VOICE EXPEDITION INTERVIEW TRANSCRIPT
The Oral History of Nephrology
RICHARD HAMBURGER, MD
Interviewed by Dugan W. Maddux, MD
July 9, 2008

DWM: It is July 9, 2008 and today I am talking to Dr. Richard Hamburger. We are conducting his interview in Dr. Hamburger's home in Indianapolis, Indiana. Dr. Hamburger received his undergraduate degree from Villanova and attended medical school at Jefferson Medical College. He remained at Jefferson for residency training and renal fellowship. Dr. Hamburger has practiced nephrology at Indiana University School of Medicine. He has had a career interest in home dialysis therapies and is nationally known for his work on physician reimbursement issues. He is now Professor of Medicine Emeritus at Indiana University.

Dr. Hamburger, I thank you for letting me come to Indiana to talk to you today.

RH: Well it's nice of you to come.

DWM: Great. I just want to start out by talking about where you were born and raised.

RH: Oh, I was born and raised in Philadelphia. I'm the second of four boys. We lived in Philadelphia until I finished fellowship.

DWM: Right. So Villanova was a very easy place for you…

RH: Yeah, well my older brother went to Villanova. I actually won a scholarship. I was going to go somewhere else. I won a scholarship.

DWM: What was your scholarship for?

RH: Academic scholarship.

DWM: Academics. So where had you gone to high school?

RH: LaSalle High in Philadelphia.

DWM: Okay.

RH: Well I mean I was then the second of four boys to go to Villanova so it's not too strange.

DWM: All right. And when did you decide that you were interested in medical school?

RH: I don't really know the answer to that because I've always wanted to be a physician. I can laugh; I went to a parochial school, a catholic school, and I can remember in second grade when the priest came in to give out report cords, it shows it's a different era then. He said, how many of you boys are going to be priests and all these hands went up. He said, how many of you boys aren't going to be priests and mine was the only hand that went up. He said, what are you going to be? I said, I'm going to be a doctor, whereupon the nun, whom we'd never seen laugh before, had her head down on the desk howling in laughter. And the priest said, well you know that's an honorable profession what's this all about and she said, I didn't know they came with the handwriting.

DWM: So your handwriting was not too good even in the second grade.

RH: Ah, no.

DWM: So very early on; so when you went to Villanova you had thoughts that maybe you were going to end up in medical school.

RH: Oh, I was a premed.

DWM: Premed.

RH: Yeah, I mean I truly said all the way along the line. So I have no idea why I wanted to do it. I kept dreading having an interview when somebody would ask me why I wanted to be a doctor when I would have no idea why I decided I wanted to be a doctor. But I guess the best answer is that you reaffirm it along the line and that's… But I always feel blessed because I knew what I wanted to do and most people didn't.

DWM: Right.

RH: And I was able to do it and most people weren't.

DWM: Right.

RH: So, you know, I was lucky.

DWM: So you go through Villanova, you have your premed degree and apply to medical school and no problems.

RH: _____

DWM: Smooth transition into medical school?

RH: Oh, medical school was a lot harder than college. I mean I wasn't playing in three basketball leagues in medical school. So yeah, I mean you know, I guess along the line there were a couple of professors even in high school that taught us how to learn and then hit medical school and put it to use.

DWM: Right.

RH: Because I remember the first year of medical school as being a lot of work.

DWM: Right. And academic work, which you were prepared for, I mean you'd been a good student all along.

RH: Yeah, I had been a good student _____.

DWM: And then you would have started doing some clinical work along your way in medical school, third or fourth year.

RH: The usual. Yeah, we did third and fourth year but I mean the usual. The system's changed from then till now but it's not changed that much.

DWM: And you stayed then at Jefferson?

RH: Yeah, I took my internship. It was the first year in Pennsylvania they had straight medical internships.

DWM: What do you mean by that?

RH: Prior to that they always had to be rotating. So our year, I graduate from medical school in 1962, and that was the first year that you could have a specialty internship and it changed a lot of the educational patterns in Pennsylvania. Hilariously the law required that everyone have obstetrics so I started my internal medicine residency, what we call residency now, delivering babies.

DWM: So prior to 1962 you could not have said, I want an internal medicine residency?

RH: You had to take a rotating internship first, in Pennsylvania; only to get a Pennsylvania license I mean.

DWM: All right. So you were able to stay internal medicine but you had to do some OB/GYN?

RH: Oh, it was just… Yeah. I mean that's how I started my medicine residency.

DWM: First rotation?

RH: First rotation.

DWM: So you get through internal medicine, where along the way did you see any renal patients? What was happening?

RH: Oh I started cutting my teeth on that as an intern.

DWM: An intern. What did you see?

RH: Acute renal failure.

DWM: Acute renal failure.

RH: Yeah, and we did peritoneal dialysis in the intensive care unit and at that point, intensive care units were really relatively small, they were small.

DWM: Right.

RH: And so I guess I cut my eyeteeth on it as a PG1.

DWM: As an intern.

RH: Yeah.

DWM: So, acute renal failure patients in 1962 what would have been the typical causes?

RH: Oh lordy, I don't remember. The ones we were seeing weren't trauma. I don't remember. I mean gee. I can't answer that question, I don't remember. Because, I mean, we did both acutes and I can even remember as a first year resident putting a peritoneal tube in somebody who had chronic renal failure just buying time and sent him out to not eat or drink and he came back promptly, you know, a few days later in pulmonary edema and told me he didn't drink very much but did eat a whole watermelon .

DWM: Some things never change.

RH: Some things don't change.

DWM: So what were the PD catheters like and what was peritoneal dialysis like in Philadelphia in 1962?

RH: Oh, well, our first part was before the Stylocath and those kinds of things so we had to put a trocar in and then a tube. And I'm trying to remember when the Stylocath came out. I think that was '64. It might have been '65. Martin Roberts was the name of the inventor.

DWM: Martin Roberts. So, this trocar that you put in was a metal trocar?

RH: Yeah, well you put a tube through it and then you took the trocar____.

DWM: Out.

RH: But I mean it was a gallbladder trocar, literally what it was that they had used for cholecystostomies or to drain the gallbladder even when they are doing cholecystectomy to make it easier to get it out.

DWM: Like a percutaneous tube?

RH: Yeah.

DWM: So the tubing that you then put in through the trocar was a …

RH: It wasn't Silastic because that wasn't around. Or it was around, just coming around. It was plastic.

DWM: Plastic. And how did they work?

RH: Ah, there were bottles. The bottles were 1.5% glucose and 7% glucose so you made 3.25 by mixing the two and, I mean, it worked. We would do hourly exchanges or thereabouts. You know, bottles up, bottles down.

DWM: Yeah. Were you really, as the physician or the intern, involved in doing the exchanges yourself? Did the nursing staff step in?

RH: The nursing staff did them.

DWM: Nursing staff.

RH: Yeah.

DWM: So you would put in the catheter and write an order...

RH: And you did a lot of hover… there was a lot of hover time.

DWM: What were you hovering for?

RH: Well because the things leaked, there were a number of problems. You know, it worked yes, it beat a lot of the other things but there were problems.

DWM: So leaking?

RH: Leaking was the chief problem.

DWM: Leaking at the trocar site? The catheter site?

RH: Yeah, the site. We used to put a pursestring around them. A pursestring suture around them. If they were really acute they would be hemodialysis. I didn't get involved in the hemodialysis till probably '63 or '64. But I mean I even went to the… as a …. before I started my fellowship I went out and did something. I went to Scribner's chronic dialysis meeting in Seattle in 1964. I realized that Jefferson then only had a couple of chronics and went out there to find out that so had the rest of the world, only a few chronics.

RH: No, I mean even before I entered my fellowship I went… One of our pathology professors was a Penn chronic dialysis patient and I went with him out to the Scribner's first chronic dialysis meeting in Seattle in 1964.

DWM: So what do you remember about that meeting?

RH: Well the chief thing I remember is that there weren't very many…the people with the big names, or what were the big names; didn't have very many patients either on chronic dialysis. I mean that's where I first saw my first home dialysis patient because they had made the…. It was the first home dialysis patient. They put us on a bus and we went to a home.

DWM: And what did you see there?

RH: Well the Sweden Freezer mixer and the Kiil dialyzer and the patient who was self-care dialysis.

DWM: Did it look workable to you? I mean…

RH: That's a hard statement to make. It was working so it was workable. It occupied a fair amount of space but it beat the alternative. I mean the alternative was death so it beat the alternative. They had had only so many patients on in-center and they began the home program just before that. I mean the shunts were awful. I mean those of us that had to bend Teflon understand, on a mandril some of the difficulty with those things.

DWM: So at this first meeting in Seattle in 1964 that you went to they showed you a home patient.

RH: They took us to a home to show us.

DWM: Took you to a home. And did you also see their in-center dialysis?

RH: Oh yeah. Oh yeah.

DWM: And were they talking about new things that were happening?

RH: It was all new then. It was all new then. They were talking about what was happening, you know, and people had the same kinds of problems most places. I mean patient selection. They had the who shall live committee you know. But patient selection and problems with volume and problems with delivery and leaks. The east coast used coils and the west cost used Kiil dialyzers or, you know, I've even used a couple of other dialyzers, I'll have to think of the name of them.

DWM: Right. So in Pennsylvania in 1964 when you went out there, was there any chronic dialysis happening back in Philadelphia?

RH: It was just beginning.

DWM: And did you go with the intent of, gosh somebody's got to figure out what's going on and…

RH: It was new, novel and exciting so I enjoyed it. I mean I think you're putting more into than I would put into it then. It was new. It was expanding. It was a tinker era in dialysis. If you knew something that worked better than somebody else or they had a problem and we tried this, don't do it; we tried this, do do it. You know, those kinds of things.

DWM: Yeah.

RH: You couldn't do it today. You know, you'd have to have informed consent for everything you did and go through an IRB and we wouldn't have any dialysis today if we had to do that.

DWM: Yeah.

RH: You know, I realize the reasons for IRBs and everything else but some of the changes would… I mean, quite honestly, this would never have occurred if you had to go through all of today's research format.

DWM: Yeah. I think that's been a general consensus that I've heard repeatedly. That people were very open about mistakes that were made and things that did not work and they were very experimental and looking at patients and saying how can I solve this problem and trying new things.

RH: Well, give an illustration; if a patient died the family apologized because you tried doctor. I mean it was not today's world. Well because the expectation now is that everything will go well and you and I both know that is not true and that the disease takes its course. But, I mean, so it was a different era. In a research era it was a lot of sharing. The ASAIO meetings, for a lot of that, there was an awful lot of communication that was verbal, not just what was in the program. Even today looking back a few years ago at some of the old ASAIOs, you know, a lot of that material would not make it to the program today for a meeting, I mean, it was…could I use the word, crude. It was pretty crude. But the dialysis was pretty crude. You talk about… we measure blood flows now, we measure dialysate flows. We did them by rule of thumb then. You couldn't even get a lab back promptly so it, you know, the procedure would be almost over by the time a stat anything came in. All fellows learned to run a flame photometer because that way you'd get a potassium.

DWM: So, yeah, you could do… that was really the one thing that you could do _____.

RH: That was the one thing we could do promptly.

DWM: Yeah. Let's back up. We haven't quite gotten to fellowship yet. Let's go back to that internship time, that early time where you're doing peritoneal dialysis. So you're keeping people alive with acute renal failure.

RH: Either acute or acute on chronic, I mean, I don't remember that much. I think some of them were acute on chronic _____.

DWM: Were there people going home on peritoneal dialysis?

RH: No, we didn't.

DWM: Yeah.

RH: Lee Henderson did at Penn, which was on the other side of town. I think he had people at home then.

DWM: Okay.

RH: It was about that time, it would blur but it's somewhere around that time.

DWM: Time. So what made you, along the way, decide that you were going to do a renal fellowship?

RH: As I said, it was new, novel and exciting. I had this question about what I wanted to do. I did not know what I wanted to do. Like most physicians, the decisions on what you end up doing the first part is made on what you don't want to do. And I knew a lot of the things I didn't want to do from my student rotations and house officer rotations and I was down to cardiology versus nephrology. Well nephrology was a wide-open field. There were none. I mean it wasn't even called nephrology then so.

DWM: Yeah, what would it have been called at …

RH: Well it was called renal.

DWM: Renal.

RH: Yeah.

DWM: And would most of the renal… Like when people talk about renal in the 1960s and renal fellowships and renal programs, it seems to me mostly they're talking about renal physiology.

RH: Well the section chief was in renal physiology, Larry Wesson. He'd been with Homer Smith so, I mean, that's exactly what it was. At Penn I think it was fluid and electrolyte. But I mean the American Society of Nephrology hadn't been formed. The National Kidney Foundation did not have that name. So I've lived through all those.

DWM: Right, which is why I'm here today.

RH: The first meeting of the American Society of Nephrology was 1967, I think, in '67 or '68.

DWM: Right.

RH: I've been to all of them but I don't remember.

DWM: So these early meetings that Scribner had, this chronic dialysis…

RH: Well that was one.

DWM: Would have been really right at the beginning of people gathering to talk about …

RH: To talk about long-term dialysis.

DWM: Yeah. Okay.

RH: And they demonstrated that you could send someone home on home dialysis and it was down the line, I'll think of the contract program, Ben Burton's contract program, had PHS grants for home dialysis but that was then in the later 60s and showing the feasibility of it. The economics were better for home dialysis than they were for in-center, still are really.

DWM: Right.

RH: So there were a lot people, I mean, at Jeff at the time before I left there we hadn't sent anyone home. I mean, the units were small. I mean, now there were not very many people on dialysis in the United States.

DWM: Well during your renal fellowship then at Jefferson, I'm guessing you had to do a fair amount of renal physiology and that would've been maybe the bulk of your work, how much dialysis did you do?

RH: Well, I was a NIH clinical trainee at that point.

DWM: Okay.

RH: The NIH had funded the program so I was truly a clinical trainee. I've got a mental block, hold on a second. John Capelli, who later was a president of the RPA.

DWM: Right.

RH: Really was doing renal physiology, he was a college and medical school classmate, was really doing renal physiology with Wesson and I was doing clinical work so I did clinical work for that. Remember, the programs were shorter and the whole training program was shorter. I mean, if you took what was called the short track you entered your fellowship early and fellowships were, you know now they're two and three years, then they were one and two and this was one. John was on two, I was on one.

DWM: The one; the clinical track.

JH: The clinical track.

DWM: Right. So you would've been doing dialysis. You would've been one of the main people providing dialysis.

JH: Oh yeah, we mixed the bath.

DWM: Yeah. So tell me, if somebody came in and they had to have dialysis, did they move from their hospital, their room, to a place in the hospital where dialysis was provided?

JH: If they were in the intensive…yes, how about yes. But it was a small room. The hemo access was a cutdown on an artery and you threaded in what was called a tapered catheter, which was good for a dialysis , two catheters, arterial and venous.

DWM: Did you do the cutdown?

JH: Oh yeah.

DWM: So at the bedside?

JH: It was bedside.

DWM: Doing a cutdown.

JH: Doing a cutdown.

DWM: And you mentioned you had to bend your own Teflon.

JH: No, that was for the chronics.

DWM: For the chronics. So you're just putting…

JH: You put a shunt in…

DWM: You're putting a temporary…

JH: A temporary access in. A temporary access at the time, this was before the percutaneous Seldinger technique, was a cutdown on a vessel and slide a tube in so the number of dialyses you could do was really limited by access.

DWM: So that tube went in, at the end of dialysis it came out.

JH: It came out.

DWM: So you were pretty good at cutdowns?

JH: You had to be pretty good at cutdowns.

DWM: And who set up the bath and the machine? So, tell me what that involved. What did you have to do?

JH: Well, I was east coast; we were using coils.

DWM: Like a Travenol twin coil?

JH: Travenol twin coil and it was called the coil at the time. There was no other version of it other than the coil. I don't remember whether it was a twin coil. I don't think it was a twin coil at the time. But, you know, that coil cost $59 then, to give you an idea of price. They were handmade and you set it up, you primed it, you made the bath, you stirred it up.

DWM: What did it take to make the bath and what kind of tank was the bath in?

JH: 100-liter tank.

DWM: So you have a 100-liter tank.

JH: You have a 100-liter tank.

DWM: And a coil.

JH: Coil. You mix it up. Well we bought the salts from a company called, I believe it was, _____, or that may have been the replacement for the company at the time, later replacement. You know, you put the salts in, you…

DWM: Did you measure out your own salts?

JH: No, they came in packets.

DWM: Came in packets, pre-measured.

JH: Pre-measured. And actually for a while, we bubbled CO2 through you found out it was one of those things that didn't make any difference.

DWM: Yeah.

JH: And I mean you found out a few tricks. You had to change the bath half way through the dialysis; it would get green, a real lime green color.

DWM: What caused that?

JH: Some kind of uremic toxin that's colored. No one ever identified exactly what the color was. I don't think it's been identified to date exactly what the funny color was. But, I mean, so it dialyzed and it would turn a strange shade of green. But you change it half way through so that you had a diffusion coefficient. And you learned a few tricks like don't run the hose over the blood, it causes immediate hemolysis. You know, because all of us had done some stupid trick some where along the line. You know, getting interrupted while you're doing something and so that was a standard. It was a six-hour procedure.

DWM: Six hours. How many dialysis treatments do you think you would typically have done in a week?

JH: Four, five.

DWM: Maybe one a day.

JH: Four or five. Yeah, roughly one a day. Well we had one chronic patient. By that time we had one chronic patient so that patient was being dialyzed, well initially, once a week. So I mean we're back to that era. Enough to keep them from dying.

DWM: So that patient would come in to the hospital once a week.

JH: Yeah, and be dialyzed.

DWM: Be dialyzed. And for that patient you had put in a shunt?

JH: That was the shunt that I learned to bend and, you know, the patient… I didn't place the … The shunt was surgically placed but those little pieces that you had to take off to do each dialysis we had to make.

DWM: Hmm.

JH: So, you know, you had a heated mandril fundamentally on a Bunsen burner the Teflon to bend it to make those things. You'd learn not to crimp it because if they crimped it the doggone things clotted. You know, that was replaced about two or three years after that with the Silastic piece that you could put over it and two little pieces that went inside that were Teflon. But I mean the whole shunt originally was Teflon.

DWM: Right. Was clotting a big issue?

RH: Oh Lord…Oh yes.

DWM: What did you do about that?

RH: Well you learned how to handle a Fogarty catheter, which was fundamentally a biliary catheter and pull the clot out. Open the shunt and put a catheter up it and pull back the clot and try and put it back together again.

DWM: Hmm.

RH: And put it back together again. But you had to do it fairly promptly after clotting because once it became a real firm clot you had a hard time doing it. So it was a middle of the night phenomenon. If it clotted you declotted it in the middle of the night.

DWM: Yeah. How did this one chronic patient do?

RH: Well she would never have been your choice of patients because she was not the world's most compliant individual. So she didn't do very well because of volume problems. And you couldn't get that much fluid off. I mean she could put more on than you could get off; not strange for today's world when you start to think about it. So, things haven't changed. I don't remember but she died after I left but not long after so she had about a couple of years of life.

DWM: Okay.

RH: Her daughter; used to beat her daughter with a cane, do this, do that. Pardon me, she would address her daughter with a cane telling her what to do.

DWM: So was there any thought during, this would have been, I guess, '64.

RH: '65, '66.

DWM: '65, '66. Was there any conversation about a chronic dialysis program bigger than one patient.

RH: Oh yes and that was the era in which they started to expand. It was after that meeting. The problem was where do you put them, how do you do it and these were the problems that were being addressed at the time. How can you pay for it? So that's when the chronic dialysis units started to happen. They were then beds like Seattle I think was 10. I should remember but I think Seattle was 10 in a unit. So five was a big number and four was a big number and sizes like that. My clinical mentor, Jim Clark, left Jefferson after I did but about a year after I did and went to a local hospital where they would do it; set up a program where Dick Soracelli was a fellow a year ahead of me in Chester County, Pennsylvania outside Philadelphia. Because the universities weren't willing to take on that kind of a …

DWM: Well, yeah, was Jefferson thinking that they had any obligation to provide chronic dialysis or…?

RH: Wait a second. When you're a house officer, do you know what the university is thinking?

DWM: So you have no idea.

RH: No idea.

DWM: They weren't… they weren't moving in the direction of trying to…

RH: They weren't moving… They expanded the unit, the size in the hospital so that you could do a couple of people so it went from one room across the hall to a bigger room and had space so that you could actually do the set up so it made it easier and you could do it. I don't know, probably could have done two patients… I don't remember whether we were doing two patients, I really don't. But they had expanded it but they weren't going to be building a large…

DWM: Chronic dialysis…

RH: Chronic dialysis unit, because no one could afford it. You know, I mean it was not in the, how do you say, in the cards.

DWM: Where was PD? We started out talking about, you know, as an intern _____.

RH: Well, PD was still the main thing for buying time and it was done in the ICU. So it was the mainstay, not hemodialysis.

DWM: How did you decide whether someone got PD or hemo for an acute?

RH: I don't remember. I mean let's put it this way, it was PD unless you couldn't for an acute episode. I guess if your belly was rendered asunder you weren't going to get PD.

DWM: Therefore you got hemo.

RH: Yeah.

DWM: So the first choice was PD.

RH: The first choice was PD.

DWM: The second choice was hemo. So how did you get from Philadelphia to Indiana?

RH: The President of the United States and my fellow countrymen requested my presence in the Army. With seven months left in my fellowship I was reclassified from 2S to 1A so I called up my draft board and I said I'm much more valuable to you in July and the lady who ran it said, yes you are, whereupon I got a six-month deferment with seven months left in my fellowship so I went shopping for jobs. And it's a real long story that I don't think anybody really cares for but I mean… So I was looking at both Army and Navy because I had not been in the Berry Plan. When I was an intern, the first few months of intern, we had to sign up for the Berry Plan, which was the deferment plan. I wasn't sure what I wanted to do so I didn't sign up during the time period. So I had taken a large number of _____physicals through the next three years and when I got this change I knew I was going to go so I went with Jim Clark asking his friends, said where are nephrologists needed. I knew where the offerings were and had opportunities in both Army and Navy. I had gone down to, I think, Walter Reed, no, down to Army which was in the Navy building, the Surgeon General's Office and out to Walter Reed and then I never heard back from them. Well it turns out they took a guy named Robert Schrier. But I thought I was going in the Navy and then I got hepatitis which was dialysis-related and I couldn't take my Navy physical and I called them up and I said I can't come in, I'm yellow, I'm hospitalized, I'm yellow and she said to me, they all say that. I said, I'm really yellow. I had double-digit bilirubins. My comment to all our young colleagues is you don't want to get hepatitis because I was hospitalized with what would now be called Hepatitis B. My wife brought in the, I think it was the New England Journal, which had the first description of dialysis-related hepatitis while I was getting worse and it described the death of a nurse.

DWM: Hmm.

RH: It didn't help me.

DWM: No. So let's stop then for a minute and talk about how you got hepatitis.

RH: We were mucking around in blood. The coil required priming. Well you couldn't get a new unit of blood every time you were doing it for someone so we started to pump blood into bags and we really weren't taking what would be considered universal precautions.

DWM: Pumping the patient's blood into…

RH: Yes.

DWM: So you were reserving it for the next treatment.

RH: Reserving it for the next treatment and then putting it back in. As I said, we ended up mucking around in blood because coils would rupture. I can remember saying in December, somebody's going to get hepatitis out of this and, yes, it was me and that was in February.

DWM: So what was your course of hepatitis like? How long did it last and how sick were you?

RH: Ah, I don't know how you could quantify it. Let's put it this way, I lost 15 pounds in eight days. I got sick. I got double-digit bilirubins. I mean I came home one night, I was dragging and I urinated mahogany-colored urine and I said, I have hepatitis. So I did. A couple of days later I was jaundiced. At that era they hospitalized you. As soon as they had a diagnosis they hospitalized me and I wasn't jaundiced then. A couple of days later I was completely jaundiced. I don't remember what my SGOT was but somewhere in the thousands.

DWM: So how long did it take you to recover?

RH: Well there is a question as to whether I ever recovered. I mean, you know, I mean that's the last time I can say before that that was in any kind of good athletic shape. You know because, at that age… But I was out of work six weeks. I mean I couldn't … I used to go in by train and I couldn't walk to the train. I mean I would get sick and tired. I took a Navy physical during that time to go back to the service. I took a Navy physical with a bunch of Wharton School seniors who wanted to go to OCS and one physician and I had to take a bus to go to the Athey station in Philadelphia from the train and it was only four blocks. Of course they asked me, in this physical, they asked me if I wanted to… you know they said drop down and do 10 push ups and I went _____. They picked me back up and said, not you, and the rest of them had to do it. There were a bunch of other things they had to do for their physical that I didn't. They said, do you want to pass now or come back later. I said my labs are fine. I'm just not back to work yet. I'm still fatigued. I said, I'll pass now. Then I had a choice between Army _____ I found at an ASAIO meeting that I had been assigned to Brooke to the Surgical Research Unit, which was better known as the Burn Unit but renal was then at the Surgical Research Unit at Brooke and that's the old Teschan Korean War Unit. I met a guy who was there and I said, no I'm going in the Navy. I hadn't had a word from either one of them. So we stopped Dr. Teschan and told him this story. He got a little upset about Army personnel people couldn't get people in the Army that the Army wanted and asked me to call, and this was a Friday or Saturday, it was a Friday and it was about 4 o'clock and he said there won't be anyone there at this time. It was 4:30.

DWM: So when you saw Dr. Teschan you were at Brooke? Where were you?

RH: No, I was a fellow.

DWM: So where did you see Dr. Teschan?

RH: At an ASAIO meeting.

DWM: An ASAIO meeting.

RH: Yeah.

DWM: So you stopped him and said, I can't get into your Army.

RH: _____ No they had Bob _____ who said something and we stopped them and Bob _____ said you're suppose to be with me at Brooke. And I said I haven't heard anything from the Army yet.

DWM: Ah.

RH: Dr. Teschan wasn't…

DWM: Happy.

RH: Happy about that kind of thing.

DWM: No.

RH: And when I called on Monday it was apparent that someone had called earlier. This story gets longer but it's not worthwhile. I was at Brooke for two years.

DWM: Was Dr. Teschan there when you …

RH: No, no. He was at Walter Reed Army Institute of Research.

DWM: Okay. All right.

RH: Jim Knockel.

DWM: Spell that.

RH: Knockel.

DWM: Okay.

RH: Is it K or H?

DWM: I can look it up if I'm close.

RH: Big in potassium if you want to…

DWM: Okay.

RH: You're going to edit some of this. But, big in potassium. Jim Knockel was there and we did some heat studies. You know, physical training in heat.

DWM: Mm hmm.

RH: Radio-labeled potassium and all that kind of stuff. I can tell you that I knew my body potassium then because we were controls. But at Brooke they could only do acutes, but we got acutes. At that point, that's 1966. I was there from 1966 to 1968, which is fundamentally the height of the Vietnam War, the couple of Tet Offensives.

DWM: So were these Vietnam soldiers who got flown into _____ ?

RH: Not really. We got them from the rest of the country because there was an acute renal failure unit in Saigon and … Who was here the first year, Andy …. I got the name… Hopkins. There were two nephrologists in Saigon. Jim Donadio from Mayo and Andy _____ from Hopkins were there the first year. _____ who was at Knoxville and I don't remember who was with him the second year we were there. But there were two nephrologists in Saigon.

DWM: Hmm.

RH: And that was not pushed from Walter Reed but, you know, there weren't very many. Put it this way, there were no nephrologists in San Antonio in the city. There several at Wilford Hall, the Air Force Hospital, and there were several of us at Brooke. But there were none in the city of San Antonio. I mean when I say it was a different era so…. It always amazed me because we were not allowed to get a Texas license or to practice in Texas because there were too many military in San Antonio for the doctors there. But I used to end up seeing, with the residents, a fair number of poor people with renal failure. I never did figure out what happened to the people that had insurance, they probably went to Houston.

DWM: Hmm.

RH: Because there was renal care in Houston. But, I mean, that was a good two years in an academic research type environment and so that when finishing in the service I said I was interested in academic medicine but we'd make a go of it. Well I couldn't afford… three children and another one on the way. I couldn't afford to go to either coasts or Chicago so I went looking for places and said that we would do it for … came and liked IU and its potential; Indiana University and its potential and said we'd do it for three years or, you know, give it three years and if we liked it we'd stay and this is 40 years later.

DWM: What about Indiana University?

RH: What about Indiana?

DWM: What did you like about it?

RH: Again, liked the things in nephrology. It was a school that was changing, meaning growing, and it had a good future for somebody that was interested. I liked the chairman. I liked the section. I joined Stuart Kleit.

DWM: Ah.

RH: In this and he'd been there a whole year before me. But it was going to grow.

DWM: So how many nephrologists were here at the time you came?

RH: Actually there were two at the VA and two at the university and one in Methodist Hospital in the city and there may have been one other in the state.

DWM: A little bit few and far between.

RH: Yeah. They were few and far between. We would get patients from all over the state with acute renal failure shipped in. I mean, like, Indiana is long and not as wide and we would get them from Evansville and anywhere. I mean there weren't very many places. At that point on chronic dialysis we only had a few patients and they were all going to be transplanted.

DWM: Right. So this would have been 1968.

RH: '68.

DWM: So there's a little bit of chronic dialysis going on, it's in-center, it's people coming into the …

RH: Into the center.

DWM: Center.

RH: And the center was small. I think three stations or four, maybe five, I don't remember exactly. I can describe the room. But we began in-center. The VA had funded dialysis, by that era, and the VA program was growing and Dana Shires, who recently died but ultimately went to Tampa, was doing that along with a guy named Kent Bradley who is long dead.

DWM: Yeah.

RH: But everyone was going to be transplanted. No one was going to be going on chronic dialysis of course. If you got a transplant then typically you lived or died with it. It had been that way at Jefferson before I left. If you got transplanted you either made it or you didn't.

DWM: It either went really well…

RH: Really well…

DWM: Or it was a disaster.

RH: But you didn't go back on dialysis.

DWM: Right. Right.

RH: So it was a lifetime…

DWM: Decision.

RH: Decision.

DWM: Right.

RH: But if you're a patient, it wasn't much of a decision because the alternatives were terrible. But I liked the academic thing. One of the questions would be if your interests were clinical would you be a full member of the academic community. In some schools that was not true. It was then true at IU, really still is but more so true even then. We were going to be permitted to use our resources to do whatever we needed… I mean the Chairman then was John Hickam and he told Stuart and I to go get known. Which was, I thought, an interesting comment if you think of it in today's world. He said, no I mean, they would clearly have preferred the route of having large NIH grants which neither Stuart nor I were going to be able to get. But otherwise we were told to go get known so we had the blessings of the department to go do things as long as it didn't cost them anything. Some things haven't changed.

DWM: True.

RH: But, if you were in control of your own section's finances then, which they aren't any more, you know it didn't cost them anything because it cost you something. So we were able to… It was a good time. But back at that time there was no payment, no ESRD program from medical disability and we could… George Applegate had shown that you could do, at Methodist with a PHS grant, that you could get people on home dialysis so we started home dialysis. I don't know how many we ever got at home at a time. I have a slide that shows 117 patients on home dialysis at one point, I think that was 1977. But I think we got up in the 120s at one point.

But I have a slide showing 117 so somewhere in that range. But we could do home dialysis. We had the state of Indiana to be a funds of last resort to pay the costs, by the way, not the physician costs but the costs for home dialysis.

DWM: So the state of Indiana was willing to step up and provide some…

RH: Step up. The State Board of Health.

DWM: The State Board of Health.

RH: Made a committee, certain requirements, etc. fiscal to augment, to step in. This is prior to Medicare.

DWM: Right. Did patients have to come up with a certain amount of money on their own?

RH: I don't remember how much they had to come up with, depending on what they had for resources.

DWM: You think they had typically some financial responsibility?

RH: I think they had… See the insurance companies wouldn't cover it either. So I think most of them had insurance or something but I don't know that they had to have anything. It was a good program. I mean it funded enough to get by on. It was funding dialysis; it wasn't funding all the care.

DWM: Right. And these people that would go home, you began then in the late 1960s training people to go home…

RH: Probably around '70.

DWM: How long would it take to train them?

RH: Oh, not very long. Depends on… It was in the early 70s, come to think of it, by the time we got there, probably '71 or '72. We got good at it. I mean we went through and changed the machines a couple of times. But we still have some of the same nurses. We found a few things; that you get most of your training done in the first hour or two because after that they don't remember. Now that has not changed. We could train people to do… they all had partners. We could train them to do it and it took about 20 dialyses, more or less. You know, my comment is if you wanted to do it you didn't have to be able to read and write, although it was a lot easier if you could read and write.

DWM: Right.

RH: And we used to swear you could train a well-motivated chimpanzee on it, that's _____ not true but you could have if they were well motivated because they wanted to learn. You know, a dialysis machine of the era was a lot simpler than any automobile you drive and a dialysis machine of today is a lot simpler than any automobile you drive and so it doesn't take much to learn and all you have to have is a 16-year-old with a learner's permit to understand some of the problems that are associated with that including the part that a lot of home training programs don't understand now that at somewhere you have to let them drive on their own.

DWM: Right.

RH: And that's hard to do for a parent with a 16-year-old with a new driver's license and it's hard to do with a home dialysis patient and we tried to have them do a dialysis in the corner by themselves before they went out. When we went to peritoneal dialysis we had one of the rooms built that had a door, they went in there and they did it. That way there was confidence on two sides, our nursing staff and the patient. So we could train a lot of people. The coil dialyzers were easy to set up and run at home. We used a RSP and then we used a big 200-liter tank. It wasn't that hard to train people. But again, the question was motivation, if someone wanted to learn. The people who lived, I mean there weren't dialysis units on every corner, and the people who had to drive a long way and wanted to keep working and do this and do that wanted to go home because dialysis was something they did to go about the business of living instead of something they lived to do. The same principles of today; in the home dialysis era. If your patient… because you don't teach your diabetic, you don't give them all their insulin shots if you can teach somebody to do it then they can do it well and on their own, they will do it better. They still won't comply all the time. But we have a lot of people on home hemodialysis. In the state of Washington and the state of Indiana we have large home hemodialysis programs. You know we didn't have the large dialysis corporations. Well they weren't called that then but…

DWM: They became that.

RH: They became that, yeah.

DWM: In this time where you're building your home program, it sounds like one of the selection criteria is you had to have somebody that was motivated enough to do it, you had to have somebody that had some support, somebody who could help. I mean, they can't …

RH: They couldn't do it by themselves.

DWM: By themselves.

RH: So we… I don't remember initially whether we taught self-cannulation. Initially we started with shunts, if my memory is correct. But I mean then fistula… We tried fistula because remember the Brescio fistula is a 1968 phenomenon.

DWM: Right.

RH: So we tried, there were fistulae and they would be stuck; typically by the partner. But because the coils blew up and things like that you had to have somebody to get them off. Initially we didn't even have water treatment at home. I mean hard water in Indiana. We had softeners and that takes care of the hard water syndrome but I mean we've seen things like the hard water syndrome because the softener ran out. It certainly wouldn't meet today's standards.

DWM: What is the hard water syndrome?

RH: Well, Indiana has very hard water; it has high calcium, magnesium and phosphate. Chiefly the calcium and magnesium. It would look like they have the flu, with red eyes and just sick, just, you know, you quickly get to recognize that kind of thing. And, you know, we would be dialyzing against hard water. You know, Seattle worked for chronic dialysis without water treatment because their water was so good. It would have been an abysmal failure in Indiana because we have limestone.

DWM: Right. Isn't that funny, just the geographical difference.

RH: Right.

DWM: Impacts treatment.

RH: Impacts treatment. In Philadelphia the patients would have fevers at the end of dialysis, it was water related. I mean, now I know.

DWM: In patient selection then there's this issue of motivation and there's an issue of having a partner in support, were you making selections based on diseases, based on age?

RH: Oh, there were no diabetics.

DWM: Who made that decision? I mean, did you just accept that as…

RH: We accepted that as a program because fundamentally they didn't live long enough and so we didn't do diabetics and there was a _____ age cut off. And you know, again, it was largely in support of transplant. Transplant was going to be the savior of everyone rather than dialysis. I don't remember what the age was. I mean we probably were 45 for an age cut off

when we started. We had a who shall live committee but it wasn't so much of who shall live, it was a question of whether the people were capable and whether we had resources.

DWM: Did you have people that you had to turn down at some point because you just didn't have the resources? They would have qualified otherwise but you were just full. I mean, you had no resources?

RH: Oh I'm sure we did but most of it was based on… I mean taking the people you could get done. Sure, I'm sure we did because psychologically, I mean, we don't want mother to die, well does mother want to die? I mean some of the same questions today. But I mean they were younger and there were questions about work; could you keep working, could you keep… Because all we had paid for, in my memory, was dialysis and so you could have dialysis paid for and lose a patient.

DWM: Yeah.

RH: But we had a very interesting committee. We had a chaplain on it. People would, they would, meet with a psychiatrist beforehand to know how well they would do with a chronic illness. It turns out we didn't turn down anybody so I mean I guess we were trying to find out if they were overtly psychotic and most internists can pick that out and be_____

DWM: And that's another issue is, do you think there was some selection just from out in the community, doctors who just didn't send you people?

RH: Oh, absolutely. You didn't get people that were, how do you say, terminally ill with cancer or those kinds of things that we knew. And since diabetes was known to be, not being cared for, we didn't get diabetics.

DWM: So there's even pre-selection before it gets to you.

RH: There was pre-selection.

DWM: Yeah.

RH: You still hear of some of that in Great Britain.

DWM: Yeah.

RH: I mean the people tell me it's not true but you still hear some of it.

DWM: Did you have people who just decided, after learning about dialysis, that this was just more than they could do?

RH: Yes.

DWM: I mean how was their lifestyle on dialysis? Was it difficult? Was it…

RH: Well there was no EPO. We would transfuse if hematocrits below 15. I said hematocrit, not hemoglobin. We weren't taking people with … I mean we were taking younger people who didn't have as much coronary disease. If they had that they might have had a hematocrit of 20 and they were getting a couple of units of blood a month. Some people were, I can't say all were because some would stabilize at hematocrits of between 15 and 20. But this was the pre-EPO era so they were dragging. I don't know a better word for it than that. You know there were some survival features that you… You couldn't take an elderly patient and run them with that low, they wouldn't make it. So it wasn't impractical to say, here's somebody we can care for and here's somebody we can't care for. So I mean, let's put it this way, I would not have qualified for a program at this age.

DWM: Right. How were your outcomes with that early group?

RH: They did pretty well. I mean, I don't remember the statistics on survival. We did not have very many deaths on dialysis but we were dealing with a younger population. They were clearly not as well dialyzed as today. I mean the clearances weren't the same as they are today.

DWM: How often were you dialyzing them at home?

RH: Thrice weekly.

DWM: Three _____

RH: Actually most of the people at home or a lot of the people at home dialyzed every other day. I mean they were suppose to be dialyzing thrice weekly but a lot of them determined that every other day was much better and since your costs were only those of the supplies nobody ever argued about it. And they found out a number of other things. There were a few things that they found out that we didn't want them to, nor did their spouses. That is that alcohol dialyzes and it was like, we can have a party out and then I come and dialyze and I won't have a hangover.

DWM: What dialyzers were they using? Were they using coils?

RH: We were using coils.

DWM: Coils.

RH: On the west coast they were using Kiil boards. They would make them once a week and keep them in formaldehyde. We were using coils and then twin coils and then there were a number of other coils that came along after that you know but they… The 135s or 145s, I don't remember the number, but they were coils. As they changed the mesh and made the coil thinner so that it didn't expand they didn't blow up as much and they had better clearances so they got smaller and they fundamentally got cheaper. Some of this was an economy of scale. You even learned back then you have to buy well for a dialysis facility to survive. I mean, we used more saline in the dialysis facility than the whole hospital would use and so you can't afford to buy from a hospital, you have to buy from somewhere else or you're really in the red. No, I mean a lot of the things, lessons were learned in that era because you didn't have any dollars to work with and so you had to work with them to do well by it. But the training unit developed and I think we had 10 stations in the training unit.

DWM: That's a lot.

RH: That's a lot.

DWM: That's big, yeah.

RH: And, as I say, we could train a lot of people.

DWM: Right.

RH: And then it would run as a training unit in the first shift and as a maintenance unit in the second. We found out when we mixed them up it didn't work. That you couldn't train in a maintenance unit, it didn't work very well.

DWM: Why?

RH: I don't know exactly why because _____ would be on get them on, get them off. People looked and said, oh that's easier. It is short term easier, long term hard. But we actually took all our people that were going in the maintenance dialysis and put them through a portion of the home training so that they were knowledgeable for in-center dialysis, at that era, which made it an awful lot easier. They understood what was going on. It wasn't something being done to them but rather something they were doing or a part of. They were part of the solution.

DWM: Right.

RH: It was much better for patient care. Much harder to do today. I mean we send people to class but it isn't the same. I mean were dealing with a different patient population, the median age is 65 and that was not true then.

DWM: Right. What was happening with peritoneal dialysis?

RH: Well it sort of declined because it was easier to do a hemodialysis. When we got the Seldinger technique for putting in lines it was easier to do the hemodialysis. We still did, you know, peritoneal dialysis in the intensive care unit through probably the early '70s was the mainstay. And then with the Seldinger technique it got to be hemodialysis and peritoneal dialysis declined. Then when Moncrief and Popovich did the CAPD thing it came back up. The slide I said had 170 it was 17 hemo patients was where I had it before and how it shifted over to peritoneal dialysis. But I went to Austin and saw Jack and he told me, don't start doing this Dick till we get it in bags. And I went to Dimitri Oreopoulos and _____ training thing. We're talking about adding something into our training program. And Dimitri was doing it in bags and so…

DWM: What year would this have been about?

RH: '78, '79.

DWM: Okay. So…

RH: Late 70s, '78, '79, somewhere in there.

DWM: Okay.

RH: And so we started to do peritoneal dialysis then as CAPD but the bags were roll up, you know, and peritoneal … I mean we even sat in on the original peritoneal dialysis registry. I've done some of that, these registry bits for a couple of these things because we needed to know what the rates were. I mean our original peritoneal dialysis rate was an ambulatory peritonitis rate of one every five to six patient months but the system has improved to where we're now dealing like one every 28 patient months.

DWM: Right. Definitely much better.

RH: Oh yeah, now the infection problem is what I call lethal lines which are…

DWM: Hemodialysis…

RH: Hemodialysis accesses.

DWM: Right. Let's go back to 1968, '69, '70. You come to Indiana University and you're clinically involved with the dialysis, the hemodialysis program, who are you talking to? What meetings are you going to at that time?

RH: Well ASN had been founded.

DWM: But now it's not dealing with dialysis much.

RH: No.

DWM: No. I mean it's the academic…

RH: I didn't deal with that at all. No, no, because the day before the ASN, I don't remember what year it was set up, was the clinical program. Earl Ginn set it up. We had a number of presentations at it and it got so big that the ASN had to incorporate that into the program. Earl was then the… It was an NKF meeting. I don't know what Earl was in the NKF at the time but it was Earl Ginn's meeting.

DWM: The clinical meeting then, that's the NKF meeting right before the ASN, what kind of things would they have been talking about in the early 1970s?

RH: The how to's is a better way of wording it than anything else. You know, newer devices. The ASAIO had more of the newer devices and access but outcomes, you know, how to's. We had X number of patients on dialysis. Even things about transplant but mainly a lot about dialysis. I don't have those books any more. I used to have them. I don't know where they went to. I probably threw them out.

DWM: But you would definitely try to go. I mean, they were helpful.

RH: Oh, I went.

DWM: Yeah.

RH: They were useful. It was not try to. As I said, I've been to all of the ASNs. I went to all of those so we went to those and they were weekend meetings you remember.

DWM: Who would have been speaking? I mean who were you interested in listening to? Who did you perceive at the time really had a lot of information for you?

RH: Seattle group.

DWM: Scribner mostly?

RH: Yes. Well, you know, Merrill, Scribner were the two big names and George..,

DWM: Schreiner.

RH: Schreiner, were the three biggest names at the time.

DWM: Were they getting along? Were they saying things that were in line with each other? Were they disagreeing?

RH: Oh, well there was a time when they had a controversy of which was the better dialyzer between the coil people and the Kiil people. And , you know, most of that was, how do I say, it was a lot of nonsense. But I still think there were people talking about better ways to, you know, a better mousetrap and things like that or how to do this. I think there was a fair amount on hypertension in the group and volume control and all that. I don't remember all the details of it, I really don't.

DWM: Well …

RH: But, I mean, it began as a half a day and then it was a whole day. It nearly attracted as many people as the ASN whereupon they promptly put in… The ASN looked at the landscape and understood this was what a large number of their members were doing and came in, you know, and put it in. But that was 70s, late in the '70s if my memory is correct. The second half, anyway, of the '70s.

DWM: There has been some discussion among people I've talked to that there was sort of an east coast contingency and a west coast contingency.

RH: Oh absolutely.

DWM: And here you are right in the middle of…

RH: Absolutely. That's why we could look and say some of this was hogwash.

DWM: You had a good perspective…

RH: Because we were right in the middle. We were using the east coast dialyzers which means the coils as opposed to the Kiils or the older dialyzer we had used a couple of times was called a McNeil Collins which was another plate dialyzer. But we had a Kiil and just didn't run it very often because it had to be assembled. Some of this was on the surface area, you know, and the cut the Kiil board differently to get triangular points of contact and they did this… I mean all of this kind of stuff was being reported at the time and, you know, my apple is better than your apple kinds of discussions on the east coast/west coast phenomenon. If you're sitting in the middle you sat and laughed at it.

DWM: I gather also there was a difference in philosophy, sort of the east coast being, we're going to provide dialysis but our whole goal is to move to transplant which is the better treatment.

RH: Yes.

DWM: And then the Seattle program which said, we believe that people can live a long time on chronic dialysis and…

RH: Well that's what I'm saying. I mean when I told you that I guess we were more east coast, our patients were going to be transplanted.

DWM: Transplanted.

RH: And we were selecting transplant candidates for dialysis. We knew that everyone wasn't going to be transplanted however so that there was a little bit the two and you were trying to provide not just a bridge to transplant but longevity for; we had no idea how long.

DWM: Right.

RH: And that's, you know… Remember we were doing twice a week dialysis there and then it skipped to three times a week. When we went to three times a week dialysis the patients complained. You know, I've got to do this three times a week until they realized that they weren't so weak at the end of dialysis. Now if you're here three times a week dialysis you hear the same complaints about dialysis now. It's nearly as bad as it was with twice a week dialysis or even worse with once a week dialysis. You know there will be less of that as we get closer to the deity model so I'm an advocate of more frequent dialysis because I've been through the once a week, twice a week, thrice a week and they were based on the ability to survive at the price, and I say, at the price because they were cost related.

DWM: Right.

RH: You know, you could say facility and all that, it's all related to cost. In today's world a lot of it's related to personnel. They aren't there to do in-center dialysis for a long time, six days a week or seven days a week, so I mean I'm still an advocate of self-care dialysis and there are a couple of versions out there now and I don't know what's best. You know there's the wake up, wash up model and there's the overnight unattended dialysis. I know that I would not do well on long-term overnight unattended dialysis because I'm a flipper. I would foul that machine up royally. So I would not be a good… I mean I might be a good candidate other than the fact of my sleeping habits.

DWM: Let's go back again to the 1970s and talk about… We talked a bit about the ASN. Were you also attending the ASAIO meetings at that time?

RH: Yes.

DWM: And what was going on at those meetings?

RH: ASAIO was more different machinery and different way. I mean the shunt, the new shunt stuff, etc. was presented at the ASAIO meetings.

DWM: Do you remember that? Were you there?

RH: Yeah. Yes. You know, don't ask me what year.

DWM: Did you see the… Was the shunt a big deal?

RH: Oh hemo access has been a big deal for the entire time, still is. So I mean the people went from the total Scribner shunt, total Quinton version which was Wayne Quinton had and it was all Silastic, I mean all Teflon then the Silastic and Teflon and then the different ways of doing it. Every year there would be more on access. If there was a new product to be brought out like a different kind of coil, it would be at ASAIO. The ASAIO meetings had a lot of new information, machinery, you know, almost all of your standards for hemodialysis equipment come out of ASAIO.

DWM: Hmm.

RH: You probably know, John Sadler was forever on the committee looking at machines. I think he finally is off it. But all of the standards that, you know… There are no standards for those machines, the original machines. I mean they wouldn't pass hospital electrical standards today. The plugs were wrong. I mean, but they worked. They bought people time. They bought people quality time. You know unfortunately for a chronic illness it does not go along a straight line of high quality of life and then fall off but that's why the east coast philosophy is we're bridging time to transplant because transplant will be the therapy and the argument was which was the better therapy. You know, at the time, you can honestly make the statement that transplant was the chief cause of death of great dialysis patients. You know as much as I don't like, that it's true because, you know, the drugs were not as good and people would go down. Some would do very well and some wouldn't. There were a lot of problems between transplant surgeons saying nephrologists are hiding patients, hiding their best patients. They're waiting till they get sick before they'll send them for transplant. I'm sure some of that is true based on their experience with that transplant program. And the patients wouldn't go for transplant because the ones that came back for… You know this is a little later than that, but the ones that came back to the dialysis program didn't look too good.

DWM: Yeah. Right. When it didn't go well or fail…

RH: When it didn't go well that didn't help the guy sitting in the next chair.

DWM: Right. Right. In 1972 when Congress passed the amendment to the Medicare law which provided funding through Medicare for the end-stage renal disease program…

RH: Well it really enabled people to be considered disabled. So it truly is an amendment to the disability provisions of the Medicare Act. It's only one sentence long; Public Law 92603. It qualified people for being disabled and it qualified, you know, based upon Medicare eligibility but it could be your parent's eligibility or your spouse's eligibility. So it was different than other disability provisions and it gave it time and all that. I'm sorry, I interrupted you.

DWM: No, no, that's exactly it. What did you think of it at the time? Did that make a difference in your practice of nephrology? What did you think would happen?

RH: You mean when the thing was passed.

DWM: Yes.

RH: We went, wow, good, now we need to see the regulations because we knew that the law doesn't do anything. It's the regulations that do it. I was then president of the, then existing, North Central Dialysis and Transplant Association which is a regional thing and we'd have meetings for instruction. Because most of our nurses, etc. couldn't get to national meetings, they got to regional meetings. The southeast was the biggest of those. We were suppose to have the regulations on our 1973, I think it was '73, it was either '73 or '74 whenever they came out, program and they hadn't come out yet which really fouled up our program. We got them in a plain brown paper envelope arrived in the office, the draft regulations.

DWM: No fanfare.

RH: No fanfare. No. They hadn't been released yet. They called a meeting. This is interesting. We called a meeting of people that were suppose to be at, the physicians anyway, that were suppose to be at that meeting and said we'd have a meeting at the O'Hare Hilton because they had a copy of the regulations. People came from all over. Nothing like calling a meeting that quickly escapes you and becomes something else. So that was actually the foundation of the Renal Physicians Association.

DWM: So you all had gathered at O'Hare.

RH: O'Hare Hilton, yeah.

DWM: Thinking that you were going to hear about…

RH: Oh no, no, no. We knew we had the regulations. We told people we had the regulations.

DWM: And who came?

RH: Golly gee, they came from Seattle, they came from… I mean the people in the region came but people came from all over, from Las Vegas, from Seattle, from…all sorts of people were coming because we had the regulations.

DWM: How did you get them?

RH: As I said, they came in a plain …

DWM: Why to you?

RH: Well they came to Stuart or me. I think they came to Stuart. Because we were suppose to have had them…we don't know who sent them. Okay. It was not one of the great… probably not one of the grand leaders but we were suppose to have somebody from there speaking at our meeting a couple of months earlier, a month earlier, and I'm sure somebody felt sympathetic to us and sent us this thing. So they were out. You know, so the regulations were out before… it was preprint. But it came in, as I said, an unmarked plain brown envelope with the regulations.

DWM: So you're holding the regulations and all of a sudden there's this…

RH: We could read the regulations and all of a sudden, you know, everybody was waiting for them. So we called this meeting and said that we now had the regulations and we'd do the business we said we'd do at the meeting. And, as I said, they came from more than the Midwest area, the north central area of the Midwest, because there were a lot of provisions in there. Everybody was trying to figure out… You know you don't have a business model if you don't have a set of rules so you couldn't figure out what you were going to do till you had a set of rules. We didn't know who was going to be covered, what was going to be covered, all that other kind of stuff. So that was the early part.

DWM: So did you read the regulations? How did you share the regulations and what was the response at that meeting at the O'Hare Hilton to the regulations, that preprint of the regulations?

RH: Well a couple of things. One, I don't remember all of them but one of them was that the original proposal was for the initial method of payment for physicians which meant that they

paid the dialysis unit and the dialysis facility, which chiefly was hospitals, and they paid you which was against the law in some states. And contracting with a hospital was an impossible situation at the time so I mean there was the ability to respond and out of that came promptly the alternate reimbursement method, which was the predecessor to today's payment method for physicians. I don't remember the other details that were in there that were interesting but there were some that required comment.

DWM: So was there disgruntlement when they heard the regulations generally or… ?

RH: Well, with that provision there was. But, no, I think it was more information and sharing of information. And it was acknowledged by the physician group that there would have to be an interaction between, what was it called then, it wasn't HCFA, it was Medicare, Social Security. And the people who knew the business, if you wish to put it that way, or the thing wouldn't fly so there was a back and forth between physicians and Medicare. John Sadler took a lead on a lot of that and so did Chris Blagg. Blagg had testified in front of Congress before. So, I mean, there was a lot of information there. It was perfectly obvious down the line that we needed a registry to know what we're doing and that was an interesting thing to sit on. I mean, I have to laugh about the first 2728, now all nephrologists know what a 2728 is. But the first 2728, with all the things, was purely an entitlement document. I can remember my comment sitting there at that table was that it had to be 8 ½ x 11, it couldn't be legal size because physicians filing cabinets weren't that big. Since it was an entitlement document it was an entitlement document. And so the first one was 8 ½ x 11 because anything more than that couldn't be filed. Duh. And everything was paper, I mean, we're not talking about computer times. So you know you had to have an entitlement document, you had to have a number of other things and so the 2728 came out of all that to and from part. So there was a lot of… And you needed a registry; well whose registry. Medicare said they weren't going to do it; Social Security, I'm sorry, it wasn't called Medicare then. Social Security wasn't going to do it. NIH said it wasn't their thing. So they were gotten together by the nephrology community to say… And it still is existing as a two-sided thing. You know we had better data than anywhere else, than any other country because up to that point you … like the PD stuff, when we got it, was voluntary. The USRDS is not voluntary but we need good data and there has been a lot that has come out of having good data. You were asking me how outcomes were; we weren't quite tracking outcomes like you are today. But, you know, when you got the bio-statisticians involved and all that you are tracking data like you are today so there's a lot. So, I mean, everyone just takes these things for granted. They weren't taken for granted in 1974 or '73.

DWM: It sounds like the physicians had to step up and initiate a lot of this, sort of try to influence it and take control of it.

RH: Well you couldn't take control of it. I mean you had to influence it, you had to change it but you were not in control of it because what you really had was a bureaucracy that had a problem that they were given which is Social Security was given this problem. They didn't ask

for it, to have this entitlement and they had to implement it and they had to implement it promptly and so they needed help from a knowledgeable community and they got the help from a knowledgeable community because it was a partnership to get things done well. So it worked out that way. Were there adversarial things? Of course. You know, there are a lot of things in there from … You know, I was at Medicare on Monday, some of the things haven't changed. Where people are thinking of making sure the system isn't gamed. I mean, that's one of the Medicare things and has been for the entire time that I've been involved in any of this. So they look and, you know, they had to be sure that they could deliver care and they had to be sure that they could monitor that it was being done in a reasonable fashion. You know you can't spend the trust funds willy-nilly. That has not changed, maybe more so now but it's not changed. But they were quite willing in the early point to work right along with the community because they knew nothing. I mean they were dumped this from the Congress. They didn't have any experts. So, you know, it settled out to where it settled out and then there have been conflicts all along. I mean, it's not… When you are saying they want to be sure that people don't game it, you and I both know that very few people gamed it but some did and that's all it takes for Medicare is one to do it and you know it's… So it's worked. We still fostered self-care and the reason they fostered self-care, and that occurred a couple of years later, by saying that the entitlement period began on day one instead of 90 days. They fostered transplant because the entitlement period began actually the month before if you were hospitalized during that time. So if it crossed over a month in the hospitalization you're entitled to Medicare during then. So the idea of fostering these therapies, transplant and self-care dialysis or home, as it was called then, were built into it early in the course; oh I don't know what year. But, you know…

DWM: This part of trying to influence decisions that would be made by the bureaucracy, is that part of what brought the Renal Physicians Association into being?

RH: Oh it is. It is the reason.

DWM: When did that sort of start and how did that start?

RH: It started at that meeting…

DWM: At the O'Hare Hilton?

RM: At the O'Hare Hilton. When I said there's nothing like calling a meeting that escapes you, you know it gets out of hand and is taken over, that's what happened. The lawyer who's still with the RPA, Bob Pristave, was there, some officers were elected; that was it. That was the start.

DWM: Why did the feel the need do you think, on that particular day, to organize themselves?

RH: It was obvious that you need someone speaking for you and to work with Medicare, with Social Security. I keep saying Medicare, because it was the Social Security Administration that was writing the Medicare rules so you had to have somebody working with them because they did not know what they were doing. And I don't remember what was exactly in that other than the initial payment method that was in there but there were things left dangling. You know, saying fundamentally to be determined like… I'll use the illustration the 2728 was not described in the original regulations so I mean you had to have things like that. How to get somebody qualified. Duh. And you know so it was felt that information was required, not just a bill.

DWM: Right.

RH: Well that's different than some of the other Medicare things. As a matter of fact it's very different. If there was an age qualification, you qualified, you qualified by age. So those things were, I mean how do you say it, Medicare needed the help of the renal community and the renal community needed to be able to influence them so that they were reasonable and did along with what the provisions should be.

DWM: Right. Some people have said that things happened, that we were sort of left with a legacy of some things in dialysis because that's the way they were sort of in the 1970s when, for example, three times a week dialysis. Just the acceptance that that's what dialysis will be, three times a week hemodialysis, came because Seattle was doing that at that time in the 1970s.

RH: Well that was the state of the art of the time. That's what that funded. Now Medicare does not tell you that you have to dialyze three times a week but that's all they'll pay for. If you want to do six times a week you can do six times a week, the maximum we're going to pay is three times this rate, the regional rate. You can send people home with a partner and what we're going to pay is three times the rate. I mean the answer is if you say to the Medicare people, you don't pay for this, they say yes we do, it's in the composite rate. And you're talking about the composite rate being built on the therapy of the time, yes it was. It didn't say it was cast in bronze though, or maybe I should say marble though. It was anticipated at the time that it would keep up with the medical necessity. Well the fundamental Medicare thing is that Medicare is suppose to provide the care that's indicated for their patient population so that if we can show that other is indicated theoretically funding will follow but in order to do it you need a huge study that requires funding from somebody else to get the thing done. So I mean it's a catch 22 and that's probably what you've heard. It still is a lot of the product of the 70s; the thrice weekly is the easy one to show.

DWM: To point to. Right.

RH: Yeah.

DWM: In the late 1960s certainly I know that on the east coast in Boston they had begun to look at for-profit dialysis.

RH: Sure.

DWM: And certainly after 1972, '73 when there began to be funding through Social Security and Medicare, for-profit dialysis was certainly out there. Were you seeing that here in Indiana?

RH: No. We did not see it Indiana at all.

DWM: Why do you think that was?

RH: I have no idea why. We had good hospital dialysis. I mean units were founded in places, we trained people, they went to those places, they were running them as hospital dialysis units. We had a certificate of need law but it went away early. We really didn't have a lot of them and under the certificate of need law it was tough to get one, I think. I think the state would look as nicely on that as some other states did. But really didn't have _____ services were being supplied. But I mean, again, we don't have a lot of managed care and some other places do. Gus Hampers was the guy that took this from out of the Boston hospitals to a facility and could do it better and cheaper. But we were not paying the same kind of rates that they were trying to charge them and so they couldn't do it for the price in Boston. As I said earlier, one of the things you learned was you had to buy well or you couldn't do it. There were a lot of reasons that hospital dialysis units have failed but a lot of it's in the allocation of costs.

DWM: Right. It certainly did sound like when Gus Hampers stepped out of the academic environment to provide for-profit dialysis that there were issues of not having enough space to accommodate the people who needed to dialyze but also that he was providing dialysis more cheaply than they were doing.

RH: That's correct.

DWM: Yeah.

RH: So he could do it for an insured patient; he could do it a lot cheaper than the insurance was paying the hospital so he could make a profit.

DWM: Yeah.

RH: Well, you know, nothing's changed. But fundamentally hospitals don't account their costs worth a hoot.

DWM: Right.

RH: You know, but if you had insurance he could do it cheaper and you could bill cheaper and still make a profit.

DWM: Though there are a lot of physicians who, just saying it's for-profit, makes them really unhappy. I mean they think that ethically that's not… that physicians should not be in the business of having a for-profit dialysis unit.

RH: You want me to comment on that?

DWM: Yeah.

RH: Taking money out of the healthcare system is not reasonable to me. My biggest complaint is not the for-profits, it's the huge salaries paid to some people, investors and, I mean, other people from chiefly insurance companies but taking it out of the healthcare, putting another middle man in and taking the money out doesn't do patient care so… But the for-profits, at the time, I can tell you that I was definitely against them. You may have known him, Fred Shapiro in the Minneapolis Medical Foundation, was extremely strong… and we would share lots of information of how to do things better and, you know, record keeping, you know, stuff like that. And he said, no way am I sharing anything with them. He was that kind of strong. I mean because, like our how to books, training and stuff like that, we freely sent anywhere. I mean we didn't copyright them or do any of those kinds of things. All of sudden we found out that we had to watch what we were doing and say they couldn't copyright them either. But generally speaking with the physicians it was no problem. When it got into corporate, physicians said, we can't do that it's not ours.

DWM: Right.

RH: Ah. Okay. It didn't pose a problem at that time. So the real question was how much money are you taking out of the system and are you being ridiculous. In other words, if they could do it for less, why don't they charge less?

DWM: Right.

RH: Now a lot of docs, a lot of nephrologists my age, made their retirement by building a unit and then selling it. I sometimes wish, you know, staying this many years in academic medicine was not a good economic decision. That and having six children, neither is a good economic decision, neither of which do I regret.

DWM: What about other industry? What about Baxter or these other… Did they impact your practice at all?

RH: Oh yeah.

DWM: Yeah.

RH: Well we worked a lot with Travenol and Baxter.

DWM: Travenol and Baxter.

RH: Travenol initially and then Baxter because we were using their coils and then we were using their bags.

DWM: Were they good partners?

RH: Yes they were good partners.

DWM: Was it a healthy relationship?

RH: It was a healthy relationship in that we could influence what they were doing. They could come see what we were doing. We had pretty much an open door back and forth. I mean it was not a… Again, it was an open thing. We were one community trying to do a better job. There was a nice medicine industry partnership in most of the dialysis areas. Things like Sweden Freezer in Seattle, Charlie Willock and Dick Drake, you know, I mean these things were done because there was somebody out there in industry that was willing to do what you needed done. At that point Travenol, later called Baxter, was quite willing to do that. Now they were fluid salesmen. I mean they were IV fluid people. This was an area that was an outgrowth off of IV fluids and so, you know, the original Kolff coil was; Kolff made the coil, was a Travenol thing. Then some of us were using it a lot so they would… you know questions about changes in machinery and doing this and doing that. You know, we talked to their engineers, they talked to us.

DWM: Is it still a god relationship, you think, industry and…

RH: Well a lot of it's dominated now by the LDOs. I mean, Fresenius is one of the leaders and they don't have to go anywhere but Fresenius so, yeah it's still good in the standpoint that, for instance, the better dialyzers, the cost of a dialyzer going down, labor costs have gone up, supply costs have gone down but we still haven't figured out how to not truck water around. You know, so you don't have yet a little bag that comes with some salt in it that you add your own water to and stuff like that so we're paying… I mean there are a lot of freight costs involved in the dialysis area.

DWM: Moving supplies.

RH: Moving supplies.

DWM: Yeah. Did you know Charlie Willock or Dick Drake?

RH: Yes. Both.

DWM: What do you remember about them?

RH: Charlie Willock's size.

DWM: Was he a big man?

RH: Oh yeah. He was a soft-spoken big guy. Dick Drake; I don't know of anything special I remember about Dick Drake except _____ long hair at a time when I was in the Army and had short hair.

DWM: Did you use a Drake-Willock machine?

RH: We had probably… I think we only had one or two of them and we didn't use them that long because we were really using coils. We had a Drake-Willock that we used at Brooke.

DWM: I think, as I gather, the Drake-Willock was really designed to support the Seattle program, which meant it was using a Kiil board.

RH: It was using a Kiil board.

DWM: Yeah.

RH: Yeah, that's what I say we used it in the service. Remember all it is is it's a two piston. You know, think about it as a steam engine, a railroad engine with two pistons. The steam engine has a little piston and a big piston for its power and the Drake-Willock was a little piston that opened at both ends and, I mean… But I don't remember what kind of engineer Charlie Willock was but he needed something that would proportion.

DWM: Right.

RH: So he made a proportioning machine and it worked very well. I mean it was piston driven. Ah, none of those machines had the pressure monitors, etc. that we have on our machines now. I mean you put a little roller clamp on it, called a Harvard clamp, on the thing and tightened it to try to achieve what you wanted to achieve, which was stay out of shock.

DWM: Tighten that up a little.

RH: Or loosen it. Ah, but stay out of shock.

DWM: Yeah.

RH: So I mean it's nice to now dial in how much weight loss you want and everything. We used to estimate how but then you know, achieving it was a…

DWM: Was a surprise at the end of the treatment.

RH: Yeah, right.

DWM: Right. What about the renal networks, were you involved in the network here and _____?

RH: Have I been? Yeah.

DWM: Yeah. Yeah.

RH: Well I'm falling off the Board of Trustees this year. I got the Distinguished Service Award after, whatever it is, 18 years or something. Yes.

DWM: Have they been functional and useful you think and what role have they played?

RH: Oh here ours has been a… This was originally Network 9 and it was only, at one point, Indiana, Kentucky and Ohio and then it took on Illinois as 9 and 10. Ours is a very functional network. We had data collection that, unfortunately, that was timely. Every unit sent in data quarterly on every patient so we had up to date data and we could look at all sorts of things. It turned out it didn't change that much but Medicare made us get rid of it. How many years ago? Four or five years ago. It was called Nephtrack. It got a name. So our Medical Review Board here had real data. We were looking at it.

DWM: Why did Medicare make you get rid of it?

RH: Because they were going to have a better animal out there. Because the LDOs didn't want to provide the information because it cost money. They weren't as big at the time as they are now but that was one of the big things. That they were providing data to USRDS and providing data to the Network and it was fundamental. Each patient had a little electronic thing that you would _____ began as a paper work system and then it was electronic but it was a disk mailed in every month.

DWM: Hmm.

RH: And so we had up to date status on patients and we had up to date labs on patients and weights and blood pressures so good Medical Review Board data; data-rich Medical Review Board. All that data is now stored for investigator use at the University of Kentucky, George Aronoff, University of Louisville. George Aronoff and Mike Breyer Ph.D. in charge of it. So we still have all of the old data in this Network. This has been a good Network. We have an annual meeting that, you know, I think it's the fourth largest; the third or fourth largest renal meeting in the United States.

DWM: That's amazing. Because you had data, could you then influence people to …

RH: Oh yeah, that is what we were doing with it.

DWM: You could pretty quickly pressure people to perform better?

RH: Well let's put it this way, we had a study done that you can't do today. We had a study done in, I don't know, _____ study where we sent out a card and said we want a report for the month of December, so you sent it in advance, on all your episodes of peritonitis and what their bacteriology is so that by February we knew the incidence of peritonitis in this four–state area and the organisms. You can't do that now because we could do prospective studies. They had to be prospective, they had to be short, they had to be…. You know, you had to have a hypothesis.

DWM: Right.

RH: So you could do hypothesis generated…

DWM: Research.

RH: Research in … Well we were really trying to influence care so we used… The problem came when it was called research and then you can't do it. We weren't doing it as research, it was hypothesis-generated things that would influence; favorably influence care. So what you were trying to do is quality improvement.

DWM: Sure.

RH: And in order to do that you have to have… You can't have quality improvement unless you know what you're doing. So we got physician report cards on urinemia, the states, the regions, you know, the networks. You know, all these things so we had physician report cards. We had facility report cards. We had these kinds of things showing over time how you were doing. And you know, I mean, it did improve in large measure all but a few of the bottom people but it didn't really change things as much as you would have thought from the data, probably some

regression to the mean. But everyone was…You know, if you looked and you were the doc and you were the one who was at the bottom, I'm sure your ego would not allow you to stay there. Doctors are good test takers. If this looked like a test they're going to be taking this test. So this network was a very, is still but, it was a very active network in quality improvement. So, still is.

DWM: How did you get interested in coding and reimbursement?

RH: Ah I was one of the three nephrologists at the Harvard RBRVS in their technical panels.

DWM: Tell me about the Harvard RBRVS.

RH: RBRVS; Resource Based Relative Value System. Physicians were paid in the usual customary and reasonable (UCR) except it wasn't… there was no basis for it. You know, which meant that the new guy in practice would charge what the senior man in town did and so it would be what the thing would bear. You have to go back to where insurance came from. And insurance fundamentally came out of World War II. In World War II when Tin Lizzy; not Tin Lizzy, Tin Lizzy was a car.

DWM: Oh.

RH: Rosie the Riveter.

DWM: Rosie the Riveter.

RH: Rosie the Riveter was there and they couldn't give the pay raises because pays were frozen so they gave them benefits. And one of the benefits was hospitalization. So hospitalization was fundamentally for surgical procedures. So surgical procedures were then paid; they had insurance to cover them because the spouse was off fighting a war and it became what was usual in the community. If you had a question in charge from like Blue Cross and Blue Shield they would take it to the county medical society who would discover and tell you whether it was usual or not usual, reasonable or unreasonable. You know that was the R part, reasonable or unreasonable. And when Medicare started paying bills they looked and they said, wide variation, there has to be an explanation for a variation. Well the explanation was not accepted, that this is usual in this community. So they said, how would you do it and the initial study was a pilot study from _____ you could look at resources that were used so that it was decided to have all medicine in for a look at this. The initial panel had very few people in it. There was a nephrologist in there, Jordan Cohen.

RH: He is President of the American College of Medical _____ . But then they said we're going to do… that was part of the original study and then it was broadened to… the original study, is this a valid way of looking at things? Then it was decided it was a way of looking at

things and we would have to look at all the specialties so they had what were called Cross Specialty Panels. I was the Midwest nephrologist and Lou Diamond was the East Coast nephrologist and Don Adams was the West Coast nephrologist. You want to know, how do you get there? I think they wanted a mixture of…

DWM: You lived in Indiana.

RH: You know, people across the country that were doing this. So that was an interesting couple of years.

DWM: So what year would that have been about?

RH: Oh jeez. It's on my CV. In the 80s; '88.

DWM: Okay.

RH: '87. And the Cross Specialty Panels looked at all the charges and tried to put together a resource base. There was no resource put in there for, I mean, it was how much work was there, physician work was really what they were trying to determine. It was very interesting to sit in the Cross Specialty Panels and hear the neurosurgeon and the orthopedist describing back operations and agreeing finally that they were the same when done by one or the other. So all of this came out of it. So because I… I don't know how I got there… I know how I got there I lived in the Midwest. I was either then on the RPA Board or I just left it and so I got appointed and I was an AMA member. You had to be an AMA member and I was appointed. So I then became the representative when RPA got on the House of Delegates of AMA I got appointed to be the CPT guy, I still am. You're an advisor so, I mean, I had to read up on that stuff. So that's it in a nutshell.

DWM: So once you got in that groove…

RH: I couldn't fall out of it. _____ to get out of that groove.

DWM: But having been there from the beginning I'm sure gives you an …. It is very complex and confusing and so I'm sure having been there from the beginning helps sort it all out.

RH: Yes. Well for the RPA some of us are history. Or even for, like I said, I was at Medicare on Monday and that was about 90935, you know, the hospital billing. But those people haven't been around a lot of the, most of them, for all that time and they don't remember their old history. So they keep telling Emil Paganini and I that we're not about to fall off the committee ____ RPA because we remember history and we lived it, you know. So that, you know, we've been doing this at RPA meetings since the cows came home. The same questions, by the way, are still present forever.

DWM: _____.

RH: People are like, you didn't really mean that. Let me try and ask the question again. _____ you mean I have to be there during dialysis? Yes. ____ The topic is extremely boring, you know, _____ by making _____. So we started doing a tag team thing at the RPA meeting; _____ and I do a tag team thing and have done it for a number of years. But without the tag team, you'd want to go to sleep. Now I don't consider myself to be an authority on billing and coding. I am the CPT Representative. I do know more than most people _____.

DWM: Yes. I would say that's definitely true having heard your tag team presentation. It appeared when I just looked at a few things about you that you've been pretty involved in community service with regard to nephrology. Has there been outreach just in Indianapolis? I mean was dialysis something that engendered community service or required community service?

RH: Well the Methodist Hospital and University Hospital were loggerheads for the PR Departments and things like that and a couple of large practices in Indiana but we were all together in the National Kidney Foundation. So if you wanted to get out of your … put a hat on … the Kidney Foundation of Indiana then you wanted to get out of it then you just did it through the Kidney Foundation. And so, but, you know, I think all sorts of nephrologists have been involved with their local chapter of the NKF where the Network or the this or the that. Fundamentally, for me, it goes back to we were told to go out by Dr. Hickam, my first chairman, and get known which meant be involved. I don't know that get known were his right words. He _____ but to be involved so that we've done it. I mean, I laugh because I think I've run out of Distinguished Service Awards. I've gotten them from the Kidney Foundation of Indiana, the National Kidney Foundation, the Renal Physicians Association and this year the Network so I'm about run out of them. But you know, I mean, yeah you have to… Well first off it's always been incumbent on medicine to be involved; for physicians to be involved. And to be involved, I mean, I was once on the American Society of Internal Medicine local thing and decided that I needed to stick with renal because I couldn't do too many. And there were enough renals when we had the Network, when we had the Kidney Foundation in the Network. But I mean, I'm back to being a prior Chairman of the Council of Dialysis of the NKF and a couple of years on the Board of the National Kidney Foundation. They were interesting times.

DWM: How was the Indiana Kidney Foundation formed?

RH: On a back porch.

DWM: Whose back porch?

RH: Claude Spellman's. He was a lawyer. He was a dialysis patient. I don't know how to go beyond that. What do you mean? It was founded because there was a need. It was founded; I don't know what year, '69 or '70.

DWM: Were you there?

RH: I think I was on that back porch. I know I was in the next meeting. But Claude was a VA dialysis patient and one of the leading lawyers in Indianapolis. So I mean that was… he was the founder.

DWM: What was the need? What was the need? What were they thinking they would…

RH: Support.

DWM: Financial support?

RH: At least they were part of getting the Indiana law that helped to support so I guess it was financial. It was education and financial. So there was a non-medical speaking body, if you will. Lobbying would be the bad word.

DWM: And so Spellman was a patient?

RH: Spellman was a patient.

DWM: And was it a way to give a voice to the patients?

RH: Yes, and the need, yes. I mean there was a clear cut need for understanding the problems and everything else of the time. Some of the problems just are the same. So it grew out of that.

DWM: We certainly are talking around that time in the early1970s where the physicians organized to speak for the physicians but it sounds like also the patients recognized that they had to…

RH: No.

DWM: ... speak for themselves.

RH: A community needed to; that's the patients, the physicians, the nurses, the social workers; the entire community.

DWM: And the NKF provided that as a community voice.

RH: A community voice. The renal community, but call it whatever, the kidney community, whatever you want. So that it really was a community, not a patient thing. I mean so when we talked before about, you know, saying we're in this together, this is we're in this together kind of thing. It was not a single discipline. Very much not a single discipline. And I think it was physician led for most of the time. But it's like all the societies, it is not a physician group; it's a…. I mean the American Cancer Society is not a patient group either. So it's that kind of a thing. The National Kidney Foundation office and the Network office are both in a building about 10 blocks _____ about 20 blocks from here. They just happen to be on the north side of Indianapolis. Sort of comically they are in two floors of the same building.

DWM: We didn't talk a lot about the 1970s and the patients you were taking care of, about you know, you're dialyzing them and they staying alive on dialysis. I mean and before dialysis it was a fatal illness to have chronic kidney disease. But they had… we talked a little bit about anemia.

RH: Well you were their doctor. What their problems were were your problems. So whatever they had…

DWM: What were they? I mean what do you remember were the big problems of those early chronic patients?

RH: They could get the same illnesses as anyone else and that was the problem. Well anemia was one of the biggest problems. The fatigue of anemia. That and their access were their two biggest problems.

DWM: Were calcium phosphorus issues…

RH: Oh lordy, yeah. I mean you've probably never even seen a calcified lung. Phosphate control was tough and it was hard to do. Hard to get compliance and nothing changed. Their calcium/phosphorus products were higher than we would consider reasonable; they would be well out of line of what we consider reasonable for today. So eggshell calcification in blood vessels was one of the problems _____. Push over the radial artery and feel it snap under you. I mean they'd calcify every vessel you could think of. So, yes, it was big. We had calciphylaxis; and calciphylaxis is something that disappeared for a long time, it's back again. We had questions about what is the best calcium bath, high low. You know, I laugh at low calcium dialysate isn't really low if you think about it, it's just lower than what we were using.

DWM: Right.

RH: And so we've had to, you know, use a high calcium bath to raise the calcium and make the labs look good and the patient doesn't. You know those kinds… all that… that's what I was

talking about free communication. See that would be the kind of stuff that would be in that dialysis meeting before the ASN. Some people would try… again these did not go through medical review boards.

DWM: Were you seeing uremic neuropathy? I mean, weakness…

RH: Well they would get numb feet. Yeah, they had peripheral neuropathy.

DWM: Peripheral neuropathy.

RH: But not as bad. Remember they went from twice a week dialysis to thrice weekly dialysis because of peripheral neuropathy.

DWM: Ah.

RH: That's part of the reason. Clyde Shields developed… the original dialysis patient, developed a lot of neuropathy which led him to twice a week and then there was still more of it. That was one of the reasons for going from twice weekly to thrice weekly, were some of these problems.

DWM: Were patients dying from these problems? Were they dying from calciphylaxis and calcification?

RH: Well calciphylaxis, yeah but… Yes, from calcifications. I mean we had deaths from calcifications but I don't remember exactly why… we had infectious deaths, we had deaths from all sorts of things and I'm sure we had mislabeled deaths. That's not even remotely a question on my part. That, you know, you bought time and they dwindled. The patients just dwindled. And a lot of that now we would know was probably related to vascular calcification and let's say poor _____ nutrition.

DWM: Right. Do you remember when people started talking about adequacy, Kt/V and…?

RH: Adequacy, that's way, way after that. Kt/V is well after that. Adequacy is a misnomer just like biocompatible dialyzer. I mean there's no such thing as a biocompatible dialyzer, blood clots in all of them. Adequacy is a misnomer; it's dose and that's a dosing phenomenon. That's Gotch's dosing phenomenon. The original thing was that when they looked at the National Cooperative Study that the dose of dialysis _____ people interpreted that as this is as much as I need to give instead of the opposite. It was; this is below the minimum. I mean some of us wouldn't go along with that. I can still remember patients saying to me, why am I dialyzing this long? If I went to such and such a place I would only do this. When we switched to shorter dialysis the patients started to look bad long before any of their numbers were back. We had a hard time going back. _____ it was obvious that when we went to shorter

dialysis, still achieving the Kt/V of 1, patients started to look bad. Nothing specific, they just looked bad compared to what they did before. We had a devil of a time getting people back to longer dialysis. You know, I mean, we Americans are entitled to elect bad medicine even if we want to. And if you want me to deliver perfect care or real good care to everyone, you're going to have to repeal a constitutional amendment, the one that prohibits slavery. You can't chain a patient to their bed, to the chair. We have had a few of those but they're called prisoners and even they can sign off of dialysis but they're chained.

DWM: So there definitely have been issues as… were there issues early on, like if you think back to the early 1970s if you had told a patient you need to dialyze longer, would there have been an argument? I mean and certainly today patients are very well informed and they don't want to spend any more time on dialysis than they have to.

RH: Well, yeah. If you went to go from six hours to eight hours you'd run into a lot of complaining, I can't do it.

DWM: Right.

RH: But the difference would be. I know I should doctor but I can't. You know, I mean it would be a different statement like it's not, I'm not gonna. It would be, I know I would be better off but it would change my life too much. I wouldn't be able to work _____. _____ dialyzed for rehabilitative therapy. This was rehabilitation to start with. We're going to have people transplanted and back to doing whatever they were suppose to do; school, house, it wasn't being done as a, how do I say it, truly just life prolongation. The concept was that you were going to rehabilitate people or their spouse or somebody else. I mean if you don't have to stay home and care for me … Have you ever spent time in a rehab institute? I had that _____. One of my comments there in rehabilitation was that if you can make someone free so that they don't need an attendant it fits very nicely with the goal of rehabilitation. We were at least trying to be that way with our dialysis at the time.

DWM: What do you thing we're trying to be now? What is the concept for dialysis now?

RH: Entitlement. Purely entitlement. Well on whose part?

DWM: Hmm, the patient's part.

RH: Ah…

DWM: And the physician, both.

RH: Well too much of it is entitlement. I'm entitled to this. I'm not a participant _____ me, I'm not an actor. But with physicians it's life prolongation. We really have a problem as

physicians when we're asked to do things that seem to be inhumane and there is too much of that. Every nephrologist talks about I have patients on dialysis that I feel like I am torturing and I can't get them to quit. I don't think there's any religion that would not say death from uremia is death from a natural cause. The accomplishment is prolongation of dying instead of prolongation of living or prolonged suffering would be an even better way of wording what I'm saying. But that's one of our big problems. What are patients trying to do? They come with their own need. Rehabilitation is not high on that list. Again, the median age of those entering dialysis is now 65. Rehabilitation to job is not part of their need; the median age is 65. You want to buy quality time. And quality is defined by the patient so, you know, I always like the studies about the 20-something year old nurse; about the nurses of 20 and 30, physicians and nurses, about the sexual life of the 65-year-old dialysis patient. It didn't live up to the standard of the 20s and 30 year olds. No kidding.

DWM: We have transitioned a long way from this therapy in the 1960s, late 1960s, which is a, as you say, really envisioned by I think people who were working in dialysis at that time. Certainly as Scribner writes about dialysis and I talked to Chris Blagg and those early people and the envisionment was that this is; it saves lives and it rehabilitates people to return to their work, to return to their quality of life. We've transitioned a long way from that. That's no longer the expectation of …

RH: Well, people have aged. It's still the expectation. If you're just keeping grandma alive to be grandma, that's the expectation. Grandma wasn't working and if grandma's enjoying her grandchildren and whether she sitting on her rocker and not playing tennis any more is a different statement. Okay. But so we're still there, we just have expanded it further. So it is part of the expectation. I mean obviously the older part of the people and we still have that. I object to a term that I've heard some of the docs say, always about some other doc, of dialysis for dollars. I mean I don't think we do very much of that. I don't think we ever have. The lament I hear from people is about they're willing to start people to see how well they do but the problem with that is they can't quit if they don't do well. So, I mean, I think we're still talking in the same line but it isn't return to work if you're dealing more age and often with more other diseases, it's return to a quality of life and that can be grandma sitting on the porch watching her grandchildren. That's determined as a quality of life by a lot of people.

DWM: Yeah. And then there are these obviously controversial issues where you are chronically dialyzing patients who are bedridden, in a hospital bed, and who determines that quality of life there.

RH: That's the problem. That's why you really want a predetermination and you want the families to live by them. I mean we have a problem that we are not permitted to … well there would be a question about permission to discontinue an ill-advised therapy. You might win that case if it went to court but no physician wants to go to court and certainly no LDO wants to go to court on something like that. But it costs us good people in dialysis because, I mean, people

work for a sense of satisfaction and if you spent your day where you think you were torturing somebody, you don't go home with a sense of satisfaction. So it's important, even in the retention of personnel, to be sure that you have advance directives and that you have the intestinal fortitude to look at a family and say, your mother wouldn't want this.

DWM: Yes.

RH: It takes time and effort on the part of people to do that. We've all had feelings like when she goes her check goes, which is just a horrible thought. Just irritates me because that's, you know, elder abuse. And so there are those situations. The chief one is that I want mother to live but you want mother to live well. I mean I have, on a couple of occasions, used the word torture but would like not to do that. It requires somebody that's with you at least, not in a confrontational standpoint before you would ever use that term.

DWM: Right. What are you doing now?

RH: What am I doing now?

DWM: Yeah.

RH: Oh, I still round. I do our teaching ward for a few weeks at a time. I don't work nights, weekends or in the winter.

DWM: Or the winter?

RH: Or the winter. I live in Indiana. We have a house in Texas near two of my daughters and six grandchildren.

DWM: So you migrate down south for the …

RH: Yeah, I'm a snowbird.

DWM: For the winter.

RH: For the winter. So I'm back on service in two weeks for the first half of August. But it's much easier when that's what I'm doing, is just that _____ and a lot of outpatients …

DWM: So you don't have an outpatient clinic. You're not…

RH: No I can't do a continuity clinic if I'm going to be gone.

DWM: Right. Be gone half the year. So you oversee the house officers on the ward, the fellows…

RH: Yeah.

DWM: Is it a consult service mostly?

RH: No. It's a ward service.

DWM: A ward service. Yeah. Okay.

RH: Yeah. I like the real patient contact. I still know a lot of the patients and I fill in, you know, I do spring break. I do the first couple of weeks of August because it's the big vacation season for the faculty.

DWM: Right.

RH: So I'm valuable as long as I'm doing spring break and vacation season.

DWM: Good. _____

RH: I still do the CPT stuff.

DWM: Yes.

RH: And, as I said, you're not going to put it in there but we were at Medicare two days ago.

DWM: Right.

RH: Still.

DWM: Doing that work?

RH: That kind of stuff.

DWM: What do you see ahead in the next 10 years for dialysis therapy?

RH: More home.

DWM: More home. Why?

RH: Because _____ personnel. I really think we'll be doing more dialysis at home. The problem is, is that the current dialysis at home things cost more for six days or five days a week than three day a week dialysis so I don't know how many days a week we're going to be able to do it. It may be dictated by dollars. But I see more home and the reason is because of personnel.

DWM: Do you think…

RH: Personnel costs keep going up.

DWM: Do you think patients are going to be willing to train and go home?

RH: Oh I think we're going to make the machines easier.

DWM: Ah.

RH: I think, I mean, like the next stage machine has some problems with it but it's easier to use than what we were using before. A lot of the machines are easier. They do more than they used to do before. If you can really get good fistulae and use buttonhole technique, it's an easy cannulation, self-cannulation, for patients. The problem with it is you still need a partner today. You know we've all had people that we knew were dialyzing without their partner. If it hits the fan there's only one monitor that misses truly and that's the venous pressure monitor wouldn't go off if the thing slips out which is more of a problem in unattended overnight dialysis than it is in the daily short because, you know, if you're asleep… people will sleep watching dialysis. There are certain times they don't. All of our men home hemodialysis patients in the fall would dialyze on Saturday afternoon and Monday night.

DWM: Football.

RH: Football. Because it wasn't wasted time.

DWM: Right.

RH: They were already spending that time…

DWM: In front of the television.

RH: In front of the TV so it didn't change their life very much to do that. Now did I really think their partner was in the room with them all that time? How about an absolutely no.

DWM: Do you think we're going to get to the point where we have a wearable kidney? A wearable membrane?

RH: I've seen that WAK. Have you seen the WAK?

DWM: _____

RH: Victor, west coast Victor, Victor Gura has one. It's awful big right now but it may get smaller. Yeah, we'll have one. Who will use it? It's got to be made small enough to go under a dress. The one he has now will go under a dress, barely. It was a prototype that I saw. Where did he present this? I'll think about it. It doesn't matter. Recently. But so I think we will have a wearable artificial kidney but I still think the basis for the next 10 years, maybe 20, is going to be hemodialysis and probably at home. While making that statement, my comment is that peritoneal dialysis is a good way to start.

DWM: Well I was going to ask you, I mean, is peritoneal dialysis going to hang in there?

RH: Oh yeah. It's a great way to start. You know, it's the way to start with an incomplete dialysis dose and an incomplete CAPD dose is really easy; to bed, from bed and from work. The least interference. Very short training time. No lethal line for hemodialysis. Great to have, put it in, let the fistula mature, great if you're going to be transplanted in the first couple of years. So, it's your lead off batter.

DWM: And when you're talking about that as an introductory therapy, do you think it's important to think about early start with peritoneal dialysis? Are we waiting too late?

RH: Show me the data and my answer is, I don't know the answer to that. Certainly when there are early symptoms the answer is, yes. But what the symptoms are, you and I both know that that's hard to quantify or qualify. If you wait longer and the patient says, I have no symptoms, then you know you started with a GFR like 7. They'll say, when they feel better, well I must have been sick because I sure feel better. So I mean, you know, we're back to that. Well I mean the other thing in the old days that many of the younger nephrologists don't realize is that we started really late.

DWM: Yes.

RH: And can honestly tell you that potassium is not a problem until the urine output falls below about a liter and a half and certainly under two liters. We would start dialysis at a GFR of around 2. I mean things have changed. So if we're talking about history it keeps creeping up and so where is the number. There is not one study that has shown me anything. I mean your survival on dialysis is longer if you start earlier. Is it longer than the early start? I don't know. There is no thing as a controlled study and I don't know how you do a controlled study on that one because a lot of this is patient intent. We were going to do a study on diabetics and PD

versus hemo; couldn't do it. Couldn't randomize it because people do the dialysis they do because of their quality of life.

DWM: Right.

RH: Not because I have a random number. We tried it, it was an abysmal failure. The study was in the round journal of negative results.

DWM: Also you mentioned earlier that you could just look at people when Kt/Vs got to be big and you could look at people and say, you know, they're not getting enough dialysis. I mean some of the problem with trying to start people is it's a very individualized thing. It's a physician talking to a patient, following a patient over time, patients, you know, trying to be in touch with their symptoms and some of it's not always numbers driven. I mean, some of it is…

RH: Oh, no.

DWM: How people look. How they are doing in non-quantifiable ways.

RH: Well you and I both know that if you see a patient enough times you can tell when they're not doing well. A patient, anyone. One of the things that's hard to put into any quality assessment is, Mrs. Jones is not doing well. The same thing, when you're making rounds in a dialysis unit and you're making the rounds in the dialysis unit, because you are their doctor you know where to stop and when to start asking questions. You know, and they talk about the G codes and the face-to-face visits and what have you done. One of the things you've done is affirmed that when you go by that they look good. Well if they look good and they don't have much of a complaint, that's it, that's what you had for the day, but you've made a judgment. And you come to the next person and they say, I'm fine and you say, no you're not. And you start to ask some … Well you don't say, no you're not. You start to ask some questions because you've told yourself _____ because they don't look good. Something is awry.

DWM: That doesn't fit very well with our, you know, rules and regulations about when you start people and meeting criteria…

RH: There are no rules on when you start people. Any one that says there's a rule… It will be questioned…

DWM: Yes.

RH: If you start them early but it's not a rule.

DWM: No but we generally understand where, what numbers Medicare's looking for and we understand that we're going to have to justify starting at a different point and sometimes it's

difficult to… and even aside from that, to quantify, well I've looked at them and they don't look good; doesn't get you very far.

RH: I was giving you an already existing dialysis patient.

DWM: Yes. Yes. Well both.

RH: And you see them frequently enough…

DWM: Yes. Absolutely.

RH: So that my comment is, just looking at them is a service.

DWM: Yes.

RH: You know; that's my point. It is a service when you look at them ____

DWM: Yes. I agree with that entirely.

RH: You know, walk in the unit, turn around and walk out and say I saw 30 patients or 20 patients is not a service but when you go and you look at them and decide and determine whether I need to do more or I don't need to do more is a service and so that's going to be based on a complaint, absence of complaint and presence of look good. I don't know how you write look good on a chart; look's fine, is fine but not… you know, looks good, is not grammatically correct but every nephrologist would understand what I'm talking about.

DWM: Yes.

RH: And a stable dialysis patient. I mean that's a term we use. You know what it means, I know what it means and you say it to a bureaucrat and all they hear is stable patient. Well a stable dialysis patient is _____ mortality of 19%. It means; they're good today.

DWM: At this moment.

RH: At this moment. Yes. We're going to have some problems in not who we start, the problem is going to be with people like congestive heart failure and other things because the entitlement is for ESRD, it's not for dialysis. Now so that you have a problem when somebody says, Mrs. Jones is diuretic resistant congestive heart failure, her creatinine's 2.5 but when she pees it's 1.2, when she gets into failure it's … Well maybe make it a little higher than that and those kinds of numbers. Is this ESRD? _____ end-stage heart disease. So if _____ diuretic resistance and you ultrafilter them then _____ is it ESRD? No. Should it be called ESRD? My answer is, boy would that foul up your statistics because, you know, all you're doing is diuresing

them, you're not fixing anything and their longevity is going to influence your statistics; their lack of longevity will influence your statistics. So I think we're going to have some of those things. But all Medicare says is when a doctor determines that a patient requires regular dialysis and they'll look at you and what has there been in the country, one, I think it's one, in all the time where they determined that somebody was putting lots of patients on dialysis as a pattern. So they would look at you if you have a pattern. You and I might have an occasional patient that goes on early "early" by their standards but it would be an occasional patient and if they ask you for a reason, they're entitled to ask you for a reason. You know, I mean, did you just slap them on or did you try things first? _____ I tried things first, fine. I don't think you'd have a problem. As I say, I really only know of one, there may be others, but I know of only one and that was a pattern of people begun on peritoneal dialysis in lieu of diuretics.

DWM: Right.

RH: It doesn't cross our… You know I think we'll see more non-ESRD dialysis therapies in the next few years. I think home dialysis is going to burgeon more frequent dialysis. How frequent and what mode will come out of this, I don't know what mode will be better. But _____ we're still racing the deity model and we're not even close.

DWM: Not even close. Is there anything else you can think of that we should talk about that we have not talked about today?

RH: I don't know but I hope you edit a lot.

DWM: Well there's going to be a lot to keep in, for sure. I thank you for letting me come today to talk to you.

RH: You're welcome. I'm happy to. But I don't know what good all of this will do for somebody. I do know one thing that we do, you know, Pags and I talked to the…Paganini and I talked to the Renal Physicians Board a year and a half ago and new members were there because they hadn't heard some of this history, with the billing history, I mean you know that kind of stuff.

DWM: Right.

RH: But we will have to educate a whole _____ of nephrologists on where all this came from because the blind acceptance that this is it, I worry about.

DWM: Yes. You know as I finished my nephrology training in 1989 and I would say that I could appreciate even then that, you know, we've come a long way and I knew some of the roots of where we had begun but I have become very much more educated in this last year about where we've come from and it's been very eye opening for me. I mean I think it changes the

way you think about dialysis, the expectations you have for what service you provide and what patients, how they ought to be involved and I think that we're losing that without ____.

RH: The part about our educating most of our patients so that they were part of the solution, I have a feeling we're going to have to go back to but it's not separately reimbursed and if you're doing training you get into that so you'll have more of it if you had more home training. But, you know, we found out we couldn't afford to keep doing it in our own program. I mean that's got to be 15 or 20 years ago we found that out.

DWM: Right.

RH: We got to be a large in-center dialysis program.

DWM: Right.

RH: And we were late, actually we did it but most people didn't do it, but you had an equipped patient and the thing that we found with our large home program was that our patients would go travel and they'd go into a unit and the people in the unit didn't understand that people could know that much.

DWM: Right. We've got to get back to that. And also, I mean, I started doing these early interviews and I talked to people who had to tell people, you've got chronic kidney disease and that's a fatal illness. I've never, in my practice of medicine, had to tell anyone that chronic kidney disease was a fatal illness. I don't even remember that time.

RH: Oh I do. We still have some of that. We still need to give our blessing to some people for whom prolongation of life is a prolongation of pain and suffering. My classic on that is a minister's wife with rheumatoid arthritis, severe rheumatoid arthritis, in constant pain, developed amyloid of her kidney and she said, do I have to dialyze. I said, absolutely not. She said, you have to tell my family. _____ of course. You know, it's your choice but it will not make any of the rest of you better. And her comment was, I will go to my maker. Which sounds like a minister's wife.

DWM: And I think for some of us who've never been in that time of life where we had to say, you know, people die from chronic kidney disease, it's okay to die.

RH: _____.

DWM: That's an important perspective to have to understand the role of dialysis, how it was born and the role that it really is okay to let it play a role where it's okay to die from your chronic kidney disease if that's the natural course of your life.

RH: And it's a good death.

DWM: Yes. Yeah.

RH: Compared to a lot of other things, it's a good death because it tends to be painless. I mean hyperkalemia is a rapid death and uremia is a death of intoxication. In my discussion with families when we talk about withdrawal, chiefly, but the same thing would apply if you don't start, is that, you know, those two things are fine. Fluid overload is not.

DWM: No.

RH: We really have to present the option of no therapy when we present a couple of dialysis options and a transplant option; I mean they're the options for ESRD. But no care, palliative care, is … I shouldn't say, no care. I should say, palliative care. Palliative care is an option and we ought to be able to feel comfortable in offering that. My age physicians, we've done it. Piece of cake. It's one of the options. It's not like I feel like I didn't do anything for you if I don't…

DWM: Right.

RH: Dialyze you till the coffin nails are all in. So that, you know, that one last dialysis is probably wrong. But patients need to hear all of the options and the demented patient in oblivion can't give consent for themselves. I have a feeling that very few, if any of those people, should be begun. Death from natural causes, uremia is a death from natural causes. The fact that you can prolong that doesn't mean that you've done anything for the patient. You've done something to them because our access procedures will be pain and discomfort. Would you want grandma tortured for multiple… you know she'll have lousy veins. You want her tortured for a lot of access procedures? No. We will need to do more of that.

DWM: Yes.

RH: Because our population is aging.

DWM: Right. So I've found this very valuable, certainly for myself, to get into perspective where we started and how amazingly far we've come and what the options are, how broad the options should be to include everything from never starting to allowing natural death with palliative care to trying to dream that some day people will wear around a membrane.

RH: Oh, they're going to do that.

DWM: Yeah.

RH: A successful transplant is still the best option because no matter… I mean all the statistics show that people who have one, a successful transplant, do better but we nephrologists have to remember that a lot of those people are going to be back on our doorstep.

DWM: Yeah.

RH: So, I mean, we dialysis nephrologists have to understand a lot of them are going to be back on our doorstep.

DWM: Right.

RH: So the same conservation of the veins and all that other stuff is highly ethical to them as it is to the diabetic; is as ethical to them as it is to the diabetic that's going down the line. Not being done.

DWM: Anything else you can think of?

RH: No.

DWM: Well I thank you for your time today Richard.

RH: As I say, I think you're going to have to edit that a lot.

END OF DICTATION

Dugan W. Maddux, MD
DWM/dlb
T: 09/05/08