IN THE COURT OF COMMON PLEAS

SUMMIT COUNTY, OHIO

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WESLEY W. WITHROW,)
Executor of the Estate)
of Wesley D. Withrow,)
Plaintiff,)
vs.) Case No. CV94-04-1279
JOHN G. MCANLIS, M.D.,) JUDGE MURPHY
and KARL D. SCHWARZE,)
M.D., et al.)
Defendants.)

ORIGINAL

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Deposition of HOWARD NEARMAN, M.D., a Witness herein, called by the Plaintiff for cross-examination pursuant to the Rules of civil Procedure, taken before me, the undersigned, Linda M. Yelinek, an RPR and Notary Public in and for the State of Ohio, at university Hospitals, 2074 Abington Road, Cleveland, Ohio, on Monday, the 14th day of August, 1995 at 4:34 o'clock p.m.

COMPUTERIZED TRANSCRIPTION BY
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APPEARANCES:

On Behalf of the Plaintiff:

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Akron, Ohio 44308

On Behalf of the Defendant John G. McAnlis, M.D. :

Messrs. Fauver, Tattersall & Gallagher
By: John Gallagher, Attorney at Law
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On Behalf of the Defendant Karl D. Schwarze, M.D.:

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Dep. 334

originals filed w/ Ct 9-19-95

COPY

(Plaintiff's Exhibit No. 1 was marked for identification.)

HOWARD NEARMAN, M.D.

of lawful age, a Witness herein, having been first duly sworn, as hereinafter certified, deposed and said as follows:

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CROSS-EXAMINATION

BY MR. HILL:

Q. Doctor, **Mr.** Banas has provided me through the mail a copy of your CV. It may or may not be current, but I just wanted to identify it for the record. Is that reasonably a current copy?

A. Uh-huh, yes, it is.

Q. Okay. **As** you know, we're here today to take your discovery deposition. I am the Plaintiff's attorney.

Will you tell me your current employer.

A. University Hospitals -- well, my -- technically, I guess, my employer is University Anesthesiologists, Incorporated.

Q. Uh-huh. Are you a shareholder, partner?

A. Yes.

Q. Okay. Do you spend 50 percent or more of

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your time -- your professional time in the active clinical practice of medicine?
A. Yes, I do.
Q. And what areas do you practice currently?
A. I practice currently in the giving anesthesia in the operating rooms and attending intensivists in the surgical ICU.
My titles are -- I am the clinical director of operative services at University Hospitals of Cleveland, and I am the co-director of the surgical intensive care unit at the same institution.
Q. And operative services title, does it have to do with anesthesia, in-operating room anesthesia'?
A. It has to do with operating room management. Giving anesthesia is sort of a part and parcel, part of the package.
Q. And what's the -- what are your titles and responsibilities regarding the intensive care unit?
A. I'm co-director of the surgical intensive care unit. I spend approximately 25 percent of my professional time in the intensive care unit. The other 75 percent revolves around the operating room. At this point I'm one of four attending --

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four or five, I think we're up to five now, attending intensivists who cover the surgical intensive care unit.
We're all anesthesiologists. We're all critical care trained. We're all Boarded or Board eligible in critical care medicine as well, and as such we help the surgeons take care of their patients.
Q. What Board certifications have you?
A. I'm Board certified in anesthesiology in 1983, I believe, and I passed the special certifications in critical care medicine as given by the Board of Anesthesia the first time it was given in '86, I believe,
Q. Is that a common linkup, people who have anesthesia practice and then they also take on intensivist-type practice as you described?
A. I don't think what you describe is common. I think the converse is true; that is, criticai care intensivists are a majority of critical -- a significant portion, I guess I should say, of critical care physicians or intensivists have anesthesia background. There a very small percentage of anesthesiologists are intensivists.
Q. Three-quarters or about three-quarters of your time is related to what we understand to be the typical anesthesiology practice, you're in the operating room with the surgeon handling the anesthesiology part of that case?
A. Correct.
Q. About a quarter of your time, rough estimate, is managing patients who are in the surgical intensive care unit?
A. Correct.
Q. And in that regard, are your -- are your cases all or most of your cases referred to you by surgeons?
A. We -- the way that our ICU runs -- and almost all ICU's are different as far as the actual -- who actually takes care of the patients -- is that all of our patients come with sort of an automatic consult. The surgeons are still primarily responsible for the patients, their patient, but we participate what we call conjoint care, meaning that we -- we write orders on the patients, we take care of the patients. The consult is not needed, it is assumed.
We don't write a consult. We write daily orders, daily progress notes along with the surgeons.

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Q. And that's a matter of a practice here at the hospital?
A. That's correct.
Q. For how long approximately has that been the practice?
A. At least 14 years because that's how long I've been director or co-director of the SICU here.
Q. Are there criteria, you know, for what types of patients follow that and what types of patients are exceptions to that?
A. There really are no exceptions. Well, I take that back. I guess starting about a year ago there have been some exceptions to that because we got a new group of physicians here who are not full-time faculty. They're with the Mednet group, which is HMO based, and they use our hospital as their admitting hospital and they see their own patients.
So there's a small percentage of the patients in the unit, probably less than ten percent, who are followed by their own private physicians or consulting physicians. The other 95 percent or so are -- are -- is a conjoined care, like I said. And within that, as you are probably asking, there are some groups that have more active

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-- some of the surgeons have more active interest in taking care of the patients, others have a very less active interest. The cardiac surgeons, by virtue of how they practice, have an active interest because it is critical care what they do every day.

When an orthopedic surgical patient lands in -- in our ICU or urology patients or obstetrical patients, GYN, ENT patients, the surgeons are more than happy to follow the patient along, and they will be glad to take care of them once they come out of the unit. We're primarily, for all practical purposes, are all physicians of record at that point.

Q. And on those types, the non-cardiac cases that you listed before, what -- how do you work out, how do you hash out amongst you, the intensivists and the surgeon, you know, under what circumstances the surgeon is reintroduced into the postsurgical care and under what circumstances you are just kind of left to make the decisions and make the, you know, orders?

A. We're the -- we maintain a presence during the day, you know, seven days a week. Five days a week we're there ten, twelve hours a day. The

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other two days of the week, weekends, we're there for rounds a few hours a day.

We -- we're there -- we're there if anything happens. If something happens when we're not there, then usually the house physician for that service, the surgical resident gets called for that incident then. If it's a critical care issue, we'll usually call our critical care fellow or one of us. If it's a surgical issue, like, you know, the wound looks bad or something like that, then they'll call their attending surgeon.

Oftentimes they'll call both and do a lot of communication; depends on the patient, depends on the problem.

Q. Now, what information do you have or what assumptions are you making as to what sort of an arrangement Barberton Citizens had; similar to yours, different from yours, how would you characterize?

A. I would assume everybody's different from ours.

Q. I do, too.

A. It would be nice if everybody's not different from everybody else's. I assume Barberton was -- is what would be typical of most

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non-academic medical centers where they do not have in-house residents or in-house house physicians. They may or may not have in-house house physicians.

I don't know, but I assume that the consults are put into other specialties, that is cardiologists or pulmonologists or intensivists and that there's some working arrangement among those physicians as to who gets called for what.

Q. I guess what I'm getting down to -- instead of dancing around, I'll just mention it. You're going to render some opinions, I take it, on Dr. Schwarze and whether he complied with the standard of care and perhaps others.

As you have analyzed those issues, you are analyzing them from the perspective of the work environment they're in and not the standards and practices here at University Hospitals?

A. Correct.

Q. Okay.

A. I'm analyzing them from what I can see. You know, I'm not even making a lot of assumptions, I don't think, about the work environment. I'm making -- I'm analyzing it from things, actions that I've seen taken or not taken, communications I've seen given or not given, et cetera.

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Q. Uh-huh.

A. Some of those may implicitly imply a certain work environment or certain way things are handled routinely. I feel that many of them are not.

Q. Do you personally have experience with the postoperative management of Whipple patients, Whipple procedures?

A. Sure.

Q. Categorize it for me, roughly.

A. How many this month or how many this year?

Q. However you can tell us so I get a feel for it.

A. I would probably say we do -- and it's not -- it's not a common operation anymore even in the -- even in the major medical centers probably selectively grouped regionalized -- but I would say we probably do one or two a month here. So multiply that by fourteen years.

Q. In the last five years or so, from '90 to the present, let's say, has the standard postoperative care and treatment of Whipple patients changed in any way in a material respect'?

A. No. The immediate critical care part of

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it?
Q. (Nodding head up and down.)
A. No. I can't speak for what the surgical enhancement, which is when the N.G. tube -- how many days it takes the N.G. tube to take it out or when you start feeding them, et cetera, but the standards of critical care, when you're following them in the first 24, 48 hours, you know.
Q. Okay. You have previously testified at deposition, I take it?
A. (Witness nodding head up and down.)
Q. Yes?
A. How you take it as such?
Q. Just a guess, just a lucky guess.
A. Yes, I have.
Q. Have you previously testified live at trial?
A. A couple of three, four occasions over the last fifteen years, yes.
Q. And aside from the deposition of Dr. Black, Dr. Schwarze --
A. Schwarze.
Q. -- you read a summary of Dr. Mir's deposition, correct?
A. Uh-huh. Dr. McAnlis.

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Q. Dr. McAnlis' deposition. Any of the nurses' depos did you read?
A. No.
Q. What you've read you have here in front of you?
A. Correct.
Q. You looked through the chart, I take it?
A. Yes. The chart with the autopsy, I think, and the medical records --
Q. Okay.
A. -- of Mr. Withrow's admission.
Q. When were you hired by Mr. Banas' firm or retained by Mr. Banas' firm to look through this case and to evaluate it for him?
A. Gee, I don't know. I don't recall how long it's been, a while back.
Q. Has it been --
A. Year.
Q. -- more than six months?
A. Probably more than six months, less than a year, something like that.
Q. Okay.
MR. BANAS: It's probably right.
BY MR. HILL:
Q. Have you ever personally talked with Dr. Schwarze or Dr. McAnlis or any of the players in this case?
A. No, don't know them, haven't talked to them.
Q. Have you relied upon any literature in forming your opinions about this case?
A. Specifically, no. Just things that I would remember from the past, but no, I do not.
Q. Okay.
A. Did not go to any books or journals to look up anything, no.
Q. Do you consider any literature, medical literature authoritative on the subjects or the issues raised by this case?
A. A lot of good books about the things that are raised in this case. No, I never considered any one piece authoritative.
Q. There's not a piece of literature or textbook or treatise that you would cite off the top of your head as being particularly authoritative or relevant to this case and these issues?
A. No.
Q. Okay. Do you have an opinion, Dr. Nearman, to a reasonable degree of medical certainty as to the patient's cause of death?
A. Yes, I do.
Q. What is it?
A. I think he -- he bled -- bled to death, essentially died of a hypovolemic shock.
Q. Hypovolemic shock?
A. Uh-huh.
Q. And do you have an opinion to a reasonable degree of medical certainty as to the source of the bleeding?
A. Upper G.I., and it appears it was nares gastroesophagitis.
Q. Do you have opinion held to the same degree as to the timing or the cause of that bleeding?
A. I'm *sorry*, the cause, no, I really can't tell you what -- as I said, it was -- it appeared at autopsy to be a nares esophagastritis. What caused that gastritis or esophagitis I can't tell you. And the timing of it, I mean, it was obviously quite active and was going on at the time that he died.
I can't tell you whether it started four hours before, eight hours before, two weeks before, I just don't know. I mean, it doesn't

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to say that's -- that's, you know, that's a judgment call and certainly, you know, you have to sum up and say how much fluid exactly had he been given. And I think, you know, by that point in time he had been given quite a bit.

I mean, I've got these notes that he had 6700 by a little bit after midnight, and then got -- you know, I don't have the exact cc. by cc. by hour count past then, but you have to look at how much fluid had been given to him and what he did in response to the fluid and what the wedge pressure was.

I think at that point in time a physician may not necessarily have had to come in, but at least should have gotten a hemoglobin to say, you know, what are we losing -- is there something that's going on? It seems to be a little bit out of whack as to what the fluid -- how much to keep the patient's blood pressure up. **A** physician may not have had to come in but should have had a little more investigative responsibility.

Q. Assuming that the intensivist at that point orders a hemoglobin and within a reasonable amount of time receives a low hcmoglobin, what's

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the standard of care require him to do at that point? This is hypothetical but I want you to assume that --

A. If at that point in time the hemoglobin is obtained and is low and is lower than people would have suspected, then I think that the blood ought to be hanged and some sort of, again, investigation as to why the hcmoglobin is low should have gotten into; whether that requires a physician to come in or not, again, is a judgment call. What's the patient look like? Is there any obvious bleeding, et cetera, drop an N.G. tube, reposition the N.G. tube, suction it back out, those kinds of things.

Again, you know, it's one thing in terms of investigation whether -- whether the actual presence is necessary for the preliminary or not, I'm not going to venture an opinion.

Q. At 3:15, we can assume that the nurse's notes are right and that at or around 3:15 Dr. McAnlis is called and that he is notified of the patient's status?

A. Uh-huh.

Q. What does the standard of care require from him, if you have an opinion about that?

A. I don't -- in standard of care requires

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that same thing of any reasonable and prudent physician no matter what their specialty is, either -- either -- because you've got something that's not going on.

That's correct, that is at 3:15, it appears that the Dopamine had been started for low blood pressure, that, you know, multiple fluid pushes have gone on, and that's just not very usual.

So either you investigate it or if you don't know what to do, you find somebody that does, and make sure it's being done because if it's your patient and things aren't going right, then you need to take corrective actions.

Q. Are Hespan and Dopamine appropriate medications to be given this patient through 5 a.m. or so; and if so, why?

A. Well, Hespan is very appropriate. It's a volume resuscitating agent, very effective volume resuscitating agent. And this patient seems to need volume, and that's a great thing to give him.

Dopamine is something that makes the heart beat a little bit more effectively. And it also will shrink the blood vessels down, and by doing so both actions cause the blood pressure to

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be raised again. This patient's blood pressure was low and I feel that Dopamine is not out of the -- out of the range of therapeutic possibilities here.

Q. Have you noted or are you assuming what orders were made by Dr. Schwarze for H & H or other lab work testing postoperatively?

A. I think Dr. Schwarze did -- did a trail of blood gases sometime around 7 or so in the morning. I don't see an order for an H & H, although I know one was drawn earlier. And I assume that was Dr. Schwarze who ordered it, but I don't -- I don't at least not going to start -- oh, he ordered it, that is the day before, I'm sorry, he ordered it the day before for the morning.

Q. That's why I wanted to ask you about it. I think if I read the records properly, when or shortly after Schwarze is consulted he puts on an order that says blood work every morning?

A. Yeah, P7, CBC q, correct.

Q. Is that an appropriate order?

A. Yeah.

Q. Do you not -- do you believe that blood should have been ordered with any more frequency or at an earlier interval than the next morning?

A. Not as a routine, correct.

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Q. Okay.
A. There is a routine postoperative evaluation done on a patient who at that time was stable, and I think those were appropriate orders.
Q. Okay. As a matter of routine --
A. Correct.
Q. -- right?
A. For that patient. Well, not even as a matter of routine. For that patient, that setting at that time and those clinical circumstances I thought those were appropriate orders.
Q. Uh-huh. I guess what I'm getting to is you mentioned earlier that at some point during the night, I think you said 3 o'clock, some H & H orders should have been made?
A. Routine, but the circumstances are changed markedly by that time.
Q. Right, that's all I'm getting to.
A. Yes.
Q. Now, do you have an understanding, are you making an assumption about -- let me take a step back.
Did you see the lab work that indicates or the lab paperwork that indicates a 6:06 a.m. hemoglobin and hematocrit result?

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A. Yes, I did.
Q. Do you know or make an assumption as whether 6:06 is the time it's drawn or 6:06 is the time it's reported?
A. My assumption I would make would be that would be the time it was drawn.
Q. Okay.
A. Because that's what usually is the way hospitals report things.
Q. Okay. And what -- what information do you have or assumption are you making about whether it's reported to Dr. Schwarze?
A. My assumption is reported sometime before 8:10 a.m. because that's when Dr. Schwarze orders four units of packed red blood cells.
Q. Right. Dr. Schwarze, according to the records, was in to see -- well, let me withdraw that.
Does Dr. Schwarze, in your opinion, act appropriately when he receives word of the low hemoglobin at, you know, or immediately before 8:10?
A. I think so, yeah. I mean, he -- he now has an answer as to what's -- at least partially as to why this patient was requiring volume, and that

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the patient obviously was bleeding. And the volume that you give, even Hespan, which is an effective resuscitating agent, doesn't -- isn't as good as blood, which is if you assume lose -- if you're losing blood, you got to get blood in.
And Dr. Schwarze orders blood and I feel that's a reasonable and correct order at that point in time.
Q. Do you assume that Dr. Schwarze at that point concluded that there was a bleed somewhere?
A. I would assume that, yes.
Q. Yes.
Are you familiar with the order that he gives over the telephone which says -- I'll tell you what it says, 50 percent v. mask, ABG's 30 minutes, transfuse 4 units PRBC now?
A. Uh-huh.
Q. Is that order appropriate?
A. Yeah.
Q. Should anything else have been done to comply with the standard of care?
A. Well, I think that, you know, again, this is what is one of those gray areas where I'm not sure what Dr. Schwarze was thinking. I'm not sure, when you started this deposition off you asked me

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about certain assumptions that I would *make* about how things are handled in ICU, and this is one of the areas where I think that that comes in.
Now, I think that, again, a reasonable prudent physician would not only order the red cells, which he did to correct the deficit, but would have an interest in seeing where the deficit was coming from as well. Now, Dr. Schwarze, again, may have said, I'm the intensivist handling the intensive care part of this, the surgeon -- if this guy's bleeding, it ain't because there's a medical bleeding going on, it's probably related -- 99.9 percent related to the past surgery.
I assume my surgeon is coming in to see the patient the day after a major operation, he will see the hemoglobin and hematocrit, he will then go ahead and investigate what's going on. Now, that would be -- and under those assumptions then I think Dr. Schwarze ought to have acted within a reasonable standard.
Q. On these facts and at that time, if we set aside whose fault it is and just talk about what should have been done --
A. Uh-huh.
Q. -- not only should blood have been hung

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appear to be obviously started two weeks before, probably wasn't going on actively in surgery or at least not to a voluminous extent, but I can't really pin it down to any more specifically than that.

Q. Do you have an opinion to a reasonable degree of certainty as to the cause or causes of the patient's falling hemoglobin in the week or so prior to the surgery'?

A. I don't have an opinion on that.

Q. Would you cat- -- if this is something you can answer for me, would you personally categorize this Whipple procedure on this patient as elective, emergent or something else?

A. Well, I'm not a -- a surgeon.

MR. GALLAGHER: Objection. Go ahead.

MR. BANAS: Overruled. You may answer.

THE WITNESS: I'm not a surgeon, but it -- I think this is -- this is certainly not one of those elective things. It certainly was elective as the patient was waiting at home and comes in the same day of admission.

The patient was obviously hospitalized and having problems, so I wouldn't call it emergent. It wasn't life-threatening in the next

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12 to 24 hours, so I think it falls somewhere in that semi-urgent perhaps.

BY MR. HILL:

Q. Do you have an opinion as to the propriety of taking the patient to surgery at the time he was taken to surgery?

A. I don't have an opinion on that.

Q. Okay. The quickest way for me to do this is to start by asking you what opinions you have as to whether any of the physicians or health care providers who provided care to Mr. Withrow satisfied or deviated from the standard of care?

MR. BANAS: I think I'm going to back up here because I think this is going to take a while.

MR. HILL: He's not going to throw anything, is he?

MR. BANAS: I don't know.

THE WITNESS: I might be very demonstrative. That's a good question. That's a fair question. I'll start with a fair answer.

I think that -- that certainly all of the physicians involved in this case at some point in time deviated from the standard of care in their care of Mr. Withrow.

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I think that some were omissions, some were co-omissions, some were blatant, some weren't. And I think that some of the nursing personnel could have done things a little bit better and could have done things a little bit quicker or expeditiously.

I guess that falls within the standard of care as well, although, you know, I'm much more assured of my opinions in the -- as far as definitions of standard of care because I am a physician. Certainly I will say that certain things that the nurses did or didn't do didn't comply with what I feel would be nursing standard -- standard practices or hospital practices.

BY MR. HILL:

Q. As it concerns the physicians, there were a lot of them so I want to make sure we're communicating when you say all the physicians at some point.

A. Okay. I'm going --

Q. Go ahead. And --

A. Let me tell you which physicians because I really looked at three of them. I really have no opinions on Dr. Mir. I have an opinion --

Q. M-I-R is Mir, Dr. Mir, *sorry.*

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A. I have opinions on Dr. Black. As I said, I have opinions on Dr. McAnlis and, of course, I have opinions on Dr. Schwarze.

Q. And the nursing personnel?

A. And -- okay, You asked me physicians. And nursing personnel?

Q. I'm following up.

A. Okay.

Q. Okay. Do you have an opinion as to a point in time or range of times when this patient became unsalvageable?

A. I think the patient was -- was unsalvageable peri-arrest, meaning, you know, when this patient arrested there's no question, I think, that that was -- the dye was cast.

When you're in hypovolemic shock and you arrest from that, you're usually so far behind it's pretty hard to resuscitate, especially if you're not 21, 22 years of age. I can't -- you know, it's hard for me to say, okay, half hour before he was salvageable, an hour before he was salvageable, but it doesn't extend much beyond -- beyond that.

I think he was probably salvageable up to maybe even 15, 20 minutes, half hour before. I

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wasn't -- that would be -- I don't have -- I don't have documentation, charts or notes as to how exactly he looked and what he was doing in that period of time to say exactly, but certainly probably to a greater probability than not certainly if the appropriate steps have been taken even up to half hour, 35 minutes before the arrest he probably would have been salvageable.

Q. Okay. I'm going to start with -- in the order that you listed them.

A. Could we go in the -- I'd rather start and go through what chronologically happened.

Q. Okay.

A. Therefore it may be easier for me to go through the story and relate the parts where I think steps should have been taken.

Q. Sure. I'll do that.

A. If that's okay with you.

Q. That's fine.

A. I mean, I first feel that -- that things were missed the evening after the surgery or early morning thereof. Let me get technical here. Let me refer to my notes so we can pinpoint exact times.

Certainly, I guess, we'll start talking

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about the morning of -- the morning after, technical sense, because it pretty much starts around midnight or a little bit thereafter, where the patient has already been seen by Dr. Schwarze. He's been officially consulted. He's been seen by Dr. McAnlis that evening before going home. And then throughout the night and early morning patient is hypotensive.

He's hypotensive on multiple occasions. Dr. Schwarze gets notified on multiple occasions; at 1:15 in the morning, according to nurse's notes, again at *3* o'clock in **the** -- in the morning. Fifteen minutes later Dr. McAnlis gets notified. Schwarze gets notified again around 4 or 4:30 and again at 6:30. Dr. Schwarze is given an update.

So over that six and a half, seven hour time span the multiple -- multiple -- both Dr. Schwarze at least three or four times and Dr. McAnlis at least once are notified that the patient is having hypotensive episodes as -- as requiring or has required and gets ordered a lot of fluids. And at one point a blood pressure raising agent, vasopressin, Inotrope, that's I-N-O-T-R-O-P-E, Dopamine gets started now.

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And I feel that the -- the amount of fluids that this patient required and the number of times that the patient was hyp- -- the degree and severity of the hypotension coupled with the amount of fluids and the fact that the fluids didn't totally correct that for this patient not to have been seen by a physician or at least have a H & H set up, hemoglobin and hematocrit, set up is below standard of care.

And I think this is both Dr. Schwarze -- I think this is primarily Dr. Schwarze's problem. Dr. McAnlis may have some -- some party to this as well. He is notified at least -- at least once that there's -- that there's a problem.

Q. What's your opinion as to the cause of the patient having this extremely low blood pressure and becoming tachycardic and requiring fluids at midnight, 1 a.m., 2 a.m.?

A. It may be different at midnight than 2 a.m. I mean, this patient had started to bleed somewhere after midnight for sure, whether it's at 1 a.m. or *3* a.m., I don't know.

Whipple patients, typically the patient's large dissections will have a lot of third spacing, often will require a lot of fluids.

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It begins to be difficult to draw the lines as to, you know, whether it's the three-thousandths cc.s or four-thousandths cc.s in -- that's a little bit abnormal.

But it -- in a pattern here, certainly I don't hold Dr. Schwarze at fault at 1:15 with the first call or maybe it's not the first call, but if maybe the first call that morning, but the first -- not -- certainly not the first time the pressure's low to respond with Hespan. I think that's pretty normal.

At 3 o'clock when he's notified that the pressure is down, he probably -- something ought to say, gee, maybe at that point it's a little bit abnormal.

Q. And I want to ask you, specifically let's take that 3 o'clock point where we know that Dr. Schwarze has been called at or around 1:15 and is called again at *3* o'clock. Considering the status of the patient then and the efforts that have been taken to that point, what does the standard of care require from the intensivist under these facts?

A. At 3 o'clock?

Q. (Nodding head up and down.)

A. At 3 o'clock I think you're going to have

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but some physician at that point should have actively been investigating to find the source of the bleed; is that correct?
A. correct.
Q. Don't you think that -- I'm not trying to be argumentative but ask it the only way I can.
A. Really? Just joking.
Q. Don't you think that Dr. Schwarze should have come in to see the patient at that point?
A. Having already been there before, no -- I think that Dr. Schwarze's duty at that point is to, as I said, is to correct the blood -- blood deficit, is to volume resuscitate this patient at that point in time.
I think that then there needs to be somebody to investigate that or at least some communication from Dr. Schwarze. Dr. Schwarze may not necessarily need to come in to see it, but probably was assuming that Dr. McAnlis is going to be following up shortly.
Now again, if Dr. Schwarze doesn't know that Dr. McAnlis -- if he doesn't know his schedule and can't assume that he's going to be in within a reasonable period of time, within the next hour or so, isn't going to come in till noon that day

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because he's in surgery in some other hospital or something else, then, yeah, I think a physician should see the patient. Again, that's one of those areas I think is up for interpretation as to what is the custom and practice as to how the patient gets seen in that particular ICU.
Q. Does the order to transfuse four units PRBC's now indicate to you based on your experience anything about the repetitiveness with which the blood should be hung?
A. Yeah. I use the same Webster's dictionary everybody else does, now means now.
Q. Does it indicate anything as to whether pressure bags or manual pressure should be used, or what would that tell --
A. That order does not, no.
Q. Okay. If you wanted to indicate to -- and I'm talking about Dr. Nearman now -- if you wanted to indicate to a nurse that she should -- he or she should hang PRBC's and use pressure or get it in faster, what kind of language typically would you use?
A. Transfuse -- transfuse four units of PRBC now, each unit going over half hour or less. You -- you *make* time specific saying, you know, get it

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in as fast as -- essentially saying get it in as fast as you can or get it in within these parameters that I give you. And that wasn't done here obviously.
Q. I will tell you that Dr. McAnlis -- you may know this but for the purposes of this question I will tell you -- that Dr. McAnlis testified that he came in at approximately 9 o'clock to see this patient. I will also tell you that 9 a.m. nurse's notes says bright red drainage noted from N.G. tube, large amounts, and then it says some other things.
A. Uh-huh.
Q. Large amounts of bright red drainage from the N.G. tube of this patient is the source of that is what in your opinion?
A. Is what finally killed him, that is the upper G.I. bleed, erosive esophagitis.
Q. If we assume, as Dr. McAnlis testified, that he was in in or around that time, what does the standard require him -- require of him?
A. If he's in at that time and he's looking at his patient, he sees large amounts of bright red blood coming out and he sees available to him an H & H of hemoglobin to 5.3, what was it?

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Q. Yes.
A. Then it requires of him to resuscitate his patient while he's attempting to find out what patient's bleeding from and to perhaps stop the bleeding if it's at all possible medically or surgically.
Q. In your opinion -- do you have an opinion as to a reasonable degree of medical certainty as to whether this patient should have been intubated at any point before the arrest?
A. I feel based on -- on patient's, you know, blood gases and upon his increased respiratory rate that we were rodden -- we were riding sort of thin on whether or not he should have been intubated prior to that. I mean, we have a fall -- we have blood gas early in the morning that shows a significant fall in pO2 on four liters. That gas is repeated.
Dr. -- Dr. Schwarze is notified of that obviously because at 8 o'clock part of the order that you read back to me says 50 percent Venti-mask, repeat the blood gases in half hour. And what we still see is that the pO2 is somewhat corrected but it is down. The patient is breathing harder, he is breathing off his end-tidal CO2. And

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to me there's no question that -- that somewhere around 9:30, 10:30, somewhere at least around 10:30 the patient probably would have been better off intubated.

Again, that's a decision that's difficult to make based on data I have here without looking at patients. We get called as anesthesiologists to come in and intubate patients all the time; some of which we do, some of which you don't do. And over the phone you can be told one thing and when you actually see the patient you can see how hard or labored their breathing is that may be a different story.

Q. Well -- did I interrupt you?

A. No, I'm fine. I'm finished.

Q. We know that Dr. Schwarze does not come in to the hospital to see this patient until -- until the arrest event.

A. correct.

Q. What information do you have or what assumption do you make as to why he didn't come in?

A. I -- I have no -- I know that he was out of the hospital. I think he stated in his deposition he went to -- he did something other than going -- going to the hospital. I don't know

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if he went to another hospital. He went to see his kids, I think he said, see his kids at one point.

My assumption is that he felt that he had ordered the blood and that perhaps Dr. McAnlis was coming in and would -- would finish handling the situation and that Dr. McAnlis would call him back or the nurses would call him back if there's other things going on other than just with the blood gases.

So I don't know what other information he had made available to him after that -- after the blood gas that was done at 7:30 and he ordered the increase in Venti-mask, et cetera. In fact, I'm not sure that I see any more orders from him, so I'm not sure that there was any more information made available to him, I just don't know.

Q. I know I'm skipping ahead chronologically but I'm going to stick with Schwarze while I'm on it.

A. Go ahead, I'm flexible.

Q. I see that. 10:30 nurse's note, patient's family visiting, continued large amount red drainage from NGT. Dr. Schwarze notified of new ABG's, and patient's status. Also unstable BP, orders to transfuse four units PRBC's being carried

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out. Dr. McAnlis in and notified of bright red drainage.

Now, Dr. Schwarze doesn't come in now, do you think that's in compliance with standard of care? If so, why?

A. I think that if he -- again, if he's notified of the 10:25 blood gases, at that point then I think he needs to do something because those blood gases show a severe metabolic acidosis.

Again, it's indicative again per -- I'm not going to -- I can't pin down whether, say, with absolute certainty he should have been intubated at that point. He probably should have been but I can't really get -- I got enough of standard of care breaches I can't make an assumption about that one, but I think with that degree of metabolic acidosis that says that the patient is troubled, somebody ought to do something. If he doesn't come back in, he ought to make sure that there is somebody there who can do something about that.

So yes, either he should come in or he should verify that there's somebody there who was -- who was capable of covering the situation.

Q. Okay. Now, the records tell us that at about 9:30 or 9:35 Dr. Black called Dr. McAnlis and

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told him in words or substance that the patient was actively bleeding.

Do you find fault with Dr. Black's involvement; and if so, how?

A. I really do find fault with Dr. Black's involvement. I think Dr. Black, you know, according to what I saw in the records and read from depositions, his heart was in the right place but he did absolutely nothing to verify the situation.

I don't know Dr. Black. I really don't want to get too -- too derogatory, but he saw the patient was bleeding, he called Dr. McAnlis and certainly let him know that the patient was bleeding. Dr. McAnlis appeared to just sort of yeah, yeah, give him a pat on the head and say, "Don't worry about it. It doesn't appear to be bad."

He calls and then it appears to me that things get -- get off into histrionics here. He -- I mean, he starts writing notes that this patient is essentially -- don't want to misquote anybody here -- he says, I called Dr. McAnlis, told the patient actively bleeding and concerned about patient's demise; i.e. death. I mean, that's a

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little dramatic to put in a note. I don't know what is -- what is the agenda that was there, but okay.
Q. Well, his concern was pretty well placed, wasn't it?
A. Yes, that's right. He then -- and in another note he says this patient is in acute bleed and needs surgery. Again, I'm not sure that he needs surgery, but again, that's -- and then in his final note and, see, I think this is the 10:55 note, if I'm not mistaken, he's unstable, is that I think -- is that Dr. Black's note?
Q. Yes. At 10:55?
A. Yeah.
Q. Calls McAnlis again and tells him the patient's bleeding?
A. Continues active GI bleed. Continued -- and called and talked to him and told him that patient was bleeding and in need of surgical intervention ASAP. And I mean, yes, I think that that's fine. He was aware of the problem.
He notified what I feel is an appropriate individual. And certainly Dr. McAnlis, who was the surgeon, should be capable of investigating what are the causes of bleeding and

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certainly should be capable of resuscitating, but Dr. Black apparently doesn't have his hands tied behind his back either at that point in time.
And I, you know, I didn't want -- I don't want to get into politics here, but I know there was some concern about who was the attending and who was -- or who was the official consultant and who was not and why wasn't I called and please call me and even notes written or orders written around as to who -- who was the clarification of consultants.
Well, you know, my God, there's a man bleeding to death and we're worried about who the consultants are. This strikes me as totally inappropriate behavior from Dr. Black.
And for the most part, I mean, it appears that he's the only one who is upset about who the consultants are here. And if -- if he's so concerned about the man bleeding to death, why doesn't he help volume resuscitate this gentleman, which he doesn't do.
Q. Let's go through it chronologically. As I noted to you before, according to the records at around 9:35 or so Dr. Black does a couple things; he calls Dr. McAnlis, hc tells him in words or

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substance the patient's bleeding to death?
A. Uh-huh.
Q. He orders stat clotting test, which was an appropriate thing to do at this point, do you agree with that?
A. I don't see any problem with that, yeah.
Q. Okay. In response to Dr. Black's telephone call, according to the nurse's notes at 9:40 a.m., Dr. McAnlis comes in to see the patient. Now we're talking about the surgeon who has been told that his patient is bleeding to death. Do you presume as I do that he's aware or should have been aware of the 6 a.m. hemoglobin results at 9:40?
A. Standards of care would dictate such, yes.
Q. Okay. At that point he irrigates the nasogastric tube with 16 cc.s of normal saline. Did you read about this episode at all?
A. I read that he -- excuse me, that he irrigated the N.G. tube. I do not know with how much he irrigated. I saw only irrigates easily, returned with mostly clear irrigation.
Q. I want you to assume that Nurse Adkins has testified and will testify that Dr. McAnlis used only 16 cc.s of normal saline solution at that time

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and he simply inserted that into the tube and then re-drew back the same 16 cc.s in a manner which she felt was not adequate to lavage the tube. Do you feel that's appropriate?
A. No, I don't feel that it is. I feel that that's not a proper lavage. I mean, the dead space of that N.G. tube alone is probably six or seven cc.s, certainly at least four to five. And that's really not appropriate to determine whether or not there's a lot of bleeding coming from there. Assuming that, that's not correct.
Q. I want you to further assume that after doing that and knowing all of the things that he knew or at least having available the information that was -- that was available then, Dr. McAnlis leaves the patient and goes home. Do you believe that that's conduct in accordance with the standard of care for this surgeon?
A. No.
Q. That leaves Dr. Black, who's in the vicinity, and Nurse Adkins in charge of this patient. Is that acceptable in your mind?
A. No.
Q. At 9:40 a.m. --
A. I -- to me, Dr. McAnlis' actions were not

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acceptable and Dr. Black's actions were not acceptable. You don't have to -- see, you don't have to have a quorum of people to do it. You have to have somebody in charge and who can volume resuscitate this patient and could have done it.

Dr. Schwarze could have done it or written for it when he saw it. Dr. McAnlis certainly should have done it. And Dr. Black, who was there the whole time, certainly should have done it. And that's why I think that the fault was dropped all the way around at this point here.

Q. Now, we know that at 10:25 a.m. the blood gases are reported, you've talked about that we also got a hemoglobin of **4.6,** co -- coag. time is PT 15.9, PTT 147. Those are all abnormal, correct?

A. Oh, yes.

Q. And then five minutes later Dr. Schwarze is notified of that information, we've talked about that already?

A. He's notified at least of the blood gases. I'm not sure that he's notified of any of the other lab data.

Q. Well, it says notified of new ABG's and patient's status.

A. (Witness shrugging shoulders.)

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Q. I wanted you to assume that at about 10:55 Dr. McAnlis is telephoned at home, is given that information and does nothing.

A. I think that that's -- that's a gross deviation from standard of care.

Q. I want to tell you -- or I want you to assume that the order that went on clarifying the consultants on the case was not Dr. Black's but was Dr. McAnlis'. What, if anything, does that indicate to you?

A. You know, again, that's just, you know, I'm -- I really feel that for -- and again, there's several versions in the depositions about caring about -- about who was consulted and who wanted who to take care of patients. And I think all of that got in the way of somebody actually doing something for the patient, and I'm just appalled, the best way I can say it.

I mean, it's okay if that goes on and the patient is very good and stable and doing well. It's not a very good thing to involve the politics of the hospital. We have politics in very big hospitals as well as small hospitals.

MR. **BANAS:** Never.

THE WITNESS: But the patient has got

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to come first. And to me, from reading the depositions, they should have seen what's going on here, it isn't apparent that the patient did come first here.

BY MR. HILL

Q. Dr. Nearman, do you intend to express any opinions as to Mr. Withrow's likelihood or chances of surviving 30 days or any period of time after that or placing a life expectancy on Mr. Withrow?

A. I'm not going to have an opinion on that.

Q. The only thing that I think I haven't asked you for specifics about to my satisfaction is the nursing issue, and I think you said in words or substance that you thought that the nurses had not done some things as promptly as they should have. What -- can you give me any specifics about that that we haven't talked about already?

A. I think it relates to hanging the blood and getting the blood available and getting it in. Now again, I don't know what's an acceptable period of titne.

I don't know whether the patient still had blood that was in the bank, type of cross-match, whether further had to be set up, but, you know, the order was written for a transfusion

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at **8:**IO and I don't think the first unit of blood got hung for at least an hour or so after that.

Q. If we -- if we assume that McAnlis came in around 9, when he testified he did --

A. Uh-huh.

Q. -- does he have obligations to check on the status of whether that order's being carried out or not or whether it's being carried out promptly or not?

A. Only in the sense that he has obligations to follow up on the patient, I think. But part of that is if he saw that hemoglobin and saw that it was 5.3 from an hour before, he should have said, Gee, we better get some blood up. And if it isn't hanging, he should say, When was it ordered and what's the hold up, and can we hurry up on it?

Q. If -- Dr. Schwarze, this is a hypothetical because I don't know -- let me say it a different way.

If we assume that when Dr. Schwarze ordered that blood to be transfused he wanted it to be put in with pressure and he wanted it to be put in with two lines instead of one, if we assume that --

MR. **BANAS:** That's a good question,

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keep going.
BY MR. HILL:
Q. We've already talked about the fact that the order is not written that way, correct?
A. Correct.
Q. If we assume that's what he wanted and Dr. McAnlis comes in at 9 and then again at 9:40 and sees that the blood is not being hung that way, what, if anything, does the standard of care require of Dr. McAnlis?
A. Well, again, when Dr. McAnlis comes in and sees the patient's status, sees where the hemoglobin is, sees the -- doesn't see physically but hears the nurse reports of and notes in the chart how much blood has come out from the N.G. tube, then his obligation is to resuscitate the patient and resuscitate the patient the most effective way possible.
And if we're having blood losses to that -- to that degree, then we've got to replace it in a quick and expeditious manner, too. And Dr. McAnlis had available to him blood gasses of 9 -- certainly had the first -- find this -- he certainly had the blood gas of 7:30 a.m. available and the blood gases of 9:08 available, which shows,

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you know, increased the base deficit and the acidosis is in, and that implies urgency in that as well. You know, to see blood drip, drip, dripping is not an effective way of doing it.
Q. At that point should there have been an order made? And by that I mean at 9:40, let's say, when Dr. McAnlis comes in and does this lavaging procedure but also sees or should have done the hemoglobins and the things you just talked about, should Dr. McAnlis have made orders as to which -- the repetity the blood is coming in or using the pressure or using an extra line to be put in?
A. He should -- he should have put the extra line himself and pumped the bags himself. I mean, we're talking a critical situation here at any point in time. At this point in time from the numerous viewpoints, at a minimum he should have said, We need to get this blood in, we need to get it in relatively quick. At minimum he should have put an order in.
Q. If that would have been put in at 9:40, do you think that would have made a difference in the case?
A. That -- I think this patient, as I said before, I think that hc was probably salvageable

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anywhere up to even half hour, maybe -- maybe even if you want to look conservatively an hour before.
I mean, if you put in proper lines, you can get 4 units of blood in over a 15-minute period, 20-minute period if you put in a couple big IV's. I mean, we do that in our ICU and O.R. all the time. I think 4 units of blood in 15 minutes would have staved off this man's eventual collapse.
I don't know, you know, I can't -- it would have staved off certainly that this led to the arrest. I don't know how fast he would have kept bleeding and the expediency that he would have got him endoscoped and corrected, that beyond is the line. I mean, that's anybody's guess at this point. But as far as keeping him from arresting, yes, that would have done it.
Q. Could he have withstood an endoscopic procedure for the diagnosis, this procedure of 9:40 or 10 o'clock or so?
A. Not without being resuscitated is the -- so the protocol or proper thing to do would have been to get him stabilized, for lack of a better word, and then try this endoscopy to try to see where the bleeding was coming from.

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If a man gets shot with a bullet, you don't try to look for what caliber it was. First you resuscitate the patient, then look for it.
MR. HILL: Okay. That's all I have.
- - -
BY MR. GALLAGHER:
Q. Doctor, do you have any opinion as to whether or not Dr. McAnlis in any other way other than you've already expressed, fell below the standard of care which caused the death of Mr. Withrow?
A. No, sir.
Q. What is that?
A. I said --
Q. You saidno?
MR. BANAS: He said, "No, sir."
THE WITNESS: I do not have any other opinions concerning Dr. McAnlis' care other than what we've talked about in the post and immediate postoperative procedure.
MR. GALLAGHER: Thank you. I have no further questions.
THE WITNESS: Okay.
MR. BANAS: Mail him a copy to read.
- - -

(Deposition concluded at 5:36 o'clock p.m.)

- - -

I, **HOWARD NEARMAN, M.D.**, do verify that I have read this transcript consisting of fifty-four (54) pages and that the questions and answers herein are true and correct with corrections as noted on the errata sheet.

_____

HOWARD NEARMAN, M.D.

Sworn to before me, _____, a Notary Public in and for the State of _____, this _____ day of _____, 19__.

Notary Public in and for the state of _____

My commission expires _____

CERTIFICATE

STATE OF OHIO,)
) SS
SUMMIT COUNTY)

I, Linda M. Yelinek, an RPR and Notary Public within and for the State of Ohio, duly commissioned and qualified, do hereby certify that the within named witness, HOWARD NEARMAN, M.D., was by me first duly sworn to testify the truth, the whole truth and nothing but the truth in the cause aforesaid; that the testimony then given by the witness was by me reduced to Stenotypy in the presence of said witness, afterwards transcribed upon a computer; and that the foregoing is a true and correct transcription of the testimony so given by the witness as aforesaid.

I do further certify that this deposition was taken at the time and place in the foregoing caption specified, and was completed without adjournment.

I do further certify that I am not a relative, counsel or attorney of either party, or otherwise interested in the event of this action.

IN WITNESS HEREOF, I have hereunto set my hand and affixed my seal of office at Akron, Ohio on this 28th day of August, 1995.

Linda M. Yelinek

Linda M. Yelinek, an RPR and Notary Public in and for the State of Ohio.

My Commission expires July 31, 1996.

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-L-

-M-

-Q-

-R-

-S-

-Y-

CURRICULUM VITAE

Howard S. Nearman, M.D.

DATE OF BIRTH: December 3, 1948

PLACE OF BIRTH: Charleston, West Virginia

FAMILY:
Wife: Barbara Blum -Married, June 2, 1974
Sons: Scott -Born May 20, 1980
Zachary -Born March 9, 1982

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EDUCATION:

Case Western Reserve University
Cleveland, Ohio
B.S., Engineering, 1966-70

Case Western Reserve University
Cleveland, Ohio
M.S., Biochemical Engineering, 1970-75

Case Western Reserve University
School of Medicine, Cleveland, Ohio
M.D., 1970-76

Case Western Reserve University
Weatherhead School of Management
M.B.A., 1984-1990

APPOINTMENTS

Hospital of the University of Pennsylvania
Philadelphia, Pennsylvania
Internship in Surgery, 1976-77

University Hospitals of Cleveland
Cleveland, Ohio
Residency in Surgery, 1977-78

University Hospitals of Cleveland
Cleveland, Ohio
Residency in Anesthesia/Fellowship
in Critical Care Medicine, 1979-81

University Hospitals of Cleveland
Cleveland, Ohio
Director, Surgical Intensive Care Unit
October 1, 1981 - March 31, 1991

APPOINTMENTS: (continued)

University Hospitals of Cleveland
Cleveland, Ohio
Co-Director, Surgical Intensive Care Unit
April 1, 1991 - present

University Hospitals of Cleveland
Cleveland, Ohio
Clinical Director, Operating Rooms
April 1, 1991 - present

Case Western Reserve University
School of Medicine, Cleveland, Ohio
Instructor, Department of Anesthesiology
October 1, 1981 - October 31, 1983

Case Western Reserve University
School of Medicine, Cleveland, Ohio
Instructor, Department of Surgery
October 1, 1981 - October 31, 1983

Case Western Reserve University
School of Medicine, Cleveland, Ohio
Assistant Professor, Department of Anesthesiology
November 1, 1983 - June 30, 1989

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Assistant Professor, Department of Surgery
November 1, 1983 - June 30, 1989

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Associate Professor, Department of Anesthesiology
July 1, 1989 - Present

Case Western Reserve University
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Associate Professor, Department of Surgery
July 1, 1989 - Present

Case Western Reserve University
School of Medicine, Cleveland, Ohio
Associate Professor, Department of
Reproductive Biology
February 1, 1990 - Present

HONORS:

President's Scholar,
Case Western Reserve University, 1967-68

Second Prize, Babies & Children's
Science Day - 1973

HONORS: (continued)

Alpha Omega Alpha - 1987

Outstanding Clinical Teacher
Department of Anesthesiology
University Hospitals of Cleveland
1987 - 1988

LICENSURE:

State of Ohio, December 1, 1977

Diplomate, American Board of Anesthesiology, September 1983

Special Qualifications in Critical Care Medicine, September 1986

PROFESSIONAL SOCIETIES:

Academy of Medicine of Cleveland
American Society of Anesthesiologists
American Society of Critical Care Anesthesiologists
Cleveland Society of Anesthesiologists
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International Anesthesia Research Society
Ohio Society of Anesthesiologists
Society of Critical Care Medicine
American Society of Physician Executives

HOSPITAL COMMITTEES:

Ethics Committee
Pharmacy and Therapeutics Committee, Chairman
Trauma Care Committee

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MAJOR PRESENTATIONS:

Pharmacology of Resuscitation. Trauma Symposium - **1983,** Cleveland, Ohio, June **1983.**

An Operating Room Data Management System. Microcomputers in Anesthesia IV Scientific Program Asheville, North Carolina, October 1983.

MAJOR PRESENTATIONS: (continued)

Perfluorocarbons. Meeting of the Seven Universities Anesthesia Departments, Hershey, Pennsylvania, January **1984.**

Artificial Blood. Advances in Cardiopulmonary Intensive Care - Fourth Annual Symposium, Cleveland, Ohio, April **1984.**

Ventilatory support in Trauma. Trauma Symposium - **1985,** Cleveland, Ohio, June 1985.

Drug Interactions in Anesthesia. Ohio Medical Education Network, Columbus, Ohio, April **1986.**

Vasopressors and Inotropes. Critical Care Conference, Cleveland Clinic Foundation, Cleveland, Ohio, October **1986.**

Adult Respiratory Distress Syndrome. Critical Care Grand Rounds, Cook County Hospital, Chicago, Illinois, December **1986.**

Respiratory Distress Syndrome, Trauma Symposium - **1987.** Cleveland, Ohio, June **1987.**

Septic Shock. Anesthesia Update IV - Cleveland Society of Anesthesiologists, Cleveland, Ohio, October **1987.**

Endotracheal Intubation. Critical Care Grand Rounds, Cook County Hospital, Chicago, Illinois, December **1987.**

Pharmacologic Implications of Septic Shock. School of Pharmacy, University of Illinois, Chicago, Illinois, December 1987.

Ethics of Decision Making on Prolonged Care, Ohio Society of Anesthesiologists Annual Meeting, Columbus, Ohio, September **1988.**

Mixed Venous Oxygen Saturation - What It Is and What It Isn't. Society of Critical Care Medicine, Michigan Chapter Annual Meeting, Ann Arbor, Michigan, October **1988.**

What's New in Mechanical Ventilation. Critical Care Grand Rounds, Cook County Hospital, Chicago, Illinois, December **1988.**

MAJOR PRESENTATIONS: (continued)

Monitoring Mixed Venous Oxygen Saturation in the Critically Ill. Surgical Grand Rounds, Jewish Hospital, Cincinnati, Ohio, June **1989.**

Ultra-short Acting Beta Blockade. Kentucky Medical Association Annual Meeting, Louisville, Kentucky, September **1989.**

Fluid Resuscitation. Anesthesiology Grand Rounds, Temple University Hospital, Philadelphia, Pennsylvania, October **1989.**

Adult Respiratory Distress Syndrome. Critical Care Seminar, St. John's and Westshore Hospital, Cleveland, Ohio, May **1990.**

Vasodilators in the Critical Care Setting. Conference for Critical Care Professionals, Sandusky, Ohio, June **1990.**

Current Issues in Nutritional Support. Advances in Clinical Nutrition Seminar, Cleveland, Ohio, August **1990.**

Clinical Pharmacology of Colloids and Crystalloids. symposium on Fluid Resuscitation in the Critically Ill: Consensus, Controversies & State of the ***Art.*** University of Louisville, Louisville, Kentucky, November **1990.**

Chemistry - Physiology of Colloids/Crystalloids. New Concepts in the Resuscitation of the Critically I11 and Injured. Critical Care Symposium, Wayne State University, Detroit, Michigan, May **1991.**

VISITING PROFESSORSHIPS:

Critical Care Medicine
Cook County Hospital
September, **1983**

Department of Anesthesiology
University of Michigan
October, **1985**

OTHER ACTIVITIES:

Review Board for Hospital Formulary (A Refereed Journal for the P&T Committee)
1989 - Present

Panel member for American Medical Association's Diagnostic and Therapeutic Technology Assessment Program of the Council on Scientific Affairs
March **1990**