STATE OF OHIO

CUYAHOGA COUNTY COURT OF COMMON PLEAS

MATTHEW CHASE WAGONER, ET AL.		
vs.		No. 497179
MARK R. EVANS, MD, ET AL.		

DEPOSITION OF MARCUS C. HERMANSEN, MD

Deposition taken at the offices of Avicore Reporting, 25 Lowell Street, Manchester, New Hampshire, on Thursday, July 20, 2006, commencing at 10:30 a.m.

Court Reporter: Karen D. Pomeroy, RPR
CCR No. 71

APPEARANCES

For the Plaintiff:

BECKER & MISHKIND CO., LPA
1660 W. 2nd Street, Suite 660
Cleveland OH 44113
By: Michael F. Becker, Esq.
(Appearing telephonically)

For the Defendant:

MOSCARINO & TREU, LLP
1422 Euclid Avenue, Suite 630
Cleveland OH 44115
By: John T. Bulloch, Esq.

I N D E X

WITNESS:

Marcus C. Hermansen, MD

EXHIBITS FOR IDENTIFICATION:

Exhibits Nos. 6, 7 and 8 retained by Dr. Hermansen

Exhibits Nos. 1-5, 9 were returned to Attorney Bulloch

MARCUS C. HERMANSEN, MD,

having been duly sworn by the reporter, was deposed and testified as follows:

EXAMINATION

BY MR. BULLOCH:

Q. Dr. Hermansen, just to reintroduce myself, my name's John Bulloch, and of course I represent Fairview Hospital in this matter; and this is a continuation of your deposition that we started in June -- on June 20th of 2006.

And I won't bother giving you any instructions but -- other than just to let you know if you need a break for any reason, any pages or anything like that you have to answer, please feel free to do so; and if you don't understand one of my questions, just let me know and I'll try to rephrase it, fair enough?

A. Yes.

Q. Okay. Since your deposition in June, have you reviewed the transcript from that portion of your deposition?

A. Yes.

Q. Did you make any changes?

A. No.

Q. Okay. So I assume you stand by the answers you previously gave during that deposition?

A. There were many places where there was a mistranscription, the word wasn't right that I could change, but I think that the answer I gave was right.

If you want me to go back through and begin making grammatical corrections --

Q. No, no.

A. -- I could, but I would stand by everything I said there.

Q. Okay. And let me clarify. I don't care about any grammatical changes or misspellings but the sum and substance of your testimony you would stand by I assume, correct?

A. Correct.

Q. And I assume the report that you authored which is dated February 22nd, 2004, which we previously marked in this case still reflects the opinions that you have and will offer at trial in this matter, correct?

A. I reread that, I didn't bring it with me today, but --

Q. I have a copy.

A. Okay. And I think there is one place where I would either clarify or modify or --

Q. All right. Well, I'll give you a chance to do that later on in your deposition, fair enough?

A. Fair enough.

Q. And if I forget to give you that opportunity, please remind me.

A. Thank you.

MR. BULLOCH: And why don't we mark this. I'm pretty sure that we've got one marked already, but as long as we -- I've got an additional copy, let's mark this as -- with the next number.

(Discussion off the record.)

MR. BULLOCH: Okay. We won't mark it.

BY MR. BULLOCH:

Q. Instead I'll just hand you what has been marked previously as Exhibit No. 4; and, as I said, we'll talk about that a little later on in the deposition, okay?

A. Yes.

Q. Okay. Now, since your prior deposition, have you reviewed any additional medical records?

A. No.

Q. Did you ask to review any additional medical records?

A. No.

Q. What about depositions, since your prior deposition, have you been provided with any additional depositions?

A. No.

Q. Have you asked to see any additional depositions?

A. No.

Q. And since your prior deposition, have you been provided with any expert reports?

A. Yes.

Q. Which additional expert reports have you been provided with?

A. This was a pediatric radiologist from Cleveland.

Q. Dr. Sivit?

A. I believe so.

Q. That would be Dr. Sivit from University Hospitals in Cleveland, correct?

A. Yes.

Q. And did you review that expert report?

A. Yes, I did.

Q. Did it in any way change any of the opinions that you hold in this case?

A. No.

Q. Okay. And have you had any conversation or correspondence with Mr. Becker since your last deposition?

A. Yes.

Q. Do you have that with you, any correspondence that

you received or was it verbal?

A. Verbal.

Q. Okay. You don't have don't any additional written materials since we last deposed you, I presume?

A. None.

Q. You haven't done any additional research or anything of that nature relative to this case since your last deposition?

A. Correct.

Q. Okay. Now, you said that you spoke to Mr. Becker. When was that, approximately?

A. Two days ago.

Q. And --

A. And then again for about ten minutes this morning.

Q. Okay. What was the substance of what you talked about two days ago with Mr. Becker?

MR. BECKER: Let me just enter an objection. Discussions that I've had, John, with my expert I think have been appropriate and proper and not discoverable.

I'd ask you, John, to move on with your deposition. We've reproduced this doctor this time to give you fair opportunity to explore his opinions, not to inquire about discussions that I've had with him.

MR. BULLOCH: All right, Mike, fair enough.

BY MR. BULLOCH:

Q. And you said you had approximately a ten-minute discussion with Mr. Becker this morning?

A. Yes.

Q. Dr. Hermansen, had you had any conversations with Mrs. Pantages -- Miss Pantages since your deposition in June?

A. No.

Q. Okay.

A. I don't know who Miss Pantages is.

Q. Okay. Fair enough. Miss Pantages is one of Mr. Becker's associates.

A. I didn't know that.

Q. You told me in June that you reviewed some films from Parma and Fairview Hospital.

Did those include the four chest x-rays that were taken at Parma and at Fairview Hospital?

A. Yes.

Q. Did it also include the head imaging that was done at Fairview Hospital?

A. No.

Q. And you had reviewed those films when, prior to authoring your report or after authoring your report?

Well, let me point to --

A. I can answer that. I have a cover letter stating that I received the films in March of 2006. My report was from February 2004, so apparently I received the films well after I wrote my report.

Q. And those are the films from Fairview, correct, according to this letter?

A. I believe all the films were together. There were both Fairview and Parma films together.

Q. Well, if you take a look at your expert report, the second material that you reviewed is the x-ray from Parma at least.

A. You're right, I was wrong. I had reviewed the Parma films prior to my report and the Fairview films in March of 2006.

Q. Okay. And you reviewed -- reviewed the -- let me try that again.

You reviewed the Fairview films after your report but before your deposition, correct?

A. Correct.

Q. Okay. I assume you're not trained in radiology; is that correct? You haven't had any formal training in radiology?

A. I think interpretation of a chest x-ray is still required of every neonatologist and we do receive training to read chest x-rays.

Q. All right. Do you feel competent in reading chest x-rays?

A. Yes.

Q. You're not board certified in radiology, though, correct?

A. Correct.

Q. And would you -- if you interpreted a film and a board certified radiologist interpreted the film differently, would you tend to defer to the board certified radiologist? And I'm talking about chest x-rays.

A. Not necessarily.

Q. All right.

A. I would listen to what they say. I know that there are board certified radiologists from Fairview that reviewed these films and I tend to agree with their interpretation, I believe.

Q. Okay. Do you know what a thymic sail is, S-A-I-L?

A. Yes.

Q. Did you see evidence of a thymic sail on any of the x-rays that you reviewed from Fairview Hospital?

A. There's a suggestion of one. There may be one.

Q. Okay. And then I assume that you would agree with me there's also the possibility or you would -- strike that.

I would assume then you would agree with me that those x-rays then show the possibility in your mind of a pneumomediastinum; is that correct?

A. If you only look at the x-rays, it would raise that possibility, yes; but if you look at the clinical course combined with the x-rays, then we can say that these were a pneumothorax that was occurring.

Q. Well, or could we say that there were pneumothoraxes (sic) that occurred and the chest tubes effectively treated the pneumothoraxes and that when the x-rays were subsequently done after insertion of the chest tubes, the pneumothoraxes were no longer appreciable on the x-ray?

A. I believe at Fairview there are three x-rays. I have them in my car. I can get them if we take a five-minute break.

Q. Sure. Why don't we do that.

A. Okay. Five-minute break.

(Recess was taken from 10:40 a.m. until 10:44 a.m.)

BY MR. BULLOCH:

Q. Doctor, before you go to all that trouble and look at

the x-rays, you're certainly more than welcome to look at the x-rays but the question that I'd like an answer to, if you can, first is you agreed with me that there was -- you at least had the impression that there was a thymic sail on the radiographs, the chest films that you received from Fairview Hospital, correct?

A. Someone could read that from these films, yes, it's reasonable.

Q. Okay. And what I'm suggesting to you is is it reasonably possible -- and I'm not debating with you whether or not there ever was a pneumothorax at this point, but you'll notice from the medical records that there was the diagnosis of a pneumothorax made, then there was insertion of chest tubes and then there were x-rays taken?

A. Not exactly.

Q. Okay. Why don't you tell me how you understand it to have occurred.

A. I think there was a diagnosis of a pneumothorax, insertion of one chest tube.

Q. Correct.

A. Then an x-ray.

Q. Correct.

A. Then a second chest tube and then another x-ray.

Q. All right. Well, let me just clarify this, though, so we're talking about the same thing.

There was an indication and a clinical diagnosis made by transillumination and otherwise of a right pneumothorax and an insertion of a right chest tube and then an x-ray?

A. Yes.

Q. Then later on in the evening, around 11:00 o'clock, there was a clinical diagnosis made on the basis of transillumination and clinical data and the insertion of a left chest tube and then another x-ray; is that correct?

A. Yes.

Q. So my question is quite simple, I'm not debating whether or not the fact that Matthew ever had a pneumothorax, what I'm asking you is since the films do not seem to show a pneumothorax, does it seem perfectly reasonable that the chest tubes decompressed the pneumothorax and that's why we don't see them on the films?

A. Oh, I think the films are consistent with a pneumothorax.

Q. Okay.

A. Not the first film before the pneumothorax but the middle film and the last film. That's how they were read by the radiologist at Fairview, that's how I looked at them.

I agree that the new radiologist who's looking at the case feels differently about it. If you only looked at the films, I would conclude he might be right; but if you look at the clinical data, I think that the Fairview radiologist and I am right.

Q. Well, the radiologist is looking at the films, correct?

A. Yes.

Q. So he's making the diagnosis based on essentially what he sees on the films and any minimal clinical data that they typically receive, correct?

A. Correct.

Q. Okay. And what you're saying is you're making the diagnosis not only based on the film but also based on the more detailed clinical information that you probably have available that the radiologist did not have available, correct?

A. Correct.

Q. Okay.

A. From the film, I can see why someone might call that a pneumomediastinum.

Q. Okay. Why don't you show me on the film -- excuse me.

(Pause in the proceedings.)

MR. BULLOCH: Back on the record.

BY MR. BULLOCH:

Q. And, Doctor, if you would, identify for Mr. Becker's sake which film you're looking at, the time of it.

A. These three films are the three from Fairview. On the bottom they have a label, one is labeled 1 of 3, the next is 2 of 3 and 3 of 3.

Q. Can I see those, sir. Now, who put those labels on, do you know?

A. I don't know. It wasn't me. They came that way.

Q. Just for the record, 1 of 3 is a film taken on 8/24/1999 at 2126 hours7?

A. Yes.

Q. The film labeled 2 of 3 was taken on August 25th, 1999, and it is labeled 2352. So actually these are out of order.

No. 3 is the film taken on 8/25/1999 at 1924 hours, correct?

A. Then they're out of order.

Q. So how about just for our purposes, Doctor, today I correct these so that we aren't confused; and then you can refer to them as film 1, 2 or 3, fair enough?

A. That works for me.

Q. All right. And you know what, why don't we label these as exhibits, too. And that would be Exhibit 6, 7 and 8.

(Hermansen Exhibits Nos. 6, 7 and 8 were marked for identification purposes.)

BY MR. BULLOCH:

Q. So Exhibit 6 would be the film taken from August 24th, Exhibit 7 will be the film taken from August 25th at 1924 hours and Exhibit 8 will be the film taken on the 25th at 2325 hours. I read that wrong. 2352 hours, I'm sorry. Okay.

Doctor, I'm returning to you the films that we've marked as Exhibits 6, 7 and 8. If you would refer to them as such, it would be helpful to the court reporter; and show me on exhibit -- well, you said Exhibit 6 there was no signs of a pneumothorax or a pneumomediastinum, correct?

A. Correct.

Q. And that was of course before one presumably occurred and chest tubes were placed, correct?

A. Correct.

Q. And that was actually the day before, correct?

A. Yes.

Q. Okay. And show me on Exhibit No. 7 what you believe to be a pneumomediastinum and what you believe to be a

pneumothorax.

A. I'm not sure there's any pneumomediastinum, I think there's extensive pneumothorax on both sides of the chest.

It's the black area in the chest. It's hard to say much more than that without a lateral x-ray, but we see a lot of blackness in the right chest and a significant amount in the left chest; there's a little bit of lung here on the left upper lobe that we can see, but there's an extensive pneumothorax present on both sides.

That is virtually the exact report that was in the chart.

Q. Doctor, there's --

MR. BECKER: Can I interrupt for one second, just because I don't appreciate what's going on there. Is the doctor using a view box?

MR. BULLOCH: Yes. And the films that you sent him.

BY MR. BULLOCH:

Q. Now, Doctor, the pleural -- pleura surrounding the lung tissue, there's two layers of that, correct?

A. I believe so.

Q. And when you have a pneumothorax, don't you typically get a very distinct white line along the outer border of the lung field?

A. No, it's not by any means consistent.

Q. All right. Show me where you see the thymic sail in this.

A. I don't know if this is the thymic sail or the left upper lobe; but if somebody wanted to call that a sail, they could.

Q. And, Doctor, you --

A. I think it's --

Q. You're pointing to the point on which rib is that?

A. Well, I'm looking at the grayness on the top of the left.

Q. I know, but what rib would that be that you're --

A. Around 1, 2 and 3.

Q. So you're saying the upper lobe of the lung is at that level of 1, 2 and 3?

A. When it's collapsed like this.

Q. Okay.

A. A lay term for a pneumothorax is a collapsed lung.

Q. I understand. Now, the clavicle on this child is at the same level?

A. It's right above those ribs.

Q. Okay. So the area that you're pointing to is directly below the clavicle and you're not sure if that's a

thymic sail or if that's the upper lobe of both lungs, correct?

A. I think it's probably the upper lobe since I know what's going on with the baby.

Q. Okay.

A. I know that the baby has a pneumothorax before then, after then, that the baby's having poor oxygenation, that the baby gets better when they put chest tubes in, that's a pneumothorax.

Q. All right. But you can have a pneumothorax and a pneumomediastinum concurrently, correct?

A. Correct.

Q. And you probably have seen pneumothoraxes and pneumomediastinums at the same time I presume in your career?

A. Probably.

Q. Okay. All right. But the bottom line is you're not certain if that's thymic sail or if that's the upper lobe of the lung, correct?

A. I don't know what you mean by certain. I state to a reasonable degree of medical certainty that that's a pneumothorax and that's lung that we're looking at.

Q. And not thymic sail?

A. Right.

Q. Okay. Why don't you put up Exhibit 8, and I have the same question for you.

Are you seeing thymic sail on this film?

A. Here I tend to think you probably are.

Q. And is a pneumomediastinum in the same location as what you felt was the bilateral pneumothorax in the prior picture?

A. No, this is a much smaller collection of air and there's much more lung.

That lung has re-expanded because they put a chest tube in and drained out the pneumothorax. You don't put chest tubes in to drain a pneumomediastinum.

But they put a chest tube in, drained the pneumothorax and the collection of air is much smaller and the lung is much more visible.

Q. Now, tell me, when you put in a chest tube -- and the one on the right was placed several hours before this film was taken -- and you have a chest tube placed for a right pneumothorax, would you expect to see that much air collection remaining if this was a pneumothorax?

A. You may. It's very likely that the baby had a bilateral pneumothorax right off the -- you know, early on.

Q. Are you saying that with a reasonable degree of

medical certainty that that's what happened in this case?

A. There's no way to know without having an x-ray at that time.

What we would need is an x-ray before they put the chest tube in, and we don't have one.

Q. All right.

A. But because we don't, we can't exclude that possibility.

Q. Now, if you would put 7 up there with No. 8, if you could just hold that up underneath there somehow.

Do you appreciate the fact that Exhibit 7 is probably a little bit overexposed?

A. It's a little dark, yes.

Q. And that's because it's -- it was overdeveloped or the -- the child was under the x-ray too long or what causes that?

A. Well, I'm not a radiologist, but my understanding is it's either overexposed or underpenetrated. That is, they didn't shoot enough radiation through.

Q. All right. And would you agree with me that the darkness that you pointed to in the prior -- in Exhibit 7 is potentially because of the fact this was overexposed or it's a dark film?

A. It is a dark film, that's true.

Q. All right. In your experience, when you put in a chest tube for a pneumothorax, what happens to the pneumothorax? I mean, does it decompress pretty quickly?

A. Either totally or partially, yes.

Q. Okay. So wouldn't you be rather surprised if a chest tube was placed on the right on this child that sometime after -- I think almost two hours after -- well, when did the first pneumothorax occur?

Well, I can tell you. It was at 7:00 o'clock, correct?

A. Well, that's not clear. The baby began having hypoxia as early as 5:30.

Q. Okay.

A. We don't have an x-ray between 5:30 and 7:00 o'clock.

Q. Okay. The chest tube was placed, though, sometime before 7:05 I presume, correct?

A. Correct, the doctor writes a note at 7:05.

Q. Okay. And then the chest x-ray's taken pretty promptly thereafter?

A. Yes.

Q. But it's almost a half an hour later, correct?

A. Yes.

Q. And in your experience, would that much air -- if this was a pneumothorax and not a pneumomediastinum, would that much air filling the entire upper and lower lobe of the right lung still be collapsed half an hour after insertion of a chest tube?

A. It may be.

Q. Is that highly unusual?

A. No, there would be -- I could list quite a few reasons for that.

Q. Well, why don't you list them.

A. Well, first of all, I can't tell you where that chest tube is, whether that chest tube is rising up to what we call the anterior chest or whether it's going down deep towards the back, the posterior.

If it's going --

Q. And you can't tell me because it's a two-dimensional picture, right?

A. And we would need a lateral film.

Q. Okay.

A. If we take a side view, we could tell.

Q. Sure.

A. But one possibility is that they put the chest tube in and it went posterior; and we know air rises to the top, so

the air's up on the top and the chest tube's down on the bottom, it wouldn't drain the air out. Then when they put the second chest tube in, it does drain the air pretty well.

That's one possibility. And I said there are many.

Q. Okay. Typically when you put in a chest tube, though, because there's some pressure gradients that are going on, it tends to deflate, correct? I mean -- strike that.

It tends to decompress the air outside of the lung and the lung tends to reinflate fairly rapidly, correct?

A. If you put that tip of the chest tube to where that bubble of air is, you should begin draining that air out.

Q. But, Doctor, you're telling me this is more than a bubble of air, this is huge.

A. A huge bubble, that's a big bubble.

Q. All right. And if that's still air, can you tell me why the heart isn't displaced?

A. It's on both sides.

Q. The heart's midline, isn't it?

A. This pneumothorax is on both sides of the chest.

Q. Okay.

A. If it were only on one side, you would expect it to displace the heart to the other side.

Q. Now, the photograph -- the film that's marked

Exhibit 8, you would agree with me that -- that both lungs have reinflated and the pneumothorax has been reduced in Exhibit 8, correct?

A. Correct.

Q. Do you see any evidence of a pneumothorax in Exhibit 8 on either side?

A. Again, there may be a residual pneumothorax sitting in the midline.

Q. I thought you agreed with me that that was a pneumomediastinum?

A. I can't tell.

Q. Okay.

A. It could be either one.

Q. And you would defer to a radiologist to make that determination since you can't tell?

A. Well, I've read two different radiologists who have read this film and one calls it a pneumothorax and one calls it a pneumomediastinum, so apparently they're having trouble telling, too.

Q. Do you know who Dr. Sivit is?

A. Only from his report. I don't know him other than that. He works at University Hospitals' Rainbow Babies. He's a pediatric radiologist.

Q. And do you know Dr. Carey who read these films?

A. No. He's a radiologist that reads films for the intensive care unit at Fairview, so he should have some expertise in this area.

Q. Do you know if Dr. Carey's an adult radiologist or pediatric radiologist?

A. I don't know.

Q. Have you ever read anything authored by Dr. Sivit that you recall?

A. Not that I remember.

Q. All right. Let's move on. Doctor, at your deposition in June, we began to talk about the causes of cerebral palsy.

I assume you recall that?

A. Yes.

Q. And I think you told me that you had read Dr. Adler's deposition; is that correct?

A. Yes.

Q. Do you agree with Dr. Adler that about 6 percent of all cases of CP are caused by an anoxic ischemic event?

A. I know some people say that. I think that number's too low.

Q. Okay. And then what you've described to you

previously, for Matthew it was more of a pure anoxic event, correct?

A. Hypoxia.

Q. Hypoxia, okay. So it wasn't a hypoxic or anoxic ischemic.

So the bottom line is I assume that whatever percentage you think CPs are caused by anoxic ischemic events, a smaller percentage are caused by hypoxic events, correct?

A. Absolutely.

Q. Okay. And do you have any idea how -- what percentage of CP cases are caused by hypoxic events?

A. Maybe on the range of 1 percent. It's a small number.

Q. Okay. And, Doctor, if I make a mistake today and say anoxic instead of hypoxic and it should be hypoxic, would you correct me if you can remember to do so?

MR. BECKER: John, it's not his job to correct your question.

MR. BULLOCH: Mike, just give me a break. I'm asking him that if it's important and I ask him and I -- I'm thinking anoxic to be equivalent to hypoxic.

THE WITNESS: I'm willing to use the two interchangeably.

MR. BULLOCH: Okay. Thank you, Doctor.

Do you have any problem with that, Mike? Mike?

MR. BECKER: John, what I do have a problem with, and I've not interrupted you, is three times in this deposition already --

MR. BULLOCH: You cut out. If you said something else, you cut out.

MR. BECKER: What I do have a problem with is that three times in this deposition, unintentionally, I know it's not intentional, you have interrupted the doctor before he's completed the answer. When you read this transcript, you're going to see that.

I would ask you professionally to be careful. I know you want to ask the next question, but make sure he's done because three times now you have cut off his answer before he has finished.

MR. BULLOCH: Okay. Doctor, if I've done that, I apologize; and, Mike, feel free to object if I do that.

MR. BECKER: Okay.

BY MR. BULLOCH:

Q. Doctor, you said that 1 percent or less of all CPs are caused by a hypoxic event, correct?

A. Yes.

Q. And I assume that even a smaller percent of all cases of cerebral palsy are caused by a hypoxic event that occurred in the neonatal period; is that fair?

A. Well, I think the great majority of the hypoxia CP cases are neonatal.

Q. Okay.

A. I'm not sure what else -- maybe you've got a few cases in early infancy, but that's about it.

Q. Okay. So can you give me a percentage in that regard, 50/50, 75/25, what would you -- your best estimate be?

A. Oh, I would think that if hypoxia causes CP, it occurred in the neonatal period over 90 percent of the time.

Q. Okay. Fair enough. And to clarify or so that I understand what you told me in June, you believe that Matthew's CP was caused by his RDS complicated by bilateral pneumothoraxes; is that correct?

A. Not exactly.

Q. Okay. Why don't you tell me how I'm wrong. What's wrong about that statement?

A. I don't think RDS by itself causes CP.

MR. BULLOCH: Are you there? Mike?

MR. BECKER: I'm here.

MR. BULLOCH: Your phone beeped, so we were just making sure you were still on board.

A. I think that complications of RDS can cause CP. In this case, there were complications of RDS, that is, pneumothoraces with hypoxia, that's the cause of the CP; but I don't think uncomplicated RDS causes CP. Rarely, if ever. I don't think that happens.

BY MR. BULLOCH:

Q. Okay. And the complications of Matthew's RDS that caused the CP was the bilateral pneumothoraxes, correct?

A. With hypoxia, with significant hypoxia.

Q. Okay. Have you ever treated a child that developed CP under similar circumstances?

A. I don't know what you mean. I don't know what you mean by similar circumstances.

Q. Well --

A. I've never had a baby in -- since 1990 with significant RDS who required intubation and I withheld surfactant therapy, so I've never been in that situation.

Q. All right. Before 1990, did you ever have a child with complications of RDS, including pneumothoraxes, that developed CP?

A. Undoubtedly.

Q. Okay. And do you know what type of CP the child developed?

A. No, I'm not thinking of a specific case; but I know that before surfactant therapy -- and I think we began using it in 1989.

Before surfactant therapy, bilateral pneumothoraces were, unfortunately, relatively common; and I'm sure some of those babies developed CP, but I can't remember any specific baby.

Q. And I think I asked you this before, if you could point me to any literature in that regard and you -- at least at your June deposition, you could not, correct?

A. In what regard? On what specific issue? I can show you that after we began using surfactant that we see very few pneumothoraces anymore. I know there's such literature.

Q. Okay. Is there such literature that shows that because of the use of surfactant we have reduced the rate of CP?

A. That's a little tricky.

Q. All right.

A. It -- we have done both, we've reduced CP and we've created new cases of CP so that the net effect is there really isn't much difference.

Q. Well, my question was more specific than that, Doctor.

Can you point to any article that shows that the introduction of surfactant has reduced the incidence of neurodevelopmental delays or neurological injury?

A. It's not that simple. What happened was babies that used to get CP now don't. We did reduce it.

Unfortunately, babies who used to die now live and have CP. So we've created new ones.

So, no, the overall incidence hasn't changed, but babies like this who used to get CP now don't. There is literature to show that CP now is showing up in tiny babies who used to die. That's why there's no change.

Q. Okay.

A. The literature -- you're right, the literature shows there's no change in overall incidence of CP in preemies, but it's because we're saving small ones and creating new cases.

Q. But you're saving small preemies for a number of reasons, correct? I mean, it's not just surfactant?

A. That's far and away the major advancement over the last 15 years.

Q. Okay. If that's the major advancement over the last 15 years, then why can't you point to an article that says

because of the introduction of surfactants, fewer children are getting CP?

A. Because it's not true. Just as many preemies do get CP, but they're different preemies. They're the smaller ones.

Q. Okay. Can you show me articles then that say because of the use of surfactant fewer children are getting CP as a result of a hypoxic event?

A. There are articles that show that the babies who used to get CP now don't and the babies who used to die now do get CP.

I could find articles that show that the smaller babies are now surviving with CP and the overall incidence of CP hasn't changed. I won't argue with you on that.

Q. And, Doctor, I won't argue with you on that either; but the question is much more fundamental than that.

The question is are there any controlled studies that show a positive neurodevelopmental outcome due solely to the use of surfactants?

A. Not if you combine all preemies.

Q. Okay. All right. Your report -- and just as foundational information for me, I want to understand what we talked about at your last deposition before I move on to new

areas.

As I read your report, I understand your sole criticism of Dr. Lilien to be his decision to withhold surfactant, correct?

A. Yes.

Q. Okay. You're not critical of Dr. Lilien's decision to admit Matthew to the NICU, correct?

A. Correct.

Q. And you're not critical of Dr. Lilien for his decision to intubate Matthew, correct?

A. Correct.

Q. And I assume you're not critical of the remainder of the care that he provided during Matthew's hospitalization, correct?

A. Correct.

Q. And your report is also not critical of any other care that was provided by any of the nurses or other physicians that cared for Matthew at Fairview Hospital, correct?

A. Correct.

Q. Okay. Now, cerebral palsy, Doctor, is that normally diagnosed in the NICU?

A. No.

Q. When's it typically diagnosed?

A. Between six to 18 months of age.

Q. And would that be a neonatologist making that diagnosis typically?

A. Sometimes. Sometimes neonatologists run what we call follow-up clinics, developmental follow-up clinics and babies like this come to the follow-up clinic for a good developmental assessment and that may be run by a neonatologist.

So sometimes yes, usually no.

Q. Okay. And I understand from your -- were you done by the way? I'm sorry if I interrupted you.

A. (Witnesses nodded head up and down).

Q. You don't work in any of those kind of neurodevelopmental clinics, correct?

A. I haven't for a long time.

Q. Okay. Is the -- is it fair to assume then that most cases of CP are actually going to be diagnosed by either a pediatrician or pediatric neurologist?

A. Yes, I think so.

Q. Okay. And as to the cause of a child's CP, would that normally be made as well -- strike that.

A determination of the cause of a child's CP, would that typically also be made by the pediatrician or the pediatric neurologist?

A. I think they have a right to express their opinion about it. I don't think that they supersede my opinion.

Q. Oh, and, Doctor, I'm not implying that; but I'm saying in clinical practice, since most neonatologists aren't seeing these kids once they leave the NICU -- and I assume that a diagnosis is usually made first and then they look for a cause, correct?

A. Not always. Sometimes you know bad things happen. You know a potential cause.

You know a baby had head trauma or had birth asphyxia or had severe hypoxia and you follow that child carefully and when the child shows the CP, you already knew the cause, you had the cause determined before the symptoms.

Q. Is that typical or is that more the exception?

A. That's hard to say. I think both occur frequently.

Q. Well, isn't it --

A. I think a lot of these kids leave as high-risk infants who you're watching carefully for the onset of CP and you know their risk factors before they have the CP.

Q. Okay. Isn't it true that most cases of CP we really don't know what caused it?

A. It depends how hard you look. It may be true that for most kids in CP clinics we don't know; and that may be

because we haven't looked hard enough, we haven't done state-of-the-art chromosome testing, metabolic testing, neural imaging, placenta pathology.

If someone undertakes a complete evaluation of a case, in most cases we can determine the cause.

The fact is, usually there aren't such complete evaluations; and it is true, in most cases we don't know the cause, but we could determine the cause if we wanted to.

Q. Okay. And who's usually in the best position to make that determination if there's a -- a search for the cause?

Would that be the pediatrician and/or the pediatric neurologist that's treating the child?

A. If there's no -- if there's no apparent reason for the CP, then someone will begin an evaluation.

However, oftentimes, the reason for the CP is known before the CP even develops.

Q. Sure, if there's a -- for example, placental abruption and the kid comes out with Apgars of 0, 0 and 1, then you're pretty sure what caused -- is going to cause CP if the child develops CP, correct?

A. That's exactly what I'm referring to.

Q. Okay.

A. And then it wouldn't be left up to the neurologist to

have to figure it out, it was figured out before the child developed the findings.

Q. Okay. We understand each other. You recently wrote a chapter in Clinics in Perinatology, a copy of which I have in front of us, on perinatal infections and cerebral palsy, correct?

A. Correct.

Q. I assume you've developed some expertise in that subject, correct?

A. Yes.

Q. You consider yourself to be somewhat of an authority on perinatal infections in cerebral palsy?

A. I think I'm up to being an expert. I'm not quite willing to call myself an authority on that yet.

Q. All right. And you're being a little modest, right?

A. No, I think I'm being honest.

Q. All right. It's a wonderful publication. I've never been invited to write anything in these kinds of publications.

In the book you state that 25 percent of all preterm births are associated with maternal infections, correct?

A. Yes.

Q. And preterm birth means anything between -- before 38

weeks, correct?

A. More like before 37 weeks. Those 37-weekers, some people consider that preterm, most people don't, but they're on the edge; but under 37 weeks without a doubt.

Q. Okay. Matthew would be what we call near term then?

A. Yes.

Q. Okay. Now, of those 25 percent of all preterm births associated with maternal infections, are all those diagnosed, are all those infectious processes diagnosed?

A. That refers to those that are, yes.

Q. Okay. So, in reality, greater than 25 percent of all preterm births could be associated with maternal infections, correct? Isn't that logical?

A. No, what you're suggesting is that an asymptomatic infection causes prematurity. That's not as common. That may happen, but that's not a big problem.

But the 25 percent refers to symptomatic infections causing prematurity. I don't think asymptomatic infections cause much prematurity.

Q. Okay. Maybe I phrased that wrong or not quite as artfully as I could have.

A clinical infection might go unrecognized,

correct?

A. I think I'll defer to obstetricians. They're the ones that recognize and diagnose infections. I don't think they miss many.

I think if a pregnant woman is infected and delivers a premature baby, they pick up on that infection virtually every time; but I'll let an obstetrician tell you that.

Q. All right. Fair enough. Now an infection in the mom or the baby can cause cerebral palsy, correct?

A. Yes.

Q. So, for example, in the mother, you wrote that the infection can be in the GU tract, correct, vaginal infections or urinary tract infections, correct?

A. Yes, those are common causes of prematurity.

Q. Okay. And outside of the GU tract, you wrote that infections can also induce prematurity, correct?

A. Yes, and those are far less common.

Q. But you wrote that even periodontal disease can cause preterm birth?

A. There's a lot of evidence from the last few years that's accumulated to suggest that that's a very common cause.

Q. All right. And, as I understand it, an infection can

directly damage the brain in cases, for example, like meningitis, correct?

A. Yes.

Q. The actual organism, viral or bacteria, can actually destroy brain tissue, correct?

A. Yes.

Q. And the other way that infections can cause brain damage is they trigger -- the infection triggers the release of cytokines, correct?

A. Yes.

Q. And the cytokines themselves directly damage the baby's brain?

A. In the small premature infant, yes, I think that's true.

Q. And in your book, in that chapter that I referred to -- and by the way, the book is Clinics in Perinatology: Perinatal Causes of Cerebral Palsy, Volume 33, No. 2.

In the book, you state the cytokine release is responsible for a significant portion of white matter damage, correct?

A. In the small premature infant.

Q. Well, if a baby has an infection -- a baby, I'm talking about one that's been born, has an infection, they can

release cytokine, too, can't they?

A. They probably can, yes.

Q. So a neonate develops an infection, they can on their own release cytokine that can be damaging to the brain, correct?

A. I'm not aware of anyone who's ever demonstrated that process.

Q. I'm going to hand you your book and I'd just like you to show me where this chapter deals with small fetuses.

A. (Examining document) There are four paragraphs on page 319 and 320 under the heading "Intra-amniotic Infection and Cytokine-Induced Brain Damage in the Preterm Newborn"; and I state in the final summary, finally, it's important to remember that not all cases of PVL in the small preterm infant are from cytokine-induced damage.

Q. But --

A. Some are -- in the small preterm infant, some are.

Q. Okay. But -- two issues here. The first heading you read it says "Intra-amniotic Infection and Cytokine-Induced Brain Damage in the Preterm Newborn", correct?

A. Yes.

Q. And we've already agreed that Matthew was preterm, correct?

A. Correct.

Q. And then the second paragraph you pointed to me says it is important to remember that not all cases of PVL -- and I emphasize all -- in the small preterm neonate are from cytokine-induced damage; is that right?

A. That's saying that there are other cases of PVL other than infection in small preterm infants.

Q. I understand. So, for example, you get the typical watershed injury to the brain where there develops some periventricular leukomalacia or PVL, correct?

A. Yes.

Q. But you're saying that cytokine release can damage even the small preterm neonate, correct?

A. Correct.

Q. And you don't say in here that cytokine-induced damage doesn't occur in infants the size of Matthew or the gestation range of Matthew, correct? It can happen to any fetus, correct?

A. No, the cytokine damage -- all the data behind that relates to small preterm infants. There's virtually no data -- there might be a suggestion in term babies and near-term babies but no good data.

Q. Doctor, are you representing that all the studies

done by Dr. Leviton and Dr. Perlman only dealt with small preterm infants?

A. The studies related to cytokine as a cause of brain damage all come from small preterm infants.

Q. Okay. And if I show you articles at trial that says that that's not the case, then would you admit that cytokine-induced damage can happen to the fetus at any gestational age?

A. I'm aware that there are other articles in term babies that have been misinterpreted to conclude that cytokine damage can occur in bigger babies, but there are major flaws with those articles.

Q. Okay.

A. Those babies if you look are also severely asphyxiated, and it's the asphyxia that causes the brain damage.

Q. Well, you admitted to me that a newborn baby could have a cytokine-induced damage to the brain.

A. No, I said that I've never seen any evidence of that.

I guess in theory it's a possibility worth exploring, but I have not ever seen anyone present any evidence of that phenomena.

Q. And you've never seen any evidence of

cytokine-induced damage to babies of 35 to 38 weeks gestational age?

A. Only flawed data.

Q. Okay.

A. And misinterpreted studies.

Q. Tell me when you -- were you done?

A. Yes.

Q. When you get cytokine damage to the white matter, what type of damage occurs? How would you describe it?

A. I think the studies in preemies refer to classic cystic PVL.

Q. Do you know what cytokine-mediated damage looks like on head imaging films?

A. I would expect it to look like classic cystic PVL.

Q. Okay. Deep white matter or cortical matter?

A. I'll defer to either a neuroradiologist or neurologist.

Q. And I assume you would defer to a neuroradiologist or pediatric neuroradiologist on the whole subject of whether or not cytokine-induced damage is evident in a particular film?

A. I'm not sure. I'd have to know a little bit more about the film.

Q. Okay.

A. If you show me a film and everyone concludes it's normal, I'll tell you there's no cytokine damage there.

Q. Okay.

A. If it shows classic PVL, cystic PVL, then I'll say it is consistent, so I don't know how to answer that.

Q. Well, Doctor, you told me that you feel comfortable reading chest x-rays.

Do you also feel comfortable interpreting MRIs?

A. Not as an expert, no.

Q. Okay. So the question is this, if you had a film of a child in your institution, would you defer to a pediatric neuroradiologist to make the interpretation of what's on that film?

A. From an MRI, yes, I would.

Q. A pediatric neuroradiologist?

A. Our neuroradiologist I don't think is specifically trained in pediatrics, although he does quite a bit of pediatrics.

Q. Okay. When -- this cytokine release mechanism that you were talking about, that's also known as fetoinflammatory syndrome, correct?

A. That's fair.

Q. Okay. Is there also a potential activation of

coagulation cascade when a child has this cytokine release in fetoinflammatory syndrome?

A. There can be.

Q. Okay. And that will cause clots to form in the baby's circulation?

A. It can.

Q. If it's in utero, you would expect to see some clot formation in the placental vessels as well?

A. I don't know.

Q. Okay. Now, clots in the fetal circulation can cause brain damage separate from that produced by cytokine release, correct?

A. Yes.

Q. So when you have cytokine release you almost get double bang for your buck in a sense, right?

I mean, you can have brain damage from the cytokine release and the action of the cytokine directly on the brain cells and you can get lesions as a result of blood clots, correct?

A. I don't think clotting is a big part of the problem. It's a -- maybe a minor factor.

Q. Okay.

A. At most.

Q. How do you know if you have an infection in an infant?

A. Well, the signs are very nonspecific. Almost any clinical sign in a newborn might be an infection. We do look to see if they were exposed to risk factors, exposed to a pregnant mother or if they have other risk factors such as catheters in place or lack of integrity of their skin and then we look at laboratory testing.

The gold standard are the cultures. After that come blood counts, CBCs; after that come some nonspecific tests such as maybe a C-reactive protein, but we do laboratory testing.

The cultures are the gold standard, but you may have negative cultures.

Q. And frequently you get negative cultures because a child's already been put on antibiotics, fair enough?

A. Well, that happens, but we try to draw the cultures before the antibiotics.

It is true that if they come after antibiotics, they may be negative.

Q. Well, sometimes you put a child on antibiotics because that's in -- the mother's membranes were artificially ruptured hours before delivery, correct, and you do that as a precautionary measure?

A. It would take more than that.

Q. All right. Well, what more does it take for you to put a baby on antibiotics prophylactically?

A. We don't put them on prophylactically. We put a baby on antibiotics to treat a potential infection.

Prophylactic means it's to prevent an infection; but when we start antibiotics, we're doing it to treat an infection.

Q. Or treat a potential infection you just said?

A. Yes.

Q. Okay. We're slicing baloney a little thin, aren't we? I mean, you treat a potential infection or prophylactically.

A. No, prophylactic refers to -- for example, if you were going to have surgery and there's no chance you're infected, they give you prophylactic antibiotics so you don't get infected during the surgery.

Q. Okay.

A. We're taking babies who might be infected when they're born and starting antibiotics until we can decide one way or the other.

Q. Well, Dr. Lilien put Matthew on antibiotics very early on in his stay, correct?

A. Correct.

Q. So can we assume that Dr. Lilien thought there was a potential that Matthew could develop an infection?

A. Yes.

Q. Okay.

A. No, I misheard you. There was the potential that he had an infection when he was admitted.

Dr. Lilien was not putting Matthew on antibiotics to prevent an infection but putting him on antibiotics because there was a chance he was being admitted with pneumonia.

Q. Okay. So he had some risk factors and some signs and symptoms, correct?

A. Yes.

Q. Okay. Now, you mentioned, too, there are certain risk factors that increase a child -- baby's chance of infection.

You said one was a catheter, correct?

A. Yes.

Q. Another would be I assume an endotracheal tube, correct?

A. Long term endotracheal tube placement, not a matter of days but long term.

Q. Okay.

A. I don't think there's any evidence that if you have a catheter in for -- or an endotracheal tube in, I should say, for three to five days that you're at risk of infection, no.

Q. All right. Because I've heard there's a risk of infection when you have an IV catheter in for as little as 48 hours, correct? Isn't that why they change them every 48 hours?

A. I don't know the answer to that.

Q. Okay.

A. We don't change them in newborns every 48 hours. If they're still working, we leave them in.

Q. Okay. What significance would you place on a finding of mononuclear infiltrate in the tracheal aspirant of a child that's been intubated?

A. I'd like to see how old the child was when that came back.

Q. Well, you're looking at the medical record -- Matthew's medical record?

A. Yes.

Q. And I'll point you to it. There was a final report, a respiratory culture was done on 8/24.

A. Yes, I'm looking at that. It didn't grow anything. It has probably no significance. Maybe -- the no growth is the

ultimate gold standard on how to look at that result.

Q. But we've -- were you done?

A. Yes.

Q. I'm sorry. We already established Matthew was already on antibiotics, so it's very likely that you're going to get no growth, correct?

He's on broad spectrum antibiotics, Doctor. He's on ampicillin and gentamicin.

A. This was collected on the evening of 8/24? I suspect if he had had a pneumonia on the evening of 8/24 it would still have grown. He wasn't even a day old when they collected that.

If he has pneumonia to the point where it's causing an infection of those secretions, it wouldn't clear up that fast. You'd see more than a few mononuclear cells.

Q. Well, what if the antibiotic isn't hitting the organism? What if it's not effective in killing that particular organism?

A. Then it should have grown in that culture.

Q. Okay. What if it was a viral pneumonia?

A. I'd expect something more impressive than a few mononuclear cells. It's just not very impressive.

Q. Okay. Let's go down to the next --

MR. BECKER: Can I take a two-minute bathroom break?

MR. BULLOCH: Sure, Mike.

(Recess was taken from 11:37 a.m. until 11:40 a.m.)

BY MR. BULLOCH:

Q. Okay. Doctor, I was about to point out the next culture insensitivity that was done on the cerebral spinal fluid; and that was done on, looks like, September 2nd, 1999, and reported out on September 5th, 1999.

Do you see what I'm referring to?

A. Yes, I do.

Q. And do you see that there again are mononuclear cells seen in the cerebral spinal fluid?

A. Yes, I do.

Q. Is there any significance to that?

A. It's a normal finding.

Q. It is a normal finding?

A. It is a normal finding.

Q. Okay. Doctor, in June you told me about your specialty interest in neonatal resuscitation, correct?

A. Yes.

Q. And I'm -- am I correct to assume that all or most babies in the NICU are potentially a risk for experiencing some untoward cardiac or pulmonary event that would potentially require resuscitation or some kind of cardiopulmonary

support?

A. That's probably true. Some are clearly higher risk than the others; but if you're in the NICU, there's something wrong with you and you're at risk.

Q. The reason I'm is asking you this question, in case I get hit by a bus, is to remind my partner that he needs to look at some of these issues because I'm not sure that people understand what NICUs are.

NICUs are neonatal intensive care units?

A. Yes.

Q. And children in NICUs are pretty sick, aren't they?

A. It's variable from being critical ill to being a pretty healthy, growing, thriving preemie about to go home.

Q. Okay. But a NICU is a full-blown intensive care unit, isn't it?

A. Yes.

Q. And the fact that a child's in a NICU, at least admitted into a NICU, is an indication the child has a very serious condition, many of which may be fatal, correct?

A. Some more than others. There are some babies that get in who aren't very sick.

Q. Okay.

A. But some can be critical, life-threatening

condition.

Q. Okay. That's why we have NICUs, right?

A. Yes.

Q. And is part of why babies survive that never used to survive back in the '60s and '70s because of the development of NICUs?

A. Yes, and the care that's given there.

Q. All right.

A. And somewhat from obstetrical interventions. The obstetricians get some credit for our neonatal outcomes.

I'm thinking, for example, of giving mothers steroids before she delivers. That improves our outcomes.

Q. And probably tocolytics, too, that's improved outcomes as well?

A. That's more controversial.

Q. Okay. But the bottom line is that since we don't have a pediatrician -- or an obstetrician here, it's okay with me if you take all the credit, fair enough?

A. Fine.

Q. Okay. A pneumothorax can be serious or it can be fairly harmless; is that fair to say?

A. Yes.

Q. And a pneumomediastinum most of those or almost all

of those are relatively harmless, correct?

A. Correct.

Q. Most pneumomediastinums aren't even treated, correct?

A. Correct.

Q. Now, would a large tension pneumothorax be most likely to present a danger of neurological injury consistent with what you believe happened to Matthew?

A. Could you repeat that?

Q. Maybe it was a bad question. Let me take another shot at that.

You said that one of the reasons that Matthew ended up with cerebral palsy was because he had respiratory problems, specifically respiratory distress syndrome, complicated by pneumothoraxes, correct, and hypoxia?

A. Almost correct.

Q. Okay.

A. I didn't say that was one of the reasons, I said that was the only reason.

Q. What was the only reason, sir?

A. Respiratory distress syndrome complicated by a pneumothorax with its associated hypoxia.

Q. Okay. Thank you.

A. That's reason for his CP.

Q. Okay. Now, the pneumothorax that occurred, I assume that was -- or the pneumothoraxes that occurred, and based on what you think you're seeing on the films that you showed us, I presume that you're seeing, both from a radiographical perspective and a clinical perspective, these as being both major large pneumothoraxes, fair enough?

A. Yes.

Q. Now, the pneumothorax that was on the right -- well, we already talked about that.

You didn't see any displacement of the heart or the esophagus in the films that you looked at, correct?

A. Correct.

Q. They were both midline in all of the films that you saw, correct?

A. Correct.

Q. Okay. Is there any reason to believe that the doctors and nurses attending Matthew during the evening hours of August 25th failed to quickly recognize and effectively treat Matthew's pneumothoraxes?

A. I have no reason to come to that conclusion.

Q. So do --

A. What you'd have to look at is say this child begins

having hypoxia at 5:40, but the chest tube doesn't go in for maybe an hour and a half or so, but I don't have enough evidence to say that that's a delay.

Q. Okay. Fair enough. How do you know when a child's blown a pneumothorax? I mean, how do you diagnose that?

A. Well, the ones you worry about are those where there's a clinical deterioration of the respiratory system.

You then listen with a stethoscope, you may hear air over one side of the chest but not hear air movement over the pneumothorax side.

You can then light up the chest with a fancy flashlight and a pneumothorax will just glow. That chest will just glow like a light bulb.

And finally you may need a chest x-ray to diagnose it.

So there are times you can do it with a stethoscope or with the flashlight or with x-ray.

Q. I've never seen a transillumination done, but is it similar to like putting a flashlight on your thumb and the pink glow that you see through your thumb, is that similar to what it looks like?

A. Yes.

Q. Okay. Now, if you transilluminate a

pneumomediastinum, what happens?

A. I don't recall doing that very often, because if we transilluminate, it's because the child's deteriorating, there's a problem and you're looking for a pneumothorax.

Pneumomediastinums don't give you the problems that require transillumination. So we really don't do that very often, if at all. The fact that you transilluminated says that this is more significant than a pneumomediastinum.

Q. Okay.

A. So I don't recall having done that very often, if at all.

Q. Well, very often. Do you remember ever transilluminating a kid's chest and saying oh, this looks like a pneumomediastinum?

A. No, I don't.

Q. Would it look any different than a pneumothorax?

A. But there's a lot I don't remember after 25 years.

Q. Believe me, I appreciate that, Doctor. There's a lot I don't remember after 25 minutes.

If you have a pneumomediastinum overlying a smaller pneumothorax, what would happen when you transilluminate it?

A. Presumably the pneumothorax would light up.

Q. Okay.

A. And you'd get a positive response or test.

Q. And I assume if you're holding it on the child's right side if there was a pneumomediastinum and a pneumothorax on that side, the pneumomediastinum would light up somewhat, too, correct?

A. I don't know.

Q. Well, the theory is that -- why it lights up is it's passing through air instead of solid tissue, right, or more dense tissue?

A. Yes.

Q. So wouldn't it make sense if you have a pneumomediastinum overlying a pneumothorax that it would light up as well?

A. The chest lights up. I don't know beyond that.

Q. Okay. All right.

A. I don't know.

Q. And you said you don't recall doing a transillumination of a pneumomediastinum so it probably doesn't matter.

Doctor, your report that you drafted which we have placed in front of you as Exhibit 4 is dated February 22nd, 2004, correct?

A. Correct.

Q. Do you know when you were first contacted by an attorney on behalf of plaintiffs in this case?

A. (Indicating).

Q. Would it be in one of these letters that you're pointing to?

A. I'll look through my correspondence.

Q. Well, maybe I can save you from doing that and maybe I've already asked you this -- and if I did, I apologize -- did you ever talk to Jack Clapp about this case, an attorney by the name of Jack Clapp?

A. No, that name means nothing to me.

Q. Okay.

A. But my original correspondence was December 20, 2002, and it came from Mr. Becker's office.

Q. Okay. And your report states what records that you had when you generated your report or what records you reviewed rather -- we may not know what records you got, but at least we know what records you reviewed -- and it doesn't appear that you had any records from any subsequent caregivers; is that correct?

A. That's correct.

Q. Do you know why?

A. No.

Q. All right. And -- and originally your report --

A. Maybe I can --

Q. Go on.

A. Let me answer, I think I can answer that. I'm looking at my original letter from December 2002 and I was asked to evaluate the newborn care. I was asked to determine whether or not there was substandard care in the newborn period. Then they go on -- they actually say then we want to know about if the subsequent problems would have been preventable.

So evidently they want me to look at both standard of care for which I would not need later records and they want me to look at causation issues.

Q. Well, the subsequent problem indicates cerebral palsy in this particular case, correct?

A. I wouldn't have known that from this cover letter.

Q. All right. So the only way you could really look at subsequent problems is to have some of the subsequent records, correct?

A. I would need some records to know his condition at that time.

Q. Okay.

A. In my report I don't talk about his condition beyond

the newborn period, though.

Q. All right. One of the things that I wanted you to have an opportunity to clean up is that you told me at your last deposition you originally thought the failure to administer surfactants led to the development of PVL, correct, that's what your report says?

A. Yes.

Q. Okay. And you wanted to change that opinion because you found out that Matthew doesn't have PVL, correct?

A. I think I'm going to leave it to the neurologist and the neuroradiologist to tell you whether we should be calling this PVL or white matter disease in the area near the PVL area.

The relationship between classic PVL, which I now don't think that's what this was after reading two different -- I think I saw two different neuroradiologists but --

Q. Reports?

A. Reports, but the damage in that area and in the white matter is what I'm talking about; and I may have gone too far calling it PVL.

Q. All right. So just to be fair to you then, if you mention anywhere in this report PVL, can I assume then what you would say is PVL and/or white matter damage?

A. Yes.

Q. Okay.

A. Yes.

Q. Were you ever provided a copy of Dr. Bachman's records?

A. No.

Q. Do you know who Dr. Bachman is?

A. No.

Q. Let me represent to you that Dr. Bachman is a pediatric neurologist who used to be the head of pediatric neurology at Ohio State University, has since relocated to North Carolina and has been Matthew's treating pediatric neurologist for almost seven years now I guess.

Would it be important for you to see a copy of Dr. Bachman's records?

A. Probably not.

Q. Were you provided a copy of Dr. Bachman's deposition transcript?

A. No.

Q. Were you advised by plaintiffs' counsel that I took Dr. Bachman's deposition in North Carolina?

A. No.

Q. Were you advised of anything that Dr. Bachman had to say?

A. No.

Q. Let me represent to you that Dr. Bachman has conducted numerous follow-up tests on Matthew, he has obtained all of Matthew's medical records from Fairview Hospital, he has obtained all of the neuroimaging studies, he has conducted his own neuroimaging studies and he has come to the conclusion and testified that he does not believe that Matthew's CP was caused by an anoxic ischemic event that occurred at Fairview Hospital.

MR. BECKER: I'm going to object. That's not his testimony. Go ahead.

MR. BULLOCH: That's absolutely his testimony, Mike. I reviewed it just yesterday. I'll be happy to point out to you where that is.

MR. BECKER: Go ahead and ask the hypothetical.

BY MR. BULLOCH:

Q. Dr. Bachman has represented this child did not -- his CP is not caused by an anoxic ischemic event. Does that in any way change your opinion?

A. No.

Q. Why wouldn't it?

A. When I think of an anoxic ischemic event, I'm thinking of an asphyxial event.

I use that term interchangeably with asphyxia. I

don't think he had that either. I think it's pure hypoxia.

I would have said if you asked me is that is an anoxic ischemic event, the way I think of that term, no, I don't think it is either. I think he was hypoxic for approximately six or seven hours.

Q. Well, from 5:40 to midnight is what you told me previously.

A. That's six-and-a-half hours.

Q. Six hours and 20 minutes?

A. Yes.

Q. Now, Dr. Bachman conducted a thorough evaluation -- he testified he conducted a thorough evaluation of Matthew's records and he does not see any hypoxic levels sufficient to cause brain damage.

Would you disagree with Dr. Bachman?

A. Yes.

Q. Dr. Bachman has also conducted several metabolic studies on Matthew and he has found -- not once but he repeated the test to make absolutely certain he said, and he has found elevated lactate levels on two occasions.

Do you put any significance to that finding?

A. That's beyond my field of expertise.

Q. Have you ever heard of primary lactic acidosis?

A. I don't know much about it. I've heard of it, I've thought of it, every time it comes up, I have to go read about it again. I'm not an expert in that condition.

Q. Okay. Have you ever heard of pyruvate dehydrogenase deficiency?

A. I've heard of it.

Q. Is -- do you know that primary lactic acidosis or pyruvate dehydrogenase deficiency is capable of producing spastic athetoid cerebral palsy?

A. I'll not an expert on those conditions.

Q. Okay. Does the fact that Dr. Bachman believes that Matthew very well might have a metabolic masquerader of cerebral palsy in any way impact on your opinion in this case?

A. No.

Q. Why not?

A. I've -- I have two opinions. One, it was a deviation from the standard of care to not give surfactant.

Now, I don't see how that opinion has anything at all to do with Dr. Bachman's opinions. This was negligence. This was substandard care. It has nothing to do with Dr. Bachman. I don't care what he believes, it's substandard care.

Now, the second opinion I offer does relate to

causation. I say that there is severe hypoxia present on the evening of August 25, 2000 -- 1999 and that there was hypoxia at critical levels, levels that mandated ventilator changes, that mandated chest tubes, that required resuscitation techniques.

This child was sick, was hypoxic, was blue, was dusky, was cyanotic for hours on end. There was enough hypoxia to cause brain damage.

Now, whether Dr. Bachman thinks that this very well might be some obscure metabolic disease or not doesn't change my opinion that there was a lot of hypoxia present that night.

Q. Okay. But Dr. Bachman's opinion as he expressed in sworn testimony directly does go to causation, would you agree with me on that?

A. It sounds likes it.

Q. Well, he's saying that the child did not experience severe hypoxia.

A. He's wrong about that. He is not a neonatologist, that's for sure. The next time he manages a premature baby with respiratory distress syndrome with chest tubes will be the first.

Q. Doctor, you also told me that pediatric neurologists frequently are the people responsible for determining the cause

of cerebral palsy.

A. If the pediatric neurologist says the PO2 values in the 30s and oxygen saturations in the 50s or 60s are safe and don't cause brain damage, then they're not very good pediatric neurologists.

Q. All right. I'll let Dr. Bachman know that you feel that way.

But the bottom line is that you disagree with Dr. Bachman's theory on causation, correct?

MR. BECKER: Same objection, that he has a theory of causation. Go ahead, Doctor, you can answer.

A. I don't know his theory. What you said was that he expressed possibilities, things that it might be; and I'm not familiar with those diseases.

I do know that there was a lot of hypoxia on the evening of August 25th.

BY MR. BULLOCH:

Q. Okay.

A. Enough hypoxia to cause brain damage.

Q. Okay. And, Doctor, I'm not trying to be argumentative, believe me, but if Dr. Bachman states that based on his review of the medical record he does not believe that Matthew's cerebral palsy was caused as a result of oxygen

deprivation, you would simply disagree with him, correct?

A. Yes.

Q. Okay. That's all I'm asking. Do you need a break?

A. No.

Q. Okay.

A. Thank you.

Q. Now, you told me that you have changed your opinion and more or less supplemented your report here today on the basis that Matthew apparently doesn't have periventricular leukomalacia and part of that you told me earlier was based on your understanding of the subsequent record, correct?

A. No, it was based more upon expert reports that I came across.

Q. Okay.

A. That -- they're using different terminology and they probably know more than I do about it.

Q. Okay.

A. I'm not changing my opinions.

Q. And I don't mean to imply that you're changing your opinions.

A. I'm just saying that I may have used an inaccurate term.

Q. And, Doctor, I understand that, that's why I allowed

you to supplement it to include white matter damage.

A. Thank you.

Q. But you told me earlier that either through discussions with Mr. Becker or you weren't sure where you heard it, but you understand that other neuroradiologists have looked at these films in North Carolina and come to the conclusion that this is not periventricular leukomalacia, correct?

A. I don't remember ever saying in North Carolina. I'm thinking more like people in California.

Q. Okay. Well, perhaps I misunderstood you. All right.

Doctor, your report also talks about -- and I'm pointing to the last paragraph in -- on the first page, you say that any obstetrical interventions to extend the pregnancy or hasten lung development would have either significantly lessened or prevented altogether the hyaline membrane disease and the subsequent PVL, correct?

A. Yes.

Q. PVL or the white matter damage that Matthew suffers from, correct?

A. Yes.

Q. Okay. And in order to extend the pregnancy, I presume you're talking about the use of tocolytics; is that correct?

A. That's an obstetrical standard of care question beyond my field of expertise.

Q. Well, you said it, though, in your report, you said any obstetrical interventions could have prevented. What were you thinking?

A. Obstetrical. I'll say it again, that's an obstetrical issue. They will tell you the obstetrical techniques that they would have available.

Q. Okay. Fair enough. Do you understand any of those obstetrical techniques?

A. To some limited extent. I'm not an obstetrician.

Q. And I understand that, Doctor, but one of those techniques you would grant me would be administration of tocolytics, correct?

A. Yes.

Q. Okay. Are you critical of the obstetrician for failing to extend the pregnancy?

A. No.

Q. Is that because you consider a fetus of 35 to 36 weeks to be near term?

A. No.

Q. Why is that?

A. It's because obstetrical standard of care opinions

are beyond my field of expertise.

Q. Okay. Fair enough. And then you also mention hastening the lung development and I -- I think we touched upon that already.

What you're referring to there is administration of steroids, correct?

A. Yes.

Q. And you're familiar with that I presume, correct?

A. Yes.

Q. So the obstetrician, had he given steroids to the mother, would have hastened lung development, correct? That's how that works?

A. If they're in the mother long enough.

Q. Okay. And somehow steroids mature the lung tissue, correct?

A. Yes.

Q. Is it risky to give steroids to a pregnant mother?

A. To the mother or the baby?

Q. To either.

A. I'm not prepared to talk about the risk to the mother. It's safe for the baby.

Q. All right. Well, as a former pharmacist, let me tell you the biggest risk to the mother is probably the sodium and

water retention; is that your understanding as well?

A. For the mother or the baby?

Q. For the mother.

A. I have no opinions about that.

Q. Okay. Fair enough. There's certainly a big benefit, correct, you won't disagree with me on that?

A. The benefit far exceeds the risk.

Q. Okay. Are you critical of the obstetrician for failing to give steroids to Margo Wagoner?

A. No.

Q. Why not?

A. Because obstetrical standard of care opinions are beyond my field of expertise.

Q. Fair enough.

A. I will not criticize an obstetrician for their care.

Q. Fair enough, Doctor. In general, when you prescribe a medication, I assume you use a certain degree of professional judgment to decide if you're going to give the drug or not give the drug, correct?

A. Yes.

Q. And part of exercising your professional judgment is you weigh the risks and the benefits, correct?

A. Yes.

Q. That's what doctors do every day, isn't it?

A. Yes.

Q. And they should do that every time they prescribe a medication, shouldn't they?

A. Yes.

Q. They decide if the benefits of administering a particular drug outweigh the risks inherent with that drug, correct?

A. Correct.

Q. Now, if a drug's suspected benefits are not great or are unknown and there's some significant risk, I assume most doctors would tend toward withholding the administration of the drug, correct?

A. I'd need to know more about the specifics, what's the drug, what are the risks and what's the disease and how do -- how does the family feel about it? I need to know much more.

Q. Okay.

A. It's true that, as there become fewer benefits and more risk, the less likely we are to recommend the treatment.

Q. Okay. And if a drug carries a potential of causing a significant adverse reaction but has no known benefit in a specific patient population, would doctors also tend to

withhold administering that drug or at least seriously consider it before they give it?

A. Yes, I would think so.

Q. All right. Are surfactants always effective?

A. No.

Q. What percentage of the time don't they work? And by not working I mean don't improve the patient's condition.

A. I would think around 20 or 25 percent of the time you see no response.

Q. Okay. And I've seen that only 70 percent of the time they work so --

A. We're close.

Q. -- 30 percent that they don't work would be -- you just said would be close, correct?

A. Right.

Q. So if I showed you literature that said surfactants don't work 30 percent of the time you wouldn't argue with that?

A. No, that's in the ballpark of what I'm thinking and it may be right.

Q. All right. How do surfactants work?

A. You can think of the lungs as being filled with these tiny, tiny balloons --

Q. Alveoli.

A. But the balloons collapse, they collapse unless they're lined with a chemical called surfactant. Surfactant keeps those balloons from collapsing.

Surfactant's not made until late in pregnancy and so the premature baby's prone to collapsing its balloons. We give surfactant to the babies, it fills up the balloons and their lungs don't collapse. That's how it works.

Q. Okay. You said it's made late in pregnancy so there's been studies showing that the further out towards term a child is, the less likely it is he's going to be deficient in that surfactant, correct?

A. Correct.

Q. Okay. Now, as I understand how surfactants work, it's basically a surface acting agent, correct? It's like dropping detergent on -- in a dish pan that's got oil floating on top, correct? That may be a very bad example --

A. No, it's a good example. A physics term might be to say it reduces surface tension.

Q. And thus it's a surfactant?

A. Right.

Q. Okay. And thanks for that physics analogy because that's -- illustrates it very well in my mind.

It is a physical reaction. This isn't a drug that requires to be absorbed and distributed and metabolized to work, this is a mechanical action that acts on the tissue to which it's being applied to, correct?

A. Almost.

Q. How am I wrong?

A. We apply it in the big airways and then we push it down.

Q. Okay.

A. To the distal small airways or the balloons that I've said.

Q. Okay.

A. We don't apply it to the balloons, we apply it higher up and we push it into the balloons.

Q. Good point. But it's acting almost as a topical agent, correct?

A. Yes, that's fair.

Q. You get it down to the alveoli and it works. It doesn't need to be metabolized, it doesn't need to be distributed any further, it doesn't need to be absorbed, it works?

A. Correct.

Q. Okay. So I assume, once you push it down there, it

works fairly quickly, right, it's a physical phenomena?

A. Yes.

Q. You get it to the alveoli and it starts having an impact, almost immediately, correct?

A. Oftentimes you see a response within minutes.

Q. Okay. Now, Matthew received surfactant several hours before the second pneumothorax.

Can we therefore assume that Matthew on this particular occasion fell into one of those 30 percent failures?

A. No.

Q. Why? It wasn't effective, was it?

A. First, we don't know that he received the surfactant before the second pneumothorax.

In fact, for all we know, he had bilateral pneumothoraces right from 5:30 or 6:00 o'clock. We don't have an x-ray before that first chest tube.

I think it's pure speculation to say that there was a second pneumothorax that occurred sometime between the surfactant and that chest x-ray. There's no evidence for that.

Q. You told me earlier that the two ways that you determine a pneumothorax is radiographically, which you're referring to now, and clinically; and we do know that Matthew's

clinical condition deteriorated around 11:00 o'clock, correct?

A. He had been bad all night. He had problems before that. We know he had pneumothorax earlier on the x-ray.

Q. Well, something -- have you read Dr. Evangelista's deposition? Is that one of the depositions you've ever reviewed?

A. Yes.

Q. Okay. Now, Dr. Evangelista describes being called to the unit again, for the second pneumothorax. She was the doctor -- just for the record, she was the doctor that placed both chest tubes in Matthew Wagoner; and she described a situation where she was called to the unit because Matthew had taken a -- clinically had deteriorated and she came up, transilluminated the left side and found a pneumothorax and inserted a chest tube.

How is that not by a licensed doctor evidence that Matthew's condition had taken a turn for the worse at around 11:00 o'clock at night?

A. He did worsen, but the pneumothorax may have been there earlier. In fact it was there earlier in looking at the x-rays.

Q. According to your interpretation of the x-rays, not

according to the interpretation by Dr. Sivit, correct?

A. And the radiologist at Fairview. I need a time-out for one second. Let me look up one thing.

Q. Doctor, you can take all the time you need.

MR. BECKER: How much more time do you have?

MR. BULLOCH: I have no idea, Mike.

A. (Examining documents) There are also expert neonatologists for the defense that are calling these a pneumothorax, not pneumomediastinum.

BY MR. BULLOCH:

Q. Well, they're --

A. In fact, it's only one person that I've seen so far that calls them a pneumomediastinum, but even the defense neonatologists are calling them what I'm calling them.

Q. Well, Doctor, I'll represent to you that's because plaintiff produced expert reports very late and we had to go out and get other expert reports as well. But, nonetheless, let's move on.

MR. BECKER: Please move on.

BY MR. BULLOCH:

Q. Surfactants are primarily given for respiratory distress syndrome, correct?

A. Yes.

Q. Are there other conditions in a neonate that have essentially the same symptoms?

You mentioned earlier pneumonia. Are there other things besides pneumonia that have essentially the same symptoms as RDS?

A. No, I think pneumonia would be your main other consideration. I don't even know what I'd put after that.

Q. What about transient tachypnea?

A. Doesn't look like anything like this.

Q. What about meconium aspiration?

A. No, this was not meconium aspiration.

Q. What about retained amniotic fluid?

A. That's probably the same as transient tachypnea, and that's not what this is.

Q. Doesn't retained amniotic fluid also go by the name of secondary respiratory distress syndrome?

A. Some people used to call it RDS Type II.

Q. Okay.

A. I haven't heard that term in a long, long time. I don't know.

Q. But you would agree with me that pneumonias both radiographically and clinically are both particularly difficult to differentiate between that and RDS, correct?

A. Yes, when the baby was admitted to Fairview, it was reasonable to think that this might be pneumonia.

Q. And treated accordingly, correct?

A. And to start antibiotics. I do not fault the decision to start antibiotics.

Q. Okay. You also told me earlier that large babies like Matthew are less likely to have RDS, correct?

A. Yes.

Q. And the rate of RDS decreases significantly with gestational age, correct?

A. Yes.

Q. And, by the way, in 1999 you didn't administered -- did not administer surfactant for pneumonia, correct?

A. It's a case-by-case decision. There probably were some cases where it would be reasonable to give surfactant for pneumonia.

Q. Okay. It wasn't -- you're not implying, though, it was a standard of care routinely to give surfactants for pneumonias in 1999, are you?

A. No.

Q. Okay.

A. What I'm thinking is that sometimes it's very hard to differentiate the two and you might think it's pneumonia but

not be sure and therefore give the surfactant in case it's not the pneumonia.

Q. All right. What are some of the more significant risks of surfactant therapy?

A. A very small percent will begin bleeding in their airway or their lungs.

Q. And that is pulmonary hemorrhage?

A. Yes.

Q. Okay.

A. One risk is that these babies get better fast. I've said they get better within minutes and they get better so fast people don't adjust the ventilator fast enough and therefore the ventilator that was meeting their needs, after surfactant it's excessive, they may be overventilated and that can actually cause a pneumothorax.

Q. Okay. Anything else?

A. Nothing with any frequency.

Q. All right. Well, can you as a result of intubating and giving surfactant cause an infection in the lungs?

A. I've never heard of that happening. I've never heard -- seen that listed. I'm not aware of that.

Q. All right. Well, do you agree that that's certainly a possibility since you're introducing a catheter and a foreign

substance in the lung?

A. You're not putting the catheter into the lung. Under semi-sterile conditions you put it into the endotracheal tube.

Q. Okay. Under semi-sterile conditions.

A. It's always hard to be sterile when you put something around the mouth --

Q. Especially in the NICU?

A. -- and the trachea.

Q. I'm sorry, especially in the NICU, correct? I mean, you're not in a sterile field, you're not in an OR?

A. You -- as cleanly as possible, you put that catheter into the trachea.

Q. Okay. Did you want to look to see if they list infection on I guess what looks to be the package insert for one of the surfactants?

A. I'm looking at the package insert and they don't -- I don't think they say anything about infection.

Q. And that package insert, is there a date on that package insert?

A. 2004. So that should be more current, that should be everything we've accumulated over 15 years.

Q. Okay. What about bradycardia, is bradycardia a

possibility?

A. That happens, yes.

Q. What about --

A. Briefly, just briefly. If you're giving it in -- as you're giving it, that can happen; but it's easy to correct.

Q. Is there sort of a vago response?

A. No, probably not.

Q. What about oxygen desaturation, can you experience oxygen desaturation when you're giving it?

A. It can be brief, yes.

Q. What about hypertension? And, again, Doctor, you're reading the package insert.

A. The package insert says that happens in less than 1 percent of the cases.

Q. But it can happen, correct? It's a risk that you have to measure and weigh, correct? What about increased incidence of intracranial hemorrhage, is that a possibility? And again you're looking at the package insert.

A. No, there's no significant change in that risk.

Q. All right. What about apnea, is apnea a possibility to induce as a result --

A. It was not found to be a significant risk, no.

Q. Is it a listed risk on the package insert?

A. No, the package insert actually says there's no increased risk.

Q. Okay. But with oxygen desaturation you're actually causing a worsening in the child's oxygenation, correct, that's what's happening when you have oxygen desaturation?

A. Just briefly, maybe for seconds, not minutes or hours but for a few seconds the saturations may fall somewhat.

Q. Is there any danger of blocking an ET tube when you administer surfactants?

A. Only very briefly. If it's blocked, you open it up. It's easy to correct if that happens. It doesn't lead to any significant problems. But if the tube is blocked, you immediately unblock it so it's not a real problem.

Q. Is it possible to have it so blocked that you can't unblock it and you have to reinsert the ET tube?

A. No, the surfactant -- it would look like milk. It's very milky.

You can either suck it out or push it in, preferably push it down in, but it doesn't -- it's not like it forms a clot or an obstruction.

Q. All right. Doctor, in -- there are two -- I understand there's two types of surfactants, there's naturally occurring surfactants and there is one synthetic surfactant,

correct?

A. Yes.

Q. And the synthetic surfactant is under the brand name of Exosurf, E-X-O-S-U-R-F, correct?

A. Yes.

Q. Now, has it been shown that the synthetic surfactants have more risks than the naturally occurring surfactants?

A. I don't think so.

Q. All right. But again if I showed you literature that documented there was an increase in the -- in the risks associated with synthetic surfactants over naturally occurring surfactants, you'd have no basis to disagree with that, I presume?

A. Yes, I would.

Q. What basis?

A. There are some studies that show that one product may be riskier than the other. Those studies are all funded by the product that tended to get the better outcomes; and for every study that shows that one product is better, there are other studies that show that the opposing product is better.

Q. All right.

A. When you combine all the studies together, there's no difference.

Q. Do the synthetic surfactants work as well as the naturally occurring surfactants?

A. Yes, there's never been shown to be any significant clinical difference.

Q. Again based on some of the studies that you've reviewed?

A. Many.

Q. All right. Now, Exosurf contains both -- strike that.

The naturally occurring surfactants contain phospholipids and surface acting proteins, correct?

A. Yes.

Q. Exosurf does not contain the surface acting proteins; is that correct?

A. I think that's correct. I haven't used that product for a long time. I'm not even sure they still market it.

Q. Was it a drug that you had on your formulary at your current hospital?

A. No, we don't.

Q. In 1999 do you recall was Exosurf included in your drug formulary at the hospital you were predominantly employed at?

A. I don't know. It might have been. I don't remember.

Q. Do the drug formularies for the Dartmouth medical hospitals, is that all the same or do they vary from institution to institution?

A. It would vary by institution.

Q. Okay. But certainly right now, as far as you know, Exosurf is not on your drug formulary, correct?

A. Correct, I know it's not.

Q. Okay. And you're not even certain if they still make it; is that correct?

A. That's correct.

Q. All right. Doctor, can you -- and I might have asked you this at your first deposition and if I did, I apologize. I don't think I did.

But can you cite for me a single controlled study published before August of 1999 where exogenous surfactant was used in newborn babies that were as large as Matthew at birth?

MR. BECKER: I object because that was asked and answered.

MR. BULLOCH: I don't think it was, but I think it was asked at another deposition but not at Dr. Hermansen's.

I went through the deposition and I could not find where I had asked that, but again if I --

MR. BECKER: Go ahead, Doctor, answer the question,

if you can.

A. (Examining documents) Yes.

BY MR. BULLOCH:

Q. Can you give me the citation of that article?

A. You want articles before 1999?

Q. That's what we're dealing with here, only the ones before 1999.

A. The New England Journal of Medicine, 1991, Volume 325, pages 1696 to 1703.

Q. Doctor, this article came from the Clinical Research Division, Wellcome Research Laboratories; is that correct?

A. I don't know.

Q. Well, let me show it to you. Let's by the way, mark this as an exhibit, please.

(Hermansen Exhibit No. 9 was marked for identification.)

BY MR. BULLOCH:

Q. Doctor, I'm handing back to you what's been marked as Exhibit 9.

I'll direct you to the small script printing in the bottom left-hand corner of the first page. Can you read that, what that says?

A. From the Clinical Research Division, Wellcome

Research Laboratories.

Q. Okay. Now, Exosurf was made by what company?

A. I don't remember.

Q. This was a study that was paid for in part or conducted at least in part at Wellcome Research Laboratories, correct?

A. I don't know what you mean. I don't know if they had babies there or not. I would doubt it. I would think that the babies were at newborn intensive care units around the country.

Q. Okay. But this was certainly -- Dr. Long, who is the lead author -- it says down below address reprint request to Dr. Long at Wellcome Research Laboratories, correct?

A. Yes.

Q. So the lead author of this article was at Wellcome, correct?

A. Yes.

Q. You made a remark earlier about studies not having much utility because they're being paid for by the company that wants to increase the use of that product, correct?

A. No, I didn't say that.

Q. Well, the record will say what it says, but I think that certainly was the implication.

Does one study create a standard of care, Doctor?

A. It can.

Q. Does it typically create a standard of care?

A. It depends on the study. A large, well-done, multi-centered, randomized, controlled trial comes pretty close and may determine the standard of care.

Q. Do you also see on this page where it says members of the American Exosurf Neonatal Study Group I and the Canadian Exosurf Neonatal Study Group are listed in the appendix?

Down at the very bottom, do you see where I'm reading that?

A. Yes.

Q. I think they're referring to that.

A. (Examining document).

Q. Do you see up at the very top that credited as the authors of this as the next to last and the very last authors is the American Exosurf Neonatal Study Group I and the Canadian Exosurf Neonatal Study Group, correct?

A. Yes.

Q. And, Doctor, what drug was administered to all of the participants of this study?

Were any of the -- well, answer that question first.

A. (Examining document).

Q. I might be able to save you some time. It says it right in the abstract.

A. (Examining document) I'm not aware that any drug was given to all the infants. Maybe I'm misreading it.

Q. And, I'm sorry, I misstated that. There was a placebo group and there was a control group.

A. That's correct.

Q. And what drug was administered to the control group?

A. Surfactant.

Q. Which surfactant?

A. Exosurf.

Q. Was any of the naturally occurring surfactants used in this study?

A. No.

Q. So only Exosurf was used in this particular study?

A. Right.

Q. And this was a study again that seems to have very close links to the manufacturer Wellcome and these Exosurf study groups, correct?

A. This was their attempt to determine the safety and effectiveness of their product, yes.

Q. So you're saying this is almost like a Phase II drug

study?

A. I don't know if it would be considered that or not.

Q. Okay.

A. I'm sure that this was an important study to determine the effectiveness and safety of their product.

Q. Of their product Exosurf?

A. There's no difference between Exosurf and the other surfactants clinically.

Q. Well, I think there is. I mean, we've talked about there might be a higher rate of side effects and you admitted to me that it probably doesn't work as well.

A. No, I didn't admit to either of those.

Q. You did not, you're right, you're correct, you did not.

A. The two products are comparable in both risks and effectiveness.

Q. Well, tell me if you were in a hospital that did not have Exosurf on your drug formulary would this study have much meaning to you?

A. Yes, it tells me that surfactant worked in larger preemies.

Q. It says that Exosurf works.

A. There's no suggestion that other surfactants wouldn't

work in other preemies as well.

I can't imagine that I would withhold surfactant therapy from larger preemies after reading this study.

Q. Okay. And what we're primarily dealing with here with Matthew you told me was the development of pneumothoraxes, correct?

A. Right.

Q. Did the use of Exosurf have any documented improvement in the development of pneumothorax? Was there clinically significant improvement?

A. In this study it cut pneumothorax in half.

Q. What are you referring to, Doctor?

A. In the table there were 122 cases in the placebo and only 60 cases with surfactant and the relative risk was .5. They cut the risk exactly in half. The relative risk is 0.5.

Q. Well, Doctor, then you've got to look at what the asterisk says because in the placebo group the outcome was a reduction in pneumothorax of 122 out of 622 in the placebo group and only 60 out of 615 in the surfactant group.

A. You cut it in half from 120 to 60.

Q. And then it says the P value is 0.008. Is that clinically significant?

A. Can I see that?

Q. Sure.

A. Yes, that's highly significant. Highly significant.

Q. In your mind this tells you that Exosurf cuts pneumothoraxes in half?

A. Absolutely.

Q. Exosurf?

A. Right.

Q. Doesn't tell you anything about any of the other drugs, correct?

A. There's no difference. You would presume that.

Q. Well, you would presume it. I'm not sure that the medical community as a whole would presume that, Doctor, in all fairness.

MR. BECKER: Is that a question or just an editorial, John?

MR. BULLOCH: I guess an editorial, Mike.

MR. BECKER: Oh, please.

BY MR. BULLOCH:

Q. What is bronchopulmonary dysplasia, Doctor?

A. Chronic lung disease.

Q. It's associated usually with long-term ventilator support?

A. Yes.

Q. Doctor, I've read the discussion portion of this paper which references the table that you read from, and for the life of me in the discussion I can't find any claim that there's improvement in the incidence of pneumothorax.

Maybe you can take a look at it and find it, but I couldn't.

A. Where, in the --

Q. In the discussion portion where they discuss the results.

Doctor, I'd like to take a short break so --

A. Fine.

Q. -- that will give you time to take a look at that.

(Recess was taken from 12:42 p.m. until 12:46 p.m.)

BY MR. BULLOCH:

Q. Okay. Doctor, go ahead.

A. It's in the very first sentence of the discussion, the improvement in the physiologic indices and the reduction in air leaks. Reduction in air leaks are reduction in pneumothoraces.

It's what they start their discussion out with because it's the most dramatic finding of the study, I think.

Q. Okay. You're right. I did not see it. But, again,

this is a study that is somehow supported by -- or the primary researcher and -- is from the manufacturer of Exosurf and the American Exosurf Neonatal Study Group and a Canadian Exosurf Neonatal Study Group were both participants, correct?

A. Well, there's more than that. The study was validated with subsequent studies using a different product, using a natural surfactant. So now we know in retrospect it was a valid study.

Q. And what study are you --

A. We knew that at the time.

Q. What study are you referring to that validated this with naturally occurring products?

A. Oh, here's a study from May 2006 about giving surfactant in near-term and term newborns with RDS; and they use a natural surfactant, and they found that surfactant therapy was 70 percent effective in improving respiratory failure in term and near-term babies.

Q. So 30 percent of the time it was ineffective, correct?

A. We agreed earlier that 20 to 30 percent may be ineffective.

Q. Okay. Now, Doctor, let me hold on and make a record of this.

You're referring to an abstract that appears in PubMed authored by a Ramanathan, R-A-M-A-N-A-T-H-A-N, and this was published apparently in 2006, correct?

A. Correct.

Q. So obviously Dr. Lilien couldn't have known about this study in 1999, correct?

A. Correct. There's another study that found significant physiologic improvement with surfactant in near-term infants published in 2000.

Q. Okay. And again this is an abstract from PubMed by a Golombek, G-O-L-O-M-B-E-K, "Effects of Surfactant Treatment and Gas Exchange in Clinical Course in Near-Term Newborns with RDS" published in 2000, correct?

A. Correct.

Q. So again Dr. Lilien couldn't possibly have known about this at the time of Matthew's birth, correct?

A. Correct, he could only have known about the study that included over a thousand babies from all over America.

Q. The Exosurf study we're referring to, correct?

A. Correct.

Q. Okay. And we've talked about this before but you cannot -- well, I'll skip that. We've beat that to death.

Doctor, what's the difference between PO2 levels and

pulse oximetry levels?

A. A PO2 level is usually determined from a blood gas analysis where it's measuring the partial pressure of the gas oxygen in the blood.

The oxygen saturation or the pulse oximeter value measures the percent of red blood cells that are carrying oxygen.

Q. Can you convert one finding to the other? Is there some rough conversion that you can do or how does that work or are they totally separate?

A. Well, clearly you cannot when you deal with high oxygen saturations.

If the saturation is 99 or a hundred percent, you just know the PO2 is high, but it could be anything high; but there is a correlation when you get down to lower saturations.

Q. And where do you have to be in those lower saturations to have a correlation?

A. Well, it's not a perfect correlation. I'll tell you it's recommended that premature babies be kept with a PO2 maybe between 50 and 70 or 50 and 80.

It's recommended that they have oxygen saturations, and here there's not quite as much agreement, but probably

somewhere between 88 and 96.

Q. Okay.

A. Roughly those values correlate. A PO2 of 50 probably correlates with an oximeter in the upper 80s, and a PO2 of 70 or 80 probably is in the mid to high 90s probably for saturation.

Q. Now, a PO2 level is a measure of the oxygen content of the blood, if you allow me to bastardize this a little bit, at a specific moment in time, correct?

A. Correct.

Q. And ABGs from what I understand are usually drawn when a baby's condition -- the vital signs are changing, is that fair in a NICU or are they more routinely done at a scheduled time?

A. It depends upon the attitude of the providers. Some people check them on a very regular basis, some people check them as needed.

Q. Well, when you look at Matthew Wagoner's chart as you're doing now, does it appear that they were doing them -- the PO2 levels on a routine basis or a sporadic basis?

A. (Examining documents) They were ordering them we can say sporadically.

Q. Okay. And a PO2 level's drawn as part of what's

known as an ABG, correct, an arterial blood gas; is that correct, am I right about that?

A. Yes.

Q. Now, are ABGs subject to sampling errors?

A. Generally it depends on how you collect them. If you collect them from an umbilical catheter, there should be very little air. If you have to stick the baby with a needle, it --

Q. Known as a heel stick?

A. Or the radial artery to get an arterial gas, you may get some effect of the procedure. It relates to the Heisenberg uncertainty principle.

Q. I have no idea what --

A. If you know anything about quantum mechanics.

Q. I don't, I hate to say. All right. But you would agree with me that ABGs are subject to some sampling errors; is that correct, is that a fair statement?

A. Not when they were obtained from a catheter.

Q. Can we tell where these were obtained from on Matthew?

A. (Examining documents) He had an umbilical artery catheter in place. I'm sure they --

Q. And you're -- you can tell that from the x-rays, you're looking at the x-rays?

A. Yes, it's very obvious here (indicating).

Q. Okay. Now, those x-rays only go through midnight of August 25th, correct?

A. Correct.

Q. So we can say during the period of time that these x-rays were taken he had an umbilical cord catheter, correct?

A. Well, I can look, I can tell you when they pulled it out. We can probably find that.

Q. Well, don't bother, unless you're very curious about it. I'm not that curious about it.

A. Okay. But the blood gases in question on the 25th, even the one at midnight, came from this arterial catheter.

Q. Well, you don't know that for sure though, right?

A. I have no doubts about that, none.

Q. Well, you weren't there, correct? You don't know what the nurses actually did or the lab personnel actually did, do you?

A. I just can't imagine that they would do anything but take it from the catheter.

Q. Okay. Fair enough.

A. There's no doubt, they had to take this from the catheter.

Q. Fair enough.

A. If not, they were negligent.

Q. ABG's also subject to storage errors, how the blood is stored until the lab actually runs it through their machines?

A. Not if it's done in any reasonable amount of time. If you let it sit for hours, it may.

Q. Does the ABG have to be kept as a certain temperature, the sample for the ABG I should say?

A. Only if it's going to take a significant amount of time before it's run.

Q. Okay.

A. But not if it's run in a timely manner.

Q. And any lab test is subject to technical or processing errors also, correct?

A. Yes.

Q. Okay. And you discussed briefly what a pulse oximeter is and what it does, but is a pulse oximeter monitoring the baby's oxygen saturation continuously?

A. Yes.

Q. And do nurses and did the nurses here record those at a routine scheduled time?

A. Yes. They did both routine recording and intermittent recording.

Q. Okay. And the intermittent recording was when something bad was happening, correct?

A. Usually, yes.

Q. I mean, we never saw one that the nurse made a note that pulse ox is 100, did we?

A. I don't know all the notes, so I can't tell you that.

Q. All right. Well, I'm sure you know the notes for the pulse ox that are low?

A. Yes.

Q. And those stick in your mind as when the nurse would make a separate indication in the medical record what the pulse ox was beside those that they were routinely charting, correct?

A. Yes, that's what happened on the 25th.

Q. Yeah, and I'm only talking now about the 25th.

In your experience as a doctor who's worked in NICUs for many, many years, isn't that typically what the nurses do, they record the pulse oximetry reading every 15 minutes as scheduled and then if they see something bad happening, they record that, too, correct?

A. Yes, that may be it.

Q. Okay. Which is more meaningful in evaluating a baby

over an extended period of time, a continuous pulse oximeter reading or random PO2 levels?

A. What's important to me is the degree of hypoxia that's present.

Q. Okay.

A. It's important to me when I see saturations fall to the 50s and 60s and 70s.

Q. Okay. Now, you talked about earlier prolonged partial hypoxia, correct, is what caused Matthew's problems?

A. Yes.

Q. Let's look at the medical record between the period of 5:40 p.m. when you told me this started until midnight on August 25th as being the time that a postpartum hypoxic event sufficient not only to cause brain damage but to cause cerebral palsy occurred.

Walk me through the record for that period, show me where he experienced brain-damaging PO2 levels.

A. Well, it's both PO2 and it's pulse oximeter.

Q. Okay. Fine. Show me where that occurs.

A. Okay. At 5:40 we have persistent saturations in the 60s and 70s.

Q. And where are you --

A. Persistent.

Q. Where are you getting these from, Doctor?
A. A nursing note, a written nursing note.
Q. Bear with me for a second if you would, please.
A. It's this page.
Q. I know. Now, if you go to the nurse's notes, which appears to be the vital sign assessments?
A. Yes.
Q. At about that time what's she reading on pulse oximetry?
A. There is no reading at that time.
Q. Well, between 5:00 and 6:00 o'clock what's she reading?
A. There's no reading between 5:00 and 6:00; there's a reading at 5:00, there's a reading at 6:00.
Q. Correct. Okay. What's the reading at 5:00?
A. At 5:00 it's 96.
Q. 97, right?
A. No, maybe we're on different pages. I think it's this page.
Q. Oh, you know what, I've got things chopped off. Okay. 96?
A. 96.
Q. And at 6:00 o'clock?

A. 96.

Q. Okay. And you said you couple this with the PO2. What was the PO2 at that time, if there was one done at that time?

A. There was not one done at that time.

Q. Okay. Then keep going, what happens next? By the way, 96 pulse oximetry reading is not an abnormally low level, is it?

A. That's normal, but that's not the time I'm talking about.

Q. I understand that, but you're talking about a prolonged time that -- you told me about during the first deposition and repeated numerous times today about a prolonged time that continued -- continued from 5:40 to midnight, correct?

A. Yes.

Q. Okay.

A. At 6:45, the saturations fall into the 70s.

Q. The PO2 or the pulse ox?

A. The saturations, that's the pulse ox.

Q. Okay. Excuse me for my ignorance of the terminology, but just help me through this.

So she's -- he's fallen to the 70s at what time?

A. 6:45.

Q. 6:45. And between 6:00 and 7:00 p.m. what did the nurse record as this child's pulse oximetry reading?

A. At 6:00 p.m. we already said it's 96. The nurse was not able to record one at 7:00 p.m.

Q. Or failed to record one?

A. Yes.

Q. We don't know. Okay. Go ahead -- and was there a PO2 level done?

A. At 6:20 it was 53, which is very borderline.

Q. Okay. Go on, sir.

A. Then at 7:05 --

Q. Well, wait a minute, there's another entry at 8:55, isn't there?

A. I'm not up to 8:55, I'm still at 7:05.

Q. I'm sorry, there's an entry at 1655 it looks like on the nurse's notes, isn't there?

A. Yes, it's 97 there.

Q. So the pulse oximetry has returned to 97, correct?

A. After they put the chest tube in.

Q. Okay. So that -- well, do we know that's when it happened?

A. Yes, on that same line it says right chest tube

inserted.

Q. Well, do we know that the pulse oximetry came before the chest tube or after the chest tube was inserted?

A. Presumably after.

Q. You're presuming after?

A. Common sense presumes after.

Q. Okay. Well, I don't think anybody's ever accused me of having too much of that.

A. The child's in the 70s, goes up to 97, you would presume they put the chest tube in before it went to 97 and not after.

Q. Okay. So we can say the chest tube was very effective in improving the child's condition, correct?

A. Momentarily. It's not going to last.

Q. Okay. Let's move on. What's the next entry you have?

A. 7:05 p.m. by the doctor. It says oxi, that's the oximeter, dips 50, very dusky. So the doctor's recording numbers and that's written at a time at 7:05 after the chest tube's in.

Q. So she's recording this note after the chest tube's in, correct?

A. At 7:05 she says the oximeter's been in the 50s and

the child is very dusky. Dusky is another term for blue.

Q. Okay. Let me ask you -- well, dusky is not a term for blue, is it? It's a term for lack of pinkness?

A. I think our providers consider it to be a euphemism for poorly oxygenated.

Q. Well, why don't you go back to the vital signs we were looking at.

Do you see where it says on the color, D, dusky; below that it says C, cyanotic?

A. Yes.

Q. So I assume dusky is not blue because it would be the same thing, wouldn't it? D would equal C and it doesn't. Dusky is not the same as cyanotic according to this sheet, correct?

A. You'll have to ask those nurses how they're doing that. Very commonly the two are used interchangeably.

Q. Okay. Let's back up a little bit then. During the period of time the nurse is making these entries we've worked up from 5:00 to -- what time were we at last, 7:00?

A. No, we began at 5:40.

Q. 5:40.

A. And we're at 7:05.

Q. What did she say about this child's color at those

times?

A. The nurse is consistently recording pink, although the nurse -- or the doctor is not writing pink and the nurse is writing other comments.

It says bagged without -- bagged with no improvement in color. That means --

Q. Now, it says without improvement, Doctor, come on, give me a break.

A. Yes, it was without improvement.

Q. But right before there she's talking about pulse oximetries, she's not saying anything about color. Where are you getting color from?

A. It says bagged with no improvement in color.

Q. Oh, I'm sorry, you're down a whole other page. I'm going back up to 5:40.

A. And I'm at 6:45 when the child is noted not to be pink, and yet she keeps putting pink on the flowsheet.

Q. Well, is it possible this child was pinking up and going back to dusky or was momentarily dusky?

A. Yes, it's possible, but it's going on and off for six-and-a-half hours.

Q. Well, let's back up a little and look at this.

Now, the note that you're talking about at 7:05 --

written by Dr. Evangelista was at 7:05 and you just told me that at 6:55 the nurse's notes when the oximetry level went up to 97 that that had to occur after the chest tube, correct?

A. Yes.

Q. So my question is at 7:05 -- and you didn't read Dr. Evangelista's deposition so you wouldn't know what she testified to?

A. I read it earlier but not recently.

Q. All right. But is it reasonable to believe that she wrote this note, timed it at 7:05 after she placed the chest tube?

A. It's possible.

Q. So when she's saying oximetry dips 50, very dusky, is it possible she's referring to what happened before 6:55 when the chest tube was placed?

A. Well, the problem is she says dips in the present tense. She didn't say dipped, past tense.

Q. Well, let me -- let me just advise you that Dr. Evangelista's Filipino and English is not her native language and, Mike will vouch to this, she's a very difficult person to depose because of it.

Now, nonetheless, the point is if you put this together, does it seem more reasonable or not that this note

was recorded after she did the chest tube?

A. Oh, yes.

Q. And wouldn't you do that, wouldn't you -- if you had a baby in trouble, what you considered to require a chest tube, you'd place a chest tube, then you would write your note?

A. The note was written after the chest tube, but that doesn't mean the oxygen dips of 50 were before the chest tube.

Q. But certainly you wouldn't argue with Dr. Evangelista if she said that's what occurred?

A. Well, if she's changing what she wrote in the chart, I won't argue with her; but let's make it clear that she's changing it.

Q. Well, I disagree with what she's changing. She's writing this note at 7:05 and she's saying what she saw and what she did.

A. No, she's saying it in the present tense. And she knows tenses because in the final sentence she says chest tube put in place.

Q. Puts in placed?

A. In placed, she had placed it, past tense, but now --

Q. Well, the proper -- I'm sorry.

A. But she's saying dips. Now, if she wants to say that this is just bad English, fine, she can say that.

Q. All right. So what you're -- how you're interpreting this and you're basing your opinion partially on the fact that after a chest tube's in place this kid has an oximetry dip to 50 and became very dusky after the chest tube, is that what you're telling us?

A. I don't know. I'm saying there are numerous notes in the chart that describe a hypoxic baby, by the doctors, by the nurses.

The doctor's writing numbers lower than the nurses ever wrote. Why didn't the nurses ever write 50s? The nurses left it blank is what they did.

Q. Is it possible that the doctor was told -- well, we're speculating with that. All right. Let's move on.

What happened after 7:05, according to the nurse's notes on the vital sign assessment? Or next, take it whatever order you want.

A. At 8:00 o'clock we have a saturation of 85, which is low. I don't think you'll find anyone telling you that 85 is acceptable. In fact, there's another note --

Q. Well, wait a minute, you told me -- before you go to that, you told me that a pulse ox --

MR. BECKER: You interrupted him again, John. You interrupted him.

BY MR. BULLOCH:

Q. All right. Doctor, you want to continue and I'll just come back to it.

A. There are two nursing notes at 8:00 o'clock. There's another one that says pulse oximeter reading 84, dash, 5 so it's either 84 or 85 but that's written in two different places at 8:00 o'clock.

Q. And where else is it written at 8:00 o'clock?

A. On the flowsheet and in the text.

Q. So we assume at 8:00 o'clock it was up to 85, correct?

A. Or down to 85, depending how you look at it.

Q. Well, good, it was down to 85.

A. I --

Q. Now, you told me earlier, Doctor, that anything -- a PO2 of 50 is equal to mid to 80s on a pulse ox?

A. I said upper 80s.

Q. So this is close to 50 PO2 level?

A. So it's low. This is a low saturation.

Q. Okay. So you're representing to me that 85 is a low -- is equivalent to a low PO2 level?

A. Yes.

Q. Okay. Go on. What happens next?

A. 8:15, saturation is 84. Again low.

Q. And what color is the child at these times, by the way, at both 8:00 o'clock and at 8:15?

A. The nurse records pink.

Q. And what's the child's activity?

A. Sleeping.

Q. Okay. Go on. What comes up next? I believe 2100 is the next.

A. 2100 they have a saturation of 96.

Q. Child's color?

A. I don't know whether that's a D or a P.

Q. Well, with a pulse ox of 96, what would you expect it to be?

A. I don't know, they were writing Ps earlier when the child was blue and dusky, so I don't trust those.

Earlier the child was noted to be very dusky by the doctor but the nurse was putting P.

Q. But, Doctor, you agreed with me that the kid's color could have changed with his pulse oximetry reading, the doctor could have saw the patient as being dusky and moments before he could have been pink, correct?

A. Correct.

Q. Okay.

A. So I would not presume anything about what that scribble is.

Q. All right. Let me ask you this right now, sir. If you have a child with a pulse oximetry reading of 96, do you expect the kid to be pink or blue?

A. Pink.

Q. Okay. What happens next?

A. 10:00 o'clock, oxygen saturation is 92.

Q. And the child's color?

A. Noted to be pink by the nurse.

Q. Okay. And next?

A. 11:00 o'clock, saturation, depending on who you read, is either 89 or 96.

Q. Okay. Now, again, who you read, you're referring to the nurse who wrote 96 on the vital sign assessment, correct?

A. Correct.

Q. And by 89 you're referring to the note that was timed and written by Dr. Evangelista at 11:00 p.m., correct?

A. Correct.

Q. Where she says oximetry dip 89, turned blue?

A. Right.

Q. Okay. So he was somewhere between 96 and 89, correct, you'd give me that, at 11:00 p.m.?

A. Those are the two numbers that we've seen.
Q. Okay.
A. I would think if the child turned blue, it's more consistent with the lower number.
Q. Okay. So you agree with me that from 5:40 to midnight -- by the way, were you done with that exercise?
A. No.
Q. I cut you off.
A. At midnight we have a blood gas with a PO2 of 32.
Q. Okay. Now, you agree with me that between 5:40 and midnight this was not one continuous period of partial hypoxia?
A. That's probably true.
Q. Okay. And, Doctor, going back to this nurse's note, the assessment sheet -- and I'm going to have to look off of yours again, I apologize, but mine got cut off -- at 5:40, first entry after 5:40 -- the first entry at 5:00, correct, that's 5:00?
A. That's 5:00.
Q. I'm reading upside down. Child's activity is what?
A. Active and alert.
Q. Okay. And then an hour later it's what?
A. Sleeping.

Q. And it remained sleeping throughout until midnight?

A. That's hard to believe.

Q. Well, Doctor, I'm asking you what --

A. It's hard to believe that a baby would sleep through two chest tube insertions. It just doesn't happen.

I think there's a problem with this flowsheet. I can't imagine a baby sleeping through two chest tube insertions.

Q. Do you anesthetize the child when you give chest tubes?

A. Local anesthetic.

Q. Okay.

A. But I can't imagine a baby sleeping through that procedure.

Q. All right. Now, the nurse is recording, as she's supposed to, every hour and she's recording what the child's doing predominantly during that hour, correct?

A. Yes.

Q. Okay. So it doesn't say that he didn't wake up during a chest tube anywhere, does it, but it implies that he was sleeping during most of the period of time from 6:00 o'clock to midnight, correct?

A. And I'm saying that is unlikely.

Q. Okay. You can argue with the nurse. She recorded what she recorded, correct?

A. I'm not here to argue with anyone. I'm saying it's unlikely a baby could sleep through this.

Q. All right. Low oxygen saturations I've read make children anxious because they're gasping for breath essentially, right?

A. I don't know if that's true of newborns.

Q. Okay. Dr. Adler -- whose deposition I believe you said you've read?

A. Yes.

Q. Dr. Adler, who's plaintiffs' pediatric neurology expert, stated that in order for a neonate to develop cerebral palsy after a hypoxic event, he would expect to see PO2 levels of 10 or less for a sufficient period of time.

Do you agree or disagree with that?

A. I disagree.

Q. Okay. Now, after -- you told me earlier that after a prolonged hypoxia -- and you told me this during your first deposition.

You told me that after a prolonged hypoxic event that you would expect to see that -- I'm sorry, strike that and I'll start this over.

You told me at the June deposition that after a prolonged hypoxic event that you may or may not see multi-system organ dysfunction; is that correct?

A. You usually do not. With just hypoxia, you usually would not.

Q. Now, is it more likely than not that you at least see one other organ affected?

A. No, I'm not prepared to say that. I don't think so.

Q. Okay. What about seizures after brain damaging hypoxia, are you more likely or less likely to see that?

A. It depends on the degree and duration of hypoxia.

Q. Well, the degree Matthew suffered from.

A. No, I would not have expected him to have seizures.

Q. He ended up with cerebral palsy, right?

A. Yes.

Q. And he ended up with both spastic and athetoid cerebral palsy, right?

A. Yes.

Q. So this hypoxic event had to be sufficient enough not only to hit the white matter but to also hit the gray matter that's normally spared during hypoxia, correct?

A. You'll have to ask a neurologist.

Q. I will do that. You're saying that you would defer to a neurologist on that issue?

A. Yes.

Q. Okay. Have you ever treated a child for carbon monoxide poisoning or near drowning?

A. Not for quite a while. Not recently.

Q. In those children did you see any multi-system organ dysfunction I guess is the term they're using now?

A. I would imagine so, but I don't remember any such cases. I haven't done that in a long time. I'm a newborn doctor.

Q. All right. I'll skip that. Now, after experiencing a hypoxic event sufficient enough not to only cause brain damage but to cause cerebral palsy, would you think it would be more likely than not that there would be EEG changes?

A. That's beyond my field of expertise.

Q. Okay. Certainly you found no evidence of multi-system organ dysfunction in Matthew's medical record, correct?

A. Correct, but I didn't expect to.

Q. Okay. But, for the record, you did not find any evidence of multi-system organ dysfunction, correct?

A. Correct.

Q. You did not find any evidence of seizures?
A. Correct.
Q. And you did not find any evidence of EEG changes, correct?
A. Correct.
Q. Doctor, that's all I have.
A. Thank you.
Q. Thank you very much, sir.
A. It's been a pleasure.
Q. It's been my pleasure.
(Conclusion of proceedings this date.)

C E R T I F I C A T E

I, Karen Pomeroy, a Certified Court Reporter and Notary Public in the State of New Hampshire, do hereby certify that the foregoing is a true and accurate transcript of my stenographic notes of the deposition of Marcus C. Hermansen, MD, who was first duly sworn, taken at the place and on the date hereinbefore set forth.

I further certify that I am neither attorney nor counsel for, nor related to or employed by any of the parties to the action in which this deposition was taken, and further that I am not a relative or employee of any attorney or counsel employed in this case, nor am I financially interested in this action.

THE FOREGOING CERTIFICATION OF THIS TRANSCRIPT DOES NOT APPLY TO ANY REPRODUCTION OF THE SAME BY ANY MEANS UNLESS UNDER THE DIRECT CONTROL AND/OR DIRECTION OF THE CERTIFYING REPORTER.

_____

Karen D. Pomeroy, RPR
NH Certified Court Reporter
No. 71 (RSA 331-B)

CERTIFICATE OFWITNESS

I, Marcus C. Hermansen, MD, do hereby swear/affirm that I have read the foregoing transcript of my testimony and further certify that it is a true and accurate record of my testimony (with the exception of the corrections listed below):

Page	Line	Correction
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Marcus C. Hermansen, MD

Subscribed and sworn to before me this _____ day of _____ 2006.

_____
Notary Public/Justice of the Peace
My Commission Expires: _____