
VOICE EXPEDITIONS INTERVIEW TRANSCRIPT

The Oral History of Nephrology

Edmund Lowrie, MD

Interviewed by Dugan W. Maddux, MD

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DWM: (0:03 - 0:16)

It's Tuesday, September 22nd, 2009, and I'm at the Fresenius Medical Care offices in Waltham, Massachusetts with Dr. Edmund Lowry. Thank you for letting me come today to talk to you about the history of dialysis.

EL: (0:16 - 0:17)

Thank you for the opportunity.

DWM: (0:17 - 0:25)

Great. I want to just start with where you were born and raised, which I hope will take us to how you got interested in nephrology and dialysis.

EL: (0:26 - 0:53)

Well, let's see. I was born in 1937 in a little place called Grosio, Michigan. It sits right in the Detroit River.

A little island about nine miles long, a mile and a half, two miles wide. It... There were, what, 36 people in my graduating class.

Canada. The only place in the country where Canada is actually a little bit south of the United States. So, right at the mouth of Lake Erie.

I grew up by the farm there.

DWM: (0:54 - 0:56)

So, what did your parents do?

EL: (0:56 - 1:12)

My dad was a builder and a lumberman. My grandfather was a lumberman and he had a farm, and so I grew up on a farm, had a couple horses, taught horseback riding, went through college, mostly teaching horseback riding during summers and that sort of stuff.

DWM: (1:13 - 1:13)

And where was college?

EL: (1:14 - 2:32)

University of Michigan, and from there I moved off and went to Wayne State University. And from there, I went to Northwestern for an internship, probably one of the last rotating interns in the world. Actually had to do some surgery.

From there, I went to San Francisco General as a resident, and I first met my colleague and in recent years, in some sense, adversary. And, but a wonderful teacher he was. Had a great time at San Francisco General Hospital.

And was, they were deciding to integrate the training programs at Moffitt, UC Moffitt and San Francisco General Hospital at the time. And I was the beneficiary of that and went up to be there, what they call senior resident. It's a co-chief resident sort of a situation at Moffitt.

And that's so, well, how'd I get interested in medicine? My grandmother lived with us and she was a record librarian. Died, I think, at about a hundred, 102, something like that.

And, but she was always on my case. You have to be a doctor, you have to be a doctor. So I guess it was just came out to be a foregoing conclusion.

DWM: (2:32 - 2:34)

Why was she interested in that?

EL: (2:34 - 3:13)

She was just, she was a widowed lady and she went, she was all involved being a record librarian at a hospital, a little hospital up in Detroit, before she came to live with us. And so Mimi, that was her name, was, I still remember her, you know, touting the medical profession. So when I went to U of M, it was sort of biology, cultural anthropology, interestingly enough, and I ended up in medical school.

You know, the ghost of my grandmother would be on me forever if I hadn't done that. Nephrology is interesting. I had a great time with Gotch.

We did dialysis back at San Francisco General. Mm-hmm.

DWM: (3:13 - 3:19)

Yeah, and I don't want to miss that. I want to actually go back. So you were at Northwestern, you were at medical school, and...

EL: (3:19 - 3:20)

Wayne State Medical School.

DWM: (3:20 - 3:24)

Wayne State Medical School, Northwestern, like internship then?

EL: (3:24 - 3:26)

Internship. Passive at Wesley Hospital.

DWM: (3:26 - 3:26)

So by the time...

EL: (3:26 - 3:28)

Wesley Hospital then, actually.

DWM: (3:28 - 3:37)

Okay. By the time you got to San Francisco General, you were interested in nephrology already? You were still going to be in general training?

EL: (3:37 - 3:42)

Well, my track went more toward, if I were to say, endocrinology.

DWM: (3:42 - 3:43)

Mm-hmm.

EL: (3:44 - 4:37)

But I liked, you know, Frank was, he's a very quantitative guy. So he worked with Izzy Edelman, who was the guy who discovered that serum sodium concentrate, if you just take a serum potassium and a serum sodium, and you divide it by a total body water, that comes... Anyway, that's the determination of total of sodium concentration.

So he, you know, Izzy was a big quantitative kind of guy, and Frank got all into that. So I remember he, we, I mean, I had more equations for calculating salt and water, and they were all in the back of my head. I carried a slide rule, didn't have calculators then, you know, so I carried a slide rule so that we went on to, when I was on the nephrology service, we'd go on, on a consultation, and San Francisco General had a lot, a lot, a lot of fluid electrolyte problems.

So, you know, I loved it. We went around in those, with my little slide rule, and answered all the fluid electrolyte problems on those, and that was Frank, you know.

DWM: (4:37 - 4:39)

What year would this have been?

EL: (4:41 - 4:48)

Sixty, well, let me see, I graduated from school in about 63, so 64, 65, 66, mid-sixties.

DWM: (4:48 - 5:01)

So 1964, 65, and were they actually, were you, were they calling each other nephrologists? Was it a true nephrology? Was it endocrine doing some salt and electrolyte water stuff, or was it true nephrology?

EL: (5:01 - 5:03)

No, we were nephrology. We had a dialysis unit.

DWM: (5:03 - 5:03)

Okay.

EL: (5:03 - 5:31)

And that's the other thing I learned to do. We used twin coils, and I remember being very interested in the acid-base stuff, so I, you know, dumped the bicarbonate in the bath, and dumped the acetate in the bath, and determined how all that worked on a physical chemistry, physical chemistry basis. I mean, I sort of had a quantitative feel back then.

I did a lot of poisonings, acute renal failure, and that sort of stuff.

DWM: (5:31 - 5:48)

So, in 1964, there is, there's acute renal failure, and y'all are doing dialysis for acute renal failure, clearly, and where in the hospital was this taking place? Would you actually have patients come into a unit, or were you taking machines into patient rooms, and how were patients doing on dialysis?

EL: (5:48 - 6:29)

Well, as I remember it, we had patients that would, that were, basically, it was in the, when I was at SFGH. Later on, they had their own dialysis unit at SFGH, in another building, but this was in the very last room of the intensive care unit. So, the intensive care unit had a couple of things, and in the back room, off F Main.

Oh, no, it wasn't off F Main. It was in another place, but, so, we were there, and Donna Mapes, who we did one at a time, Donna Mapes, who worked for Amgen for a long time, was the one who I'd like to, you know, Frank was the boss, but Donna's the one who actually taught me how to do dialysis. The nurse, actually, doesn't that sound familiar?

The nurse actually taught me how to do dialysis.

DWM: (6:29 - 6:32)

And what would you do? What would be your role if they were doing a treatment?

EL: (6:33 - 6:46)

Put them on, take them off. I mean, I did that all the way through my fellowship at the Brigham. I mean, I actually did dialysis, you know, machine, set it up, take it apart, all this other kind of stuff.

DWM: (6:46 - 6:48)

So, what dialyzers were you using? What was the setup like?

EL: (6:49 - 7:40)

Well, this is a twin coil, you know, a great big tank, and there's the coil, it is, sort of, you roll it up, like, if you put two pieces of cellophane in a towel and roll it up, that's how it's constructed. Baxter made them at the time. And, mostly, we used those.

In Seattle, they were using keel dialyzers, parallel plate dialyzers. They weren't using blood pumps, we were, so we had a little bit better control. Frank actually went up there to learn a little bit about chronic dialysis, how to put scriveners shunts in.

Scriveners shunts were available when I got there, when I started getting into it, but I remember Frank teaching me how to take a piece of, you know, there were stylastic rubber shunts. You take a little piece of, I can't remember, PVC-like tubing, and fit it so that we could make the little loop that you join the two pieces of stylastic together.

DWM: (7:40 - 7:42)

Did you have a little mandrel and heat it?

EL: (7:43 - 8:01)

No, just tubing, bang, bang, and then heat it. Yeah, we had a little mandrel, pull it around the mandrel after it's hot, get something about the right length, and the reason we had to do the connectors that way is because they were always getting clotted, you know, and to go find another connector. But, anyway, I remember that.

So, we had a good time there.

DWM: (8:01 - 8:02)

Clotting was pretty common.

EL: (8:03 - 8:03)

Big time.

DWM: (8:04 - 8:06)

Access, why is access always a problem?

EL: (8:07 - 8:40)

It's non-biological, right? I mean, you know, it's a huge problem. It's always been a problem.

I've never been able to figure out how people, I mean, I understand, but people decided they were going to use these silly catheters, and when I was still doing the statistics here, I said, how can you people be doing this? It's an absolute travesty. But, for all the standards people wanted to have, the government never set a standard for a tertiary care center having to have a real access program.

You know, they just never did it. But I think a lot of people were damaged, did a lot of statistics on access, higher white counts, lower albumens.

DWM: (8:41 - 8:42)

All bad.

EL: (8:42 - 8:51)

All bad, all bad. Everything that was associated statistically, precursors statistically to increased mortal risk. Bad, bad, bad, bad, bad.

DWM: (8:52 - 9:00)

So in 1964-65, are you all putting in the accesses, or are surgeons coming to do cut-downs and putting in accesses?

EL: (9:01 - 9:14)

Then I would go to the operating room of the surgeon, and he'd do it. But we were not doing it. No, we weren't, probably wasn't.

I mean, I didn't feel, somebody could have taught me, but I didn't feel quite competent to do an arterial cut-down at that time.

DWM: (9:14 - 9:28)

So there were surgeons putting in the access, and then the patient would come, you would help set up the machine, set up the dialyzer, mix the dialysate in the tank. Chemicals, dry chemicals into, yeah. And how long were...

EL: (9:28 - 9:33)

Well, some of it was wet. I mean, the acetate, you know, you dump some bicarbonate in, and you dump a pretty amount of acetate into it.

DWM: (9:34 - 9:36)

And how were patients doing on dialysis?

EL: (9:36 - 10:07)

Well, you know, I'm certain we saved some lives. And about that time, of course, Scribb and Chris and that bunch in Seattle were starting to do them in home dialysis. And then when I came from San Francisco, I came here to the Brigham, and they had about the same...

Well, interesting patient, you might enjoy this. They had a home dialysis program when I arrived. And a couple of people...

DWM: (10:07 - 10:08)

Home hemodialysis?

EL: (10:08 - 11:23)

Oh, yeah. And that was, at the same time, I don't know, it was 64, 63, in that ballpark. They had a fellow by the name of Peter Stuyvesant, who was the last remaining male heir to the \$24 worth of beads thing.

And he was on home dialysis, in the home. And interesting little story there, my boss at National Medical Care, the founder, the precursor, of course, to Fresenius, took care of Peter, and Peter put him in a home. And this lady by the name of Ernie was dialyzing him in the home, she'd go in the home.

And she dialyzed him. Well, it turned out that Peter had a transplant, and so Ernie then started, went to the Brigham. And she was the head nurse at the Brigham.

And this little fellow came running around and found Ernie at the head nurse at the Brigham, and we ultimately got married. And so, we had a career. I mean, I was the chief operating officer here, and she ran the dialysis services, the whole division.

She built it. She built the regional structures and the whole thing here. So, never, never, she didn't have a BSN or an MSN.

She was a diploma nurse from the Baptist Hospital, but she was energetic, forceful, smart, and she had a memory like a whip.

DWM: (11:23 - 11:37)

So, Ernie started out dialysis with Peter Stuyvesant. Peter, yeah. Yeah, did they just, she was just a two-year degree nurse, and they found her?

I mean, how did she ever decide to get involved with him?

EL: (11:37 - 11:54)

She had a couple of kids at the time, and she decided that I need to do something besides do this at home. This isn't good for my kids. It isn't good for me.

And she answered, and they had in the paper for a dialysis nurse. So, they taught her how to dialyze, and she went and did it with Peter at home. Isn't that amazing?

Interesting little story.

DWM: (11:54 - 11:58)

It is a very, well, I was wondering how Ernie got involved in this story.

EL: (11:59 - 12:29)

Well, that's how she did. And Hampers recognized a good thing, and he made her the head of his first outpatient clinic, which was operating Commonwealth on Babcock Street in Boston, and made her the head nurse there, and she did a good job there. And the next thing that he asked to do is to offer her the senior vice president's position here in charge of nursing.

And the next thing you know, she's running a division. So, that was her track record.

DWM: (12:29 - 12:40)

And as we talk along, I want to get the timeframe for that. The year that all happened. But let's go back again to you, finishing up at San Francisco General.

How long were you there in San Francisco?

EL: (12:41 - 12:42)

One, two, three years.

DWM: (12:43 - 12:48)

Three years. And during that time, that would have been not fellowship, because fellowship really happened in the gym.

EL: (12:48 - 12:48)

No, that was residency.

DWM: (12:48 - 12:50)

That was residency, okay.

EL: (12:50 - 12:52)

I mean, I did GI and the other things, too.

DWM: (12:52 - 12:58)

So, you did, you rotated through everything. So, how did you decide in that time that you were going to do nephrology?

EL: (12:58 - 14:05)

Well, primarily, I guess it was because I enjoyed the dialysis exposure and I enjoyed my time with Frank. A very quantitative guy. And that appealed to me.

And so, I got moved into nephrology. And it's kind of interesting because I had a choice. I had to go to see, that guy will remain nameless, but he was an electrolyte endocrinophysiologist at San Francisco General.

And I had a choice. I had a choice. He wanted me to go draw bloods on his research patients in the morning or I could go set up dialysis.

I said, Dr. So-and-so, I'm sorry, but I just can't do your blood drawing in the morning because I've got to take care of patients. I said, if you want to do it, kick it up to the chief of medicine. So, and I never did draw his bloods.

But, at least to one of my fellowship applications, he gave me a bad recommendation. But it worked out very well. I might have gone actually to Tufts if it hadn't have been for him.

My whole life would have been different. And I like what happened. So, you know, interesting little, I always figured that you'd rather be lucky than smart.

DWM: (14:06 - 14:10)

I agree with that. And somehow things that seem like mistakes turn out to be the right thing after all.

EL: (14:11 - 14:11)

Absolutely, absolutely.

DWM: (14:12 - 14:23)

True. So, you finished up there and you know you have an interest in nephrology. And I mean, here you are from Michigan.

You've been in California and you're going to come over to the East Coast. What brought you all the way to the Brigham?

EL: (14:24 - 14:28)

I was looking for fellowships and...

DWM: (14:28 - 14:30)

I mean, Seattle was just north of you.

EL: (14:30 - 15:54)

Well, I don't know. I did not consider Seattle, to tell you the truth. I'm not sure why.

I mean, there's no, I mean, guys like Joe Eschbach, who rest his soul is gone now. But he and I turned out to, you know, we've had an interest in anemia, both of us. And so we had a lot of, you know, a lot of discussions at the meetings and things like that.

And Scribd, I mean, it turns out I had a lot of respect for Scribd. When I was at the Brigham, junior staff or, or I don't remember, but Hampers gave me this little box. He ran the dialysis services.

We're supposed to evaluate membranes for Monsanto. It's called a Bab-Grimsrud cell, test cell. I said, how am I supposed to do it?

What numbers am I supposed to have? Yeah, I don't know, clearance. And I said, that would make sense because the size of the membrane was maybe four times the size of a postage stamp.

So you can't get a clearance out of it. But Bab was at Seattle and I said, well, I don't know, you know, why don't I call a guy whose name is on it? So I called him and Les Bab was extremely helpful, extremely helpful.

So I had a good relationship, at least I thought I did with the Seattle people. I don't know why I didn't look up there to begin with, but maybe I was headed to the, it wasn't an East Coast sort of thing, but I applied to Tufts and to the George Shriners program and to Brigham. And Tufts guys gave me an awful time.

And I, Jerry actually, and I don't know why.

DWM: (15:54 - 15:55)

Why did they give you an awful time?

EL: (15:55 - 16:37)

Well, I said, how old will you be when you're finished? 32 or 34. Well, isn't that awful old for a guy with two kids to get into his program?

I said, doctor, I said, you know, maybe, but that's my choice. And I looked him square in the eye. They didn't like me so much.

The funny thing is, I was really interested in the flu and I would have gone there, turned me down. And, but Brigham, I liked Brigham. And I interviewed with Jack Marr and we got along fine at the other place.

And, but it was a stroke of wonderful luck. And I hope that Dr. K listens to this because I want to thank him so much. He did me a wonderful favor.

Anyway.

DWM: (16:38 - 16:52)

So you arrived at the Brigham and it's mid 1960s or so, and they have a chronic dialysis, I'm sure here, and also transplant. So talk to me about what your duties were as a fellow here. How long did your fellowship last?

EL: (16:53 - 18:37)

Well, I did three years. I always say that I flunked one of the two, so I went three, but I did three years and we had an artificial kidney center. I did general nephrology.

John Merrill was my, was the head of the place. John was, I mean, he was a wonderful guy precisely because he didn't give you too much help. You'd go on rounds.

He didn't say, go do this, go do that. He said, well, here's the task. And then he sort of relied upon his fellows to do what they were supposed to do.

I mean, Jerry Deboner was the fellow. Frank Gotch was gone. He was a fellow.

Dick Glastic was a fellow, you know, before I was there, but Merrill was like a ghost in a lot of ways. We'd go have breakfast. We'd discuss cases with him.

Of course, he was a very accomplished guy, but you did not see this big bombastic ego come, he had an ego, but you didn't see this big boom coming out of Merrill. Much softer. So he was good.

Working for John. So I did that for the first year. The second two years, I did exclusively in dialysis.

And we had, I did tissue culture. I hated it. Growing fractionating serum and growing myeloblasts.

I mean, you know, if there's anything that can catch a cold fast, it's a myeloblast growing in my laboratory. Mycoplasma and this all over the place. Had the great Harry Eagle come into, Eagle's medium come in to give us a hand.

But I enjoyed, I did a lot of dialyzer evaluation work. So I had, I'd set up, when I went back as a junior staff in particular, I'd set up a, I'd been in the Navy for a couple of years and I built their, or equipped their intensive care unit for cardiovascular stuff.

DWM: (18:37 - 18:38)
Where?

EL: (18:38 - 18:39)
In San Diego.

DWM: (18:39 - 18:39)
In San Diego.

EL: (18:40 - 18:51)
And so I got all that stuff for the pressure transducers and we did dialyzer evaluations, which is how I sort of, Brigham likes you to fund yourself. They don't like to pay anything, you know?

DWM: (18:51 - 18:51)
Right.

EL: (18:52 - 19:07)

And so that's, I had a lot of contracts with a lot of companies like Monsanto and a little company called Abcor. Same time, Dr. Lips, who's now chairman, was doing this sort of stuff for Dow. Frank was consulting with Dow.

We've gone. And so we had the cordyceps.

DWM: (19:07 - 19:12)

Where were they in the Holofiber dialyzer plan when you were looking at?

EL: (19:12 - 21:16)

Oh, they were starting. We were all, in fact, the three of us were on some NIH committees. A fellow by the name of Ben Burton ran the committees and he was the head.

And so they were doing it. We were, I was contracting with two companies at the Brigham. Dow ended up doing it.

But, you know, basically if I stay ahead, the better product of the three. But one of them was Monsanto. Actually, way back then, we're using polyacrylonitrile, flat sheets of polyacrylonitrile.

So evaluate the biocompatibility of flat sheet polyacrylonitrile, way back then, not Holofibers, but way back then. And a bunch of others, polycarbonate and a bunch of other things. So, you know, I put them up in the back room, sterilize the dialyzers, just like you do a keel dialyzer, my little cell.

I did it, well, I would call ex vivo with a patient, not in the patient, but out of the patient, ex vivo. And draw the blood samples and do the mass transfer coefficients. Biocompatibility studies for them.

Another little company called Abcor, which is a bunch of MIT types. Had an interesting cross-flow dialyzer. Very, very good membrane for small stuff, but not big stuff.

Big, you know, what you'd call middle molecules, maybe, you know, very low molecular weight cutoff. But the guy there, he did kinetic modeling as a part of what he was going to do. All got reported to the NIH.

This is before kinetic modeling got popular. Guy by the name of Jim Porter. And very smart.

He came in and said, well, what do you do? How does this work? And we talked about physiology.

He sat down with his paper and all his little integrals and differentials. He said, well, it can be this pool, that pool, let's collect some data. So he said, well, if you do it really fast, it could be two pools.

He said, but one pool works just fine. So let's make it really simple. But he had them all.

He had 10 pools and all this stuff all stimulated on his computer over at MIT. So it was exciting. You know, it was a fun time.

It was a fun, fun, fun history in this. And on top of that, you know, you go do your own dialysis.

DWM: (21:17 - 21:30)

Right. So you're looking at membranes and also taking care of patients. And the membranes that you're using in a dialysis unit, what's happening in that?

EL: (21:30 - 21:31)

Those were membranes.

DWM: (21:31 - 21:34)

And do you have a chronic outpatient dialysis unit at the Brigham at that time?

EL: (21:34 - 21:57)

That's another really, really interesting story. Hampers was the head of dialysis at the Brigham when I went back there to staff. I ultimately ended up being the head of dialysis at the Brigham, ran the dialysis unit at the Brigham.

But Gus, Gus Hampers decided that he could do it a lot cheaper than the insurance companies were paying.

DWM: (21:57 - 21:58)

What year was this?

EL: (22:00 - 22:12)

Gee, that must be somewhere, we're pushing maybe into the, early, early part of the late sixties. I don't remember the exact years.

DWM: (22:12 - 22:17)

So there's chronic dialysis at the Brigham, but it's not very efficient. It's pretty expensive.

EL: (22:17 - 24:52)

Yeah. And we had took care of people as a chronic, Gus decided he could do it better. He went to Harvard and went to the Brigham.

So let me, let us, let's build an outpatient dialysis unit. And Brigham and Harvard said, oh, we can't do that. There's a famous paper that was in Lancet way back when it said, you know, it's only for dogs.

That's what the physiologist said. That's all dialysis is good for is dogs. Well, they took that as the position.

So Gus went out and he raised the money and built the company. It turned out to be National Medical Care. And so that was in the late sixties, the affiliated clinic was the Babcock Artificial Kidney Center.

The one that Ernie ultimately was the head nurse for. And Gus, I remember he had a little office and he got his money and he and Gene Shupak, who was down at Elmhurst in New

York and Ted Hager were the three principals in this. Ted ultimately left the company and went out to run unsuccessfully for a Senate seat in New Hampshire.

Gene ran his own dialysis unit, but also did the medical products division side of things. Started up the original laboratory, which was called Life Chem at the time. And then he retired and that left Gus.

And so now we're up into the late sixties and maybe, or no, up into the seventies rather. So he went to the Brigham first and Harvard first. They said no.

And that's how that National Medical Care actually got started, which is now for Zeniths. So he just did it. So, okay, went out and did his own money.

And then of course, they decided that, well, this was really happening. And a fellow by the name of Gene Braunwald went to be the chief of medicine. And he didn't like this at all.

He figured that all that money that came from dialysis ought to go to the academic departments. Gus said, I don't think so. And we were, a number of us, including Mike when he came to the Brigham a little bit after I arrived there, started to, you know, we were seeing the patients for money outside.

So we'd go cover his dialysis unit. Gus's dialysis room. And Gene says, this ought to come under me.

And we all said, I don't think so. So there was some acrimony. It's all described in a book, which Gus had published.

A fellow who was general counsel for national medical care. Very nice, competent, pleasant man, Tim McFeely, wrote a book called The Price of Access. And it's too long and too detailed.

And the business stuff is a lot in there, but it's all, you know, it gives the whole history of national medical care.

DWM: (24:52 - 25:22)

And I want to think back about a time where Gus Hampers is starting this outpatient dialysis unit. And there were sort of several issues going on, I guess, at the time in the late 1960s. One is patient access to chronic dialysis, that there are not enough dialysis places, slots, machines to dialyze everyone who might benefit from it.

Was that part of the need to move out to a chronic unit, building more dialysis stations? Yeah.

EL: (25:22 - 29:34)

Look, what he did and what happened in an entrepreneurial environment, I mean, there's lessons for health policy today in this. In an entrepreneurial environment, there was a constrained resource availability so need could not be met. And the manifestation for that

you saw in the, lack of a better word, death committees that you saw in a number of cities, including Boston and including Seattle.

You know, who are we going to give this to? And so people start making value judgments in their own terms, their own collective terms, in terms of other people's lives. And that happened in the UK.

And the same thing happened. What Gus did, and it sounds like a good technical economic solution, but it's much more chaotic than all of that. They just said, hey, you know, there's an unmet need.

We think we can do it. We think we can do it better in a hospital. Brigham Harvard, you want to do it?

They said, no. He said, all right. And they went and raised money.

Of course, when it turned out to be a success, all the academic institutions, they said, well, we want that. But they didn't want it at the beginning. So this was an entrepreneur who saw an unmet need and created the capacity to meet that need.

And that's basically how dialysis started. I mean, I wrote an article on profit-making medicine in the New England Journal of Medicine at one point that was defending this sort of stuff, basically in terms of who's going to put the capital to make the need. It was an economic argument.

Good friends of mine, like Lee Henderson, who was another Brighamite, by the way, I remember we had a discussion sometime at the NIH, and he said, Ed, you sold your soul to the devil. I went to work for him. I said, Lee.

Of course, Lee ended up to be the medical director for Baxter-Pravenol at one point. So I had a good time giving him the resume for that. No, it was, the center that was constructed here, the kidney center, was an interesting center.

A lot of people, like we were at the Brigham, and of course, you ought to lock this in, keep everybody else out, because we have this resource, and that resource, we ought to force people to refer the patients to us because we have the resource. None of that. Guswood had none of that, and he's right.

He said, if you want to have a community resource, you don't lock people out of it, you invite people into it. So the kidney center was a wonderful place to practice nephrology at the time, because Mike and I would go make rounds there, and at this point in time, this was in the 70s, we had our own patients, patients that came from the Brigham to us. And then we had people from, but we also had BU, so Bell Idelson, and people from BU would refer their patients there and come see their patients there.

Steinman and the others from Beth Israel, Leahy Clinic. Mass General would refer their patients, but the docs never wanted to come see them. But we had a rule, we had to see a

patient, patient had to be seen with every dialysis, and so there had to be a doctor in there for each shift of dialysis patients.

They don't have to be there the whole time, but they had to be there. Well, that's a pain. What am I going to do?

Steinman's going to have his patients, and I'm going to have my patients, so I'm going to go see mine, Steinman's going to, no, no, no. We set up a little collaborative so that Steinman would see my patients, and I would see his patients, and Idelson from BU would see the patients. And we all managed to work together on each other's patients, and that was kind of nice, because each of us had different sort of subacademic interests.

So if you get a bone disease guy over there, he said, Ed, I thought that your patient, thus and such, may have a thus and such, because he spends most of his life thinking about bone disease, and somebody else spends most of his life thinking about something else, you know? So it was a group practice for seeing the patients, an economic group practice for seeing the patients, but it was also an intellectual collective for seeing the patients. It was great.

It was a wonderful experience. And I don't know how many of those models still are existing in this company or any other, but it was a good model. It was a community dialysis center, is what it was.

DWM: (29:35 - 30:06)

Yeah. And it makes so much sense hearing the story that way. Go back to the late 1960s, and let's talk a minute about the selection committees and all that.

Did you feel any impact from that in the academic center at the Brigham as they began this chronic outpatient dialysis program? Did you see patients who didn't qualify for dialysis, who, because of the limited resources, could not be dialyzed? And did that make a big difference when you began to see the growth of outpatient dialysis?

EL: (30:07 - 31:13)

No. Usually, you see, when a patient came to us, I never personally, the death committees were maybe a year or two before I got into this or three, and even when I was still in it, depending upon where you were. In England, certainly.

I don't know when Seattle abandoned theirs. I just don't. But when a patient came to us, with or without funding, if they had insurance, you know, you put them on dialysis and you take care of them.

If they didn't, that's another problem. But a part of what our responsibility was was to find the money for the patient. So we actually got a little program going in Massachusetts, a fellow by the name of George Bailey, who's also going, very active in the program, very energetic guy, had a tonilic estimator.

And he just, I mean, he just was a vicious advocate for these people. And so the idea was, you go find money for them. So we had a social service department, and then we had George and Gus, you know, and the rest of us.

So we'd go hunt down money for people.

DWM: (31:13 - 31:14)

Where? Where'd the money come from?

EL: (31:15 - 33:03)

Oh, some of it came from the state, you know? Some of it came from foundations. Some of it came from families, in various and sundry ways.

Because we did not have, at that point, the social security amendments that gave coverage for dialysis. But there was, the kidney center was Babcock Artificial Kidney Center at that point. I don't remember how it had many chairs, 12, 20 maybe chairs below a nursing home.

And so it wasn't a trivial little tiny center. I mean, it wasn't as big as some of the other centers that you see these days. But it wasn't a little center.

And this was before the social security amendments. So to say that those amendments, you know, made these companies and these companies nuts. I mean, people were finding solutions to the problem long before the government got into it.

And I wasn't any part of that lobbying program. I mean, that's, I was not in that. I got into lobbying a little bit later on in life.

But the government, I mean, the hospitals were charging 220 and all this other, I don't remember what NMC was charging at the time, but we gave them their, I didn't give them, I wasn't part of the company then, but they gave them their phosphate binders and their vitamins and all this stuff. They just gave it to them for whatever it was. And government came in and said, well, we, that, medicines aren't covered.

So therefore we're going to reduce the price from, I don't know, I'm going to say 180, down to 160 or 150. I don't remember what the original, maybe we were at 160 and they took it down to 140. Maybe that's what happened.

I don't remember the exact numbers, but anyway, the government gave us a haircut. They gave everybody a haircut. And the guests continued to, you know, shovel out the ampogel for a while.

As it turned out in later life, probably it was a mistake, but that's another story.

DWM: (33:03 - 33:04)

We didn't know it at the time.

EL: (33:04 - 33:06)

We didn't know it, that's another story.

DWM: (33:06 - 33:18)

That's right, that's right. So 1972, when the amendment to the Medicare Act was passed, that didn't make really any difference. You all were sort of barreling along with this program that was steadily growing.

EL: (33:18 - 33:26)

Yeah, I suppose, yeah. I mean, it may have helped with the other clinics in the company, but at least as far as what we were doing in Boston, it didn't make much difference.

DWM: (33:28 - 33:44)

Patients were, in the late 1960s, early 1970s, how were they doing on dialysis? Were they pretty healthy? Were they having good outcomes?

What did you think about the quality of life and all on dialysis, for chronic dialysis patients at the time?

EL: (33:45 - 35:15)

Well, I remember a home dialysis patient that we had to Brigham, who I think may still be alive. And he would have been, he was paid for because he went on home dialysis and we had a grant, just like this Seattle grant, to put people, I still remember those two patients. I still remember the first two patients that went on dialysis for Brigham.

I couldn't tell you their names. One's gone, and I believe that this one's alive. But he would come in and he was a professor in college and a very quantitative sort of guy.

And he wrote a textbook on dialysis. He did okay. Another guy who was an engineer at MIT, engineer.

He and I wrote a little paper together way back then. They did okay. You say, well, they're younger, and maybe that's true.

And I don't want to get into the case mix adjustment garbage with this. But I would say that they did reasonably well. But you have to remember that we were dialyzing six hours at the time.

The dialyzers were not so efficient. Then our country got in the, we want to get this really fast dialysis. The shorter, the better, so to speak.

And I think that that was, I mean, the Europeans used to chide us for that. I think rightfully so. I think that was a huge mistake.

DWM: (35:16 - 35:20)

So you were dialyzing six hours, three days a week at that point already?

EL: (35:20 - 36:44)

Six, well, five and six. It gradually worked its way down to five. So yeah, it was five.

I mean, I did the National Cooperative Dialysis Study and people would, just one quantitative person that I mentioned said to me, Ed, they're saying three hours, two and a

half. They say three hours, okay, because of what your study showed. And I said, I don't want to do it.

I said, in the first place, I think it's misinterpreted. They're looking at, they're missing the forest for a tree, technically, but I don't want to do it, Rick. And he just shrugged his shoulders, okay.

Other people would press. He said, okay. And we had quite a number of people that, I mean, that were doing, that were reasonably rehabilitated.

Some who were not even, you know, as educated as this person was, but managed to have pretty reasonable, happy lives. I remember saying, you know, when they complain about the unit's too hot or the unit's too cold, or can't I have a color television set? I could take all that stuff because I'd look down that row of people and I'd know what their alternatives were, which wasn't very happy.

You know, at least now they're able to complain about the things that make them unhappy. You know, I don't know. I think, you know, it's a clinical judgment and, but they did okay.

A lot of them did okay. There were some disasters, but a lot of them did okay.

DWM: (36:46 - 36:50)

Was hemodialysis, home hemodialysis still big and were you doing any PD?

EL: (36:51 - 38:07)

I was never much of a PD fan. And that's on technical grounds. The mass that you can take out on a PD is just very small compared to what you can do on an artificial kidney.

It's just, it's a limited therapy. And I remember having, when Lee Henderson was a, at Baxter, we were having a middle molecule discussion and Lee looks at me, shook his head. He said, well, he said, you can take, we think you can take a lot of middle molecules out with PD, but look at the difference in the patients.

And that's true. I mean, in most of the PD studies showed, at least some time ago, that a significant contributor to them was residual renal function. And so it's not, let me put it this way, a pure therapy.

The complication rates, particularly back then from the technologic issues, you know, the glass bottles and the connectology were just not good. So we did have a PD program because there are some patients who really do okay. And in some patients, it's probably the better choice.

So we did have a PD program, but it wasn't a big program. You know, we had a pretty good sized home hemo program. Yeah.

DWM: (38:07 - 38:12)

And how about transplantation? Were you involved in the transplant program at the Brigham?

EL: (38:12 - 39:44)

I was, you know, when I was staff there. And we would go on rounds and take care of the transplant patients. But I would say that the transplant patient, the transplant was, people were populated by immunologists, interested people.

But I had more of an engineering interest in it. I taught, I mean, we had courses over at MIT that I taught in the Department of Chemical Engineering for the engineering students, basically. Wonderful to go lecture those guys when you know that they know more math than you do.

But nonetheless, we shared the same language anyway. So I was more interested in that. I enjoyed it.

I enjoyed the quantitative side that I could put into dialysis. And at that time, certainly, you know, transplantation was basically a crapshoot. You know, every transplant that they had was in a different experimental protocol.

But, you know, the Bringham, John Merrill, and Hartwell Harrison, and Joe Murray, Joe, of course, got the Nobel Prize, actually developed it and did a wonderful job developing transplant at the Bringham. And if you were to ask me what would I have now if I were, let's say, 50 years old, you know, I don't think there's any question which type of therapy that I would choose. Mercifully, I haven't had to confront that situation.

But I'm not sure it would have been back then. I sure wouldn't have taken a cadaver transplant back when I was practicing. I wouldn't have touched it with a 10-foot ball.

DWM: (39:47 - 40:01)

As we're talking, you keep talking about being quantitative and quantitative, and yet when you talk about your education, your undergraduate education, you talked about biology and all that. Did you do a lot of math? Where did you become this quantitative person?

EL: (40:01 - 42:27)

I don't know. I always have had it that way, but I remember that when I first came to the Bringham, and I decided I needed statistics, and I needed the math. I had done, I'd done some math, but, I mean, I worked for a living in addition.

I did emergency rooms and that sort of stuff to support a wife and kids. And so, you know, I take my calculus book, and I read my calculus book. So I taught myself calculus.

One of the very first home dialysis patients, I sort of got off the story, was a fellow who was also the, worked for Advco Everett. He was a physicist, a theoretical physicist. And he went to Baxter, and they said, how much would you use on home dialysis at the time?

And they went to Baxter and said, okay. Baxter said, how much would you charge us so that we could put you in one of our commercial, you know, promotional videos? And Bennett said, well, I don't want any money from you.

I just want dialysis supplies for as long as I need them for the rest of my life. Whatever the one you have that I think's best, I want. And they, of course, went around, how long can he live?

Well, maybe six months or a year. And Bennett was on dialysis for a long time. I used to have him in the clinic.

That's about math. This is connected to your question. So I'd write out a series of differential equations that I thought would describe a particular system that I was interested in.

And Bennett, he would sit there, and then I'd explain it to him. He'd scratch his head, he'd look at it, he'd take the list of equations. If he thought that this was not appropriately said, he'd tell me at the time.

He'd take it off, put it in his pocket. And he'd come back, and you know, a few days later, I'd get a little note from the desk of Bennett Terrell where it was all worked out. And then I could track and see how he did the solution.

And that's how I could learn. So I learned pretty quickly with that that when I saw Bennett in a clinic, he was followed by the Brigham, not the outpatient. When I saw Bennett in a clinic, I used to schedule him for two clinic slots.

One I took care of him, and one he took care of me. I, until, he's long gone, but Bennett was on dialysis for quite a number of years, and his son used to work for a company down there. Every year, I'd get a little note from his son.

DWM: (42:28 - 42:34)

That is a remarkable story. I'm sure we've all learned a lot from our patients in one way or another, but that's a remarkable story.

EL: (42:34 - 43:06)

I had another one who worked at another place, and he also helped me with a little mathematics. Bella was his name. And he would, I remember I was in a clinic one time, and I said, he said, oh, I have to go make a call.

I said, Bella, we're in the middle. He said, I've got to go call. I said, what's this about?

He said, well, I have a rocket that's going from here to somewhere. So he was running a stimulation on a rocket, on rocket trajectories or something like that. So he worked for AFCO Everett, or one of the local defense contractors around here.

It was fun. I had a good time, as you can tell.

DWM: (43:06 - 43:27)

Yeah, absolutely. I can see why. You mentioned a bit ago that, you know, there were these physiologists who said, well, dialysis is only for dogs.

That pure nephrology or pure medical science is not dialysis. It's renal physiology. Was that an attitude the Brigham had?

EL: (43:27 - 44:19)

Other people at the Brigham who- Well, some did, but John wouldn't do it that way. John Merrill. I mean, that just wasn't his character.

And besides which, he'd worked on dialysis. Carl Walter was there. Carl worked for Baxter Wall, like in Fenwall, and Fenwall Bags.

Maybe you don't remember. But that's what they had, Fenwall Company. It was a Baxter company.

It's gone now. But Carl had a, I don't know what his background was, a much older man. But he's the guy who designed or worked on the bushing in the rotating drums.

And I don't know if you've ever seen one of those things. But as you see them, how you can get the blood going through that rotating drum with this thing going around like that without turning the tube into a piece of spaghetti is really pretty ingenious. If you're ever at the Smithsonian, they have a rotating drum there.

You ought to go take a look at it.

DWM: (44:19 - 44:21)

I'll do that. Can you describe it?

EL: (44:22 - 44:26)

No, I'd have to sit down and resurrect it to draw it on a piece of paper.

DWM: (44:27 - 44:28)

But he helped sort that out.

EL: (44:28 - 44:30)

Yeah, I'm pretty sure Carl helped sort that out, yeah.

DWM: (44:31 - 44:46)

Yeah, so there were academic people, but there was not a lot of animosity or one group being more respected than the other group. The dialysis people versus the physiology.

EL: (44:47 - 45:58)

Not when John Merrill was there, no. I mean, things changed a little bit when the leadership changed at Brigham. It was one of the reasons I decided to leave.

But Bernie Carpenter, Prince of a Man, was the immunological sort of guy there. And he had no interest in the engineering of things. But on the other hand, he fully well understood that even though he had no interest in it, there must be a value to it somewhere.

So he was, it was a wonderful group of people. Don Oken ran the lab, the micropuncture lab upstairs. And he was interested in teaching clouds, you know?

And he sort of said, we're going to teach you all a little calculus. We're going to teach you all a little statistics. Statistics I did.

I remember having to read a book on how you do an analysis of variance in programming an Olivetti calculator, one thing at a time. Enter the number, put it into this register. Enter the number, put it in this register, bring the two down, multiply them, store them in another register, bring it up and square it.

So I wrote a whole series of programs for an Olivetti language for analysis of variance and linear regression and things that people go like, just on their statistical package, you know?

DWM: (45:58 - 45:59)

No problem.

EL: (45:59 - 46:00)

No problem, no.

DWM: (46:01 - 46:02)

So why did you decide to leave?

EL: (46:03 - 48:43)

Brigham? Well, you know, things were getting, the leadership changed in both the Department of Medicine and the Department of Nephrology. And they did not comport philosophically particularly well with me.

And I suppose I was in. I mean, things changed and there was now a mismatch. So I stayed.

I suppose they'd have fired me, but the National Cooperative Dialysis Study was underway at the time. And I had a reasonable amount of money comparatively with other people coming into Harvard. And they do like their overhead.

In Brigham, they do like their overhead. In fact, funny story, in competing for grants, Brigham had like 60 or 80% overhead. I talked hampers into a 30% overhead at the Kidney Center when I went there.

So they paid 30, 40% overhead at the Kidney Center. I got more grants as an off-campus rate from Harvard. And then the thing I really loved was when I decided I was gonna leave, but I still had to have an office for the National Cooperative Dialysis Study.

Had Harvard pay the Kidney Center the money for me. So it all worked out. I still laugh about that.

But it was a mismatch. Their emphasis was on, at Brigham, if you were a practicing doctor, they welcomed you in as a practicing doctor. And you were not in a highly, highly structured Department of Medicine.

You're in sort of a collegial. I mean, George Thornton was the head of the Department of Medicine then, but he was like Merrill. Smart, but he didn't have, he did not have what I'll call the power grab in him.

And the, let me call it the younger group coming up, who are older than I am, I want you to know. They all felt that they were sort of, we're gonna run this thing. And so you're gonna, if I went out and worked my tail off in an emergency room or someplace else seeing patients, then I should give them that money and they tell me how much of it they're gonna get back.

And I just, mostly, you see, it was to fund things that they wanted to fund. And so I viewed it sort of, to be quite frank, as parasitic. And whatever it was, I didn't need to be there.

So I left. Went on to do other things. And then Hampers just asked me to come here and I ended up giving up practice and all that other stuff, you know.

DWM: (48:43 - 48:50)

What was NMC at the time you came here? How big was it? What was it doing?

What did you come here to do?

EL: (48:50 - 48:56)

We were the biggest one. I first went over to be medical director at the Kidney Center.

DWM: (48:56 - 48:58)

And what year was that? Oh, Lord.

EL: (48:59 - 49:02)

I should have brought my resume because I could have looked it up.

DWM: (49:03 - 49:03)

You can be close.

EL: (49:03 - 49:48)

Although you're doing two things at once. You know, you're an assistant professor here and you're doing this over here. So it was sort of a, it wasn't like I quit one job and do another.

This whole thing was sort of a, what I'll call a cause and guided evolution. Not a matter of I'm going to quit. And I, as I say, I did have a cooperative dialysis study.

So I'm having to guess, this is after the amendments. I'm going to guess it's somewhere in the late 70s. I continued doing my dialyzer research and I kept taking care of patients and running the National Cooperative Dialysis Study and having my little computer that hooked up with John Sargent's kinetic computer and going over to the Harvard Public Health School to talk with the statisticians.

It was fun. It was fun. Very enjoyable.

DWM: (49:49 - 49:54)

And so at the time that you came here in the late 1970s, Ernie was already here.

EL: (49:55 - 51:25)

Oh yeah. But I came here, I was, I actually met Ernie. I came, you know, I was in the 60s when I came to Boston and Ernie was most certainly already here.

And then she was at the, she went to Peter. I didn't know when she was dialyzing Peter. Peter came over.

We had dinner with Peter one Thanksgiving when Peter developed gastric cancer actually, lymphoma I think. He wanted to go around the world and he got sick and they had to go pick him up in a place like Thailand and bring him back on an airplane, you know, rented up the first class part of an airplane. I think Gus went over to pick him up to tell you the truth.

Hampers went over to pick him up. A remarkable relationship they had. But, so we're talking during this evolution, Ernie went from head nurse to Brigham to head nurse in the dialysis unit to a clinical vice president at the National Medical Care to running.

Well, that has to be, that has to be, well, she left in 94. Four. So, I would have to guess that you're probably into the, I guess you're probably into the 80s now, into the late 70s and 80s.

National Cooperative Dialysis Study, I think, ended up in the late 80s. And so, we're talking about in that, in that time frame and a little later. So, we're evolving from the 80s into the 90s.

DWM: (51:25 - 51:31)

And Ernie, so you come here in late 70s, early 80s and Ernie is what is your?

EL: (51:31 - 51:33)

She's a nurse at the Brigham.

DWM: (51:33 - 51:34)

A nurse at the Brigham, still?

EL: (51:34 - 51:42)

No, yeah, she is. Well, still, but no, no, no, I didn't, no, no, I arrived in Boston in the 60s.

DWM: (51:42 - 51:42)

Right.

EL: (51:42 - 51:42)

Late 60s.

DWM: (51:43 - 51:44)

When did you and Ernie marry?

EL: (51:45 - 51:53)

Be about 40 years ago. So, I remember the date. I can't remember the year.

What about 40 years ago?

DWM: (51:53 - 51:54)

70, 90?

EL: (51:54 - 51:59)

Yeah, it'd be 70. Oh, yeah, I can tell you when. Be 70, about 70.

DWM: (51:59 - 52:06)

Yeah, okay. So, and she worked at the Brigham then while you were in training at the Brigham. You were junior faculty at the Brigham.

EL: (52:06 - 52:06)

Yeah.

DWM: (52:06 - 52:10)

Okay, and then when did she come out to work for Gus at National Medical Care?

EL: (52:10 - 52:18)

Well, we got, I was fellow at the Brigham and then we got married about that time. Then I went to spend two years in the Navy.

DWM: (52:18 - 52:18)

In the Navy.

EL: (52:19 - 52:24)

Then I came back in about 72. And, and so then.

DWM: (52:24 - 52:26)

So, she had left dialysis during that time.

EL: (52:26 - 52:28)

Yeah, she didn't work while I was in the Navy.

DWM: (52:28 - 52:28)

Right.

EL: (52:28 - 52:31)

But she came back and got rehired. Went to work at the Kidney Center.

DWM: (52:32 - 52:32)

Okay.

EL: (52:32 - 52:37)

To run the Kidney Center. And then she took her run up from that, in that position.

DWM: (52:37 - 52:56)

What do you think it was about, tell me about Ernie and what was it about her that gave her that career at National Medical Care? Because by the time she finished working here, she was, I, a lot of us knew about her. I'd heard of her.

I mean, she had quite a high profile.

EL: (52:56 - 56:21)

Well, she was a high energy woman. I mean, she really was. I mean, she, on a personal side, she insisted upon coming home and having dinner.

You know, we all, I mean, she just was a very, very high profile. Her daughters just like her in that way. No one's a Kennybunk poured in up here, you know, but it's either two of them.

And they had some discussions once, occasionally, when, you know, when she, when Debbie was growing up. But, but Ernie, we'd go on rounds at the Brigham and it was amazing. She knew all the x-rays, the x-ray numbers of the patients, their hospital numbers.

I mean, I had them on my little card that I kept in my pocket. I didn't have to take it out. And he said, well, it wants to see Mrs. Jones. Well, Mr. Smith will go get the x-rays we'll go look at. She was just intuitive and she was fair. She had very strong feelings.

She was demanding, but the guys that worked for her, amazing. I remember they said, when they were going to give her Puerto Rico, oh, you can't get up those macho Latins are never going to pay any attention to a woman. Well, she went down there and they just loved her.

After she died, I'd get calls from guys down. And basically they were talking to me. They know that she was gone, but they were basically talking to her.

And same thing in Portugal. She went over there and, oh, you'll never get those Portuguese guys. But whatever it was, I mean, she was tough and she was not yielding.

Very feminine, but not yielding. I mean, when she had a principal, she would, she was the only person that basically I ever could see could regularly put basically hampers on his knees. He's a tough guy, but she'd look at him like I knew you were in Baggy Pants, son.

And he's older than she is, so she can't call him son. You're very domineering, very demanding personality, but very fair. And her approach to patients in the medical profession was absolutely uncompromising.

Absolutely uncompromising. It wasn't that the patient has to have the television set or you have to do everything the patient wants. It was that we're going to provide the best care.

And this is, well, her idea of a tech, according to her idea of technical care. You're not sure, you know, it's a safe treatment. It's a fully delivered treatment.

If there were doctors that were having problems, they'd get down and say, hey, we've got a problem in this particular place. You know, it's tough working with somebody who's that strong in the same company and such a related, but we never talked about it at home. You know, she'd come and she'd knock on my door.

Dr. Lowry, I have to talk to you about this. Seriously, you think I'd get Dr. Lowry at the home? The role reversal was 100%.

Ernie, what do you want me to do today? She is a tough lady. And some nice compliments that I've had from some of the nurses that would come up here.

One nurse who came up here after, you know, the change at Fresenius and was sort of doing, she said, I didn't know those volunteers here. We've been talking about this for years and you people have been doing it. You know, she didn't like ANNA particularly.

She thought they spent too much time talking and too little time doing. That was just her personality, you know? So that's how she did it.

And Gus recognized it. And he's certainly got his money's worth out of the lady, I think.

DWM: (56:22 - 56:55)

Well, also in being a nephrology nurse and coming from that background, I mean, taking care of chronically ill patients can wear you out. I mean, it's a lot of responsibility for a caregiver. I've seen a lot of caregivers who just over time being in a dialysis unit, being responsible for a dialysis unit, nursing, head nurse, those kinds of things.

You can get a lot of burnout, but I mean, she, it sounds like, was very involved always over a long period of time. That's pretty remarkable.

EL: (56:56 - 59:28)

Well, she was different, like me. I mean, I've been involved over a long period of time, but my actual life day-to-day changed. I mean, I ultimately ended up with P&L responsibility, profit and loss responsibility for sizable operations.

And so did she. I mean, hampers had it. But you start worrying about how these things all fit together.

The lobbying group, I mean, hampers was very involved in it, but the group, some people don't like lobbying. So it's called advocacy. I don't think there's anything wrong with it.

I think it's a key profession to tell you the truth. If you don't understand, if you understand how government works, you need lobbyists and advocates. And it's a constitutional right.

So I picked that up. So now as opposed to going in a dialysis unit with my little stethoscope and making the decisions every day, I'm using the skills and the sensitivities that you pick up during that period of time, but they're being cast over a much wider horizon. And medicine is a great profession.

At least it has the capacity to be a great profession. Things are changing, but it has the, I mean, forget all the social stuff and the payment stuff, but the taking care of it is a great profession. The technical side of taking care of it, if you're allowed your freedoms, is a great profession.

But it can be very limiting. If you go to a bunch of doctors, a party with a bunch of doctors, you used to be, I don't go to all doctors anymore, but you used to, you know, the

conversation sort of converges on one place. And it's nice to say, well, I now know how a manufacturing plant runs.

Why? Because I had the controller down there teach me. Why?

I ranked him. I could argue with him. I could say you're wrong, force him to argue with me.

So we could have a little dialectic going. So I learned how PMO runs. You know, you have enough modesty that when I walk into one of my plants, I look around and see how the plant manager's doing.

They say, you want to see this thing fall apart? Watch me. Let me take it up tomorrow, it'll fall apart.

So you see a broad, diverse convergence toward a final goal in the plant. Now, I do understand what his numbers mean. And if there's things going wrong, I can say something's going wrong.

I don't know how to fix it. You fix it. So it's a wonderful thing that you can retain your skills and your contacts with a profession, but it's also nice to diversify.

And Ernie did that.

DWM: (59:29 - 59:33)

What all was ultimately Ernie responsible for at the company?

EL: (59:33 - 1:00:24)

She was responsible for the dialysis services division. It was the, she was the mox, so to speak. And she took both domestic and international.

She didn't do international development. Hampers and another fellow, a fellow by the name of Chris Ford, who's in ARA right now, one of the principals in ARA, were doing international development. And I'd tag along occasionally when that needed.

But when things started to go and we started to have some doctors, then I had to go meet with the doctors in China or something like that. And then when they have a country that comes up, like let's say Portugal, Ernie ultimately ended up in managing Portugal. But as I say, there was some resistance in the company because they thought a woman couldn't possibly do it.

She had a much better job. They all loved her.

DWM: (1:00:27 - 1:00:42)

Let's go back again to the late 1960s, early 1970s when you're really starting your nephrology career. What organizations, if any, did you belong to? Were you part of ASIO or ASN?

What do you remember about those early meetings?

EL: (1:00:42 - 1:01:26)

Well, they were great. It was a hot topic meeting. I mean, you know, everything was highly, highly focused in, oh, I flipped over to ASIO.

But the meeting, even ASN was smaller than it is today. You know, I go around and get lost. I mean, my God, what are you gonna do?

I mean, you know, it's like walking into a smorgasbord of chocolates and you just absolutely stuff yourself and die. So the last ones I went to, you know, I'd say, well, here's something I don't know anything about. I'll go listen to people use words that I have to sort of learn what they mean.

And so it wasn't, they're not highly focused anymore. I mean, there's too much, too big, too tough for me.

DWM: (1:01:27 - 1:01:35)

Those early ASIO meetings, I gather George Schreiner really was a driver for that. And they were pretty dialysis focused. I mean, were they talking about membranes?

EL: (1:01:36 - 1:02:59)

Oh, yes, no, no. They were talking about membranes, talking about how dialyzers worked, talked about clinical care in dialysis patients. It was a mixture of clinicians and engineers and hybrids like me and Frank, gotcha, yeah.

So it was sort of an eclectic mix and you'd get exposed and the community was sufficiently of actively involved people was sufficiently small that you got to know a lot of people. And, you know, I could, if I had a problem with, well, as I said, I had a Babs Grimsrud dialyzer, I'd call up Les Baer. How do you do this?

Well, he sent me this thing. I remember he sent me this thing and said, what does HO mean? You know, it was an appendix to whatever he had.

So I had to go figure all that out. If I didn't know what it was, I'd call him up and ask. And the same thing is true if you're dealing with, you know, anemia or any other things.

Membrane interactions were a lot of the stuff that I still remember and when I was giving talks, I'd still show some of the old slides showing membrane interactions. Interaction between a red cell and a cellulosic membrane, for example. They stick under shear.

You can see them stick right there and the shear stresses go right flat over the cell. It deforms it. You understand why, you know, you end up with troubles from those membranes.

So there's a lot of those discussions.

DWM: (1:02:59 - 1:03:35)

Some of the folks I've talked to about this sort of 1960s time period and some of these meetings said that it was a pretty close-knit community, a relatively small community of

dialysis providers, dialysis nephrologists and dialysis nurses, and that there was pretty open communication about what worked and what didn't work. Like if you were doing something, part of your technology or your treatment and it wasn't going so well, you might call up somebody and say, you know, I just tried this and don't do that. That didn't work out very well.

Was there a lot of openness about mistakes and problems?

EL: (1:03:36 - 1:06:25)

Well, one of the nicest things, and you can actually look at this. Eli Friedman is a, well, you know, do you know who he is? You know, I very love Eli.

But he's very, and he just didn't like the idea of this profit-making stuff at all way back then. Funny, because then later on when I started to work and people would come in from Grace, you'd see what all people were doing, like suitcase kidneys and keto amino acids. All these guys were doing, were trying to sell them to companies, you know.

You get a wonderful perspective when you cross the line into the business world. But Eli, he didn't do too much about that, but he came up and he actually gave us some kudos for the tail end of a paper that was published, very embarrassing the quality of the figures, but it's the albumen paper published way back when. But in there, we did a little first part of it, was to say, okay, how can we possibly create a system by which we could improve care with these measurements?

We were flirting with those ideas. And so we had a little logistic regression thing that showed that we could actually predict the dialysis unit scores based upon a profile of their laboratory stuff. And I can't remember, we basically said that there were 10%, 20%, I don't remember the number, but basically said these are not good, was the inference when we presented the paper.

And for the life of me, I can't remember what we said, but Eli came up afterwards and he thought that was the most marvelous thing that somebody would come up and say something like that. Goes to your point, were people afraid to confess their errors? And I mean, we certainly weren't, not even in a paper like that.

We certainly weren't. And I found that people would say, you know, it just didn't work. We did an IDPN much later.

And that started, I didn't believe it at all. But there are two or three docs who were doing it out in the field. And one of them came up and said, Ed, you really ought to look at this.

I said, it can't possibly help. And he said, you ought to look at this. So we did.

And you know, it wasn't the best, it wasn't the most potent therapy in the world, but it could have been developed into a therapy had the government not killed it. To them, it was too expensive. But it did work.

We published a couple of papers. And that all came from information sharing. If they said, is this a product line that this company ought to indulge in back then, I'd have said, forget it.

In fact, I did. But two or three of them came up and said, we've done it, and this is what we believe in. Okay, so we tried it, you know.

DWM: (1:06:26 - 1:07:09)

This time also is pretty remarkable. I look at medicine today and sort of some of the constraints we have for many reasons on innovation. I mean, this time in the 1950s, 1960s, even 1970s was a time of amazing innovation, in part, I think, because of the smallness of the community and the communication among the people.

But what do you think allowed that to be such a remarkable time of, you know, going from no dialysis to chronic dialysis, life-saving technology, and the ability to make that into a functioning business, you know, that provided outpatient dialysis for thousands of people?

EL: (1:07:09 - 1:14:02)

Well, in some respects, our creativity has been stolen from us. What do I mean by that? Guidelines are nice things to have, but who gives a committee a right to tell a doctor how he should practice medicine?

They wanted, at one point, somebody said, we ought to have guidelines in national medical care, and for doing that, you have to do it this way. And I don't know what they do now, to tell you the truth. But my answer to that question is no.

I said, I'm not going to go down to Dallas, Texas and tell Alan Holl and Tom Parker how to practice medicine down there. They're perfectly competent people. I'm licensed in Michigan, California, and Massachusetts.

I am not licensed in Texas. What gives me the right to go tell people? Now, you'd get people who don't even have medical degrees now reading literature and telling people how they should practice medicine.

You go, I don't want to get too hard on the Kidney Foundation, but there are pages and pages and pages of guidelines and costs that get put together. Now, if somebody does that, and the government says, oh, we're going to do this guideline, and now what are you supposed to do as a poor doctor in a dialysis unit when the government says this is what we expect you to do? And if you don't, we're likely to say that you're not a good person.

We may even sanction you. And if we decide it's illegal, it's \$25,000 and five years in jail for each circumstance of that illegality. What are you supposed to do?

I mean, the creativity in a lot of the medical profession has been stolen from it, in my view. And I don't think, I mean, look, I know it's arguable, but not to me. The KT over V issue is not arguable.

I mean, it is a suboptimum damaging concept in dialysis, as it turned out. And I would be glad to defend that. I'm still competent to do that, at least, in spades.

But you can't change. It's on your UB82. What's the URR?

Same thing as a KT over V, right? It's on your UB82. Government says, we want to have it.

I said, the lines are, you know, look, you ought to use KTs. You've got a dialysis machine. Marketing-wise, it's great.

Nobody else can do it right now. If I were in your company, I'd say it worked good for the business. It works better for patients.

Do it. If I'd have been where I was 10 years previous, that's what we would have done. Well, I don't know.

There's some political things by other consultants in the company. I don't know what the dynamic was. It doesn't make much difference.

But the point is, what he said to me is, they want a URR and a KT over V. What am I supposed to do? Give them a KT just because you or even I think it's a better measurement?

What are you going to do? I say that the creativity of the medical profession has been and has been over time. Now, this isn't a Democrat-Republican thing, right?

Because I can transcend a couple of administrations here. It's been the way our society has decided to move. And physicians have been turned from physicians to some form of technician.

And that's why I would not advise any of my kids. One kid is a, well, Matthew's a PhD-qualified electrical engineer who went to Harvard and now is a patent lawyer. I wish he was building things as opposed to rearranging wealth, but nonetheless, hey, he's probably making more money.

So I think that that's the big thing. I don't think you can lay it off on the small communities. I think it's the big community.

In England, I actually read a paper and did some work on this at one point. In England, at one point, they were telling us in the United States that dialyzing anybody over 50 was a waste of time. It's, you know, you're dialyzing old crows.

Well, they didn't even recognize what was going on. The health service said, we're not gonna buy dialysis machines for you. So they were forced into allocation, like the death committees, because they did not have the ability to have an entrepreneurial solution to the problem.

And so those people just died. And it's a strange thing, because what happened when PD came on the story? They didn't go to get to the registrars in the hospital anymore.

The GPs could now get the PD. All of a sudden, PD in England explodes. It absolutely explodes.

And I'll never forget it at an ASN meeting or one of those things. Tony Wing, who was a big nephrologist over in England, was sitting up there and saying, now we don't have the machines. What are we supposed to do when the people fail on PD?

Because we have absolutely no backup to take care of them. We've made a commitment that we cannot fulfill. Now, those doctors in England, it's an interesting story.

Those doctors in England who were chatting us throughout the 45s and 50-year-olds were merely rationing therapy as a result of their government's decision not to provide the resources. The resources came in and got them in this huge problem with PD. It's interesting.

We did some dialysis units, built dialysis units in the UK. So I got a chance to go around, needle out of the docks and have a good time over there too. But, you know, even then, PD was going 10 years ago.

I don't know what it is now. I don't follow the statistics, but it was going down. And an interesting statistic, I went to the referee and the nephrologist there showed his demographic.

The probability of being on PD was inversely, was directly proportional to the circumferential distance from the hospital. So they didn't have community dialysis centers out in the time. So they were using PD for these people.

They couldn't do home for some reason or other. So they're doing PD. My point is that all of those medical practice things are driven by resources that are being allocated, by rules that are being written.

For a profession who is a reasonably highly educated profession, and despite all the claims against it, I have found that clinical physicians, the ones that I've known, are really pretty ethical, well-meaning people. I mean, they really are. They're not these scurrilous, greedy dogs that people need to control.

You know? Anyway, that's just the way I feel about it. I suppose that other people may look at life differently, but that's me.

DWM: (1:14:02 - 1:14:40)

Yeah, and I think that's definitely an interesting and valid perspective. And it is talking about change in dialysis. The folks in Seattle talk a lot about the things that they found early on in the 1960s, and that they were taking care of patients and responding to what they were seeing in patients.

And they had complete freedom to make adjustments in treatment, adjustments in access, make decisions about those things, and that without that freedom, they would not have nearly made the progress that they made that eventually moved towards the Scribner-Shunt, and the care of bone disease, and the care of anemia, and things like that.

EL: (1:14:41 - 1:15:44)

So we had it, you know? But I found that a lack of knowledge and a lack of experience is no impediment to a strong opinion in a lot of people, you know? And, you know, you get people, I mean, you go to the utilization review committees in a hospital.

Oh, I had to do that at the Brigham. Oh, my goodness. The nurses at that thing decided that a patient must be kicked out of the hospital.

He'd overstayed his time. Dr. Lowery, you have to do this. Patient had arrhythmias.

Dr. Lowery, you have to go talk to this doctor and get this patient out of the hospital. Turned out that the doctor who was taking care of the arrhythmias was Bernie Lowne, who, I don't know if you know him, but he's the pioneer in cardiac arrhythmias. I said, if you think I'm going to walk in Dr. Lowne's office and tell him that he's got to get a patient out, that this nephrologist is going to go into Dr. Lowne's office, who's a world-renowned expert on arrhythmias, and tell him he's got to get his patient out, you're sadly mistaken. Go get the hospital administrator. He can do it. I'm not going to do it.

DWM: (1:15:44 - 1:15:45)

It's crazy.

EL: (1:15:46 - 1:16:41)

But it's, you know, and I had some money, you know, utilization stuff, I suppose, that gets in the way. But it's got to be a better system. But to your point, the Seattle people were right.

They had freedom. They weren't constrained by, well, my URR is this. I mean, KTO of anything is a real travesty.

I mean, people were dialyzed at two and three hours. You know, and Lazarus is telling me he couldn't change the number. But it seems scientific, and everybody got together, and they had a panel, and then, oh, the NIH is going to have a HEMO study, which is so embarrassing.

That goes on for years and years and years and years, and produced thousands and thousands of papers, and not thousands, hundreds and hundreds of papers, and look what the result was.

DWM: (1:16:44 - 1:17:00)

Well, and some of the things we have today are almost happenstance. Like Chris Flagg says that the reason we have three days per week dialysis is that the government, when Medicare was going to start funding dialysis, came out of Seattle, and they were dialyzing people three days a week, so therefore? It's all tradition.

Yeah, tradition.

EL: (1:17:00 - 1:19:04)

It's all tradition. And unfortunately, the suppliers have this problem. Look, if I were the government, and I'm going to argue their position on a money side, I would, it's pretty simple.

I'd say, I'm going to be the X dollars a week. I don't care whether you dialyze them two, three, four, five times. You pick.

You know, in other words, that would count. But, oh, we have more money, we have to do this, and on and on it goes. We didn't have that.

And one of the problems, and then on top of that, you know, the rehabilitation, I worry about this Medicare. The rehabilitation, they're looking at rehabilitation, and you read some of the stuff that comes out of Washington about, you know, are you really getting them a good life or not? The perception is that dialysis patients don't have a great life.

So maybe we ought not to pay for it. I'm not saying specifically, but, you know, older people, but I've heard it, I can't tell you. Most of the costs of care go in the last few months of life.

So how do we do that? How do we take care of that? You know, if you're a business guy, you say, where are my costs?

They'll go look at the costs. It's not irrational. It may be inhuman, but it's not irrational, in my opinion.

So I wonder about dialysis that way sometimes. I have no privy, so. But we are in a regulated world, whether we like it or not, and our freedoms are being taken from us as physicians, and we had a lot more flexibility that way to create.

Who's doing the creations now? It isn't the clinical care sort of stuff. It's somebody in a drug company who goes to somebody other, and, you know, they do it outside of it, or somebody in a manufacturing company.

But the engineers are the ones that are being, you know, MRI is not a medical guy who did that, you know, but engineers. And then we go test it, and things get slow.

DWM: (1:19:05 - 1:19:46)

And it is interesting to hear you talk about how, you know, you had this sort of broad skill set, which was a whole part of your career. I mean, this sort of engineering interest and background, and you developed that skill that you applied to your clinical science. I mean, certainly talking to the folks in Seattle, they, Scribner, one of the things that he was very good at was sitting down at the table with Les Babb, and Wayne Quinton, and people who had skills that were not directly clinical, but applying engineering and other types of sciences to clinical problems.

That is a very unique multidisciplinary group, and I'm not sure we're seeing as much of that anymore.

EL: (1:19:46 - 1:21:29)

True, but it's a management thing, too. I mean, when I was in the company, I told you, this company, what you learn to do is to read people and test arguments. You can't think of it all.

And you want people who have an engineering background, or have a chemistry background, as well as biologists, to come to a decision about something. You know, the engineers and the product development guys always want to develop a product that nobody has any interest in consuming. So you've got to have the marketing and salespeople in there to come to the, and the marketing and salespeople always want to have a product that absolutely nobody can build.

So somehow you have to bring these people together. Same thing. I have this guy who's going to deal with dialyzers, well, I mean, mass transfer.

I mean, any idiot would know that. But I don't know anything about mass transfer. Let's get an engineer in the room.

Well, I don't know anything about how these things operate, but heat transfer is very much like mass transfer. So let's go to the heat transfer equations and see how this all works out. It's, you know, it's like Adam Smith.

Adam Smith, you know, his pin factory thing? Oh, yeah, he said, if you take a pin, if you're going to make a pin, and you're going to draw the wire, clip off a little piece for the head, glue the head to the pin, a man can make nearly 10 pins a day, something to those effects. But if you have, the word is division of labor, one man to cut the wire, one man to draw the wire a month, they can make 1,000 pins a day, four of them.

So, you know, one person gets a specialized skill, and they bring the skill together, and you do it. That's Adam Smith.

DWM: (1:21:31 - 1:21:32)

Didn't know that.

EL: (1:21:33 - 1:21:37)

Very famous, very famous, the pin factory example of Adam Smith and the division of labor.

DWM: (1:21:38 - 1:21:48)

All right. Speaking of people, let's talk about some of these people that have come up, and I want to start back where in the beginning when you mentioned Izzy Adelman, did you actually know Dr. Adelman?

EL: (1:21:48 - 1:21:58)

I would say met. Met, okay. He was off in a physiology lab, and I was over taking care of patients with esophageal varices and electrolyte problems over at San Francisco General.

DWM: (1:21:58 - 1:22:02)

So he was an older, was he an older physician, already established?

EL: (1:22:02 - 1:22:04)

Oh yeah, Frank, I think, trained with him.

DWM: (1:22:04 - 1:22:04)

Trained with him.

EL: (1:22:04 - 1:22:10)

So he was, Frank was a puppy under Izzy's thumb, like I was a puppy under Frank's thumb for a while, and then John's.

DWM: (1:22:10 - 1:22:16)

And where was Frank Gotch in his career when you were training under him? Was he?

EL: (1:22:17 - 1:23:38)

Well, he ran, he ran the artificial kidney center at San Francisco General. It was a little fragmented as to who was in charge of it. I mean, the cardiologists were in one place, and the endocrinologists were sort of treading on the nephrologist's toes in spitting water, as I remember.

I don't remember the hierarchy very well, but it's very clear that Frank ran the artificial kidney center. And he also, certainly we had a lot of nephrology consults that would come to Frank. He may have been the head of nephrology at SFGH, I'm not sure.

I just don't remember. But I don't remember, I remember a ton of fluid and electrolyte problems that I saw with him. And I don't remember, I can remember having seen some nephrotic syndrome and some other sorts of things, but I don't remember that.

I mean, I may have seen a lot, it's been a lot of years ago, but I don't remember that as a major point. So maybe he didn't do the nephrotic syndromes and the hypertension. May have been some other people did the hypertension.

The endocrinologist may have been doing the hypertension. But Frank certainly had all the fluid and electrolytes. You know, my God, and I had more equations into how to calculate a bicarbonate deficit than you can possibly imagine.

DWM: (1:23:38 - 1:23:41)

What kind of fellow was he? What was he like to work with?

EL: (1:23:44 - 1:24:00)

Curious, I don't mean curious strange. I mean, he's a curious guy. You know, and I don't mean that strange either.

I mean, he has a curiosity about it. A curiosity says, oh, I wonder how this works. Oh, I wonder how that works.

Well, what about this? Kind of intense, intense I remember.

DWM: (1:24:03 - 1:24:05)

But he was directly involved with patient care.

EL: (1:24:05 - 1:24:53)

Oh yes. Oh, no question about it. I mean, he was doing some stuff off on the side, but I mean, to the extent that he was doing patients other than on rounds with a resident like me, or a fellow, he had a couple of senior guys, Gary Cardos and Marv Smaller.

Isn't that interesting? I can remember their names. But they were a little, maybe they were senior residents to me, but they were sort of hooked into this kind of a thing.

And I think that both of them went into practice with Frank later on. So, but then Frank left San Francisco General and started his dialysis unit over at Ralph A. Davies Medical Center.

And I don't remember when that was. That was after I left SFGH, made way to Boston.

DWM: (1:24:55 - 1:25:00)

And Donna Mates, did you know her? Did you live with her? Tell me about her.

EL: (1:25:00 - 1:25:34)

Donna, oh, she's a peach. Donna taught me how to do dialysis. We spent quite a bit of time in the back room there with some poor patient, you know, and doing dialysis.

She worked in the ICU and things like that. So she was a dear and valued friend. I haven't seen her in quite a while, but she taught me how to do dialysis.

Wasn't Frank, she did. I mean, he was there to, you know, put the sugar on the cake, but she's the one who taught me how to do it.

DWM: (1:25:34 - 1:26:10)

Yeah, I've talked to a handful of early nephrology nurses and they talk about the fact that the nurses who became involved in dialysis in the 1960s tended to be pretty young because they were the high energy, young, interested in trying new things kinds of nurses, or they were sort of selected to come into it because they didn't have a lot of nursing baggage. And that nursing prior to that time had been a lot of sort of bed-making, hand-holding kinds of activities, but then with dialysis, they became a lot more hands-on. And it sounds like Donna Mates was very much involved in the treatment itself.

EL: (1:26:10 - 1:26:11)

Oh, she was, yeah.

DWM: (1:26:11 - 1:26:14)

Setting up the machine and understanding the treatment itself.

EL: (1:26:14 - 1:26:28)

Yeah, no, she was. She, you know, she's been a real advocate for patients, dialysis patients for most, if not all of her professional career. Donna, I mean, even at Amgen.

DWM: (1:26:32 - 1:26:33)

Did you ever meet him?

EL: (1:26:33 - 1:26:35)

Oh, sure. I didn't know him well.

DWM: (1:26:36 - 1:26:39)

What kind of places did you meet him or see him?

EL: (1:26:40 - 1:30:16)

I think exclusively at the meetings. George Schreiner and I got to be, not, I wouldn't say really, really close, but we had a very convivial relationship when I saw him at meetings. We'd sit down, have a drink, he'd joke and do things about the old days and things like that.

Scribd was into the middle molecule hypothesis back then. And they did a lot of money, spent a lot of money back in those old days looking for middle molecules on Cephalexin columns and stuff like that. And never got much out of it.

But the square meter hour business and things like that, I mean, as I evaluated it, it just, and I can't remember exactly the reasons why, it just didn't seem reasonable. Oh, I remember one of the reasons. We tested a dialyzer for, it was only in an abstract that this thing got published and I don't even know where that was, but for this Abcor company.

And I told you that earlier that it had a very, it was good for small molecules, but it was very permaselective. So urea went across it like nobody's business. We were doing B12 clearances at the time, virtually zero.

Well, as a part of our qualification for this dialyzer and part of our contract with them, I had to dialyze after we'd done our stuff and done our safety testing, which is safe. We had to dialyze three patients for six months each or something like that, four patients for six months each. And we did that.

And then it was later on that we did, we did creatinines and phosphates and all that other sort of mass transfer, but did not do B12 until later on in this dialyzer. And all these patients did just fine. And this thing had no middle molecule clearance to speak of.

So I submitted the abstract and the hampers was still at the Brigham at the time. And I said, gosh, this is just a point, look at that. This is a terrible abstract.

I said, look at that. I mean, this dialyzer just had no middle molecule clearance. He just looks at me and says, I think it's important.

I said, well, why do you think so? He said, well, he said, telogen middle molecules can't be all that important to keep somebody alive, at least not for six months. It's true, isn't it?

The thing had no middle molecule clearance. And I said, yeah, that's true. So I didn't think that was one of the things, one of the observations that informed my opinion that the middle molecule hypothesis, they may be important, but they weren't.

But then of course the NCDS was constructed specifically to evaluate those things with its two dimensions of time and BUN concentration. And as it turns out, time was marginally significant in this study. At least it was sufficiently significant given the circumstances that you can't say it wasn't important, I mean, you just can't.

And which is why I say it was sort of misinterpreted over the years. But in any event, and why I kept my patients on longer dialysis. But in any event, it was really marginal compared to the small molecule clearance business with directed clearance like the BUNs.

Of course, along with the BUNs was the hydrogen ions and the creatinines. And that's all covariates to that sort of stuff. Uric acids, things like that.

It just swamped the middle molecule dimension. But I'd come to that conclusion was, I don't remember exactly when I came to it, but that put Scrib and Babb and fortunately Joe Eschbach and the rest of them, they were cool with that, didn't matter.

DWM: (1:30:18 - 1:30:29)

Joe Eschbach, as I've started this project, people have died. Joe Eschbach is one of the people who died right as I started beginning to record people. Can you tell me about him?

EL: (1:30:29 - 1:31:27)

Oh, he was a prince of a guy. He was so pleasant. He was clinically sound, clinically curious.

Very into the anemia of renal failure business, as you know. He was just a pleasure. He's a gentleman.

You could argue with him. You could agree with him, whatever worked. He was just a very good guy.

And I don't think I ever referred him a patient. I don't think he ever referred, the two of us back and forth and we didn't collaborate on any patients. But, and my association with him was social professional where the social was a part of the professional meetings and things like that.

I have a lot of respect for Joe. I have a lot of respect for his work and I have a lot of respect for him as a person.

DWM: (1:31:27 - 1:31:43)

Yeah, he spent, Erythropoietin, which we now sort of take for granted. I mean, he spent 20 years looking at Erythropoietin and I understand that he did, he was taking care of patients and being a nephrologist and a clinical doc and private practice while doing this research work that's led to, you know, this.

EL: (1:31:44 - 1:32:34)

Last time I saw Joe, they invited me to give a talk, a couple talks of it, in Seattle. And I didn't know it at the time, but Joe was sick and he did not look well. And he came to the talk just to say hello and listen to the talk.

And this guy was dying at the time from his lung cancer. I get a little tear when I think about it every now and then, to tell you the truth. I met, I was downstairs and there was another guy standing at this desk.

It turns out that he was sort of a distant cousin of Joe's. Oh, Dr. Lowry, he said, and I saw his name, Eshbach. I said, you know, he says, yes, he's a cousin, was a distant cousin of mine.

So we chatted about Joe for a while. At least that part of his family liked him too. He was a good guy.

DWM: (1:32:35 - 1:32:37)

Yeah, and where would we be without Erythroputin?

EL: (1:32:37 - 1:34:13)

Well, I'm not sure to the extent that he invented the Erythroputin. In other words, I don't think that he's the guy who synthesized it, but he was a collaborator. But that's okay.

You know, this is something that we need. You know, this is, well, he did Erythroputin. He was worried about anemia and Erythroputin measurements, as I recall.

See, we got interested in this a little bit because back when I was at the Brigham, we used to do routine nephrectomies before transplant. And the reason was we wanted to get those old dead organs out of there so they don't screw up the patient. Absolutely no evidence for it, but that's what everybody decided they had to intuit.

And we noticed when I was there that crits seemed to drop after they took these kidneys out. So we took a bunch of patients and did ferrokinetics on them before. They had their things, just pairwise it.

And it's not a famous paper, by any stretch of the imagination. Appeared in J. Leiblin-Mitt, I think, way back then.

But it certainly stopped the Brigham from doing pre-transplant nephrectomies. And with it, that whole thing just sort of stopped. That, you know, we realized that these dead organs weren't as dead as you might think they are.

They still have some of their own synthetic capabilities. I mean, who knows what it did to vitamin D, for example, at the time. But the rule of thumb, maybe the surgeons just wanted another operation or maybe they really did feel that they're dead organs.

You know, dead organs, hypertension, it does make some sense, doesn't it? I mean, you can't fault them for it. Turns out it was a mistake.

DWM: (1:34:14 - 1:34:15)

How about George Feiner?

EL: (1:34:17 - 1:34:49)

Very affable, in my view. You must understand that I have particularized views of these people, given my associations with them, which could be either right, wrong, or some combination of the two. But from my perspective, George was an affable, pleasant, having fun kind of guy.

I mean, for all I know, when he went home, he was depressed as the Dickens. But from my contact with him, he was that and politically quite astute, living in Washington.

DWM: (1:34:49 - 1:34:49)

Yeah.

EL: (1:34:50 - 1:37:05)

So he made his, you know, I knew Jack a little bit better, Jack Maher, a little bit better. But if I can read George through Jack a little bit, I would say the same kind of thing. And certainly in his older years, George would always come up to the meetings and put his hand on my shoulder and would sit there and BS about things for a little while.

Sorry, Tate. BS about things for a little while. And I, you know, you can't, you cannot, the record speaks for itself.

I mean, if Scribd was sitting there and Scribd was present at some of these organizations, and he was certainly involved in those sorts of things. I mean, I wasn't. I sat on some committees, but I chose particularly not.

That isn't what I, that's not my talent. That's not what I wanted to do. And besides which, when I was with the company, which would have been those years, I was just too darn busy anyhow.

But Scribd, you would remember him not so much for the presidency of an organization or any of the honors that he might've gotten or the fact that somebody's, that ASN has a, you know, has an award under his name. What you remember him for is things like the Scribner Shunt and home dialysis. And if you knew a little bit about him living on a houseboat and things like that.

George, you would remember him, I think, a little bit more as a, as a, as an organizer in a lot of ways. I mean, he was very instrumental in ASAO. And in those organizations.

And he built, he built a program that way. I don't think of, I mean, I've read some of his older stuff, you know, when he was, let's call it his formative and productive technical years. But, but that isn't how I remember him anyway.

You know, I remember him, I remember him as a nice guy who enjoyed a lot of things from our discussions and a guy I respected, both of my respected. I'd rather go have a beer with George than Scrib. Let me put it that way.

No, they were remarkable people. Too bad that you can't interview them.

DWM: (1:37:06 - 1:37:11)

No, that's why I'm left asking people who remember them. What about Gus Hampers?

EL: (1:37:12 - 1:37:24)

Well, he's a hot ticket. Gus is a tough guy. He was very, he's still alive.

I mean, you can find him. Mr. Weintraub, you can catch up.

DWM: (1:37:24 - 1:37:25)

Talk to me.

EL: (1:37:25 - 1:41:57)

Yeah, yeah. But he's, I mean, he's quite bright. He's very dedicated.

He was a good clinician. I mean, Peter Stuyvesant. They were at the hospital and they went around having one of these big rounds.

Peter was having a rejection. And I said, oh, we think it's acute renal failure. We don't, we think it's a renal failure.

We don't think it's, you know, ARF is opposed to rejection, blah, blah, blah, blah, blah. Gus was on rounds. Peter was his boy and his patient.

Gus, they decided they were going to wait a couple of days to see if this was a renal failure or rejection. Gus thought that was the button. Goes back in the middle of the night with a handful of prednisone.

I'm thinking they thought it was rejection because it got all better. Gus gave him a handful of prednisone. He's not a fearful guy at all.

He's, loves his family. He's, we published some stuff together. He's a tough guy.

He understood, understands leverage and finance quite well, although he's not a financial executive. He's very practical. I mean, he'll push people to the wall.

But if it's, we had a lawsuit in Texas with big doctors down there. They basically decided that they were going to, you know, walk away with the clinics and we sued them and beat the pants off them a lot of money. And when that was all done, Gus went back and healed it after we'd beaten him, beaten him badly.

He went back to heal. His feeling was, oh, I need to have a war. You know, very practical guy.

He and I would fight like cats and dogs from time to time. And my position was if we had a disagreement, yes sir, you have an extra star on your shoulder. Maybe me, I've only got an eagle.

You have the authority. And but, and so, you know, but I didn't lose every fight because he, well, first of all, there were some that were just under my purview, not his. But I'm talking about things that are, you know, sort of a company wide thing.

He knew when to back off. And he certainly knew when the argument was logical and that it was probably a better way to go. His was not the better way to go.

So he would do that. But I would not say that this was a sort of my relationship with him. We're always friends and good friends.

At least I hope, I mean, I view it that way. But I wouldn't say that this was all, you know, you talk about the politics of corporations and my feeling was you can fire me any day you want to. And that was okay.

And we survived that way quite well, a lot of respect. I mean, once he gave me an order to do that, I said, well, I may do it, but I haven't decided yet. And he said, this needs to happen.

And I said to him, I remember this on an airplane, we were having a heated discussion. I said, I may do it and I may not, but we'll see. And he said, well, I could just do it myself.

And I said, I'm going to give you the opportunity. Now, how many times you talk to a boss that way? How many times he can get rid of it or get away with it?

And that's not a testament to my arrogance as much as it is a testament to him. Because what it creates is an honest working relationship between two people. When I left the company, that's a story I won't go into.

But when I left the company, he was going up and doing some stuff at Grace and all that stuff. I stayed on as a consultant. We agreed in the office as to what I would do.

And we agreed on what I would be paid. And we shook hands. That's all it was.

We didn't have a contract. When I was doing, Gus is now gone, we're doing it for Zinnia's, it stayed that way. Then they wanted to have a contract.

And I said to them, you know, look, the only thing I want is you can't compel me not to work for another company if that's what I decide I want to do. But as far as I'm concerned, you can tell me or let me go whenever you want. Just let me go, just tell me.

But they wanted it for this. So ultimately, we had a little contract which basically said that.

DWM: (1:41:58 - 1:41:59)

You know? For a while.

EL: (1:41:59 - 1:49:00)

For a while. But that's the relationship we had. There aren't too many people that would go, Joe Blow, I'm not going to say Mott's or Kent or Ben, who would deal with a company that way.

We have to have the contract. But Gus and I grew up in a different time together. And we trusted each other.

And despite the arguments we had, I can never say that I was treated unfairly. I have a lot of respect for the guy. And he was a vicious advocate for his patients.

We were not going to, I mean, but look, it makes sense. Gus understood that good treatment was good business. You don't short shrift a patient simply to make a quick buck.

And here's why, on dialysis. That patient is an annuity to you, isn't it? That patient is current and future income, whether you're a physician or whether you're a dialysis provider.

To short shift the treatment and provide inadequate care is not only in that patient's, not in the patient's interest, it's not in yours. It's true. And I remember, because one of my jobs that I didn't like so much is I had to go talk to the investment bankers and talk with them.

And these guys would talk depreciation and whether we're going to do leases or with the investment bankers, the investment bankers. I mean, I must say that they had a control over a lot of stuff and what they didn't understand was incredible. And I remember having to talk to them one time after I'd done it once or twice.

We developed the patient statistical profile system here, which is now presenting us as knowledge-based. Mike tells me your husband is going to be doing something about that. That's interesting.

He'd be interested in this then. So I, basically I would have to talk to these people and I had to go talk to them and grace about this system that we were building and why it was important. And they'd all sort of glass over.

And so finally I just told, you know, I told them, I said, look, I don't understand why you don't understand that every patient we have is an annuity. What do you think I want to do? Pitch that annuity out the door?

Do I want to treat it badly or do I want to coddle it? What do I want to do with that annuity? And it sounds like a horrible thing to say, but it was an extremely effective communication tool for those people.

Let me tell you how the PSP got started. It's kind of interesting. Knowledge center, I guess they're called.

And it was, we were being acquired by grace. It's on a leverage buyout. The stock of the company wasn't going up.

The financial performance of the company was okay. And so Gus knew a guy who was also with grace and he was on our board of directors, but he got affiliated with grace. And so Paul said, gosh, maybe you need to get together.

As they're talking, and I was the director for national medical care at the time, it was a public company. Maybe you need to get together. And so Gus did this and a little while later, grace came up and said, well, we'll do a leverage buyout of the company.

Well, how are you going to do that? You know, which basically you do, you turn all your equity into debt. Government didn't like that because they did not allow in their costs when you determine, you know, the federal register, they disallowed, they included debt, but they did not allow a return on equity.

So all the equity that we had, you know, if you borrowed things, borrowed the money, you could have the interest, but we had all this equity. And so you're looking for, they didn't allow that. Capital is capital is capital.

It can be borrowed capital or it can be equity capital, right? So we decided we'd do a leverage buyout and that worked out financially. It'd be okay for most of the people in the company and for grace.

But the idea now is now that you have all this debt, how are you going to pay it back? I guess we have a country that's going through that same problem right now, so bingo. So how are you going to pay it back?

So what you do is, this is a financial thing, where if you depreciate what you call goodwill, that is the business interests of something, it was 35 years or something like that, which means that you don't deduct very much from your taxes. And we didn't care about profits. All we cared about was cashflow at the time, keeping cash in the coffers.

So as a part of the leverage finance thing, what we decided we could do is to say, well, it turns out the legal beagles got together. So you have to have a multidisciplinary team, one in particular. He wasn't a legal beagle.

He was a very smart finance guy. So what we can do is we can actually, for each patient in each dialysis unit, we can assign them a value, just as though that value were a machine or a building, which you have useful life for a computer, much shorter than 35 years. So that's what we went ahead and did.

And you cannot just say, well, all of our patients, we're going to lump them all together because it was a rule against depreciating a mass asset in terms of the time. Hate to get too technical on you here. So what we did was to go back, we had to determine what the useful life of the patient's medical record is.

Medical record is only valuable as long as the patient is alive. So we had to determine what the living, what the death rates were in each of our individual dialysis units as a terms of patient's age, race, and all that kind of stuff. And we were already reporting our lab values to the clinics.

That was already centralized and we'd stuff out, we'd do analysis, lab analysis to them. So we had a great little project. We went through and we collected, along with an appraiser, an actuary, went through and collected, had to load up, went to every dialysis unit, put every patient to DOB and all this stuff and collected.

So it was a front end load to that. And that's how it got started. And then we went to each clinic and we said, determine what was the distribution, statistical distribution of death rates and loss rates in each facility.

And some had a Poisson distribution, some had a Weibull, some had exponentials. So each unit had its own. So it's not a mass asset, they're all being treated differently.

And the patients within the units are not mass assets because that's all an age, race kind of a thing. So we did that and we projected it. And we came, I don't remember what it was, I'm gonna say from 15 it went there, from 35 it went down to 15 years on the average more or less, which means that you have massive depreciation, which meant that we got massive taxes.

So the government actually helped to do it. So actually the PSP system got started as a tax shelter.

DWM: (1:49:01 - 1:49:02)

Loading all of that data.

EL: (1:49:02 - 1:56:59)

All that data. And that wasn't all that expensive. I'd been trying to sell this idea around here for a long time, but you know, what's the internal rate of return and how can we do it?

What are you gonna get out of it? I don't know what we're gonna get out of it, but it's gonna work well. I just know it's gonna work well.

Well, what's this? How can you do that? Well, you need to have information if you're gonna take care of a patient.

Well, how much will it cost? Can you show it and get any money? Well, this way we had to go do it.

And it worked very well. Turns out that a number of years later, the IRS came back to audit it. So we had to go back to those same clinics and those same patients.

We were remarkably close, as you might expect from an epidemiological study that has a whole, I don't know, there were probably only 50,000 patients in it at the time, something like that. But a lot of patients were remarkably close. The negotiations with the IRS started and they stopped.

No problem. They changed the law. You can't do it anymore.

It's not a valuable thing. But the PSP got started as a tax shelter. And from the money we got back out of it, so the capital that was required to set up the PSP was actually nothing.

Didn't cost us anything to set it up. In fact, we made money on setting it up. And I think everybody agreed afterwards that the use of having those data available, I mean, I went to Gus and said, as long as we got it, we may as well keep it up.

And I think that everybody agreed in hindsight that it was an extremely valuable resource. You know, it helped us in negotiating with networks. It helped us in negotiating with the feds.

We could talk in terms of hematocrits and EPO. One of the guys said to a friend, Phil Hill, when they were walking into a meeting in Baltimore as we were walking out, one of his colleagues there says, I hate those guys. He said, why?

He said, because they're making too much money. But every time they come in here, I think they're probably right. Isn't that a wonderful compliment?

I mean, isn't that just a wonderful compliment to take from an adversary? I don't mean a mad adversary. I mean, just on different sides of the fence.

This isn't personal. But to have somebody say something like that, well, that's PSP. You know, it's the power of information.

And this information was set up, you see, not just to write papers. In fact, most of the papers that came out of PSP weren't written at all. They were in quarterly and annual medical directors.

Some of it just went to the clinics. But then we analyzed them. And every year, we go through and basically do a very comparable analysis every year to see how the patterns were changing.

One example of that is the URRs. When we first did it, URR was a very, very strong predictor of mortality. As URRs went up, it became less of a predictor of mortality.

Isn't that a happy thing? It means maybe it did something. Maybe something happened.

So we paid a lot of attention not only to what the static associations were, but how the associations were evolving through time becomes very important. And I don't know, but I don't believe that same thing is done here. I mean, I know that they went back and used some of the old techniques that we had, and they just are publishing a paper that was based on one of the things that we did a very long time ago.

But we did it pretty much routinely to see. And then, of course, with URRs, we actually went out to the field, published something in a little journal. I remember Parker said, why don't you send this to the New England Journalist?

I said, well, it'll take forever to get published. So I went into D&T to say, okay, here we have a URR, and this is how we want to do it, and this is what it did. And that also got, I mean, the nurses don't read it.

New England Journal of Medicine, but they do read something like D&T. And they were a more important public for this message than the head of nephrology at the Brigham, and most certainly than the head of the, chairman of the Department of Medicine. And who cares if it's on your resume?

The idea is what's the effect of your work? That was the philosophy behind the PSP. That was the philosophy behind how we processed and used data here.

And they got discussed. Went to the nursing meetings, Ernie discussed them at the nursing meetings. How come the profiles of bicarbonates in your clinic?

I remember one guy, very good doctor, but very, boom, very didactic doctor, noticed that his bicarbonates were way low, so he called me up, compared to everybody else. And I said, Joe, I don't know why that is. I said, but you figured out, you're a smart boy, you figured out.

He said, I think it's a problem with the laboratory. He said, well, they pick ours up on such and such a day, it doesn't, that's the problem with the laboratory. And I don't think that's the case, but I mean, I'll look into it, but I'm pretty sure it's not the case because other people have the same kind of thing.

This was a long time ago, maybe even before the patients, probably when we were just doing the lab data. And I got a call back three or four days later, and he said, Ed, do you suppose it's because I'm still using acetate as a buffer? I said, that might be it.

But that's how the information is supposed to work. You're supposed to have somebody in the unit who cares and who looks at the comparative information across a bunch of people and says, something's wrong here. I'm a good doctor, I don't like this, I know I'm a good doctor, it must be somebody else's fault.

Well, maybe it's not. That's the way it's gonna work. And we sort of built a system that way.

I'm not sure that people, and I want to tell you that because I'm not sure that people look at information the same way. It's to sort of create policy. And again, it's the top-down approach.

The information for us in PSP was not so that we have a superior base over the people who are providing the care. So it was to support them. In other words, here we are, this big company up here, right at the pinnacle.

Take that pinnacle and all these dialysis units and flip it upside down. We're not commanding them, running them, we're supporting them. Why?

These people, they have the licenses in their state. I mean, I don't. Certainly Ben Lipps doesn't.

Mike is a good guy and I'm sure he's licensed to practice medicine and Ray Hakeem. I'm sure they're both very good. But, well, Mike actually may have one in the Carolinas, don't know, but Florida, Texas, Oregon, Washington, does he have a dialysis license there?

No. Ray has one in Tennessee, I'm pretty sure. But I bet you he doesn't have one in Michigan.

So the idea was to support the units, not to lord it over them. That's the best way to say it. Let them decide.

Occasionally, I must say, of all the years I was here, I only had two people, two doctors in dialysis units, remote ones actually, both of them, that were really a problem. I let them go and I remember one case, the lawyer said he was gonna sue us and I said, do it, but here's what you're gonna confront. And I sent him the average stuff in his dialysis unit.

I said, this is good, this is bad, ask your own doctor, get your own consultant. The lawyers didn't say, don't say anything. And then I circled his units for the past year.

And I said, we can show that he's known this and it hasn't happened, he just isn't there. I said, I gotta do it. And never heard another word back from him.

Never got sued. So, it's so rare that you have to do that.

DWM: (1:57:02 - 1:57:51)

Well, I think it is the benefit of talking to, for instance, you and getting this historical perspective on your role in building this company and where the company is today. Or people who began dialysis in 1960, so look at where we are at dialysis today and to understand the courage that it took for patients and nurses and doctors to work through the 1960s and the 1970s problems we were having and how some of the things we take for granted today, whether it's the Knowledge Center or the timing we use for dialysis or KT over V, how, what the thinking was that got us there today and understand that people, all of these things have come out of people trying to solve problems and deal with problems and support a system of patient care.

EL: (1:57:52 - 1:57:54)

Mostly unrestrained from the top.

DWM: (1:57:54 - 1:57:56)

Yes, yeah.

EL: (1:57:56 - 1:59:19)

You know, if there were to be one message out of that, I think that's it. I mean, I just know too many docs who say they'd love to do this and love to do that, but what's gonna happen when the state surveyor walks in the door, you know? And the amount of pain that they can inflict upon you for no good reason is incredible.

It doesn't do any good to say, well, look, here's the problem with this. Oh, this is what our guidelines say. Doesn't do any good.

And to change the, oh, here's what DOKI says. How long is it gonna take you to change DOKI? Any piece of DOKI.

It's a static document. There's static standards that are living in a dynamic environment. Doesn't work.

The system's broken. And the system is broken basically characterized by a lack of trust. The bigs do not trust the people who are actually in the trenches.

Where the action is, it's the general or the president doesn't trust the colonel or the lieutenant, sort of a thing. You know, you just can't run a system that way. They tend to get quagmired and broken because the people at the top can't possibly understand the detail that the people at the bottom see.

DWM: (1:59:19 - 1:59:23)

And the dynamic nature of it is also quite difficult.

EL: (1:59:23 - 1:59:33)

Things change. So that's our problem with our system. That's why I'm glad that I participated in this some years ago.

You know, getting old has some advantages to it, you know.

DWM: (1:59:35 - 1:59:49)

Well, what do you think will be the next important thing to happen for dialysis that'll really make a difference for patients and patient quality of life, patient survival or dialysis or chronic kidney disease today?

EL: (1:59:50 - 2:04:14)

Frankly, I don't know. You know, the stock answer is, well, more frequent dialysis, frequent home dialysis, that sort of stuff. I just don't know.

But you gotta understand that a piece of plastic through which water flows and blood is not a kidney. The kidney has more functions than that. Alan Hull likes to say that he used to think that all we need to do is dialyze people more, you know, using, let's say, hollow fiber systems of some sort or other.

And I said, Alan, I don't think it's that simple. And it isn't. Your dialyzers don't make vitamin D.

Your dialyzers don't. There's a whole host of synthetic functions that the kidney has. And even in its simple excretory function, you know, the relationship between creatinine and urea clearance in a dialyzer is not the same as it is in a kidney.

And I think it's irrational to assume that you can fix it with an artificial, with a kidney. But to me, I mean, so if you're a young person, you're always looking in a therapeutic decision as a trade-off between its downsides and its benefits. And for example, well, some years ago, I had prostate cancer.

So I looked at this pretty carefully. And, you know, and I must say, I mean, I opted for surgery, but I was 55 or 56 or 57, something like that. I'm pretty sure, and I knew it at the time, that if I were 78, I probably wouldn't, for all the reasons that you know probably better now than I do.

The same thing is true for renal failure therapy. And that is that if you're old enough and under certain circumstances, or if there aren't any other opportunities, or if the opportunities are sufficiently perilous, then you opt for dialysis. But there's no question to me that you would opt now, provided the situation is right.

It may not work, but you ought to take a shot at a transplant. Now, there may be some, I mean, it's still not normal. At least as far as I know, people are still taking a bunch of poisons in order to keep that kidney going for the most part.

And they have their own side effects. So it's not a free lunch. It isn't like, it isn't even possibly as good as somebody with one of these fancy prosthetic limbs.

I mean, these guys are running marathons, functionally. And although I'm certain it's very inconvenient, their functionality at least appears to be quite good. The risks are relatively small.

But the risks of the transplant, no matter how good you are, still has the overlying risk of the medications that are required. But I think that that is less, at least I would think, and I haven't thought about this in any detail in a while, I think that that's probably less for, let's say, a 30-year-old than trying to spend the next 40 years on dialysis. On the other hand, if you're 75, and depending upon your health and some other sorts of things, maybe you ought to consider staying on dialysis.

You're going to die one of these days. There's this whole issue of competing risks, you know? So maybe you ought, and I'm not saying 75 is, and I'm not quite there, but I'm almost, I'm not saying that that should be their decision, but under certain circumstances, maybe.

Or maybe the situation is such that immunologically there's some screwy thing. But I don't see a real breakthrough. I mean, maybe frequent dialysis would work well, but you have to deal, and certainly for some people, but you have to deal not only with the getting on dialysis and getting off dialysis.

I mean, there's a certain social impediment to doing all of that kind of stuff, and a certain risk. I mean, as far as I know, they still haven't fixed the access issue. So, you know, you've got all those sticks, and maybe that works, and I don't like these little ports up here.

They tend to get infected. We all argue about them, you know? But things sort of go in a state of flux.

But I haven't seen a lot of movement. And I have to say, I haven't read a lot of renal journals lately.

DWM: (2:04:15 - 2:04:17)

So what have you been doing lately?

EL: (2:04:17 - 2:04:17)

Me?

DWM: (2:04:17 - 2:04:18)

What are you doing in your retirement?

EL: (2:04:19 - 2:10:32)

Well, I had a great experience. I decided I wanted to fly a fish, so I'm not a great fly fisher. My lady friend's son, or son, actually makes fly rods, makes dual fly rods.

They're very good fly rods. So I get a little professorial help there every now and then. But, you know, I like to do that.

I'll probably start tying flies. It's a nice way to learn some entomology. I grew up with some of these guys, my God.

I mean, people get impressed with themselves about what they know about medicine and things like that. What some of these guys know is just incredible. Some of these old outdoor rednecks and things like that, I mean, when you sit talking about what they really like to talk about, their knowledge base and their ability to think about it is great.

Anyway, I went up and last, just fun time, there's this thing called Project Healing Waters. They're for vets that come back from the war and they have something wrong with them. And they go through a post-traumatic stress disorder, something I got to read about medically, got to read about that.

And, or injuries, amputations, one blind guy. And a bunch of volunteers from the Sebago Tribal Unlimited chapter go out to one of the VA hospitals. Then they all meet there and they teach them how to tie flies and teach them how to cast fly rods.

So they do this thing once or twice a year. And we went up to, well, they went up to a very nice river, the Rapid River in Maine, 18 miles down a dirt road and stayed at a camp. And this is not a Hilton-type camp.

It was a pretty rough camp. And for some reason, I ended up with three, in a cabin with three of the guys, one of whom was basically blown up in that, in that, when they hit the mess tent in, in, I can't remember where it was, which city it was in Iraq. But anyways, he got blown back 30 feet.

And the other couple of guys had some issues. Pleasant guys. And we're sitting out in the stream teaching them how to fly fish.

It's a wonderful experience, a wonderful medical experience. I mean, they, I'm standing in the middle of this stream, water's going by with this guy who's blind. I walked him out to the spot.

I said, started to, it was bushes not, so I could just see myself going back and forth, getting this fly out of the bush. So I taught him a little type of a cast so that you don't have to worry about that. So we went all through this stuff and he says that, he said, it's nice of you to show me if I can't see anything out of that side.

So I went over to the other side and I started doing this. I can see a little better, but not great. So I stood behind him and I was just starting to think how to do this.

I stood behind him, right behind him. And I took his hand in my hand, put the rod in his hand. I said, do this.

And then do that. And he said, I want you to go over here, right off your right shoulder, right off the nose. And then I want you to count to 10 or 12, whatever it was.

I watched this drift to the fly. And we did this, I did that maybe a dozen times with him. And he got it down pretty well and he laughed.

He said, I wonder when you were gonna figure out how to teach me that. I said, look at this guy in the middle of the stream, you can't see. He's standing, this water's going by.

And I thought this guy has more nerve than I do. And there was a newspaper that came up. Same fellow.

He said, I love to come up here. And I said, why? Why do you love this thing?

And he told the reporter, he said, because I go home and I see all my friends and people and they tell me, you can't do this and you can't do that. I come up here and say, I want to do it. And all they say is, let's figure out how.

Isn't that nice? I mean, for a doctor, that is a very, very, very rewarding experience. And another young man, he was very, his affect was just flatter than a pancake.

And he was sort of acting out. He was okay fishing and he'd fish before he was injured. As he said to the same reporter, he said, well, my job was to, I thought he had some medic experience and maybe he did, but he said that my job was to find IEDs.

And mostly we'd find them before they'd find us, he said, but occasionally he'd find us before we'd find him. And he said the last one was a bad one. And he was out for a long time and he had some, it was difficult, he was just almost like rigid acting.

And so we fished with him a couple of times and we were talking back and we were talking a little bit about his injury. And he said, yes, he'd been out for a while. And I used to do and teach karate.

And I did a guy was a priest who had a receptive aphasia. And I remember this guy, I mean, he really rehabilitated himself. I mean, I thought that I was going to be in for noodles when he came at me, but I decided I better defend myself pretty quick.

And so I told this, gave a story. It was sort of, you know, pep him up a little bit, you know, world is not all you're coming along and perhaps that other people have done this sort of a thing. And he said, yes, he said for a long time, I knew that people were talking to me, but I couldn't understand what they were telling me.

I said, see, well, that's what you had. And I said, but you sure do understand me now, you're making progress. He sort of did his best to smile.

And then I noticed that he was picking up a little more forced affability during the thing, you know. The last day he comes up, put his arms around me, said, I want to take a picture. I mean, you know, you just can't get paid enough for those kinds of experiences.

So anyway, I like doing that kind of stuff. I like hunting, you know, I go down to the range and shoot bullets that make a lot of noise, punch holes in targets, that kind of stuff. Read a lot of books, read some books, you know.

I really don't miss. I mean, I miss, I still think a lot about my patients. I really enjoyed the business stuff.

But every time a little thing comes along, I start pushing away, you know. I start to say, I don't want to review papers. You know, I keep pushing away and I'm happy with that.

You know, there's life after this kind of stuff. But it was a good run. It was a fun run while it lasted.

DWM: (2:10:33 - 2:10:37)

I really appreciate you sitting down and talking to me about all that and remembering all this.

EL: (2:10:37 - 2:10:41)

Well, I appreciate the opportunity to do it and also give me an excuse to see my grandkids.

DWM: (2:10:42 - 2:10:48)

Wonderful. Very good. Is there anything else you want to add that we didn't talk about?

I mean, you just did great.

EL: (2:10:48 - 2:10:54)

No, I just, I wish I should have, you know, reviewed things a little better or something before I could put the dates together, but.

DWM: (2:10:54 - 2:10:56)

No, and that's the whole purpose. I mean, it's not a.