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<p>1 IN THE COURT OF COMMON PLEAS 2 OF CUYAHOGA COUNTY, OHIO 3 ----- 4 KARL MCELFISH, II, etc., 5 Plaintiff, 6 vs. Case No. CV-04-537289 7 MERIDIA MEDICAL 8 GROUP, L.L.C., et al., 9 Defendants. 10 ----- 11 DEPOSITION OF RAYMOND REDLINE, M.D. 12 MONDAY, MARCH 14, 2005 13 ----- 14 Deposition of RAYMOND REDLINE, M.D., 15 a Witness herein, called by the Defendants for 16 examination under the statute, taken before me, 17 Cynthia A. Sullivan, a Registered Professional 18 Reporter and Notary Public in and for the State 19 of Ohio, pursuant to notice and stipulations of 20 counsel, at the offices of University Hospitals 21 Institute of Pathology, 2085 Adelbert Road, 22 Cleveland, Ohio, on the day and date set forth 23 above, at 5:30 p.m. 24 ----- 25</p>	<p>1 RAYMOND REDLINE, M.D., of lawful age, 2 called for examination, as provided by the Ohio 3 Rules of Civil Procedure, being by me first duly 4 sworn, as hereinafter certified, deposed and 5 said as follows: 6 EXAMINATION OF RAYMOND REDLINE, M.D. 7 BY MR. TREU: 8 Q. Doctor, would you give us your full 9 name, please? 10 A. Raymond W. Redline. 11 Q. What is your professional address? 12 A. University Hospitals of Cleveland. 13 Q. What is your profession, Doctor? 14 A. Pediatric pathologist. 15 Q. Doctor, when were you first 16 contacted regarding this case, the McElfish 17 case? 18 A. Correct. 19 Q. When were you first contacted? 20 A. I'm sorry. Shortly before June 18th 21 of 2002. That's when I received the materials 22 to review. 23 Q. You would have gotten a phone call 24 prior to that? 25 A. That's right.</p>
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<p>1 APPEARANCES: 2 On behalf of the Plaintiff: 3 Becker &amp; Mishkind Co., LPA, by 4 MICHAEL BECKER, ESQ. 5 Becker Haynes Building 6 134 Middle Avenue 7 Elyria, Ohio 44035 8 (440) 323-7070 9 George E. Loucas Co., LPA, by 10 GEORGE E. LOUCAS, ESQ. 11 1370 Ontario Street, Suite 1700 12 Cleveland, Ohio 44113 13 (216) 622-1234 14 On behalf of the Defendant Dr. Bailin: 15 Moscarino &amp; Treu, by 16 KRIS H. TREU, ESQ. 17 630 Hanna Building 18 1422 Euclid Avenue 19 Cleveland, Ohio 44115 20 (216) 621-1000 21 On behalf of the Defendant Euclid Hospital: 22 Reminger &amp; Reminger, by 23 CHRISTINE S. REID, ESQ. 24 1400 Midland Building 25 101 West Prospect Avenue Cleveland, Ohio 44115 (216) 687-1311 On behalf of the Defendants Dr. Karasik, Nurse Midwife Beregovskaya, Nurse Midwife Rusga, and Meridia Medical Group via telephone: Reminger &amp; Reminger, by MARILENA DISILVIO, ESQ. 1400 Midland Building 101 West Prospect Avenue Cleveland, Ohio 44115 (216) 687-1311 On behalf of the Defendant Dr. Stine: Gallagher, Sharp, Fulton &amp; Norman, by ANN R. MITCHELL, ESQ. Seventh Floor, Bulkley Building 1501 Euclid Avenue Cleveland, Ohio 44115 (216) 241-5310</p>	<p>1 Q. Do you recall that, or is that just 2 your routine practice? 3 A. That's my routine practice. 4 Q. Do you know who you spoke with? 5 A. I think it was Cathryn Loucas. 6 That's who I had contact with in my early 7 portion of this case. 8 Q. Do you recall that conversation? 9 A. No, I don't. 10 Q. Do you recall the gist of that 11 conversation? 12 A. She asked me to review the case, and 13 I agreed to. 14 Q. Did you request certain materials, 15 or were the materials that were provided to you 16 determined by the lawyer who sent you the 17 records? 18 A. No. I requested materials. I 19 requested all the maternal records, all the 20 neonatal records, and all the pathology slides 21 on the case plus the reports. 22 Q. There is a letter that you have? 23 A. Yes. 24 Q. Can I see that, please? There's a 25 letter here dated June 18th, 2002, from Cathryn</p>

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<p>1 Loucas enclosing certain materials regarding 2 this case. I'd like to have that marked as an 3 exhibit, if you don't mind. 4 MR. TREU: Can we mark that as 5 Exhibit A? 6 ----- 7 (Thereupon, Defendant's Deposition 8 Exhibit A was marked for purposes 9 of identification.) 10 ----- 11 Q. Exhibit A is what? 12 A. This is a letter from Cathryn Loucas 13 accompanying the materials that I had asked to 14 review in the McElfish case. 15 Q. To your knowledge did you receive 16 all these materials with this letter? 17 A. Yes. 18 Q. Have you received any additional 19 materials other than two deposition or two 20 reports I see that were provided to you at a 21 later date? 22 A. That's it. 23 Q. Again, I'm referring to a letter of 24 December 10, 2004, from Mr. Becker in which you 25 were provided copies of reports from</p>	<p>1 records. The first is a surgical pathology 2 report from Meridia Euclid Hospital for the 3 placenta; is that right? 4 A. Correct. 5 Q. Then there appear to be prenatal 6 records on the patient which includes some flow 7 sheet records, prenatal flow; an ultrasound 8 report of June 2nd, 2000; some chemistries and 9 labs from Meridia Euclid; labor and delivery 10 summary; operative note for the delivery; 11 progress notes from the delivery admission; 12 nurse's notes from the delivery admission; some 13 handwritten physician notes from the delivery 14 admission; and that appears to be it. Did I 15 state that accurately? 16 A. Yes. 17 Q. Doctor, I see you've also got some 18 notes that you've made? 19 A. That's right. 20 Q. Can you describe for me what those 21 notes represent? 22 A. Those notes are notes that I made 23 when I reviewed the chart. The first portion 24 are from the mother's chart, there are a few 25 from the baby's chart, and then at the bottom</p>
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<p>1 Dr. Hitchcock and Dr. Gilbert-Barness; correct? 2 A. Correct. 3 Q. I'll give that one back. This 4 letter asks that you please give Ms. Loucas a 5 call when you're ready to discuss your findings 6 and to not prepare a report; is that correct? 7 A. Correct. 8 Q. Did you do that? 9 A. I did. 10 Q. You called her first? 11 A. I did. 12 Q. We've taken a look at your file 13 materials here, and you have one batch of 14 documents there which appear to consist of 15 medical records; is that correct? 16 A. That's right. 17 Q. Those are the records that were 18 contained in the letter from Ms. Loucas; is that 19 right? 20 A. Just a small fraction of the 21 records. The others I discarded. These are 22 just some that have some information that I may 23 need to refer to in the future. 24 Q. I think just for the record I'd like 25 to indicate what I can tell is included in these</p>	<p>1 underneath the horizontal line are my findings 2 in the case. 3 Q. Can I get a copy of one of those 4 copies? Do you have two of those there? 5 A. I do 6 ----- 7 (Thereupon, Defendant's Deposition 8 Exhibit B was marked for purposes 9 of identification.) 10 ----- 11 Q. Exhibit B is your notes; correct? 12 A. Correct. 13 Q. All right. Now, what you've 14 indicated is that the top portion of this page 15 of notes is from mom's chart? 16 A. Correct. 17 Q. The small middle section is from 18 baby's chart? 19 A. I didn't mention. Actually, the top 20 part is from mother and baby's chart, the middle 21 section are actually the pathology reports from 22 other institutions, and then the bottom are my 23 findings. 24 Q. Your findings, fine. Do you know 25 when you did that review?</p>

<p style="text-align: right;">Page 9</p> <p>1 A. Yes. It was in June of '02. 2 Q. Doctor, can you describe your 3 practice for us, please? 4 A. I'm a pediatric pathologist, and 5 about 70 percent of the time I do clinical work, 6 and the other 30 percent I do a combination of 7 teaching and research. 8 Q. Your clinical work, what does that 9 consist of? 10 A. It consists of pediatric pathology 11 including placental pathology and all forms of 12 obstetric pathology and also gynecologic 13 cytology, reading Pap smears. 14 Q. What percentage of your time do you 15 spend reading adult autopsy slides? 16 A. Only when I review maternal deaths. 17 Q. How often? What percentage of your 18 practice is that? 19 A. That would be mostly medical-legal 20 at this point, although during my fellowship I 21 regularly reviewed maternal deaths, about 10 to 22 20 during my fellowship, and then probably 23 another 20 or 30 doing the cases, a combination 24 of medical-legal cases and occasional consult 25 cases from other hospitals. But fortunately,</p>	<p style="text-align: right;">Page 11</p> <p>1 Q. Is the bulk of your practice review 2 of placental slides? 3 A. Right. I'm sorry. I do all of 4 pediatric pathology and GYN cytology, so the 5 placenta is a portion of that, but only one 6 part. 7 Q. The report that you drafted in this 8 case that I have is dated August 26th, 2002? 9 A. Right. 10 Q. Is that the only report that you 11 drafted in this case? 12 A. Yes. 13 Q. Were there any drafts? 14 A. No drafts. 15 Q. Is there anything you wish to amend, 16 modify, or delete in that report? 17 A. No. 18 Q. Does it accurately and completely 19 set forth your findings in this case? 20 A. I think it summarizes what I believe 21 to be the main findings. I wouldn't say they 22 are my only findings, but they are the ones that 23 I felt were most important. 24 Q. When you get a case like this, 25 Doctor, you got the slides and the records at</p>
<p style="text-align: right;">Page 10</p> <p>1 maternal deaths are not very frequent, so it's 2 not a large percentage of my practice. 3 Q. Just in terms of just overall adult 4 autopsy slides, is it only in the scope of 5 maternal death cases that you will review adult 6 autopsy slides? 7 A. Yes, at this point. Although I'm 8 fully trained in adult autopsy, I don't practice 9 it anymore. 10 Q. Understood. I'm just trying to get 11 a handle on how often you end up looking at 12 these kinds of slides. Can you quantify it for 13 me at all in your practice? 14 A. Right. About 20 to 30 cases 15 reviewed since 1990. 16 Q. Prior to this particular case, when 17 was the next last or next prior one you 18 reviewed? 19 A. I can't really say, but it was 20 within the last two or three years. 21 Q. Okay. Can you give me an idea of 22 say in the past five years how many have you 23 reviewed? 24 A. Just a handful of cases, less than 25 five.</p>	<p style="text-align: right;">Page 12</p> <p>1 the same time, as I recall? 2 A. (Indicating.) 3 Q. In what order do you do things? 4 A. I always review the records first, 5 and I always start with the prenatal records and 6 the maternal OB history, then the labor and 7 delivery, and then the baby's chart. Then I 8 look at the other pathology reports to get some 9 basic factual information, numbers and weights, 10 and then I look at the slides. 11 Q. Why is that? 12 A. Because I really can't interpret the 13 pathology without knowing what the problem is. 14 I need to know the clinical context much the 15 same way that the coroner always gets a clinical 16 history and a police report before he actually 17 does the autopsy. 18 Q. So you were fully aware that this 19 was a death case when you reviewed the slides? 20 A. Absolutely, yes. 21 Q. And you had information, clinical 22 information, before you looked at the slides? 23 A. Yes. Even without the clinical 24 history, I would have known it was a death when 25 I looked at the slides.</p>

<p style="text-align: right;">Page 13</p> <p>1 Q. I guess so. You knew it was a 2 lawsuit? 3 A. I did. 4 Q. Were you aware when you reviewed the 5 slides that there was a partial placental 6 abruption in the case? 7 A. Well, yes. I read the history that 8 relates to the abruption. I think it's a 9 relatively small abruption, in my opinion, but 10 yes, I read that. 11 Q. The slides that you reviewed in this 12 case, do you know how many there were and how 13 many were from each organ? Is that in your 14 notes? 15 A. Yes. Yes. It's actually in the 16 report -- well, actually I didn't enumerate. 17 Q. I don't believe it is in the report. 18 A. Right. I reviewed four slides from 19 the placenta; and yeah, I don't see anywhere 20 here where I've stated the number from the 21 autopsy that were reviewed, but I reviewed the 22 entire set of slides from the autopsy. 23 Q. But you can't tell us as we sit here 24 today how many you got from the lungs, how many 25 from the heart, how many from the liver, et</p>	<p style="text-align: right;">Page 15</p> <p>1 A. Indicative means a constellation of 2 findings that together overwhelmingly suggest a 3 certain scenario or clinical diagnosis, so 4 greater than a 95 percent chance or something 5 like that. 6 Q. And suggestive of? 7 A. Suggestive of means probably what 8 lawyers talk about when they say more likely 9 than not, so 50 percent, greater than a 10 50 percent probability, but certainly not a 11 definite. 12 Q. You have the autopsy in the case? 13 A. I do. 14 Q. Do you agree with the microscopic 15 description of the organs in that report? 16 A. There are no findings here I 17 disagree with. I had additional findings as 18 well. 19 Q. With respect to the heart, Doctor, 20 did you find a 2 centimeter area of interstitial 21 fibrosis on the heart in this case? 22 A. Well, what I've written down here 23 are the findings that I thought were important 24 to the case. I haven't written down every 25 single diagnosis in the case, and I did not note</p>
<p style="text-align: right;">Page 14</p> <p>1 cetera, or the total number? 2 A. That's correct. Whatever was 3 sampled at the time of the autopsy, correct, 4 which may be in the autopsy report. 5 Q. Doctor, you used certain terms in 6 your report, and I want to ask you if you can 7 tell us what you mean by these terms. I see the 8 terms diagnostic of, indicative of, and 9 suggestive of. Can I presume that those are 10 carefully selected words on your part? 11 A. Yes. 12 Q. When you say diagnostic of, what do 13 you mean by that? 14 A. Well, diagnostic of generally 15 means -- and I think that I actually don't see 16 in my report where I've used it. 17 Q. I think I can point it out to you. 18 In the comments section you talk about 19 diagnostic of superimposed severe preeclampsia. 20 A. Right. When I say diagnostic of I 21 mean there's a histologic finding that even 22 without the clinical history would allow me to 23 make a clinical diagnosis because that finding 24 is only found with that clinical syndrome. 25 Q. What do you mean by indicative of?</p>	<p style="text-align: right;">Page 16</p> <p>1 it although -- is it mentioned in the coroner's 2 report? I'm not sure if it is or not. Hold on. 3 Yes, it was noted in the coroner's report, so I 4 didn't disagree with that. 5 Q. Is a finding of a 2 centimeter area 6 of interstitial fibrosis on the heart consistent 7 with ischemic injury predating the time of 8 delivery? 9 A. There are other causes of fibrosis. 10 It can be inflammatory or infectious, it can 11 develop chronically due to wear and tear, it 12 could be due to an old infarct, but it 13 definitely is due to some damage to the heart. 14 Q. You make mention in your report of 15 myocardial hypertrophy. Can you tell me what 16 slides showed this myocardial hypertrophy? Have 17 you identified that? 18 A. That would be the slides of the 19 heart. 20 Q. Do you know did you indicate 21 anywhere in your notes what slides of the heart? 22 A. No. As we discussed before, I 23 didn't identify the specific slides, but I 24 certainly can find them again and photograph 25 them.</p>

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<p>1 Q. Do you still have the slides?</p> <p>2 A. I don't believe so, but it's</p> <p>3 possible.</p> <p>4 Q. Did you have any prepregnancy blood</p> <p>5 pressures available to you when you did your</p> <p>6 report?</p> <p>7 A. I have some notes on prepregnancy</p> <p>8 blood pressures, yes.</p> <p>9 Q. Where are they?</p> <p>10 A. They are on that sheet of notes that</p> <p>11 I have here.</p> <p>12 Q. Can you show me those?</p> <p>13 A. Sure. The first one I have is the</p> <p>14 one at the time of screening and prenatal care</p> <p>15 which was 130 over 80, and then shortly after in</p> <p>16 September I have 150 over 90 with a protein of</p> <p>17 one plus, and then I have on 8-21 at 156 over</p> <p>18 102 with two plus protein. Then I have -- the</p> <p>19 next one I have is admission on 9-16, 195 over</p> <p>20 105.</p> <p>21 Q. I appreciate all that. My question,</p> <p>22 however, is did you have any prepregnancy</p> <p>23 information as to her blood pressures?</p> <p>24 A. I'm sorry. I misunderstood you. I</p> <p>25 thought you meant predelivery. No. The</p>	<p>1 coming from?</p> <p>2 A. I think they are adjusting for the</p> <p>3 woman's body weight.</p> <p>4 Q. What is more accurate?</p> <p>5 A. Well, adjusting for body weight,</p> <p>6 when you have obese women, sometimes they have</p> <p>7 underlying chronic hypertension. When you take</p> <p>8 an average of all of the blood pressures for</p> <p>9 obese women, you're going to include some women</p> <p>10 who have chronic hypertension. So it's</p> <p>11 controversial if you should use as the normal</p> <p>12 the normal for a normal body weight or you</p> <p>13 should include a group of women who have an</p> <p>14 increased risk for disease associated with</p> <p>15 hypertension and other problems, but that's</p> <p>16 where the numbers come from.</p> <p>17 Q. In any event, to the extent that</p> <p>18 there was an enlarged heart you would agree that</p> <p>19 it was mild?</p> <p>20 A. Right. But it wasn't only the</p> <p>21 weight. It was also the thickness of the left</p> <p>22 ventricle and the presence of focal myocytic</p> <p>23 hypertrophy.</p> <p>24 Q. You noted that the other</p> <p>25 pathologists in this case didn't find the</p>
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<p>1 screening blood pressure at the time of prenatal</p> <p>2 care is usually considered to be a prepregnancy</p> <p>3 blood pressure, but it's not strictly</p> <p>4 prepregnancy.</p> <p>5 Q. Did you find any vascular changes</p> <p>6 associated with hypertension in your review?</p> <p>7 A. No.</p> <p>8 Q. You noted a mildly enlarged heart?</p> <p>9 A. Correct.</p> <p>10 Q. You indicated that you would expect</p> <p>11 a 250 gram heart?</p> <p>12 A. Correct.</p> <p>13 Q. I've heard different things about</p> <p>14 that. That sounds low to me. Why isn't the</p> <p>15 normal 350 to 375?</p> <p>16 A. Well, that's the published data in a</p> <p>17 book that we use in our institution for normal</p> <p>18 values for a woman's heart at autopsy.</p> <p>19 Q. What is?</p> <p>20 A. 250.</p> <p>21 Q. 250?</p> <p>22 A. Right.</p> <p>23 Q. You saw the reports of the other</p> <p>24 pathologists in this case, and they both</p> <p>25 indicated 350 to 375. Do you know where that's</p>	<p>1 hypertrophy?</p> <p>2 A. Everyone is entitled to their</p> <p>3 opinion, but the numbers that I have for normal</p> <p>4 for thickness of the left ventricle are 8 to</p> <p>5 12 millimeters, and what I measured on the slide</p> <p>6 was 1.4 or 14 millimeters, and there's always</p> <p>7 some shrinkage with formalin fixation. So I</p> <p>8 think that it's definitely thickened, the left</p> <p>9 ventricle, and I saw myocyte hypertrophy, and</p> <p>10 I'll be glad to illustrate it.</p> <p>11 Q. Did you take any --</p> <p>12 A. No.</p> <p>13 Q. -- slides or photos when you did</p> <p>14 your --</p> <p>15 A. No.</p> <p>16 Q. Did you find that myocardial</p> <p>17 thickening throughout the ventricle?</p> <p>18 A. No. It's actually that's a</p> <p>19 measurement for the thickest portion of the left</p> <p>20 ventricle. It's usually taken at the base of</p> <p>21 the heart, so if this section wasn't taken at</p> <p>22 the base of the heart, it may have been even</p> <p>23 thicker at the base of the heart.</p> <p>24 Q. Do you know where it was taken from?</p> <p>25 A. No. Somewhere in the middle of the</p>

<p style="text-align: right;">Page 21</p> <p>1 left ventricle.</p> <p>2 Q. Given that it was 14 and normal is 8</p> <p>3 to 12, would you describe it as mildly</p> <p>4 thickened?</p> <p>5 A. Yes.</p> <p>6 Q. Can that be from an acute and</p> <p>7 chronic process?</p> <p>8 A. I think that an acute process could</p> <p>9 contribute to that, yes.</p> <p>10 Q. Did you reach a conclusion as to</p> <p>11 whether it was acute or chronic?</p> <p>12 A. Well, first of all, it was my fourth</p> <p>13 finding, and I thought that the findings were</p> <p>14 only suggestive of it and not definitive, and I</p> <p>15 thought it was only mild.</p> <p>16 Q. When you put your findings in</p> <p>17 numerical order, is there some reason for that?</p> <p>18 A. Right. Yes. In this particular</p> <p>19 case, the order of the finding is first I listed</p> <p>20 what I thought was the most important underlying</p> <p>21 problem, second was what I thought was the</p> <p>22 approximate cause of death, third was the</p> <p>23 contributing cause of death, and fourth was</p> <p>24 another associated finding. The only</p> <p>25 significance of chronic hypertension in this</p>	<p style="text-align: right;">Page 23</p> <p>1 A. No, not at all.</p> <p>2 Q. The finding of liver necrosis in the</p> <p>3 case, are similar findings found in patients who</p> <p>4 suffer from shock?</p> <p>5 A. No. This pattern of periportal</p> <p>6 necrosis is very typical for HELLP or severe</p> <p>7 preeclampsia. In patients with shock, they get</p> <p>8 central lobular necrosis.</p> <p>9 Q. Just again just to be clear, is it</p> <p>10 indicative of preeclampsia but not necessarily</p> <p>11 HELLP?</p> <p>12 A. Well, HELLP means elevated liver</p> <p>13 enzymes, so it's indicative of that syndrome.</p> <p>14 All of the elements of the HELLP syndrome were</p> <p>15 met in this case.</p> <p>16 Q. What are those elements?</p> <p>17 A. Hemolysis, elevated liver enzymes,</p> <p>18 low platelets. I say low platelets, that's the</p> <p>19 one I'm not sure of. Actually, yes, they went</p> <p>20 down to 79.</p> <p>21 Q. What were your findings in the</p> <p>22 lungs?</p> <p>23 A. My findings in the lungs were that</p> <p>24 there was an acute capillaritis, what we call</p> <p>25 white cell thrombi, there were platelet fibrin</p>
<p style="text-align: right;">Page 22</p> <p>1 case is that it increased the risk of getting</p> <p>2 preeclampsia.</p> <p>3 Q. You found renal -- I'm going to</p> <p>4 butcher this -- glomerular endotheliosis?</p> <p>5 A. Yes.</p> <p>6 Q. Can we agree that that is indicative</p> <p>7 of preeclampsia?</p> <p>8 A. Yes.</p> <p>9 Q. Not necessarily HELLP?</p> <p>10 A. No. It has nothing to do with</p> <p>11 HELLP.</p> <p>12 Q. Acute renal tubular necrosis is</p> <p>13 another one of your findings in the case?</p> <p>14 A. Right.</p> <p>15 Q. Do I understand correctly that this</p> <p>16 results from reduced blood flow to the kidney?</p> <p>17 A. Correct.</p> <p>18 Q. This can result from shock and</p> <p>19 cardiac arrest regardless of cause?</p> <p>20 A. Correct.</p> <p>21 Q. It is not diagnostic of HELLP?</p> <p>22 A. I don't even think I listed it under</p> <p>23 HELLP as one of the findings.</p> <p>24 Q. So the answer would be it is not</p> <p>25 diagnostic of HELLP?</p>	<p style="text-align: right;">Page 24</p> <p>1 thrombi, there was an increase in alveolar</p> <p>2 macrophages, and there was dilatation of the</p> <p>3 pulmonary veins. I did not disagree with any of</p> <p>4 the coroner's findings.</p> <p>5 Q. I'm going to ask you to go through</p> <p>6 those again because I couldn't keep up with you.</p> <p>7 A. Acute capillaritis which is just a</p> <p>8 term meaning aggregates of white cells in the</p> <p>9 capillaries, platelet fibrin thrombi indicative</p> <p>10 of disseminated intravascular coagulation, an</p> <p>11 increase in alveolar macrophages mild.</p> <p>12 Q. What is that?</p> <p>13 A. That's a change you see with</p> <p>14 congestive heart failure. And pulmonary venous</p> <p>15 dilatation.</p> <p>16 Q. Take me back to the platelet fibrin</p> <p>17 thrombi again. What was that?</p> <p>18 A. Those were in the capillaries, and</p> <p>19 those are indicative of DIC.</p> <p>20 Q. You say you did not disagree with</p> <p>21 any of the findings from the autopsy?</p> <p>22 A. Correct.</p> <p>23 Q. Including the focal acute</p> <p>24 bronchopneumonia?</p> <p>25 A. Correct.</p>

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<p>1 Q. Pulmonary atelectasis?</p> <p>2 A. Correct.</p> <p>3 Q. And trophoblastic emboli?</p> <p>4 A. Correct.</p> <p>5 Q. What are those trophoblastic emboli</p> <p>6 indicative of, suggestive of, or diagnostic of?</p> <p>7 A. Pregnancy, diagnostic of pregnancy.</p> <p>8 Q. That's it?</p> <p>9 A. Yes.</p> <p>10 Q. What are trophoblasts?</p> <p>11 A. Trophoblasts are the cells that</p> <p>12 surround the villi and that are bathed in</p> <p>13 maternal blood in the placenta.</p> <p>14 Q. Syncytiotrophoblasts?</p> <p>15 A. Right.</p> <p>16 Q. What are those?</p> <p>17 A. Those are the cells that line the</p> <p>18 villi are called syncytiotrophoblasts.</p> <p>19 Q. Did you find fetal and placental</p> <p>20 derived emboli within the venous vasculature of</p> <p>21 the lung?</p> <p>22 A. I found trophoblasts in the</p> <p>23 capillaries of the lung as you do in all</p> <p>24 pregnancies.</p> <p>25 Q. Did you find squamous cells?</p>	<p>1 embedded in a small globule of sort of mucousy</p> <p>2 material. Sometimes you see hair as well, but</p> <p>3 that's really uncommon.</p> <p>4 Q. So it's the squamous cells that you</p> <p>5 look for initially?</p> <p>6 A. Correct.</p> <p>7 Q. Do you find squamous cells in the</p> <p>8 lungs in any other conditions other than</p> <p>9 pulmonary emboli, or I'm sorry, amniotic</p> <p>10 embolus?</p> <p>11 A. None that I can think of offhand.</p> <p>12 Q. Are you familiar with amniotic fluid</p> <p>13 embolus?</p> <p>14 A. Very familiar.</p> <p>15 Q. Have you ever diagnosed it?</p> <p>16 A. I have.</p> <p>17 Q. Can you tell me on how many</p> <p>18 occasions?</p> <p>19 A. I was an OB resident, so we had a</p> <p>20 couple of patients while I was doing my</p> <p>21 residency, and my second child. After the birth</p> <p>22 of my second child, my wife had an amniotic</p> <p>23 embolus which our obstetrician and I diagnosed</p> <p>24 together.</p> <p>25 Q. And she got through it?</p>
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<p>1 A. No fetal squamous cells.</p> <p>2 Q. No fetal squamous cells?</p> <p>3 A. No.</p> <p>4 Q. Did you disagree then with</p> <p>5 Dr. Hitchcock and Dr. Gilbert-Barness?</p> <p>6 A. Yes. I disagree with them.</p> <p>7 Q. So I take it then you don't agree</p> <p>8 that there was an amniotic fluid embolus in this</p> <p>9 case?</p> <p>10 A. Right. I think that the clinical</p> <p>11 information is completely inconsistent with</p> <p>12 amniotic fluid embolus, and I didn't see any</p> <p>13 pathologic evidence for it, either.</p> <p>14 Q. Okay. Let's just talk about the</p> <p>15 pathologic findings. What would you look for?</p> <p>16 A. The most common findings in cases of</p> <p>17 amniotic fluid embolus is no finding at all</p> <p>18 because it's very rare to be able to identify</p> <p>19 fetal cells in the capillaries. I can count on</p> <p>20 one hand the number of cases where I've seen</p> <p>21 them in over 20 cases of pretty well-documented</p> <p>22 clinically amniotic fluid embolus. But in the</p> <p>23 cases where you do see something, what you see</p> <p>24 are you see little aggregates of squamous cells</p> <p>25 that adhere to one another and are sort of</p>	<p>1 A. She did, yes.</p> <p>2 Q. Great. So you had a couple during</p> <p>3 your residency?</p> <p>4 A. Clinical cases.</p> <p>5 Q. And then with your second child, how</p> <p>6 did you diagnose it?</p> <p>7 A. In all cases it's the same. Either</p> <p>8 before, slightly before delivery, or at the time</p> <p>9 of delivery there's a sudden cardiopulmonary</p> <p>10 arrest followed shortly thereafter by a massive</p> <p>11 DIC where blood comes pouring out of every</p> <p>12 orifice.</p> <p>13 Q. What about this case does not fit</p> <p>14 that picture?</p> <p>15 A. The deterioration doesn't occur</p> <p>16 until hours after the delivery when the amniotic</p> <p>17 fluid is no longer present.</p> <p>18 Q. When did the deterioration occur in</p> <p>19 this case?</p> <p>20 A. Well, the blood pressures begin to</p> <p>21 go down shortly after the patient is given</p> <p>22 apresoline at about 2:00 in the morning. They</p> <p>23 stay down. The patient does relatively well</p> <p>24 until about 3:30 when she becomes dyspneic,</p> <p>25 cyanotic, and eventually arrests at 3:48.</p>

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<p>1 Q. When did she deliver?</p> <p>2 A. She delivered at 1:18.</p> <p>3 Q. So why does that not fit?</p> <p>4 A. Well, as I said before, it has to</p> <p>5 happen at the time when there's amniotic fluid</p> <p>6 in the uterus. The last time there was amniotic</p> <p>7 fluid in this uterus was 1:18. So mothers don't</p> <p>8 go for two hours or two-and-a-half hours</p> <p>9 afterwards and then arrest at that point.</p> <p>10 There's no amniotic fluid to embolize.</p> <p>11 It's a sudden process. What happens</p> <p>12 is the placenta begins to peel off the uterus,</p> <p>13 and some of the amniotic fluid slips behind the</p> <p>14 placenta and gets sucked up in those maternal</p> <p>15 veins. Once the placenta is delivered and</p> <p>16 there's no amniotic fluid, then you can no</p> <p>17 longer have an amniotic fluid embolus.</p> <p>18 Q. I thought I heard you say it</p> <p>19 happened hours after delivery.</p> <p>20 A. Correct. Two-and-a-half hours was</p> <p>21 the deterioration. Amniotic fluid embolus only</p> <p>22 happens --</p> <p>23 Q. You misunderstood my question. I'm</p> <p>24 sorry. I don't mean to interrupt you. I</p> <p>25 thought I heard you say that the entity usually</p>	<p>1 should be a sudden acute event very close in</p> <p>2 time to the delivery before the placenta is</p> <p>3 removed?</p> <p>4 A. It has to be, yes. And then the</p> <p>5 other thing that doesn't fit is that the</p> <p>6 hypotension precedes the arrest by hours. The</p> <p>7 hypotension begins at 2:30, the dyspnea doesn't</p> <p>8 start until 3:33, and then the arrest doesn't</p> <p>9 happen until 3:48. That's not generally the way</p> <p>10 it happens with amniotic fluid embolus.</p> <p>11 Everything happens at once.</p> <p>12 Q. Is hypertension a symptom of</p> <p>13 amniotic fluid embolism?</p> <p>14 A. No.</p> <p>15 Q. Would you agree with the statement</p> <p>16 that the diagnosis of amniotic fluid embolism</p> <p>17 has traditionally been made at autopsy when</p> <p>18 squamous cells are found in the maternal</p> <p>19 vasculature of the lungs?</p> <p>20 A. No, I wouldn't. Most cases are</p> <p>21 clinical diagnosis. As I said before, it's very</p> <p>22 rare to be able to document the squamous cells</p> <p>23 in the lungs.</p> <p>24 Q. Does this patient's DIC fit with an</p> <p>25 amniotic fluid embolism?</p>
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<p>1 presents hours after delivery.</p> <p>2 MR. BECKER: No.</p> <p>3 A. No. Before delivery.</p> <p>4 Q. Before delivery?</p> <p>5 A. But usually right at the time of</p> <p>6 delivery. When it occurs not at the time of</p> <p>7 delivery it's always before delivery.</p> <p>8 Q. Are there any presenting symptoms</p> <p>9 before the person crashes, or is it a sudden and</p> <p>10 acute event?</p> <p>11 A. It's a sudden and acute event.</p> <p>12 Q. Do these patients first become</p> <p>13 dyspneic?</p> <p>14 A. In my experience, yes.</p> <p>15 Q. Did this patient become dyspneic</p> <p>16 prior to delivery?</p> <p>17 A. Prior to delivery?</p> <p>18 Q. Yes.</p> <p>19 A. I don't have that in my notes. If</p> <p>20 that's the case, then I didn't know that.</p> <p>21 Q. Well, taking out the pathologic</p> <p>22 findings, just the clinical part of it, is it</p> <p>23 the timing that doesn't fit in this case?</p> <p>24 A. Exactly.</p> <p>25 Q. So what you're saying is that it</p>	<p>1 A. The DIC could be due to</p> <p>2 preeclampsia, abruption, amniotic fluid embolus,</p> <p>3 blood loss, ARDS, pulmonary embolus. There are</p> <p>4 more possible causes of DIC in this case. To me</p> <p>5 the main ones are preeclampsia and hypotension.</p> <p>6 Q. I want to look at your comment</p> <p>7 section of your report, if we could, please.</p> <p>8 Have you got it?</p> <p>9 A. I do.</p> <p>10 Q. You indicate that the findings, your</p> <p>11 findings, are suggestive of underlying chronic</p> <p>12 hypertension?</p> <p>13 A. Correct.</p> <p>14 Q. Again, from your prior testimony,</p> <p>15 does that mean you believe that it was greater</p> <p>16 than 50 percent that this patient had chronic</p> <p>17 hypertension?</p> <p>18 A. Yes.</p> <p>19 Q. That's based on what again?</p> <p>20 A. The finding of increased heart</p> <p>21 weight, left ventricular hypertrophy, and</p> <p>22 myocyte hypertrophy.</p> <p>23 Q. None of those are diagnostic of that</p> <p>24 condition?</p> <p>25 A. Correct. And then I would comment</p>



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<p>1 that a 50 percent chance to me isn't a strong 2 chance. It's just -- it's almost like flipping 3 a coin.</p> <p>4 Q. Right. I was going to say, as I 5 say, you described diagnostic as a definite, 6 indicative of as a high percentage, and 7 suggestive of you're telling me is a coin toss?</p> <p>8 A. Right. As I said, chronic 9 hypertension isn't really important in any of my 10 conclusions regarding the case either except 11 that it increases the risk of the patient 12 getting preeclampsia in the first place.</p> <p>13 Q. So just so we're clear, I need to 14 find this out before we get out of here today, 15 and that is, by saying suggestive of underlying 16 chronic hypertension, would you come into court 17 and testify that it was a probability that this 18 was the case or a possibility?</p> <p>19 A. I think I would say a strong 20 possibility. I don't want to come across too 21 strong on that, but I think there are a number 22 of findings.</p> <p>23 Q. That's fair. We just need to be on 24 the same page.</p> <p>25 A. That's fine.</p>	<p>1 hypertension close to delivery and the body 2 getting used to that degree of hypertension and 3 then the sudden hypotension can throw the heart 4 into dysfunction. It's not getting enough 5 pressure.</p> <p>6 Q. When you say the recent hypotension 7 begins at least six hours prior to death, are 8 you referring to the hypotension that occurred 9 shortly after delivery?</p> <p>10 A. What I'm referring to are the 11 pathologic findings of acute tubular necrosis 12 and myocardial necrosis, the subendocardial 13 myocyte necrosis, and that corresponds to the 14 time of hypotension that begins approximately an 15 hour and ten minutes after delivery.</p> <p>16 Q. Did you know or know of 17 Dr. Hitchcock from Ohio State?</p> <p>18 A. No. I don't know him.</p> <p>19 Q. How about Dr. Gilbert-Barness?</p> <p>20 A. Yes. I know her.</p> <p>21 Q. How do you know her?</p> <p>22 A. Well, I'm writing a chapter in her 23 textbook is one way, but she's been a member of 24 the Society of Pediatric Pathology for years, 25 and I've heard her present and chatted with her</p>
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<p>1 Q. There's no question this patient had 2 severe preeclampsia at least late in the 3 pregnancy at the time she presented for the 4 delivery admission?</p> <p>5 A. Correct, and had hypertension as 6 early as August 21st. So either chronic 7 hypertension or preeclampsia, take your pick.</p> <p>8 Q. There were times she was 9 hypertensive and times she was not?</p> <p>10 A. Right. But 156 over 102 isn't 11 subtle hypertension. She was significantly 12 hypertensive a month before her delivery.</p> <p>13 Q. At least when that reading was 14 taken?</p> <p>15 A. Fair enough. Fair enough.</p> <p>16 Q. There were also numerous readings 17 when she was not hypertensive; do you agree with 18 that?</p> <p>19 A. Yes.</p> <p>20 Q. The congestive heart failure, to 21 what do you attribute that finding if at all?</p> <p>22 A. Right. Well, I think that fluid 23 overload may have played some role in it. 24 Second, I think that the effect of whether it 25 was chronic hypertension or exacerbated</p>	<p>1 at meetings.</p> <p>2 Q. Does she have a good reputation in 3 the community?</p> <p>4 A. Absolutely. As a pediatric 5 pathologist, she's one of the leaders.</p> <p>6 MS. DISILVIO: I'm sorry to 7 interrupt. Can we take a quick two-minute 8 break?</p> <p>9 MR. TREU: Sure.</p> <p>10 MS. DISILVIO: Thanks. 11 (Brief recess.)</p> <p>12 Q. Doctor, you won't be offering any 13 opinions on the standard of care in this case; 14 will you?</p> <p>15 A. No.</p> <p>16 Q. Are there any other reasons you can 17 find from your review of the records and the 18 pathology in this case for Mrs. McElfish's mild 19 cardiomegaly and chronic hypertension?</p> <p>20 A. No.</p> <p>21 Q. Are there other reasons for her 22 ventricular cardiomyocyte hypertrophy other than 23 chronic hypertension?</p> <p>24 A. No. Well, I mean, there are other 25 potential reasons, sure.</p>

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<p>1 Q. What are those?</p> <p>2 A. If she had a myocarditis or</p> <p>3 something, her heart may have had to work harder</p> <p>4 and had some hypertrophy of the nuclei. I</p> <p>5 didn't see any evidence of myocarditis at the</p> <p>6 autopsy, but there were other potential</p> <p>7 explanations that just weren't found at autopsy.</p> <p>8 Q. Are you going to offer an opinion to</p> <p>9 a degree of probability as to the time frame of</p> <p>10 Mrs. McElfish's hypertension?</p> <p>11 A. We haven't gotten into that. The</p> <p>12 only basis I would have for that pathologically</p> <p>13 is just looking at the placenta which we didn't</p> <p>14 discuss. It has changes consistent with</p> <p>15 uteroplacental underperfusion, and I think</p> <p>16 that's at least a week, a week or more prior to</p> <p>17 the delivery to get that kind of pathology.</p> <p>18 Q. Let's talk a little bit about the</p> <p>19 placenta now that you bring it up. I'm flipping</p> <p>20 papers since I don't have a table or desk to</p> <p>21 work with here. That was a dig.</p> <p>22 You found a relatively large, mature</p> <p>23 placenta, 640 grams?</p> <p>24 A. Correct.</p> <p>25 Q. Is that of any significance to your</p>	<p>1 underperfusion?</p> <p>2 A. Preeclampsia, chronic hypertension,</p> <p>3 diabetes, connective tissue disease.</p> <p>4 Q. Can it be a result of an old</p> <p>5 placenta, a placenta that has been there too</p> <p>6 long?</p> <p>7 A. No.</p> <p>8 Q. The remote villous infarct, is that</p> <p>9 consistent with any other findings?</p> <p>10 A. No.</p> <p>11 Q. What are syncytial knots?</p> <p>12 A. Well, the nuclei are surrounded by</p> <p>13 syncytiotrophoblasts, and they usually grow and</p> <p>14 are shed, and they end up in the lungs. When</p> <p>15 you decrease the oxygen tension in the</p> <p>16 intervillous space, then the cells begin to die</p> <p>17 more quickly. So they ball up into these little</p> <p>18 knots, and then they pass into the circulation,</p> <p>19 and more trophoblasts grow to replace them. So</p> <p>20 an increase in syncytial knots means there is an</p> <p>21 increase in turnover of trophoblasts due to</p> <p>22 hypoxia which is due to the decreased perfusion</p> <p>23 by the mother.</p> <p>24 Q. Is there any significance to the</p> <p>25 fact that these were focally increased as</p>
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<p>1 findings in this case?</p> <p>2 A. No, not really. Placentas that are</p> <p>3 large are actually a risk factor for</p> <p>4 preeclampsia, number one. Women who are</p> <p>5 overweight are more likely to have large</p> <p>6 placentas. Women who have a metabolic syndrome,</p> <p>7 quote, chronic hypertension, gestational</p> <p>8 diabetes, hypolipidemia, are more likely to have</p> <p>9 large placentas. Those are some of the risk</p> <p>10 factors. There are others, too.</p> <p>11 Q. Does it have any bearing on the</p> <p>12 incidence of placental abruption, the size of</p> <p>13 the placenta?</p> <p>14 A. Not to my knowledge. I've never</p> <p>15 seen an association.</p> <p>16 Q. Your second finding on the placenta</p> <p>17 is, change is consistent with mild</p> <p>18 uteroplacental underperfusion, and what is after</p> <p>19 that, the findings that are consistent?</p> <p>20 A. Correct, three findings.</p> <p>21 Q. That includes the villous infarct,</p> <p>22 locally increased syncytial knots?</p> <p>23 A. Yes.</p> <p>24 Q. Increased perivillous fibrin with</p> <p>25 X-cells. What are the causes of uteroplacental</p>	<p>1 opposed to globally increased?</p> <p>2 A. Right. In a preterm placenta, it's</p> <p>3 very easy to see an increase in syncytial knots</p> <p>4 because they are not there normally. In a term</p> <p>5 placenta there are always some syncytial knots.</p> <p>6 So what we're looking for is some areas of the</p> <p>7 placenta that have more than others. So when I</p> <p>8 say focally increased syncytial knots, I mean</p> <p>9 there are areas of the placenta that are</p> <p>10 underperfused relative to other areas, so one</p> <p>11 part of the placenta is serving as a control for</p> <p>12 other areas of the placenta.</p> <p>13 Q. Why do you get this focal increase?</p> <p>14 A. Blood gets into the placenta through</p> <p>15 80 spiral arteries. Some of them are working</p> <p>16 okay, and some of them aren't, and there's</p> <p>17 always variation in how much blood is getting</p> <p>18 in. In a normal pregnancy, you would expect</p> <p>19 that most of them are functioning well. In a</p> <p>20 placenta with maternal underperfusion, a good</p> <p>21 percentage of them aren't functioning well, and</p> <p>22 the ones that can't help each other, where</p> <p>23 there's no sharing of the blood, the villi are</p> <p>24 going to have more syncytial knots than those</p> <p>25 where there's a relatively better blood supply.</p>

<p>Page 41</p> <p>1 Q. Can you educate me on perivillous 2 fibrin with X-cells? 3 A. Perivillous fibrin is very simple. 4 It just means that the blood is sitting around 5 in the intervillous space because not that much 6 is coming in to push the stuff out that's 7 already there. So you have good maternal 8 perfusion, blood is coming in and quickly, and 9 there's no time for it to clot. When it's not 10 coming in well, then it sits around and clots. 11 Then the trophoblasts begin to migrate out into 12 the fibrin after a while. That's indicative of 13 the time that the fibrin has been there, so at 14 least a week. 15 Q. Are you going to offer an opinion in 16 this case regarding the time frame of this 17 patient's severe preeclampsia? 18 A. No. 19 Q. I may have touched on this 20 previously, but the extracellular fluid 21 accumulation that was found, is that most likely 22 due to the administration of fluids in the 23 postpartum period? 24 A. I believe so, yes. 25 Q. Did the autopsy indicate any</p>	<p>Page 43</p> <p>1 BY MS. REID: 2 Q. Dr. Redline, I'm Chris Reid, and I 3 represent Euclid Hospital, and I do have just a 4 few questions. First of all, regarding your 5 expert history as an expert witness, have you 6 served as an expert in other cases involving a 7 maternal death due to preeclampsia? 8 A. Yes. 9 Q. About how many times? 10 A. I can't say exactly, but I would say 11 five to ten times, maybe more toward the five, 12 but it's one of the more common scenarios in 13 maternal deaths. 14 Q. Have you provided deposition 15 testimony in those cases? 16 A. Well, yes. 17 Q. Do you have any recollection of in 18 those five to ten cases whether they were on 19 behalf of the plaintiff or on behalf of the 20 defendant? 21 A. I can only really recall one that 22 involved preeclampsia that involved maternal 23 death, and that was one with Mr. Becker many, 24 many years ago. I can't remember the name of 25 the patient now.</p>
<p>Page 42</p> <p>1 evidence of myocardial hypertrophy? 2 A. That's the only basis that I have 3 for concluding there was myocardial hypertrophy. 4 Q. I'm talking about the autopsy 5 report. I apologize. 6 A. Yes. The weight of the heart, the 7 370 grams. 8 Q. Did they indicate anything in the 9 microscopic findings, however? 10 A. I don't believe so. 11 Q. Other than the weight, did they find 12 any other abnormalities of the heart in the 13 autopsy report? 14 A. They did. They saw the 15 subendocardial myocyte necrosis. I realize that 16 I'm only one of four people who believes in this 17 myocyte hypertrophy, but I'm sticking with my 18 opinion. 19 Q. You're outvoted in this case. 20 A. That's fine. It's not important to 21 my conclusions anyway, and I don't care. 22 MR. TREU: If any of you other guys 23 have questions, I'm just looking through here 24 right now. I may be done. 25 EXAMINATION OF RAYMOND REDLINE, M.D.</p>	<p>Page 44</p> <p>1 Q. You don't remember the name? 2 A. No. 3 Q. Do you remember the names of any of 4 the other attorneys who you worked with in any 5 of those five to ten cases? 6 A. No. I'm afraid I don't. 7 Q. Have you ever served as an expert in 8 a case involving an amniotic fluid embolus? 9 A. Yes. 10 Q. Have you ever given an opinion that 11 a patient did indeed die of an amniotic fluid 12 embolus? 13 A. Yes. 14 Q. Was that a case where you provided 15 deposition testimony; do you recall? 16 A. I can't say for sure. I think so, 17 but I don't know for sure. 18 Q. On about how many occasions have you 19 been involved in a case involving an amniotic 20 fluid embolus? 21 A. It's less than the preeclampsia 22 cases. It's probably two to four, three, 23 something like that, the number of cases. To 24 the best of my knowledge in all of the other 25 cases I thought there was an amniotic fluid</p>

<p style="text-align: right;">Page 45</p> <p>1 embolus. 2 Q. There was? 3 A. Yes, I believe so. There may have 4 been one other case that I didn't -- no, that 5 was a case here in the hospital where there was 6 a question, one of our cases in the clinical 7 service thought to be an amniotic fluid embolus, 8 I disagreed, and we later showed it was due to 9 sepsis. 10 Q. But in those two to four cases where 11 you testified as an expert, you found indeed 12 there was evidence of amniotic fluid embolus; 13 correct? 14 A. Right. Not always by the pathology, 15 but sometimes based on the clinical history plus 16 the pathology, meaning that there weren't 17 squamous cells, but the rest of the pathology 18 and the timing was consistent with it so that I 19 thought that was the most likely cause of death 20 in that case. 21 Q. What other pathologic evidence did 22 you find in those cases that was consistent with 23 amniotic fluid embolus? 24 A. Just the DIC really. 25 Q. So in those cases, and I'm just</p>	<p style="text-align: right;">Page 47</p> <p>1 the timing wasn't right for amniotic fluid 2 embolus, I made the statement at the bottom of 3 the sheet before reading any other reports that 4 this was not massive abruption, not amniotic 5 fluid embolus, not exsanguination, not ARDS, and 6 not pulmonary embolus. So I had that in mind 7 when I reviewed the case the first time. 8 Q. Did you evaluate the slides in this 9 case looking for anything that might mimic fetal 10 squamous cells in the vasculature? 11 A. Sure. 12 Q. Was there anything? 13 A. Absolutely. There's a very common 14 problem which is that especially in coroner's 15 cases where the body has sat around for a while 16 and at the time of autopsy the sections sit 17 around for a while before they get fixed, 18 there's almost always the lining of the blood 19 vessels separates and sits in the middle of the 20 blood vessels, so you often see these clumps of 21 cells that can mimic squamous cells. If you 22 don't see the globules of the fatty material and 23 you don't see the squamous cells actually in a 24 particular configuration where they are almost 25 molding with one another, I don't think you can</p>
<p style="text-align: right;">Page 46</p> <p>1 trying to summarize here, it would have been the 2 clinical picture plus pathologic evidence of DIC 3 that supported a conclusion of amniotic fluid 4 embolus? 5 A. Right, although there may have been 6 a case where I actually saw squamous cells. I 7 just don't remember. It's been over about a 8 15-year period. 9 Q. You'll agree that a finding of fetal 10 squamous cells in the pulmonary vasculature is 11 consistent with amniotic fluid embolus; correct? 12 A. I would. 13 Q. That is indeed one of the ways to 14 make the diagnosis on autopsy or postmortem? 15 A. Correct. But it's very difficult to 16 make that determination because there are a lot 17 of things that mimic squamous cells on autopsy, 18 so it's hard to be sure of. 19 Q. Have you had a chance to look at the 20 slides in this case after receiving the expert 21 reports of Dr. Hitchcock and 22 Dr. Gilbert-Barnes? 23 A. No. I didn't need to because I was 24 reviewing this case with an eye toward the 25 possible cause of the maternal death. Although</p>	<p style="text-align: right;">Page 48</p> <p>1 make a diagnosis. In fact, seeing too many 2 squamous cells is actually a bad thing. 3 Q. Why is that? 4 A. In the cases where there's amniotic 5 fluid embolus, you usually see only a very few 6 squamous cells, and the rest of the capillaries 7 are clean. When every capillary has cells 8 sitting around in the middle of it, it's 9 difficult to tell the real ones from what is 10 just degeneration artifact. Even though you 11 would think a lot of squamous cells end up in 12 the lungs, in fact there are usually none in 13 most cases which is well documented. In the few 14 cases where you do see them, they are usually 15 quite rare and hard to find. 16 Q. So if there's more than a very few, 17 that would constitute artifact which is the 18 lining of blood vessels which separate? 19 A. It doesn't rule out an amniotic 20 fluid embolus. It's theoretically possible, but 21 there just aren't that many fetal cells in the 22 amniotic fluid. You only get a small amount of 23 amniotic fluid that leaks into the blood before 24 it sort of closes down. So it's really hard to 25 believe that you would get hundreds and hundreds</p>

<p style="text-align: right;">Page 49</p> <p>1 of squamous cells released into the circulation. 2 That would probably take hundreds of ml's of 3 amniotic fluid to get that. 4 Q. What quantity would you typically 5 expect? 6 A. Very small. It's hard to tell, but 7 the mechanisms of the placenta separating are 8 obviously evolutionarily conservative so that 9 the amniotic fluid does not get into maternal 10 vessels normally since it causes so many 11 problems. The problem is that amniotic fluid 12 has a high concentration of phospholipids, and 13 as soon as any phospholipids hit the 14 circulation, it triggers coagulation. 15 In the clinical laboratories we have 16 put microgram amounts of phospholipids into a 17 reaction to trigger clotting. So as soon as a 18 very small amount of amniotic fluid hits the 19 blood, it begins to coagulate. So that's why 20 you really wouldn't expect there to be a whole 21 shower of cells into the lungs. 22 Q. Do you keep any type of list of all 23 the cases you reviewed over the years in a 24 medical-legal setting? 25 A. No. The only thing I have is a list</p>	<p style="text-align: right;">Page 51</p> <p>1 of preeclampsia is different than the clinical 2 diagnosis of preeclampsia. So when I see 3 endotheliosis and perichordal necrosis in the 4 liver, that's pretty strong evidence for being 5 preeclampsia regardless of the clinical details, 6 and certainly with the clinical details in this 7 case, I feel pretty comfortable. 8 Q. As it relates to the timing, though, 9 of the preeclampsia or the severity of it, 10 there's no pathologic way to determine that with 11 any certainty? 12 A. I have no opinions about the timing 13 of the preeclampsia in this case and the extent 14 of it except that there was a HELLP syndrome. 15 Q. Have you authored any articles -- I 16 apologize, I didn't look through your CV in much 17 detail -- related to preeclampsia or amniotic 18 fluid embolus? 19 A. Nothing on amniotic fluid embolus, 20 but preeclampsia, there are some articles that 21 -- there's one article that primarily relates to 22 preeclampsia. Many of my book chapters and 23 other articles cover preeclampsia as part of 24 them. 25 Q. They would all be listed in your CV?</p>
<p style="text-align: right;">Page 50</p> <p>1 of all my depositions and trial testimonies over 2 the last four years. 3 Q. Is that something that's easily 4 obtainable? 5 A. Yes. 6 Q. Could you make a copy of that list 7 and get it to Mr. Becker? 8 A. Sure. 9 Q. I'm sure he will send it along. 10 MR. BECKER: Sure. 11 Q. What is your definition of 12 preeclampsia? 13 A. I use the definitions that are 14 endorsed by ACOG. 15 Q. Which is? 16 A. Well, I don't remember the exact 17 details and the changes offhand, but for mild 18 preeclampsia it's generally something like a 19 blood pressure of 140 over 90 on two occasions 20 something like six hours apart or two hours 21 apart in association with at least 22 500 milligrams of protein in the urine. 23 Q. So you would stand behind the 24 definition that ACOG provides for preeclampsia? 25 A. Right. But the pathologic diagnosis</p>	<p style="text-align: right;">Page 52</p> <p>1 A. They are all listed, yes. 2 Q. Let's talk about this concept of 3 trophoblastic emboli. 4 A. Right. 5 Q. You said they are diagnostic of 6 pregnancy? 7 A. Right. 8 Q. And that's really their only 9 diagnostic significance? 10 A. Usually you know the patient is 11 pregnant anyway, so they are not too useful, but 12 they are always present in a pregnant female 13 that dies. 14 Q. Do they provide any information 15 whatsoever related to an amniotic fluid embolus 16 in your opinion? 17 A. They come from a different place. 18 They come from the intervillous space where the 19 maternal blood circulates, and the amniotic 20 fluid is coming from the amniotic cavity and 21 then it's going behind the placenta. So the 22 knots are coming from a different location where 23 there is no amniotic fluid. 24 Q. Is there a typical quantity of 25 trophoblastic emboli that you typically see?</p>

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1 A. Thank goodness it's uncommon to see  
2 lungs from dead mothers, and sometimes there's a  
3 lot and sometimes not that many. I don't think  
4 anybody has done a study, at least not to my  
5 knowledge, but I didn't think them to be unusual  
6 in this case.  
7 Q. Any statement that the evidence of  
8 trophoblasts in the lungs is indicative of  
9 amniotic fluid embolus you would disagree with?  
10 A. Right.  
11 MS. REID: I think that's all the  
12 questions I have, Dr. Redline. Thank you.  
13 MS. MITCHELL: Doctor, we met  
14 earlier. My name is Ann Mitchell. I actually  
15 don't have any questions for you tonight.  
16 MR. TREU: Marilena?  
17 EXAMINATION OF RAYMOND REDLINE, M.D.  
18 BY MS. DISILVIO:  
19 Q. Doctor, I think you may have said  
20 this but I just want to make it abundantly  
21 clear. You have completely ruled out amniotic  
22 fluid embolism for this patient?  
23 A. Right. I don't see any pathologic  
24 evidence, and I don't think the clinical picture  
25 fits.

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1 Q. But to the extent that any other  
2 experts may have that opinion, you would  
3 disagree?  
4 A. Correct.  
5 MS. DISILVIO: Thank you. I don't  
6 have any other questions.  
7 FURTHER EXAMINATION OF RAYMOND REDLINE, M.D.  
8 BY MR. TREU:  
9 Q. Doctor, I want to go through your  
10 notes.  
11 A. Yes. There were two copies  
12 originally. You sure you don't have my copy?  
13 Q. I just have that one that we have  
14 marked.  
15 A. I've got it.  
16 Q. What I want to look at is starting  
17 below the first line, the small section there in  
18 the middle. What does this represent?  
19 A. That represents data that comes from  
20 the pathology reports from the Euclid Hospital  
21 for the placenta and from the coroner's office  
22 for the autopsy.  
23 Q. Would you mind running through that  
24 for me and interpreting what you have written  
25 here?

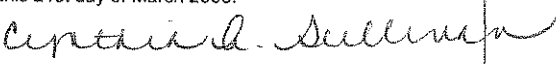
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1 A. Sure. For the placenta, it weighed  
2 640 grams, and it had a 25 centimeter marginally  
3 inserted umbilical cord, it had a 1.5 centimeter  
4 infarct, and the fetal placental weight ratio  
5 was 5.21 which was slightly elevated.  
6 Q. That is from some source?  
7 A. Yes. It's from dividing the weight  
8 of the fetus by --  
9 Q. No.  
10 A. You mean the fact that it's slightly  
11 elevated?  
12 Q. Go ahead.  
13 A. From the autopsy I note that the  
14 weight of the mother was 286 pounds, that she  
15 was 51 inches tall, which I hadn't noticed  
16 before, and actually, that sort of goes along  
17 with a smaller heart. It doesn't always go  
18 along with weight. Height is important as well.  
19 Anyway, pleural fluid 500 cc's in  
20 each cavity, amber colored. Ascites, 300 cc's,  
21 bloody. Pericardial fluid 80 cc's, and I think  
22 it says amber. The heart weighed 370 with a  
23 normal of 250. The spleen weighed 350 with a  
24 normal of 155. The kidneys 390 with a normal of  
25 240 to 350. Cervix and uterus together 770

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1 grams, thick, diffuse hemorrhage and fibrin in  
2 the endometrium, not unusual findings.  
3 The lungs weighed 900 with a normal  
4 from 680 to 1050. The liver weighed 2580 with a  
5 normal from 1500 to 1800, and the brain, 1275  
6 with a normal of 1275. The brain is really the  
7 only organ which wouldn't be affected by diffuse  
8 edema, so I took that as sort of being my gold  
9 standard of what a normal organ weight in this  
10 case might be. Finally, the liver, I noted that  
11 it was extensively dark red with I think it says  
12 necrosis and hemorrhage.  
13 Q. Then the next set of notes starts,  
14 it says my review, is that what that says?  
15 A. Correct.  
16 Q. Can you take us through this,  
17 please?  
18 A. Under the placenta, a remote infarct  
19 1.4 centimeters in diameter in block number two.  
20 Increased knots and increased intervillous  
21 fibrin with X-cells and noted most in block  
22 number four. There were a total of four recut  
23 slides. I did not get the blocks on one and  
24 three, although I looked at the slides on them.  
25 For the autopsy, the heart, I noted

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<p>1 that there was myocyte hypertrophy and the left 2 ventricle measured 1.4 centimeters, and then 3 there's an arrow off that says focal 4 subendocardial and papillary muscle myocyte 5 necrosis, parenthesis, hypereosinophilia. Then 6 liver showed periportal necrosis and large drop 7 of steatosis which is nonspecific. 8 The uterus was not taken from the 9 implantation site of the placenta, so you 10 wouldn't expect to see atherosclerosis which is 11 something you would see with preeclampsia. I 12 did not see atherosclerosis. There was myocyte 13 necrosis in the uterus and some focal residual 14 hemorrhage. The lung findings we have gone 15 through already. Do you want me to repeat 16 those? 17 Q. Yes. 18 A. Acute capillaritis with white cell 19 thrombi, platelet fibrin thrombi, alveolar 20 macrophages, mild pulmonary venous dilatation. 21 Q. There is something scratched out 22 there. Do you know what that is? 23 A. Yes. I can't tell what that is, and 24 it's nothing secret. It was just -- there are 25 other scratches here, too. It's just as I was</p>	<p>1 the ones that I found to be particularly 2 significant. 3 Q. Why is endotheliosis starred? 4 A. Because it's considered to be 5 diagnostic of preeclampsia. 6 Q. What about casts? 7 A. Casts are a good indication of acute 8 tubular necrosis. 9 Q. All right. Go down to the -- should 10 we go to the conclusions next? 11 A. Sure. Conclusions, I said late 12 onset fulminant preeclampsia with endotheliosis, 13 hepatic necrosis, and disseminated intravascular 14 coagulation. Significant hypotension 6 to 24 15 hours prior to delivery. Acute tubular 16 necrosis -- 17 Q. Delivery or death? 18 A. Prior to death, yes. I'm sorry. 19 Acute tubular necrosis and subendocardial 20 myocyte necrosis, myocyte hypertrophy, pulmonary 21 edema and effusions consistent with congestive 22 heart failure. And then, as I said before, not 23 massive abruption, amniotic fluid embolus, 24 exsanguination, ARDS, or pulmonary embolus. I 25 have some timings on the right-hand side.</p>
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<p>1 writing I changed my mind. It was all done at 2 the time of the original notes. 3 Central nervous system within normal 4 limits. Thymus within normal limits. Kidney 5 showed acute tubular necrosis, endotheliosis. 6 There were no platelet fibrin thrombi in the 7 kidneys. There were casts along with the acute 8 tubular necrosis. 9 The other organs were -- I say not 10 sampled, but I think that I was going to make a 11 list of organs that weren't sampled and didn't, 12 because I think there were sections of the 13 spleen, adrenal, thyroid, pancreas, GI, and 14 bladder, but I can't be sure of that. At any 15 rate, there were no findings for that. 16 Q. Before we go on, I just want to ask 17 you, there are little stars by some of these 18 findings? 19 A. Right. 20 Q. For example, up under the liver? 21 A. Right. 22 Q. The necrosis? 23 A. Right. 24 Q. Why is that? 25 A. Well, I think the star findings are</p>	<p>1 Hypertension and vasospasm less than one hour 2 post delivery. Sudden hypotension one hour post 3 delivery. Shortness of breath, pulmonary edema, 4 and congestive heart failure two hours post 5 delivery. Cardiopulmonary arrest two-and-a-half 6 hours post delivery followed by DIC and vaginal 7 bleeding. 8 Q. When you say late onset fulminant 9 preeclampsia, I think you testified earlier 10 other than to say it was late onset you don't 11 have an opinion to a degree of probability as to 12 the timing of that preeclampsia? 13 A. The late onset is referring to the 14 fulminant nature of the preeclampsia. I'm not 15 saying there wasn't preeclampsia before, but I'm 16 saying that the fulminant preeclampsia was late 17 onset. 18 Q. Just so we're all clear, what do you 19 mean when you say fulminant? 20 A. Well, to me fulminant means when you 21 have elevated liver enzymes and low platelets, 22 when you get the development of the HELLP 23 syndrome, when you have blood pressures where 24 the diastolic is over 100 and when the systolic 25 is over 170, those kinds of things.</p>

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<p>1 Q. To the best of your knowledge have</p> <p>2 we discussed the opinions that you anticipate</p> <p>3 offering in this matter?</p> <p>4 A. Yes, we have.</p> <p>5 Q. If at any time, Doctor, you review</p> <p>6 any additional materials or if you make any</p> <p>7 slides or photos, digital photos or anything</p> <p>8 that you would use to present your testimony at</p> <p>9 trial, we'd like to know that so we have the</p> <p>10 opportunity to review those prior to the trial;</p> <p>11 is that okay?</p> <p>12 A. That's fine.</p> <p>13 MR. TREU: With that I think I'm</p> <p>14 done. Does anybody else have any other</p> <p>15 questions?</p> <p>16 MS. REID: Nothing further.</p> <p>17 MR. TREU: Do you want to read it,</p> <p>18 Doctor?</p> <p>19 THE WITNESS: No. I waive reading.</p> <p>20 -----</p> <p>21 (Deposition concluded at 6:42 p.m.)</p> <p>22 (Signature waived.)</p> <p>23 -----</p> <p>24</p> <p>25</p>	<p>1 INDEX</p> <p>2 DEPOSITION OF RAYMOND REDLINE, M.D.</p> <p>3</p> <p>4 BY MR. TREU:..... 3:7</p> <p>5 BY MS. REID:..... 43:1</p> <p>6 BY MS. DISILVIO:..... 53:18</p> <p>7 BY MR. TREU:..... 54:8</p> <p>8</p> <p>9 Defendant's Deposition</p> <p>10 Exhibit A was marked..... 5:7</p> <p>11</p> <p>12 Defendant's Deposition</p> <p>13 Exhibit B was marked..... 8:7</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>
<p>Page 62</p> <p>1 CERTIFICATE</p> <p>2</p> <p>3 State of Ohio, )</p> <p>4 ) SS:</p> <p>5 County of Cuyahoga. )</p> <p>6</p> <p>7</p> <p>8</p> <p>9 I, Cynthia A. Sullivan, a Notary Public</p> <p>10 within and for the State of Ohio, duly</p> <p>11 commissioned and qualified, do hereby certify</p> <p>12 that the within named RAYMOND REDLINE, M.D. was</p> <p>13 by me first duly sworn to testify to the truth,</p> <p>14 the whole truth and nothing but the truth in the</p> <p>15 cause aforesaid; that the testimony as above set</p> <p>16 forth was by me reduced to stenotypy, afterwards</p> <p>17 transcribed, and that the foregoing is a true</p> <p>18 and correct transcription of the testimony.</p> <p>19</p> <p>20 I do further certify that this deposition</p> <p>21 was taken at the time and place specified and</p> <p>22 was completed without adjournment; that I am not</p> <p>23 a relative or attorney for either party or</p> <p>24 otherwise interested in the event of this</p> <p>25 action. I am not, nor is the court reporting</p> <p>firm with which I am affiliated, under a</p> <p>contract as defined in Civil Rule 28(D).</p> <p>IN WITNESS WHEREOF, I have hereunto set my</p> <p>hand and affixed my seal of office at Cleveland,</p> <p>Ohio, on this 21st day of March 2005.</p> <p></p> <p>Cynthia A. Sullivan, Notary Public</p> <p>Within and for the State of Ohio</p> <p>My commission expires October 6, 2006.</p>	



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