(Brief pause in proceedings.)

MS. LAMBERT: State calls Dr. Randy Marcel.

(Witness sworn by the Court.)

THE COURT: Proceed.

RANDY MARCEL, MD,

the witness hereinbefore named, having been duly sworn by the Court, testifies under oath as follows:

DIRECT EXAMINATION

BY MS. LAMBERT:

Q. Could you please introduce yourself to the Members of the Jury.

A. Dr. Randy Marcel.

Q. And what do you do for a living?

A. I'm an anesthesiologist?

Q. How long have you been practicing as an anesthesiologist?

A. Private practice, since 1994.

Q. What kind of educational background and training do you have that allows you to practice as an anesthesiologist?

A. I went to medical school in -- at Mercy University School of Medicine in Georgia. And then I did my anesthesia residency training at UT Southwestern here in Dallas. And then I stayed on and did a fellowship in transplant and cardiac anesthesia in downtown Baylor, where I remained on

staff for 13 years at downtown Baylor.

I was the assistant director of anesthesia and medical services there for five years, before leaving there in '05; and then went to Baylor Plano, when it was built, and was medical director and director of anesthesia services at Baylor Plano. And then, when the heart hospital was built, my practice shifted mainly to cardiac.

Since that time, I've been serving as medical director at both facilities until 2013.

Q. And what do you do now?

A. My practice now is mainly gravitated towards cardiac anesthesia, minimally-invasive. But specifically cardiac anesthesia and valve repairs. Minimally-invasive robotic valve services.

Q. So back in 2012, did you serve on any committees for the hospital?

A. Yes. In 2012, as director of anesthesia and medical services for anesthesia services, I was on the Quality Committee and also the Medical Exec Committee.

Q. We have already heard from Dr. Sample. Were you on the same Medical Executive Committee as Dr. Sample at that time?

A. Yes, that's correct.

Q. Is there only one of those at that hospital?

A. There's one Quality Committee and there's one

Medical Exec Committee.

Q. We've been hearing a lot about "peer review" today.

Can you kind of tell us what peer review is and what the concept of peer review is.

A. Peer review is an internal review that's in the process of -- from a hospital, whereby cases are -- patient cases that are at the hospital are reviewed and graded by a committee to ensure that there's ongoing quality of care. And if there's any areas that need improvement, then the Committee often will recommend such improvements to the providers.

Q. Okay. And why -- what's the purpose of the peer review?

Is it for the physician? Is it for the hospital?

A. No. It's strictly an internal thing for the hospital and for the staff to -- so that Baylor can try to maintain quality. So, it's really an internal review. It's not meant for outside review. It's really an internal process that takes place.

Q. Okay. And why is it so confidential?

A. Well, I think the reason for that is, is that there's sensitive cases that come before the area of -- our emphasis is mainly on quality, to ensure the physicians are comfortable with self reporting and being -- reporting to

these committees so we can be trustworthy and reliable; that those processes are going to be fair to the physicians that are involved so that ongoing quality can be assured, without being punitive from an outside source.

Q. Is it a big deal, as a physician, to be notified that your cases are being sent to the Peer Review Committee?

A. Well, I don't know if the right word's "a big deal". You take that seriously. I mean, you would certainly wanna be involved in that process.

Q. Let's talk about the Defendant. How are you related to this case?

A. I was on the Quality Committee at the time and was asked to review the anesthesia care that was involved on a case at Baylor Plano.

Q. Okay. Do you recall the name of the patient on that case?

A. Kellie Martin.

Q. And what records did you review in coming to a conclusion or in reviewing her case?

A. The entire chart, medical file.

Q. Did you review the case by yourself? Or did the whole Committee review it? How does that work?

A. So, when there's a case that involves surgical care, I'm the anesthesiologist expert on the Committee. So I'm given the entire chart to review and the entire case.

Any quality issues that relate to the anesthesia or anesthesia care, then I serve to report back to the Quality Committee, which then -- there's a discussion usually within the Quality Committee about that case and what my findings were and any recommendations that I might have to the Committee.

And then the Committee makes a decision about those recommendations and decide to move forward with whatever decision they make.

Q. Dr. Marcel, I'm going to show you what's been marked as State's Exhibit 61. What is that?

A. That's the anesthesia record for Kellie Martin.

Q. And what date did this reflect her surgery occurred?

A. 3-12-2012.

Q. And who was the anesthesiologist?

A. It indicates Dr. Isaac.

Q. And the surgeon?

A. Dr. Duntsch.

MS. LAMBERT: The State offers State's Exhibit 61.

MR. FRANKLIN: Same: 404(b), Judge.

THE COURT: Overruled. Admitted.

Q. (By Ms. Lambert) I'm going to put this up on the big screen, Dr. Marcel. You can look to your right.

A. Okay.

Q. Okay. So, to the rest of us, this looks like some --

A. Jibberish.

Q. Yes. Okay. What are these check marks and arrows here (indicating)?

A. So, the top check marks that are going up would indicate the systolic blood pressure during the case. The check marks that are down would represent the diastolic blood pressure during the case.

The little dots that are every five minutes are the pulse rate that correspond to that time.

Q. Okay. And, on here, does it also show where blood pressure medication was administered?

A. Yes. Under the top left are the list of drugs that were administered during the operation.

If you look at the sixth one down (indicating) --

Q. You can actually touch the screen.

A. Oh. Okay. The sixth one down here (indicating), that's ephedrine. Approximately, over to the right -- at the top is the time. So, over to the right, approximately 9:25, there's 10 milligrams of ephedrine given. And then some ten minutes later another five milligrams, then 10 milligrams, 20 milligrams. I can't quite read that. I think it's another five and 10 milligrams.

Q. Okay. You said these dots down here, those -- that's the pulse (indicating)? Is that what you said?

A. Yes. The dots that go across here, here, here, here, those are pulse rates (indicating).

Q. Okay. And when blood pressure drops during surgery, what does that indicate?

A. Well, it can have a variety of things. It can be origin -- I mean, it has to be of origin from the cardiovascular system, because that's what generates blood pressure.

When you have a falling blood pressure, in the light of a rising pulse, then you most often think blood loss is at the top of the list, by far.

Also, I neglected to say -- can I go back?

Q. Absolutely.

A. Right here, it says "Fenfedrin" (indicating). Those are blood pressure medicines. At the end of the case, there's 100, 200, 300 milligrams given. And then below that, epinephrin. And there's ten, ten, ten milligrams given all at the end of the case.

Q. And why is that significant?

A. Because, at the end of the case, you see, as time goes along, the very last 30 minutes of the case, there was a precipitous drop in blood pressure to 60 milligrams of -- 60 milliliters of mercury. And the heart rate was as high

as 120.

So it looks like the anesthesiologist was aggressively treating blood pressure at that point.

Q. You said, when the blood pressure drops, the first indication that you think of is bleeding; is that correct?

A. Well, I mean, in the surgical setting then, yes. Frequently, you want to think of bleeding and make sure that there's no excessive bleeding occurring.

Q. When the blood pressure drops, what does the anesthesiologist do in response to that?

A. Well, quite often, you try to administer fluids and try to bring the blood pressure back up to restore the blood volume.

A temper-rising measure would be to administer aphasia pressure drugs. In this case, it was three different aphasia pressure drugs given, as I just pointed out.

Q. That was an attempt to bring that blood pressure back up?

A. Right. There would also be, at this point, communication with the surgical staff to ensure that there was not bleeding occurring that was not visible to the view of the anesthesiologist at the head of the table.

Q. Okay. So what would that look like?

What should the anesthesiologist do at this point?

A. They would be speaking to the surgeon and the

surgical staff and asking questions; ,such as, "Is there excessive blood loss or something going on in the field that I cannot see?"

Quite often today the incisions are pretty small, because there's a trend towards minimally-invasive surgery. So some of the incisions can be quite small, and blood loss may not be evident unless you're in the direct surgical field.

Q. If the surgeon is telling the anesthesiologist that there's no blood in the operative field, what can that be indicative of?

A. If a surgeon's saying there's no blood in the field?

Q. Yes.

A. I mean, it could be that there's no bleeding occurring in the field.

Q. But there's a drop in blood pressure and a rise in the pulse.

A. Yes.

Q. And so does that still mean there's no bleeding occurring?

A. No. No. It may be, you know, a bleeding that's occurring at a different site. It can be an injury that was unforeseen in the site. At that point, you know, you'd want to be checking some parameters to make sure that that was

the case.

Q. Okay. Is there -- what kind of testing can you do to test for that?

A. Well, at this particular facility, there's a bedside monitor called an "i-STAT" -- I, hyphen, s-t-a-t (spelling) -- where you can draw blood, and it will give you some basic labs at the bedside in a just a few minutes.

Q. Okay. So, looking at this, we see that first drop right here (indicating).

A. Yes.

Q. Okay. So, we see that first drop right there.

A. Correct.

Q. And does that appear to be about 9:15 or 9:10?

A. Yes. About 9:10, 9:15.

Q. Okay. So, that's that first drop.

A. Correct.

Q. Does that indicate to us that that may be when the surgical injury occurred, that would be leading to blood loss?

A. Yes. Certainly possible at that point. I don't see any indication that that blood pressure was lowered on purpose.

Sometimes, for minimally-invasive surgeries, we lower the blood pressure so there's minimal bleeding. Because the surgeon is looking through a small incision, so any bleeding

can be overwhelming in that tiny incision.

But I don't see any indication that that was the case; that the blood pressure was lowered on purpose.

So the fact that that blood pressure dropped from 100 plus to below 80's would indicate that something at that point was going on. That would have alerted me at that point.

Q. Okay. So the surgery started -- this reflects the surgery started around 8:32. Is that what that says?

A. I think 8:36 is the exact time, in the bottom right.

Q. Okay. And so then 9:10 or so is when that first blood pressure -- an indication that the blood pressure dropped, correct?

A. That's correct.

Q. Okay. So then this entire rest of the time, the blood pressure is low. And it drops again here, correct (indicating)?

A. Correct.

Q. Okay. And so what time does the -- did the surgery end?

A. It looks like about 11:40. On the bottom right, exact surgical time would be the intraoperative record from the nurse. But the anesthesia actually stopped it at 11:44, it looks like.

Q. Okay. So Kellie would have been potentially bleeding from 9:15 until the end time?

A. Correct.

Q. Okay. And tell us, when a person is losing blood or bleeding internally during a surgery, what kind of issues can that cause?

A. Well, I mean, the immediate issue is what you're seeing here, is a drop in blood pressure, rise in heart rate.

If that's sustained over a long period of time then, eventually, you start to get organ failure. The large organ beds suffer the most. The legs may become ischemic, may become painful. The liver may start to not function.

If there's a large blood loss, the clotting factors that are in the blood would start to be lost and then there would be ongoing bleeding due to coagulopathy. That's where the clotting factors have been used up by the clotting process, because of the overwhelming blood loss.

Q. So that might result in blood that's a little thinner and different in color than blood that's been clotted; is that right?

A. Yes, that's correct.

Q. And why does the pulse rate -- what relation does the pulse rate have to the blood pressure?

Why do we see that rise?

A. That's a reflection where the heart is trying to overcome the loss of blood and volume.

So, as the heart -- if you think of the heart as a pump and the fluid that's coming into the heart, the heart pumps out. If there's less fluid coming in, the heart has to work harder and faster to get that same amount of fluid out of the heart to profuse the organ beds that are downstream from the heart.

Q. Okay. So when the blood is not distributing -- when the blood pressure is low, the blood is not distributing the oxygen and nutrients to the vital organs, correct?

A. That's a basic way of looking at it. Correct.

Q. Is there any way to calculate the amount of time it would take for that to do damage to someone?

A. Well, I mean, every individual is a little bit different. But all individuals, at some point, with ongoing blood loss would have irreversible organ damage.

The thing that's most often feared is hypoxic brain injury, where the brain cannot get enough oxygen and then the brain would slowly die and the person would have an oxygenic injury and death.

Q. In your review of this case, you had some criticisms of the anesthesiologist, correct?

A. Yes.

Q. Is it fair to say that your strongest criticisms occur in that last 45 minutes of the surgery?

A. Yeah, I think that's fair to say.

Q. Okay. And what did you think he should have been doing at that point?

A. I think he should have properly been checking some of the i-STAT levels at this point, hemoglobin levels at this point.

It looks like --

Q. And if you want to mark on the screen, you can show the jury where --

A. Well, I just need to see the bottom. The bottom is cut off right there.

Q. Oh.

A. So, he doesn't record fluids right here. They might have been recorded in the ICU record. But, at this point, he should have been administering a lot of fluids. I can't recall the exact amount, because I didn't look it up at the time.

I was critical of the last little part, where he should have checked labs and been, in my opinion, more aggressive.

Q. And when you're reviewing the case in a peer review context, how are you looking at this case?

A. In the peer review quality, I mean, we are grading this with the utmost care and we are being very aggressive

with the grading system.

The goal here, again, of the Quality Committee is to have an A+ rating on all care that's administered at Baylor. So we're very critical of anything that goes on, and we're very aggressive about bringing that physician in and talking to them and trying to begin -- the goal here is to include quality and get the highest quality of care.

So any reviews that I do on quality are always graded with the utmost sternness, if you will.

Q. If a person is bleeding internally, and the blood pressure drops, is there a point in which there will be nowhere else for the blood to go?

Does the space that it can fill into, will it fill up? How does that work?

A. It depends on the site. In this case, it was a lower-back operation. And so there's only a few places for it to go, because it's a relatively-closed, tight space.

Blood at that point would have been going -- would have been coming up out of the surgical field, I would think, at a pretty brisk rate. Also, blood would have been going posterior into a retroperitoneal space at that point.

Q. So if the surgeon is saying, "I'm not seeing any blood. I don't know what the problem is," you believe that wouldn't be the case. Is that fair? Because you think it would be coming up through the surgical site?

A. Well, I mean, blood doesn't choose a left or right. It's going to go both left and right. So blood would have been coming out of the surgical site at a brisk -- more than normal brisk rate, and also been going posteriorly.

Blood is going to take the path of least resistence, so it's going to go where the easiest place to go is, if you would. So it's going to come out of that surgical site. It's going to be a noticeable thing.

Q. If blood were going into the retroperitoneal space and were to fill up that space and kind of create pressure, would the patient feel that when they were awake?

A. Well, what happens is, blood starts to fill that space. There's -- we call it a "space" but it's really just a potential space. There are some important structures back in that space: the vena cava, the aorta's in there, some parts of the bowel, duodenum, if you would, is in that space.

One of the most important structures back there are the nerves and stuff that leave the back and go through some large muscles in that space. So the nerves that leave your back and go down to your legs, that provide feeling in your legs, are all in that space.

So, to answer your question, if that space was full of blood and was very tight and the patient was awake, they

would complain of excruciating pain from the pressure of those nerves. So the pain would have been quite severe into the lower extremities.

Q. Can it cause paralysis, of any sort?

A. Sure. If -- we've seen that in patients before, with retroperitoneal bleeds, where the leg -- nerve was compressed. Unable to move.

Q. And so we talked about that last 45 minutes. That would be roughly like this time period here, that you really would have liked to have seen the anesthesiologist be more aggressive; is that correct (indicating)?

A. Yes. Absolutely.

Q. So, let's say that he had done the hemoglobin test that you suggested and had started administering some fluid and some blood.

Is there a possibility that he could have kept Kellie alive longer?

A. I think it's possible. This is a pretty precipitous drop. That would indicate there was an ongoing significant blood loss at that point.

Q. And she had been bleeding possibly from this point all the way through here, correct (indicating)?

A. Yes.

Q. And so if he had been able to keep her alive a little longer, do we know what state she would have woke up

in, if she would been kept alive?

A. Well, I mean, I can speculate as to what that would have been. I mean, at that point, with that hypertension and the tachycardia, that's a significant blood loss.

I think, at that point, you're starting to get into organ damage. And I can only imagine that she would have woke up with possible ongoing neurological damage to the lower extremities or widespread organ failure, that would have led to death.

Q. And that's because there's no way to predict which organs didn't get the blood they needed, correct, during that time period?

A. Right. They probably all didn't get the blood they needed at that point. Which organ would fail first or which would be more severe is anybody's guess.

Q. Ultimately, the Medical Executive Committee, when they reviewed Kellie's case, did they find that Dr. Isaac, the anesthesiologist, was the cause of Kellie's death?

A. I wasn't privy to that final -- the grading came from the Quality Committee. Dr. Isaac was graded as below average. "Needs improvement" was his final grade.

Q. And that was based on your critique that you would have liked him to be more aggressive?

A. And the discussion with the Quality Committee,

yes.

Q. But Dr. Isaac didn't cause the bleed, correct?

A. No.

Q. Is that what the Committee determined?

A. Yes.

Q. There was no doubt about that.

A. No.

Q. Correct?

A. Absolutely none.

Q. And Dr. Isaac could not have fixed the bleed itself.

A. No. No.

Q. As an anesthesiologist, that's not his role.

A. No. Absolutely.

Q. Best, he could have managed the -- he could have given fluid, given blood and tried to manage the situation, correct?

A. Correct.

Q. Without fixing the bleed, would she have eventually bled to death anyway?

A. I think the ICU records would indicate that, yes, she did in fact bleed to death.

MS. LAMBERT: Pass the witness.

CROSS EXAMINATION

BY MR. FRANKLIN:

Q. Doctor, is that document up here the only thing that you reviewed?

A. No, sir. As I stated earlier, I reviewed the entire chart.

Q. You didn't review anything about the surgery itself, did you?

A. I'm not sure I understand that question. The entire surgery was in the chart.

Q. All right.

A. The surgical records were in the chart.

Q. Okay. But your focus was on the anesthesiologist; is that correct?

A. The focus -- my job on the Quality Committee was to critique the anesthesiologist's care. But you can't do that, without looking at the entire chart and the entire process and the entire surgery.

Q. So you reviewed what happened in the ICU?

A. Yes.

Q. Okay. And do you recall how long she survived in the ICU?

A. I don't recall the exact time. But it was more than minutes, less than hours.

Q. And what is the function of a vascular surgeon?

A. Vascular surgeon is somebody that works on the vasculature of the body.

Q. And that would have been vascular surgeons at Baylor Hospital during this time of the surgery?

A. I don't know if there was a vascular surgeon in the operating suite at that time. But there was probably vascular surgeons on staff, yes. I think that's your question.

Q. Yes, that's the question. And you don't know what the final outcome of the peer review report was?

A. With regards to which physician?

Q. With regard to the surgeon, Dr. Duntsch.

A. No. With regard to the surgeon during the peer review process, there was discussion about this case.

During the Quality Committee meeting, it was suggested that we possibly suspend privileges until we can get more information, until we can figure out what was going on.

That recommendation was sent to the Medical Exec Committee at that time, which I also served on. And in the Medical Exec Committee meeting, that discussion was that the medical exec agreed with that recommendation from the Quality Committee.

And, at that time, the recommendation was taken forward by the Baylor administration, with reference to the Baylor lawyers at that time. From that process forward, I do not have privy to that.

Q. Went up to the lawyers, did you say?

A. That's what I recall.

Q. Oh. Okay. All right.

MR. FRANKLIN: No further questions. Thank you very much.

MS. LAMBERT: Nothing further, Your Honor.

THE COURT: Thank you, Doctor.

Ladies and Gentlemen, that's all the testimony you're going to be hearing today. Let's meet again at nine o'clock tomorrow morning.

THE BAILIFF: All rise.

(Members of the Jury retire to the jury room and are released for the evening.)

MISS SHUGHART: Your Honor, I would like to ask the Court to please seal the Baylor peer review records that have been entered into evidence, so that they're not out in the public. Of course, it doesn't seal it from the jury. That would be State's Exhibits 79 through 84; and Defense Exhibits 3, 6 and 8, because those records are confidential and generally not subject to being in the public at all.

MISS McCLUNG: No objection, Judge.

THE COURT: All right. Anything else?

MISS SHUGHART: That's it.

THE COURT: See you tomorrow.

(Proceedings recessed for the evening.)