Pioneer Perfusionist Interview: Skip Russell

Mark Kurusz: My name is Mark Kurusz. We're here in Tampa, Florida during the annual AmSECT conference. We're going to interview Skip Russell. We're delighted you're here, Skip.

Skip Russell: Thank you. I'm glad to be here.

Mark Kurusz: As you may know, there's a history task force and the [AmSECT] Board of Directors thought it was important to capture some of the thoughts and reflections and experiences of some of our more senior members. That's not a dig or any derogatory comment at all, because I know you're still practicing, but we've got a series of questions that we've used before. I'd like to go through these, sort of one by one. It's a rough script. If there's any area that you'd like to digress on, certainly feel free to. The first question is what were the circumstances that led you to become a perfusionist? If you could supply some of the dates and people that you interfaced with when you first got into perfusion, Skip?

Skip Russell: Well, my father was a physician, and he passed away when I was 10 years-old from heart disease. I knew I wanted to do something in medicine, but I wasn't exactly sure what I wanted to do. I thought about going to medical school, but after I dropped out of college during the Vietnam era, I decided that if I wasn't going to be in school, I was going to be drafted. I went back to school, and I went into respiratory therapy. In those days, it was called inhalation therapy.

Mark Kurusz: Yes.

Skip Russell: I became a Respiratory Therapist, and I had been working for a couple of years in our department, and they came to me, the director of the program that came and asked if I wanted to train on-the-job to be a perfusionist. I asked if I would make more money. They said, "Yes." I said, "Okay, I'll do it."

Mark Kurusz: What hospital setting was this?

Skip Russell: That was at Bethany Medical Center in Kansas City, Kansas.

Mark Kurusz: Bethany Medical Center.

Skip Russell: Uh-huh. In 1977, I started my training in January, and it took about three months. The person who was training me decided to take a job at another hospital. So, I was left by myself.

Mark Kurusz: This was an on-the-job training situation. It wasn't a formal program.

Skip Russell: Correct.

Mark Kurusz: It was one-on-one with your...

Skip Russell: Yes.

Mark Kurusz: ...with the more senior perfusionist, who I assume had been working for some years?

Skip Russell: Yes.

Mark Kurusz: How big was the open-heart program at Bethany in those years?

Skip Russell: We were doing 120 cases a year.

Mark Kurusz: Okay.

Skip Russell: I stayed for two years as the Chief and only perfusionist that they had. I was on-call 24/7. I was only paid to be on-call on the weekends. I did not receive any money for being on-call Monday through Friday.

Mark Kurusz: Is that right?

Skip Russell: But I didn't get called in that often either. Our hospital was located between two major freeways in a bad section of town. So, our emergencies were either gunshot wounds or stabbings or car accidents. The rest of our cases were elective.

Mark Kurusz: It was a private practice situation?

Skip Russell: Mm-hmm.

Mark Kurusz: How many surgeons were there that you worked for?

Skip Russell: We had three surgeons, Dr. Thomas Thomas, Frank Bichlmeier, and Mike Bogan.

Mark Kurusz: I see.

Skip Russell: Dr. Bichlmeier was the Chief, and he had trained at the Cleveland Clinic. So, after my mentor left, the hospital sent me to the Cleveland Clinic for two weeks.

Mark Kurusz: I see.

Skip Russell: I spent two weeks with John Meserko, and Dave Ogella and Tula and Marty Sinkowich. They were doing 14 open-heart surgeries a day. They were still using the old Travenol bag bubbler.

Mark Kurusz: Yes.

Skip Russell: They had been given several cases of bubble oxygenators that they didn't want to run. I got to run those, and they were the old William Harvey, H-1000 oxygenator.

Mark Kurusz: Sure.

Skip Russell: I stayed for two weeks and stayed all day at the hospital every day. The hospital picked up the tab for me to be there. That was additional training that I got.

Mark Kurusz: Would you consider that two weeks important in elevating your skill levels when...

Skip Russell: Absolutely.

Mark Kurusz: ...you went back to Bethany?

Skip Russell: Yes.

Mark Kurusz: Well, I guess seeing 14 cases a day is pretty intense.

Skip Russell: Well, and they would come in, and the attending would come in and sew the distal anastomosis, and then they'd leave the room and go onto another case. The residents would do the proximals and take them off [cardiopulmonary] bypass.

Mark Kurusz: Sure. Now, when you went back to Bethany, can you tell us a little bit about some of the equipment you used? What was your choice of oxygenators, et cetera?

Skip Russell: I had an Optiflo One [Galen] oxygenator that had an arterial side heat exchanger.

Mark Kurusz: Yes.

Skip Russell: I had a Travenol pump, and I had an old Avco balloon pump, the first model, model 7.

Mark Kurusz: Yes.

Skip Russell: We put quite a few people on the balloon pump because we didn't have cardioplegia in those days.

Mark Kurusz: Right.

Skip Russell: We didn't have very good myocardial protection.

Mark Kurusz: Sure. Were any cell savers used?

Skip Russell: I had the first cell saver in Kansas City, which was the cell…

Mark Kurusz: Which was the Haemonetics?

Skip Russell: …Haemonetics one, model 1.

Mark Kurusz: Sure.

Skip Russell: I talked to the Haemonetics rep the other day, and he said that's on display at their home office.

Mark Kurusz: Really?

Skip Russell: Yeah.

Mark Kurusz: Amazing.

Skip Russell: We had to leave at least 1,000 ccs of blood in the oxygenator at the end of the case so I could spin that down and give it back.

Mark Kurusz: Yes.

Skip Russell: When we got a level of a thousand, then we didn't transfuse anymore after that.

Mark Kurusz: Okay. Now, I recall the Optiflo One, even though it had an arterial side heat exchanger, it was not terribly efficient. Did you routinely employ hypothermia during your…

Skip Russell: Yes.

Mark Kurusz: How cold would you take the patient?

Skip Russell: We routinely [would] go to 28 degrees.

Mark Kurusz: Using the built-in heat exchanger?

Skip Russell: Yeah. We used to have a Sarns.

Mark Kurusz: Torpedo?

Skip Russell: No. The Sarns heater-cooler, and it had an internal heat exchanger in the oxygenator.

Mark Kurusz: Okay. How long were you by yourself there at Bethany? I assume the program either increased its caseload or maybe you moved to another center?

Skip Russell: I moved to another center because in the paper, I'd read where St. Luke's in Kansas City had gotten approval to build a Heart Institute. I thought that when the Heart

Institute opened up, it was the first stand-alone Heart Institute in the United States, that when that would open up all the smaller programs would close. I had an opportunity to move over to St. Luke's. I left Bethany, and I've been at St. Luke's now 36 years.

Mark Kurusz: Tell me a little bit about the interview process. How did you get the foot in the door, so to speak, over at St. Luke's?

Skip Russell: Well, I knew, who is my wife now, Maggie Russell worked there, and she had told me, "We have an opening," that they had had an opening. Dr. Reed, Dr. William Reed was the Chief, and Dr. Reed wanted to interview me, and I went over to his office about four times in a suit with a resumé. He never came to the interviews. He was busy in the operating room. Finally, he just told Maggie to go ahead and hire me if they thought I was a good candidate. I started at St. Luke's in June of 1979.

Mark Kurusz: I see. Was Maggie the Chief Perfusionist?

Skip Russell: At that time, she did all the ordering of supplies.

Mark Kurusz: I see.

Skip Russell: Everybody kind of shared the duties. If there was an issue and you took the phone call, then you had to see it through to the final stage, whether [to] correct the problem. So, Maggie had a lot of responsibility back then.

Mark Kurusz: Sure.

Skip Russell: She actually had been there the longest of all the other perfusionists.

Mark Kurusz: I see. How big was the perfusion team at St. Luke's at that time?

Skip Russell: There were four people there.

Mark Kurusz: Four of you?

Skip Russell: Uh-huh.

Mark Kurusz: I guess from going from 24/7 being on-call, it was spread around a bit?

Skip Russell: Yes.

Mark Kurusz: How did the call work?

Skip Russell: Everybody took equal share, and we all got paid for it.

Mark Kurusz: Okay. That was definitely a step up from your previous employment?

Skip Russell: Correct.

Mark Kurusz: Tell me a little bit more about the equipment over the years. You were using bubble oxygenators in the late-1970s?

Skip Russell: Yes.

Mark Kurusz: Did you eventually transition to membranes?

Skip Russell: Well, actually, when I was still at Bethany, I tried the Travenol...I believe it was Travenol membrane where you had to run two pumpheads.

Mark Kurusz: Oh, the TMO?

Skip Russell: Yes, TMO. Also, one of the perfusionists from St. Luke's went to work for SciMed.

Mark Kurusz: I see.

Skip Russell: He came over and showed me some SciMed membranes. I ran a few of the TMOs. I ran a few of SciMeds, and they were large. The one that took two pumpheads to drive it, they weren't synced together. You had to control both knobs. SciMed took a lot of priming volume, but back in those days, we didn't really worry too much about prime. Almost everybody got two units of blood.

Mark Kurusz: Really?

Skip Russell: Right. While I was at St. Luke's, we used bubblers for a good five years.

Mark Kurusz: I see.

Skip Russell: One of our surgeons, Dr. Arnold Killen got interested in membranes. We used the first Bard generation membrane that came out.

Mark Kurusz: Which was a microporous?

Skip Russell: Yes. We used that for a long, long time.

Mark Kurusz: Okay.

Skip Russell: The only reason we switched away from the William Harvey H-1000 oxygenators [was] they weren't going to make it anymore.

Mark Kurusz: I see.

Skip Russell: Different surgeons use different oxygenators. You really couldn't get a good value because you are ordering bits and pieces for each surgeon. We finally, after years, got them all on the same oxygenator, the same cardiotomy reservoir, all the same equipment...

Mark Kurusz: Sure.

Skip Russell: ...but we had some issues with other oxygenators from other companies. There was a time period that we were getting oxygenators from California when they had a bad medfly incident or fruit flies. You'd open up your tubing pack, or you'd open up your oxygenator, and there would be a dead fly inside the oxygenator. We quit using that product.

Mark Kurusz: Sure.

Skip Russell: It was easy to change the surgeon's mind when we told him there was a dead, sterile fly inside the oxygenator.

Mark Kurusz: Now, besides the individual oxygenators amongst the surgeons, were there any uniform protocols for how to conduct perfusion or was that individualized to each surgeon as well, Skip?

Skip Russell: We had a fairly standard protocol for going on and coming off bypass. We didn't really chart a lot of things when we went on, when we started cooling, when we did a blood gas. Our remarks were only four or five sentences.

Mark Kurusz: I see.

Skip Russell: We all pretty well pumped the same way.

Mark Kurusz: I see. And when did cardioplegia come into your practice?

Skip Russell: Well, we started using a crystalloid cardioplegia from the head of the table.

Mark Kurusz: Okay.

Skip Russell: It was attached to a quick-prime line, and the bag was put in a pressure bag, and we would pump it up and run it straight. There was no filter in-line. When the surgeon wanted it, we'd take the bag. We had it sitting in a tubing pack tray filled with ice. That kept it cold in between the shots. We would pump up the bag and open-up the clamp and let it run in and he'd get 200 or 400, or however much he wanted, and then we'd lay it back down in the ice when we were done. We did that for about three years. If you weren't in the room to help with the delivery of it, then anesthesia might do it, but we operated in two rooms, and we did a lot of running back and forth between the rooms, trying to make sure cardioplegia was in the ice and ready to go.

Mark Kurusz: Sure.

Skip Russell: When they finally came out with a system that hooked to the pump and was driven by the pump, then the perfusionist could deliver it. That was a huge innovation to be able to not have to have two people in the room, or somebody at the head of the table. The perfusionist could give it at will.

Mark Kurusz: Do you recall what that first integrated cardioplegia delivery system looked like?

Skip Russell: It was in a white bucket wtih a coil.

Mark Kurusz: Sure.

Skip Russell: I can't remember the company. It might have been something that Shiley produced.

Mark Kurusz: Sure. It was still crystalloid at that point?

Skip Russell: Yes.

Mark Kurusz: Did you ever transition over to a blood cardioplegia delivery?

Skip Russell: Not until we'd been working for probably 20 years.

Mark Kurusz: I see.

Skip Russell: I used crystalloid primarily on everybody.

Mark Kurusz: So, you started in 1977, is that right?

Skip Russell: Yes.

Mark Kurusz: You're still practicing…?

Skip Russell: I am.

Mark Kurusz: …in 2015. That's quite a track record.

Skip Russell: It's a lot of cases.

Mark Kurusz: A lot of cases.

Skip Russell: Yeah.

Mark Kurusz: Because the Kansas City Heart Institute or Mid-, what is it called?

Skip Russell: Mid-America Heart Institute.

Mark Kurusz: Mid-America Heart Institute has quite a reputation as almost a Mecca...

Skip Russell: Yes.

Mark Kurusz: ...for people with all sorts of issues. I know the cardiologists are very aggressive with stenting.

Skip Russell: Yes.

Mark Kurusz: When that doesn't work, I guess you see them in the operating room for their [coronary artery] bypass operations. You've been there really at two institutions your entire career.

Skip Russell: Yes.

Mark Kurusz: Bethany and the Heart Institute.

Skip Russell: I had surgeons that went around to different hospitals when I was at Bethany. I actually pumped the first five cases at a hospital in Overland Park, Kansas for those surgeons.

Mark Kurusz: Okay.

Skip Russell: I also would take the balloon pump over to different hospitals that they went to. They went to Shawnee Mission Medical Center. I took the old Avco model 7 over to Shawnee Mission.

Mark Kurusz: That must not have been very easy. Did you have a station wagon or a truck?

Skip Russell: No. I had to, somebody, one of our orderlies had a pickup truck, and that was a very heavy—it was like lifting an ATM machine into the vehicle.

Mark Kurusz: Sure. Well, as you reflect back on your career, both at the early days and at the Heart Institute, are there any surgeons that really stand out in your mind that you really learned a lot from or influenced you or enjoyed working with?

Skip Russell: Well, Dr. William Reed was the Chief surgeon at St. Luke's for 30 years, and I learned a lot from him. His partner was Arnold Killen, and Dr. Killen was a walking encyclopedia about everything, not only perfusion, but any subject that you wanted to talk about. They left St. Luke's in 2000, 2002, and they had also hired, who is our director now, Dr. Mike Borcon. I've worked with Dr. Reed for 25 years, and it overlapped with Dr. Borcon. I've now pumped with Dr. Borcon longer than I did with Dr. Reed.

Mark Kurusz: Really? Did you ever have the experience that some have talked about where the surgeons would go to a meeting and come back with a new idea on how to...

Skip Russell: Yes.

Mark Kurusz: ...how to change the delivery of cardiopulmonary bypass?

Skip Russell: Yes. We didn't have arterial line filters for a long time. The blood exited the bubble oxygenator and went straight to the patient. We had, for years, tried to get our surgeons to look at them and okay the use of it at St Luke's. After they went to a meeting and saw a presentation, they came back and said, "What do you think about arterial line filters?" We all said, "Yeah." We started doing that. Then, they're the ones that saw the membranes at the meetings.

Mark Kurusz: Sure. How did the transition go when you made a major change like that to begin using arterial line filters? Did the team get any inservice or was it sort you had to learn on your own?

Skip Russell: Well, you got a lot of help from the vendors. They would show you how to use it, show you how to prime it and no matter what it was. If we bought a new heart-lung machine, they would inservice us on the use of the equipment. It wasn't a bad learning curve, other than debubbling an arterial filter took some time.

Mark Kurusz: Did you ever implement 100% CO2 flush of the filter to aid debubbling?

Skip Russell: Yes.

Mark Kurusz: You did?

Skip Russell: When we built our present Heart Institute, we have it in line and comes out of the wall that way. The old way was to take tanks from room to room.

Mark Kurusz: Sure. Tell me a little bit about the anesthesiology team that you worked with over the years. Has it been fairly stable, and once again, are there any...

Skip Russell: Very stable.

Mark Kurusz: ...anesthesiologists that stand out in your mind that you enjoyed working with or maybe learned from?

Skip Russell: Well, Dr. Rich Nelson was our first cardiac anesthesiologist, and he's still practicing. Then, there've been a number. Dr. Jim Kelly is another one.

Mark Kurusz: Sure.

Skip Russell: Dr. Randy Hudson, one of the senior members, and we've done thousands of cases together.

Mark Kurusz: I imagine when you're on [cardiopulmonary] bypass, you and the anesthesiologist exchange information...

Skip Russell: Yes.

Mark Kurusz: ... blood gases...

Skip Russell: Yes.

Mark Kurusz: ...ACT results, that sort of thing.

Skip Russell: Yes.

Mark Kurusz: How much leeway did the anesthesiologist give you when you're on [cardiopulmonary] bypass to administer drugs directly into the pump?

Skip Russell: Well, they used to walk over and inject a little bit of neo[synephrine] into a pigtail every time the pressure got low and we couldn't get it higher with flow, and that constant walking back over to us got really old after a while.

Mark Kurusz: Sure.

Skip Russell: They finally said, "Here's the syringe. Give it when you need it." We still practice that way today. We have really quite a bit of leeway, but there were four of us there that had over 150 years' experience combined. We had a lot of leeway because there was so much trust, and we had done so many cases.

Mark Kurusz: What you're saying is you had a very stable perfusion team?

Skip Russell: Yes. Mm-hmm.

Mark Kurusz: I imagine most of your cases were coronary artery bypass grafts. Did you do any thoracic aortic surgery or ventricular assist?

Skip Russell: Not in the early years—mostly coronaries were single vessel or double vessel. When I was at Bethany, we did six double valves, and they were long, drawn-out cases, and all six of those patients died.

Mark Kurusz: Oh, my goodness.

Skip Russell: When we had double valves at St. Luke's, that was the first time I'd ever seen one survive. It was a short pump run. I was shocked that they did so well.

Mark Kurusz: Yes.

Skip Russell: The ventricular assist device program started in 1994.

Mark Kurusz: Quite early.

Skip Russell: Yeah. We had gone to Presbyterian in New York to meet Dr. Oz and see the Thoratec equipment that they were using. But in the early years, we did it with a centrifugal pumphead and...

Mark Kurusz: Sure.

Skip Russell: ...tubing.

Mark Kurusz: Sure. If you did put a centrifugal pump in for either failure to wean or postop heart failure, who actually sat with that system?

Skip Russell: The perfusion team stayed in-house.

Mark Kurusz: Okay. I imagine that put quite a dent in your manpower.

Skip Russell: Yes. We were doing a thousand pump cases a year, and if we stayed all night, we still had to work all day the next day.

Mark Kurusz: It's very tough. Certainly, a job for a younger person to be able to put in those hours, isn't it?

Skip Russell: Try to have kids. I eventually married one of my coworkers, and then we started a family, and we were both taking call. In those days, in the 1980s and into the 1990s where two people took call and two people went in when you got called.

Mark Kurusz: Okay.

Skip Russell: We tried to have two people for every case, at least going on [cardiopulmonary] bypass and coming off bypass.

Mark Kurusz: Sure.

Skip Russell: For my wife and I to juggle our call schedules and still have some vacation time together, it was tough.

Mark Kurusz: Sure. I'm going to ask sort of a broad question now, Skip, about, as you reflect back on the last 38 years, what do you think have been one or two of the major technical innovations that really changed the way you do [cardiopulmonary] bypass today?

Skip Russell: Well, to move into the membrane era was very beneficial...

Mark Kurusz: Sure.

Skip Russell: …get away from the bubble oxygenators. Although, we had done thousands of patients on bubblers, and they worked well, and they were inexpensive. The other [innovations] are the safety devices. We didn't have low level alarms. We didn't have bubble detectors. My first low level alarm would go off with when it saw light, and we would tape it to the side of the oxygenator.

Mark Kurusz: Yes.

Skip Russell: Those photosensor [types], and sometimes it worked and sometimes it didn't.

Mark Kurusz: Sure.

Skip Russell: Cardioplegia was a major innovation.

Mark Kurusz: Sure. It could really prolong the safe period of [aortic] cross clamp.

Skip Russell: Yes.

Mark Kurusz: How important has continuing education been in your career? I know that you've organized many meetings in the Kansas City area. You certainly have attended some national conferences. Tell me a little bit about continuing education in your view.

Skip Russell: Well, we all would try to go to a meeting every year. We rotated, and in the early years, the hospital was pretty giving of funds for us to travel. My favorite meeting was an AmSECT meeting because they unveiled new products in the vendor exhibits. If you wanted to see the latest oxygenator or the latest heart-lung machine, you had to go to an AmSECT meeting to see it.

Mark Kurusz: Sure.

Skip Russell: Nowadays, vendors come by as soon as they have a product—they knock on your door, and they want to show to you, but that was always the best part I thought of going to a meeting was seeing what's coming out.

Mark Kurusz: Sure.

Skip Russell: We've always done continuing education, and we did it locally. That's how I met my wife. I was at Bethany, and in those days, we had local AmSECT chapters. St. Luke's would put on a chapter meeting, and they would get one of their surgeons to speak or one of their anesthesiologists. I went over from Bethany to attend the conference, and that's how I met Maggie. We eventually got married after that. Continuing education is extremely important.

Mark Kurusz: Sure.

Skip Russell: We still host meetings. I'm part of the Missouri Perfusion Society. So, after we passed our licensing bill, some societies fold, and we thought, "Well, we'll just keep doing scientific meetings." We continue that in Missouri yearly.

Mark Kurusz: You worked with Al Stammers, I believe, with some blood management...

Skip Russell: Yes.

Mark Kurusz: ...meetings?

Skip Russell: He did a combined meeting, hemostasis meeting that Al would put on. That was a great meeting, and Al was a regular around Kansas City.

Mark Kurusz: Sure.

Skip Russell: He was the director of the program in Nebraska. He wasn't very far away.

Mark Kurusz: Sure. Over the years, as you said, you would see new equipment at the meetings, and now vendors knock on your door. This isn't really a negative or a positive thrust to this question, but what is your general view of the cardiopulmonary industry?

Skip Russell: Well, there aren't as many vendors as there used to be, and you have four or five major vendors. I was concerned that with cost containment, that the research and development programs would suffer, but they still come out with better oxygenators, and now, they have integrated filters. I think they've done a good job of promoting their products and developing good products, safe products.

Mark Kurusz: Sure. Well, let's say, give you a hypothetical, and I'm sure this may or may not have happened, but let's say you had a leaking oxygenator or some other device-related issue. How responsive did you find the various companies, without naming names, but just in general?

Skip Russell: Well, generally, if we had an oxygenator that would fail, we'd send it back to the company, and you'd get a letter stating that they ran it and couldn't find anything wrong with it. It was pretty standard.

Mark Kurusz: Yes.

Skip Russell: Then, it was exposed to blood, and they tried to wash them out. Generally, if we had a leak in something, we didn't use it very long.

Mark Kurusz: Sure.

Skip Russell: If we had problems with products, they didn't stay in our hospital.

Mark Kurusz: You would change and use what you thought was probably the best device at that time?

Skip Russell: Yes, there's seven of us now, and we evaluate everything that we use in pros and cons. We didn't used to put cost in the equation, but cost is in the equation now.

Mark Kurusz: Sure. Once a decision is made amongst your current team members, everybody uses the same system?

Skip Russell: Everybody uses it.

Mark Kurusz: Okay. Now, during your career, Skip, did you have the opportunity to work with new perfusionists or even trainee perfusionists?

Skip Russell: Well, we started as a clinical site with the University of Nebraska Medical Center in 1997. In the early years, we only would get three or four students. We still are a clinical site. We get four students a year. David Holt is the director of that program. David just brought his students down for us to showcase our new Heart Institute and to do some lectures. They have 13 in their present class. The classes have gotten a lot larger.

Mark Kurusz: Sure.

Skip Russell: The first class had Joe Deptula in it, and he went to work with Gary Grist at Children's. We captured Troy Sydzyik out of that class and Doug Zavadil went to Trinity Lutheran Hospital. Three of the four perfusionists in that class in 1997 came to Kansas City.

Mark Kurusz: Wonderful. Tell me a little bit more about the logistics of students doing a rotation at your center? Was it one student at a time?

Skip Russell: Yes.

Mark Kurusz: Did you spread the mentoring amongst the entire team, or were there designated people such as yourself that would spend as much time with one student on any given rotation?

Skip Russell: We all take the students, and students are free to pick and choose the cases they want to do. We try to point them in their direction that would be the best learning experience. If we had four cases during the day and one was a CAB [coronary artery bypass] times two, and the other was a double valve, we wanted them on the double valve.

Mark Kurusz: Sure.

Skip Russell: We sort of steered them away from easy, short cases. All of us take time with each student, and we take one student at a time.

Mark Kurusz: So, tell me a little bit more about the mentoring. Obviously, they would be involved from early morning set-up, priming, [and] managing with you looking over their shoulder.

Skip Russell: Yes.

Mark Kurusz: Did you do any post-bypass debriefing or any sort of one-on-one discussion after cases...

Skip Russell: Yes.

Mark Kurusz: ...or after a particular…?

Skip Russell: After every case, we have a score sheet, a grading sheet, and we try to go over at the end of the case that grading sheet and discuss how the case went. What was good about it? What was bad about it, but our students will bounce right into another room after they finish their first case. They generally get two a day and sometimes three a day. So, our debriefing period can be really short, but…

Mark Kurusz: A brief debriefing?

Skip Russell: Yes. I like to discuss any points of interest while we're in the room doing the case.

Mark Kurusz: Sure.

Skip Russell: There's not a long debriefing afterwards. It's just depending on how much time you have.

Mark Kurusz: Tell me a little bit about how the surgeons have reacted to having students there. Has it been fairly seamless?

Skip Russell: Yes. Our surgeons enjoy having the students, and it's made us better perfusionists.

Mark Kurusz: Really?

Skip Russell: We have to stay abreast of the latest technology, and these students come in very smart. I'm known in Nebraska as the "master of disaster." I talk about things that you don't usually see in textbooks. Lights go out. The pump fails. The oxygenator fails. The heater-cooler fails…things like that.

Mark Kurusz: Well, that actually is a good lead-in to my next question, Skip. That is, do any cases in particular stand out as ones you'll never forget?

Skip Russell: Well, you have so many successful cases that you don't always remember those. It's the cases that go bad, cases where you've had to change-out an oxygenator. I've had so many of those that they were sort all run together. In the 38 years, I would say I may have changed out an oxygenator 10 times.

Mark Kurusz: Really?

Skip Russell: Yeah. Out of the four- or five-thousand cases I've done, that's probably not very many, but for a while, we were getting a bad batch, and it was a manufacturing error. The whole lot of oxygenators were bad, and we'd change one out almost daily.

Mark Kurusz: That must have been nerve-wracking going into a case, not knowing whether the oxygenator would fail or not.

Skip Russell: Right.

Mark Kurusz: I'm sure as you changed out the first one, you changed out the third one, you changed out the sixth one, you got a little better.

Skip Russell: Yes. We got a little faster.

Mark Kurusz: That's the type of case I'm sure that sticks with you well into the next day and night.

Skip Russell: Right.

Mark Kurusz: How did you approach perfusion? Tell me a little bit about a typical workday. Even today, regarding chart review…do you interface with the patient at all?

Skip Russell: We do more of that now. Most of our patients were asleep by the time we got in the room. I mean, we would set up early in the morning, and then we would go have breakfast. By the time we got back, then the patient was already asleep and ready to go, but we're a very busy ECMO program and a very busy transplant program. We see a lot of these patients before surgery. Of course, we don't stay in house with our ECMO patients. We have a group of specialists from internists to nurses to Respiratory Therapists that help us. We're still a busy surgery program.

Mark Kurusz: Sure. That's very much sounds like the University of Michigan ECMO…

Skip Russell: We've modeled our ECMO program after Michigan's program.

Mark Kurusz: But the perfusionists clearly are involved with setting up...

Skip Russell: …all priming, yes.

Mark Kurusz: ...priming, initiating...

Skip Russell: Change-outs.

Mark Kurusz: ...troubleshooting.

Skip Russell: Yes.

Mark Kurusz: If a patient's on ECMO, Skip, do you have one of the perfusion members make rounds daily?

Skip Russell: Yes. Even on weekends.

Mark Kurusz: Really?

Skip Russell: Daily rounds. We leave our name at the nurses' station and who to contact at night. We come in on the weekends and round on those patients.

Mark Kurusz: I imagine your ECMO program started out with infants or newborns.

Skip Russell: No.

Mark Kurusz: Are you taking all comers now?

Skip Russell: It's all adults. We don't do any pediatric cases at St. Luke's.

Mark Kurusz: All adult?

Skip Russell: Uh-huh.

Mark Kurusz: Respiratory failure. Those are challenging cases. Those tend to be long cases.

Skip Russell: Well, most of them are pneumonias and ARDS, H1N1. I think the longest we ever had anybody on ECMO was 45 days.

Mark Kurusz: Well, that's a long time.

Skip Russell: Our VV ECMO is very successful. We're above the national average in survival. Our VA ECMOs take more of an incident of cardiac failure.

Mark Kurusz: Sure.

Skip Russell: Last winter, in 2014, we had eight ECMOs at one time.

Mark Kurusz: My goodness.

Skip Russell: We only had four carts. So, I'd go to Children's Mercy Hospital and get some of their equipment. I would go to North Kansas City Hospital and get some of their equipment. We had to borrow to take care of everybody. This past winter was not as bad.

Mark Kurusz: Okay.

Skip Russell: We've done five so far this year.

Mark Kurusz: I imagine you started out with the SciMed Kolobow membrane. What sort of circuitry are you using now for adult ECMO?

Skip Russell: It's a Quadrox oxygenator.

Mark Kurusz: Quadrox?

Skip Russell: Mm-hmm.

Mark Kurusz: What sort of a pump, Skip?

Skip Russell: Yes. We use a Revolution from Sorin, centrifugal pump.

Mark Kurusz: Do you have to change out the centrifugal pump every few days or do they generally last the…

Skip Russell: No. They last usually longer than the oxygenator does.

Mark Kurusz: Really?

Skip Russell: Yeah.

Mark Kurusz: Okay.

Skip Russell: If we do a change-out, they get a whole new circuit.

Mark Kurusz: Sure.

Skip Russell: We've had issues with clotting. Some of our patients get heparinized and some not. If they're bleeding, we don't heparinize them. Every day, when you round, you check the oxygenator on both sides for clots...

Mark Kurusz: Sure.

Skip Russell: ...visible clots, and we do blood gases daily.

Mark Kurusz: Sure.

Skip Russell: When the blood gases start to deteriorate, then we change-out the oxygenator.

Mark Kurusz: Okay. I imagine in the patients that don't get heparin, these are coated circuits, is that right?

Skip Russell: Yes.

Mark Kurusz: Okay.

Skip Russell: All of our tubing is coated...

Mark Kurusz: I see.

Skip Russell: ...for every patient.

Mark Kurusz: Let's talk now a little bit about teamwork, not just with ECMO, but in the operating room. Do you have regular team meetings or does everybody seem to get along? How do you handle the teamwork aspects in your practice?

Skip Russell: Well, in the early years, the four or five of us worked together for a long, long time. We're now up to seven people. We've hired some of our students. It's a very cohesive group. We have a good time in our office. We laugh a lot, but we take our job very seriously, and we have a very tight team. The acuity level of our patients is really high, and we do a lot of cases, and we have seven surgeons. We're a busy program, and it's very good. That's all we do. We're in a new Heart Institute after 30 years in our last one. It's the same people every day, same nurses, same anesthesiologists.

Mark Kurusz: Sure. You alluded to patients being a little sicker these days than they may have been a decade or more ago.

Skip Russell: True.

Mark Kurusz: How many cases during a typical week now get added on as either urgent or emergent?

Skip Russell: It's not uncommon to get one almost daily...

Mark Kurusz: Really?

Skip Russell: ...or every two or three days.

Mark Kurusz: Where they call down from the cath lab and say, "This patient needs to go to surgery now?"

Skip Russell: Right. You really can't put a lot of stock in our schedule because it changes.

Mark Kurusz: Really?

Skip Russell: I get up in the morning and at home while I'm having coffee, and I look at our schedule on my computer. By the time I get to work, there could be two or three cases added on...

Mark Kurusz: Really?

Skip Russell: ...that I didn't see.

Mark Kurusz: That's a very, very busy program.

Skip Russell: Right.

Mark Kurusz: Do you have any perfusion-related stories that stand out, either while attending conferences or sharing experiences with other perfusionists, that you'd like to share with the people viewing this interview?

Skip Russell: Well, I got to meet [Dr.] Denton Cooley at an AmSECT meeting that was in Houston, and one of my coworkers had gone to THI, and she took us over to the hospital and we met him, shook hands with him. I was probably 28 or 29 years-old and had come from a small program and now into a big program. That meant a lot to me to meet Dr. Cooley.

Mark Kurusz: Sure.

Skip Russell: I've rubbed elbows with a lot of the people that are here at this meeting today.

Mark Kurusz: Yes.

Skip Russell: It's good to see old faces. One of the remarks from my students is how young the group looked, and I said, "Well, you don't see very much gray hair in this room."

Mark Kurusz: Yes.

Skip Russell: I actually took my board exams after I'd been in the field for 15 years.

Mark Kurusz: Really?

Skip Russell: I got certified in 1993.

Mark Kurusz: Okay.

Skip Russell: I didn't go to a school. Everything that was on the test, I had to learn by reading books. I studied with a coworker that was also taking the exam, and he and I went through the process together.

Mark Kurusz: That must have been challenging.

Skip Russell: Well, I did very well on the oral exam. The written was a little tougher. It took two attempts to get through the written exam.

Mark Kurusz: Well, the disadvantage, of course, is that you didn't come out of a formal training program, so as you said, you had to do a lot of book-reading on your own.

Skip Russell: Yes. I had a lot of test questions on tape that we had made, and I'd listened to those tapes when I drove to work and drove home at the end of the day.

Mark Kurusz: Sure. Now, licensure was recently enacted in your state.

Skip Russell: Yes.

Mark Kurusz: Tell us a little bit about what the criterion is to be licensed in Missouri.

Skip Russell: Well, it's tied into continuing education. You have to be a certified perfusionist to get a license.

Mark Kurusz: Okay.

Skip Russell: We can hire new grads, and they can qualify for provisional license, but they have to have a mentor with them while they're working and waiting to take their board exams.

Mark Kurusz: I see. Well, it's not unlike the situation in other states...

Skip Russell: Right.

Mark Kurusz: ...where the American Board [of Cardiovascular Perfusion] certificate is very, very important, and many state licensing boards, I think, have adopted the American Board...

Skip Russell: Yes.

Mark Kurusz: ... criterion.

Skip Russell: Our first president was Bob Longenecker, and he got a group of us together in St. Louis. We passed our licensing bill the first year that we attempted it.

Mark Kurusz: Really?

Skip Russell: I sat on, I was the representative from the Kansas City area and then was elected vice president. Then, I became the society's second president.

Mark Kurusz: Wonderful.

Skip Russell: Bob and I have worked together for a long time.

Mark Kurusz: Well, to get it through the legislature in just one year, I think is extraordinary. I know that in other states, it's several years to get a licensure bill passed and mandated essentially for all perfusionists.

Skip Russell: Yes.

Mark Kurusz: I know in New York they spent many, many years.

Skip Russell: You have to come up with the money, usually comes out of all the members of a society that...

Mark Kurusz: Sure.

Skip Russell: ...your lobbyist costs. If it drags on for several years, you can run out of money quick.

Mark Kurusz: Well, that was another good day when they finally passed it in Missouri, after only one year's effort.

Skip Russell: Yes. All the board of directors were in the governor's office.

Mark Kurusz: Really?

Skip Russell: We had a photo taken, and I had taken my son with me. He's just under the edge of the picture and sitting on Mel Carnahan, the governor's desk sort of because he got a little tired of standing. So, I joke with my son a lot about sitting on the corner of the governor's desk to rest.

Mark Kurusz: How old was your son at that time?

Skip Russell: I believe he was 11 [years-old].

Mark Kurusz: Okay. Well, now again, shifting gears a bit, Skip, what in your estimation constitutes some personal attributes to be a good perfusionist? Can you reflect on that first?

Skip Russell: I've always been concerned about details, attention to detail, and there's so much multitasking going on while you're doing a case that you really need to pay attention and stay focused to all the aspects of it.

Mark Kurusz: Sure.

Skip Russell: We've gone to an electronic record, and that has helped us a lot to stay more focused on all the other tasks that we do, but it's much more complicated now than it used to be.

Mark Kurusz: Sure.

Skip Russell: Heart-lung machines are more sophisticated, more computerized. The early pictures of our pump were just five roller heads and nothing mounted on the mast except a Secrest oxygen blender.

Mark Kurusz: Sure.

Skip Russell: Now, we have displays, and we have vacuum regulators, and we have [an] electronic oxygen delivery system, and it's very congested.

Mark Kurusz: How easy or difficult was it to implement the electronic record into your practice?

Skip Russell: It took me eight years to get it.

Mark Kurusz: Eight years? Once the decision was made to implement it, how quickly did the perfusion team adapt to using that as opposed to the handwritten record?

Skip Russell: Well, and I've kept a handwritten record for 35 years.

Mark Kurusz: You continue to keep a hand record?

Skip Russell: I do not...

Mark Kurusz: You don't?

Skip Russell: ...but the transition was very easy because the device that we selected was very user-friendly. The more user-friendly it is, the more expensive it is. But our hospital had me sit in on a prioritization committee meeting. I had five minutes to plead my case, and I showed

pictures on PowerPoint slides of people with bad penmanship. The handwritten records were perfect. They had done everything, but it was very difficult to read. Our record now is we tweak it every couple of days...

Mark Kurusz: I see.

Skip Russell: ...add something that we like, take something out that we don't like. It is very simple to use.

Mark Kurusz: Well, I would say that your group is ahead of the curve on this because the electronic record is very slowly being embraced...

Skip Russell: Yes.

Mark Kurusz: ...and used around the country.

Skip Russell: Now, we are the only hospital in Kansas City that has it.

Mark Kurusz: Really? Well, I'm going to pose another question, a very broad question as we're getting near the end of this interview, Skip, and that is what has it meant to you personally to have been a perfusionist for as long as you have been?

Skip Russell: I absolutely love it. I get up in the morning, and I'm ready to go. My wife is a perfusionist for 40 years. We could talk about a day at work, and we both knew exactly what each other did. I was asked that by David Holt last week. He said, "Do you have as much enthusiasm as you did 38 years ago?" I said, "Absolutely."

Mark Kurusz: That's wonderful. That is wonderful.

Skip Russell: I really enjoy it.

Mark Kurusz: Even though, I think you alluded to earlier, other than the ECMO patients or maybe some of the VAD patients, your interaction with individual heart patients is fairly limited. Do you ever visit patients postop or happen to see patients after their surgery?

Skip Russell: Not weeks after, but usually postoperatively, especially if we had a really long, difficult case, we like to check up on them...

Mark Kurusz: Sure.

Skip Russell: ...to see how they're doing.

Mark Kurusz: Sure. Well, is there anything else you'd like to share with today's perfusionists when they view your video? The plan is to either post the entire interview or post some

excerpts on the AmSECT website. Are there any words of wisdom you might have for today's new perfusionists, Skip?

Skip Russell: Well, pay attention to detail, study regularly, read as many journals as you can, but enjoy what you do. Hopefully, they'll take jobs that they have coworkers like I've had that you get along with, trust, and that you have their back and that they'll have yours.

Mark Kurusz: Well, it sounds like an ideal situation, and I really applaud your experience that you've shared with us today. Are there any other closing thoughts you might want to say before we turn off the camera?

Skip Russell: This has been a pleasure knowing you for a long time.

Mark Kurusz: Well, thank you. Thank you, Skip. Well, I think that this has been a wonderful hour we've spent with you. We really appreciate you sharing your thoughts and experiences on behalf of AmSECT. As you may know, the Executive Board made the decision on who to interview, and we're just delighted that you were willing to be interviewed. I know there was a bit of a hesitation when I first invited you, but...

Skip Russell: There was.

Mark Kurusz: ...you were the first to say, "Yes, I'll be there." I want to thank you for that.

Skip Russell: In looking at today's perfusionists, they look really smart.

Mark Kurusz: Yes.

Skip Russell: I never thought I was as smart as these kids today and most of the people in the room. I've just been very, very dedicated, and I've been around a long time.

Mark Kurusz: Wonderful. Well, thank you so much. Skip. This has been terrific.

Skip Russell: Thank you.