

IN THE COURT OF COMMON PLEAS  
CUYAHOGA COUNTY, OHIO

STEPHANIE L. BAILEY, etc., )  
Plaintiffs, )

-vs-

No. 566632

THE CLEVELAND CLINIC FOUNDATION, )  
etc., )  
Defendants. )

CERTIFIED  
COPY

The deposition of DR. ERIC GLUCK,  
called by the defendants Syed Razmi, M.D. and  
Physicians for Pulmonary and Critical Care Corp. for  
examination, pursuant to notice, taken before Judy A.  
Landauer, CSR, a Certified Shorthand Reporter and  
Notary Public within and for the County of Cook and  
State of Illinois, at 3435 North Western Avenue,  
Chicago, Illinois, on October 17, 2006, at the hour of  
9:30 o'clock A.M.

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1     P R E S E N T :

2                   JAMES S. CASEY, ESQ.  
3                    (of the firm of Messrs. Djordjevic, Casey  
4                    & Marmaros, 17 South Main Street, Suite  
                    201, Akron, Ohio 44308)

5                   appeared on behalf of the plaintiffs,  
6                   Stephanie L. Bailey, etc.;

7                   BRANT E. POLING, ESQ.  
8                    (of the firm of Messrs. Sutter, O'Connell  
                    & Farchione, 3600 Erieview Tower, 1301  
9                    East Ninth Street, Cleveland, Ohio 44114)

10                   appeared on behalf of the defendants  
11                   Syed Razmi, M.D. and Physicians for  
                    Pulmonary and Critical Care Corp.;

12                   DOUGLAS G. LEAK, ESQ.  
13                    (of the firm of Messrs. Roetzel & Andress,  
                    1375 East Ninth Street, One Cleveland  
14                    Center, 10th floor, Cleveland, Ohio 44114)

15                   appeared on behalf of the defendant  
16                   Dr. Khoury.

17     A L S O     P R E S E N T :

18                   SYED RAZMI, M.D.  
19                    One of the defendants herein.

I N D E X

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WITNESS

Dr. Eric Gluck

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DR. ERIC GLUCK

having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. POLING

Q. Good morning, Dr. Gluck.

A. Good morning.

Q. My name is Brant Poling. I represent Dr. Razmi in this case. You've been identified as an expert witness on behalf of the plaintiff, and we've come to Chicago today to take your deposition.

Do you understand?

A. Yes.

Q. All right. If -- well, strike that. I'd like to have an agreement with you at the outset of the deposition that if I ask you any question you don't understand you'll let me know at the time I ask the question, so I can rephrase it and make it clear to you; okay?

A. Yes.

Q. All right. Have you given deposition testimony before?

A. Yes.

1 Q. All right. So you understand the  
2 court reporter's taking down my questions and your  
3 answers?

4 A. Correct.

5 Q. All right. Is there any reason why  
6 you cannot answer my questions today?

7 A. Not at the moment.

8 Q. Okay. All right. Let's do a little  
9 bit of housekeeping. I've got a copy of your C.V.  
10 somewhere.

11 Can you tell me if this is current  
12 and up to date?

13 A. Yes.

14 Q. Okay. Are there -- do you -- would  
15 you like to make any changes, additions, or  
16 deletions to this document, to your C.V.?

17 A. No.

18 Q. I see that you did an internship at  
19 Beth Israel Medical Center in New York in 1976 or  
20 finished in 1976, is that right?

21 A. Yes.

22 Q. Coming out of medical school did you  
23 apply for any residencies or internships other  
24 than the one at Beth Israel?

1           A.     I went through the matching program.

2           Q.     Okay.

3           A.     So basically what you do is you list  
4 your top choices and the programs list their top  
5 choices, and it goes through a computer and they  
6 match you.

7           Q.     Okay.

8           A.     And Beth Israel was my first choice.

9           Q.     All right. And you did your  
10 residency in what, internal medicine?

11          A.     Yes.

12          Q.     Okay. And you completed that in  
13 1978?

14          A.     Yes.

15          Q.     And then a two-year pulmonology  
16 Fellowship at the University of Utah?

17          A.     Yes.

18          Q.     All right. Did you do a critical  
19 care Fellowship?

20          A.     No. There was no such thing as  
21 critical care in 1978 to 1980.

22          Q.     Okay. When did the critical care  
23 Fellowship first become available?

24          A.     The first Fellowships -- well, the

1 first Boards for critical care were not available  
2 'til 1986.

3 Q. Okay.

4 A. So people who trained in specialties  
5 that involved critical care were grandfathered in  
6 as far as the training went, and then they just  
7 had to get their certification on the exam.

8 Q. All right. Let me ask you about your  
9 practice. It looks to me from looking at your  
10 C.V. as if you have a special interest or maybe a  
11 subspecialty in asthma, is that right?

12 A. I have an interest in asthma. I  
13 don't treat very many asthmatics anymore.

14 Q. Okay. You were in private practice  
15 from 1980 to 1991 in Hartford, Connecticut?

16 A. Correct.

17 Q. What prompted your move to -- well,  
18 where did you go? You went to St. Louis?

19 A. No. Yes, Rush-Pres-St. Luke's,  
20 right.

21 Q. Right.

22 A. I started in private practice, and I  
23 decided that I really enjoyed the academic  
24 lifestyle better and the academic practice better,

1 so gradually at the University of Connecticut they  
2 offered me more and more full-time position as an  
3 instructor, and then I started doing some  
4 research, got some grants, did some publications,  
5 and then was recruited to go to Rush-Pres-St.  
6 Luke's.

7 Q. Okay.

8 A. And join the pulmonary critical care  
9 section.

10 Q. Okay. And then you've been at  
11 Swedish since 2000?

12 A. Yes.

13 Q. Okay. And what is the nature of your  
14 practice now?

15 A. It's pretty much all critical care.

16 Q. Okay. And what do you define as  
17 critical care?

18 A. I run the intensive care unit and the  
19 step-down unit at Swedish Covenant Hospital.

20 Q. All right. Do you keep an office  
21 outside the hospital?

22 A. No.

23 Q. Okay. How many hours a week, a  
24 full-time position?

1 A. Yes.

2 Q. Okay. Do you administer thrombolytic  
3 therapy yourself?

4 A. Yes.

5 Q. Okay. Do you place filters, venous  
6 filters, yourself?

7 A. No.

8 Q. Okay.

9 A. I order them.

10 Q. Okay. And then who does them in your  
11 hospital?

12 A. A radiologist.

13 Q. Okay. Interventional radiologists?

14 A. Yes.

15 Q. As opposed to a vascular surgeon?

16 A. Yes. It's not really much a vascular  
17 procedure anymore.

18 Q. Okay. Tell me about the I.C.U. in  
19 your hospital. Do you have different I.C.U.s for  
20 different areas of specialty?

21 A. Sort of. The main I.C.U. where I run  
22 is a combined medical/surgical unit, but we do  
23 have some support units.

24 We have a surgical unit, but it's

1 more like a step-down unit than an intensive care  
2 unit.

3 We take actually the sickest surgical  
4 patients in our unit.

5 Q. Okay.

6 A. We take the open hearts, for  
7 instance, in our -- in our unit.

8 Q. Okay.

9 A. And the patients who have shock,  
10 postoperative shock, will come to our unit.  
11 There's also a coronary care unit, but we also  
12 take the patients who are the sickest heart  
13 patients, so we'll take the patient who is  
14 cardiogenic shock, and that's pretty much it.

15 We have those two sort of support  
16 units, but we're pretty much the main unit.

17 Q. Okay. So there's a separate CCU from  
18 the I.C.U.?

19 A. Yes.

20 Q. Okay. All right. And then the  
21 I.C.U., you're director of the I.C.U. as opposed  
22 to the CCU, is that correct?

23 A. That is correct.

24 Q. Okay. How many beds is the I.C.U.?

1           A.     We have 14 beds in the intensive care  
2 unit and 16 beds in my step-down unit.

3           Q.     What percentage of your patient  
4 population would you say comprises patients with  
5 pulmonary embolism or venous thromboembolism?

6           A.     The actual disease pulmonary embolism  
7 and actual DVT, not people who are treating for  
8 potential processes?

9           Q.     Correct.

10          A.     Okay. I would say in a typical year  
11 we will have in our intensive care unit about five  
12 to six admissions for pulmonary embolism and  
13 probably thirty to forty cases of patients who  
14 have DVT.

15          Q.     Okay. And just for purposes of  
16 definition, so we're on the same page, when you  
17 say DVT we're talking about deep vein thrombosis  
18 in the absence of P.E.?

19          A.     Correct.

20          Q.     Okay. And when you say P.E. we're  
21 talking about a clot in the vasculature of the  
22 lung?

23          A.     Documented.

24          Q.     Okay. In the absence of DVT?

1 A. No.

2 Q. Okay.

3 A. If they have P.E. they can have DVT  
4 as well.

5 Q. Okay. So P.E. and V.T.E. are  
6 essentially the same, in your opinion?

7 A. No.

8 Q. Okay.

9 A. That's not what I'm saying. I'm  
10 saying that people can have DVT without pulmonary  
11 embolism.

12 Q. Sure.

13 A. And people can have pulmonary  
14 embolism without DVT.

15 Q. Right.

16 A. And some people have both.

17 Q. Okay.

18 A. And I'm saying --

19 Q. When they have both, what do you call  
20 it?

21 A. P.E.

22 Q. Okay.

23 A. Because that's the worst part of the  
24 clinical scenario.

1 Q. So do you use the terminology V.T.E.?

2 A. Sometimes.

3 Q. Okay. And what does that mean to  
4 you?

5 A. In that case it could be either.  
6 Venous thromboembolism typically means that there  
7 was a clot in the leg and it went someplace, and  
8 it typically goes to the lung, but it could also  
9 mean that there was a clot in the abdomen or some  
10 other blood vessel and went to the lung.

11 Q. Okay.

12 A. So it can -- so, yes, that's the term  
13 for the combination.

14 Q. Okay. And then what do you define as  
15 massive P.E.?

16 A. Massive pulmonary embolism is a clot  
17 that causes either hemodynamic compromise or right  
18 ventricular dysfunction or severe hypoxia.

19 Q. Anything else?

20 A. Well, anything beyond that, yes. I  
21 mean, shock and cardiac arrest, death, and all of  
22 those would be part of it, but I'm just saying the  
23 classical thing is for any of the other things to  
24 occur they need to either have a significant

1 burden of clot in the lung, typically more than 50  
2 percent, hypotension, severe hypoxia, and right  
3 ventricular dysfunction.

4 Q. And then you mentioned hypotension.  
5 How do you define hypotension?

6 A. A blood pressure that's significantly  
7 lower than the patient's normal blood pressure.  
8 So in a -- in a normal individual the blood  
9 pressure's usually about 120 over 80, so  
10 hypotension is typically defined less than 100.

11 But if somebody's hypertensive  
12 typically, let's say the blood pressure's normally  
13 150 over 90, then hypotension in that person could  
14 be 120 over 80, so a significant reduction in  
15 blood pressure from the baseline.

16 Q. Okay. And so I guess what I'm  
17 hearing you say is in order to get to the  
18 diagnosis of hypotension you have to look at the  
19 entirety of the patient's picture and history in  
20 order to make that determination?

21 A. Yes.

22 Q. Okay. And to some extent I assume  
23 that's going to involve judgment of the physician,  
24 since there's no textbook definition of a specific

1 number?

2 A. Right. I mean, if you know that the  
3 patient's blood pressure is normal to begin with,  
4 then there's pretty much agreement that a systolic  
5 blood pressure less than 100 is considered  
6 hypotension.

7 Q. Okay. And, well, not to get ahead of  
8 ourselves, but the medical records that you've  
9 been provided with in this case are on a CD, is  
10 that correct?

11 A. Yes.

12 Q. Okay. And it looks like from the  
13 label on the CD you got medical records from the  
14 Cleveland Clinic Foundation and Marymount  
15 Hospital, is that correct?

16 A. Yes.

17 Q. Do you know from review of the  
18 medical records in this case what the patient's  
19 baseline or -- I don't like the term normal, but  
20 normal blood pressure was?

21 A. Baseline is good. She seems to be a  
22 hypertensive.

23 Q. Okay. And was she on any  
24 antihypertensives or any medications?

1           A.     That I can't tell you.

2           Q.     All right.  So in terms of giving me  
3 a number or a range of numbers where this  
4 particular patient in this case would run, you  
5 don't know?

6           A.     Well, no, I know her blood pressures.  
7 I just don't know whether she was on medications  
8 or not.

9                     I know the blood pressures that were  
10 measured.

11          Q.     Okay.

12          A.     There were several of them in the  
13 chart that showed that she was above normal.

14          Q.     Okay.

15          A.     In these records.

16          Q.     In these records at where?

17          A.     I'd have to check.

18          Q.     At Cleveland Clinic?

19          A.     I don't remember if it was Cleveland  
20 Clinic or not, but there was one of the places  
21 there was a set of almost five or six blood  
22 pressures that were elevated.

23          Q.     Okay.

24          A.     Not severely elevated.  I'm not

1 talking about she was a hypertensive emergency or  
2 anything like that, but above normal, so her blood  
3 pressure baseline was not 120 over 80.

4 Q. Okay. What was it, to your memory?

5 A. I would bet a guess -- I mean, we can  
6 look at it and get a better handle from the chart,  
7 but it was somewhere in the range systolics were  
8 running in the 150-ish range and the diastolics in  
9 the 90 range, if I'm not mistaken.

10 MR. CASEY: Any time you want to go  
11 to the records, I have a copy here.

12 THE WITNESS: Except I don't know how  
13 to find things in that thing. I only know  
14 how to find things in that.

15 MR. CASEY: They're tabbed.

16 THE WITNESS: Okay. Good. Okay.

17 MR. POLING: All right.

18 THE WITNESS: So she was a  
19 hypertensive. She probably was borderline  
20 meeting the criteria for requiring therapy,  
21 so it's probable that she was on  
22 medication, but I'm not sure.

23 MR. POLING Q. Okay. What happened to  
24 this particular patient at the Cleveland Clinic

1 Foundation?

2 Why did she go there?

3 THE WITNESS A. That was a fractured  
4 ankle.

5 Q. Okay.

6 A. I believe it was a fall.

7 Q. Okay.

8 A. And then she fractured her ankle and  
9 she underwent a surgical reduction and cast,  
10 splint.

11 Q. Okay. Do you know anything else  
12 other than -- about this patient's medical history  
13 other than the fact that she fractured her ankle  
14 before coming to Marymount?

15 A. No. I did not spend a lot of time  
16 looking at the other medical comorbidities. I  
17 mean, I know basically what they wrote in the H&P.

18 Q. Okay. That she was a 70-year-old  
19 female?

20 A. Right.

21 Q. Okay. Getting back to your C.V., not  
22 to jump around too much, you were a member, I saw,  
23 of the American College of Chest Physicians?

24 A. I still am.

1 Q. Okay. Do you agree with the American  
2 College of Chest Physicians guidelines for the  
3 administration of TPA?

4 A. Mostly, yes.

5 Q. Explain that.

6 A. Well, basically they report what's in  
7 the literature.

8 Q. Yes.

9 A. They can't tell you specifically what  
10 to do in an individual patient. So basically what  
11 they're going to do is they're going to say this  
12 result, these two studies compared this and this  
13 and it showed that, and so basically that's their  
14 recommendation.

15 And they can say, well, you know, in  
16 certain patients we can use this drug or not use  
17 that drug, but they can't actually tell you that,  
18 because they're just giving you guidelines.

19 Q. Okay.

20 A. So they're not the definitive  
21 statement of what to do --

22 Q. You don't think --

23 A. -- in an individual instance.

24 Q. You don't think that the guidelines

1 put out by the American College of Chest  
2 Physicians sets the standard of care for the  
3 administration of TPA or the placement of a vena  
4 cava filter, but they are guidelines a physician  
5 can consider in his or her judgment in the context  
6 of treating the particular patient in front of  
7 them at the time?

8 A. Right.

9 Q. Okay.

10 A. And, of course, there's guidelines  
11 from multiple different societies. The S.C.C.M.  
12 has their guidelines, the European Respiratory  
13 Society has their guidelines, the A.T.S. has  
14 guidelines that are slightly different, and the  
15 A.C.C.P., The American Thoracic Society.

16 Q. Is there one set of guidelines for  
17 treatment of pulmonary embolism or V.T.E. that you  
18 think is more authoritative than another?

19 A. No. I would say that if you look at  
20 all of them combined there aren't very many  
21 deviations, and by looking at them all combined  
22 you sort of get a better picture of what people  
23 who have researched this area believe that is the  
24 appropriate way to treat patients.

1 Q. Are you familiar with the guidelines  
2 put by the America College of Chest Physicians?

3 A. Yes.

4 Q. Okay. And the most recent set was  
5 put out when prior to the care in this case?

6 A. Actually, I think it was concomitant  
7 with the care in this case, if I'm not mistaken.  
8 I think the guidelines came out in 2004.

9 Q. Okay.

10 A. And this case is 2004.

11 Q. Okay.

12 A. And I don't actually know whether the  
13 A.C.C.P. had guidelines before 2004. The A.T.S.  
14 did.

15 It may have.

16 Q. Okay.

17 A. You know, these kind of things sort  
18 of I don't remember when guidelines come out.

19 Q. That's fine.

20 A. I have other things to remember.

21 Q. All right. Do you subscribe to  
22 Chest?

23 A. Yes.

24 Q. Okay. What other journals do you

1 subscribe to?

2 A. Critical Care Medicine, American  
3 Review of Respiratory and Critical Care Medicine,  
4 New England Journal of Medicine, and then I have a  
5 service which reviews the cardiology literature  
6 and then sends me abstracts of the relevant  
7 articles.

8 That's my practice.

9 Q. Okay. And do the -- the A.C.C.P.  
10 guidelines for the management of pulmonary  
11 embolism or V.T.E., is that a generally reliable  
12 source of information that a physician can look to  
13 in determining what the appropriate course of  
14 treatment is for a patient?

15 A. Yes, you know, understanding that  
16 basically these are guidelines for an average  
17 patient, but the physician has to make decisions  
18 based on a particular patient.

19 Q. Got you. Okay. Your C.V., have you  
20 published any publications relevant to this case?

21 A. You know something? I may have  
22 actually. If I did, it was a long time ago. Let  
23 me just see.

24 I did a whole bunch of review

1 articles in the mid-'90s. I just want to make  
2 sure that I go through those.

3 Q. If you have something there, just  
4 shout out the numbers so we know.

5 A. Okay. I guess not. I thought I did.  
6 No.

7 Q. Okay. How about on DVT? Any  
8 publications on DVT?

9 A. No.

10 Q. And none on pulmonary embolism?

11 A. No.

12 Q. Okay. How about on thrombolytic  
13 therapy?

14 A. No.

15 Q. Anticoagulant therapy?

16 A. No.

17 Q. Or venous filters?

18 A. No.

19 Q. Okay. Have you given any lectures  
20 relevant to this case?

21 A. Not to any national societies.

22 Q. Okay. All right. You have in this  
23 case the reports of the defense experts, Dr.  
24 Tapson, Dr. Evans, Dr. Cutler, and Dr. --

1 MR. LEAK: Ruwende.

2 MR. POLING: -- Ruwende.

3 MR. CASEY: What?

4 MR. LEAK: I think it's pronounced  
5 Ruwende, R-U-W-E-N-D-E.

6 MR. POLING Q. Do you know any of  
7 those doctors?

8 THE WITNESS A. Not personally.

9 Q. Okay. Have you read any publications  
10 authored in the literature by any of those  
11 experts?

12 A. I can't say that I didn't. Again, I  
13 might have read something in one of the journals,  
14 but I don't recall specifically.

15 Q. All right. In the context of this  
16 case you reviewed the medical records from  
17 Cleveland Clinic.

18 Were those just the admission records  
19 for the fractured ankle?

20 A. Yes.

21 Q. In, I believe, October of '04?

22 A. Again I'd have to check the dates,  
23 but that sounds about right. It was the end of  
24 October, if I'm not mistaken, or the middle of

1       October, something like that.

2               Q.     Okay.  And then you saw the Marymount  
3 admission obviously, and then you have the autopsy  
4 report here on the table, is that correct?

5               A.     Right.  I didn't see the autopsy  
6 report until today.

7               Q.     Okay.  Did you -- well, it's almost a  
8 stupid question.  You got all the records on that  
9 one disk at the same time?

10               That's the only disk you've gotten,  
11 right?

12               A.     Yes.

13               Q.     Okay.  Have you reviewed any  
14 radiographic films in this case?

15               A.     No, just the reports --

16               Q.     Okay.

17               A.     -- that were in the chart.

18               Q.     All right.  So the CT that was done  
19 in this case on November 1st, you have not  
20 actually looked at the film?

21               A.     No.

22               Q.     And again not to ask the ridiculous,  
23 but you don't have any disagreement with the  
24 radiographic interpretation of any of the films,

1 given the fact you haven't reviewed them, correct?

2 A. Correct.

3 Q. All right. Now, the depositions  
4 you've seen in this case, you have Dr. Razmi's and  
5 Dr. Khoury's, is that right?

6 A. Correct.

7 MR. CASEY: I think I sent him the  
8 mom's, too, but he didn't have them with  
9 him when I got there.

10 THE WITNESS: If he did, it's in a  
11 pile of things that I will confess that I  
12 did not read.

13 MR. POLING: That's fair.

14 THE WITNESS: I will read it  
15 eventually.

16 MR. POLING Q. And I brought a copy of  
17 your report with me today. I don't think you have  
18 a copy with you, is that right?

19 THE WITNESS A. I think I do  
20 somewhere.

21 Q. I'll tell you what.

22 A. I read it today.

23 MR. POLING: Let me just give you my  
24 copy. Would you mark that as Exhibit 1?

1 (Whereupon said document  
2 was marked as requested.)

3 MR. POLING Q. Dr. Gluck, I'm going to  
4 hand you Exhibit 1. Just for the record, tell me  
5 what that is.

6 THE WITNESS A. That is the report that  
7 you described.

8 Q. That you authored in this case?

9 A. Yes.

10 Q. Okay. Aside from that report, have  
11 you authored any other writings regarding the  
12 medical care or treatment involved in this case?

13 A. No.

14 Q. No letters to counsel, no e-mails, no  
15 written communications of any kind?

16 A. No.

17 Q. Okay. Do you have any notes  
18 regarding your review of the medical records,  
19 depositions, etc.?

20 A. No.

21 Q. Okay. Have you reviewed any  
22 literature in preparation for this case?

23 A. I am always reviewing literature  
24 regarding pulmonary embolism, so in the last two

1 years I have reviewed lots of literature on  
2 pulmonary embolism but nothing specific as a  
3 function of reviewing this case.

4 Q. Okay. Is there any particular  
5 article, journal, or other publication that stands  
6 out in your mind as being particularly relevant to  
7 this case that you've read in the normal course of  
8 your practice?

9 A. Well, I would say that in the last  
10 several years there's been several articles  
11 published in Chest and Critical Care Medicine  
12 regarding pulmonary embolism.

13 Even the New England Journal has had  
14 a couple, and also Up To Date is one of the  
15 textbooks that I rely on, and then they're always  
16 updating the material on various topics on a  
17 regular basis, so I probably reviewed some of that  
18 from time to time but not again specifically for  
19 points in this case.

20 Q. Do you have Greenfield's text on  
21 pulmonology?

22 A. No.

23 Q. Okay. And I think we've established  
24 you haven't looked at any guidelines specific to

1 this case?

2 A. No.

3 Q. Okay. And is there anything else  
4 that you've looked at in this case at any point in  
5 time before today's deposition that I haven't  
6 asked you about?

7 A. Not that I'm aware of.

8 Q. Okay. Is there anything else you  
9 need to see in order to offer your opinions in  
10 this case?

11 A. No.

12 Q. Okay. Your report, which we've  
13 marked here as Exhibit 1, is not dated. When did  
14 you author that document?

15 A. I'd have to go to my computer to  
16 figure that out, but it's about two years old, I  
17 would think.

18 Q. So somewhere back in '04?

19 A. Yes. It probably would have occurred  
20 about six to eight weeks after I received the  
21 case.

22 Q. Okay. And does that report contain  
23 all of your opinions following your review of the  
24 records in this case?

1           A.     Yes.

2           Q.     All right.  We're going to talk about  
3     it a little bit.  One of the things that I noticed  
4     in your report was you have a discussion of the CT  
5     that was done on November 1st, correct?

6           A.     Yes.

7           Q.     All right.  And it's my understanding  
8     from reading your report that you believe this  
9     patient should have received prophylaxis for the  
10    contrast prior to obtaining the CT, is that  
11    correct?

12          A.     Yes.

13          Q.     And if that prophylaxis had been --

14          A.     Well, we should rephrase that.  She  
15    should have gotten prophylaxis at the time of  
16    having the CT.

17                    There was nothing in here that says  
18    that they should have delayed the CT scan for the  
19    prophylaxis, but they can give prophylaxis and  
20    then do the CT scan and then do prophylaxis after  
21    the CT scan.

22          Q.     Okay.  And it's your understanding or  
23    it's your opinion that, had the prophylaxis been  
24    given either in advance or at the time of the CT

1 in this particular case, that this patient would  
2 not have developed acute renal failure secondary  
3 to the contrast that was given for the CT?

4 A. Right. What I then say, though, is  
5 that the renal failure was not entirely due to the  
6 contrast.

7 Q. I understand.

8 A. Right, yes.

9 Q. I'm not trying to misquote you in any  
10 way.

11 A. No. Then again --

12 Q. I was looking at the CT, initial  
13 prophylaxis.

14 A. Now, I wish --

15 Q. We would have eliminated that one  
16 aspect of the renal failure?

17 A. No, that would be foolish. I mean,  
18 what we're saying is that it would have reduced  
19 the risk of getting the contrast media to renal  
20 failure, because nothing is 100 percent.

21 Giving prophylaxis doesn't drop the  
22 risk of renal failure from the contrast to zero.  
23 It just makes it much less likely.

24 And since she was at risk for

1 developing the renal failure from it, it should  
2 have been administered.

3 Q. Okay. So in your report you state  
4 prophylaxis against renal failure from the dye  
5 could have been provided without impeding the  
6 workup, reducing the likelihood for acute renal  
7 failure that resulted from the hypoperfusion and  
8 the CT dye?

9 A. Yes.

10 Q. So are you saying now that that would  
11 not eliminate the acute renal failure secondary to  
12 the contrast but it would reduce the likelihood of  
13 it?

14 A. Well, that's what it says. That's  
15 exactly what I said then and that's what I'm  
16 saying now.

17 Q. Okay.

18 A. The same thing.

19 Q. Maybe this is a poorly-worded  
20 question from a lay person, but under what  
21 percentage of the time does the prophylaxis reduce  
22 the likelihood of acute renal failure secondary to  
23 contrast?

24 A. It's variable depending on which

1 prophylactic technique you use and how much time  
2 you have to do it.

3           The results vary from about reducing  
4 it by two-thirds to reducing it only by about 50  
5 percent.

6           Q.     Okay. And so what method of  
7 prophylaxis should be given if a physician wants  
8 to try to reduce the risk of acute renal failure  
9 secondary to the administration of contrast?

10          A.     Well, there's multiple different  
11 techniques that could have been used, and I'm not  
12 going to promulgate one over the other.

13          Q.     Tell me what the options are.

14          A.     Hydration, predialysis followed by  
15 postdialysis, Mucomyst at the time followed by  
16 follow-up oral Mucomyst after, and bicarbonate by  
17 infusion at the time followed by up by bicarbonate  
18 after.

19                 All four of them are reasonable  
20 alternatives. The literature doesn't really  
21 support one being all that much more superior than  
22 the other.

23                 Some of the research has been a  
24 little bit more sketchy with the Musomyst and with

1 the dialysis, the hydration and the bicarbonate a  
2 little bit more solid evidence.

3 Q. What's Mucomyst?

4 A. That's N-acetyl-L-cysteine.

5 MR. POLING: Okay.

6 MR. CASEY: That's why they call it  
7 Mucomyst.

8 MR. POLING Q. And if you give  
9 Mucomyst, how many doses over what period of time  
10 does it have to be given?

11 THE WITNESS A. Well, I don't have it  
12 memorized, but there are two different protocols.  
13 If you have the ability to delay the procedure you  
14 can give some doses before the procedure and then  
15 doses after, and if you don't have time to delay  
16 you can give a dose at the time and then a couple  
17 of doses after.

18 Q. And what I'm trying to understand is  
19 what's the recommendation for the doses  
20 beforehand?

21 A. I'd have to look it up.

22 Q. Okay.

23 A. I don't have it memorized.

24 Q. Or after?

1           A.     I'd have to look. I don't have it  
2 memorized.

3           Q.     What about the recommendations for  
4 I.V. fluids?

5           A.     I'd have to look that up again, too,  
6 but it's basically a hydration before followed by  
7 continued hydration after.

8           Q.     All right. So let's assume that they  
9 give some or all of these therapies as you suggest  
10 simultaneously.

11                     Do you have an opinion as to what the  
12 likelihood is of the reduction of the acute renal  
13 failure in this case?

14           A.     They would probably use only one. I  
15 wasn't recommending them to do multiple different  
16 ones, but the literature would support a reduction  
17 from somewhere between 50 percent and 66 percent.

18                     MR. POLING: Okay.

19                     MR. CASEY: Brant, let me understand.

20                     Are you excluding the hypoperfusion?

21                     MR. POLING: At this moment we're  
22 just talking about the CT. We'll get to  
23 hypoperfusion later.

24                     MR. CASEY: All right.

1           MR. POLING     Q.     So in this particular  
2 case what we're talking about is acute renal  
3 failure secondary to the contrast administered  
4 with the CT?

5           THE WITNESS     A.     Right.

6           Q.     It's your opinion that, had the  
7 prophylaxis been given, more likely than not it  
8 would have eliminated that aspect of renal failure  
9 such that the physicians looking at this case  
10 could have said, "We know it's not secondary to  
11 the contrast because we've given the prophylaxis"?

12          A.     That's not what I said.

13          Q.     I thought you said 50 to 60 percent.

14          A.     Right. But you just said would have  
15 eliminated, meaning that it wouldn't have occurred  
16 at all.

17          Q.     Okay.

18          A.     There's still a risk of it occurring  
19 somewhere between 33 and 50 percent of the time.

20          Q.     All right. So let me rephrase.

21          A.     Okay.

22          Q.     It's your opinion to a reasonable  
23 degree of medical probability that, had the  
24 prophylaxis been given either in advance or at the

1 time of the CT, more likely than not it would have  
2 been effective in reducing the likelihood of acute  
3 renal failure?

4 A. The component of renal failure from  
5 the dye, yes.

6 Q. Okay. And the effect of that would  
7 have been that the physicians in this case who  
8 then were looking at the patient would have been  
9 able to say, "Well, we know that the acute renal  
10 failure is not secondary to the contrast more  
11 likely than not because the prophylaxis was  
12 given," is that fair?

13 Isn't that what you're saying in the  
14 report, which is, look, it's secondary to  
15 hypoperfusion and contrast in this case, and if  
16 you would have given the prophylaxis you could  
17 have taken, more likely than not, that element out  
18 of the case?

19 A. Well, it certainly would have made  
20 the renal failure less significant perhaps, but  
21 I'm not saying that the physician should have had  
22 a difficult time discerning that the renal failure  
23 was a combination at best from -- the renal  
24 failure from the dye and the pulmonary embolism.

1 Q. We'll get there.

2 A. But it could have been just from the  
3 pulmonary embolism itself, and that should have  
4 been considered, anyhow.

5 Q. We'll get there.

6 A. Okay.

7 Q. But in this case, focusing in on the  
8 CT at this moment in time, it's your opinion to a  
9 probability that if the prophylaxis had been given  
10 it would have more likely than not reduced the  
11 likelihood of any acute renal failure secondary to  
12 the contrast?

13 A. Yes, that is my opinion.

14 Q. Okay. Are you saying that the  
15 failure to give the prophylaxis was a deviation of  
16 standard of care?

17 A. Yes.

18 Q. Okay. And that's your opinion to a  
19 reasonable degree of probability, that the failure  
20 to give the prophylaxis is a deviation of the  
21 standard of care?

22 A. Yes.

23 Q. Okay. What effect of that -- what's  
24 the effect of failure to give the prophylaxis?

1           A.     Well, it just makes the likelihood of  
2 onset of renal failure more likely, and renal  
3 failure's not a good thing for the patient to  
4 have, and if it can be avoided you want to avoid  
5 it.

6           Q.     Did the renal failure in this case  
7 play a role, in your opinion to a probability, in  
8 the patient's ultimate death?

9           A.     Yes. The simplest way to answer that  
10 would be yes.

11          Q.     Okay. And again that's your opinion  
12 to a probability?

13          A.     Yes.

14          Q.     Okay. So in this case what  
15 physician, based upon your review of the records,  
16 ordered the CT scan?

17          A.     I'd have to look at the -- at the  
18 medical record. We can -- we can figure this out.  
19 It's usually on a slip.

20          Q.     Let me ask you this. Why do you  
21 think -- the records will show us who the doctor  
22 was that ordered it.

23                   Why do you think it's a deviation of  
24 the standard of care in this case? I mean,

1 everybody doesn't get prophylaxis before they get  
2 a CT with contrast, right?

3 A. She had abnormal renal function to  
4 begin with.

5 Q. And abnormal renal function was the  
6 creatinine?

7 A. Yes.

8 Q. And what was her level?

9 A. I don't remember, but we can look it  
10 up.

11 Q. Okay.

12 A. It was abnormal for a 70-year-old  
13 woman.

14 MR. CASEY: There's the labs.

15 (Indicating) That's before.

16 THE WITNESS: Right. One point  
17 three.

18 MR. POLING Q. Okay. And so based  
19 upon the creatinine of 1.3 you think this patient  
20 should have received prophylaxis prior to the CT?

21 THE WITNESS A. Yes.

22 Q. All right. And would you agree with  
23 me that on autopsy there was no evidence of kidney  
24 damage?

1           A.     Yes, I would agree with that.

2           Q.     Okay.

3           A.     The significance of that, I will say,  
4 I have no idea whether this kind of renal failure  
5 would show up on autopsy or not.

6           Q.     Okay. Do you think that in this case  
7 they should have waited for the prophylaxis to  
8 obtain the CT?

9           A.     No.

10          Q.     Okay. This was an emergent situation  
11 and required immediate CT, in your opinion?

12          A.     Yes.

13          Q.     Okay. Would you define the 1.3 as  
14 stable creatinine for a patient of this age and  
15 gender?

16          A.     It would be high.

17          Q.     Okay. So the answer is no?

18          A.     Well, I don't know what you meant by  
19 stable. You have to -- if you mean normal, I  
20 would say no.

21          Q.     Okay.

22          A.     This is too high for a patient who's  
23 70 years old and that's a female.

24          Q.     All right. Are you aware of any

1 prior creatinines on this particular patient?

2 A. I'm pretty sure she had normal  
3 creatinine previously or close to normal. She had  
4 creatinine, I think, of -- well, I'd have to look  
5 it up.

6 I think it was lower than that  
7 before.

8 Q. Okay. All right. Your memory is it  
9 was normal at the Cleveland Clinic  
10 hospitalization?

11 A. Yes. Well, yes. I mean, it was one.

12 Q. Okay.

13 A. And that's probably at the upper  
14 limit of normal for a woman who's 70 years old.

15 Q. Okay. And how would you quantitate  
16 the 1.3?

17 A. Abnormal.

18 Q. Okay. High, low, medium?

19 A. High. Very abnormal? I don't know  
20 what you mean. High.

21 Q. Yes. Is it a high abnormal, is it  
22 low abnormal?

23 A. It's abnormal, abnormal enough that  
24 you'd want to make sure that you prophylaxed them,

1 because creatinine's a funny measurer.

2 It stays in a very low range while  
3 you lose lots and lots of renal function. It's  
4 only until after you've lost a significant amount  
5 of renal function that it starts going up  
6 dramatically.

7 Q. Okay.

8 A. So that's why 1.3 in a 70-year-old  
9 woman would be considered abnormal.

10 Q. What's your basis for your opinion  
11 that the prophylaxis in this case more likely than  
12 not would have eliminated that aspect of the renal  
13 failure?

14 A. Multiple articles published in the  
15 literature.

16 Q. Can you refer me to any?

17 A. Not off the top of my head.

18 Q. Okay.

19 A. But we can find articles. I'm sure  
20 he can find the articles for you, too. It's all  
21 over the place.

22 I mean, this is a --

23 Q. Even when you give it simultaneously,  
24 like you're suggesting here for an emergent CT,

1 that it will, in fact, reduce the incidence of  
2 acute renal failure?

3 A. Yes.

4 Q. Okay. And I know you read the  
5 literature all the time. You've have been clear  
6 with me on that point.

7 But as you sit here you can't refer  
8 me to a particular journal or textbook that would  
9 support that?

10 A. No. I edit a journal called  
11 Practical Reviews in Chest Medicine, so I review  
12 literally dozens and dozens of articles every  
13 month for the journal.

14 Q. Sure.

15 A. So I just don't have the ability to  
16 remember these things off the top of my head.

17 Q. Okay.

18 A. But that's why we have the Internet.

19 Q. Would you agree that the 1.3 -- well,  
20 let me rephrase the question. Would you agree  
21 that giving contrast with the CT at a creatinine  
22 of 1.3 is not contraindicated?

23 A. The test was absolutely necessary.  
24 There's no way to get around it. The risk for

1 renal failure is there, so you use prophylaxis to  
2 get the best result you can possibly have happen.

3 Q. Sure.

4 A. Yes.

5 Q. I understand that. The question was  
6 are you saying that at 1.3 giving contrast with  
7 the CT is contraindicated?

8 A. No.

9 Q. No. Okay.

10 A. That's the only way you're going to  
11 get the diagnosis.

12 Q. All right. Any other opinions that  
13 you hold relative to the administration of  
14 prophylaxis for the CT that we haven't talked  
15 about before we move on?

16 A. No.

17 Q. All right. Pulmonary embolism is a  
18 life-threatening condition?

19 A. Sometimes.

20 Q. Untreated pulmonary embolism is a  
21 life-threatening condition?

22 A. Sometimes.

23 Q. Okay. Pulmonary embolism is the  
24 third leading cause of death in the United States,

1 true?

2 A. I'd defer to you on that. It  
3 surprises me.

4 Q. Do you know?

5 A. No, I don't know. Why would I know  
6 that?

7 Q. I don't know. Because you're a  
8 doctor treating pulmonary embolisms.

9 A. Yes, but why would I know if it's the  
10 third leading cause or the fourth leading cause or  
11 the fifth leading cause?

12 It surprises me that it's the third  
13 leading cause.

14 Q. Okay. How many cases of pulmonary  
15 embolisms result in death every year? Do you know  
16 that?

17 A. No.

18 Q. Okay. Do you -- would you agree that  
19 people die of pulmonary embolisms even when  
20 they're treated correctly?

21 A. Yes.

22 Q. Okay. You say in your report that  
23 death is associated with massive pulmonary  
24 embolism in 25 to 40 percent of all cases even

1 when the patient receives proper treatment?

2 A. Correct.

3 Q. Okay. What is your basis for those  
4 statistics? Where do those come from?

5 A. Literature, probably Up To Date,  
6 probably lectures that I heard at conferences.

7 Q. Do you have any materials -- and I  
8 assume you keep some file somewhere. Maybe not.  
9 I don't know. Do you have any files or any  
10 documentation of that?

11 I mean, did you pull out a reference  
12 from a seminar or a lecture or any literature that  
13 you see or review in authoring this report to back  
14 that number up?

15 A. It was probably Up To Date if I'm  
16 pulling out numbers. I would certainly not rely  
17 on something that was told to me in a lecture as  
18 being gospel, because sometimes they make mistakes  
19 at the time.

20 Q. Okay.

21 A. So if -- it was either an article  
22 that happened to be something I recently read or  
23 Up To Date.

24 Q. Okay. So as I understand it, when

1 you get -- if a patient develops a massive P.E. --  
2 and your opinion is this patient had a massive  
3 P.E.?

4 A. Yes.

5 Q. Even being -- even assuming  
6 hypothetically that she was correctly treated by  
7 all the physicians in this case, she still carries  
8 upwards of a 40 percent risk of mortality?

9 A. Yes.

10 Q. You say in your report, too, that  
11 after surviving the initial episode of P.E. the  
12 mortality rate is felt to be less than 10 percent,  
13 assuming the proper treatment?

14 A. Right.

15 Q. What's your basis for that?

16 A. That's again in the literature.

17 Q. Okay. Where?

18 A. This is not massive pulmonary  
19 embolism, though. This is just all pulmonary  
20 embolism.

21 Q. Okay. Where in the literature is  
22 that?

23 A. I'm sure it's in a review article in  
24 Chest or Up To Date, something like that.

1 Q. Okay. As you sit here you can't give  
2 me a specific cite for that document?

3 A. No, but if I had to I could find it.

4 Q. Okay.

5 A. Anyone can find it. That's pretty  
6 easy to figure out.

7 Q. Okay. What percentage of the patient  
8 populations who have P.E. develop subsequent  
9 emboli or P.E. while receiving anticoagulation  
10 therapy?

11 A. So let me understand the cohort that  
12 we're talking about. The patient has a P.E.

13 Q. Correct.

14 A. Is being treated with Heparin.

15 Q. Correct.

16 A. Is that the treatment that you're  
17 talking about?

18 Q. We can get into the specifics of  
19 anticoagulation.

20 A. I just want to know if it's Heparin.

21 Q. Yes, that's correct.

22 A. So it's the acute phase, and then  
23 they get a recurrent pulmonary embolism.

24 Q. Yes, sir.

1           A.     And we're talking about when, within  
2 the first twenty-four or forty-eight hours, over  
3 the next six weeks, over the next six months, over  
4 the next life span?

5           Q.     Can you break it out?

6           A.     Well, I will tell you that the  
7 highest risk is in the first couple of days after  
8 the onset of the embolism during Heparin  
9 treatment.

10                   Then there is still significant risk,  
11 however, for the next several months, which is why  
12 we continue the patients on prophylaxis, but it  
13 doesn't actually go down to zero in some patients  
14 ever, because they still have damage to their legs  
15 and they have a site for getting reembolization.

16                           We're still talking about a small  
17 number. If somebody's adequately treated for a  
18 pulmonary embolism, the likelihood of recurrence  
19 is probably less than 2 to 3 percent.

20           Q.     Okay. Patients with pulmonary  
21 embolisms or V.T.E. who receive adequate  
22 anticoagulation generally do not die from  
23 recurrent emboli?

24           A.     Right. The only problem is in that

1 first twenty-four to forty-eight-hour window when  
2 they present and they start being treated that  
3 their treatment is really not all that  
4 prophylactic against recurrence for about at least  
5 twenty-four hours, maybe as much as forty-eight  
6 hours but, you know, typically that's the whole  
7 purpose of treating them and then putting them on  
8 drugs for a period of at least three months and  
9 some people for six months.

10 Q. Okay. So the first line of defense  
11 for a patient like the one in this case who comes  
12 in with P.E. is what, anticoagulation?

13 A. I don't know what you mean by  
14 defense.

15 Q. Okay. This patient comes in. In  
16 this particular case she's treated with  
17 anticoagulation therapy, correct?

18 A. This particular instance?

19 Q. Yes.

20 A. Marian Pope?

21 Q. This case.

22 A. Okay.

23 Q. Marian Pope.

24 A. Okay. Well, Marian Pope has a

1 massive pulmonary embolism.

2 Q. Correct.

3 A. So we need to discuss whether the  
4 appropriate therapy for somebody with massive  
5 pulmonary embolism is just Heparin.

6 Q. Let's go one step at a time.

7 A. Okay.

8 Q. She comes in, she's diagnosed on CT  
9 with P.E., massive, as you say, and she's started  
10 on anticoagulation therapy, do you agree?

11 A. I would disagree that she should have  
12 received Heparin as the initial therapy after --  
13 if the hypothetical is as you set it up, that she  
14 presents, before she's started on any therapy at  
15 all is diagnosed with massive pulmonary embolism,  
16 then she probably should have received TPA.

17 Q. Why do you believe that before she  
18 got anticoagulant therapy she should have been  
19 started on TPA?

20 A. It was just as easy to give the TPA  
21 as it is to give the Heparin in hospitals. It's  
22 readily available.

23 If one should have the diagnosis of  
24 massive pulmonary embolism, you might as well give

1 the TPA first and then start the Heparin  
2 afterwards.

3 Q. Do you -- in this case you're saying  
4 you would have -- if you were the treating  
5 physician you would have given the TPA on the 1st,  
6 November 1st?

7 A. Yes and no.

8 Q. It can't be both. Which is it?

9 A. Well, it can. You see, if I were the  
10 treating physician I would have gotten the echo  
11 that day.

12 They didn't get the echo until the  
13 next day.

14 Q. On the 2nd?

15 A. And so we would have probably had a  
16 discussion between me and the radiologist about  
17 whether she had massive pulmonary embolism or not.

18 I would have probably believed that  
19 she did, because she had severe, severe hypoxia,  
20 which is one of the criteria that the A.C.C.P.  
21 recommends and Up To Date recommends as a  
22 criteria, and she had a clot that was about 50  
23 percent or more in her lung.

24 So assuming that the radiologist said

1 it was more than 50 percent and she had severe  
2 hypoxia, I probably would have classified her  
3 right at that point in time as a severe -- as a  
4 massive pulmonary embolism and I probably would  
5 have started it.

6 Q. Can I stop you? You're saying, just  
7 so I understand the time, on the 1st you believe  
8 that she -- based upon what was known in the chart  
9 without the echo, she would have been classified  
10 as massive?

11 A. Pretty much, yes, by most of the  
12 criteria that I've seen in the literature, yes.

13 Q. Okay. And that would have been on  
14 the basis that she had severe hypoxia and that  
15 there were occlusions to 50 percent or more of the  
16 lung vasculature?

17 A. Yes, assuming that's what the  
18 radiologist actually said.

19 Q. Okay. That's not on his report,  
20 though, is it?

21 A. Right.

22 Q. Okay.

23 A. It just says --

24 Q. So looking prospectively at this case

1 without the benefit of the autopsy, can you  
2 describe it as massive?

3 A. Yes.

4 Q. Okay.

5 A. Based on the severely low pO2 and the  
6 amount of clot that is described in the CT scan.

7 Q. Okay. I want to be clear on the  
8 terminology and make sure I understand what you're  
9 telling me in terms of how you define things.

10 And my understanding is that you're  
11 going to call the patient in this case massive on  
12 November 1st because of the fact that she is  
13 severely hypoxic and because of the amount of P.E.  
14 described in the CT report?

15 A. Well, that's not exactly what I said.  
16 What I said is the nomenclature in the literature  
17 could classify her as pulmonary -- massive  
18 pulmonary embolism.

19 I would have wanted to see the  
20 echocardiogram --

21 Q. Okay.

22 A. -- on that night.

23 Q. So you're saying --

24 A. So I'm just saying that, right, if

1 you went to Up To Date right now and you looked  
2 under massive pulmonary embolism, she would meet  
3 that criteria for massive pulmonary embolism.

4 Q. Okay. So getting back to where we  
5 started a few moments ago in terms of your  
6 definition of massive P.E., you said hemodynamic  
7 compromise, RV dysfunction, clot of greater than  
8 50 percent or -- maybe it was or, maybe it was  
9 and -- hypoxia?

10 A. They're all ors.

11 Q. All ors?

12 A. Like I said, the hypoxia one is the  
13 one that's in Up To Date. That's probably the one  
14 that's least used.

15 They classify it as an or, not as an  
16 and.

17 Q. So under your definition any patient  
18 with P.E. who is hypoxic is a candidate for TPA?

19 A. Severe hypoxia.

20 Q. Define severe hypoxia.

21 A. pO2 less than 50 on room air. So  
22 it's really, really uncommon to get severe hypoxia  
23 from a pulmonary embolism.

24 It's actually really uncommon to get

1 severe hypoxia from a massive pulmonary embolism.  
2 That's why I don't use that particular criteria.

3 Q. Okay. What percentage of patients  
4 with P.E. have an RV dysfunction?

5 A. That's unknown, but we know that  
6 patients with massive pulmonary embolism, most of  
7 them have RV dysfunction.

8 So we don't know because we don't do  
9 echoes on every person who has a small P.E, so we  
10 don't know what percentage of people with P.E.s  
11 have abnormal RVs, but we do know that the  
12 patients with severe pulmonary embolisms do have  
13 abnormal RV, and that has become one of the main  
14 criteria for massive pulmonary embolism.

15 Q. Would you agree with me that on the  
16 1st this patient in this case was not hypotensive?

17 A. I'd have to look. Again, hypotension  
18 would be relative to her baseline blood pressure,  
19 which again, giving deference to the guy in the  
20 emergency room who might not have that information  
21 available, that's why I would -- I would not  
22 necessarily, you know, say that he deviated,  
23 because he didn't realize that she was  
24 hypotensive.

1                   That's why I was saying that before  
2 then on that first admission I would have a  
3 difficult time saying that she had a massive  
4 pulmonary embolism unless I spoke with the  
5 radiologist or saw the echo, but when the echo was  
6 there then I can clearly say that she had massive  
7 P.E.

8                   Q.     Why?  What about the echo tells you  
9 that?

10                  A.     It showed that she had pulmonary  
11 hypertension.

12                  Q.     Okay.

13                  A.     And a dilated right ventricle and a  
14 dilated right atrium, all signs of right  
15 ventricular dysfunction associated with a massive  
16 pulmonary embolism.

17                         Now, as it turns out, her blood  
18 pressure is relative to her baseline low.  So,  
19 yes, she is hypotensive at the time she presents  
20 in the E.D.

21                  Q.     What do you know about her blood  
22 pressure medications on the day she comes into the  
23 E.D.?

24                         Is she taking them or not taking

1 them?

2 A. I don't know.

3 Q. Okay.

4 A. It wouldn't make any difference. If  
5 she's taking the blood pressure and her blood  
6 pressure's lower than it's supposed to be, then  
7 it's still hypotension.

8 If she's not taking the blood  
9 pressure medicine and the blood pressure's low,  
10 then it's definitely hypotension.

11 Q. Would you agree with me that the  
12 patient is not hemodynamically unstable during the  
13 care she received at Marymount on the first visit?

14 A. I guess it all depends on what your  
15 definition of hemodynamic instability is.

16 Q. What's yours?

17 A. Well, hypotension would be part of  
18 mine.

19 Q. So hypotension equals hemodynamic  
20 instability?

21 A. Absolutely. I mean, the body doesn't  
22 want to be hypotensive under any circumstances.  
23 We have multiple, multiple, multiple different  
24 mechanisms in our body, both humeral and

1 vasomotor, that prevent hypotension.

2 I mean, that's one of the most  
3 critical aspects of our physiology. So, yes, I  
4 would classify anybody who's hypotensive as  
5 hemodynamically unstable, yes.

6 Q. And the basis for your opinion that  
7 she is hypotensive on the 1st is what?

8 A. Only that I knew that she is normally  
9 hypertensive.

10 Q. And your basis for that she's  
11 normally hypertensive -- well, that means nothing  
12 to me in terms of hypertensive.

13 What's her baseline?

14 A. One fifty over ninety.

15 Q. Okay.

16 A. And so now she's 108 over, I think  
17 that says 54, which is a significant drop. That  
18 would be the same as if my blood pressure was 80  
19 over 50.

20 Q. Is your definition of hemodynamic  
21 instability set forth in the literature anywhere?

22 A. Yes.

23 Q. Where?

24 A. Everywhere. That's in medical school

1 101. Anybody who is hypotensive is  
2 hemodynamically unstable.

3 I mean, I will tell you that my  
4 fourth-year medical students in the I.C.U. right  
5 now would classify a hypotensive patient as  
6 hemodynamically unstable.

7 Q. What if we assume this patient's not  
8 hypotensive?

9 A. Well, then she's not hemodynamically  
10 unstable.

11 Q. Okay. Would you agree that the size  
12 of P.E. on an imaging study does not correlate  
13 well with the clinical outcome?

14 A. No, I'd disagree with that. Bigger  
15 clots result in significantly more mortality than  
16 little clots.

17 Q. Would you agree that the patient's  
18 not tachycardic on the 1st?

19 A. Yes, I would agree with that.

20 Q. Isn't one of the mechanisms of  
21 hypotension an increased pulse to compensate for  
22 the low blood pressure?

23 A. Typically it is.

24 Q. Okay. But in this case we don't have

1 that?

2 A. Right.

3 Q. All right.

4 A. Which makes her even more  
5 hemodynamically unstable.

6 Q. Because why?

7 A. Well, if I were to suck blood out of  
8 your body and lower your blood pressure, you would  
9 get tachycardic to compensate and your body would  
10 be happy and fine, because pressure times flow  
11 equals resistance.

12 In this case she can't -- she  
13 apparently doesn't get tachycardia, which possibly  
14 could mean that she has an underlying heart  
15 disease, or maybe one of the medications she's  
16 taking is preventing her from getting the  
17 tachycardia, but a low blood pressure and a low  
18 heart rate in a person who's supposed to be -- I  
19 mean, you know, a low blood pressure and a low  
20 heart rate in somebody whose blood pressure is  
21 significantly lower than it's supposed to be, that  
22 increases the hemodynamic instability.

23 Q. Do you -- it could also be evidence  
24 that she's not hypotensive, true?

1           A.     Except for the fact that I know that  
2 her blood pressure is 150 over 90 on a regular  
3 basis.

4           Q.     That was during her admission for the  
5 fractured ankle?

6           A.     Yes.

7           Q.     And when people fracture their bones  
8 can they have pain?

9           A.     Yes.

10          Q.     And when they have pain can they have  
11 a higher blood pressure than they would otherwise  
12 normally have?

13          A.     Yes.

14          Q.     Okay. And she was -- and the blood  
15 pressures you're relying on is when she was in for  
16 the open surgery and internal reduction with Dr.  
17 Joyce, correct?

18          A.     Yes.

19          Q.     Okay. And you don't have any other  
20 blood pressures that you're relying on in terms of  
21 formulating her baseline, correct?

22          A.     No.

23          Q.     Okay.

24          A.     But I can't imagine that was due to

1 pain, in my opinion.

2 Q. Would you agree with me that there's  
3 nothing in the literature that would demonstrate  
4 the admission -- that the administration of  
5 thrombolytic therapy or TPA in pulmonary -- in  
6 pulmonary embolism cases reduces mortality?

7 MR. CASEY: From all or massive?

8 MR. POLING: Go ahead.

9 THE WITNESS: Well, I'll ask that  
10 question. Are you talking about generally  
11 speaking for every pulmonary embolism or  
12 massive pulmonary embolism?

13 MR. POLING Q. I'm not trying to play  
14 games. Are you aware of any literature that  
15 demonstrates that TPA or thrombolytic therapy  
16 reduces mortality in pulmonary embolism?

17 THE WITNESS A. If you consider all  
18 pulmonary embolism, no. It's never been studied  
19 in just massive pulmonary embolism.

20 Q. Okay.

21 A. That doesn't mean it wouldn't work in  
22 an individual patient, and there has been data  
23 that's shown in patients who are hemodynamically  
24 compromised it does improve cardiac function.

1           Q.     All right.  So my question was you  
2     are not aware of any literature that demonstrates  
3     thrombolytic therapy decreases mortality in  
4     pulmonary embolism cases, correct?

5           A.     The literature talks about cohorts of  
6     patients.  We are talking about an individual  
7     patient.

8                     If we're talking about cohorts,  
9     you're right.  If we're talking about individual  
10    patients, the literature doesn't answer that  
11    question at all.

12          Q.     Okay.  So it's either not answered at  
13    all or there's no evidence to support that it  
14    reduces mortality, correct?

15          A.     No.  It does improve hemodynamics in  
16    patients.

17          Q.     That's not my question.  I'm talking  
18    mortality.

19          A.     I understand, but I can't --

20          Q.     You keep changing the question.

21          A.     Well, it's because the question that  
22    you're asking is not clear.

23          Q.     Well, the question I'm asking is real  
24    simple.  Thrombolytics has not been shown to

1 reduce mortality in pulmonary embolism cases,  
2 correct?

3 A. Yes.

4 Q. And in this case there was no  
5 contraindication to anticoagulant therapy,  
6 correct?

7 A. What do you mean by no  
8 contraindication?

9 Q. Did you -- do you believe there is  
10 any contraindications to the anticoagulant therapy  
11 in this case?

12 A. No.

13 Q. All right. Do you -- did you see any  
14 complications from the anticoagulation therapy in  
15 this case?

16 A. No.

17 Q. And would you agree with me there's  
18 no evidence of recurrent embolism or emboli in  
19 this case prior to say 3:00 or 4:00 P.M. on  
20 November 4th?

21 A. I can't tell you.

22 Q. You can't say either way?

23 A. Right. I'd have to talk to the  
24 pathologist.

1 Q. Okay.

2 A. The clots that were seen in the lung  
3 were all fresh.

4 Q. Okay.

5 A. And so I can't tell whether they all  
6 came at the same time or whether they came  
7 sequentially.

8 I can't tell.

9 Q. Okay.

10 A. I would assume a pathologist could.

11 Q. Okay. And you haven't consulted with  
12 any pathologic experts in this case?

13 A. No. Why would I?

14 Q. Because sometimes doctors do that.

15 A. Well, I'm not her physician.

16 Q. I understand. In this case is it  
17 your opinion that the patient had acute renal  
18 failure secondary to the contrast and the  
19 hypoperfusion?

20 A. I can't separate the two. I'm saying  
21 that the patient has acute renal failure most  
22 likely due to the hypoperfusion, but I cannot  
23 exclude the dye as causing it.

24 Q. What is your -- so you think that --

1 let me go one step at a time. You think that the  
2 dye or the contrast played some portion of the  
3 role in the acute renal failure, too?

4 A. Well, I certainly think that it was  
5 additive.

6 Q. Okay.

7 A. But I don't know that it was a major  
8 player in the renal failure.

9 Q. What evidence is there upon your  
10 review of the records that the patient was, as you  
11 say, having hypoperfusion?

12 A. Well, the renal failure, for one, the  
13 abdominal pain for two.

14 Q. The creatinine?

15 A. Right.

16 Q. Okay.

17 A. Well, I mean, the creatinine --

18 Q. When you say the renal failure, I  
19 want to be clear in terms of you're talking about  
20 the elevated creatinine?

21 A. Yes. It gets worse and worse as time  
22 goes by.

23 Q. Okay.

24 A. The intra-abdominal pain, which

1 observers at the bedside thought was abdominal  
2 ischemia, and the echo results.

3 Q. What day -- let's go one step at a  
4 time. What day was the abdominal pain noted?

5 A. I'd have to check.

6 Q. Okay. Go ahead.

7 A. Where do I find the progress notes?

8 MR. CASEY: Under Progress Notes.

9 THE WITNESS: The 3rd.

10 MR. POLING Q. Okay. And in response  
11 to the complaint of abdominal pain what did the  
12 physicians do?

13 THE WITNESS A. They got a surgical  
14 consult.

15 Q. Okay. And what tests were ordered?

16 A. I don't remember. I'd have to check  
17 the order sheet. It looks like an ultrasound of  
18 the abdomen was done --

19 Q. Okay.

20 A. -- on the 3rd later that day. I  
21 assume that that was part of the process to rule  
22 out cholecystitis as a cause.

23 Q. Okay.

24 A. And when that was negative the

1 conclusion seemed to be ischemic bowel.

2 Q. Any other tests that you're aware of  
3 based upon your review of the records that were  
4 done?

5 A. I'd have to look at the orders. A  
6 pelvic CT was considered, an abdominal -- an  
7 abdominal and pelvic CT scan.

8 Q. Okay.

9 A. No contrast.

10 Q. And do you recall what the CT showed?

11 A. I'd have to look. I don't recall off  
12 the top of my head.

13 Q. All right.

14 A. It didn't strike me as being  
15 significantly relevant.

16 Q. Could an abdominal abscess be an  
17 explanation for abdominal pain?

18 A. Sure.

19 Q. Okay.

20 A. Not likely in this patient, but sure.

21 Q. Why not?

22 A. Well, why would she have an abdominal  
23 abscess?

24 Q. Did she have any infectious process

1 going on?

2 A. Not that I'm aware of.

3 Q. Okay.

4 A. Not that I would have diagnosed.

5 Q. Okay.

6 A. Certainly the abdominal CT didn't  
7 suggest that there was an abscess in the belly.

8 Q. Did you see any evidence on autopsy  
9 of ischemic bowel?

10 A. I'd have to look. Again, that was  
11 not what I was focusing on. These are all signs  
12 of hypoperfusion, which really --

13 Q. Right.

14 A. -- the echo --

15 Q. We'll get to the echo.

16 A. -- substantiated without physical  
17 exam or anything else.

18 Q. We're still on the abdominal pain.

19 A. I understand, but you asked me if I  
20 thought there was signs of hypoperfusion. I'm  
21 telling you that the echo basically tells you that  
22 there's hypoperfusion.

23 Q. Okay. We'll get there. Any evidence  
24 on autopsy of --

1           A.     You wouldn't -- you wouldn't see  
2 evidence on autopsy of ischemic bowel.

3           Q.     That's not one of the findings a  
4 pathologist can make if it's present?

5           A.     Only if it's -- if it's significant,  
6 you know. You know, you'd have to do a  
7 histological evaluation unless there's  
8 through-and-through transmural ischemia.

9           Q.     What's that?

10          A.     Then you'd have to -- you wouldn't be  
11 able to see on it an autopsy.

12          Q.     Was there any gross visible to the  
13 naked eye --

14          A.     No.

15          Q.     -- finding of ischemia?

16          A.     No.

17          Q.     Okay. And did the --

18          A.     Which makes it more likely -- can I  
19 finish?

20          Q.     Sure.

21          A.     Which makes it more likely that it  
22 was a hypoperfusion.

23          Q.     Did the coroner do any microscopic  
24 analysis of the colon to determine if there had,

1 in fact, been ischemia of the colon?

2 A. That I don't have any record of. I  
3 don't have the microscopics, so if they did it I'm  
4 unaware.

5 Q. Okay. And in your review of this  
6 patient's chart did you see any evidence of the  
7 patient having a urinary tract infection?

8 A. There was some stuff in the urine,  
9 which I did not feel was very significant. I  
10 mean, if you take any woman in the -- who is very  
11 sick, they're going to have a positive urinalysis.

12 Q. And she had a positive urinalysis, is  
13 that what you said? I'm sorry.

14 A. I didn't say that. I said I didn't  
15 see anything that was of any significance  
16 clinically.

17 Q. Okay. Did you see anything going on  
18 clinically significant with the urine?

19 A. I can't even find the urinalysis in  
20 this chart, so I can't comment on that at the  
21 moment.

22 Q. Do you know if this patient had fever  
23 at any point in time during the hospitalization?

24 A. As I recall, she did have a low-grade

1 fever.

2 Q. Okay. And what do you define as  
3 low-grade fever?

4 A. Less than 102.5.

5 Q. Okay. Did the patient have an  
6 elevated white count?

7 A. Yes.

8 Q. And what do you believe the cause of  
9 that is?

10 A. The pulmonary embolism and the stress  
11 of the circumstances from the massive pulmonary  
12 embolism and massive hypoperfusion of the kidneys  
13 and the small bowel.

14 It's much more likely than having a  
15 patient show up suddenly and have three different  
16 diagnoses.

17 One of the things that we talk about  
18 in medical school is that if there's a single  
19 explanation of all the patient's symptomatology  
20 and signs it's much more likely to be the case  
21 than coming up with three or four different  
22 things, so --

23 Q. Can you -- I'm sorry. Go ahead.

24 A. So since we have a massive pulmonary

1 embolism which we've documented, and a DVT which  
2 we didn't document but should have known that she  
3 had, then those two could be responsible for every  
4 single sign and symptom that this patient has,  
5 which makes it significantly less likely that all  
6 of a sudden this patient, who had a massive  
7 pulmonary embolism, also, unbeknownst to everybody  
8 else, developed an intra-abdominal abscess or  
9 pyelonephritis or renal failure or, I mean, a  
10 renal infection or stuff like that.

11 Q. But patients can, in fact, on  
12 occasion have simultaneous infection process with  
13 pulmonary embolism, true?

14 A. I don't know if that's true. You'd  
15 have to show me that in the literature. I've  
16 never actually specifically had a patient who  
17 showed up in the hospital with a pulmonary  
18 embolism and a UTI at the same time.

19 I mean, if it happened I guess it  
20 would be a rare event, but I've never seen it.

21 Q. Is there any evidence in the medical  
22 record that the patient had ischemic bowel?

23 A. No. That would be a clinical  
24 diagnosis.

1           Q.     And you say -- let's talk about the  
2 echo. It demonstrated a dilated right ventricle  
3 and right atrium, is that correct?

4           A.     Yes.

5           Q.     And she was diagnosed with pulmonary  
6 hypertension, correct?

7           A.     Yes.

8           Q.     And when a patient has pulmonary  
9 embolism, as this patient did, the right atrium  
10 can't push the blood to the lungs as well because  
11 of the emboli that's in the lung, correct?

12          A.     Well, it's the right ventricle that  
13 pushes the blood.

14          Q.     I'm sorry. What did I say, right  
15 atrium? I misspoke.

16          A.     Well, I just never know if you guys  
17 are trying to trick me or not. Yes, it's the  
18 right ventricle.

19          Q.     Right. And so consequently the right  
20 ventricle can't work as well because of the emboli  
21 in the lung, correct?

22          A.     Yes.

23          Q.     Okay. Do you -- do you call the  
24 dilation of the right ventricle right ventricle

1 hypertrophy?

2 A. No.

3 Q. Okay.

4 A. The right ventricle takes months and  
5 months and months to hypertrophy.

6 Q. And are you saying the mere fact that  
7 there's dilation of the right atrium and the right  
8 ventricle indicates that there's a lack of  
9 perfusion of the rest of the body?

10 A. Well, yes, because basically from  
11 physiology we would know that any right ventricle  
12 acutely has an impossible task of being able to  
13 sustain adequate perfusion with a systolic  
14 pressure of about 70 millimeters of mercury, which  
15 is what they estimated.

16 Even 55 would be pushing the right  
17 ventricle to its limit. So inevitably if there's  
18 an elevation of the pulmonary artery pressure  
19 above 55 acutely, the right ventricular output has  
20 to be low.

21 That's why it's dilating.

22 Q. By mere -- by the mere virtue that  
23 the patient has a pulmonary embolism?

24 A. Well, it could be whatever cause.

1           Q.     Right.  But the blood's not moving  
2 out to the lungs --

3           A.     Right.

4           Q.     -- and back?

5           A.     Well, some is moving.

6           Q.     Right.

7           A.     But not enough, and that's why -- and  
8 the reason it's not moving is because the right  
9 ventricle's a very thin wall of muscle, and it  
10 can't respond to a pressure such as generated by a  
11 massive pulmonary embolism.

12          Q.     Okay.  The effect of that, though, is  
13 that the patient did, as you state in your report,  
14 have improvement in her oxygenation throughout the  
15 Marymount hospitalization up and through midday on  
16 the 4th, correct?

17          A.     Yes.

18          Q.     Okay.  And, in fact, she had been  
19 weaned off the FIO2, I think, down to 60 percent?

20          A.     Yes.

21          Q.     Okay.  And so they're decreasing the  
22 amount of oxygen they're giving the patient and  
23 her O.T. sats are staying within the normal range?

24          A.     Yes.

1           Q.     Okay.  In terms of the administration  
2 of TPA, your report states at the top that she's  
3 approximately two weeks postop from her ankle  
4 surgery.

5                     The reality of it is she's nine days  
6 postop.

7           A.     Close enough.

8           Q.     All right.  And what are the  
9 contraindications, the relative contraindications,  
10 for the administration of TPA?

11          A.     Well, massive surgery, intracerebral  
12 processes, allergic reactions to the drug, high  
13 risk for bleeding.

14          Q.     Chronic hypertension?

15          A.     Yes.

16          Q.     Elderly?

17          A.     This blood pressure is not high  
18 enough to be considered a problem.  Seventy years  
19 old is not a problem because, I mean, we give TPA  
20 to probably a couple hundred thousand people over  
21 the age of seventy years old in the United States  
22 every year for coronary artery disease.

23          Q.     How frequently do you use TPA?

24          A.     In what?

1           Q.     In administration -- in management of  
2 cases like this with pulmonary embolism and DVT.

3           A.     Well, like I say, I only get about  
4 five or six massive pulmonary embolism cases a  
5 year.

6           Q.     That's what you get or what the  
7 hospital department gets?

8           A.     Well, I get them all.

9           Q.     Okay.

10          A.     They only come to the intensive care  
11 unit. You wouldn't put them anywhere else.

12          Q.     I know, but there's other docs in the  
13 I.C.U. That's what I'm saying. It's just you?

14          A.     Just me. I run the I.C.U.

15          Q.     All right.

16          A.     I'm the only -- well, there's now  
17 another intensivist who works for me, but I round  
18 every day.

19          Q.     So the two of you are the only two  
20 docs that manage the I.C.U.?

21          A.     Yes.

22          Q.     Okay. The only attendings in the  
23 I.C.U.?

24          A.     No.

1 Q. Okay.

2 A. We allow consultations with other  
3 docs. I mean, we ask for support from I.D. and  
4 pulmonary and cardiology and nephrology all the  
5 time.

6 Q. Okay.

7 A. But we are -- we round on every --

8 Q. You are the only two intensivists?

9 A. Yes.

10 Q. Okay.

11 A. So in massive pulmonary embolism,  
12 unless there is a contraindication to using the  
13 TPA, which in this case I didn't find any, we  
14 would use it all the time, yes.

15 Q. Okay. So you don't think that her  
16 surgery, her age, her diabetes, or her  
17 hypertension pose contraindications in any way to  
18 the administration of TPA?

19 A. No. In fact, I actually asked an  
20 orthopedist in my hospital if he would have a  
21 problem with us doing TPA on a patient who just  
22 had hip surgery seven days ago or two weeks ago,  
23 and he said no problem. So the answer is if  
24 there's a doubt about whether to use it, just ask

1 the surgeon.

2                   And if they had called up the surgeon  
3 and he said, "Well, you know, based on the type of  
4 surgery I did on this particular individual  
5 patient, we put in screws and bolts and nuts, and  
6 they really went right through the bone marrow,  
7 and she would be really at high risk for bleeding  
8 if you gave her TPA," well, then I would have to  
9 say, well, then fine, then this patient couldn't  
10 get it.

11                  Q.     Does the standard of care require  
12 that the doctors considering TPA call the surgeon  
13 and ask for his permission --

14                  A.     Well, in this --

15                  Q.     -- or is that something they have to  
16 make on their own?

17                  A.     In this case --

18                  Q.     I mean, if they give it and the  
19 patient bleeds out from the surgery, I mean, is it  
20 a defense to say the surgeon said it was okay?

21                  A.     Yes.

22                  Q.     You think so?

23                  A.     Absolutely, absolutely, absolutely.

24 If the surgeon is the expert on what goes on in

1 the ankle after the surgery and he says, "What I  
2 did, if I did everything okay, you can give TPA,"  
3 and I give the TPA and the guy bleeds out, that  
4 can't possibly be my fault.

5 I've asked the expert. He's the guy  
6 who's the master. I do this all the time. I have  
7 patients who come up to the I.C.U. after massive  
8 abdominal surgery and they need to be on an  
9 anticoagulant.

10 Who do you think I ask? The surgeon.  
11 He's the one who did it. I say, "Can I put this  
12 guy on full anticoagulation?" And he says, "Yes."

13 And if the guy bleeds, you know, yes,  
14 okay, fine, you guys may find fault and you can  
15 sue me, but I'll go to court with a clear  
16 conscience, because basically I did everything in  
17 my power to find out whether or not the patient  
18 should have received it or not.

19 Q. Would you agree with me --

20 A. I will say that --

21 Q. -- that the literature says in this  
22 particular case that the patient's orthopedic  
23 surgery with Dr. Joyce is a relative  
24 contraindication?

1           A.     No, I wouldn't, because this is ankle  
2 surgery, and what they're talking about with  
3 orthopedic surgery is they're talking about major  
4 knee and major hip.

5           Q.     Where is that in the literature?

6           A.     Well, that's what's in all the  
7 literature for DVT and stuff like that.

8           Q.     All the literature. So if I pull any  
9 article I'll see that, major knee and major hip?

10          A.     Yes, that's what they'll talk about,  
11 orthopedic procedures. If you can find me any  
12 article -- because I looked.

13                     If you can find me any article that  
14 says that after an ankle surgery that that's a  
15 relative contraindication to TPA, then I'll change  
16 my opinion.

17          Q.     Okay.

18          A.     But the right answer here is not even  
19 that. The right answer is if you're not sure and  
20 this is a procedure that's lifesaving, then you  
21 ask the surgeon.

22          Q.     Well, let's talk about whether it's  
23 lifesaving, because why would -- if it's a massive  
24 P.E. requiring administration of thrombolytics why

1 would you have improvement in the initial  
2 oxygenation levels up and through even the 4th,  
3 four days into this, if we're only treating with  
4 the anticoagulant therapy?

5 A. Unrelated. Oxygenation is related to  
6 ventilation perfusion balancing within the lung,  
7 right.

8 It has nothing to do with whether the  
9 right ventricle is failing because of afterload  
10 being too high, the pressure being too high, two  
11 separate things.

12 This patient didn't die from hypoxia.  
13 This patient died from hypoperfusion because the  
14 right ventricle failed.

15 Q. Okay.

16 A. And even if the clot were getting  
17 better with the Heparin, which probably it wasn't,  
18 because -- well, maybe a little bit better,  
19 because the Heparin really doesn't dissolve the  
20 clot. The oxygenation is a separate  
21 consideration.

22 That's just due to Bq mismatching in  
23 the lung and diffusion defect and a whole bunch of  
24 other physiology which I don't want to get into,

1 but that doesn't say -- that has nothing to do  
2 directly with why the right ventricle is failing.

3 The right ventricle is failing  
4 because it was insulted by a very high afterload  
5 and it can't recover from that.

6 Q. Where does it say in the records that  
7 the right ventricle's failing?

8 A. Right here. (Indicating)

9 Q. It says it's dilated?

10 A. That's the definition of right  
11 ventricular failure.

12 Q. And where -- what happens when the  
13 right ventricle fails?

14 A. It can't perfuse the rest of the body  
15 and you get hypoperfusion.

16 Q. What happens to the vitals?

17 A. What?

18 Q. What happens to the vitals of the  
19 patient?

20 A. Well, initially they stay okay.

21 Q. Initially for how long?

22 A. Well, it depends on how good the left  
23 ventricle can compensate for it. But what  
24 eventually happens is the renal -- the kidneys

1 fail, the liver will fail, you get ischemic bowel.

2                   Eventually when all the mechanisms  
3 stop working you get a crisis associated typically  
4 with either hypotension unresponsive to treatment  
5 and pressures or cardiac arrest.

6           Q.     So in this case how long will that  
7 be?

8           A.     Well, it looks like in this case it  
9 was three days, from the 1st to the 4th. On the  
10 fourth day --

11          Q.     Because the vitals stayed essentially  
12 the same through the evening, 9:00 P.M.-ish of the  
13 4th, correct?

14          A.     That's true.

15               MR. CASEY: Only look at the -- look  
16 at the vitals before you answer that  
17 question whether they stayed essentially  
18 the same.

19               THE WITNESS: Well, let me say I'll  
20 just take his word for it. But, you see,  
21 the point is that it doesn't matter what  
22 the vitals are.

23                   You look at perfusion of the  
24 body and you see the kidneys are failing

1 and she's developed ischemic bowel disease,  
2 or at least people presuming that she has  
3 ischemic bowel disease, and she has this  
4 big right ventricle and a high -- and a  
5 dilating right ventricle and tricuspid  
6 regurge from it.

7 I mean, come on. This is  
8 common knowledge. The vital signs  
9 basically tell you whether the left  
10 ventricle is compensating for the bad right  
11 ventricle.

12 And everyone knows that you can  
13 walk into the emergency room with a gaping  
14 wound in your abdomen with a blood pressure  
15 of one twenty over eighty and be at death's  
16 door because five minutes later your blood  
17 pressure will go from one twenty over  
18 eighty to sixty over twenty.

19 The body has tremendous  
20 mechanisms to sustain vital signs until the  
21 very end.

22 Once those mechanisms are used  
23 up, then the demise is very, very rapid and  
24 very dramatic, but the blood pressure --

1 MR. CASEY: This is the 3rd and then  
2 the 2nd. (Indicating)

3 THE WITNESS: The blood pressure  
4 waxes and wanes and then gets -- on the  
5 3rd, if you look -- I guess I misspoke.

6 If you look on the 3rd, you can  
7 see her systolic blood pressure has fallen  
8 and she was --

9 MR. POLING Q. When and where?

10 THE WITNESS A. Well, look here.

11 (Indicating) I can't -- I can't see the date.

12 Q. Give me the number.

13 A. It's on the 3rd, and it's about  
14 halfway down the sheet.

15 MR. CASEY: In the morning.

16 THE WITNESS: You got it?

17 MR. CASEY: Ten oh five in the  
18 morning.

19 THE WITNESS: And then she was  
20 started on dopamine.

21 MR. POLING Q. Do you know if she was  
22 started on any other medications that day?

23 THE WITNESS A. We can look.

24 Q. Sure. I mean, by all means.

1           A.     Orders, where is the orders? She was  
2 started on antibiotics.

3           Q.     Okay.

4           A.     And I'm not faulting them for  
5 starting antibiotics and for possibly assuming  
6 that the fever was due to an infection.

7                     That's irrelevant and probably not  
8 bad medicine, either, you know, hope for the best  
9 and expect the worst.

10          Q.     Sure.

11          A.     So give that. No big deal.

12          Q.     Okay.

13          A.     She was given more I.V. fluids and  
14 normal saline when her blood pressure started to  
15 fall, and they started to be concerned about her  
16 renal failure, so they ordered a whole bunch of  
17 tests for that.

18                     They ordered the abdominal CT scan.  
19 They stopped her blood pressure pills because her  
20 blood pressure was low.

21          Q.     What's her blood pressure medicine?

22          A.     Cozaar.

23                     MR. POLING: Okay.

24                     MR. CASEY: I think the dopamine

1 order's on the 2nd.

2 THE WITNESS: Where is the dopamine?

3 MR. CASEY: I think it's on the 2nd.

4 THE WITNESS: It's on the 2nd? It  
5 looked like it was on the 3rd. Here it is.

6 (Indicating)

7 They even wrote it to titrate  
8 it for mean arterial blood pressure no  
9 greater than 60.

10 MR. POLING Q. Okay. And on the 2nd  
11 did the patient get dopamine?

12 THE WITNESS A. I was just trying to  
13 see whether it was picked up. I'm trying to  
14 get -- it looks like it was a verbal order and it  
15 was picked up.

16 Yes, it looks like it was a verbal  
17 order given. Let me see. So where's the MAR?  
18 That's I.V. fluids.

19 All right. Let's see. I assume it  
20 wasn't done on the 1st, so I'll just start looking  
21 at the 2nd.

22 Q. Well, the order you referred to was  
23 the 2nd.

24 A. I know. So there's the dopamine on

1 11/2.

2 MR. CASEY: This is the 3rd up here.

3 (Indicating)

4 THE WITNESS: No, but it says --

5 MR. CASEY: I know. It was written  
6 on 11/2.

7 THE WITNESS: That's just when it was  
8 printed out. I don't -- I'm going -- if it  
9 says 11/2 and it's 7:00 to 3:00, then I  
10 would assume it was given on 11/2.

11 MR. POLING: Okay.

12 THE WITNESS: I mean, I could be  
13 reading this wrong.

14 MR. POLING: All right.

15 THE WITNESS: But that's the way I  
16 would interpret this MAR. Everyone's MAR  
17 is done just slightly different.

18 So if the nurse told me no,  
19 that's 11/3, I would say okay, fine, as  
20 long as you guys know it's 11/3.

21 I have no idea that's 11/3, but  
22 it was like it was given, started and  
23 documented that it was on all three shifts.

24 MR. POLING Q. Okay. And you know

1 that the order for the dopamine was given by who?  
2 What's that doctor's role in this case?

3 THE WITNESS A. I don't know yet  
4 actually. I didn't recognize the name at all.

5 Q. Okay.

6 A. But it was a verbal order, so I  
7 assumed it was somebody who was responsible for  
8 the care of the patient.

9 Q. The quantity or the dose of dopamine  
10 on the 2nd was three mics --

11 A. Well, it was --

12 Q. -- is that right?

13 A. It was -- yes, that's what's in the  
14 MAR, but it was ordered as a titration, so that  
15 doesn't necessarily mean that that's what the  
16 patient was getting.

17 It's ordered to titrate to keep the  
18 mean arterial blood pressure over 60.

19 Q. On November 2nd was the mean arterial  
20 pressure always over 60?

21 A. I'd have to ask the nurse, because I  
22 can't do that calculation. I don't see the mean  
23 arterial blood pressure.

24 I just see the blood pressure.

1 Q. Okay. Do you know how to calculate  
2 mean arterial pressure?

3 A. Well, yes, I do, but they stopped  
4 calculating it over here.

5 Q. Okay.

6 A. The mean arterial blood pressure  
7 is -- if you want to know --

8 Q. Sure.

9 A. -- is one-third of the pulse  
10 pressure. So you take the pulse pressure, take  
11 one-third, divide it -- add it to the diastolic  
12 pressure, but only if the heart rate's less than  
13 80 or 85, because once you get above -- heart  
14 rates above 85 or 90, then you can't use that  
15 formula because the systolic/diastolic times are  
16 not one to two, they are actually one to one, so  
17 you have to actually then use just 50 percent of  
18 the difference between systolic and diastolic, but  
19 nobody does that anymore because it's all  
20 automated in the I.C.U.

21 The blood pressure cuff, the arterial  
22 line, whatever you do, automatically calculates  
23 the mean arterial blood pressure for you.

24 Q. Do you see any mean arterial

1 pressures in this chart below 60?

2 A. Yes, but they stop.

3 Q. Okay.

4 A. So when the blood pressure got low  
5 they stopped calculating.

6 Q. And in your review of this case have  
7 you then gone on to calculate out what any of the  
8 mean arterial pressures would be?

9 A. No. I just assumed that they were  
10 lower than 60, because that's why the guy ordered  
11 it.

12 Q. Okay.

13 A. Otherwise, why would you order it to  
14 titrate to anything over 60 if the blood pressure  
15 wasn't less than 60?

16 Q. What's your understanding as to why  
17 the dopamine was given on the 3rd and the 4th from  
18 anything you have reviewed?

19 A. Well, you know, nobody actually  
20 specifically says. I just assume that it's  
21 following the order, and here's -- the mean  
22 arterial blood pressure is now lower than 60, but  
23 it's not routinely calculated for some reason.

24 It's 52, 57, 54, a couple above, so

1 they may have titrated down. Then it was -- then  
2 it fell below, you know.

3 So basically I assume that it was  
4 based on the order that was written on 11/2, which  
5 was the patient was hypotensive, and the  
6 physicians, appropriately so, felt that increasing  
7 perfusion pressure of the body to a mean arterial  
8 pressure of 60 would be the minimum requirements  
9 to maintaining homeostasis in this patient.

10 Q. And that's based upon your review of  
11 all the materials that have been provided to you  
12 in this case, correct?

13 A. Yes.

14 Q. Okay. What's the window of time for  
15 the administration of TPA?

16 A. For P.E.?

17 Q. Yes.

18 A. I don't know.

19 Q. Why not?

20 A. Because nobody's ever studied it. We  
21 assume the earlier you give it the better. The  
22 longer you wait, then the less likely it's going  
23 to have any significant benefit, but nobody's ever  
24 studied to see, as opposed to like using TPA in a

1 heart attack, where we sort of know that if you  
2 don't give it within a certain period of time it's  
3 not going to do anything.

4 Nobody's really studied that. So the  
5 assumption is as soon as you document that the  
6 patient's had a massive P.E. with hemodynamic  
7 compromise or right ventricular dilatation that  
8 you would give it as soon as it was clinically  
9 available.

10 Q. Okay. What's the incidence of  
11 bleeding reported in the literature for the  
12 administration of P.E. for TPA or thrombolytic  
13 therapy with P.E.?

14 A. You know, I'm not actually aware of a  
15 bleeding incidence with TPA associated with P.E.,  
16 although the Pioped study did -- looked at  
17 bleeding incidence -- P-I-O-P-E-D -- of bleeding  
18 incidence with other thrombolytics.

19 It was about two and a half to three  
20 percent. TPA, which is now really TN as in Nancy,  
21 K as in Kathy, the incidence of bleeding  
22 associated with that drug, which we use for heart  
23 attacks -- and there's no reason to believe that  
24 it would be different -- is about two and a half

1 percent.

2 Q. So it's your understanding that the  
3 incidence of bleeding with thrombolytic therapy  
4 for M.I.s or heart attacks is the same as it is  
5 for P.E.?

6 A. I would assume so. I don't have any  
7 basis to believe that it wouldn't be so nor basis  
8 to believe that it is so, but it just seems it's  
9 the same drug.

10 And I'm talking about significant  
11 bleeding. I'm not talking about just a guaiac  
12 positive stool or something like that, okay.

13 Q. I understand.

14 A Okay.

15 Q. And you're in an academic setting at  
16 your current institution. I know you haven't  
17 published on P.E., but you do consider yourself  
18 current on the literature with respect to P.E. or  
19 thrombolytic therapy and the administration of  
20 P.E., is that correct?

21 A. Yes.

22 Q. Okay. Would you agree that TPA is  
23 recommended for only those patients who are at low  
24 risk for bleeding?

1           A.     I don't know what you mean by low  
2 risk of bleeding, but the way I would say it is  
3 hemodynamic compromise and no absolute  
4 contraindication for the administration.

5                     So I guess if the patient had some  
6 major reason to bleed, then that would be an  
7 absolute contraindication to using it.

8           Q.     Okay. So if someone said that, for  
9 example, you should only give TPA to those  
10 patients who are at low risk for bleeding, that's  
11 not something you would subscribe to on a  
12 philosophical practice?

13          A.     Well, it is, but the way I would look  
14 at it is not -- you know, how do you judge if  
15 somebody's low risk for bleeding or high risk for  
16 bleeding?

17          Q.     How do you judge?

18          A.     Well, I look at what the other  
19 comorbidities are in the patient and evaluate them  
20 one by one.

21          Q.     In this patient what were the  
22 comorbidities for bleeding?

23          A.     Well, I don't see very many. I  
24 mean --

1 Q. Which ones do you see?

2 A. Well, there's probably a slight  
3 increased risk because she's older.

4 Q. Okay.

5 A. But not such a big risk, because we  
6 use TPA on patients her age all the time.  
7 Diabetes, I don't find that to be a significant  
8 risk.

9 Q. Not a significant risk but a risk?

10 A. No.

11 Q. Not a risk at all?

12 A. Not a risk.

13 Q. Okay.

14 A. I use TPA on diabetics with coronary  
15 artery disease all the time. In fact, probably  
16 the vast majority of patients who get TPA at our  
17 institution for a coronary artery disease probably  
18 have a comorbidity of diabetes.

19 I would say that the risk factor that  
20 needed to be considered in this patient, this one  
21 specifically, was the surgery and what would be  
22 the risk of her bleeding if she got the TPA into  
23 her ankle or around her ankle.

24 That would -- that is the only

1 significant contraindication, and I would call it  
2 a relative contraindication.

3 Q. The TPA in this case, if you had been  
4 the treating physician you would have administered  
5 what kind of TPA?

6 A. TNK.

7 Q. TNK systemically?

8 A. Yes. The literature between  
9 squirting it into the pulmonary artery versus  
10 systemic, there have been some data that suggested  
11 that direct administration into the pulmonary  
12 vascular bed is associated with lower risk, but  
13 there's probably only a handful of places in the  
14 whole world who could do that in a timely fashion,  
15 and I wasn't --

16 Q. I'm asking that you would give it  
17 systemically?

18 A. I would give it systemically, yes.

19 Q. And it's TNK, and you're going to  
20 give it in what quantity?

21 A. I'd have to look that up. I don't  
22 know the dose.

23 Q. Are you going to give it with  
24 anything else?

1           A.     What do you mean?

2           Q.     Anticoagulant therapy?

3           A.     Well, no, first -- you give the TNK  
4 first, and then once, you know, the TNK is  
5 administered and the clotting parameters go back  
6 to relatively normal, then you start the other  
7 anticoagulant, which would probably be in this  
8 case Heparin.

9           Q.     Why do you want to give it first?  
10 Why not give the anticoagulant therapy, because it  
11 carries less risk, and follow it with TPA?

12          A.     Well, because you want the effect of  
13 the TPA first to fix the hemodynamics.

14          Q.     So is it --

15          A.     Heparin's not going to fix the  
16 hemodynamics.

17          Q.     Is it true that the effectiveness of  
18 thrombolytic therapy -- I'll use that generically  
19 for TNK or TPA, let's use it generically -- that  
20 the effectiveness of thrombolytic therapy for P.E.  
21 goes down after 24 to 48 hours?

22          A.     In my opinion -- and this is purely  
23 my opinion -- yes, I think it would.

24          Q.     Sure.

1           A.       However, I couldn't back that up with  
2 any specific literature. It just seems intuitive  
3 that if the ventricle is exposed to this kind of  
4 pressure for a prolonged period of time, then even  
5 if you give it later than the right ventricle  
6 probably won't recover.

7                    The other possibility --

8           Q.       So if the physicians had decided --

9           A.       Well, let me just finish. There's  
10 one other little caveat.

11          Q.       Okay.

12          A.       Just to be clear, so that people  
13 don't think I'm nuts, it's also possible that  
14 after the clot has had a chance to be in place for  
15 a prolonged period of time that the TNK might be  
16 less effective.

17                    I don't know that's the case, in  
18 fact, but I'm just saying that that's a  
19 possibility, and that's why it would seem logical  
20 that if you're going to use a drug like that you  
21 would use it right away rather than waiting.

22                    Now, let's suppose you couldn't get  
23 it, you didn't have it in your hospital, you know,  
24 you're not a cardiac center, you don't have TPA.

1 I can't imagine too many places that  
2 don't. Then you would start the Heparin first  
3 until the TPA started.

4 If you couldn't get it after 48 hours  
5 that would be a judgment call, and I'm not exactly  
6 sure how you make that call.

7 You get your best minds together, you  
8 sit at the bedside and you say, well, do you know,  
9 do I know, call up somebody, ask somebody.

10 You know, that would be a tough call.

11 Q. Okay. Isn't one of the risks when  
12 you give thrombolytic therapy systemically that it  
13 can lyse clots anywhere in the body?

14 A. Absolutely.

15 Q. And then when you lyse a clot from  
16 that individual spot you can bleed from it?

17 A. Yes.

18 Q. And that could be in the brain or  
19 that could be any other part of the anatomy,  
20 correct?

21 A. That's why there's a two and a half  
22 percent incidence of bleeding associated with it,  
23 massive bleeding.

24 Q. And when that occurs you can have

1 significant neurologic impairment, brain damage,  
2 and/or death?

3 A. Yes.

4 Q. Okay. Is it true that there's no  
5 clinical benefit between Heparin and thrombolytic  
6 therapy after the first 24 to 48 hours?

7 A. Again, I don't know there's any  
8 literature to speak to that, because I really  
9 don't know whether, in fact, people have actually  
10 looked at administration of TPA after 48 hours.  
11 It would be somewhat unethical.

12 However, if you want my personal  
13 opinion, yes, I think that after a period of time  
14 the effectiveness of TPA would diminish, as it  
15 does for almost every other clot in the body.

16 Q. Okay. You talk in your report about  
17 performing an ultrasound for purposes of assessing  
18 the clot burden in the lower extremity?

19 A. Yes.

20 Q. Would you agree that, even if that  
21 had been done, it would not have changed the  
22 course of treatment in this case?

23 A. In this particular patient it would  
24 not have changed the course of therapy, but that

1 doesn't mean it's not the right thing to do  
2 anyhow.

3 MR. CASEY: Are you asking about the  
4 course of therapy they chose? Because I  
5 think you two miscommunicated there.

6 MR. POLING: No, I don't think we  
7 did.

8 MR. POLING Q. So, I mean, the  
9 agreement at the beginning of the deposition was  
10 that if you didn't understand one of my questions  
11 you'd let me know.

12 You answered my question. Were you  
13 confused in any way, doctor?

14 THE WITNESS A. Well, the fact that  
15 you said something and I said something doesn't  
16 mean that both of us aren't confused about the  
17 same issue.

18 So I answered the question the way I  
19 understood it and you asked the question the way  
20 you understood it.

21 Q. Fair enough.

22 A. And basically my caveat is that in  
23 this particular patient it did not change the  
24 outcome of the patient, but it's still the right

1 thing to do.

2 Q. Okay. So even if they had -- well,  
3 strike that. Your opinion on cause of death is  
4 what, or are you just relying on the autopsy?

5 A. I am relying on the autopsy.

6 Q. Okay. You don't take any issue with  
7 anything in the autopsy?

8 A. No.

9 Q. You say at the end of your report  
10 that if all of the above indications had been  
11 taken that this patient would have had only a  
12 minor reduction in life expectancy, is that true?

13 A. Yes. Actually, the literature is  
14 very interesting. Even on massive pulmonary  
15 embolism, if you look at longevity after surviving  
16 a massive pulmonary embolism, the reduction in  
17 life span is only small.

18 Q. And are you capable of quantifying  
19 what that reduction would be in this particular  
20 case?

21 A. I'd have to look it up. It was a  
22 study that was done in Minnesota, a massive huge  
23 study.

24 The interesting thing was that most

1 people thought that if you survive a pulmonary  
2 embolism there is no life span reduction at all,  
3 and they demonstrated that it was a small  
4 reduction.

5 I believe off the top of my head it  
6 was a couple of years.

7 Q. Okay. Do you know -- I know you  
8 haven't seen all of Mrs. Pope's medical records.  
9 Do you have an opinion as to her life expectancy  
10 in light of the fact that you haven't seen all of  
11 her medical records and you don't know what her  
12 comorbidities are?

13 A. There's a couple other reasons why I  
14 have no opinion about her life expectancy. I am  
15 not an actuary, and I really don't know what the  
16 implication of diabetes is on long-term survival,  
17 combined especially with hypertension and all that  
18 other stuff.

19 Somebody else would have to  
20 understand that a lot better than I. I don't deal  
21 with those kinds of problems on a regular basis.

22 Q. That's fair. So when the case comes  
23 to trial you will not be offering an opinion as to  
24 the life expectancy of Mrs. Pope in this case,

1 correct?

2 A. No. The only thing, if somebody  
3 asked me whether I thought that the pulmonary  
4 embolism would affect it, I would say what I said  
5 just before.

6 Q. With respect to the placement of a  
7 vena cava interruption device, a filter --

8 A. Yes.

9 Q. -- would you agree with me that  
10 there's nothing in the literature that would  
11 indicate that the placement of a filter reduces  
12 mortality?

13 A. I guess the way you phrased it, sure.

14 Q. Okay. Would you -- what are the  
15 indications for the placement of a vena cava  
16 interruption device?

17 A. Well, there's -- the indications are,  
18 let's see, contraindication to anticoagulant  
19 therapy, failure of anticoagulant therapy,  
20 bleeding while on anticoagulant therapy, and risk  
21 of recurrent embolism high with clot still present  
22 in the lower extremities.

23 Q. All right. So let's go through this.  
24 In this case was there failure of anticoagulation

1 therapy?

2 A. No.

3 Q. Was there bleeding while on  
4 anticoagulation therapy?

5 A. No.

6 Q. Was there any contraindication for  
7 anticoagulation therapy?

8 A. No.

9 Q. And the last point you said, I tried  
10 to write it down. You said high risk of recurrent  
11 embolization?

12 A. No. Basically here's the deal. If  
13 you have a patient who's had a significant  
14 pulmonary embolism and significant -- we don't  
15 necessarily mean massive anymore, because this is  
16 now relative depending on the patient's underlying  
17 lung and heart function.

18 And so she's had the clot and there's  
19 still clot present in the lower extremity. Now,  
20 as it turns out, somewhere around half the time  
21 all the clot leaves the lower extremity and goes  
22 to the lung and about half the time some clot  
23 remains.

24 So if the patient has a small clot

1 and could withstand another clot then you don't  
2 have to do anything about it, but for 24 to 48  
3 hours after the administration -- after the start  
4 of Heparin therapy the risk of recurrence is still  
5 pretty high.

6 Q. Is that --

7 A. Let me finish the whole thing. So it  
8 doesn't go down 'til about 48 hours to the very  
9 low rate associated with successful Heparin  
10 treatment.

11 So if a patient could not withstand a  
12 small or moderate clot and still has clot in the  
13 leg, it is now recognized as an indication for  
14 putting in a filter to protect the patient for  
15 those 24 to 48 hours after the onset of treatment.

16 Q. Is that, not to make light of what  
17 you're saying, a long-winded version of saying  
18 there needs to be recurrent embolization while on  
19 anticoagulation?

20 A. No, this is to prevent recurrence in  
21 those first 48 hours after the treatment has been  
22 started.

23 Q. So you're going in on a preventive  
24 measure?

1 A. Yes.

2 Q. Okay.

3 A. And this --

4 Q. So you don't believe that the  
5 criteria is that there has to be recurrent  
6 embolization?

7 You're going in on more or less a  
8 prophylaxis sort of basis to prevent it from  
9 occurring?

10 A. Well, that's the fourth criteria.  
11 The third criteria is certainly what you said.  
12 There are all four.

13 So yes, if there's a recurrence you  
14 definitely do it, but if there -- if the patient  
15 could not withstand a significant pulmonary  
16 embolism and there is still clot in the lower  
17 extremity, then it is appropriate to put in a  
18 filter.

19 Q. Okay. And so the fourth factor,  
20 you're saying, is the risk of reoccurrence, and it  
21 goes down after 48 hours with anticoagulation  
22 therapy.

23 Did the risk go down after 48 hours  
24 with this patient with anticoagulant therapy?

1           A.     Yes.

2           Q.     And in the first 48 hours did you see  
3 anything that you could point to that says, hey,  
4 this patient's having recurrent embolization in  
5 the first 48 hours?

6           A.     No. The pathologist would be the one  
7 who would be able to tell me whether the clots  
8 seemed to occur at the same time or are recurrent.

9           Q.     What's your basis for setting forth  
10 four criteria instead of three?

11          A.     The Society of Critical Care Medicine  
12 now has that as part of their syllabus for  
13 teaching the indications for that.

14                   Multiple studies have demonstrated  
15 that the risk for recurrence is very high in the  
16 first 24 to 48 hours, so in patients in whom that  
17 risk is untenable because they would likely  
18 succumb you don't want that to happen, and now the  
19 procedure is so easy to do, it's a radiology  
20 procedure. It's not like a major surgical  
21 procedure.

22                   Fifteen years ago nobody would ever  
23 have considered doing that, because you'd have to  
24 take the guy to the O.R., and an unstable patient

1 in the O.R. is not a good thing, but now since  
2 it's a radiology procedure, and it's been so for  
3 probably seven or eight years now, maybe longer  
4 than that, it's become an indication for using it.

5 So the point is that's why we still  
6 do Doppler studies, ultrasounds to the lower  
7 extremity, to find out if there's clot burden in  
8 the leg, because if there is none then you don't  
9 have to worry about it.

10 Then the filter will do the patient  
11 no benefit. But if there is clot and the patient  
12 would not withstand another clot, then a filter  
13 would be lifesaving.

14 Q. Is one of the risk factors associated  
15 with the placement of a filter that it can migrate  
16 to the heart?

17 A. Yes.

18 Q. And if that happens it can be fatal  
19 to the patient?

20 A. Yes.

21 Q. Why did this patient have left  
22 ventricular hypertrophy?

23 A. I would assume -- and again we don't  
24 know for sure -- this patient had chronic

1 hypertension.

2 I mean, that was just --

3 Q. How long does this patient --

4 A. -- a statistical analysis.

5 Q. -- need to have chronic hypertension  
6 in order to develop left ventricular hypertrophy?

7 A. I do not know.

8 Q. Okay.

9 A. I would say a while, but a  
10 cardiologist would be able to answer that better.  
11 I probably knew that 20 years ago.

12 I don't remember anymore.

13 Q. If a patient's being treated  
14 effectively with antihypertensives will the  
15 patient still develop left ventricular  
16 hypertrophy?

17 A. They're not supposed to. That's the  
18 whole beauty of using the antihypertensive. It's  
19 supposed to prevent them from developing the left  
20 ventricular wall thickening.

21 Q. So do you have an opinion in this  
22 case as to whether her hypertension went untreated  
23 or whether the patient was not compliant with her  
24 therapy?

1           A.     Well, first of all, it's not  
2 politically correct to say noncompliant anymore.  
3 We say nonadherent.

4           Q.     I'm sorry.

5           A.     Okay. No, I would not know. And  
6 again I also would not comment on what percentage  
7 of hypertrophy that develops can actually go away  
8 even if a patient were adherent with therapy.

9                     A cardiologist would have to answer  
10 that. I just wouldn't know.

11          Q.     Okay. And while we're on the issue  
12 of the heart and the functioning of the heart,  
13 would it be true that any patient who has  
14 pulmonary hypertension secondary to P.E. would  
15 have some state of hypoperfusion?

16          A.     Say that again. I just -- it was a  
17 clear question. I just missed -- I just  
18 defocused.

19          Q.     Would it be true that any patient  
20 who's diagnosed with pulmonary hypertension  
21 secondary to P.E. would have some state of  
22 hypoperfusion?

23          A.     No, it would have to be significant  
24 pulmonary hypertension. There's a lot of people

1 who have elevated pulmonary artery pressures, and  
2 if it comes on gradually and it's not too high  
3 then the right ventricle eventually will  
4 hypertrophy, and then that will be able to be  
5 sustained.

6                   They may be symptomatic, but they  
7 should have reasonable perfusion.

8                   Q.     Okay.  So if they have severe  
9 pulmonary hypertension it will cause -- secondary  
10 to pulmonary embolus it will cause some degree of  
11 hypoperfusion to the other organs in the body?

12                  A.     Yes.

13                  Q.     And that's a mere function of having  
14 the P.E. itself?

15                  A.     Right, because the right ventricle  
16 can't respond to pressure very well because it's  
17 too thin.

18                  Q.     So what do you do to increase  
19 perfusion under that scenario?

20                  A.     Well, if there's a massive pulmonary  
21 embolism there aren't very many clinical tricks  
22 that you can use.

23                                 What you can do, though, is you can  
24 give the patient a significant amount of volume.

1 The right ventricle, even though it is dilating,  
2 will respond to adequate venous return.

3 Some people will try to use the  
4 classical inotropic agents for right ventricular  
5 enhancement, although the data in the literature  
6 is really marginal as far as effectiveness.

7 There really isn't a whole lot that  
8 you can do. You basically have to wait it out and  
9 hope that during that period of time the right  
10 ventricle, the low perfusion doesn't do the  
11 patient in.

12 Q. Okay. So in this case you can't  
13 say -- well, perhaps nobody can say to a  
14 probability -- that if they would have given large  
15 quantities of volume -- and maybe they did under  
16 your map.

17 I don't know what you consider to be  
18 a large quantity of volume. But nonetheless, if  
19 you take these two steps that you've just  
20 described, you can't say to a probability that  
21 would have increased perfusion?

22 A. No. It would have been what we would  
23 have tried, but I actually do not know off the top  
24 of my head what the likelihood of success under

1 those circumstances would be.

2 Q. Okay.

3 A. I mean, I could guess, but that's not  
4 what you want from me.

5 Q. No. Is the level of pulmonary  
6 hypertension an indication for TPA?

7 A. Well, yes. I mean, basically the  
8 level of pulmonary hypertension tells you how  
9 significant a clot there was.

10 I mean, if the pulmonary artery  
11 pressure's barely elevated, then that would  
12 probably not be an indication to use TPA.

13 Q. The reason I ask that is because in  
14 the third paragraph of your report you say the  
15 level of pulmonary vascular occlusion and the  
16 resultant pulmonary hypertension should have led  
17 the physicians to consider and use TPA, a  
18 thrombolytic agent?

19 A. Right. That's what I just said here.

20 Q. What's the basis for that statement?  
21 Where does that come from in the literature?

22 A. That's basically the pulmonary  
23 artery. This is basic physiology.

24 Q. Is it physiology or literature?

1           A.     No, it's physiology.

2           Q.     Okay.

3           A.     The amount of clot, the pulmonary  
4     vascular bed is very tolerant of clot or anything  
5     else that affects the pulmonary blood vessels  
6     until you get to an occlusion of about 50 percent.

7                     Then once the occlusion is more than  
8     50 percent, then the pulmonary vascular resistance  
9     goes up, and as a result as the vascular  
10    resistance goes up the right atrial and right  
11    ventricular pressure goes up and the right  
12    ventricle dilates.

13                    And so basically I don't know that  
14    it's necessarily a linear relationship, but  
15    there's a direct correlation.

16                    The more clot, the more pulmonary  
17    hypertension.

18           Q.     Is there a correlation between the  
19    pulmonary pressure and the patient's oxygenation  
20    level?

21           A.     Not always. Low oxygen can raise the  
22    pulmonary artery pressures, but just because the  
23    pulmonary artery pressures are elevated doesn't  
24    mean the oxygen levels are going to be low, you

1 see what I'm saying.

2 Q. The final thing you have in here is  
3 metabolic acidosis. Are you going to opine that  
4 either of the doctors in this case were below the  
5 standard of care relative to their diagnosis or  
6 management of metabolic acidosis?

7 A. No. What I was -- what I was trying  
8 to say -- and maybe I didn't say it clearly in the  
9 letter -- was that the metabolic acidosis that was  
10 present on admission should have clued them into  
11 the fact that there might be hypoperfusion, and  
12 that would have been another piece of information  
13 that led them to the diagnosis of massive  
14 pulmonary embolism.

15 And in addition, on the last day of  
16 survival, when the patient had a massive metabolic  
17 acidosis, there was a significant delay in  
18 intubation.

19 Q. Okay. And that was what, after 9:00  
20 P.M. on the 4th?

21 A. Yes. I have to look at the exact  
22 time, but there was one blood gas that occurred  
23 which showed there was a very significant  
24 metabolic acidosis, and the patient was not

1 intubated, I don't think, until midnight, and  
2 there was a significant delay of several hours, if  
3 not even more than that.

4 Q. There was a blood gas at 11:30 P.M.,  
5 pH 7.24, pCO2 17.4, pO2 129.

6 A. Right, but that's not the one I'm  
7 referring to. On the 4th at 5:00 o'clock, the one  
8 that preceded that one on the 4th at 5:00 A.M.

9 You're reading the one on the 4th at  
10 11:00 P.M., right?

11 Q. Okay. Five fifty-two A.M.?

12 A. You see 733?

13 Q. Yes.

14 A. pCO2 22.

15 Q. Yes.

16 A. That's a very, very significant  
17 metabolic acidosis.

18 Q. And the treatment there was to begin  
19 bicarb, is that correct?

20 A. Well --

21 Q. Is that what they did?

22 A. -- I don't know if they did or  
23 didn't. The patient should have been intubated,  
24 because this is a 70-year-old lady with massive

1 pulmonary embolism and a bad right ventricle.

2 This patient should have been  
3 intubated right then.

4 Q. When she's -- her oxygenation is 98  
5 percent. If that were 100 percent at that point  
6 in time on 60 percent --

7 A. That's right.

8 Q. -- you still are going to intubate a  
9 patient at 60 percent?

10 A. Every single day, every single day of  
11 the year.

12 Q. And you believe it's a deviation of  
13 the standard of care not to?

14 A. Absolutely, absolutely. This is a  
15 massive -- you see, the lungs in order to  
16 generate -- in order to generate a pCO<sub>2</sub> of 22 the  
17 lungs have to quadruple the work they do, and this  
18 is a 70-year-old lady who's got a bad right  
19 ventricle and bad lungs.

20 She is not going to be able to  
21 sustain this for a pronged period of time. This  
22 is -- oxygenation is actually not a very common  
23 need for intubation.

24 Most people think it is, but it's

1 not. It's ventilation that we intubate most  
2 people for.

3 And this is a very severe metabolic  
4 acidosis, and I will tell you that I will intubate  
5 this patient no matter what her pO2 is every  
6 single time I see that blood gas.

7 Q. What's the significance of the pO2 at  
8 162?

9 A. It's nothing. She's probably getting  
10 a lot of oxygen at the time and the ventilation  
11 perfusion ratios in her lung are okay, but the  
12 work of breathing and the metabolic acidosis is so  
13 severe that this is going to cause left  
14 ventricular and right ventricular dysfunction, and  
15 eventually she's going to have a cardiac arrest,  
16 which she eventually did.

17 Q. Would it be appropriate to treat with  
18 bicarb?

19 A. Well, some people -- that's  
20 controversial. I'm not going to opine about that.

21 Q. So you don't have an opinion?

22 A. Well, I have an opinion, but it's  
23 controversial.

24 Q. You're not going to express it?

1           A.     Right, right. The point of the  
2 matter is I would not treat with bicarb, I would  
3 just put her on the ventilator, but there are some  
4 people who would.

5                     The literature is sort of pointing  
6 against it, but I'm not going to say that that's a  
7 deviation of standard of care.

8                     But not intubating that patient, this  
9 particular patient, a 70-year-old person, massive  
10 pulmonary embolism, evidence of hypoperfusion and  
11 renal failure with this blood gas, that is not  
12 following standard of care.

13                    That's what I was trying to say. I  
14 think that's what I did say.

15            Q.     How would intubation correct the  
16 acidosis?

17            A.     Well, the ventilator would do all the  
18 work for her breathing and, therefore, her  
19 respiratory muscles and diaphragm would not have  
20 to do it.

21                    The ventilator would decrease  
22 afterload for her left ventricle and make the left  
23 ventricle work better.

24                    And so those two things alone -- her

1 muscles would not be producing any acid because  
2 they're working hard, and so those two things  
3 alone would have helped the acidosis.

4 Q. You're not going to cure the left  
5 ventricular hypertrophy by putting her on a  
6 ventilator?

7 A. No, no, but, you see, what I'm doing  
8 is now saying that she doesn't have to worry about  
9 doing the work.

10 The machine will do the work, so  
11 she'll be able to sustain everything else. She  
12 doesn't have to worry about ventilation.

13 What's going to do her in now is that  
14 pCO<sub>2</sub> of 22. That's increasing her work of  
15 breathing, it's increasing the amount of  
16 ventilation she has to do.

17 She already has a huge debt space  
18 because of the pulmonary embolism. This is going  
19 to lead to a cardiac arrest almost all the time.

20 Q. What does bicarb do?

21 A. Well, bicarb would fix the metabolic  
22 acidosis. She had renal failure. Bicarb probably  
23 would have helped.

24 Q. When you fix the metabolic acidosis,

1 what's going to happen to the pO2?

2 A. Nothing. The pO2 will be fine.

3 Q. It will be fine?

4 A. The pO2 is not -- the pO2 is  
5 irrelevant here. The pO2 is great. No fault with  
6 the oxygenation and whatever the docs did to keep  
7 her oxygen levels.

8 Whatever they did for that was  
9 absolutely perfect, but this is an indication for  
10 intubation, not because of oxygenation.

11 The ventilator is a ventilator. We  
12 can give patients 100 percent oxygen without  
13 putting them on a ventilator.

14 This is because she is working so  
15 hard to fix her metabolic acidosis that her  
16 respiratory muscles will eventually fatigue and  
17 poop out and she will have a respiratory arrest.

18 If she doesn't have a respiratory  
19 arrest she'll have a cardiac arrest, and that's  
20 why we intubate patients with severe metabolic  
21 acidosis.

22 Q. All right. So the opinions, as I  
23 understand them, that you've expressed in this  
24 case relate to administration of TPA, the

1 intubation that we just discussed.

2 In terms of Dr. Razmi's care, are  
3 there any other deviations in the standard of care  
4 besides the TPA and the intubation?

5 MR. CASEY: The filter, right?

6 MR. POLING: Well, I thought we  
7 talked about that earlier and you said no.

8 THE WITNESS: No, that's not what I  
9 said. I said that it would not have  
10 changed the outcome in this case.

11 MR. POLING: Okay.

12 THE WITNESS: But it was still the  
13 right thing to do.

14 MR. POLING: Okay.

15 THE WITNESS: So the ultrasound  
16 should absolutely have been done, and then  
17 based on the fact that they would have  
18 found clot there --

19 MR. POLING: Okay.

20 THE WITNESS: -- they would have put  
21 in a filter.

22 MR. POLING Q. So let me just -- let me  
23 see if I got this straight. The ultrasound if it  
24 had been done would not have changed the outcome

1 of the case, correct?

2 THE WITNESS A. No, it wouldn't.

3 Q. Okay.

4 A. But it's still the right thing to do.

5 Q. And that's your opinion to a  
6 probability?

7 A. Yes.

8 Q. All right. And if you put in a  
9 filter in this case that would not have changed  
10 the outcome, correct?

11 A. No, I can't say that. That's up to  
12 the pathologist to tell us.

13 Q. You don't know either way?

14 A. Right.

15 Q. Okay. The opinions that you have  
16 that you think would have changed the outcome are  
17 the TPA, correct?

18 A. Yes.

19 Q. And then the intubation?

20 A. Yes.

21 Q. Okay. Any other opinions or  
22 deviations by Dr. Razmi that you think would have  
23 changed the outcome in this case?

24 A. No.

1           Q.     Okay.  Have we discussed all the  
2 reasons for the opinions relative to Dr. Razmi's  
3 care and treatment?

4           A.     Yes.

5           MR. POLING:  That's all I have at  
6 this moment.  Thank you.

7                   CROSS-EXAMINATION

8                   BY MR. LEAK

9           Q.     Dr. Gluck, my name is Doug Leak.  I  
10 represent Dr. Khoury, the cardiologist.  I just  
11 want to start off with some stuff about your  
12 experience as an expert.

13                   How many depositions have you given  
14 over the years?

15           A.     Fifty.

16           Q.     Fifty.  And if you had to break those  
17 depositions down between plaintiff versus  
18 defendants, what is that percentage?

19           A.     I would say initially it was probably  
20 two-thirds plaintiff one-third defendant and now  
21 it's about fifty-fifty the last three or four  
22 years.

23           Q.     And for what reason has that changed?

24           A.     I have been doing a lot of work for

1 Cook County, so I have been an expert on many of  
2 the cases, the defensive cases from Cook County  
3 Hospital.

4 Q. Okay. And have you ever worked with  
5 Mr. Casey before?

6 A. Just on this case, but I have worked  
7 with him when he was with Elk & Elk. I have done  
8 other cases.

9 Q. And how many occasions have you done  
10 work with Elk & Elk?

11 A. Four or five maybe over a bunch of  
12 years.

13 Q. Is your name in any of the  
14 medicolegal referral services?

15 A. No.

16 Q. Do you know how they got in touch  
17 with you the first time?

18 A. I believe that it was based on a  
19 friend of a friend. My friend Dr. Franklin here  
20 was working with somebody from Elk & Elk and said  
21 they needed a pulmonologist, and he referred me to  
22 him.

23 Q. Was the attorney either Steve  
24 Crandall or Jay Kelly?

1           A.     I think it was Jay Kelly.  It could  
2 have been Steve Crandall.

3           Q.     Okay.  You've worked with both of  
4 them?

5           A.     Both of them.

6           Q.     Have you worked with Mr. Casey's  
7 present law firm before?

8           A.     No.

9           Q.     Okay.  You spoke a lot about  
10 literature.  Is there any literature out there  
11 that you find to be a reliable authority?

12          A.     Well, you know, literature is  
13 literature.  Basically it reports experimental  
14 evidence, and experimental evidence is as good as  
15 the researcher is and as good as the topic allows  
16 them to deal with.

17                   Sometimes you can only find a handful  
18 of patients and you have to draw conclusions from  
19 that, other times you can actually do really very  
20 good research, so it's variable, and everyone  
21 knows the variability of it, and if you're a  
22 critical reader you know how to interpret it.

23          Q.     Okay.  But is there any one authority  
24 out there, anything that's authoritative in your

1 mind?

2 A. It's not a question of one authority.  
3 I mean, in the critical care literature and in the  
4 pulmonary literature there's just a handful of  
5 journals that are published, and you hope that  
6 they review them critically and publish the good  
7 articles.

8 So in pulmonary it's -- basically in  
9 the United States it's just Chest and The American  
10 Review of Respiratory and Critical Care Medicine,  
11 and then, of course, occasionally if pulmonary  
12 stuff shows up in Critical Care Medicine and in  
13 The New England Journal, but there's just a  
14 handful of journals.

15 Q. In those expert reviews you've  
16 done -- well, if you've done about 50 depositions,  
17 how many cases have you reviewed over the years?

18 A. A lot more. I would say that  
19 probably three-quarters of the cases that I review  
20 I don't find any merit in the case.

21 Q. So if you had a total number of cases  
22 you have reviewed --

23 A. Over 20 years, probably 200.

24 Q. And how about in those cases in which

1 you've given depositions? Have you ever rendered  
2 criticisms against a cardiologist before?

3 A. Yes. I mean, not me being a  
4 cardiologist and him being a cardiologist but in  
5 areas where there's been overlap.

6 In certain things that I deal with  
7 that he deals with as well, then I've been  
8 critical of that, but I am certainly not going to  
9 tell him how to read an EKG or do an EP study.

10 Q. Do you hold yourself out as an expert  
11 in cardiology?

12 A. No.

13 Q. And if you have a cardiology question  
14 when you're treating a patient, I take it you  
15 would consult with the cardiologist instead of  
16 making the decision yourself?

17 A. Yes.

18 Q. Mr. Poling covered extensively all  
19 the medicine in this case, and I don't have to  
20 rehash a lot, so what I'd like to do is cut to the  
21 chase.

22 I take it you will be rendering  
23 opinions against Dr. Khoury, since I'm here today?

24 A. Yes.

1 Q. Okay. And I need you to tell me in  
2 which way in all your opinions you believe Dr.  
3 Khoury deviated from the standard of care.

4 A. Well, Dr. Khoury is the heart expert,  
5 and he had EKGs and echo data which should have  
6 made -- alarmed him to the impending right  
7 ventricular failure, and then he should have in  
8 that circumstance spoken with the other care  
9 givers; pulmonary, primary care, or whoever else  
10 was involved, and told them that we have a bad  
11 right ventricle and something needs to be done.

12 I would not go as far as to say that  
13 he is responsible for deciding whether to use TPA  
14 or not, but certainly he would be an adviser,  
15 because he does use the drug.

16 Q. And you're aware that Dr. Khoury and  
17 Dr. Razmi did have a discussion about the TPA  
18 therapy, correct?

19 A. Right.

20 Q. And the consensus with those two was  
21 that it was not warranted in this case, correct?

22 A. Right. And so the question is why  
23 did Dr. Khoury think it was not warranted. Did he  
24 misinterpret the EKG and the echo data suggesting

1 that this patient didn't have bad right  
2 ventricular disease?

3 Because just my glancing at the data  
4 would have alarmed me.

5 Q. Well, you read Dr. Khoury's  
6 deposition, correct?

7 A. Yes, a while ago, yes.

8 Q. And what was his explanation given in  
9 his deposition for why he agreed with Dr. Razmi  
10 that TPA therapy was not warranted?

11 A. He considered the fact that the  
12 patient did not have a massive pulmonary embolus.

13 Q. Did he use those exact words?

14 A. I don't remember if he used the exact  
15 words, but that was the gist of what I got out of  
16 what he said.

17 Q. And that was your recollection of the  
18 reason Dr. Khoury gave in his deposition that he  
19 did not -- that she did not have a massive  
20 pulmonary embolus?

21 A. Well, I assume that the indication is  
22 a massive pulmonary embolism with hemodynamic  
23 compromise, since he recommended not to use it,  
24 and I don't believe that his recommendation was

1 based solely on the fact that the patient had  
2 recent surgery.

3 Then it had to be hemodynamic  
4 compromise was not evident to him and that it  
5 wasn't, therefore, indicated.

6 Q. I think he --

7 A. I mean, I am reading between the  
8 lines, because I don't recall specifically a line  
9 in there where he actually says what his thought  
10 process was.

11 Q. I take it it's within the standard of  
12 care and good medicine for two consultants or two  
13 physicians of different specialties to consult  
14 with each other?

15 A. Absolutely.

16 Q. And, in fact, we know that both these  
17 doctors did meet with each other, which is  
18 appropriate, correct?

19 A. Right.

20 Q. And they came to the same decision,  
21 putting their respective specialties in mind and  
22 their analysis of the case and evaluation of the  
23 patient, and they both arrived at the decision  
24 that TPA therapy was not warranted, correct?

1           A.     I assume so.  There's no note in the  
2 chart that actually says that that occurred.  I  
3 only have the documentation in the -- in the  
4 deposition that that occurred.

5                     I mean, there's no specific note that  
6 says that the two of us discussed this and we  
7 decided not to do TPA because of A, B, C, and D.

8                     I don't see that in the medical  
9 record at all.  It's in the deposition, but it's  
10 not in the medical record.

11           Q.     Will you be rendering any opinion to  
12 the effect that you believe that Dr. Khoury in  
13 some way should have ignored anything Dr. Razmi  
14 said and taken it upon himself to order the TPA  
15 therapy?

16           A.     No, no.

17           Q.     What is the -- I know you touched on  
18 this, the window of opportunity for TPA therapy.  
19 The earliest is upon the diagnosis, correct?

20           A.     Yes.

21           Q.     Are you able to tell me the outside  
22 end, the latest that TPA therapy could have been  
23 administered in this case?

24           A.     No.  The only thing I can say is that

1 the likelihood of success with TPA probably  
2 decreases with time. Where it becomes ineffective  
3 we don't know, because it's never been studied.

4 We know that -- where it becomes  
5 ineffective when you use it in strokes and we know  
6 when it becomes ineffective when you use it in  
7 myocardial infarctions. That has been studied.

8 And we also know that in both strokes  
9 and myocardial infarctions as time goes by it  
10 becomes less effective and that it eventually  
11 becomes ineffective, so it is reasonable to  
12 presume that at some point in time afterwards it  
13 would become ineffective, and so I just don't know  
14 whether it's 48 hours, 72 hours, 96 hours.

15 It has to be within a successful --  
16 effective within twenty-four hours, because we've  
17 seen it work, so obviously it does work, and so it  
18 has to be at least twenty-four hours, but I can't  
19 tell you whether if they thought of doing it on  
20 day two whether that would have changed the  
21 outcome or not.

22 Q. And when you said within 24 hours,  
23 are we talking about the -- within 24 hours of  
24 when the diagnosis was made or within 24 hours of

1 the onset of symptoms?

2 A. Well, in this case it's diagnosis.  
3 In other diseases it's actually symptoms. Like in  
4 strokes it's symptoms, in myocardial infarctions  
5 it's symptoms, but at least so far in pulmonary  
6 embolism at the present time it's diagnosis.

7 Q. And why is there a difference then in  
8 the other two instances that it's within a certain  
9 time of the symptoms versus here, diagnosis?

10 A. Because the pathology is a bit  
11 different. In the stroke and in the myocardial  
12 infarction there's total occlusion of the blood  
13 vessel, and so basically once the blood vessel is  
14 occluded the area behind it is dying.

15 In the lung that's not the case.  
16 There's multiple different mechanisms for getting  
17 oxygen into the lung, so it's basically how long  
18 is the right ventricle going to tolerate the  
19 elevated pulmonary artery pressures.

20 Q. Your other opinions, the ultrasound  
21 and the vena cava filter, I take it the same  
22 opinions that you provided Mr. Poling, that you  
23 cannot say that the outcome would have been any  
24 different -- I'm just asking it from Dr. Khoury's

1       standpoint -- correct?

2               A.     No.  It's still the right thing to  
3       do, as I said before, but right, in this  
4       particular instance there was no obvious  
5       recurrence of a clot from the legs, so it didn't  
6       make any difference.

7                       But, you know, we're not interested  
8       in this particular instance.  You know, I know Dr.  
9       Ulsler once said, "If I had a choice to be either  
10      a smart doctor or a lucky doctor I'll always  
11      choose to be a lucky doctor," but that's not the  
12      way we practice medicine.

13                      It is the correct standard operating  
14      procedure with somebody who has massive pulmonary  
15      embolism to check the lower extremities for a  
16      clot.

17               Q.     In your situation where you're in the  
18      I.C.U. --

19                      MR. CASEY:  Did you recognize he  
20      lumped that with the filter in that  
21      question?

22                      THE WITNESS:  Yes.

23                      MR. CASEY:  Okay.

24                      MR. LEAK:  I just was assuming he was

1 covering both.

2 MR. CASEY: All right.

3 MR. LEAK Q. In the I.C.U. you as the  
4 pulmonologist, the intensivist, you manage  
5 pulmonary embolism patients?

6 THE WITNESS A. Yes.

7 Q. And what do you perceive the role of  
8 the cardiologist? Is there always a cardiologist  
9 involved, to begin with?

10 A. Only if there's right ventricular  
11 disease.

12 Q. And how often does that occur in  
13 patients with pulmonary embolus?

14 A. Well, if it's massive, pretty often.  
15 Probably the majority of massive pulmonary  
16 embolism is associated with right ventricular  
17 disease.

18 In moderate pulmonary embolism I  
19 would say some and in small pulmonary embolism  
20 virtually none, so in a small pulmonary embolism I  
21 probably would not get a cardiologist involved.

22 However, if the patient is an older  
23 person, you know, he's going to be involved in  
24 helping me read the EKG if it's a tricky one and

1 helping me read the echocardiogram, because I  
2 can't read them at all.

3 So if there's an echo then he'll  
4 always be involved, but if there's no echo it's  
5 not routinely necessary to have a cardiologist.

6 Q. You touched on the intubation issue  
7 on November 4th, I believe that was?

8 A. Yes, at 5:00 A.M.

9 Q. Okay.

10 A. Or 6:00 A.M. almost.

11 Q. I take it -- what is your  
12 understanding of Dr. Khoury's involvement with the  
13 patient on November 4th and whether or not any of  
14 your opinions apply to Dr. Khoury that day?

15 A. Well, again that would be dependent  
16 on how the hospital works. In my hospital both  
17 the cardiologist and the pulmonologist would have  
18 decision making capabilities about doing stuff,  
19 even though intubation would be a pulmonary thing  
20 and an echocardiogram might be a cardiac thing.

21 Other hospitals, like when I was in  
22 Connecticut, the lines were clearly demarcated. A  
23 cardiologist dealt with the heart and would not  
24 suggest to intubate somebody.

1                   He might tell the pulmonologist, you  
2 know, you should maybe look at this guy, but he  
3 wouldn't suggest it.

4                   So it all depends on what the -- on  
5 what the circumstance is. If they are co-managing  
6 the patient, then Dr. Khoury should have known to  
7 intubate that patient as well.

8                   Q.     But that's all dependent upon whether  
9 or not he was contacted by the hospital?

10                  A.     Sure. If you don't know what the  
11 results of the data are, then you can't make  
12 decisions.

13                  Q.     And do you have a recollection or do  
14 you know from the review of the records what Dr.  
15 Khoury's role was, whether he was contacted,  
16 whether he was informed, or where he was when all  
17 this was happening on the 4th?

18                  A.     I don't, I don't.

19                  Q.     Okay.

20                  A.     And again it would all depend on what  
21 the custom at that hospital was. In my hospital  
22 typically if there's a critical lab value the  
23 primary care physician, the main specialist, and  
24 the intensivist are called simultaneously.

1                   At that hospital it may be just a  
2 single individual.

3                   Q.     I take it then that you would defer  
4 to a cardiologist when it comes to, No. 1, the  
5 readings of EKGs and the interpretations of same?

6                   A.     If they are tricky ones. Like in  
7 this case we're looking at a patient who had right  
8 ventricular strain. It's not a common EKG  
9 diagnosis that we see all the time.

10                   Although pulmonologists do see it on  
11 a regular basis, I certainly would defer to a  
12 cardiology and say, "Hey, do you agree that this  
13 is showing right ventricular strain and do I need  
14 to be worried about the right ventricle?"

15                   And then I certainly would defer to  
16 him on an echo, sure.

17                   Q.     That was my next question. You'd  
18 definitely defer to the cardiologist in terms of  
19 the observations of an echo, the interpretations,  
20 and what action should be taken with respect to  
21 the echo?

22                   A.     Yes.

23                   Q.     Have we covered everything? I know  
24 that it sounds like what you're saying was there's

1 overlap between the issues here, and I know you  
2 spent a long time with Mr. Poling on all those  
3 issues.

4 Have we covered all your opinions as  
5 they relate to Dr. Khoury? And I'm sure it  
6 incorporates your prior examination.

7 Have we covered everything?

8 A. Yes.

9 MR. LEAK: That's all I have.

10 REDIRECT EXAMINATION

11 BY MR. POLING

12 Q. You have seen TPA work within 24  
13 hours of a diagnosis of pulmonary embolism?

14 A. Yes, on several occasions.

15 Q. And the flip side of that is I assume  
16 you have seen TPA not work or fail in cases where  
17 it's been administered within 24 hours of  
18 diagnosis of P.E., correct?

19 A. Yes.

20 Q. And the percentage of time that it  
21 works versus the percentage of time that it  
22 doesn't work, does that depend upon the quantity  
23 of clot in the lung?

24 Is that one of the factors?

1           A.     It may be. I don't think anyone  
2 really knows all the factors that are involved.  
3 We're talking about the lung and the heart and the  
4 coagulation system all interacting to result in an  
5 improvement in the hemodynamics, and so I am sure  
6 that it's not just the volume of clot, but there's  
7 potentially people who are somewhat resistant to  
8 the action of TPA.

9           Now, how long the clot was in the leg  
10 before it came to the lung, how long it was in the  
11 lung before the patient presented to the Emergency  
12 Department, there could be all sorts of factors.

13           So the point is it does work but it  
14 doesn't work all the time.

15           Q.     In this case do you know how long the  
16 clot was in the leg before it came to the lung?

17           A.     No. I mean, we sort of know. We  
18 have a time line. We're assuming that the DVT was  
19 responsible, was caused by the immobility of the  
20 patient as a function of the ankle fracture, so we  
21 know that the earliest it probably started was  
22 nine days prior to admission, but it could have  
23 started eight, seven, six.

24           It could have started the day before.

1 Q. Do you know if the patient had any  
2 immobility issues before the fractured ankle?

3 A. No.

4 Q. Okay.

5 A. But we do know that the clot is  
6 fresh.

7 Q. But in the --

8 A. The clot in the lung is fresh.

9 Q. Immobility is one of the things that  
10 can lead to the development of a DVT or a clot in  
11 the lower extremity?

12 A. Yes.

13 Q. Okay. And that's why you think that  
14 the immobility following the orthopedic ankle  
15 surgery is when the clot developed in the lower  
16 extremity?

17 A. It would seem to be the most logical.

18 Q. Okay. And in this case we've got a  
19 lung that has a vasculature with 50 percent  
20 occlusion.

21 I mean, you know, some cases work,  
22 some cases don't work. You don't know the age of  
23 the clot in the lower extremity or in the lung.

24 Do you know one way or another if TPA

1 had been given in this case if, in fact, it was  
2 going to work in this case?

3 A. No, we never know in a particular --

4 MR. CASEY: Go ahead.

5 THE WITNESS: We never know in a  
6 particular case.

7 MR. POLING: Right. And that's your  
8 opinion --

9 THE WITNESS: But we know that the --  
10 right, but we know overall. I mean, just  
11 like, you know, we quoted before, the  
12 mortality rate is no different, we also  
13 know that in an individual patient it's  
14 difficult to predict what's going to  
15 happen, but we do know that in more  
16 patients than not hemodynamic data improved  
17 following the administration of TPA.

18 MR. POLING Q. Right. And the  
19 improvement in hemodynamic data alone does not  
20 necessarily from the literature equate to a  
21 patient -- an increase in patient survivability?

22 THE WITNESS A. Correct.

23 Q. Okay. And in this case there's just  
24 no way for you to know -- you don't have a crystal

1 ball -- whether TPA would have saved this patient  
2 or not?

3 A. Well, actually I do have a crystal  
4 ball.

5 MR. CASEY: Objection. That's not  
6 the standard.

7 THE WITNESS: No, what we're all  
8 dealing with is medical probabilities, and  
9 what I was asked by Mr. Casey was did I  
10 think it was more likely than not that, had  
11 the patient received TPA, that she would  
12 have had a positive outcome, and I was able  
13 to answer the question yes.

14 MR. POLING Q. And by positive outcome  
15 you mean what?

16 THE WITNESS A. Meaning that her  
17 likelihood of survival was greater with the TPA  
18 than without the TPA, because we already know that  
19 TPA is going to fail sometimes.

20 Q. And your basis for that in this  
21 particular case is what? Because I thought you  
22 just said in any individualized particular case  
23 you don't know.

24 A. Right. No, no, we're talking about

1 in general.

2 Q. Right.

3 A. We don't know in a particular  
4 patient.

5 Q. Okay.

6 A. We would know if she had received the  
7 TPA. We don't know if she didn't receive it.

8 Q. Right.

9 A. So basically if she doesn't receive  
10 it we compare it to other similar patients.

11 Q. Okay.

12 A. And in other similar patients we have  
13 demonstrated -- well, not we. The literature has  
14 demonstrated improvement in hemodynamics  
15 associated with the administration of TPA.

16 Q. Okay. And just so I close the loop  
17 and I understand what you're saying, the  
18 improvement of hemodynamics does not necessarily  
19 equate to improvement in ultimate survivability,  
20 true?

21 A. It makes it more likely but doesn't  
22 make it 100 percent.

23 Q. Okay. And according to the  
24 literature, there's nothing that indicates that

1 the administration of TPA, in fact, more likely  
2 than not to a reasonable degree of medical  
3 probability decreases mortality, correct, at this  
4 point in time?

5 A. Right, in general P.E.

6 Q. Right.

7 A. It's not been studied in massive P.E.

8 Q. Right.

9 A. But in general P.E., right.

10 MR. POLING: Okay. I'm with you, and  
11 I appreciate the clarification. Thank you  
12 very much.

13 That's all I have.

14 MR. LEAK: That's it.

15 (Witness excused.)

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IN THE COURT OF COMMON PLEAS  
CUYAHOGA COUNTY, OHIO

STEPHANIE L. BAILEY, etc., )  
 Plaintiffs, )  
 -vs- ) No. 566632  
 THE CLEVELAND CLINIC FOUNDATION, )  
 etc., )  
 Defendants. )

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I, DR. ERIC GLUCK, being first duly sworn, on oath say that I am the deponent in the aforesaid deposition taken on October 17, 2006, and that I have read the foregoing transcript of my deposition, consisting of Pages 4 through 152 inclusive, taken at the aforesaid time and place, and that the foregoing is a true and correct transcript of my testimony so given.

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SUBSCRIBED AND SWORN TO  
 before me this \_\_\_\_\_ day  
 of \_\_\_\_\_, A.D. 2006.

---

Notary Public

1 STATE OF ILLINOIS )  
2 ) SS:  
3 COUNTY OF C O O K )

4 I, JUDY A. LANDAUER, CSR, a  
5 Certified Shorthand Reporter and Notary Public within  
6 and for the County of Cook and State of Illinois, do  
7 hereby certify that heretofore, to-wit, on the 17th day  
8 of October, A.D. 2006, personally appeared before me at  
9 3435 North Western Avenue, in the City of Chicago,  
10 County of Cook, and State of Illinois, DR. ERIC GLUCK,  
11 a witness called by the defendants Syed Razmi, M.D. and  
12 Physicians for Pulmonary and Critical Care Corp. in a  
13 certain cause now pending and undetermined in the Court  
14 of Common Pleas, Cuyahoga County, Ohio, wherein  
15 STEPHANIE L. BAILEY, etc. are the plaintiffs and THE  
16 CLEVELAND CLINIC FOUNDATION, etc. are the defendants.

17 I further certify that the said  
18 witness, DR. ERIC GLUCK, was by me first duly sworn to  
19 testify the truth, the whole truth, and nothing but the  
20 truth in the cause aforesaid; that the testimony then  
21 given by him was by me reduced to writing by means of  
22 machine shorthand in the presence of said witness and  
23 afterwards transcribed upon a computer, and the  
24 foregoing is a true and correct transcript of the

1 testimony so given by him as aforesaid.

2 I further certify that after said  
3 testimony had been so transcribed it was made available  
4 to the witness for examination.

5 I further certify that the taking of  
6 this deposition was pursuant to notice and that  
7 there were present at the taking of the deposition  
8 counsel as hereinbefore set forth.

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

13 In testimony whereof I have hereunto  
14 set my hand and affixed my notarial seal this 23rd day  
15 of October, A.D. 2006.

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JUDY A. LANDAUER, CSR  
CSR License No. 084-000153  
Notary Public, Cook County, IL

