses about that. So I really think this PSO is gonna be really interesting. And my other area that I'd like to kind of delve in and play with is the accountable care organizations. I just think it's so important that we get physicians that are, that are trying to reduce hospitalization, and we get paid to keep 'em out, not to put 'em in. So those are kind of three areas that I haven't been able to touch on that I'd like to stay in touch with. Don't know what I'll do. Karen says, "When you get back to Chapel Hill you're gonna forget all that stuff."

DWM: I know! You may not ever want to come back north again!

JML: And I may. I may. I find it hard to believe, though, that, that I'm gonna just stop doing stuff. I'm just --

DWM: All of a sudden.

JML: -- too interested in being involved to just wrap it up and stop, although I really look forward to getting back to the South. Boston's nice, but it's…

DWM: You haven't gotten the accent going yet. You still have a nice Southern accent.

JML: Yeah, no, I worked hard to keep my accent. It's -- that's -- that's really my… My daughter came up when we were in New Orleans, and she had a really deep Louisiana accent, and she got to school, and the first thing the teacher said -- she said, "Yes, ma'am," "No, ma'am," and the teacher said, "You know, you really don't have to do that. That's deferential. You don't have to call me yes ma'am and no ma'am." And she came home and told me that. I had a conversation with the teacher. I said, "Please… You know, I worked really hard to get my children to say yes ma'am and no ma'am. I would appreciate you wouldn't discourage that." So we work hard to keep some Southern to all of us.

DWM: Yeah.

JML: But I look forward to that. That's gonna be great to get back. I want to, I want to -- I'm gonna call Ron Falk sooner or later --

DWM: Great.

JML: -- see if I can go over and poke around at UNC.

DWM: He'll be delighted, I'm sure.

JML: And I want to work in Dialysis unit.

DWM: That's great.

JML: I mean, I'd love to make rounds. I just love to go just to make rounds.

DWM: Well, they --

JML: Don't want to do any night calls, thank you very much, but I wouldn't mind making some rounds.

DWM: Well, I'm sure they'll be delighted to accommodate you.

JML: Usually that's a job that's easy to get.

DWM: Right. Well, I thank you so much for letting me talk to you today.

JML: Well, it was delightful. Yeah.

DWM: Good.

JML: I hope I can enlighten the world, or enlighten part of it.

DWM: Absolutely. I think this is very important to not lose all of this information, so…

JML: Yeah.

END OF AUDIO