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STATE OF O H I O)
) SS.
COUNTY OF CUYAHOGA)

IN THE COURT OF COMMON PLEAS
CUYAHOGA COUNTY, OHIO

CHRISTOPHER S. LONG, Executor of the Estate of James Long,

Plaintiff,

v.

CLEVELAND CLINIC FOUNDATION,

Defendant.

No. 419978
Judge: Burt W. Griffin

Deposition of JEFFERY S. VENDER, M.D., called as a witness by the Plaintiff, pursuant to the provisions of the Ohio Rules of Civil Procedure pertaining to the taking of depositions, before Melanie L. Humphrey-Sonntag, CSR, RDR, CRR, and a Notary Public in and for the County of DuPage, State of Illinois, taken at Evanston Hospital, 2650 Ridge Avenue, Evanston, Illinois, on the 25th day of February, A.D. 2002, at the hour of 2:05 p.m.

PRESENT:

BECKER & MISHKIND CO., L.P.A., by

MS. JEANNE M. TOSTI,

Skylight Office Tower, Suite 660
1660 West Second Street
Cleveland, Ohio 44113
(216) 241-2600

appeared on behalf of Plaintiff; and

ROETZEL & ANDRESS, a Legal Professional Association, by

MR. JOHN V. JACKSON,

One Cleveland Center, Tenth Floor
1375 East Ninth Street
Cleveland, Ohio 44114
(216) 623-0150

appeared on behalf of Defendant.

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(Attached to original and copy transcripts.)

(The document was thereupon marked Plaintiff's Exhibit No. 2 for identification as of February 25, 2002.)

(The witness was thereupon duly sworn.)

MS. TOSTI: Doctor, did you bring your file with you today?

THE WITNESS: No.

MS. TOSTI: John, can you produce his file for me?

MR. JACKSON: I -- I do not have his file, Jeanne. I don't --

THE WITNESS: I can get it to him. I'd have to mail it back.

MS. TOSTI: Okay.

MR. JACKSON: I don't have it.

MS. TOSTI: Because I think I would like to see what's in your file.

Do you recall what documents that you've reviewed in this case?

THE WITNESS: Sure. Oh, yeah.

MS. TOSTI: Okay. I will get to that in just a minute. We'll go through some

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of those.

Do you have a set of records for the doctor to look at, John?

MR. JACKSON: I do not.

Here, I can maybe save some time on this. Here's a letter.

MS. TOSTI: I have his report, so --

MR. JACKSON: Okay. I will tell you that what's in his report is all the records that were sent to him.

MS. TOSTI: Okay.

JEFFERY S. VENDER, M.D.,

called as a witness by the Plaintiff, pursuant to the provisions of the Ohio Rules of Civil Procedure pertaining to the taking of depositions, having been first duly sworn, was examined and testified as follows:

E X A M I N A T I O N

BY MS. TOSTI:

Q Doctor, would you please state your full name for me.

A Yeah. Jeffery S. Vender; V, as in Victor, E N D E R.

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Q And what is your business address?

A Evanston Northwestern Healthcare. It's Evanston Hospital, 2650 Ridge -- R I D G E -- Evanston 60201.

MR. JACKSON: Let me correct something.

He -- he was sent Dr. Minore's deposition, also. That's not listed in his report.

MS. TOSTI: Okay. Well, we'll go through what he doesn't have.

MR. JACKSON: I just wanted you to -- I made that statement before, but I need to correct it.

BY MS. TOSTI:

Q Have you ever had your deposition taken before, Doctor?

A Yes, I have.

Q Okay. How many times?

A Oh, over 50.

Q Okay. Well, I'm sure counsel's had a chance to talk with you, but I'm just going to go over a few of the ground rules.

This is a question-and-answer session.

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It's under oath. It's important that you understand my questions.

If you don't understand my questions, let me know, and I'll be happy to repeat the question or to rephrase the question. Otherwise, I'm going to assume you understood my question and that you're able to answer it.

It's important that you give all of your answers verbally because the Court Reporter can't take down head nods or hand motions.

At some point defense counsel may choose to enter an objection. You're still required to answer my questions unless he instructs you not to answer them.

At this point you don't have any medical records to refer to, and defense counsel has said he doesn't have any medical records for you to refer to, so I would normally offer you that option if it would be helpful to you in answering the questions.

Do you understand those instructions as I've given them to you?

A Yes.

Q Okay. Doctor, I have a -- a copy of your

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report, and in that report it indicates some materials that you've reviewed in addition to the depositions of Dr. Cosgrove, Dr. Muehlebach, Dr. Hernandez, Dr. Hearn, Dr. Koch, a Nurse Hrobat, Nurse Young, Nurse Zilka, Dr. Yared, and the depositions of Dr. Smith and Dr. Minore, as well as Plaintiff's nursing expert, Miss Smith.

And I believe defense counsel has also mentioned, additionally --

MS. TOSTI: What was the additional?

MR. JACKSON: The deposition of Dr. Minore.

MS. TOSTI: I believe that's in his --

THE WITNESS: No, those are Plaintiff's reports of Smith and Minore --

MS. TOSTI: Okay.

THE WITNESS: -- versus the actual deposition of --

MS. TOSTI: Have you --

THE WITNESS: I did not review the -- you alluded to a Nurse Smith's

deposition.

It is actually CV Smith that I reviewed and Minore's deposition that I reviewed.

BY MS. TOSTI:

Q Okay. In addition to the Cleveland Clinic -- did you review all of the Cleveland Clinic records of Mr. Long?

A I believe so. I mean, I . . .

THE WITNESS: Were those the complete records?

MR. JACKSON: Between August 20th and September 13th.

THE WITNESS: Yeah.

BY MS. TOSTI:

Q Okay. He was at a extended care facility after discharge from Cleveland Clinic. Did you review any medical records from that extended care facility?

A No, I -- just the autopsy report.

Q You have not reviewed any depositions from the Plaintiff in this case, have you, Christopher Long, his deposition?

A No.

Q Okay. Or any of the other lay witnesses that

have been taken in this case --

A Not --

Q -- Anthony DeFlavis, Jean DePrisco?

A No.

Q In addition to the written medical records, have you reviewed any films of echocardiograms or cath films?

A No.

Q Have you been provided any deposition summaries in this case?

A No.

Q Any time-line summaries?

A No.

Q Doctor, I'd like you to tell me about your experience in medicolegal matters. When's the first time that you offered your service as an expert medicolegal consultant?

A Well, I wouldn't say "offered." The first time I did was probably around 1984.

That's pretty representative.

Q Okay. And how many medicolegal matters have you consulted on since then?

A I'm guessing probably, at this point, a couple hundred.

Q Can you tell me approximately how many you do in a year's time?

A That's variable. I mean, it can be one a month. It can be two in a month. It could be 12 in a year. I don't really track it. I don't know.

Q How many files do you have in your possession right now that you're currently consulting on?

A Well, I probably have in my possession 50 or 60, but I don't know if -- some of those cases could be closed and I'm unaware of it. In fact, I'm sure some are closed but I'm unaware of it, so I don't know how many are truly active.

Q And what proportion of the medicolegal matters on which you've consulted have been for plaintiff and what proportion for defendant?

A It's about 10 to 15 percent plaintiff and 85, 90 percent defense.

Q And in the cases that you've consulted for plaintiff, how many times did you find substandard care, what percentage of them?

A Oh -- what percentage of them?

I'd be strictly guessing if I said

20 percent, maybe 30 percent.

Q Now, Doctor, you've mentioned you've had your deposition taken about 50 times. Was that as an expert in medicolegal matters?

A Correct.

Q When's the last time that you had your deposition taken as an expert in a medicolegal matter?

A I would say -- but I can't be sure -- within the last six weeks.

Q And what was --

A I could look it up. I mean, I don't know off the top of my head.

Q Okay. What was the name of that case?

A Don't recall.

Actually, I do. I think it was the O'Keefe case, but who -- O'Keefe versus somebody.

Q Where is that case filed?

A I want to say Cook County.

Q And were you acting as an expert for plaintiff or defense in that case?

A Defense.

Q Have you ever testified at trial?

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A Yes, I have.
Q How many times?
A Probably 35, 40.
Q And in your trial testimony, how many times -- how many times out of that was for defendant?
A 100 percent for defense. But I think it's important to get on the record that wasn't because of refusal to do trials or depositions on the plaintiffs' side as much as it was either the trials -- the cases settled prior to the scheduling of one or the other.
Q I had --
MR. JACKSON: Apparently, when plaintiffs use Dr. Vender, the defendants settle.
MS. TOSTI: I'll have to keep that in mind.
BY MS. TOSTI:
Q Have you ever acted as an expert in a case involving issues of postoperative bleeding in a cardiothoracic patient?
A I can't say, by recollection, yes or no. I -- I don't recall.
Q What about in a case involving issues of

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postoperative cardiac tamponade?
A Possibly. Don't know.
Q Don't have a specific recollection?
A No.
Q Doctor, what is your charge for consultation on legal matters?
A $250 an hour to review charts, $350 for depositions and trials; typically, half-day minimum unless they're out of town, and then I have to work something out because of travel and other issues.
Q Approximately how many hours of expert services have you spent to date on this case?
A Don't know. I could get a number. I mean, it's easy enough to track down just by looking at any bills that I've sent Mr. Jackson. That would pretty much stipulate the hours in review, and then there was a preparation for this, which I probably have, you know, four hours in -- invested in.
Q Have you sent Mr. Jackson or his law firm any bills --
A I think --
Q -- on this case to date?

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A Excuse me. I'm sorry for interrupting.
I think I did for the materials that had been reviewed to date, excluding Dr. Minore's, which came in later.
MS. TOSTI: Okay. I'm going to make a request for the doctor's billing statements in this case.
MR. JACKSON: Okay.
THE WITNESS: I'm listening. Keep going. I'm walking.
BY MS. TOSTI:
Q Doctor, do you provide your name to any professional services or medicolegal consulting firms, indicating that you're available to do medicolegal reviews?
A No.
Q And other than in this case --
MR. JACKSON: I really wish you hadn't done that, but I'm glad you did.
THE WITNESS: "Other than this case," yes?
BY MS. TOSTI:
Q Other than this case, have you ever been consulted on a medicolegal matter by

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Mr. Jackson or anyone at Mr. Jackson's law firm?
A I can't answer that. I'm not sure. He -- he'd probably know better than me.
Q You don't have any recollection --
A No.
Q -- of working with Mr. Jackson before?
A No.
Q Do you know how it is that he came to contact you or his office came to contact you regarding this case?
A No.
Q When were you first contacted?
A Don't know.
Q Okay. And would -- do you know if you were contacted by letter or by phone?
A Initially by phone, follow-up with letter, including the chart.
Q Okay. And in your file on this case, would there be correspondence that would document approximately the time you were contacted on this case?
A Probably not. I can't be sure. I can check. I typically do not retain the correspondences

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because the lawyers do, not -- for just paper reasons. It doesn't benefit me and I only retain the chart or things pertinent to the actual case itself.

Q Have you ever been named as a defendant in a medical negligence case?

A Twice. Once in 1979, dismissed prior to any deposition or anything else. The second time I would say was approximately -- I don't know -- 1995, gave a deposition and it was dismissed, no settlements on my behalf in either case.

Q What was the allegation of negligence in those two cases?

A The first case I have no idea. I was a treating physician in a case that there was a suit, and I don't know what the allegations were against me, but like I say, I never even got deposed.

In the second case it had to do with medical supervision of a resident.

Q And what were they alleging that you did improperly?

A Well, that I didn't watch him adequately.

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Q Did some harm result or was there an alleged harm that resulted because of that?

A An alleged one.

Q Okay. What was that?

A The puncture of a carotid artery in the placement of a central line.

Q What happened to the patient?

A He's fine. The surgery had to be canceled for a day or a week, whatever.

Q Has your license ever been suspended -- your medical license ever been suspended, revoked, or called into question?

A No.

Q Have you ever had your hospital privileges suspended, revoked, or called into question?

A No.

Q Doctor, do you know when this case is set for trial?

A No. When is it?

Q I take it, then, you haven't been asked to attend trial as yet.

A No. I always presume I will unless told differently.

Q Okay. I believe the case is set for trial

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in June.

A Okay.

Q Doctor, I have a copy of your curriculum vitae that was provided to me by Mr. Jackson.

MR. JACKSON: Jeanne, what he brought down -- if you're going to ask him about current, it's laying right there.

THE WITNESS: Let me see that one. It could be just the same one, same set. That one's more current.

(There followed a discussion outside the record.)

(The document was thereupon marked Plaintiff's Exhibit No. 1 for identification as of February 25, 2002.)

BY MS. TOSTI:

Q I'm going to ask, Doctor, if you would just identify this and then if you would give it back to me as to what that document is for the record.

A This is -- what's been handed to me as Exhibit 1 is a copy of my curriculum vitae, representative of my practice and credentials

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through August 31st, 2001, barring any additional publications that might have occurred since then that are not noted on here.

Q Okay. Are there any additions or corrections that you'd like to make to your curriculum vitae that's been marked as Plaintiff's Exhibit 1?

A Not that are substantive to this case.

Q And you believe that -- are there some additional publications that are not contained on your curriculum vitae?

A I'm not sure.

Q Okay. I . . . would any of them that may be pending have any applications for this case?

A No.

Q Doctor, the articles that are contained on your curriculum vitae, do any of these deal with postoperative complications of bleeding or cardiac tamponade?

A Not that I'm aware of.

Q Pardon me?

A Not that I'm aware of.

Q Okay. Are there any articles contained on

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your CV that you believe have particular relevance to the issues in this case as you understand them?
A No.
Q And as you sit here today, are -- are there any publications that you believe have particular significance or relevance to the issues in this case?
A No.
Q And I'm asking if there's a specific article that you are aware of at this time.
A No.
Q Doctor, you are board certified in several areas of medicine; is that correct?
A No, just two.
Q Just -- go ahead.
A Anesthesiology and then I have a special certification in critical care, available since 1987.
Q Okay. When did you receive your certification in anesthesiology?
A 1979.
Q And did you pass that on your first try?
A Correct.

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Q Okay. And the critical care, you mentioned the date that you received that special --
A I did mine -- I think the initial exam was '87. I think mine was 1988. It says '87 on here. I'm not sure -- it was '87, '88.
Q Okay. And in regard to that particular certification, did you need any additional credentials besides your residency in anesthesia? What were the requirements or the criteria for that special certification in critical care?
A I can't remember any at this point. I know I had a fellowship in critical care so I had that. It was an exam process at the time, so the certification came through examination process, and there might have been other options to doing it, like 50 percent practice or something.

I don't remember what the requirements were. I know I met them.

Q But there were some additional requirements besides just sitting for the examination?
A I think so.
Q Okay. Where do you have hospital privileges?

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A In the Evanston Northwestern Healthcare system.
Q And there is a group of hospitals that belong to that system?
A Correct.
Q Okay. Is there a particular hospital that you practice from the majority of the time?
A The majority of the time I -- I am at Evanston Hospital, but I, at any one point in time, have been to all of them.
Q How many beds are in the Evanston Hospital? Approximately.
A System or this hospital?
Q In this hospital.
A Four hundred.
Q Do they have a specific cardiothoracic intensive care for the -- postoperative cardiothoracic care?
A It's part of the medical/surgical intensive care unit.
Q So when a patient undergoes cardiothoracic surgery, they go into the general medical/surgical intensive care unit?
A Correct.

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Q How many beds is that unit?
A It's 18.
Q And is it only surgical patients in there?
A No, it's probably, on average, 70 percent surgical.
Q And would the others be various medical conditions?
A Correct.
Q Okay.
A And then we also have intensive care unit beds that we cover in another unit, but it's really not the medical/surgical; it's overflow.
Q Doctor, do you currently hold an academic appointment?
A I'm a professor of anesthesiology at Northwestern University.
Q And what currently are your administrative positions?
A I'm the chairman of the department of anesthesia at Evanston Northwestern Healthcare and director of critical care services.
Q Is there a particular textbook of anesthesiology that you refer to from time to time that you consider to be the best or one

that you find to contain reliable information?
A I think there's a number of textbooks available in our field that are very well written, offer reasonable information.
The word "reliable" is something that needs definition if it's going to be used globally, but those textbooks would be the Miller textbook, the Barash textbook, Kirby, then there are others.
Q What textbook does Northwestern University Medical School utilize with the students?
A Good question. I think they're using Barash's. I'm not sure.
Q Is there a particular echocardiography text that you find to be a reliable source of information?
A Did you say "echo"?
Q Yes.
A There are several -- there's a lot of echocardiography texts but no. The answer's no.
Q Who is your present employer?
A Evanston Northwestern Healthcare.
Q And aside from Evanston Northwestern

Healthcare, do you provide professional services for any other entity?
A You mean medically?
Q Yes.
A No.
Q Is Evanston Northwestern Healthcare a professional medical group?
A We have -- Evanston Northwestern Healthcare is a not-for-profit healthcare organization within which there is the Evanston Northwestern Healthcare medical group, of which I am a member.
Q Okay. Are you a part owner or shareholder in that group?
A No, I'm an employee.
Q I'd like you to describe for me your professional responsibilities and how you divide your professional time.
A Well, within the context of my medical time, I would say it's divided between, really, three areas, critical care, and depending on the week of the month, that could take 25 to 50 percent of my time that week, that particular week. And that's clinical.

In the operating room, depending on what is going on, I work 25 to 50 percent of the time, and that's ongoing, and that's an average number reflective of the last couple years. Prior to that, it was more.
And then the remainder of my time, in particular -- which has increased to probably 25 to 50 percent, depending on what point in time that is -- would be administrative, and that's primarily increased because of us becoming an independent department versus a division of surgery necessitating a little bit more time commitment. And clearly this is predicated, though, on a seven-day workweek and hours that are clearly more than eight per day.
Q Where in all this does your academic appointment fall?
You had mentioned that you were a professor of anesthesiology with the medical school. Is that part of your clinical time, or do you have additional time that you devote to classroom instruction?
A Being a professor is something that typically

comes from either your publications and/or professional commitments, like professional speaking and things of that nature.
Q So you don't have any responsibilities for formal classroom -- classroom instruction at the medical school?
A Working at Evanston Northwestern, clearly, I do lecture residents and medical students. That could be on our grounds here because they rotate to our institution from the medical school.
I have given lectures downtown at the medical school, but those are all scheduled and not necessarily firmly committed to on any regular basis.
Q How often are you involved in doing that?
A Variable. Downtown, probably once a year, and up here it could be 10 times a year.
Or more.
Q Now, Doctor, you had -- you said that you had an opportunity to review the medical records of James Long.
In reviewing the medical records, was there anything that you disagreed with in

regard to the assessments of James Long, any of the interpretations of diagnostic tests that you recall from your review of the records?

MR. JACKSON: I'll object but go ahead.

A Yeah. I mean, the form of the question is such that it's difficult for me to understand when you say do I disagree with, but if you're saying did I -- is there anything that I saw that I said shouldn't have been done or deviated from a standard of care that was reasonable versus different methods for handling things by different practitioners, the answer's no.

BY MS. TOSTI:

Q And in regard to any diagnostic studies they had, did you disagree with any of the diagnostic impressions?

A Can you be specific?

Q I'm asking if you recall anything that you reviewed, and since you didn't bring your file with you today, it's a little difficult, since I can't look through your file, either, at

this point.

But at -- as you sit here today, is there any recollection that you have in your review of anything that you disagreed with in regard to his diagnostic tests?

A No.

Q At any time when you were reviewing this case, did you ever request that defense counsel provide you with any additional materials or additional records?

A No.

Q And all of the depositions that you were provided, have you read them?

A Yes.

Q In formulating your opinions in this case, did you refer to any medical literature, journal articles, or textbooks?

A No.

Q And in preparing for this deposition, did you refer to any type of medical literature?

A No.

Q Have you consulted with any physicians at any time regarding this case?

A I can't say I specifically did. I probably,

at some point afterwards, presented to one of our heart surgeons the initial scenarios of the case.

Q When you say "some point afterwards," what are you referring to?

A After receiving the case, reviewing it, scenario playing with the surgeon to see how they would respond without knowing the outcomes.

Q Okay. And who was the surgeon that you ran these facts by?

A I don't know. It would be one of our heart surgeons.

Q And do you recall what he told you?

A Didn't hear anything too unusual.

Q Well, what do you recall his response was to the facts as you presented them?

A I think it's not what I recall as a response as much as -- in the scenario playing, what one often tries to do is present the situation as they see it and blinding the respondent to the outcome because it often is the case, when one retrospectively looks at something, it really prejudices the response positively or

negatively, being influenced by the outcome versus the situational material.

And so I just remember he didn't find anything out of line with it.

Now, obviously, there could be some prejudices there that would be on the negative side because I think his presumption would be why am I presenting this unless something did go wrong, but without knowing the outcome, he did not find anything particular wrong.

Q Okay. And what information did you present to him?

A Basically, it was a very generic presentation of Mr. Long's situation in the postoperative state, as reflected through the operative procedure, the postoperative bleeding, a little bit of the volatility of the vital signs, and then the interventions.

Q And at what point did you stop providing the facts and -- you recall that there is a -- more or less -- time line on the ICU flow sheets?

Did you present it all the way through the full ICU experience that was gone on?

A Pretty much. By -- by the way, this was all by recollection because this was a while ago, but by recollection, it was sometime up -- prior to the final few hundred-cc bleed that's referred to in the 2210, 2230 time period. It's up and to that point.
Q Have you ever met or had any contact with Dr. Delos Cosgrove?
A No. No one in the case I don't know -- don't know any of them.
Q Okay. I'm going to mention some of them. Dr. Muehlebach you've never met or had contact with?
A No.
Q Okay. Or Dr. Charles Hearn or Dr. Colleen Koch -- and I'm not sure I'm pronouncing her name correctly.
A No.
None of the nurses, no.
Q Or Dr. Yared or Dr. Hernandez?
A No.
Q Have you ever met or had any contact with any of the experts that have been identified in this case, either for Plaintiff or for

Defendant?
A I know Dr. Minore.
Q Okay. How do you know Dr. Minore?
A He's an anesthesiologist here in Illinois, in Rockford, and I've spoken in his town. I think I've spoken to his hospital.
Q Okay. You have never met or had contact with Dr. Mehmet Oz or Dr. Timothy Lyons?
A Don't -- no. I've spoken at Columbia where Oz is, but I don't know him.
Q Have you read the report of Nurse Mary Anne Belanger?
A Is that the Plaintiff's expert nurse?
Q Have you -- have you read Plaintiff's expert nurse's report?
A There was a report and I can't remember the name on it, so I can't -- I can't answer that right now.
MR. JACKSON: From one of the nurses?
THE WITNESS: Not a deposition. I didn't read any deposition. There were two reports, and I can't remember. One was a Minore report.

MR. JACKSON: The other one was Dr. Smith.
THE WITNESS: Okay.
A (Continuing.) So no. The answer's no on the nurse.
BY MS. TOSTI:
Q In reviewing this case, did you generate any personal notes?
A No, other -- no, other than what you've got here.
Q And you're referring to your report?
A Correct.
Q And you have seen Dr. Vernon Smith and Dr. Minore's reports; correct?
A Reports, yes.
Q Yes.
Have you ever been involved in any research involved with postoperative cardiac tamponade?
A Research, no.
Q What about postoperative bleeding in cardiothoracic patients?
A Research, no.
Q Do you personally provide anesthesia services

for cardiothoracic surgery service at Evanston?
A Correct. Yes.
Q How many cases a week do you personally provide the anesthesia for?
A Oh, I would say, over the years, it's been between one a week and -- in a given week -- six. Variable.
Q Okay. And currently, this year --
A Well, this year just started, and I haven't been around a lot, but historically, at least 50 a year, 50 to a hundred a year or more.
Q And in the last year, how many cases would you say you've personally provided anesthesia services for heart valve replacements?
A Don't know.
Q Well, generally speaking, in the 50 to a hundred a year that you may do, can you give me just a -- a ballpark as to approximately how many --
A Well, generally speaking --
Q -- would be heart valves?
A Generally speaking, based on historics, about 25 percent of our procedures are valves. I

can't say what mine are.
Q. Tell me what your experience is in providing anesthesia for minimally invasive valve replacements.
A. Zero.
Q. Are there any cardiothoracic surgeons that are doing minimally invasive procedures --
A. Not that --
Q. -- at Evanston Hospital?
A. Sorry.
Not that I'm aware of.
Q. Is there a reason that you know of why they're not being done here?
A. No, other than, you know, not -- not everybody does them.
Q. Doctor, in the Evanston Hospital postoperative unit, where the cardiothoracic patients go, what type of physician coverage does that unit have? How are they staffed?
A. We have the primary service, which is the cardiac service, who has their patients in the unit. They're involved, obviously, with direct patient care of their own patients.
And then we have coverage by an

intensive care group, which I oversee, with full-time day coverage there and then coverage by beeper at night.
We have moonlighting people at night, we have house staff at night, and we have nurse practitioners who also are involved with the residents.
Q. The moonlighting and house staff physicians, what area of expertise are they?
A. They're variable. The majority are cardiology and pulmonary and/or medical house staff.
Q. Now, you also mentioned that you have some -- did you say -- nurse clinicians that are available in the area?
A. Nurse-practitioners.
Q. Nurse-practitioners. Okay.
Are they there on a 24-hour basis?
A. No.
Q. Okay. When are they there?
A. Mostly during the day. And the CV nurse-practitioner, I don't know what her hours are.
Q. In your unit, if a patient has difficulty and the nurses feel that a physician needs to be

contacted and it's after, say, 7:00 p.m. at night, what's the procedure? Who do they contact?
A. Depending on what they perceive as the problem, they'll either call one of the intensive care people on call and/or the cardiac surgeon involved, primary cardiac surgeon.
Q. So the cardiac surgeons stay on call at night?
A. Sure.
Q. Okay. Now, Doctor, you mentioned previously that you spend a good deal of your time in the intensive care unit.
Is it the unit that we were previously talking about, that postoperative unit that has mostly surgical patients in it?
A. Yes.
Q. Okay. Tell me a little bit about what your responsibilities are in that unit, what you do.
A. Well, I'm the -- I'm the head of -- historically -- I've been the head administrator for critical care services in our institution as of recently but, prior to

that, in the medical/surgical intensive care unit since 1987. That's administrative involvement with, you know, nursing and triaging, policies and procedures and things of that nature.
And then, in addition to that, I've been one of five practitioners who rotate on a weekly basis for weekend call responsibility in the intensive care unit as a consultant to critical care patients and the managers of the ventilators.
Q. So currently, on a weekly basis, how much time are you in the ICU?
A. Well, since we do it by the week, every few weeks I'm in there, but the other weeks I'm just there administratively. I'm not taking care of patients.
Q. And how often do you rotate in and actually are carrying out clinical responsibilities in the unit? How many --
A. Every fifth week.
And there's other times I'll substitute in and stuff like that, but generically, we rotate on a five-week basis.

Q And then are you in there for seven days?
A Uh-huh.
MR. JACKSON: You should say yes so that she has it.
A (Continuing.) Yes.
THE WITNESS: I'm sorry.
MR. JACKSON: Thank you.
BY MS. TOSTI:
Q Okay. And when you are in -- when it's your week and you're in the ICU, tell me what it is you do in the ICU, what your responsibilities are.
A We consult on new admissions. We see all of the patients, either from a clinical care standpoint or -- and consultation -- or educational standpoint with house staff, and we manage all of the ventilators that are in the unit and ventilators that are in any acute care setting.
Q Now, Doctor, do you have responsibilities for managing vasopressors or for watching chest tube drainage or any of those types of things for the patients?
A We participate with all the primary care

services. This is not a closed ICU. It's semiopen, semiclosed, meaning we have a critical care service that sees everybody. We have a primary service and responsibility, which is the surgical service or primary medical admitting physician.
We have various degrees of liberty that we work out with the individual practitioners or service on how many we will or won't do, which could include the management of vasoactive agents and/or sedation and/or mechanical ventilation.
Q Okay. So you don't have a set policy or procedure that goes over all the patients, the postoperative patients in the unit?
A No.
Q Okay. Generally speaking, is the management of vasopressors and management of chest tube drainage and fluid replacement something that falls to the surgical staff or that which falls to the person that's the intensive coverage of the unit for that week?
A Both.
Q And do you --

A Can be either/or, I should have said.
Q Do you have training in echocardiography?
A No. Not formal training, no.
We have seven certified anesthesiologists in our group, not to mention the cardiologists. That all came about after my training time period, so I'm involved with them, but no, I don't have formal training.
Q Okay. And just in follow-up, do you -- do you do any intraoperative transesophageal echoes?
A It's often done on my cases but not by me.
Q And you would not consider yourself an expert on echocardiography?
A Do not, no.
Q Okay. Are you sometimes in a position, though, to order an echocard -- echocardiogram on patients --
A Sure.
Q -- in the intensive care unit?
A Sure.
Q And do you sometimes evaluate the results of the echocardiograms in conjunction with the echocardiographer?

A Sure.
Q And can you tell me, from the perspective of a postoperative cardiothoracic patient, what type of information an echocardiogram provides you in regard to cardiac function.
A It can show you, you know, wall motion abnormalities. It can show you ventricular volume and filling. It can show you function through ejection fraction and outputs. It can show you the presence of pericardial fluid. It can show you valvular function.
Those are the key things.
Q Now, do you have any responsibilities in your unit for supervising the nursing staff?
A We work professionally in conjunction with nursing staff.
Supervisory roles of nursing staff are by nurses.
Q Okay. And do you have any responsibilities for setting the policies and procedures that the nurses are to follow in the ICU?
A Well, if we have protocols, often they're done in conjunction with nursing, or if we do it, one way or the other, it's eventually in

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conjunction, so the answer would be yes.
Q And do you consider yourself an expert in nursing care?
A No.
I haven't met any doctors who are.
Q In general, what is your understanding as to the duties and the responsibilities of the Cleveland Clinic anesthesia department personnel regarding James Long's management in the ICU?
A I -- I'm -- didn't read any policies and procedures as it relates to that. I know that they are involved in the intensive care unit, in the context that Dr. Yared came through there and there's pain management involved. I don't know their exact involvement as it relates to the care of the postcardiac surgical patient.
I do know that they have critical care services they clinic, but that's just from outside knowledge, but I don't know the policies and procedures.
Q Okay. Well, my question was in regard to the duties and the responsibilities of the

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anesthesia department personnel --
A Don't know.
Q -- in the ICU.
A Don't know.
Q Do you know whether the anesthesia personnel had responsibility for managing the sedation on James Long?
A Don't know.
Q Do you know whether they had any responsibility for managing the chest tube drainage on James Long?
A I would presume not, based on the communications with the different surgeons and not the anesthesia.
Q Okay. What communications are you speaking of?
A With Dr. Muehlebach and his awarenesses or Dr. Hernandez and his awarenesses.
Q And what is your understanding as to whether they had any responsibilities for the management of the vasopressor drugs that were given to James Long?
A Anesthesia, you're talking about?
Q Yes.
A Don't know.

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I'll go back to the original statement: I don't know anesthesia's responsibilities at the clinic.
Q Okay. Well, Doctor, I believe you've been identified as an anesthesiology expert in this case --
A Uh-huh.
Q -- and that you are rendering opinions as to whether or not they met the standard of care, so my questions to you are in regard to what their duties and responsibilities were.
So you understand why I'm asking you these questions?
MR. JACKSON: Well, I'll object, Jeanne, because I don't think he was identified specifically as just an anesthesia expert dealing with anesthesiology matters.
So I disagree with your characterization but go ahead.
BY MS. TOSTI:
Q Doctor, in your report of August 14th --
A Uh-huh -- yes.
Q -- in paragraph 2 you indicate, "Based on my review of the above, with a primary focus on

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the anesthetic care."
Was that, in fact, what you were focusing on primarily in your review of this case?
A Well, obviously, since I'm an anesthesiologist, I look for any aberrations in the anesthetic care, which means intraoperatively. That's anesthetic care.
I was not provided with any policies and procedures as it relates to stipulating anesthesia's specific roles in the perioperative care of Mr. Long.
The secondary focus was on the post-op care of the nurses as it was my perspective, as somebody who practices with nurses in an intensive care environment on similar kinds of patients under similar circumstances with a background in anesthesia and critical care, and focusing more from the perspective of a deviation that I would find relative to what the reasonable practitioner would do under similar circumstances.
Q Okay. And Doctor, you did read the depositions of the various anesthesia

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personnel in this case; correct?
A I read the depositions of Hearn, Yared, and Koch -- Koch.
Q And you -- in those depositions, do you recall them defining what they felt their responsibilities were in regard to James Long's care and in regard to some of the issues that I just mentioned?
A Well, they gave variable answers because they're all involved at variable points in time, so none of them were identical, as representing anesthesia, versus what their own roles were.
And I don't specifically -- because it did not stand out as an abnormality to me -- remember any of the specific language that defines specifically what you are alluding to.
Q Well, we're talking about the duties and the responsibilities of the anesthesia personnel to James Long in the ICU.
A Clearly, from my review of their particulars, without seeing specifically what you are referring to, I found nothing that they did not adhere to their own perspectives of what

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their duties are so I don't recall.
Q Doctor, at your institution, do you know what the rate for cardiothoracic reexploration is because of bleeding complications?
A I would -- I used to know it exactly, and prior to a couple years ago, it was clearly down under 2 1/2 percent, I think. I don't know recently what it is.
Q Do you know what the national average is for reexploration for bleeding complications?
A It's higher than that. It's higher than that. I don't know what it is. We were always well below it here.
Q When a cardiothoracic surgery patient has bleeding at a suture site that requires reinforcement before the close of surgery, should escalating postoperative hourly chest tube drainage that goes from 50 to a hundred to 250 in the first few hours after surgery cause a heightened concern for excessive postoperative bleeding?
A I would answer it that it would cause a heightened concern.
Q So the answer is yes to that?

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A Yes.
Q Now, Doctor, for the remaining part of this deposition, I'm going to be speaking specifically in reference to aortic valve replacement surgery. I may just say "surgical post-op patient," but that's what I'm referring to, and if I mean something else, I'll let you know.
A Fine.
Q And when I'm speaking of the postoperative period, I'm speaking of the immediate postoperative period, that first 12 hours or so right after surgery.
A Fine.
Q Okay. Is there a point in time after aortic valve replacement surgery at which you anticipate that the patient's cardiac index is going to approximate what it was at the close of surgery?
A Variable.
Q So there isn't a point when you, as an intensivist, would say, "Well, this patient should now have gotten over that initial postoperative period and should be about what

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he was when he was in surgery"?
A This -- this is a very dynamic process that numerous independent factors play into that is variable from patient to patient, depending on other issues -- like underlying diseases; volume; blood management; baseline and post hemoglobins, which vary from patient to patient; coronary disease, which was not the issue in this particular patient; myocardial dysfunction and/or variances among patients in cardiac contractility; systolic and diastolic dynamics of the ventricle -- and to try to pigeon-hole aortic valve patients as a singular entity that then reflects how they behave intra and postoperatively is incorrect.
Q So you would disagree with the statement that about four to six hours after surgery an aortic valve replacement patient's cardiac index should strongly correlate with the cardiac index at the close of surgery?
A I think that is directly determined by a lot of things that go into the care of that patient, temperature changes that might have occurred.

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Typically, many of the patients -- their cardiac outputs will be variable from the end of surgery because, all of a sudden, they're waking up.

Intraoperatively, at the end of the surgery, you have an anesthetized patient. In the postoperative period, similar to Mr. Long, when he comes back to the intensive care unit, he is responsive. He's then sedated.

Depending on the degree of sedation and when -- if it's an early extubation, the hemodynamics can be very different if a patient is anesthetized.

So anybody that says there's a singular answer to that, I disagree with them.

Q In a patient who's undergoing aortic valve replacement, does preoperative left ventricular hypertrophy increase the risk for hypertension in the immediate postoperative period?

A The preoperative presence of left ventricular hypertrophy is classically present in patients with aortic stenosis.

When you repair the stenosis, the

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increased ejection and cardiac function that can occur can alter the hemodynamics and blood pressure, but once again, blood pressure is a variable thing, depending on medications and a lot of other things, and the left ventricular hypertrophy itself, I don't recognize it as, you know, significantly influencing hypertension.

Q Have you seen patients with preoperative left ventricular hypertrophy who have required medications to reduce their blood pressure during the first few hours after aortic valve replacement?

A Well, you know, classically, with aortic stenosis, prerepair you never want to lower the blood pressures, and -- because of diastolic filling of the coronary arteries.

Postoperatively -- and if we're going to try to stick to this case -- and maybe that wasn't your intent -- there are plenty of patients who have their blood pressures controlled because of suture line concerns and bleeding.

Q In James Long's case, did he have left

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ventricular hypertrophy prior to surgery?

A Based on the echocardiogram and strictly by recollection -- because I'm not reading it here -- I recall him having left ventricular hypertrophy, and I think he had some dysfunction of the left ventricle, I think a .54 opening on the volume.

THE WITNESS: Can I just grab something real quick out here. I'll be right back.

(Whereupon, a recess was had at 3:05 p.m., after which the deposition was resumed at 3:07 p.m. as follows:)

BY MS. TOSTI:

Q In a patient who has undergone aortic valve replacement, does a falling cardiac index suggest that there may be problems with cardiac function?

A Well, that's -- that's a very large statement.

Could it be due to falling cardiac function? Yes. It can also be due to hypovolemia. It could be due to changes in metabolics, temperature, lots of things. Very

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multifactorial.

Q And would you agree that, when a postoperative cardiac surgery patient exhibits hemodynamic instability, that it's important to look for the cause of the instability?

A Correct.

Q And isn't it also true that, when a patient's cardiac index goes down, the coronary perfusion also goes down?

A That -- well, there's a couple of statements.

Coronary perfusion is primarily related to diastolic pressure and diastolic filling time, which they can be impacted by low states of perfusion in general, but you can have a great cardiac output and an exceptionally high heart rate and have no diastolic filling time.

You could have a great cardiac output and no diastolic pressure because of severe vasodilatation, and it can impact it.

So once again, not a singular answer.

Q Okay. But with the cardiac index, when that goes down, does the coronary perfusion go down?

A I think, if it goes down significantly -- when

we're talking about a cardiac index of 2.50 in somebody without significant coronary disease, it's insignificant.

Q In a postoperative aortic valve patient, if the cardiac index falls from 8.0 on admission to the unit down to 2 over the course of an hour and 20 minutes, should that raise a level of concern for cardiac function?

A Well, I think you misrepresented the information. I think you just said a cardiac index of 8.0 falling to 2.

I think you're referring to a cardiac output of 8.2 falling to a cardiac index of 2.0, which are two different ways of representing the same data.

One is clearly a higher number than the other, and depending on what else is going on is how one would interpret what that all means.

Q As it relates to postoperative cardiac surgery patients, what is a cardiac tamponade?

A A cardiac tamponade is a collection of fluid around the heart, in the juxtacardiac area within the pericardial mediastinal contents,

that creates a pressure around the heart from the collection of the fluid that creates hemodynamic instability as a result of this pressure.

Q Can you also have localized tamponade with a collection of blood that coagulates or forms a clot and impairs a regional portion of the heart function?

A Well, I'm sure that can happen, but typically, the thing is more global.

Q And when cardiac tamponade occurs, what happens to cardiac function?

A Oh, when the tamponade actually occurs, versus just an effusion, cardiac function in the context of cardiac output and stroke volume and things of that nature typically diminish.

Q What would be the profile of someone that would be suspected of having a cardiac tamponade in a postoperative-type patient? What would you be looking at?

A Well, classically, you look for falling ventricular function, increasing cardiac pressures, equalization of cardiac pressure, falling signs of perfusion, like urine output,

narrowed pulse pressure.

Those are the key things. Increasing heart rate, tachycardia.

Q Do you have to have all of those present in order to have a cardiac tamponade?

A No.

Q Would you agree that another sign of cardiac tamponade might be the gradual increasing requirements for entropic or pressor support?

A Well, as a response to a number of the things I mentioned, if you had the problems I alluded to, you would need, as a consequence, increasing pressor support.

Increasing pressor support, in the absence of the things I mentioned, wouldn't make me think of cardiac tamponade.

Q But if you had some of the things you mentioned and had pressors running without a good response to the pressors, would that increase the index of suspicion for cardiac tamponade?

A It depends on what things aren't responding. It depends if I had other explanations.

Q Is tamponade considered an emergency situation

in a postoperative patient?

A Yes.

Q And cardiac tamponade in some instances can lead to total cardiovascular collapse and death; correct?

A Correct.

Q And would you agree that, following cardiac surgery, it's important to watch for those factors that may suggest cardiac tamponade?

A Yes.

Q And in a postoperative patient, how is tamponade treated?

A Well, you know, it can be done two ways. On an emergent basis, they can do a pericardiocentesis with a needle, subxiphoid into the pericardium, and try and aspirate fluid. They can do it with interventional radiology and put drains in or emergently reexplore the patient and decompress it.

Q Isn't it true that echocardiography is the definitive diagnostic technique for documenting the presence and the magnitude of pericardial effusions?

A Well, you -- you jumped from tamponade to

effusion, and I would say that the -- the best diagnostic technique that I'm aware of -- but I would stand corrected by a cardiologist -- is transthoracic echocardiography.

Q Do you know what the echocardiographic correlates are that suggests that there is cardiac tamponade?

A Well, you know, I -- I think -- like I said, I'm not an expert on echocardiography, so I'm not going to presume anything. I will say that it would probably be, you know, the presence of fluid, contracted ventricular volumes, and things of that nature.

Q Would you agree that the information provided by an echocardiogram is helpful to the physician in arriving at the diagnosis of cardiac tamponade?

A Well, it is help -- the tamponade, no. The presence of an effusion, yes. Tamponade is the clinical scenario that surrounds the presence of the effusion.

Q Okay. My question was, is an echocardiogram helpful to the physician in arriving at the diagnosis of cardiac tamponade?

And I'm not sure whether your answer is a yes or a no to that.

A Well, the diagnosis of tamponade is a clinical diagnosis as a consequence of a pericardial effusion under pressure, and the presence of the effusion itself is made with the echocardiogram.

So in conjunction with those two, I would say yes.

Q Have you ever ordered an echocardiogram in order to assist in the diagnosis of cardiac tamponade in a postoperative patient?

A Sure.

Q Doctor, would you agree that, when a postoperative cardiothoracic patient is hemodynamically unstable, that an echocardiogram should be done to help determine if the cause is due to tamponade?

A I -- I think that's a clinical decision that is made in the context of a lot of information available to the practitioners at the time.

If one cannot explain, in their mind, why the dysfunction exists or finds the magnitude of the dysfunction dramatic, clearly

an echocardiogram is another piece of information.

Q Okay. And an echocardiogram also provides you with a lot of information about cardiac function, not just --

A Sure.

Q -- in regard to tamponade correlates but as to the actual function of the heart, too?

A Sure. Absolutely.

Q So if there is a patient that is hemodynamically unstable, the echocardiogram may provide additional information regarding ejection fractions and wall movement and those types of things, also; correct?

A If you've perceived significant instability, yes.

Q Are there any -- aside from echocardiogram, are there any other tests or studies that may provide findings that would suggest tamponade?

A Nothing significant, no.

Q Isn't it true that, in some instances, cardiac -- with cardiac tamponade you can see mediastinal widening on chest films?

A Mediastinal widening is more commonly

associated with aortic aneurysm development, especially after trauma. That's a classic thing for mediastinal widening.

Can you have mediastinal widening? The answer is yes, but X-ray interpretation as a means of diagnosing tamponade, slash, effusion is very difficult because of the variability in patient position, lung expansion, and a number other things that impact -- A/P versus supine filming -- that impact the interpretation of mediastinal width.

Q But if a patient is hemodynamically unstable after surgery and a chest X-ray is done and there is a new finding of mediastinal widening, would that raise a concern for tamponade?

A Once again, I'll say not necessarily, and I would leave that to the expertise of a cardiac surgeon and/or radiologist.

Q In your institution, how long does it take in the cardiothoracic intensive care unit to have a transesophageal echo done?

A Boy, it depends what time of night. If there is no one in-house who does it, you know, you

could probably get one within 45 minutes to an hour. And if somebody was available, it could be done in 10 minutes.

Q And what about a -- a surface echo, a transthoracic?

A Pretty much the same.

Q Doctor, if blood clots occlude a chest tube and the drainage backs up in the chest, can that result in cardiac tamponade?

A I'm not sure how to interpret that, but I think the answer is yes.

Q If there's clots in the chest tubes that doesn't allow the drainage into the chest tube and then the blood clots are dislodged through milking or squeezing the chest tubes, can that sometimes relieve a tamponade that's begun?

A I'm not sure -- I'll defer to a cardiac surgeon.

Q You'll defer to a surgeon?

A I'll defer to a cardiac surgeon.

Q In your unit are the nurses required to milk or squeeze the chest tubes at regular intervals to assist in keeping the chest tubes clear of clots?

A I think they are.

That's under the auspices of the heart surgeons and their protocols.

Q Okay. And do you know how often the nurses do that?

A No.

Q In regard to the chest tubes, Doctor, if clots are lodged in the chest tube, sometimes they could be lodged in the portion of the tube that's inside the chest that can't be seen if you're standing at the bedside; is that correct?

A Correct.

Q If there's a significant loss of circulating fluid volume, will that tend to mask some of the hemodynamic changes that are usually seen with cardiac tamponade?

A No. It would make them worse.

Q Doctor, is there a minimal level of mean arterial pressure that's needed to maintain cerebral blood flow in a patient?

A That's independently variable in the context of age, presence of vascular disease in the carotids and/or brain. Classically, we think

of a perfusion pressure minimum of about 50 or 60, but in healthy people or patients without significant cerebral vascular disease, for periods of time they can definitely go below that.

Q If the mean arterial pressure falls below 50, would there be an increased risk for brain damage?

A I think, the lower the pressure goes, the increase of the risk.

Q You have a copy of your report in front of you, don't you, Doctor?

A Correct.

Q Okay. I'm going to hand you what's been marked as Plaintiff's Exhibit 2, if you would just identify that, and then we'll use that as the exhibit number.

A Correct.

Q Okay. Is that a copy of your report?

A Yes, it is.

Q And that's dated -- it's a letter dated August 14th of 2001; correct?

A Yes.

Q Now, did you provide Mr. Jackson or his office

with any type of written memorandum of your opinions before rendering your August 14th report?

A No.

Q And --

A You said "written"; right?

Q Yes.

A No.

Q Okay. Did you perform -- did you provide him with any type of memorandum of your report before you rendered this August 14th report?

A No.

Q Were you asked to include anything in particular or to exclude anything in particular?

A No.

Q And did you provide any drafts of your August 14th report?

A No.

Q And this is the only report that you've provided to Mr. Jackson?

A Written, yes.

Q And does your August 14th, 2001, report summarize all the opinions that you currently

hold concerning this case?
A Yes.
Q Is there any additional opinions, as you sit here today, that you intend to offer at trial that are not summarized in this report?
A No.
Q And do you still maintain all the opinions that are contained in your August 14th report?
A Yes.
Q Do you intend to do any additional work or review any additional materials in this case prior to trial?
A Only if specific information is sent to me by Mr. Jackson; example, Plaintiff's nursing expert, something of that nature.
Q Now, we talked a little bit about what your assignment in this case was, and you were -- if you would just relate to me again what you were asked to do in regard to this case.
A I think I was basically asked to review the case from my perspective as to the care and its relationship to outcome and its relationship to any deviations from standard of care that I would notice in the care of

Mr. Long with no specific direction as to who or what as much as did I note something inconsistent with what I might typically see in our practice.
Q Okay. And were -- were you asked to render any opinions as to whether certain individuals met the standard of care in this case?
A No. I think it was more of the participants from Cleveland Clinic where I was capable of responding appropriately.
Q Okay. And who are the individuals that you will be rendering the opinion met the standard of care in this case?
A I think, to the best of my abilities, I did not identify any deviations from the standard of care on the part of any practitioners, but I'm not holding myself out as an expert on the nursing end or the cardiovascular end.
The actual anesthetic managements -- where I can hold myself out as an expert -- they were both superbly done, whether it was notation charting, et cetera.
The critical care part is the general gestalt of a critical care practitioner, of

which I am, who renders care to cardiovascular patients who can present with similar circumstances.
Q What is your understanding as to the cause of bleeding at the end of James Long's first surgery?
And I'm speaking of the -- the close surgery, that episode that he had.
A Excuse me?
MR. JACKSON: Can you define that better than what you're saying, Jeanne. I'm not sure what you're talking about.
BY MS. TOSTI:
Q There was -- I believe there was an episode of bleeding that occurred at the close of James Long's first surgery before --
A During the first surgery.
Q -- before he went into the ICU.
And I'm asking as to what your understanding is of the cause of that bleeding.
MR. JACKSON: When you're saying "close," you're not saying when they closed him on the first surgery? You're talking

about --
MS. TOSTI: I'm talking about before he left the surgical suite.
THE WITNESS: I thought it was during the surgical procedure.
MR. JACKSON: I think it was and that's the confusion.
MS. TOSTI: I --
THE WITNESS: He had an episode of bleeding that delayed the bypass period of time prior to closure of the first operative procedure.
I can't remember the exact site or situation, but it was satisfactorily managed to Dr. Cosgrove's satisfaction.
MR. JACKSON: Is that what you were referring to, Jeanne?
MS. TOSTI: Yes.
MR. JACKSON: Okay.
BY MS. TOSTI:
Q Okay. Did that bleeding episode have any implications for his postoperative care in the ICU, as far as your understanding?
A My understanding is that the surgical service,

because of the -- a couple of things -- because of the bleed and because of using the aortic route homograft, not just a valve, that there was concerns for suture line bleeding, and therefore, they had requested the systolic blood pressure be maintained below 100.

Q And would keeping his blood pressure below 100 systolic have any relationship to his left ventricular hypertrophy that he had before surgery?

Was that also one of the reasons why they wanted to keep his blood pressure below 100 systolic?

A Not to my knowledge, but I'd stand corrected by some specific comment that you're alluding to.

Q The episode prior to coming into the ICU, when he was still in the surgical suite, should that episode of bleeding have raised a heightened index of concern for bleeding in the ICU?

A I think there is a heightened index of concern for any bleeding in the ICU, irrespective of any intraoperative occurrence, and they are

true, true and unrelated in the context that whether the patient bled or not intraoperatively is unrelated to our levels of concern for postoperative bleeding and that the fact that somebody bleeds intraoperatively does not change how we interpret postoperative bleeding except in states of coagulopathy and things of that nature, if we felt we can correct it intraoperatively.

Q So in James Long's case, there was no higher level of concern for bleeding for him than there would be for any other cardiothoracic patient?

A I'm speaking from my own opinion, that I think any bleeding postoperatively has a heightened concern, irrespective of anything prior. It's unrelated.

Q When James Long came out of surgery, would you agree that he was hemodynamically stable?

A Well, I -- you know, when you say "out of surgery" --

Q When he arrived in the ICU, would you agree that he was hemodynamically stable? If that's helpful to you.

A He had acceptable parameters, yes.

Q Okay. Was there any of those parameters that were cause for concern?

A No.

Q And at the time of his admission to the ICU, were there any indications that James Long would not remain stable?

A Not that --

MR. JACKSON: I'm sorry, I didn't under -- what did you say again, please?

BY MS. TOSTI:

Q I said, at the time that he came into the ICU, were there any indications that James Long's condition would not remain stable.

A Not that I'm aware of.

Q Okay. At the time that he was admitted to the ICU, were there any indications that his cardiac function was compromised?

A No.

Q Doctor, would you agree that James Long had no evidence of right heart dysfunction prior to surgery?

A None that I'm aware of.

Interestingly, though, having stated

that, throughout his initial operative procedure, the whole time his -- what has been referred to as his central venous pressures were always high.

Q And what would a high central venous pressure throughout his operative procedure indicate?

A You know, anything from preexistent high pulmonary artery pressures, pulmonary hypertension, right ventricular dysfunction. It could be a lot of different things.

But it -- it was present. I don't know why. They were not low numbers.

Q Now, when James Long came into the ICU, who, in your opinion, was responsible for his medical management while he was in the ICU?

A Dr. Cosgrove and -- and the cardiovascular surgical service.

Q And that would be Dr. Muehlebach --

A Well --

Q -- and Dr. Hernandez?

A Well, Muehlebach was there earlier, and Hernandez was there later. I don't know how you want to separate that as separate.

Q Who is Nurse Hrobat?

A She was the intensive care unit nurse who was on duty till 7:00 p.m.
Q And what responsibilities did she have regarding James Long's care?
A Provision of nursing care till the time she left. Staff nurse.
Q And who is Nurse Zilka?
A She was the nurse on -- after the seven o'clock, who was the preceptor to Nurse Young.
Q And what were her responsibilities?
A Well, she was the preceptor for Nurse Young in the management of Mr. Long.
Q And who was Dr. Yared?
A Dr. Yared was a staff anesthesiologist who -- I don't know -- he was on the pain service or something that night, and I don't know what other roles that he had as it related to the intensive care unit. I can't remember.
Q And what, in your opinion, were Dr. Yared's responsibilities regarding James Long's postoperative care in the ICU?
A I specifically don't recall any direct responsibilities by him.

Q So Dr. Yared didn't have any responsibilities in managing, monitoring chest tube drainage, hemodynamics?
A Not that I'm aware of.
Q Do you believe those items, hemodynamic monitoring, chest tube drainage, fell to the surgical staff, Dr. Cosgrove, Dr. Muehlebach, Dr. Hernandez?
A Primarily, in communication with nursing.
Q Doctor, is a diminishing pulse pressure one of the red flag indicators of cardiac tamponade?
A I think I already answered your question regarding the signs and symptomatology of cardiac tamponade, of which I mentioned pulse pressure at that time as one of them, yes.
Q Okay. And in James Long's case, do you have an opinion as to whether he had a diminishing pulse pressure over the course of time that he was in the ICU?
A Without looking at the actual vital sign flow sheet, I -- there might have been a vital sign here or there that pulse pressure narrowed, but whenever you see a falling blood pressure, quite often is the case that the pulse

pressure will narrow.
Q Okay. Doctor, I -- I have a copy of the initial flow sheet from August 20th of 1996 that I'm going to provide you with just so that you have something to look at --
A Sure.
Q -- if that's helpful to you.
A Thank you.

MR. JACKSON: Is there a question you're asking him to look at now, Jeanne, or --

MS. TOSTI: No. We were discussing whether there was a diminishment of his pulse pressure over the course of time that he was in the ICU, and he stated that he didn't recall specifically all of the values.

THE WITNESS: Yeah. Interestingly, between H -- and I'm using that as meaning 1950 -- you can even go back to 1910, going all the way back here -- let's see.

If I can read this right, I would say sometime about, you know, 1900, going down to about 2150, there was a overall modest drop in his pressures and a narrowing of his pulse

pressure but, interestingly, an increase in his diastolic pressures as part of the reason.

Earlier in his admission, his diastolic pressures were very, very low, although his systolic pressures weren't that much higher; therefore, he had a wider pulse pressure.

Later in the time course, prior to any significant instabilities, his pulse pressure then began to widen again, and his cardiac function seemed to be consistent, the -- appropriate for those pressures.

BY MS. TOSTI:
Q And why do you think there was that type of variability that you just described?
A Well, you know, to the best of my abilities to ascertain, since there was no marked changes in his central venous pressures throughout this whole time period, no statistically significant changes in his central venous pressure, and then one looks at his heart rate, there was no statistically significant change in his heart rate to explain any of those things, and then you go over and look at his pulmonary artery pressures and his cardiac

output pressures, one could only presume but not be sure that this could be related to hypovolemia, of which he did receive fluids in the intensive care unit, and he did receive various vasoactive agents in response to the hypotension that developed, either from the nitroprusside and/or the propofol administration, both of which impact systemic vascular resistance, which was low.

Q Do you have an opinion as to whether he was hypovolemic at any point in time when he was in the ICU that evening?

A Well, I would say that a -- you know, at 1810, for instance, or even before that, when his pulmonary artery pressures are 22 over 15, that is a low number for somebody who's had aortic stenosis, and -- or at least appears as a low number.

And he has not had any major blood loss to that point in time, so one could presume a degree of hypovolemia.

Q Doctor, who had responsibility for watching James Long's pulse pressure while he was in the ICU?

A Well, I think -- you know, I think the nurses were the ones who record the vital signs in general.

It isn't a matter of watching a vital sign any more than watching the vital signs, so nursing typically is the one monitoring the patients and recording these things and then, in conjunction with the various practitioners, be it Dr. Cosgrove and/or his service, managing these situations.

Q And one of the reasons why these hemodynamics are recorded is in order to be able to pick up trends that may occur in the various hemodynamic values; correct?

A Sure.

Q And that's one of the ways that various problems with cardiac function or tamponade may be suggested, is by seeing a trend that occurs in the various hemodynamics; correct?

A Sure.

Q What is the drug propofol used for?

A Sedation.

Q Okay. And does propofol have one -- is one action of propofol to decrease blood pressure?

Is that one of the actions?

A Reduces -- reduces systemic vascular resistance and, therefore, blood pressure.

Q Okay. In your opinion, was it appropriate to continue to administer propofol during the time period when his blood pressure was below 90 systolic with two vasopressors being administered to increase his blood pressure?

A Well, I think, you know, that -- that's an independent decision on whether one believes somebody who is intubated postsurgery with pain deserves to be sedated, and obviously, if you cannot sustain hemodynamic stability in an acceptable vein, then you have to play one against the other.

In this particular case, because of the perceived needs of the patient to not be in pain and/or aware of the circumstances, they elected to use a vasoactive agent to increase systemic vascular resistance yet maintain blood pressure below the desired 100 and at a pressure that still sustained adequate perfusion of the kidneys, as exemplified by the urine output throughout the procedure.

Q All right. But Doctor, when the patient is unresponsive to the vasopressors for an extended period of time -- which, in this case, I believe he's got vasopressors that are started at 1910, 1930 hour --

A Correct.

Q -- and his blood pressure falls at 1950 hour to below 90 systolic and stays down there until 2150 hour, during that period of time, when two vasopressors are running and the patient's blood pressure, his systolic value, remains below 90, is it appropriate to continue administering propofol?

A I think, at that point in time, I -- I believe there was a reduction in the propofol dosage, but if -- if one was concerned about the level of the blood pressure, clearly reducing and/or terminating propofol would be an acceptable therapy.

Q Why was James Long's chest tube drainage increasing from 50 to a hundred to 250 ccs during the first two hours he was in the ICU?

A Why was it?

Because he was bleeding.

Q Would you agree that increased chest tube drainage followed by a fall in blood pressure below 90 systolic, with two vasopressors running, should have raised a high level of concern for excessive postoperative bleeding?

A Well, I think clearly it did raise a concern, and that's why platelets and fluids were administered. There is no question about it, yeah.

Q Now, considering that the bleeding -- that bleeding at a suture line occurred when he was in surgery, this increasing amount of chest tube drainage during the first two hours in the ICU, followed by this persistent hypotension with two vasopressors running, would you agree that James Long should have been assessed by a physician at the bedside to determine if he was having complications of excessive bleeding?

A Well, I think everything is a matter of interpretation and what call is successive.

A lot of people would be cognizant of a blood loss of 400 in the first two hours, but many people might not do anything about it,

other than to go ahead and do things like the administration of platelets, the reinfusion, the volume infusion, and then watching for any other precipitous changes that could not be explained, either by the vasodilators that were being administered and the likes or some other hemodynamic instability.

In this particular case, as the management played out, cardiac function continued to go up after its low point of about 1950 to 2030. In that time period was the low point in cardiac output, and then it proceeded going up, so one would presume that their management was addressing the problems as they perceived it.

Q Okay. My -- my question was, though, when you have escalating chest tube drainage that goes from 50 to a hundred to 250, followed by this extended period of hypotension with two vasopressors, should this patient have been seen by a physician at the bedside to do an evaluation?

A That -- that's an independent decision of the institution and -- and how they typically

perceive these problems.

If one was to look at these pressures on a patient on propofol, unchanging CVP, unchanging heart rate, mean blood pressures from -- ran from a low point of 55 to 67 -- you know, a very modest swing in mean blood pressure -- from admission all the way down, one would not find this to be a very unusual presentation.

Q Okay. Now, James Long had another increase in his chest tube drainage, I believe at 2210 hour, where he put out 250 ccs into his chest tube, and that had been preceded by that long period of hypotension.

In your opinion, Doctor, should that have raised a high level of concern for excessive bleeding and tamponade?

A Well, a couple of things.

Number one, in the absence of a changing heart rate, his pulse pressure actually was widening at that period of time. The CVP did not change at all in that period of time. His pulmonary diastolic pressures had been stable or relatively stable.

It should raise a high index of suspicion of bleeding but not necessarily tamponade.

Q Okay. You mentioned his pulmonary artery pressures being stable.

A Correct.

Q Okay. Doctor, isn't it true that the last pulmonary artery pressure we have is at 2050 hour --

A Correct.

Q -- because the nurses didn't take them after that? Right?

A No.

Q So how can you say that they were stable because that 250-cc dump into his chest tube occurs at Line 0, which is at 2210 hour?

A Well, the best way to answer that is, number one, I didn't specify to what time the pulmonary pressures, in particular in isolation of the CVP, the cardiac output that was increasing, the heart rate that was stable, or the pulse pressure that was widening. I didn't specifically identify a time.

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But having said that, through the time of the bleed, the CVP pressures were very stable, going all the way back to 1930. There was no dramatic change, which one would expect in the presence of a tamponade, and were within the range that they were intraoperatively at the first surgical procedure.

The heart rate did not dramatically change from 1930 all the way through the time of the increased bleed. The mean blood pressure had actually increased in that time period, not decreased, and the pulse pressure widened, not narrowed.

And admittedly, as alluded to by Plaintiff's attorney, yes, the last one was taken at 2050, prior to that episode of bleeding, but prior to that was relatively stable, also, and yet, the cardiac function appeared to continue to increase at 2150 and even at 2210.

THE WITNESS: Sorry if that was quick.

BY MS. TOSTI:

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Q Doctor, do you think an echocardiogram should have been done to assess cardiac function when Mr. Long experienced hypotension below 90 systolic that was unresponsive to two vasopressor drugs for over an hour or an hour and 40 minutes?

A On the basis that, other than a couple of pressures at 2010 and 2030 that were in the 70s, none of the pressures on this patient -- there was one at, you know, 1850 that was set -- most of these pressures are in the 90s or 80s.

In somebody you're trying to keep in the 90s, these pressures, in and of themselves, don't seem very bad, especially in somebody with normal coronaries and who's making urine the whole time, so there was nothing demonstrably bad here. There was no acute voluminous change in any of these vital signs.

Q And you don't find a problem with the systolic blood pressures that are in the 80 range with the two vasopressors running? That's acceptable for this patient, in your opinion?

A Well, I -- I think there's a couple of things.

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I think, number one, you've got ongoing propofol, and that is a systemic vasodilator, but it was determined to be necessary for sedation and, therefore, take that in conjunction with the vasoactive agents.

You know, this is not an unusual circumstance to see, this kind of presentation.

Q What did you find that would tell you that the propofol was a necessity in this case?

A Well, it's -- the use of the word "necessity" --

Q Well, that was the word that you used, Doctor.

A Well, it's common practice in all postcardiac patients to use various medications for sedation and/or analgesia.

In days gone by, we used to use lots of morphine and some Versed and Valium and drugs of that nature, but today the most commonly employed drug in the perioperative period for the transition of the patient from the operating room to the point of extubation is propofol because it's short acting, so it's commonly employed, probably in -- I'd be

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speculating to say 90 percent of the patients we do.

Q Okay. And are there any alternative drugs that can be used that don't have the additional effect of lowering blood pressure but will also provide the sedation that a patient such as James Long would need?

A All of the primary sedative agents that we employ, which were typically the benzodiazepines, offer some vascular resistance.

Q Doctor, if James Long had had an echocardiogram prior to 2110, which I think is Line L, and it showed echocardiographic correlates of tamponade physiology, would you agree that it would have required immediate return to surgery for a reexploration for him?

A Sure. Yes.

Q How often were the nurses supposed to be observing and recording the hemodynamic parameters on Mr. Long?

A They -- they stated it in the depositions somewhere, and I don't know if it was Q 20 minutes with cardiac outputs every couple

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of hours. I forget -- they exceeded it in most situations. I mean, the cardiac outputs are much more frequent than we often see, but I can't remember their exact timing.

Q Are pulmonary artery pressures important in assessing the stability of a postoperative aortic valve patient?

A I think all the vital signs taken together are important, yes.

Q And in your cardiac surgery ICU, how often do the nurses do pulmonary artery pressures on postoperative aortic valve patients?

A Well, it's a continuously monitored pressure. How often do they chart it? Is that the question? That would be every 15 or 30 minutes or something. I'm not sure of the exact number.

Q Okay. And the reason, again, that it's charted is so that you can view a trend --

A Sure, but --

Q -- if one is occurring?

A These are continuously displayed numbers, though, so they could see dramatic changes right on their monitors.

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Q But the requirements of the nurses are that they record it on a sheet so that a trend can be seen; correct?

A Sure.

Q Isn't that what they do in your unit?

A Yes.

Q And how often in your unit do they do cardiac outputs and indexes on postoperative aortic valve patients?

A It's -- it's quite variable. I would say anywhere -- depending on the stability of the patient, it could be, you know, every 15 minutes, or it could be every 2 to 3 hours.

Q So if the patient's unstable, you'd expect them to be doing them the Q 15 minutes?

A Sure. But you got to be very careful on the definition of "instability." And the -- the definition that I'm employing is a situation that doesn't -- seems out of line with the circumstances or significantly abrupt and dramatic changes.

Q Okay. And in James Long's case, the nurses were the individuals responsible for observing and recording the hemodynamic values?

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A Correct.

Q Are you critical of the nursing staff for failing to record cardiac outputs and cardiac indexes for the last hour and 20 minutes that James Long's in the unit?

A Well, you know, I think the last one being recorded is 2210, at the time of the bleed, at which point I think it was in that time period that the conversations on what to do began.

Recognizing no other dramatic changes, recognizing that the blood pressure, heart rate, et cetera, maintained their stability and the actual last output was, I think there were other things going on at that point in time that I wouldn't be critical of it.

Q Doctor, in a patient that's just bled 250 ccs into his chest tube and had, just prior to that, an extended period of hypotension, wouldn't that be precisely the type of situation where you would want to know the cardiac index on a more frequent basis?

A I think the cardiac index at the time of the bleeding was quite good. It was 2.9. There was no change in the pulse pressure, blood

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pressure, mean pressure, or CVP.

Q Okay. And for the next hour and 20 minutes, you have no idea as to what his cardiac index was; correct?

A No, I do not.

Q Now, you indicate, I believe, in your report, in the middle of the third paragraph, that -- you say, "Throughout the postoperative period, the patient was appropriately monitored."

And we've already talked about the pulmonary artery pressures that are not recorded during the last 2 hours and 40 minutes that James Long is in the ICU, I believe from after 2050 hour, at Line K, through the final notation at 2330 hour at Line S.

A Yes.

Q What is your understanding as to why the PA pressures were recorded every 20 minutes at the beginning of the time that he was in the unit and then stopped?

A Don't know. I -- I forget what Nurse Young answered, other than to allude to the fact that they should have been recorded.

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Q And you'd agree that a prudent nurse, caring for a postoperative patient that had had blood pressures below 90 systolic with two vasopressors running should have continued to observe and record the pulmonary artery pressures every 20 minutes?

MR. JACKSON: Objection.

Go ahead.

A Well, I think she answered that for herself, and I'll let nursing experts do that. I think it's agreed upon they should have been recorded.

I don't think the absence of recording is the issue as far as did -- the outcome, and therefore, I think they're unrelated.

BY MS. TOSTI:

Q Well, Doctor, without having them recorded, there would be no way to really monitor the trends --

MR. JACKSON: Objection.

BY MS. TOSTI:

Q -- that were occurring; correct?

MR. JACKSON: Objection.

Go ahead.

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A I think you're -- you're correct in that statement. I think we have other information in their absence, though, that gives us a reasonable reflection on the stability and/or instability of the cardiopulmonary situation.

BY MS. TOSTI:

Q Okay. And what are those other reflections that you're speaking of?

A Well, I think we've got situations of stable to increasing blood pressure, stable heart rate, stable mean arterial pressure, stable CVP, improving oxygenation, and improving cardiac output, despite the absence of the pulmonary artery pressures.

Q Would you agree that pulmonary artery pressures would have provided additional information regarding James Long's heart function during the last 2 hours and 40 minutes he was in the ICU?

A No better information than is exemplified by the presence of an increasing cardiac index at 2210 and the existing other vital signs.

Q Then why do pulmonary artery pressures, Doctor?

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A Well, I think it's like all bits of information count, but no piece of information unto itself is the whole answer. If you have enough of the pieces, you can often tell the picture, so -- the reason you can put all the parts of a puzzle in a box is to complete the whole picture, but if you're missing 1 piece or 10 percent of the pieces, you can often still tell the picture.

Pretty good analogy there.

MR. JACKSON: I like that.

THE WITNESS: That will work.

MR. JACKSON: Did you like that analogy, Jeanne?

You don't have to answer.

BY MS. TOSTI:

Q Now, Doctor, you have commented on this patient's urinary output --

A Correct.

Q -- and you have indicated that you felt that the urinary output gave some indication that there was -- and maybe I'm going to misphrase this, but -- that there was good perfusion?

A Yeah. Urinary output is a sign, not the only

PAGE 100

sign, of perfusion.

Kidneys in significantly compromised states are often an early organ function to shut down to preserve other organs, and there was good urine output through the last one at 2210.

Q Now, he was in the ICU for another hour and 20 minutes --

A Correct.

Q -- and there are no urine outputs recorded during that time.

So Doctor, you would agree that we have no reflection in regard to perfusion because of this missing urinary output?

A No, I agree with -- I agree with that.

Q Okay. Should the nurses -- considering this patient had just drained 250 ccs of blood into his chest tube, should they have been checking that on a regular basis?

A Oh, I think absolutely except then -- and the fact that it's not there does not mean that they were not checking it.

I think, as exemplified in the depositions and the examined sequence of

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events and notes, that, after this bleed, I think there became a significant concern for communicating with other people and getting this gentleman back to surgery.

So I think part of what we are looking at here is an attentiveness to other issues.

Q Okay. But Doctor, Mr. Long had Nurse Zilka, who was an experienced ICU nurse, plus Nurse Young working on him.

Wouldn't you expect that an experienced ICU nurse would be reporting the urinary outputs on a patient who had just had a significant bleed into their chest tubes?

A No, because, if -- even if it was good, it wouldn't matter, so the fact that it's bad could be expected.

If it was good, it would make no difference. Their concerns were totally drawn at that point in time to the bleeding and the fact that this is -- probably now, since this is the second significant bleed in this gentleman, they had gone by a couple of hours or whatever since the 250 bleed at Point G, which is 1930. They had made it a couple of

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hours plus in a very stable fashion, nothing demonstrable, and then this acute bleed occurs.

This changes everything in their perspective, and I think everyone's attention was elsewhere at that point in time. It wouldn't matter what the urine output is. This man's going back to surgery.

Q Well, he didn't go back for an hour and 20 minutes, though, did he?

A Correct. And I -- you know, I think that's a number of issues as it relates to communication, getting people onboard, making the appropriate contacts and decisions.

Q Is it your opinion that he should have gone back to surgery at 2210?

A I think, at that point in time, the decision to go back is there.

I think they gave him packed cells, they gave him albumin, and they were treating the bleeding knowing that they were going to go back because I don't think there was a perception at any point in time -- and there never was a documentation of a tamponade --

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and therefore, just bleeding is -- can be treated with volume resuscitation, blood, and then reexploration.

The acuity that you go back is determined by the -- the degree of the bleeding and the absence of believing there's a tamponade.

Q Do you think that James Long should have been assessed at the bedside by a physician at 2210 when he had the 250-cc bleed into his chest tubes?

A Oh, sure. I think a physician should have been called and come to assess the patient, yes.

Q Okay. Did you find any indication that a physician came and assessed the patient at 2210?

A Well, the only thing I know is, sometime around 2300, Dr. Hernandez is at the bedside, and -- because there's 350 mls of blood in the chest tube -- and prior to that, that Dr. Muehlebach had been called in the process, and he had been called, also, at about 2150.

So I think there was ongoing

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communications, the exact timing of which I'm not sure.

Q Okay. What's your understanding as to why James Long required the drug Amicar?

A Well, I think, you know, that's for coagulation purposes. You know, when somebody has ongoing bleeding, Amicar is often used.

Q Okay. And is it your understanding that he received the Amicar in response to the 250 ccs of chest tube output that he had at Line G?

A Correct.

And then continued thereafter.

Q Now, your report indicates, I think, the last line on page 1, that the patient's had several episodes of bleeding from the chest tube.

Would you tell me what -- what you're referring to as the episodes.

A I'm referring to all of them, 50 in the first minutes of being there, then a hundred occurring at 1830, then the 250 that occurs at 1930, then there's a couple of 50s, and then there's the big 250.

The two primary ones are the two 250s.

Q Okay. And --

A And a suggestion of additional bleeding in somebody's comments beyond that 250.
Q Okay. Now, you also state, at the top of page 2, that the surgical service was aware of these episodes and were at the patient's bedside prior to the second episode of significant drainage.
A I think, at that point in time when I wrote this, I was referring to Dr. Yared, who was actually anesthesia.
Q Okay. So that -- that's a correction that you want to make in your report?
A Correct, yes.
Q Okay. You didn't find that anyone from the surgical service was at the bedside prior to the second --
A No. Dr. Hernandez, which we already described, was at the bedside sometime around 2300, but -- I'm not sure of the exact time, but based on the lines, that's what it looks like.
Plus I do have to make one other correction in there. Where it says "2230, an acute deterioration," that should really be

"2330."
Q Okay. And what is the basis for your opinion that James Long suffered acute deterioration at what you've corrected to be 2330 hour?
A What is my -- what?
Q The basis for your opinion that that's when he --
A I think at that point --
Q But let me finish my --
A Yeah.
Q What is the basis for your opinion that James Long suffered acute deterioration at 2330, which is what you've corrected just now in your report?
A Was the mean arterial blood pressure dropping down to 45.
And just the descriptiveness of the events that occurred with rushing him back to the operating room and the situation at that time.
Q Okay. Let me edit here.
Did James Long have any Lasix that would have increased his urinary output and have masked any of his -- reflection of his

perfusion?
A Might have, but on the medications I didn't notice it.
Q Okay. Would Lasix have -- if he was given Lasix, would that change your opinions at all as to --
A No.
Q -- what the evidence of his urinary output means?
A Oh, it would influence the impact on urinary output, absolutely.
Q No, that was a bad question.
Would it change your opinion any, if he had had Lasix, as to whether or not his perfusion was as good as you've represented it to be?
MR. JACKSON: He answered that, Jeanne.
But go ahead.
A Yeah, I -- I think it could but it wouldn't -- when you take it -- like I said, when you take the pieces together, you -- you just don't look at the urine output in the absence of the other information; you don't look at the other

information in the absence of the urine output. And the more of the pieces we have, the more comfortable we are in making decisions or interpretations that -- and unfortunately, in these kinds of situations, aren't always correct.
BY MS. TOSTI:
Q What's your understanding as to the cause of James Long's bleeding that occurred in the ICU?
A Well, strictly based on the surgical dictations and comments that existed in the material reviewed, it was from bleeding at the distal suture line in the graft.
Q Doctor, isn't it likely that the bleeding that occurred earlier in the evening in the ICU was also the result of bleeding from that distal suture line?
A Could be. Don't know.
Q Now, Doctor, you mention in your report something called a vascular myocardial bridge. What is that?
A That is, you know, a -- I'm not a pathologist. That was in the autopsy report, and I think it

refers to a fibrotic band of tissue within the myocardium that was detected at autopsy.

Q Okay. And what significance might that have to what occurred here?

A Don't know.

Q You, in your report, say the exact etiology of the patient's demise is unclear and you mention bleeding, I think that's tamponade --

A Correct.

Q -- okay -- and vascular myocardial bridge.

How could vascular myocardial bridge lead to a patient's demise?

A Well, you know, I'm not saying it can. I said it's unclear and I don't know. I mean, you could also have kinking of the grafts to the coronary arteries causing ischemia and arrhythmias when they were reopening the chest.

He had two -- a couple of grafts to reattach the coronary vessels to the new graft.

I am not sure why he had the demise he had necessitating internal cardiac massage right at the time because the bleeding was not

so extensive, there was no presence of tamponade noted by anybody at any time, including opening the chest, to explain the whole thing.

Q Doctor, is it possible that he could have had tamponade earlier in the evening and -- such as from blood clots in the chest tube that then released when he ejected 250 ccs and then another hundred ccs into the chest tube?

MR. JACKSON: Objection.

But go ahead.

Object to the possibilities.

A Well, he could have but then he wouldn't if he ejected it with the 150 ccs, et cetera; he wouldn't have had the hemodynamic deterioration. He would have actually improved from the added fluid administration and everything else that he had and the release of the tamponade. He would have gotten better. He wouldn't have gotten worse.

BY MS. TOSTI:

Q Can a tamponade cause such cardiac -- decrease in cardiac function that the heart cannot recover from it, even if the pressure is

relieved?

A Well --

MR. JACKSON: Objection again to possibilities.

A (Continuing.) I think, number one, his heart did recover, so that would be inconsistent with the question asked.

He was resuscitated and his heart adequately recovered. He incurred a cerebral event, so his heart did recover.

BY MS. TOSTI:

Q Okay. But can it -- for a period of time can you have decreased cardiac function, even if a tamponade is relieved and, during that period of cardiac decompensation and decreased cardiac function, can you have insufficient circulation to the brain?

A I think --

MR. JACKSON: Objection again.

Go ahead.

A (Continuing.) I think what would be typically answered is, if one was to ask what happens to cardiac function in the vast majority of patients where a tamponade has been relieved,

cardiac function dramatically improves. That's the perception.

What could happen versus what does happen are two different issues.

BY MS. TOSTI:

Q At 2330 hour, at the point when he was last in the ICU, what's your understanding of James Long's condition?

A I think he was critical. I think his blood pressure was falling and he was rushed back to the operating room, and it's very hard, between that point in time and the surgical procedure itself, to figure out what's going on. There's a transition period in there, but he was very critical.

Q And would you agree that a mean arterial blood pressure of 45 put James Long at high risk for brain injury?

A Sure.

For a prolonged period of time if it persisted, yes.

Q Doctor, in this cardiac flow sheet at 1850 hour, which is at Line E, I believe --

A Yes.

Q -- his blood pressure goes down to 75 over 46, and he's got a mean arterial pressure of 55 --
A Sure.
Q -- cardiac output of 4.4, and a cardiac index, I believe, of 2.0.
A Correct.
Q Do you have an opinion as to what caused his blood pressure to drop to 75 over 46 at that point?
A Yeah. As best as I can tell, at that point in time, a combination of hypovolemia, they continued to give more fluids in addition to the nitroprusside, which they terminated, and the nitroprusside could clearly explain that fall in blood pressure, especially when one looks at the CVP coming down, et cetera.
Q Is there an acceptable range for test -- chest tube drainage per hour in a postoperative aortic valve replacement patient?
A Well -- well, clearly, we don't like seeing -- and I say "we" in the global sense, but cardiac surgeons typically use a number of a hundred an hour. You don't want to see more than a hundred an hour.

Where you have situations more than a hundred an hour, you have enhanced awareness and concerns.
Q Can a rise in CVP pressure and diastolic pressure sometimes be an indicator of bleeding and cardiac tamponade?
A Those are two different things, bleeding and cardiac tamponade.
A rising CVP definitely is consistent with a tamponade. A falling CVP is more consistent with bleeding.
Q Why, in your opinion, was the IP drip of Levophed started?
A Oh, I think, as I alluded to earlier, you know, there's numerous reasons someone's vascular resistance could be down, but clearly, the propofol itself lowers some vascular resistance, and therefore, they started the Levophed.
Q And the main action of Levophed is what?
A Vasoconstriction.
Q Okay. Now, in addition to the Levophed, a second IV vasopressor, epinephrine, was added, I believe at 2010 hour.

And what is your understanding as to why epinephrine was needed in addition to the Levophed?
A Well, I -- I would presume, when -- when the cardiac index had dropped down, that they also wanted to add a contractility agent. He did have a history of left ventricular dysfunction, I think by the echo. I'm going to presume that they were using them additively. I don't know.
Q Doctor, isn't it unusual for an aortic valve patient to come out of surgery not needing vasopressors and to have medications to lower his blood pressure and then, after two hours postoperatively, have to be started on not one but two vasopressors in order to maintain his blood pressure?
A I think that answer's all over the place. I think there are numerous patients that, depending on their degree of health and stability, after an aortic valve replacement have no -- no agents, other than propofol.
Where you have bleeding concerns and you're trying to maintain a suture line and

you want to maintain certain blood pressures, depending on the underlying situation, you might be using vasodilators, like nitroprusside, and if you then have to diminish that because of other problems, you might find yourself using vasoactive agents.
I think what makes these cases so difficult to interpret is the dynamic nature of cardiac surgery and the inability to make a universally applicable statement to all patients.
Q Now, he had the two vasopressors running from about 1930 hour and through 2130 hour when his blood pressure wasn't responding.
Why wasn't his blood pressure responding during that period of time, bringing his blood pressure up to at least 90 systolic?
A Well, I think it's a couple things. I think they were also giving ongoing fluids, platelets. I think they had, you know, the -- the propofol was being decreased, and it was a matter of trying to get everything in balance.
THE WITNESS: Can I take a break for one second?

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MR. JACKSON: Sure. Go ahead.
THE WITNESS: I'll be right back.
MS. TOSTI: We've only got 5 or 10 minutes.
(Whereupon, a recess was had at 4:20 p.m., after which the deposition was resumed at 4:21 p.m. as follows:)

BY MS. TOSTI:

Q Doctor, if a patient develops a cardiac tamponade in some instances, would you agree that you can see decreasing chest tube drainage?
A Sure.
Q Would you agree that, when serious complications occur in the early postoperative period, that the surgeon has a duty to keep the patient's family informed regarding the patient's condition?
A I think, if one perceives a significant problem occurring versus problems that are consistent with routine care and management of critically ill patients, yes.
Q And would you agree that the surgeon should

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respond in a reasonably prompt manner to inquiries made by the immediate family of a patient that's suffered complications from surgery?
A Sure.
Q Do you have an opinion as to when James Long's brain damage occurred?
A No.
Q Do you have an opinion as to what point in time James Long's condition was irreversible?
And by that I mean the point when brain damage was not avoidable.
A No.
Q Now, if James Long had recovered from his aortic valve surgery neurologically intact, do you have an opinion as to what his reasonable life expectancy would have been?
A No.
Q Do you have an opinion as to whether his death was preventable?
A No.
Q What is your understanding as to what caused James Long's death?
A You know, I think he suffered consequences of

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cerebral hypoxia, and exactly what transpired I don't know.
Q Do you find fault with any of the care that you reviewed in this case?
A Not as it relates to my areas of expertise, no.
Q Okay. And have we covered all of your opinions in this case that you currently hold?
A Yes.
Q There's none that we've -- haven't discussed in any of the questions?
A No.
MS. TOSTI: Okay. I would ask that, if you arrive at any new opinions between now and the time of trial, that you inform defense counsel, and I would request to continue your deposition relative to any new opinions that you should have.
Other than that, I think we're completed, your deposition.
THE WITNESS: Fine.
MS. TOSTI: Okay. I thank you for --
MR. JACKSON: I would suggest you

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read it, Doctor.
THE WITNESS: Oh, please.
MR. JACKSON: Okay.
MS. TOSTI: Thank you for your time, Doctor.
THE WITNESS: Thank you.
AND FURTHER DEPONENT SAITH NOT AT 4:25 P.M.

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S45435 ERRATA SHEET

PAGE	LINE	CHANGE	REASON

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I have read the above and foregoing, and it is a true and correct transcript of my deposition given on the day and date aforesaid.

_____
JEFFERY S. VENDER, M.D.

Subscribed and sworn to before me this ____ day of _____, 2002.

_____
Notary Public

My Commission Expires

_____.

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STATE OF ILLINOIS }
COUNTY OF DU PAGE } SS.

I, Melanie L. Humphrey-Sonntag, Certified Shorthand Reporter No. 084-004299, CSR, RDR, CRR, and a Notary Public in and for the County of DuPage, State of Illinois, do hereby certify that previous to the commencement of the examination, said witness was duly sworn by me to testify the truth; that the said deposition was taken at the time and place aforesaid; that the testimony given by said witness was reduced to writing by means of shorthand and thereafter transcribed into typewritten form; and that the foregoing is a true, correct, and complete transcript of my shorthand notes so taken as aforesaid.

I further certify that there were present at the taking of the said deposition the persons and parties as indicated on the appearance page made a part of this deposition.

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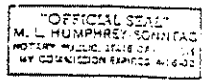
I further certify that I am not counsel for nor in any way related to any of the parties to this suit, nor am I in any way interested in the outcome thereof.

IN TESTIMONY WHEREOF I have hereunto set my hand and affixed my Notarial Seal this 1st day of March, A.D. 2002.

Certified Shorthand Reporter
Registered Diplomate Reporter
Certified Realtime Reporter

My commission expires
April 16, 2002.



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