

<p style="text-align: right;">Page 1</p> <p>1 IN THE COURT OF COMMON PLEAS 2 OF LUCAS COUNTY, OHIO 3 ----- 4 JOSEPH STALMA, JR., 5 Plaintiff, 6 vs Case No. CI011505 7 THE TOLEDO HOSPITAL, 8 et al., 9 Defendants. 10 ----- 11 VIDEOTAPED DEPOSITION OF KEITH B. ARMITAGE, M.D. 12 MONDAY, SEPTEMBER 9, 2002 13 ----- 14 videotaped deposition of KEITH B. ARMITAGE, 15 M.D., a Witness herein, called by counsel on 16 behalf of the Plaintiff for examination under 17 the statute, taken before me, Vivian L. Gordon, 18 a Registered Diplomate Reporter and Notary 19 Public in and for the State of Ohio, pursuant to 20 agreement of counsel, at University Hospitals of 21 Cleveland, Wearn Building, Cleveland, Ohio, 22 commencing at 8:00 o'clock a.m. on the day and 23 date above set forth. 24 ----- 25</p>	<p style="text-align: right;">Page 3</p> <p>1 KEITH B. ARMITAGE, M.D., a witness herein, 2 called for examination, as provided by the Ohio 3 Rules of Civil Procedure, being by me first duly 4 sworn, as hereinafter certified, was deposed and 5 said as follows: 6 EXAMINATION OF KEITH B. ARMITAGE, M.D. 7 BY MR. BECKER: 8 Q. Good morning, doctor. Would you tell 9 me your full name, please. 10 A. Keith Barclay Armitage. 11 ----- 12 (Thereupon, ARMITAGE Deposition 13 Exhibit 1 was marked for 14 purposes of identification.) 15 ----- 16 Q. Doctor, handing you what's been 17 marked as Plaintiff's Exhibit 1, would you 18 identify that for me, please. 19 A. This is a recent CV. 20 Q. Are there any articles that you have 21 authored or co-authored that do not appear on 22 that vitae? 23 A. No. 24 Q. Would you tell me what your position 25 is here at University Hospital?</p>
<p style="text-align: right;">Page 2</p> <p>1 APPEARANCES: 2 On behalf of the Plaintiff 3 Becker & Mishkind 4 MICHAEL BECKER, ESQ. 5 Becker-Hayes Building 6 134 Middle Avenue 7 Elyria, Ohio 44035 8 440-323-7070 9 On behalf of the Defendant The Toledo Hospital 10 Marshall & Melhorn 11 NANCY D. MOODY, ESQ. 12 The Ohio Building 13 420 Madison Avenue Suite 1100 14 Toledo, Ohio 43604 15 419-249-7100 16 On behalf of the Defendant Buganski (By phone) 17 Kitch, Drutchas, Wagner, DeNardis & 18 Valitutti 19 JOHN WASUNG, ESQ. 20 405 Madison Avenue Suite 1500 21 Toledo, Ohio 43604-1235 22 419-243-4006 23 ALSO PRESENT: 24 Barry Hersch, videographer 25 -----</p>	<p style="text-align: right;">Page 4</p> <p>1 A. I'm on the -- I'm a member of the 2 infectious disease division. I'm on the faculty 3 of Case Western Reserve University in the 4 division of infectious diseases and in the 5 infectious disease division at University 6 Hospital. I'm sort of overall in charge of the 7 educational programs in the department of 8 medicine, which includes being the residency 9 training director. I'm the co-training director 10 of the medicine pediatric training program. I 11 have a clinical role and a teaching role. 12 Q. You have been identified as an expert 13 on behalf of the defendant in this matter and 14 I'm just trying to get a handle on your 15 experience with taking care of newborns. Would 16 you tell me about that. 17 A. Other than my own, not a lot of 18 hands-on experience. 19 Q. Well, can you tell me when was the 20 last time you had hands-on care with a newborn 21 other than your own? 22 A. Probably medical school. 23 Q. Are there any articles that you have 24 authored or co-authored that are potentially 25 relevant to the subject matter of this case?</p>

<p style="text-align: right;">Page 5</p> <p>1 A. None that come to mind. 2 Q. Are there any research interests by 3 you reflected on that vitae that are potentially 4 relevant to this case? 5 A. Other than my background in 6 infectious diseases, I don't think there is any 7 specific research. 8 Q. Doctor, did you bring your complete 9 file here today with you? 10 A. Yes, I did. 11 Q. May I look at it? 12 A. Sure. 13 MR. BECKER: Could we go off the 14 record for a moment. 15 MR. HERSCH: Off the record. 16 (Recess had.) 17 MR. HERSCH: Back on the record. 18 Q. Doctor, thank you for giving me an 19 opportunity to look at your file on this matter. 20 I noted that there are no personal notes by you. 21 Is that accurate? 22 A. Correct. There is a few scribbles 23 on the back of that letter which I know you 24 didn't turn over. 25 Just random scribbles that I did</p>	<p style="text-align: right;">Page 7</p> <p>1 that, I couldn't interpret it too well, your 2 handwriting is kind of like mine -- 3 A. Probably worse. 4 Q. Okay. -- would you for the record 5 slowly interpret, starting from the top of 6 Exhibit 2 and working your way down, exactly 7 what your notes reflect and explain any 8 abbreviations, please. 9 A. Honestly, I don't know what they all 10 mean at this point. There is just, you know, 11 things I was jotting. 12 It says, 3-21, 9:32 a.m. I'm not 13 sure what that means. Mother RH antibody. Two 14 days increase bilirubin. 3-23, 100.6. LP white 15 count looks like either 2 or 7. CSF, blood. 16 Positive GBS 3-24. 3-23 Timp, double lights. 17 And I think it says blankets. Peds 3-22 normal 18 exam. 3-23, double photo, billi alert, good 19 suck. 3-24, 0230. Abdomen distended, ticar, 20 gent, and then it says amp 200 with an arrow 21 that says amp 400. 22 And then in this corner it says 23 Adderral. I can't read it, 6 p.m. Called nurse, 24 food and mouth. Question, stiff. 25 This must be some notes I took from</p>
<p style="text-align: right;">Page 6</p> <p>1 when I looked at the records, but -- 2 Q. You are right, I did not notice that. 3 And I suppose that we are going to have to mark 4 this as an exhibit. 5 MR. BECKER: Let's do that, Vivian. 6 Off the record again, please. 7 ----- 8 (Thereupon, ARMITAGE Deposition 9 Exhibit 2 was marked for 10 purposes of identification.) 11 ----- 12 MR. HERSCH: Back on the record. 13 Q. Doctor, would you take a look at 14 what's been marked as Plaintiff's Exhibit 2. 15 Would you identify that for me, please? 16 A. This is a letter that I think 17 accompanied the medical records when they were 18 sent to me to ask me to review them. 19 Q. I understand your personal notes are 20 on the back side of that letter from -- 21 A. Yeah, this is just like a nervous, or 22 a habit I have of writing down things when I 23 look at the records. There is no specific 24 significance of anything written here. 25 Q. Okay. Since in my brief review of</p>	<p style="text-align: right;">Page 8</p> <p>1 the deposition of the mother. Tried to feed 2 10:30 to 11:15. That's all it says. 3 Q. Going back to the reference to the 4 abdomen being distended, what time was that? 5 A. These jottings are in juxtaposition, 6 but I'm not sure there is any time attached to 7 the abdomen distended. I think that's what the 8 pediatric resident wrote after he came and saw 9 the child in the middle of the night on the 10 24th. 11 Q. I know that you have been deposed 12 before, doctor. And I just want to review the 13 ground rules with you. 14 This is a question and answer session 15 under oath. It's very important that you 16 understand the question that I ask. If the 17 question doesn't make sense to you or is 18 inartfully phrased, I want you to stop me and 19 tell me so and I'd be pleased to attempt to 20 rephrase or restate the question. Fair enough? 21 A. Okay. 22 Q. It's also very important that you 23 answer verbally, because it's difficult for this 24 lady to take down head nods, and so we fully 25 understand what you say, please respond verbally</p>

Page 9

1 to all questions. Fair enough?
2 A. Okay.
3 Q. However, doctor, unless you indicate
4 otherwise to me, I'm going to assume that you
5 fully understood the question that I posed and
6 you were giving me your best and most complete
7 answer today. Is that fair?
8 A. Sounds good.
9 Q. Would you tell me what you have
10 reviewed in preparation for today's deposition?
11 A. I have reviewed the medical records
12 from the birth and the subsequent events in the
13 hospital and reviewed depositions of Norma
14 Stalma, Joseph Stalma, Diane McKee, Lucinda
15 Osterhut, Linda Johnson, Constance Rose, Raymond
16 Buganski, Richard Vogarty, Jay Goldsmith, Judith
17 Lott, Gilbert Givens, and then Roger Faix.
18 Q. Okay. Did you do any research?
19 A. No.
20 Q. Did you review any journal articles
21 or textbooks in preparation for today's
22 deposition?
23 A. No.
24 Q. Do you know any of the medical
25 providers?

Page 10

1 A. No.
2 Q. Have you talked to any of the medical
3 providers?
4 A. No.
5 Q. Was there anything that you needed to
6 complete your review that you had to pick up the
7 phone and write Nancy a letter and say I still
8 need X documents?
9 A. No.
10 Q. As far as you are concerned, all the
11 medical records that you needed were initially
12 provided to you?
13 A. As far as I know.
14 Q. Are you going to be rendering an
15 opinion in this case on standard of care as well
16 as causation?
17 A. No.
18 Q. Just causation?
19 A. Correct.
20 Q. Okay. Before I get into your
21 opinions on causation, I need to talk to you
22 about your medical/legal work.
23 Your name has appeared quite a bit in
24 the last couple years doing medical/legal work;
25 is that fair? Is it fair for me to assume that

Page 11

1 you are engaged in a lot of medical/legal work
2 in the last few years?
3 A. I don't know what the reference is in
4 terms of a lot. I have been an expert mainly
5 for cases in Cleveland and northeast Ohio a few
6 times in the last few years.
7 Q. When did you start doing
8 medical/legal work? What year?
9 A. I believe it was 1996.
10 Q. Right. And how many cases a year
11 would you review?
12 A. I would estimate ten to 20.
13 Q. And has that been pretty consistent
14 since 1996?
15 A. Probably in the last three or four
16 years. It probably wasn't that many in '96,
17 '97.
18 Q. It could have been five to ten in '96
19 and '97?
20 A. Potentially. I don't keep track.
21 Q. Do you have any logs or anything on
22 your computer where you reflect your active
23 cases?
24 A. No.
25 Q. Can you give me an idea of the

Page 12

1 breakdown between contacts made on cases by the
2 medical provider's attorney versus the patient's
3 attorney?
4 A. It's roughly 60 percent, I guess,
5 cases that are for the defense and 40 percent
6 for the plaintiff.
7 Q. 60/40?
8 A. Right.
9 Q. Of the 40 percent of the cases that
10 you have reviewed on behalf of the plaintiff,
11 what percentage of those do you find
12 meritorious?
13 A. Most of those cases are out of Ohio.
14 I don't know if that -- probably 70 or 80
15 percent. I mean, usually, I think there is some
16 idea, you know, what the issues are before
17 reviewing the records.
18 Q. So would it be fair for me to
19 conclude that the plaintiff's cases that you
20 review, you are contacted from people outside
21 the state?
22 A. Not exclusively, but I think I have
23 been a plaintiff -- have been a witness for an
24 expert on behalf of the plaintiff four or five
25 times in the state and, you know, the rest are

3 (Pages 9 to 12)

Page 13

1 outside the state.
2 Q. Can you give me the names of any
3 plaintiff's attorneys, either in the State of
4 Ohio or outside the state?
5 A. Sure. Inside the state, Peter
6 Voudouris, Stege and Associates.
7 Q. Dick Stege -- Rick Stege?
8 A. People in Chicago have used me.
9 Richard Rosenbaum. People in New Hampshire,
10 people in West Virginia. All the names are
11 escaping me, but, you know, I could try to think
12 of more later.
13 Q. Okay. Well, if any other names come
14 to you during this depo, please feel free to
15 just tell me about them.
16 Any of the cases that you have
17 reviewed on behalf of plaintiff involve group B
18 strep?
19 A. No.
20 Q. Any of the cases you have reviewed on
21 behalf of the plaintiff where you found
22 meritorious where you gave an opinion to the
23 effect that timely administration of an
24 antibiotic would have avoided an injury?
25 A. Probably.

Page 14

1 Q. Can you name any of those cases?
2 A. I know that one case that was in
3 Cuyahoga County, I think it involved, it was a
4 staph infection in an older woman and I don't
5 remember my specific testimony, but it might
6 have been along those lines.
7 Q. Would this have been for Stege?
8 A. Correct.
9 Q. Okay. Since you are reviewing cases
10 for Stege, you don't have a rule that you don't
11 review cases on behalf of plaintiffs for
12 northern Ohio then?
13 A. You know, that was the first one, and
14 I try to not review cases from Cleveland.
15 Q. How long ago was that case for Stege?
16 A. Probably maybe '99, 2000.
17 Q. Did you give a deposition in that
18 case?
19 A. Yes, I did.
20 Q. Did it go to trial in that case?
21 A. Yes, it did.
22 Q. Did you make a live appearance at
23 trial?
24 A. Yes, I did.
25 Q. All right. Just for the record then,

Page 15

1 you will not be rendering any opinions at the
2 trial on this case relative to the issue of
3 compliance in the standard of care by the
4 hospital nurses; is that accurate?
5 A. Correct.
6 Q. Okay. That just leaves causation, so
7 tell me what your causation opinions are in this
8 case.
9 A. I guess that is an open ended
10 question and obviously I will try to give it
11 that way for you.
12 I think if you look at, based on my
13 experience with infectious diseases, if you look
14 at the child's clinical course, I think the
15 infection started probably sometime around 11:00
16 o'clock at night, around there.
17 Q. On the 23rd?
18 A. On the 23rd. If you look at the
19 child's vital signs, during the day, there is
20 periods when they were normal. If you look at
21 the inflammatory response, certainly in the
22 child's blood count, they drew blood at around
23 3:30 in the morning on the 24th and there was a
24 normal blood count, a normal differential. They
25 drew blood at 7:30, four hours later. There was

Page 16

1 a shift to left. They drew blood I think the
2 next day and there was quite an elevation in the
3 white count.
4 So the child monitored, you know, an
5 intense inflammatory response in response to
6 this infection, but certainly the blood counts
7 didn't reflect any inflammatory response as of
8 3:30 in the morning.
9 It takes three or four hours for the
10 cytokines and the inflammatory mediators to kind
11 of crank up and cause increased white count,
12 shift left, et cetera. That and I think the
13 child's overall clinical stability, you know, a
14 couple episodes notwithstanding, provide
15 evidence for when the infection occurred.
16 Q. I didn't hear -- would you repeat
17 that last sentence?
18 A. I think the white count and then the
19 periods of clinical stability in the preceding
20 24 hours helped time the infection as occurring,
21 you know, three or four hours before 3:30 in the
22 morning.
23 Q. Okay. Any other opinions on
24 causation?
25 MS. MOODY: I'm going to object to

4 (Pages 13 to 16)

Page 17

1 the form of the question, but doctor, if you can
2 answer.
3 If you want to be more specific.
4 A. Yeah, I guess, I have been fairly
5 specific with the timing, and I'm not sure what
6 else.
7 Q. Okay. Let me help you then.
8 From that statement, would it be fair
9 for me to conclude that it would be your opinion
10 that had there been a sepsis workup at 4 to 6
11 p.m. on the 23rd, the culture would have been
12 negative?
13 A. Correct.
14 Q. Hypothetically, doctor, had there
15 been a sepsis workup between 4 and 6 p.m. or
16 6:30 p.m., on the 23rd, and -- well, let me back
17 up.
18 Would you agree that at the time of
19 this particular delivery, it would be protocol
20 at most hospitals that when there is a sepsis
21 workup that would include the administration of
22 antibiotics after cultures are drawn?
23 A. I wouldn't agree.
24 Q. What's the basis of that statement?
25 A. Basing my familiarity with what

Page 19

1 earlier question? You answered it with
2 certainty and I'm just trying to close that out.
3 A. Yeah. I guess. I don't understand
4 the legal terms, but --
5 Q. No opinion?
6 A. Yeah, I don't think if antibiotics --
7 you know, I know in one of the earlier
8 depositions the question was asked, if the child
9 was put on antibiotics at birth, would it have
10 made a difference, and I think it would have. I
11 think it's -- I don't think antibiotics, I don't
12 think anybody can say that the child wouldn't
13 have had any consequences had antibiotics been
14 started at 6:30 or ordered at 6:30.
15 Q. Well, that sounds a little different
16 than you don't have an opinion as to whether or
17 not the antibiotics would have been effective.
18 So you do have an opinion?
19 A. I guess I don't think anybody could
20 say with reasonable degree of medical certainty
21 that antibiotics would have. That's my opinion.
22 Q. And why couldn't someone say that?
23 A. I just think it's hard to predict
24 what the inflammatory response and the CSF is.
25 And it's really the inflammatory response not

Page 18

1 happens here and based upon, in reading the
2 depositions of the various experts in these
3 cases, I think it comes down to clinical
4 judgment, clinical suspicion. There is
5 certainly -- they are frequently given, but not
6 100 percent of the time.
7 Q. The majority of the time are they
8 given?
9 A. I would say so.
10 Q. Hypothetically, doctor, had IV
11 antibiotics been given roughly at 6:30 p.m. on
12 the 23rd, would you agree with me more likely
13 than not that this would have avoided the severe
14 consequences in this child?
15 A. I don't think that's an opinion that
16 I can give to a reasonable degree of medical
17 certainty.
18 Q. You don't have an opinion on that
19 issue?
20 A. No.
21 Q. You understand that there is a
22 difference between certainty and probability?
23 And would your answer be the same?
24 You do not have an opinion within a
25 reasonable degree of medical probability on that

Page 20

1 the bacteria itself that caused the damage, and
2 kids are different.
3 You know, I think in this case, and
4 I'm not obviously a pediatric neurologist, but
5 in looking at the record, it seemed that this
6 child had a lot of seizures the first week and,
7 you know, how much the seizures contributed to
8 his outcome versus just the inflammation in the
9 CSF.
10 Q. Well, isn't it likely that the
11 seizures were just simply a by-product of the
12 initial insult?
13 A. The seizures resulted from the
14 meningitis, but the question is if somehow had
15 there been a little less inflammation would he
16 have still had seizures, and I think you can't
17 say.
18 Q. All right. Let's go over some
19 definitions, doctor. Let's start with the
20 concept of sepsis. What does that mean?
21 A. Well, sepsis is a clinical term
22 referring to an inflammatory response usually to
23 infection, and people usually, especially for
24 research purposes, define it on the basis of
25 clinical variables.

5 (Pages 17 to 20)

<p style="text-align: right;">Page 21</p> <p>1 It doesn't necessarily mean that 2 there is bacteria in the blood, so sepsis could 3 occur with or without bacteria in the blood and 4 it's a clinical definition. 5 Q. You are saying for sepsis there 6 doesn't have to be bacteria in the blood? 7 A. Correct. Especially in the way 8 people use the term in research, it's just part 9 of a spectrum of clinical conditions. Systemic 10 inflammatory response, sepsis. Sepsis most 11 often occurs in response to infection and in 12 most cases there is positive blood cultures, but 13 there doesn't have to be. 14 Q. Isn't it a systemic response, the 15 body's response to an infection, isn't that what 16 sepsis means? 17 A. Correct. But it's a clinical 18 definition, not a microbiologic definition. 19 Q. Okay. And how would you distinguish 20 sepsis from bacteremia? 21 A. Well, patients can be bacteremic 22 without sepsis, and, you know, every time we 23 brush our teeth, we probably have some 24 bacteremia, although it's not clinically 25 significant.</p>	<p style="text-align: right;">Page 23</p> <p>1 Q. No idea? 2 A. I mean, I'm sure it's something that 3 occurs relatively frequently, but I couldn't 4 give you a number. 5 Q. Do you have any knowledge how 6 frequently sepsis workups occur in the NIC unit? 7 A. No. 8 Q. Can you give me an estimate of the 9 likely ratio between positive and negative 10 results of a sepsis workup? 11 A. Again, the majority of sepsis workups 12 are negative. I couldn't give you the exact 13 ratio. 14 Q. Have you ever engaged in a sepsis 15 workup of a newborn? 16 A. Of a newborn? Not since medical 17 school. 18 Q. And what year was that? 19 A. I think I did my pediatric rotation 20 in spring of 1985. 21 Q. Do you have any recall about that 22 sepsis workup back in medical school? 23 A. I mean, you know, I just spent time 24 in the neonatal intensive care unit at the 25 Children's Hospital in Denver and recall taking</p>
<p style="text-align: right;">Page 22</p> <p>1 Patients can have clinically 2 significant bacteremia without having, without 3 meeting the definition for sepsis. 4 Sepsis is a clinical entity that 5 reflects the body's response to the inflammatory 6 condition usually provoked by an infection. 7 Q. All right. And what is meningitis? 8 A. Meningitis is an inflammation of the 9 meninges, which is the membrane that lines the 10 brain that contains the cerebral spinal fluid. 11 Q. What does the phrase sepsis workup 12 mean? 13 A. Sepsis workup means evaluating for 14 potential sources of infection. In pediatrics 15 it usually means doing blood cultures with or 16 without a spinal tap, urine culture, sometimes 17 chest x-ray. 18 Q. And I think we can agree that the 19 majority of the time it's followed by 20 institution of IV antibiotics? 21 A. Correct. 22 Q. Do you have any knowledge as to how 23 often the, in the nursery here at University 24 Hospital, they engage in sepsis workups? 25 A. No.</p>	<p style="text-align: right;">Page 24</p> <p>1 care of children where sepsis was suspected. 2 Q. Do you recall in 1985 in Denver -- 3 what hospital was that in Denver? 4 A. I actually did my pediatric rotation 5 at the University Hospital, so the University of 6 Colorado Medical School. 7 Q. Do you recall being a resident and 8 working in the NIC unit whether they had a care 9 pathway or algorithms of when one was to engage 10 in sepsis workups? 11 A. I'm pretty sure they didn't in 1985. 12 Q. Have you ever created -- you have an 13 adult practice; correct? 14 A. Correct. 15 Q. Have you ever developed a care 16 pathway or an algorithm for sepsis workups in 17 adult patients? 18 A. Not for sepsis, no. 19 Q. Do you have an explanation for this 20 child's temperature instability on the 23rd of 21 March? 22 A. It's my understanding the child was 23 under two lights to treat the high bilirubin and 24 this is what the treating pediatrician thought, 25 and I think in given the child's clinical</p>

Page 25

1 course, I think that 2:30 p.m. temperature was
2 due to sepsis or infection, the child wouldn't
3 have had -- would have defervesced and wouldn't
4 have had normal vital signs the majority of the
5 time for the next 12 hours.
6 Q. Okay. So you attribute the
7 temperature instability to the phototherapy?
8 A. Correct.
9 Q. Do you recall when abdominal
10 distention was first charted by the nurses?
11 A. I believe it was around 2:30 in the
12 morning.
13 Q. Are there two types of group B strep
14 infection, one fulminant and one low grade, is
15 that your understanding?
16 A. I think there is a spectrum.
17 Q. Okay. Where does the Stalma child
18 fall within your spectrum?
19 A. It's a more aggressive presentation.
20 Q. And when did this child have
21 meningitis, in your mind?
22 A. I think the meningitis, again,
23 probably started in two to three hours before
24 3:30 in the morning, as evidenced by the
25 inflammatory response in the blood.

Page 26

1 Q. So roughly the meningitis was --
2 began around midnight?
3 A. In that time frame.
4 Q. And what's the basis for that
5 opinion?
6 A. Again, looking at the relative
7 clinical stability up until that time, looking
8 at the normal blood counts at 3:30 in the
9 morning.
10 Q. Are you familiar with the phenomenon
11 where with an infection bacteremia going down to
12 meningitis there could be an elevated white
13 blood count and then as the infection goes on,
14 the white blood count goes down?
15 A. Well, sometimes with overwhelming
16 infections, the white blood count would drop to
17 abnormally low levels, and so I think if you
18 look at this case, you see at 3:30 in the
19 morning, you have a normal white count, normal
20 differential. If the 7:30 a.m. white count was
21 one or two, you could see a white count that's
22 trending down. But that's not what you see here
23 The 7 a.m. white count was 9 with a left shift.
24 So, I don't think you could invoke that
25 pathogenesis to explain the normal white count

Page 27

1 and normal differential at 3:30 in the morning.
2 Q. Well, so in general you are familiar
3 with the phenomenon that as the infection
4 progresses, it will cause initially an elevation
5 of WB -- white blood count and then it will
6 cause the white blood count to drop?
7 A. I think we are talking about two
8 things. Sometimes an overwhelming infection,
9 the white blood can drop drastically low. In
10 general with infection, the first few days the
11 white count is high. As you successfully treat
12 the infection over days -- not hours but over
13 days -- the white count will decrease.
14 Q. Are you familiar with the phenomenon
15 where there is a backflow after meningitis is
16 really set in place which causes a significant
17 increase in white blood cell count?
18 A. Backflow out of the CSF?
19 Q. Yes.
20 A. I have not seen that.
21 Q. Are you familiar with any literature
22 on that?
23 A. Not specifically, no.
24 Q. Do you have within your chart the
25 medication records for March 24th?

Page 28

1 A. I would assume I do.
2 Q. Would you check.
3 MS. MOODY: I don't think that we
4 have ever been able to find the particular med
5 sheet for that date, but please check.
6 A. I don't recall specifically.
7 Q. All right. You don't recall as we
8 sit here now, since that issue has been raised
9 just a few minutes ago, whether or not those
10 records were actually missing?
11 A. I don't recall.
12 Q. Can we enter into a stipulation,
13 Nancy, on that, that those records are not
14 available today?
15 MS. MOODY: To my knowledge, they are
16 not available. I think that amounts to one page
17 of medication records, if I'm not mistaken. We
18 have just never been able to locate them.
19 Q. Do you think in this case, doctor,
20 this child was likely bacteremic before
21 meningitis set in?
22 A. Yes.
23 Q. Okay. Why do you say that?
24 A. I don't think that the cerebral
25 spinal fluid was inoculated directly. It

7 (Pages 25 to 28)

Page 29

1 requires the bacteria to get through the blood
2 into the cerebral spinal fluid.
3 Q. Would you refer then to this type of
4 infection as fulminant?
5 A. I'm not sure I would use the term
6 fulminant. I think I said a few minutes ago
7 this was an aggressive infection.
8 Q. Okay. If a child is overheated due
9 to either phototherapy or overbundling and the
10 child is removed from that environment or a
11 child is -- I don't know if there is a word --
12 unbundled, do you have any idea how long it
13 takes a child's core temperature to get back to
14 reflect what's actually going on, in terms of
15 minutes?
16 A. I think most of the pediatricians in
17 this case have said it's minutes to an hour.
18 Q. Minutes to an hour; correct?
19 A. Correct.
20 Q. Did this child develop shock, this
21 newborn?
22 A. In the early morning hours of the
23 24th, there was evidence of some decreased
24 tissue perfusion.
25 Q. Would that be roughly 2:30 or 3 a.m.?

Page 31

1 the first real seizures?
2 A. There is an arched back. The child
3 was stiff.
4 Again, I think we know that the child
5 had meningitis based on subsequent data. So if
6 you track back in time, we know the child was
7 very sick then, so it all fits.
8 And the nurses' description.
9 Obviously the nurses were concerned enough about
10 how the child looked that they called a resident
11 on call to come see him.
12 Previously I think these relatively
13 experienced nurses thought the child looked
14 normal. The nurses talked to Dr. Buganski at
15 9 p.m. and there wasn't any question about a
16 seizure then.
17 Q. Is vomiting in a newborn a sign of --
18 can vomiting be a sign of sepsis?
19 A. Well, I think it's very, very common
20 for newborns to regurgitate. And so can it be?
21 I suppose it can, but it's, the vast majority of
22 times it's not.
23 Q. The first CBC done on this child, I
24 think at three hours of life, would you pull the
25 results of that?

Page 30

1 A. I think after that.
2 Q. 4 a.m.?
3 A. Around there.
4 Q. Between 3 and 4 a.m., shock?
5 A. Right.
6 Q. What is your opinion as to the first
7 time seizures presented with this child?
8 A. 2:30 in the morning.
9 Q. And what's the basis of that opinion?
10 A. Well, I think the description at 2:30
11 in the morning sounds typical for a seizure. I
12 guess the question is, there is an incident when
13 the mother was feeding the baby at 6:30. That's
14 probably what you are referring to.
15 You know, I think if that was a
16 seizure due to infection, the child would not
17 have been stable for the ensuing, you know,
18 eight or ten hours. And the nurse's notes and
19 the nurses' deposition in that incident reflect
20 that after suctioning the child, the child
21 returned to being, appeared normal to them
22 within ten minutes. I don't think that's
23 consistent with a seizure.
24 Q. And what is it about the 2:30 a.m.
25 note that tells you that it's -- that was likely

Page 32

1 A. Sure.
2 Q. And tell me if you feel that was
3 normal.
4 A. I believe it was, the white count was
5 elevated, which is normal for newborns. The
6 white count was 20.3 at 2210 on the 21st.
7 Q. Okay. The white count was elevated?
8 A. Correct.
9 Q. Any other shifts or abnormalities?
10 A. No.
11 Q. This child was jaundice within the
12 first 24 hours?
13 A. Correct.
14 Q. What do you attribute that to?
15 A. The RH reaction.
16 Q. Do you know whether or not most
17 hospitals, when jaundice is present and they are
18 attributing it to RH incompatibility, whether
19 they engage in any type of serial blood counts?
20 A. I don't know.
21 Q. Would you call this an early onset
22 group B strep infection?
23 A. It's sort of on the borderline. You
24 know, some people say 48 hours. I think it
25 falls within that category.

8 (Pages 29 to 32)

<p style="text-align: right;">Page 33</p> <p>1 Q. Do you have an opinion as to etiology 2 of this pathogen? 3 A. Yes. 4 Q. What is it? 5 A. Group B strep can be a normal 6 colonizer of the birth canal and during normal 7 vaginal delivery, children can become colonized 8 and then subsequently become infected. 9 Q. Would you categorize this as a 10 typical presentation of a group B strep 11 infection? 12 A. I don't know if there is a prototype. 13 I think it's consistent with the way newborns 14 present at 48 to 72 hours. 15 Q. So you feel this child became, was, 16 had septicemia by 10 or 11 p.m. on the 23rd? 17 A. I would say more between 11 and 12. 18 Well, I think again, I guess 19 septicemia is a clinical diagnosis. I think the 20 bacteremia probably started around, you know, 11 21 or 12. 22 It takes -- you know, again, 23 bacteremia in and of itself doesn't make you 24 sick. Usually it's the inflammatory response 25 that produces the signs of sepsis and that takes</p>	<p style="text-align: right;">Page 35</p> <p>1 Q. Well, do you have any criticism of 2 any of the caregivers here? 3 A. No. 4 Q. Whether a resident or a doctor or an 5 attending? 6 A. No. 7 Q. Had IV antibiotics been started in 8 this child by 7 p.m. on the 23rd, you are saying 9 that you cannot state whether more likely than 10 not that would have had an impact on this kid's 11 clinical course? 12 A. Correct. 13 Q. And once again, what's the basis for 14 that opinion? 15 A. Again the -- 16 MS. MOODY: Objection. Asked and 17 answered, but go ahead, doctor. 18 A. -- the damages due to the 19 inflammatory response, not the bacteria. 20 So the only way to have no 21 inflammatory response is to have no bacteria at 22 all. It's not really the amount of bacteria, 23 it's the inflammatory response in the cerebral 24 spinal fluid that causes the damage. 25 Q. Right. But isn't the size of the</p>
<p style="text-align: right;">Page 34</p> <p>1 a few hours. You have to manufacture 2 inflammatory mediators. There is a process that 3 takes three or four hours. 4 Q. Well, when was the signs of sepsis 5 first apparent to you in the chart? 6 A. Obviously at 2:30 the child appeared 7 ill to the caregivers. 8 Q. I think you told me earlier that's 9 when meningitis had already set in as well; 10 correct? 11 A. Correct. 12 Q. So is it routine that a child, a 13 newborn will -- strike that. 14 Is it unusual that a newborn will not 15 demonstrate any signs of sepsis prior to the 16 first signs of meningitis? 17 A. They can often occur simultaneously. 18 You know, I think in this case the 19 pediatrician that was called initially suspected 20 intraabdominal infection based upon the note and 21 based upon the antibiotics it shows. 22 Q. What time was that? 23 A. At 3:30 in the morning. 24 Q. You mean the resident? 25 A. The resident, correct.</p>	<p style="text-align: right;">Page 36</p> <p>1 quantity of the inflammatory response in many 2 ways dependent on the number of bacteria present 3 at the time antibiotics are given? 4 A. That's one factor. 5 Q. Okay. And are you familiar with any 6 type of doubling rate, or doubling time for 7 antibiotics -- or excuse me, for pathogens? 8 A. You know, I think Dr. Faix was asked 9 about this. I think I have the same answer he 10 does; that I don't have a specific doubling time 11 for group B strep. 12 Q. Can we agree, doctor, that the longer 13 a bacteria is present in a child's bloodstream, 14 the more bacteria will grow? 15 A. In general, yes. 16 Q. Can we agree, doctor, that it's much 17 better to treat sepsis early rather than later 18 for -- relative to outcome? 19 A. As a general statement, that's true. 20 A lot of patients are -- there is some data 21 that the patients are going to do poorly in the 22 first 24 to 48 hours. And you know, antibiotics 23 don't change that. That's why there has been so 24 much research over the years looking for other 25 therapies; that antibiotics alone don't do it.</p>

Page 37

1 So the patients are going to have the worst
2 outcome. The data isn't that convincing
3 antibiotics make a difference.
4 In general I would agree with the
5 statement, however.
6 Q. And the same question relative to
7 meningitis. The earlier you treat meningitis,
8 the better the outcome, in general?
9 A. Again, I would respond the same way.
10 People -- in kids, hemophilus influenza, the
11 meningitis used to be a severe problem before
12 there was a successful vaccine, and despite
13 antibiotics given early, a lot of children did
14 poorly and there was a lot of research on
15 steroids, for instance, because antibiotics
16 alone didn't seem to be the answer, despite,
17 you know, when they were given.
18 Q. So you agree in general that the
19 earlier you treat meningitis, the better the
20 outcome, or you disagree with that general
21 statement?
22 A. In a general statement with the, you
23 know, the provisos that I gave; that it's not a
24 cut and dry situation.
25 Q. But in general, you agree with it?

Page 38

1 A. Correct.
2 Q. What is your recollection of what,
3 since you don't take of newborns, what a newborn
4 fever is?
5 A. It's 100, 100.4.
6 Q. Now, is that by rectal temperature or
7 axillary?
8 A. By rectal.
9 Q. Is the rectal temperature generally
10 higher than what the axillary temperature is in
11 a newborn?
12 A. Yes.
13 Q. Is it generally one degree or have
14 you heard that range?
15 A. Well, I think -- again, this comes
16 out both with kids and adults. I think a lot of
17 that data, a lot of that idea is based on old
18 data. With modern digital temperatures done
19 correctly, it's probably not a degree, it's
20 probably less than a degree.
21 Q. Could you find the culture result of
22 the blood drawn at 2:30 or 3:00 o'clock in the
23 morning?
24 A. This is the final result. I'm not
25 sure this page says when it was drawn. There is

Page 39

1 a positive blood culture for group B strep.
2 Yes, 3-24, 0300, group B strep.
3 Q. Any other data given to you in that
4 culture other than that it was positive for
5 group B strep? The number of colonies or the
6 severity of that infection?
7 A. No.
8 Q. Okay.
9 A. Not on this page, nothing like that.
10 Q. Okay. Would you look at the CSF.
11 When was the CSF sampled?
12 A. The CSF sample looks like it was
13 obtained on 3-24 at 3:30 in the afternoon.
14 Q. And what were the results of that?
15 A. It says a rare colony identification
16 confirmed, which would indicate that there
17 wasn't a lot of bacteria in the CSF at that
18 time.
19 Q. Could you go over the variables or
20 the counts that are noted in the CSF and tell me
21 if there are any abnormalities on them?
22 A. You are talking about the
23 chemistries?
24 Q. Yes.
25 A. Okay. So the protein looks like the

Page 40

1 24th at almost 5:00 o'clock was 340 and the
2 glucose was 14.
3 Q. Protein 340 and glucose 14?
4 A. Correct.
5 Q. All right. Can you draw any
6 conclusions from those two chemistry values as
7 to how long that bacteria had been present?
8 A. You can't. And again, I think these
9 values were taken more than 12 hours after the
10 child became ill. So it's impossible to -- you
11 can't draw any line. There is no linear
12 relationship between how high the protein is and
13 the time. This shows a marked inflammatory
14 response. And this is about 12 hours after the
15 child became ill.
16 Q. Any other abnormalities other than
17 the protein and glucose?
18 A. The white cell count was 7900.
19 Q. Have we covered all the
20 abnormalities?
21 A. I'm sure there were a few red cells.
22 I don't see them listed. It looks like the gram
23 stain showed some bacteria present.
24 Q. Consistent with group B strep?
25 A. Correct. The group B strep antigen

10 (Pages 37 to 40)

Page 41	Page 43
<p>1 was positive and the CSF.</p> <p>2 Q. Did you mention in your notes</p> <p>3 something about CSF having a bloody result? In</p> <p>4 your notes right in front of you there. I</p> <p>5 thought I heard that earlier in the deposition.</p> <p>6 A. No. It's CSF and blood culture</p> <p>7 positive for group B strep.</p> <p>8 Q. I misunderstood you.</p> <p>9 A. CSF, blood is what my little scribble</p> <p>10 there says.</p> <p>11 Q. Okay. Doctor, are you familiar with</p> <p>12 any literature that stands for the proposition</p> <p>13 of how long bacteria, bacteremia will be present</p> <p>14 in group B strep, likely to be present in group</p> <p>15 B strep before it develops and goes on to</p> <p>16 meningitis?</p> <p>17 A. No.</p> <p>18 MR. BECKER: That's all I have.</p> <p>19 MS. MOODY: John, do you have any</p> <p>20 questions?</p> <p>21 MR. WASUNG: No. Thank you.</p> <p>22 MS. MOODY: Doctor, you have right to</p> <p>23 read the deposition and sign if you would like</p> <p>24 to do that.</p> <p>25 THE WITNESS: Whatever is</p>	<p>1 AFFIDAVIT</p> <p>2 I have read the foregoing transcript from</p> <p>3 page 1 through 42 and note the following</p> <p>4 corrections:</p> <p>5 PAGE LINE REQUESTED CHANGE</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18 KEITH B. ARMITAGE, M.D.</p> <p>19</p> <p>20 Subscribed and sworn to before me this</p> <p>21 day of , 2002.</p> <p>22</p> <p>23 Notary Public</p> <p>24</p> <p>25 My commission expires .</p>
<p>1 appropriate.</p> <p>2 MS. MOODY: We will reserve</p> <p>3 signature.</p> <p>4 MR. BECKER: Thank you for your</p> <p>5 time, doctor.</p> <p>6</p> <p>7 (Deposition concluded at 9:05 a.m.)</p> <p>8 (Signature not waived.)</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</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>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 I, Vivian L. Gordon, a Notary Public within</p> <p>9 and for the State of Ohio, duly commissioned and</p> <p>10 qualified, do hereby certify that the within</p> <p>11 named KEITH B. ARMITAGE, M.D. was by me first</p> <p>12 duly sworn to testify to the truth, the whole</p> <p>13 truth and nothing but the truth in the cause</p> <p>14 aforesaid; that the testimony as above set forth</p> <p>15 was by me reduced to stenotypy, afterwards</p> <p>16 transcribed, and that the foregoing is a true</p> <p>17 and correct transcription of the testimony.</p> <p>18</p> <p>19 I do further certify that this deposition</p> <p>20 was taken at the time and place specified and</p> <p>21 was completed without adjournment; that I am not</p> <p>22 a relative or attorney for either party or</p> <p>23 otherwise interested in the event of this</p> <p>24 action. I am not, nor is the court reporting</p> <p>25 firm with which I am affiliated, under a</p> <p>contract as defined in Civil Rule 28 (D).</p> <p>21 IN WITNESS WHEREOF, I have hereunto set my</p> <p>22 hand and affixed my seal of office at Cleveland,</p> <p>23 Ohio, on this 10th day of September, 2002.</p> <p>24</p> <p>25</p> <p><i>Vivian L. Gordon</i></p> <p>Vivian L. Gordon, Notary Public</p> <p>Within and for the State of Ohio</p> <p>My commission expires June 8, 2004.</p>

Page 45

1	INDEX
2	DEPOSITION OF KEITH B. ARMITAGE, M.D.
3	BY MR. BECKER: 3:7
4	Exhibit 1 was marked..... 3:13
5	Exhibit 2 was marked..... 6:9
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	

<p>A</p> <p>abbreviations 7:8</p> <p>abdomen 7:19 8:4,7</p> <p>abdominal 25:9</p> <p>able 28:4,18</p> <p>abnormalities 32:9 39:21 40:16,20</p> <p>abnormally 26:17</p> <p>about 4:16 10:22 13:15 23:21 27:7 30:24 31:9,15 36:9 39:22 40:14 41:3</p> <p>above 1:23 44:11</p> <p>accompanied 6:17</p> <p>accurate 5:21 15:4</p> <p>action 44:16</p> <p>active 11:22</p> <p>actually 24:4 28:10 29:14</p> <p>Adderral 7:23</p> <p>adjournment 44:14</p> <p>administration 13:23 17:21</p> <p>adult 24:13,17</p> <p>adults 38:16</p> <p>AFFIDAVIT 43:1</p> <p>affiliated 44:16</p> <p>affixed 44:18</p> <p>aforsaid 44:11</p> <p>after 8:8 17:22 27:15 30:1,20 40:9,14</p> <p>afternoon 39:13</p> <p>afterwards 44:11</p> <p>again 6:6 23:11 25:22 26:6 31:4 33:18,22 35:13,15 37:9 38:15 40:8</p> <p>aggressive 25:19 29:7</p> <p>ago 14:15 28:9 29:6</p> <p>agree 17:18,23 18:12 22:18 36:12 36:16 37:4,18,25</p> <p>agreement 1:20</p> <p>ahead 35:17</p> <p>al 1:7</p> <p>alert 7:18</p> <p>algorithm 24:16</p> <p>algorithms 24:9</p> <p>almost 40:1</p> <p>alone 36:25 37:16</p>	<p>along 14:6</p> <p>already 34:9</p> <p>although 21:24</p> <p>amount 35:22</p> <p>amounts 28:16</p> <p>amp 7:20,21</p> <p>answer 8:14,23 9:7 17:2 18:23 36:9 37:16</p> <p>answered 19:1 35:17</p> <p>antibiotic 13:24</p> <p>antibiotics 17:22 18:11 19:6,9,11 19:13,17,21 22:20 34:21 35:7 36:3,7 36:22,25 37:3,13 37:15</p> <p>antibody 7:13</p> <p>antigen 40:25</p> <p>anybody 19:12,19</p> <p>anything 6:24 10:5 11:21</p> <p>apparent 34:5</p> <p>appear 3:21</p> <p>appearance 14:22</p> <p>APPEARANCES 2:1</p> <p>appeared 10:23 30:21 34:6</p> <p>appropriate 42:1</p> <p>arched 31:2</p> <p>Armitage 1:11,14 3:1,6,10,12 6:8 43:17 44:9 45:2</p> <p>around 15:15,16,22 25:11 26:2 30:3 33:20</p> <p>arrow 7:20</p> <p>articles 3:20 4:23 9:20</p> <p>asked 19:8 35:16 36:8</p> <p>Associates 13:6</p> <p>assume 9:4 10:25 28:1</p> <p>attached 8:6</p> <p>attempt 8:19</p> <p>attending 35:5</p> <p>attorney 12:2,3 44:15</p> <p>attorneys 13:3</p> <p>attribute 25:6 32:14</p>	<p>attributing 32:18</p> <p>authored 3:21 4:24</p> <p>available 28:14,16</p> <p>Avenue 2:4,9,13</p> <p>avoided 13:24 18:13</p> <p>axillary 38:7,10</p> <p>a.m 1:22 7:12 26:20 26:23 29:25 30:2 30:4,24 42:7</p> <p>B</p> <p>B 1:11,14 3:1,6 13:17 25:13 32:22 33:5,10 36:11 39:1,2,5 40:24,25 41:7,14,15 43:17 44:9 45:2</p> <p>baby 30:13</p> <p>back 5:17,23 6:12 6:20 8:3 17:16 23:22 29:13 31:2 31:6</p> <p>backflow 27:15,18</p> <p>background 5:5</p> <p>bacteremia 21:20 21:24 22:2 26:11 33:20,23 41:13</p> <p>bacteremic 21:21 28:20</p> <p>bacteria 20:1 21:2 21:3,6 29:1 35:19 35:21,22 36:2,13 36:14 39:17 40:7 40:23 41:13</p> <p>Barclay 3:10</p> <p>Barry 2:16</p> <p>based 15:12 18:1 31:5 34:20,21 38:17</p> <p>Basing 17:25</p> <p>basis 17:24 20:24 26:4 30:9 35:13</p> <p>became 33:15 40:10,15</p> <p>Becker 2:3,3 3:7 5:13 6:5 41:18 42:4 45:3</p> <p>Becker-Hayes 2:4</p> <p>become 33:7,8</p> <p>before 1:17 8:12 10:20 12:16 16:21 25:23 28:20 37:11</p>	<p>41:15 43:20</p> <p>began 26:2</p> <p>behalf 1:16 2:2,7,11 4:13 12:10,24 13:17,21 14:11</p> <p>being 3:3 4:8 8:4 24:7 30:21</p> <p>believe 11:9 25:11 32:4</p> <p>best 9:6</p> <p>better 36:17 37:8 37:19</p> <p>between 12:1 17:15 18:22 23:9 30:4 33:17 40:12</p> <p>bilirubin 7:14 24:23</p> <p>billi 7:18</p> <p>birth 9:12 19:9 33:6</p> <p>bit 10:23</p> <p>blankets 7:17</p> <p>blood 7:15 15:22,22 15:24,25 16:1,6 21:2,3,6,12 22:15 25:25 26:8,13,14 26:16 27:5,6,9,17 29:1 32:19 38:22 39:1 41:6,9</p> <p>bloodstream 36:13</p> <p>bloody 41:3</p> <p>body's 21:15 22:5</p> <p>borderline 32:23</p> <p>both 38:16</p> <p>brain 22:10</p> <p>breakdown 12:1</p> <p>brief 6:25</p> <p>bring 5:8</p> <p>brush 21:23</p> <p>Buganski 2:11 9:16 31:14</p> <p>Building 1:21 2:4,8</p> <p>by-product 20:11</p> <p>C</p> <p>call 31:11 32:21</p> <p>called 1:15 3:2 7:23 31:10 34:19</p> <p>came 8:8</p> <p>canal 33:6</p> <p>care 4:15,20 10:15 15:3 23:24 24:1,8 24:15</p> <p>caregivers 34:7</p>	<p>35:2</p> <p>case 1:6 4:3,25 5:4 10:15 14:2,15,18 14:20 15:2,8 20:3 26:18 28:19 29:17 34:18</p> <p>cases 11:5,10,23 12:1,5,9,13,19 13:16,20 14:1,9 14:11,14 18:3 21:12</p> <p>categorize 33:9</p> <p>category 32:25</p> <p>causation 10:16,18 10:21 15:6,7 16:24</p> <p>cause 16:11 27:4,6 44:10</p> <p>caused 20:1</p> <p>causes 27:16 35:24</p> <p>CBC 31:23</p> <p>cell 27:17 40:18</p> <p>cells 40:21</p> <p>cerebral 22:10 28:24 29:2 35:23</p> <p>certainly 15:21 16:6 18:5</p> <p>certainty 18:17,22 19:2,20</p> <p>CERTIFICATE 44:1</p> <p>certified 3:4</p> <p>certify 44:9,13</p> <p>cetera 16:12</p> <p>change 36:23 43:5</p> <p>charge 4:6</p> <p>chart 27:24 34:5</p> <p>charted 25:10</p> <p>check 28:2,5</p> <p>chemistries 39:23</p> <p>chemistry 40:6</p> <p>chest 22:17</p> <p>Chicago 13:8</p> <p>child 8:9 16:4 18:14 19:8,12 20:6 24:22 25:2,17,20 28:20 29:8,10,11 29:20 30:7,16,20 30:20 31:2,4,6,10 31:13,23 32:11 33:15 34:6,12 35:8 40:10,15</p> <p>children 24:1 33:7 37:13</p>
---	--	--	--	--

<p>Children's 23:25 child's 15:14,19,22 16:13 24:20,25 29:13 36:13 Civil 3:3 44:17 CI011505 1:6 Cleveland 1:21,21 11:5 14:14 44:18 clinical 4:11 15:14 16:13,19 18:3,4 20:21,25 21:4,9 21:17 22:4 24:25 26:7 33:19 35:11 clinically 21:24 22:1 close 19:2 colonies 39:5 colonized 33:7 colonizer 33:6 colony 39:15 Colorado 24:6 come 5:1 13:13 31:11 comes 18:3 38:15 commencing 1:22 commission 43:25 44:24 commissioned 44:8 common 1:1 31:19 complete 5:8 9:6 10:6 completed 44:14 compliance 15:3 computer 11:22 concept 20:20 concerned 10:10 31:9 conclude 12:19 17:9 concluded 42:7 conclusions 40:6 condition 22:6 conditions 21:9 confirmed 39:16 consequences 18:14 19:13 consistent 11:13 30:23 33:13 40:24 Constance 9:15 contacted 12:20 contacts 12:1 contains 22:10 contract 44:17</p>	<p>contributed 20:7 convincing 37:2 core 29:13 corner 7:22 correct 5:22 10:19 14:8 15:5 17:13 21:7,17 22:21 24:13,14 25:8 29:18,19 32:8,13 34:10,11,25 35:12 38:1 40:4,25 44:12 corrections 43:4 correctly 38:19 counsel 1:15,20 count 7:15 15:22,24 16:3,11,18 26:13 26:14,16,19,20,21 26:23,25 27:5,6 27:11,13,17 32:4 32:6,7 40:18 counts 16:6 26:8 32:19 39:20 County 1:2 14:3 44:5 couple 10:24 16:14 course 15:14 25:1 35:11 court 1:1 44:16 covered 40:19 co-authored 3:21 4:24 co-training 4:9 crank 16:11 created 24:12 criticism 35:1 CSF 7:15 19:24 20:9 27:18 39:10 39:11,12,17,20 41:1,3,6,9 culture 17:11 22:16 38:21 39:1,4 41:6 cultures 17:22 21:12 22:15 cut 37:24 Cuyahoga 14:3 44:5 CV 3:19 cytokines 16:10</p>	<p>damages 35:18 data 31:5 36:20 37:2 38:17,18 39:3 date 1:23 28:5 day 1:22 15:19 16:2 43:21 44:19 days 7:14 27:10,12 27:13 decrease 27:13 decreased 29:23 defendant 2:7,11 4:13 Defendants 1:8 defense 12:5 defervesced 25:3 define 20:24 defined 44:17 definition 21:4,18 21:18 22:3 definitions 20:19 degree 18:16,25 19:20 38:13,19,20 delivery 17:19 33:7 demonstrate 34:15 DeNardis 2:12 Denver 23:25 24:2 24:3 department 4:7 dependent 36:2 depo 13:14 deposed 3:4 8:11 deposition 1:11,14 3:12 6:8 8:1 9:10 9:22 14:17 30:19 41:5,23 42:7 44:13 45:2 depositions 9:13 18:2 19:8 description 30:10 31:8 despite 37:12,16 develop 29:20 developed 24:15 develops 41:15 diagnosis 33:19 Diane 9:14 Dick 13:7 difference 18:22 19:10 37:3 different 19:15 20:2 differential 15:24 26:20 27:1</p>	<p>difficult 8:23 digital 38:18 Diplomate 1:18 directly 28:25 director 4:9,9 disagree 37:20 disease 4:2,5 diseases 4:4 5:6 15:13 distended 7:19 8:4 8:7 distention 25:10 distinguish 21:19 division 4:2,4,5 doctor 3:8,16 5:8 5:18 6:13 8:12 9:3 17:1,14 18:10 20:19 28:19 35:4 35:17 36:12,16 41:11,22 42:5 documents 10:8 doing 10:24 11:7 22:15 done 31:23 38:18 double 7:16,18 doubling 36:6,6,10 down 6:22 7:6 8:24 18:3 26:11,14,22 Dr 31:14 36:8 drastically 27:9 draw 40:5,11 drawn 17:22 38:22 38:25 drew 15:22,25 16:1 drop 26:16 27:6,9 Drutchas 2:12 dry 37:24 due 25:2 29:8 30:16 35:18 duly 3:3 44:8,10 during 13:14 15:19 33:6</p>	<p>29:9 44:15 elevated 26:12 32:5 32:7 elevation 16:2 27:4 Elyria 2:5 ended 15:9 engage 22:24 24:9 32:19 engaged 11:1 23:14 enough 8:20 9:1 31:9 ensuing 30:17 enter 28:12 entity 22:4 environment 29:10 episodes 16:14 escaping 13:11 especially 20:23 21:7 ESQ 2:3,8,13 estimate 11:12 23:8 et 1:7 16:12 etiology 33:1 evaluating 22:13 event 44:15 events 9:12 ever 23:14 24:12,15 28:4 every 21:22 evidence 16:15 29:23 evidenced 25:24 exact 23:12 exactly 7:6 exam 7:18 examination 1:16 3:2,6 exclusively 12:22 excuse 36:7 exhibit 3:13,17 6:4 6:9,14 7:6 45:4,5 experience 4:15,18 15:13 experienced 31:13 expert 4:12 11:4 12:24 experts 18:2 expires 43:25 44:24 explain 7:7 26:25 explanation 24:19</p>
	<p>D D 2:8 44:17 damage 20:1 35:24</p>		<p>E earlier 19:1,7 34:8 37:7,19 41:5 early 29:22 32:21 36:17 37:13 educational 4:7 effect 13:23 effective 19:17 eight 30:18 either 7:15 13:3</p>	<p>F factor 36:4</p>

<p>faculty 4:2 fair 8:20 9:1,7 10:25,25 12:18 17:8 fairly 17:4 Faix 9:17 36:8 fall 25:18 falls 32:25 familiar 26:10 27:2 27:14,21 36:5 41:11 familiarity 17:25 far 10:10,13 feed 8:1 feeding 30:13 feel 13:14 32:2 33:15 fever 38:4 few 5:22 11:2,5,6 27:10 28:9 29:6 34:1 40:21 file 5:9,19 final 38:24 find 12:11 28:4 38:21 firm 44:16 first 3:3 14:13 20:6 25:10 27:10 30:6 31:1,23 32:12 34:5,16 36:22 44:9 fits 31:7 five 11:18 12:24 fluid 22:10 28:25 29:2 35:24 followed 22:19 following 43:3 follows 3:5 food 7:24 foregoing 43:2 44:12 form 17:1 forth 1:23 44:11 found 13:21 four 11:15 12:24 15:25 16:9,21 34:3 frame 26:3 free 13:14 frequently 18:5 23:3,6 from 6:20 7:5,25 9:12 12:20 14:14 17:8 20:13 21:20</p>	<p>29:10 40:6 43:2 front 41:4 full 3:9 fully 8:24 9:5 fulminant 25:14 29:4,6 further 44:13</p> <hr/> <p>G</p> <p>gave 13:22 37:23 GBS 7:16 general 27:2,10 36:15,19 37:4,8 37:18,20,22,25 generally 38:9,13 gent 7:20 Gilbert 9:17 give 11:25 13:2 14:17 15:10 18:16 23:4,8,12 given 18:5,8,11 24:25 36:3 37:13 37:17 39:3 Givens 9:17 giving 5:18 9:6 glucose 40:2,3,17 go 5:13 14:20 20:18 35:17 39:19 goes 26:13,14 41:15 going 6:3 8:3 9:4 10:14 16:25 26:11 29:14 36:21 37:1 Goldsmith 9:16 good 3:8 7:18 9:8 Gordon 1:17 44:8 44:22 grade 25:14 gram 40:22 ground 8:13 group 13:17 25:13 32:22 33:5,10 36:11 39:1,2,5 40:24,25 41:7,14 41:14 grow 36:14 guess 12:4 15:9 17:4 19:3,19 30:12 33:18</p> <hr/> <p>H</p> <p>habit 6:22 Hampshire 13:9 hand 44:18</p>	<p>handing 3:16 handle 4:14 hands-on 4:18,20 handwriting 7:2 happens 18:1 hard 19:23 having 22:2 41:3 head 8:24 hear 16:16 heard 38:14 41:5 help 17:7 helped 16:20 hemophilus 37:10 hereinafter 3:4 hereunto 44:18 Hersch 2:16 5:15 5:17 6:12 high 24:23 27:11 40:12 higher 38:10 him 31:11 Honestly 7:9 hospital 1:7 2:7 3:25 4:6 9:13 15:4 22:24 23:25 24:3,5 hospitals 1:20 17:20 32:17 hour 29:17,18 hours 15:25 16:9,20 16:21 25:5,23 27:12 29:22 30:18 31:24 32:12,24 33:14 34:1,3 36:22 40:9,14 Hypothetically 17:14 18:10</p> <hr/> <p>I</p> <p>idea 11:25 12:16 23:1 29:12 38:17 identification 3:14 6:10 39:15 identified 4:12 identify 3:18 6:15 ill 34:7 40:10,15 impact 35:10 important 8:15,22 impossible 40:10 inartfully 8:18 incident 30:12,19 include 17:21 includes 4:8</p>	<p>incompatibility 32:18 increase 7:14 27:17 increased 16:11 INDEX 45:1 indicate 9:3 39:16 infected 33:8 infection 14:4 15:15 16:6,15,20 20:23 21:11,15 22:6,14 25:2,14 26:11,13 27:3,8 27:10,12 29:4,7 30:16 32:22 33:11 34:20 39:6 infections 26:16 infectious 4:2,4,5 5:6 15:13 inflammation 20:8 20:15 22:8 inflammatory 15:21 16:5,7,10 19:24,25 20:22 21:10 22:5 25:25 33:24 34:2 35:19 35:21,23 36:1 40:13 influenza 37:10 initial 20:12 initially 10:11 27:4 34:19 injury 13:24 inoculated 28:25 Inside 13:5 instability 24:20 25:7 instance 37:15 institution 22:20 insult 20:12 intense 16:5 intensive 23:24 interested 44:15 interests 5:2 interpret 7:1,5 intraabdominal 34:20 invoke 26:24 involve 13:17 involved 14:3 issue 15:2 18:19 28:8 issues 12:16 IV 18:10 22:20 35:7</p>	<p>J</p> <p>jaundice 32:11,17 Jay 9:16 John 2:13 41:19 Johnson 9:15 Joseph 1:4 9:14 jotting 7:11 jottings 8:5 journal 9:20 JR 1:4 judgment 18:4 Judith 9:16 June 44:24 just 4:14 5:25 6:21 7:10 8:12 10:18 13:15 14:25 15:6 19:2,23 20:8,11 21:8 23:23 28:9 28:18 juxtaposition 8:5</p> <hr/> <p>K</p> <p>keep 11:20 Keith 1:11,14 3:1,6 3:10 43:17 44:9 45:2 kids 20:2 37:10 38:16 kid's 35:10 kind 7:2 16:10 Kitch 2:12 know 5:23 7:9,10 8:11 9:24 10:13 11:3 12:14,16,25 13:11 14:2,13 16:4,13,21 19:7,7 20:3,7 21:22 23:23 29:11 30:15 30:17 31:4,6 32:16,20,24 33:12 33:20,22 34:18 36:8,22 37:17,23 knowledge 22:22 23:5 28:15</p> <hr/> <p>L</p> <p>L 1:17 44:8,22 lady 8:24 last 4:20 10:24 11:2 11:6,15 16:17 later 13:12 15:25 36:17 leaves 15:6</p>
--	---	---	--	---

left 16:1,12 26:23 legal 19:4 less 20:15 38:20 let 17:7,16 letter 5:23 6:16,20 10:7 Let's 6:5 20:18,19 levels 26:17 life 31:24 lights 7:16 24:23 like 6:21 7:2,15 39:9,12,25 40:22 41:23 likely 18:12 20:10 23:9 28:20 30:25 35:9 41:14 Linda 9:15 line 40:11 43:5 linear 40:11 lines 14:6 22:9 listed 40:22 literature 27:21 41:12 little 19:15 20:15 41:9 live 14:22 locate 28:18 logs 11:21 long 14:15 29:12 40:7 41:13 longer 36:12 look 5:11,19 6:13 6:23 15:12,13,18 15:20 26:18 39:10 looked 6:1 31:10,13 looking 20:5 26:6,7 36:24 looks 7:15 39:12,25 40:22 lot 4:17 11:1,4 20:6 36:20 37:13,14 38:16,17 39:17 Lott 9:17 low 25:14 26:17 27:9 LP 7:14 LUCAS 1:2 Lucinda 9:14	majority 18:7 22:19 23:11 25:4 31:21 make 8:17 14:22 33:23 37:3 manufacture 34:1 many 11:10,16 36:1 March 24:21 27:25 mark 6:3 marked 3:13,17 6:9 6:14 40:13 45:4,5 Marshall 2:7 matter 4:13,25 5:19 May 5:11 maybe 14:16 McKee 9:14 mean 7:10 12:15 20:20 21:1 22:12 23:2,23 34:24 means 7:13 21:16 22:13,15 med 28:4 mediators 16:10 34:2 medical 4:22 6:17 9:11,24 10:2,11 12:2 18:16,25 19:20 23:16,22 24:6 medical/legal 10:22 10:24 11:1,8 medication 27:25 28:17 medicine 4:8,10 meeting 22:3 Mellhorn 2:7 member 4:1 membrane 22:9 meninges 22:9 meningitis 20:14 22:7,8 25:21,22 26:1,12 27:15 28:21 31:5 34:9 34:16 37:7,7,11 37:19 41:16 mention 41:2 meritorious 12:12 13:22 MICHAEL 2:3 microbiologic 21:18 middle 2:4 8:9 midnight 26:2	might 14:5 mind 5:1 25:21 mine 7:2 minutes 28:9 29:6 29:15,17,18 30:22 Mishkind 2:3 missing 28:10 mistaken 28:17 misunderstood 41:8 modern 38:18 moment 5:14 MONDAY 1:12 monitored 16:4 MOODY 2:8 16:25 28:3,15 35:16 41:19,22 42:2 more 13:12 17:3 18:12 25:19 33:17 35:9 36:14 40:9 morning 3:8 15:23 16:8,22 25:12,24 26:9,19 27:1 29:22 30:8,11 34:23 38:23 most 9:6 12:13 17:20 21:10,12 29:16 32:16 mother 7:13 8:1 30:13 mouth 7:24 much 20:7 36:16,24 must 7:25 M.D 1:11,15 3:1,6 43:17 44:9 45:2	newborn 4:20 23:15,16 29:21 31:17 34:13,14 38:3,11 newborns 4:15 31:20 32:5 33:13 38:3 next 16:2 25:5 NIC 23:6 24:8 night 8:9 15:16 nods 8:24 None 5:1 Norma 9:13 normal 7:17 15:20 15:24,24 25:4 26:8,19,19,25 27:1 30:21 31:14 32:3,5 33:5,6 northeast 11:5 northern 14:12 Notary 1:18 43:23 44:8,22 note 30:25 34:20 43:3 noted 5:20 39:20 notes 5:20 6:19 7:7 7:25 30:18 41:2,4 nothing 39:9 44:10 notice 6:2 notwithstanding 16:14 number 23:4 36:2 39:5 nurse 7:23 nursery 22:23 nurses 15:4 25:10 30:19 31:8,9,13 31:14 nurse's 30:18	office 44:18 often 21:11 22:23 34:17 Ohio 1:2,19,21 2:5 2:8,9,14 3:2 11:5 12:13 13:4 14:12 44:3,8,19,23 Okay 6:25 7:4 8:21 9:2,18 10:20 13:13 14:9 15:6 16:23 17:7 21:19 25:6,17 28:23 29:8 32:7 36:5 39:8,10,25 41:11 old 38:17 older 14:4 once 35:13 one 14:2,13 19:7 24:9 25:14,14 26:21 28:16 36:4 38:13 only 35:20 onset 32:21 open 15:9 opinion 10:15 13:22 17:9 18:15 18:18,24 19:5,16 19:18,21 26:5 30:6,9 33:1 35:14 opinions 10:21 15:1 15:7 16:23 opportunity 5:19 ordered 19:14 Osterhut 9:15 other 4:17,21 5:5 13:13 16:23 32:9 36:24 39:3,4 40:16,16 otherwise 9:4 44:15 out 12:13 19:2 27:18 38:16 outcome 20:8 36:18 37:2,8,20 outside 12:20 13:1 13:4 over 5:24 20:18 27:12,12 36:24 39:19 overall 4:6 16:13 overbundling 29:9 overheated 29:8 overwhelming 26:15 27:8
--	---	---	--	---

21:10,10,16,20,22 22:3,4,11,13,24 23:6,10,11,14,22 24:1,10,16,18 25:2 31:18 33:25 34:4,15 36:17 September 1:12 44:19 septicemia 33:16 33:19 serial 32:19 session 8:14 set 1:23 27:16 28:21 34:9 44:11,18 severe 18:13 37:11 severity 39:6 sheet 28:5 shift 16:1,12 26:23 shifts 32:9 shock 29:20 30:4 showed 40:23 shows 34:21 40:13 sick 31:7 33:24 side 6:20 sign 31:17,18 41:23 signature 42:3,8 significance 6:24 significant 21:25 22:2 27:16 signs 15:19 25:4 33:25 34:4,15,16 simply 20:11 simultaneously 34:17 since 6:25 11:14 14:9 23:16 28:8 38:3 sit 28:8 situation 37:24 size 35:25 slowly 7:5 some 7:25 12:15 20:18 21:23 29:23 32:24 36:20 40:23 somehow 20:14 someone 19:22 something 23:2 41:3 sometime 15:15 sometimes 22:16 26:15 27:8 sort 4:6 32:23 sounds 9:8 19:15 30:11	sources 22:14 specific 5:7 6:23 14:5 17:3,5 36:10 specifically 27:23 28:6 specified 44:14 spectrum 21:9 25:16,18 spent 23:23 spinal 22:10,16 28:25 29:2 35:24 spring 23:20 SS 44:4 stability 16:13,19 26:7 stable 30:17 stain 40:23 Stalma 1:4 9:14,14 25:17 standard 10:15 15:3 stands 41:12 staph 14:4 start 11:7 20:19 started 15:15 19:14 25:23 33:20 35:7 starting 7:5 state 1:19 12:21,25 13:1,3,4,5 35:9 44:3,8,23 statement 17:8,24 36:19 37:5,21,22 statute 1:17 Stege 13:6,7,7 14:7 14:10,15 stenotypy 44:11 steroids 37:15 stiff 7:24 31:3 still 10:7 20:16 stipulation 28:12 stop 8:18 strep 13:18 25:13 32:22 33:5,10 36:11 39:1,2,5 40:24,25 41:7,14 41:15 strike 34:13 subject 4:25 Subscribed 43:20 subsequent 9:12 31:5 subsequently 33:8 successful 37:12	successfully 27:11 suck 7:19 suctioning 30:20 Suite 2:9,13 suppose 6:3 31:21 sure 5:12 7:13 8:6 13:5 17:5 23:2 24:11 29:5 32:1 38:25 40:21 suspected 24:1 34:19 suspicion 18:4 sworn 3:4 43:20 44:10 systemic 21:9,14	8:7 12:15,22 13:11 14:3 15:12 15:14 16:1,12,18 18:3,15 19:6,10 19:11,11,12,19,23 20:3,16 22:18 23:19 24:25 25:1 25:16,22 26:17,24 27:7 28:3,16,19 28:24 29:6,16 30:1,10,15,22 31:4,12,19,24 32:24 33:13,18,19 34:8,18 36:8,9 38:15,16 40:8 thought 24:24 31:13 41:5 three 11:15 16:9,21 25:23 31:24 34:3 through 29:1 43:3 ticar 7:19 time 4:20 8:4,6 16:20 17:18 18:6 18:7 21:22 22:19 23:23 25:5 26:3,7 30:7 31:6 34:22 36:3,6,10 39:18 40:13 42:5 44:14 timely 13:23 times 11:6 12:25 31:22 timing 17:5 Timp 7:16 tissue 29:24 today 5:9 9:7 28:14 today's 9:10,21 told 34:8 Toledo 1:7 2:7,9,14 top 7:5 track 11:20 31:6 training 4:9,10 transcribed 44:12 transcript 43:2 transcription 44:12 treat 24:23 27:11 36:17 37:7,19 treating 24:24 trending 26:22 trial 14:20,23 15:2 Tried 8:1 true 36:19 44:12 truth 44:10,10,10 try 13:11 14:14 15:10	trying 4:14 19:2 turn 5:24 two 7:13 24:23 25:13,23 26:21 27:7 40:6 type 29:3 32:19 36:6 types 25:13 typical 30:11 33:10
U				
unbundled 29:12 under 1:16 8:15 24:23 44:16 understand 6:19 8:16,25 18:21 19:3 understanding 24:22 25:15 understood 9:5 unit 23:6,24 24:8 University 1:20 3:25 4:3,5 22:23 24:5,5 unless 9:3 until 26:7 unusual 34:14 urine 22:16 use 21:8 29:5 used 13:8 37:11 usually 12:15 20:22 20:23 22:6,15 33:24				
V				
vaccine 37:12 vaginal 33:7 Valitutti 2:12 values 40:6,9 variables 20:25 39:19 various 18:2 vast 31:21 verbally 8:23,25 versus 12:2 20:8 very 8:15,22 31:7 31:19,19 videographer 2:16 videotaped 1:11,14 Virginia 13:10 vitae 3:22 5:3 vital 15:19 25:4 Vivian 1:17 6:5				

44:8,22 Vogarty 9:16 vomiting 31:17,18 Voudouris 13:6 vs 1:6	wouldn't 17:23 19:12 25:2,3 write 10:7 writing 6:22 written 6:24 wrote 8:8	2004 44:24 21st 32:6 2210 32:6 23rd 15:17,18 17:11,16 18:12 24:20 33:16 35:8 24 16:20 32:12 36:22 24th 8:10 15:23 27:25 29:23 40:1 28 44:17	7 7 7:15 26:23 35:8 7:30 15:25 26:20 70 12:14 72 33:14 7900 40:18
W Wagner 2:12 waived 42:8 want 8:12,18 17:3 wasn't 11:16 31:15 39:17 WASUNG 2:13 41:21 way 7:6 15:11 21:7 33:13 35:20 37:9 ways 36:2 WB 27:5 Wearn 1:21 week 20:6 well 4:19 7:1 10:15 13:13 17:16 19:15 20:10,21 21:21 26:15 27:2 30:10 31:19 33:18 34:4 34:9 35:1 38:15 were 6:17 9:6 10:11 15:20 20:11 28:10 31:9 37:17 39:14 40:9,21 West 13:10 Western 4:3 WHEREOF 44:18 white 7:14 16:3,11 16:18 26:12,14,16 26:19,20,21,23,25 27:5,6,9,11,13,17 32:4,6,7 40:18 whole 44:10 witness 1:15 3:1 12:23 41:25 44:18 woman 14:4 word 29:11 work 10:22,24 11:1 11:8 working 7:6 24:8 workup 17:10,15 17:21 22:11,13 23:10,15,22 workups 22:24 23:6,11 24:10,16 worse 7:3 worst 37:1	X X 10:8 x-ray 22:17 Y Yeah 6:21 17:4 19:3,6 year 11:8,10 23:18 years 10:24 11:2,6 11:16 36:24 0 0230 7:19 0300 39:2 1 1 3:13,17 43:3 45:4 10 33:16 10th 44:19 10:30 8:2 100 18:6 38:5 100.4 38:5 100.6 7:14 11 33:16,17,20 11:00 15:15 11:15 8:2 1100 2:9 12 25:5 33:17,21 40:9,14 134 2:4 14 40:2,3 1500 2:13 1985 23:20 24:2,11 1996 11:9,14 2 2 6:9,14 7:6,15 45:5 2:30 25:1,11 29:25 30:8,10,24 34:6 38:22 20 11:12 20.3 32:6 200 7:20 2000 14:16 2002 1:12 43:21 44:19	3 3 29:25 30:4 3-21 7:12 3-22 7:17 3-23 7:14,16,18 3-24 7:16,19 39:2 39:13 3:00 38:22 3:13 45:4 3:30 15:23 16:8,21 25:24 26:8,18 27:1 34:23 39:13 3:7 45:3 340 40:1,3 4 4 17:10,15 30:2,4 40 12:5,9 400 7:21 405 2:13 419-243-4006 2:14 419-249-7100 2:10 42 43:3 420 2:9 43604 2:9 43604-1235 2:14 440-323-7070 2:5 44035 2:5 48 32:24 33:14 36:22 5 5:00 40:1 6 6 7:23 17:10,15 6:30 17:16 18:11 19:14,14 30:13 6:9 45:5 60 12:4 60/40 12:7	8 8 44:24 8:00 1:22 80 12:14 9 9 1:12 26:23 31:15 9:05 42:7 9:32 7:12 96 11:16,18 97 11:17,19 99 14:16