IN THE CIRCUIT COURT OF COOK COUNTY, ILLINOIS
COUNTY DEPARTMENT, LAW DIVISION

NO: 91 L 21091

MARK TURNER, a disabled person by his co-guardians, DIANE TURNER and WILL TURNER,

Plaintiffs,

vs.

CITY OF CHICAGO, a municipal corporation, d/b/a MUNICIPAL CONTAGIOUS DISEASE HOSPITAL, et al.,

Defendants.

DEPOSITION OF MICHAEL S. RADETSKY, M.D.
January 11, 1996
10:00 a.m.
500 Marquette, Northwest, Suite 280
Albuquerque, New Mexico 87102

PURSUANT TO THE ILLINOIS RULES OF CIVIL PROCEDURE, this deposition was:

TAKEN BY: MR. BARRY GOLDBERG
ATTORNEY FOR THE PLAINTIFFS

REPORTED BY: MARY ABERNATHY SEAL, RPR, RMR, RDR, NM CCR #69
Bean & Associates, Inc.
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A P P E A R A N C E S

For the Plaintiffs:

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BY: MR. BARRY GOLDBERG

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I N D E X

MICHAEL S. RADETSKY, M.D.,
after having been first duly sworn under oath, was questioned and testified as follows:

EXAMINATION

BY MR. GOLDBERG:

Q. Doctor, I'm going to be asking you lots of questions. If I ask a question in any way that you don't understand, just ask me to rephrase it or explain something, if there's any question or doubt about it. All right?

A. That would be fine.

Q. Try to avoid doing what all normal folks do, uh-huh, um-hmm, going like this, shaking your head up and down. She can't get anything other than an audible answer recorded accurately, all right;?

A. Sure.

Q. This is a CV **I** was given just at the beginning of this. Is this current?

A. Yes, it is.

Q. We'll make that Exhibit 1.

(Exhibit 1 marked for identification.)

(A discussion was held off the record.)

Q. I would like, please, for the record, any exhibit marked and identified be physically -- unless we, the attorneys, both stipulate that we don't need it to be attached physically to the deposition -- any of those that don't fall within that category, please make sure they are.

Doctor, have you seen answers to Rule 220 interrogatories? Have you seen this document? I don't mean the exact one I'm holding in my hand, but have you seen one like that recently?

A. I believe so.

Q. When did you see it?

A. I honestly don't remember, but -- and in all honesty, what I may have seen would just have been my portion of this, In other words, the portion attributed to me.

Q. Where is that copy?

A. I'll look through my file. But it looks familiar, but I don't have an exact memory of seeing it.

Q. All right. Have you seen this letter of January 8 which we'll make Exhibit 3, the prior one Exhibit 2, and I'll have you mark it in a moment.

A. No.

(Exhibits 2 and 3 marked for identification.)

Q. Doctor, in your curriculum vitae, is there any article, journal, any work, research, that you have done that

bears directly upon, as you perceive it, any of the issues in this case?

A. Yes.

Q. Would you just turn to your copy and tell me which of the articles or what literature, research, specifically impact upon that?

A. You have the only copy, sir.

Q. Can we have someone make another copy, while we're working?

(A discussion was held off the record.)

Q. Give me the page, and then we'll get the identification.

A. Page 11, reference 6. Page 11, reference 13. Page 11, reference 14. Page 11, reference 17. I believe that's all.

(A discussion was held off the record.)

MR. GOLDBERG: Show the deposition began timely at 10:00.

Q. Doctor, just so we can get this out of the way, it's my understanding for personal reasons that you have to leave somewhere around 4:00, 4:15.

A. That's correct, sir.

Q. Involving children problems -- or not problems, but is that correct?

A. That's correct.

Q. And that's unexpected, I presume. You didn't expect that, anticipate it; right?

A. Yes, my wife, because of work considerations, will not get home until about 10:00 tonight, so I'm forced to deal with the children.

Q. Just understand that we're going to proceed with the deposition. I'm not making any aspersion, but we had hoped that we would be able to go to conclusion. I'll try to go as far as I can, okay? We'll continue.

With regard, Doctor, to these items that you have picked out, 6, 13, 14 and 17, do you have copies of these somewhere?

A. Yes.

Q. Where would that be?

A. In my office.

Q. Something that, if I asked you, you could, at my expense -- or give to counsel and photocopy?

A. If Ms. McDonald asks me to do something, I certainly would do it.

MR. GOLDBERG: Ms. McDonald, would you ask the doctor to -- I'll pay my share, of course -- have copies of those made, 6, 13? And for the record, I'm circling those that he identified, 6, 13, 14, and 17.

A. If I could ask that at the end of the deposition, I'm given the numbers again.

Q. I'm going to give you a copy of the CV. We're going to make other copies

How old are you, Doctor?

A. 50.

Q. In 1970, where professionally in your practice were you?

A. I was not practicing medicine. It was prior to my medical school.

Q. Were you in college?

A. In 1970, I was working at the Tufts New England Medical Center as a pediatric cardiology technician.

Q. Had you goals, then, of going to medical school?

A. No.

Q. Had you completed college?

A. Yes.

Q. As a technician, did you have the occasion to deal with doing laboratory work?

A. Of what sort, sir?

Q. Well, that's what I'm asking. Of any type? Laboratory, did you work in a laboratory?

A. We worked in a cardiovascular laboratory, yes.

Q. Did you deal with blood workups of any kind?

A. We would occasionally draw blood samples if directed to do so.

Q. In 1970, Doctor, at Tufts, were you working in a

medical school setting?

A. No, I was working at the Boston Floating Hospital for Children, which is appended to Tufts. It is part of the teaching program of Tufts University, however.

Q. Did they have laboratories there, microbiology and blood labs?

A. Yes

Q. Do you know what the turnaround time was for various -- do you recall -- laboratory tests?

A. No.

Q. With reference, Doctor, to this case, what materials have you reviewed?

A. I brought them all with me, Mr. Goldberg. I don't have an inclusive list of them, but they're in that box over there.

Q. Pretty heavy, huh?

A. I had to carry it myself.

Q. Well, no sympathy from the lawyers in this case. Would you be kind enough -- you don't have a list, I take it, right?

A. No, I do not.

Q. This manila folder you have -- are there documents in it concerning this case?

A. Yes, there are a few.

Q. What are those things that are in the manila

folder? Let's start with that.

A. Sure. I took excerpts from the case records on a word processor.

Q. Excerpts, word processor. One of those people, huh

A. I have an original copy, and I made a copy for you if you so desire it.

Q. Please. So that we're clear, we'll mark this Exhibit 4, A and B. You'll keep the original, I'll take B to mark. You worked at a computer and you then, as to certain depositions, I presume, took portions of statements and just typed on this document; right?

A. No, these are entirely from the medical records. N depositions are included.

Q. So this is just the chart itself?

A. Yes, but it's not inclusive of the entire chart. It's portions of the chart presented in a chronological form for ready reference.

Q. How long did that take you?

A. I don't remember. A while.

Q. Have you had this for very long? How long ago did you complete this?

a. I completed the major part of it when I did my firs review, and based on rereview of the medical records or the ability to decipher handwriting, I have added a few things to it since then.

Q. By that statement that you have added a few things as a result of deciphering handwriting, did anyone assist you in that?

A. No, I did it all myself.

Q. All yourself. Okay. Are you able to determine what was added and what was your initial review?

A. Not easily, no.

MR. GOLDBERG: Mark this Exhibit 4B, A being the original, which the doctor will keep.

(Exhibits 4A and 4B marked for identification.)

Q. How much time would you estimate you spent in total on this case, Doctor?

A. I can't actually estimate it, because I haven't made a final time tally. Certainly over ten hours.

Q. Can you be any more specific than over ten hours?

A. No, I can't.

Q. You have never kept records of your time?

A. I do have records of the time back at the office, but I have them on a yellow sticky somewhere in the office for later use.

Q. When we resume this deposition, would you be kind enough, the next time, to bring with you what that tally is, or if there's some way, on a break, that you could get it? Ten hours is as close as you can estimate the time you have put in this case to date?

A. No, I said over ten hours.

Q. Can you be any more specific as to how many hours? Are we talking about 20, 50, 100, 500?

A. I can't be any more specific now, but I will compute it for you. It would be included in the invoice that I would send to Ms. McDonald after this day is over, however, and I presume that you could obtain a copy of that.

Q. When this day is over, what do you plan on charging an hour for review and deposition?

A. Reviews are $350 an hour. Deposition is $400 an hour.

Q. Trial?

A. Travel time, $350 an hour, with a 12-hour a day maximum. Testimony time, $400 an hour.

Q. There's a lot of preliminary stuff before I get into the case, so let me get to that. How many times have you ever acted as an expert witness?

A. I would say over the last 13, 14 years, around 100 cases I have reviewed.

Q. Do you know how Ms. McDonald got your name?

A. No, I do not.

Q. Do you have any evidence of documents of your first contact?

A. I have the correspondences, yes.

Q. So the correspondence is here?

A. They're in this manila folder.

Q. Getting back to the manila folder, why don't we first identify what's in the manila folder, if you'd be kind enough to do that?

A. Sure. I took out of the case records the xerox copy of the graphic chart and nurses' notes from the Municipal Contagious Disease Hospital.

Q. We'll make that Exhibit 5.

(Exhibit 5 marked for identification.)

Q. I'll give it back to you. I'll give it back. I'm not keeping it. We just want to make a copy of everything. I just want to see what it is.

A. I have a copy of a report authored by a Dr. Robert Eilers, dated April 17, 1991, on the child.

Q. We'll make that Exhibit 6.

(Exhibit 6 marked for identification.)

A. I have a copy of Plaintiff's Supplemental Answers to Rule 220 Interrogatories.

Q. We'll make that Exhibit 7.

(Exhibit 7 marked for identification.)

A. I have a copy of an invoice that I sent to Ms. McDonald on November 30, 1995.

(Exhibit 8 marked for identification.)

A. And then I have three letters from Ms. McDonald that I received at various times.

Q. We'll make that A, B and C, three letters, from Ms. McDonald, one November 7, 1995, one January 2, 1996, and one January 4, 1996.

(Exhibits 9-A, B and C marked for identification.)

Q. Doctor, we've now completed the materials in that packet; is that correct?

A. Yes.

Q. On any of these documents, did you make any highlighting or notes specifically that - I'll give it all back to you.

A. No, I did not.

Q. Did you make any notes, separate notes?

A. Other than the -

Q. One exhibit of the chart.

A. Other than the ones that you have before you, no.

Q. Getting back, Doctor, to where we were, in the 13 t 14 years you have been acting as a witness, how many times hav you testified in court?

A. I would say around a dozen times.

Q. What state or states have those been in?

A. I don't know if I can remember them all, but of the ones 1 can, Hawaii, California, New Mexico, Colorado, Wyoming, Missouri, Illinois.

Q. You were doing great until you got to Missouri.

Skiing and fishing. Wonderful. Any others?

A. North Carolina. New Jersey, I believe.

Q. Of the dozen or so times in court, what percentage have been for the defense, what percentage for the plaintiff?

A. In court, I have only testified once for the plaintiff.

Q. Where was that one time?

A. In Albuquerque.

Q. How long ago was that?

A. Seven or eight years ago.

Q. What law firm?

A. Excuse me?

Q. What law firm, if you recall?

A. I don't recall the law firm. I'm sorry.

Q. Of the approximate 100 cases that you have been involved with, what percentage for the plaintiff, what percentage for the defense?

A. I would say 10 to 15 percent for plaintiff.

Q. Can you name any plaintiffs' attorneys from memory that you have worked with?

A. No, I can't. I'm sorry.

Q. Has your name ever been used in a service of any kind, or have you ever worked with a service?

A. Not to my knowledge.

Q. Do you know how times you have worked for the City

of Chicago or the corporation counsel?

A. This was the first time.

Q. With reference, Doctor, to the 100 approximate in number cases over 13 to 14 years, have you testified concerning a specific area, or has it been a variety of areas?

A. I have testified primarily in the area of infectious disease, although I have given testimony also regarding critically ill children, both newborns and older children.

Q. Is and are the subjects of pertussis and otitis media and Hemophilus influenzae type B within the areas of your expertise?

A. Yes.

Q. Is or are those the areas of infectious disease processes that were involved in your opinion in this case?

A. They were infectious disease elements in this case, yes.

Q. Are there any other elements from your review that you considered in addition to those?

A. Well, Ms. McDonald asked me to review the case from the point of view of the link, if any, between the timing of the evaluation and treatment for meningitis and outcome, and that was my focus. From that particular point of view, the only relevant topic is the Hemophilus influenzae meningitis.

However, I read all of the case records, obviously, and in those case records elements included the ones you named,

infectious gastroenteritis, evaluation of children with fevers acute arthritis, subdural effusions, seizure disorders, strokes. Those are other elements.

Q. Have we completed the elements?

A. I think those are the highlight elements, yes.

Q. With regard, Doctor, to your assignment that Ms. McDonald asked you, when were you first asked to do that?

A. At the end of 1995. I have a letter dated November 7, 1995, which accompanied the first wave of records being sen to me.

Q. Is infectious gastroenteritis in the area of your expertise?

A. Yes.

Q. Fever?

A. Yes.

Q. In children? Acute arthritis?

a. Yes.

Q. Subdural effusions?

a. Yes.

Q. Seizure disorders?

A. Yes.

Q. Strokes?

A. Yes.

Q. In each of those areas I have described, they're no exclusive to the area of infectious disease, are they, Doctor?

A. Well, nothing is exclusive to anything in medicine. I don't know how better to answer that question.

Q. By that I mean, in all fairness to both of us, there are physicians that are pediatricians, family practitioners, infectious disease specialists, neurologists, pediatric neurologists that, in fact, at various institutions are called in to be involved in the management of one or any of these; is that correct?

A. Yes.

Q. Including gastroenterologists; correct?

A. Yes.

Q. Is there a certain basic body of information that you would, in your opinion, say is not other than expected of all physicians regarding these areas, as a general body of information?

A. I didn't understand the question.

Q. Well, do you, as far as you understand it -- and were you trained and taught that there are standard norms that are used as criteria for evaluation and assessment?

A. I think that over -- that at each time in the evolution of medicine, there are general approaches and optior which are available to clinicians when confronted with clinic; problems. But there has never been a standard or a norm at ar time, to my knowledge.

Q. There's never been a standard or norm of what?

A. There's never been a single standard or a single normal approach to any medical problem, to my knowledge. It all has to do with acceptable available options and reasonable management schemes within which prudent clinicians will work.

Q. With reference, Doctor, to fever, are there standar norms used, centigrade and Fahrenheit, for measurement?

A. Again, I don't quite understand the question.

Q. Is there a range of normal that you were taught to consider in assessing and managing patients?

A. The demarcation between normal and elevated temperature has no universal threshold. There are a number of numbers that are used as well as referred to, but there is no universal agreement as to when a temperature is elevated to th point that it becomes a fever.

Q. Well, let me ask you, what do you define as a fever then, if that's the case, so we can get the barriers and demarcation lines drawn?

A. Well, you understand that whatever I define is certainly not incumbent on others to accept.

Q. I understand. But I want to find out what you use.

A. I think for the child who is older than 1 to 2 months of age, I use a temperature of 38.3 degrees centigrade taken rectally as a good demarcation point, although it sometimes depends on the time of day, the ambient temperature, and other factors that may artificially raise core body

temperature.

In the neonate, I think a good dividing line is better established at 38 degrees centigrade taken rectally. But no matter what number is picked, it's more a clinical threshold question than a physiologic question, inasmuch as fever's only use is to act as a warning sign for possible illness and as a trigger to a further evaluation. Therefore, inherently, there must be some arbitrariness about establishing a threshold.

(The record was read by the reporter.)

Q. With regard, Doctor, to Fahrenheit, translate 38.3 into Fahrenheit for me, please.

A. Sure. 38.3 is about 101.5 degrees, 101 to 101.5. I can do it exactly, if you want me to actually calculate it out.

Q. so 101 to 101.5?

A. Why don't you let me actually do the calculation?

Q. ***So*** this is not something that you routinely deal in Fahrenheit? You deal in centigrade?

a. Correct.

Q. **Well,** let's see if **you** have got the computer,,and then we'll **use** it, I love and hate people that can do what you're doing.

A. *101* is 38.3, and 100.5 **would** be 38 degrees.

Q. In your career, Doctor, would you give me a ballpark

estimate of the numbers of times you have diagnosed and been involved in the management of pertussis?

A. I would say 50 to 100 times over the course of now 22, 23 years.

Q. When was the first time?

A. In medical school, in Montreal.

Q. The last time?

A. About two months ago.

(A discussion was held off the record.)

Q. With regard to pertussis in contradistinction to pertussis-like syndrome, have you ever heard that phrase used?

A. Yes.

Q. Is there a difference?

A. Yes.

Q. Would you define and distinguish the two for me, please?

A. Pertussis is a microbiological diagnosis. It means that you have either isolated the organism or you have used some other diagnostic technique to prove the presence of the organism as the causative agent of the clinical illness. Pertussis-like syndrome is the clinical illness independent of its cause.

Q. And of cause, you mean in lay terms the bug, if you will; right? Very basic, I'm just trying to get to the point. There are numerous types of organisms that can cause pertussis

right? Many?

A. Well, pertussis syndrome can be caused by certainly more than one organism. The actual number *of* organisms that have been implicated in pertussis-like syndrome is relatively restricted, however.

Q. Under five?

A. I think so.

Q. And pertussis, when it's in a microbiological diagnosis, true pertussis, is how many organisms that are associated with it?

A. One.

Q. Which is?

A. Bordetella pertussis.

Q. How does one go about identifying the organism?

A, Are we talking about in **1996**, now, sir?

Q. Yes.

A. You can diagnose it usually one of three ways. You can either culture it, you can use serology, meaning blood samples taken at two different points during the illness looking for a change in the antibodies to the illness; or you can use a noncultural diagnostic technique, of which there are a number.

Q. Such as?

A. Fluorescent antibody technique is the most common. One can use an enzyme linked immunoassay, and nowadays there is

a polymerase chain reaction available in research centers for pertussis.

Q. Did you do any research to determine or assess what in 1977, were the methodologies for diagnosing and treating an of these elements we've called --

MS. McDONALD: You mean 1977 or 1970?

MR. GOLDBERG: 1970. Did I say 1977? I apologize. 1970.

A. No.

Q. Do you know which of the methodologies that you referred to as being available in 1996 were available in Chicago in 1970?

A. I can make an educated guess, but I don't know exactly.

Q. By the way, Doctor, so that I don't have to repeat this, can you keep this in mind? Any questions I ask you, I'm only interested in those opinions which can be elevated to a reasonable degree of medical and surgical probability, and if they are opinions that you can say based upon a reasonable degree of medical and surgical possibility, I will use and accept both of those. But I want you to differentiate between possibility and probability. Would you do that?

A. Yes.

Q. Also, if I ask any questions on standards of care, I'm only interested in what opinions you believe you can give

based upon your background, education, training, that you can give as to the time period of 1970 in the Chicago area or similar areas. All right?

A. Fine.

Q. When you mentioned a moment ago an educated guess, is that educated guess based upon the fact that you went through a normal medical school, residency, internship type of process that would have given you some insight as to the time period in question?

A. Yes. My medical school began in 1973. I don't believe circumstances were different based on that two-and-a-half-year time period.

Q. So you have some clear understanding of what and ho things were done in 1973, and you feel that it was also being done at or about that time in 1970, pretty much the same way; right?

A. Yes, sir.

Q. What is the only one or two of these methodologies that are new that was not available then, in your opinion, in 1970?

A. **Well**, culture was available. Culture was available and the noncultural techniques were not, and serology was available, but not used.

Q. What specific serology are you referring to?

a. This would be acute and convalescent sera for the

antibody response to Bordetella pertussis.

Q. Getting back for a moment to your testifying as an expert, how many times have you testified on any area of meningitis? Let me restate that. Not testified. How many times have you been an expert or a consultant?

A. I don't know, sir.

Q. Can you give me your best estimate? More than five? Less than five?

A. More than five.

Q. Would it be the area which in most of these cases you were involved with the highest percentage?

A. I think of any single area, it's the one which has the largest number of cases that I have been involved in, yes.

Q. Can you be any more specific than above five in number, or is that as close as you can estimate for me?

A. It would just be a --

Q. Ballpark. I'm just looking for an educated guess.

A. I honestly don't know.

Q. Let's talk about meningitis. In your career, how many times have you diagnosed it?

A. By diagnosing, you mean made the initial diagnosis myself?

Q. Yes. I'm going to get into the diagnosed or been involved in those cases and we'll separate them. But I want to keep them separate.

A. I would say 50 to 100 times.

Q. With reference to meningitis, Doctor, in those 50 to 100 times, what percentage of those were in your training program period?

A. I can't estimate, sir.

Q. When did you first see it?

A. In medical school in the 1970s.

Q. When did you last see it?

A. About two weeks ago.

Q. With regard, Doctor, to the greatest number of cases you were exposed to, what era or time period was it? What years?

A. I was exposed to the greatest number of cases of meningitis during the years 1982 to approximately 1991.

Q. May I ask what you ascribe medically or attribute to that?

A. I would say two factors. One is that my positions during those years included work in infectious diseases and critical care. Therefore, I was involved in almost every case of meningitis that came through the respective institutions with which I was associated during those times.

And secondly, the use of the Hemophilus vaccine had not made inroads into the incidence of disease until the early 1990s.

Q. I take it it's your opinion that, fortunately, those

inoculation programs have had an impact on the frequency of this disease in America, the USA.

A. Yes.

Q. How many cases of meningitis have you, in fact, been involved with that you didn't initially make the diagnosis, but were involved in the management thereof? Over and above this 50 to 100, I'm talking about.

A. I have been involved in hundreds of cases. I honestly don't know how many hundreds.

Q. Is there a body of literature, Doctor, dealing with meningitis?

A. Yes.

Q. Is there a body of literature dealing with meningitis that you have ever specifically done formal research on?

A. I don't quite understand that question.

Q. Have you ever done formal research on meningitis?

A. Yes.

Q. In the lab? When?

A. Excuse me. In the laboratory?

Q. In a lab or scientific setting. Hospitals included, if you want to consider that.

A. Well, I have done a scholarly work in meningitis, some of which included specific laboratory work. Is that an answer? Yes, that's my answer.

Q. What scholarly work? What does that mean when you say "scholarly work"?

A. Sure.

Q. Many physicians would have said everything they do is scholarly, so -- and I'm not being facetious.

A. Some days it feels that way, and some days it doesn't.

I have done specific research, either research in mining the medical literature or specific studies which have resulted in publications, and those are included in my curriculum vitae.

Q. In the infectious disease specialty area, you consider Cherry and Feigin one such learned work, a recognized authority in the field?

A. I believe he pronounces his name Feigin.

Q. Okay. I'll accept that.

a. It is **a** comprehensive textbook. It's not authoritative in the sense that it adds to the body of knowledge, but it is not dispositive of that knowledge.

Q. Nothing is, is it?

A. No.

Q. Nothing. And maybe you could tell me something tha is, but some physicians are willing to say some works are considered authoritative, and others are willing to say nothir is authoritative. You're somewhere in between the two?

A. Nothing that's published has the final word, sir.

Q. With regard, Doctor, to the field and specialty of meningitis, tell me what are the learned texts that you consider, if one were to go to, or you would send a resident in infectious disease to, that you would say, "This is a good source" as an initial Bible sort of situation.

A. I don't know if I'd ever use that phrase. It depends what the purpose of the search is.

Q. Meningitis.

A. I understand that. But if the purpose of the search is to gain some background information about meningitis, you must understand that most residents have short attention span. I probably would not send them to the Feigin and Cherry textbook, which they probably would not finish the article. I might choose one of a number of different available textbooks, or --

Q. Such as?

A. -- or published articles.

Q. Texts.

A. And I say such as, not because these are the premier publications or even because necessarily they are the most definitive publications, but they are publications. And therefore, that's all you have to choose from.

I might ask them to take a look at the textbook by Dr. Saul Krugman, now out in its ninth edition, which has quite

a nice introductory chapter to meningitis. I might ask them to take a look at the chapter by Dr. Mel Marks in his single authored textbook of infectious disease.

If I thought it was more important to learn about the setting of meningitis amongst different other diagnostic possibilities, I might send them to Dr. Hugh Moffit's textbook, which is now somewhat outdated, being four years old, but is really quite a wonderful work to the thinking processes in medicine. I might ask them to take a look at the most recent incarnation of the so-called white paper on meningitis, this one being published around 1992, in the Pediatric Infectious Disease Journal authored by Dr. Feigin, Dr. McCracken, and Dr. Klein.

Q. From Harvard?

A. Dr. Klein is at Boston University. But probably what I would do is give them a lecture on meningitis and not refer them to anything.

Q. To gather the information to give that lecture, did you make use of any literature in the form of texts?

A. I have been interested in meningitis my whole practice life. I keep up on the literature as a normal course of events. I wouldn't have to actually go back and do anything more.

Q. But to get to that stage, did you ever use texts in the initial starting point?

A. I have read all of the textbooks.

Q. Good. Have you also done literature searches on the subject?

A. Yes, for specific projects.

Q. Have you ever done a Medline or Index Medicus search specifically on meningitis and any particular type of meningitis?

A. No.

Q. That is available to be done, isn't it?

A. It is, but you know, you get more than you bargain for there, and it's very hard to winnow it down to a manageable level. There's an infinite literature on meningitis.

Q. There is, isn't there?

A. Yes.

Q. Hundreds and hundreds of articles.

A. Yes.

Q. Is there any article on the subject of meningitis which you consider to be the leading article or series of articles, or is there a position paper that you consider to be one of the recognized types of papers?

A. Upon which aspect of meningitis?

Q. Let's talk about H. flu meningitis type B.

A. Which aspect of meningitis?

Q. That's broad enough to narrow it down.

A. No, it's too broad a topic. There's nothing which

is the leading position paper on H. flu meningitis.

Q. Type B, -- has that been referred to as 1, 2, or 3 in other articles or compendiums?

A. No.

Q. That's separate, isn't it? 1, 2 and 3?

A. Yes.

Q. What does H. flu meningitis type B specifically mean?

A. It means meningitis caused by that specific organism.

Q. How many cases of a meningitis have you been involved with directly and indirectly, the first one being 50 to 100, as I recall, and the second group being hundreds, but you couldn't say how many -- narrowing it down more so?

A. I'm sorry, what was the question?

Q. Narrowing it down now to that, how many --

MS. McDONALD: Those caused by H. flu type B?

Q. Right, type B. Of the direct diagnosis, and indirect involvement.

A. 80 to 90 percent. Correction. I would say more like 80 percent, because I include in there group B streptococcal meningitis of the newborn, of which I have seen a fair number of cases.

Q. I was going to get to that. Now, of group B, by the way, H. flu meningitis type B is that what you call group B,

when you just use the phrase?

A. No, I said group B streptococcal meningitis of the newborn.

Q. What percentage of the type -- let's start over, H flu meningitis type B. What percentage of those have been involved with the newborn?

A. I have seen one case in my life.

Q. Other than that, all of it would be other than newborn?

A. Correct.

Q. Now, Doctor, H. flu meningitis type B. Have you written any papers in the items that you earlier listed for me specifically dealing with that issue?

A. I have written no papers that have been limited onl to that particular organism.

Q. Have any *of* the papers that you highlighted for me, pointed out to me -- did they include this specific organism?

A. Yes.

Q. **All of** them that you mentioned -- you can look. It's not a memory contest.

A. **Yes.**

Q. Have you done any long-term follow-up care or has anyone done long-term follow-up care that reported to you on the outcomes of these particular patients, limiting it to H. flu meningitis type B?

MS. McDONALD: The ones he's been involved in the treatment of?

MR. GOLDBERG: Direct and indirect, yes.

A. No. I have taken care of them, some of them in follow-up care, but I do not have a comprehensive follow-up registry of these patients.

Q. There have been such studies done, have there not, that are published?

A. Yes.

Q. We will obviously be doing -- and I'll be asking you lots of questions about H. flu meningitis type B, but I want to just go back to where I was a moment ago. In the cases that you have been involved with, you told me the numbers that you testified in were approximately a dozen, give or take. How many depositions have you given?

A. I would say around 50, plus or minus.

Q. How many for the plaintiff?

A. 10 or **15** percent.

Q. How many of those depositions involve meningitis of any type, if you recall?

A. I can only recall one, but there may be more.

Q. Some doctors, after the case **is** over, throw away all the papers, depositions, everything. Others keep them. Which group are you within?

A. I'm the throw away type.

Q. So you don't have any of the depositions or materials from cases other than those that you may actively be invoived with; is that correct?

A. That's correct.

Q. At present, how many cases are you actively involve with?

A. I honestly don't know.

Q. What percentage of your income comes from testifying?

A. From testifying?

Q. Consulting, testifying. The whole gambit. Expert witness work.

A. I would say over the years that I have been doing it, it averages about 15 percent.

Q. How about in the last three years, five years? Has it been less or more than **15** percent?

A. I honestly don't know. That's probably my best estimate.

Q. *And* there's no way that you can be more precise at this moment; right?

A. That's correct.

Q. In 1995 do you know what amount of money or income you made in testifying?

A. No.

Q. Do you know what percentage of your income came fro

testifying?

A. No.

Q. Do you know how many depositions you gave in 1995?

A" No.

Q. How many cases you testified in?

A. No.

Q. How many cases you reviewed?

A. No.

Q. 1994, same questions.

A. No, I don't know.

Q. 1993?

A. Again.

Q. 1992?

A. Same.

Q. 1991?

A. Same, sir.

Q. Is the procedure that has been followed by you in these cases pretty much the same? You're asked to make an assignment, and then you do it?

A. I don't understand that at all.

Q. In acting as a consultant, in an expert capacity, someone calls you up and asks you something and then you see if you can do it or not; right? Ms. McDonald called you and gave you an assignment, which is what I heard you say. And I'm wondering, is that the way it works generally for and with

you? Someone calls you up, asks you would you look at a particular case, you review it, and then you give them an answer if you're capable; correct?

A. Yes.

Q. And that's all I'm saying. It's nothing complex. Is that how it's worked in the past?

A. More or less, I think that's the way it' gone in the past. I didn't know there was any other way that it's done, so I'm a little bit --

Q. There are lots of ways it's done.

A. -- at a loss.

Q. Do you, Doctor, ever ask for additional materials that you feel you may need to look at?

A. Sometimes.

Q. Rather than just what's sent to you?

A. Sometimes.

Q. Did you do that in this case?

A. Yes.

Q. What did you ask for?

A. I asked to see Dr. Gotoff's deposition.

Q. **Did** you read it?

A. **Yes.**

Q. Was there some reason that you wanted to read his deposition?

A. Yes.

Q. Why?

A. Two reasons. One is that he was a principal involved in the child's care. But at the same time, he was an infectious disease specialist, But the main reason was that Dr. Livingston had used some portions of the Gotoff deposition in his deposition, and I wanted to see the full deposition.

Q. And you read all three portions?

A. I read the entire thing, yes.

Q. Interesting reading; right?

A. well, depositions are, I think, a form of literatur of their own, sir

Q. Have you read other depositions in this case?

A. Yes.

Q. Could you be kind enough to stand -- or we'll pass it to you -- to tell me the depositions you have read, please?

A. Why don't I just go to the box?

Q. I think that's easier, Before you do that, one thing, did you make any markings in them, dog tag, fold over pages, that kind of stuff?

A. No.

Q. So all that is in the materials you have here are just the deps themselves?

A. That's correct.

Q. And you made no computer readout or sheets of that type at all?

A. No.

Q. So all you did is just read them, and no notes, nothing; right?

A. That's right.

Q. Okay.

A. Here's Dr. Gotoff's deposition.

Q. Is that the whole deposition?

A. Yes, it is.

MS. McDONALD: It's the reduced form.

MR. GOLDBERG: Let me see that.

Q. So this is the Min-U-Script.

(A discussion was held off the record.)

A. There's a deposition of Robert Livingston, MD. The deposition of Leon Charash, MD. The deposition of Charito Dellatorre, MD, two volumes. There's the deposition -- I'll spell the first name -- M-E-H-R-U-N-N-I-S-A, Zarif, Z-A-R-I-F, MD. And there are five pieces to it. There's the deposition of Diane Turner. There are two pieces to it. That's it.

Q. Did you ask for those deps?

A. Only the one from Dr. Gotoff.

Q. Do you know why these that you mentioned were sent to you specifically?

A. No.

Q. Doctor, some people read meticulously, detail. Some people scan. Some people just read what they think is

important. Insofar as these depositions, what did you do?

A. I read each page. I read about 70 pages an hour, deposition.

Q. Were you reading it with any specific point in mind, or points in mind that you were looking for?

A. No.

Q. Do you feel that you needed these depositions in any way to reach the opinions that you originally gave?

A. Well, I'm not quite sure how to answer that. The opinion that I originally gave, I originally gave. And then the depositions I reviewed, most I reviewed subsequent to my first conversation with Ms. McDonald. The nature of my opinions did not change based on the depositions. I suppose they could have, but they didn't.

Q. So the opinions you gave Ms. McDonald originally are basically the same and have not been altered or modified as a result *of* anything you read in any *of* these depositions; correct?

A" They were not altered.

Q. Did you learn anything new, different or additional by way of factual matter that **had** any bearing on your opinions insofar as supporting, corroborating, things of that type?

A. Well, again, recalling, I was asked to look at the link, if any, between the timing of antibiotics and outcome. With regard to that, the depositions did not supply new factual

information that modified my opinion in any way.

Q. Doctor, please understand that as a lawyer, all we have to work with are words, so I'm not trying to be picayune with you. I'm trying to be specific. Fair enough? You understand what I'm saying? So let me ask this of you. You were asked to look at the link, if any, between the timing of the antibiotics and outcome; is that correct?

A. That's correct.

Q. To save somewhat of a period of time, is that what your role, as you see it, is in this case?

A. My role, as I see it, is to ask questions posed to me. I'm just reiterating to you what the focus was as given to me by Ms. McDonald.

Q. But I'm asking, is that what your focus was as you went through all the chart and the materials?

A. I read all the chart and the materials. I certainly paid attention to that, since that was the issue of my charge. My mind doesn't turn off automatically, so, you know, I read everything.

Q. I'm trying to just see if I can narrow something. I'm trying to find out, in listening to what you said, as to whether you are going to be offering opinions, if asked, at the trial on standards of care as to any of the parties, or have you confined your review and are your opinions limited to causation?

A. I will answer all questions posed to me.

Q. Does that mean that you feel you are prepared to answer questions on standards of care?

MS. McDONALD: Let me say, we're not intending to elicit those.

MR. GOLDBERG: Well, so we're clear, you are not intending -- you stipulate you do not intend or expect to ask opinions of him on standard of care?

MS. McDONALB: That's correct.

MR. GOLDBERG: Okay.

Q. (By Mr. Goldberg) With regard, Doctor, to your opinions, I take it the issue of antibiotic therapy and outcome in the issue of the charge, as you called it, that you were asked to do, is within the area of your expertise?

A. Yes.

Q. Is it an area peculiar just to infectious disease, Doctor?

A. E don't understand the question.

Q. Are there other areas of medical discipline that deal with this issue, as well?

A. I would say that the timing of antibiotics in the context of illness does reside within the subject matter of infectious disease. I would probably say a rheumatologist would not be asked about this area. Antibiotics and their influence on infections seems to be within the subject matter

of infectious disease more than any other subspecialty.

Q. But is there and are there not other areas of specialty, such as pediatrics, emergency medicine, emergency pediatrics, orthopedics, infectious disease, all of which are called upon to diagnose, manage, and treat infectious diseases of one type or another?

A. Well, to borrow a phrase of your own, sir, medicine is a seamless web.

Q. Would the answer then be yes?

A. I think as stated, the answer is yes.

Q. Okay. I have to, so you understand, get an answer so I can go on. A seamless web, I understand it. But someone if they heard it, might not, so I just want to be sure we're communicating.

Now, Doctor, with reference *to* the expert witnesses in this case, do you know of them, or know them personally on both sides?

A. Of the two expert witnesses, I only know of three expert witnesses involved in this case, two of whose depositions I read.

Q. You only know of three?

A. Correct.

Q. Two you read?

A. Yes.

Q. Who are the two you're referring to? Livingston?

A. Livingston, Charash, and there's another one that Ms. McDonald told me about who is a neurologist whose deposition I did not read.

Q. Tomasi?

A. Correct.

Q. So Ms. McDonald told you about a Dr. Tomasi, but you didn't read his deposition; right?

A. Correct.

Q. You read Charash and you read Livingston; right?

A. Yes.

Q. Do you know of Dr. Tomasi?

A. I have heard the name, yes.

Q. Do you know anything about his training or background?

A. No.

Q. Meningitis -- is that something which, from your experience and exposure, pediatric neurologists have the occasion to become involved in the management, care, and treatment thereof, on the acute as well as long-term follow-up care basis?

A. Occasionally.

Q. Pediatricians?

A. No.

Q. Do you know of a Dr. Schulman, for example?

A. I know his name.

Q. That's all?

A. That's correct.

Q. Do you know of Dr. Gotoff?

A. *Yes.*

Q. How do you know of Dr. Gotoff other than having read his deposition?

A. Again, I know his name, and I briefly met him once many years ago.

Q. Have you read any of his works that you recall?

A. Yes, I have read a number of papers in which he was a coauthor, all having to do with group B streptococcal disease of the newborn.

Q. Have you read any papers by Dr. Schulman?

A. Yes.

Q. Which?

A. Primarily papers having to do with Kawasaki disease and papers having to do with infections of the heart.

Q. Any papers by Dr. Livingston?

A. No. When I say no, I don't have a memory of it.

Q. Not that you recall. That's a fair understanding. Nothing that you remember; correct?

A. Correct.

Q. You're board certified?

A. In three things, yes.

Q. What are you board certified in, Doctor?

A. pediatrics, pediatric infectious diseases, and pediatric critical care.

Q. Well. When were you boarded, Doctor, in peds?

A. 1983.

Q. Infectious disease?

A. 1996.

Q. Critical care?

A. Originally 1987, recertified in 1995. Correction, the infectious diseases is 1995. Sorry. Not 1996.

Q. Doctor, the fact that you weren't certified in infectious disease before 1995 -- did you consider yourself to have expertise, nevertheless, in infectious disease?

A. You understand there was no board certification available before then, and the answer is yes.

Q. That's my point. Just because a discipline gets a board certification doesn't mean that you had to be certified or have to be certified to have expertise and knowledge in it; right?

A. Expertise and knowledge resides with the individual. Board certification is for another purpose.

Q. Critical care would be both with newborns, I take it, as well as other than newborns? Or is that left to the

neonatologists?

A. Critical care has to do with the pediatric intensive care unit and pediatric emergency rooms. Issues regarding newborns are included there, but it is different than neonatology.

Q. Right. So after the first 30 days of life primaril is what you're referring to, and then thereafter?

A. Not necessarily. As I said, it does have to do wit newborns, but the day-to-day management of premature newborns and that sort of thing is usually left to a neonatologist,

Q. Being boarded in critical care, do you know most of the people that are boarded, or many of them, in that specialty?

A. I know some of them, but I don't know them all.

Q. Do you know Roger Barkin?

A. Yes.

Q. How do you know Roger?

A. Roger was a colleague of mine in Denver.

Q. You worked together with one another for some peri of time, did you not?

A. **Yes.**

Q. Was he one of your -- how do I say this -- did he teach you, or were you on an equal plane at the time?

A. Originally, he was on the faculty when I was going through my training, and then we were colleagues.

Q. What do you know of him by way of reputation?

A. He was originally trained as a public health specialist, then became a pediatrician. He has an interest in infectious diseases, although I do not believe he is board certified in infectious disease.

He then made a career change and devoted his time towards pediatric emergency medicine, where he's been a very prolific contributor in textbook articles, and he currently is primarily in pediatric administration in a large multihospital group which supplies services to the Denver area.

Q. When did you last have any dealings with Roger Barkin?

A. I talked to Roger last time last year.

Q. Was there ever any mention or discussion of this case between the two of you?

A. No.

Q. With regard, Doctor, to Dr. Gotoff, when you read his deposition, did you note certain comments he made about his perception of his involvement and role in relation to the residents and interns?

a. Well, I have **a** memory of some of the remarks he made.

Q. This is not per se a memory contest, and by all means, when I ask a question, if you need to go to the dep, I will not only try to help you find it, I'll try to be

specific. But do you remember what he said was the way in which the Municipal Contagious Disease Hospital was run in terms of the supervision?

A. I have a general idea, yes.

Q. What's your general idea?

A. The general idea is that the attending physicians were there primarily to deal with the problem patients, to provide education to the residents. They were not hands-on physicians to each and every patient, and so they exerted overall supervision in a hospital in which the resident staff did the primary care.

Q. Have you ever been in a hospital where that was the situation?

A. Sure

Q. Which?

A. San Francisco General Hospital, Denver General Hospital are examples of two of those.

Q. Is it your testimony that in Denver General Hospital, anytime you were ever there, that attendings didn't supervise the residents?

MS. McDONALD: Well, I'll object, because when you say "supervise," you know, I think you have to be a little more specific. He's talked about what his understanding of th relationship is.

A. I don't think that's anything that I said, sir.

Q. Well, when you said resident staff did primary care. Were you ever at Denver General where there was an attending supervising the residents?

A. We always had an attending supervising, but that's what they did, they supervised.

Q. Would you define, then, in the sentence you used a moment ago, resident staff did primary care. What does that mean?

A. Yes. What I meant by that was that the day-to-day examinations, management, collection of data, and primary contact with patients and family were done by the resident staff. Patients would then be presented to the supervising staff. They would in a more selective way do examinations or interact with the families, but the supervising or attending staff do not do direct, daily, hands-on care on all patients.

Q. "Presented to the attending in a more selective way," that phrase means that those that were other than in a range of healthy or normal would be brought to the attention of, some way, the attending?

A. No, The way it usually works is that all children are brought to their attention, but with different degrees of participation on the part of the supervisor, and what I meant, selective was not that the patients were selective, so much as the content, issues, and degree of discussion was selective, depending on the problems associated with each individual

patient.

Q. In the context of the statement, "The resident staf did primary care," was it in any instance that you have ever been involved with, without supervision of an attending?

MS. McDONALD: Well, I'm going to ask you to define what you mean by that.

MR. GOLDBERG: He understands the question.

MS. McDONALD: Well, I don't know. I think you both might have different understandings. You mean the attending never ever talked with the resident about the case?

Q. Would you answer the question, Doctor?

A. As I define "supervision," supervision has always been present.

Q. Doctor, is it your understanding that at Denver General Hospital, there was ever a time where there wasn't som attending that, in fact, would supervise and be available to supervise patient care done by the residents or interns?

A. Well, as I said, as I define supervision, there was always an attending who was supervising residents.

Q. Now, there is what is known as a medical chain of command, is there not, Doctor?

A. Perhaps you can flesh that out a bit more for me. It's not a phrase that I commonly use.

Q. Is there a nursing chain of command?

A. Well, again, I don't know what you mean by chain of

command. There is a military chain of command, but as it applies to medicine, I'm not quite sure what you mean.

Q. Well, perhaps I can explain further. Have you ever been the chairman of any department?

A. Yes.

Q. Did you have a job description and responsibility a a chairman?

A. In a loose way, yes.

Q. Did you delegate that responsibility to others beneath and below you on the chain of command?

A. Well, I'm currently a chairman.

Q. I know.

A. And the people I work with are my colleagues. We don't have a particular chain of command in a military sense. We share in the administrative chores, although I perhaps get the lion's share of those chores.

Q. Are you the director or the chairman of the department?

A. Yes.

Q. Is there a co-director or chairman?

A. No.

Q. Is there an assistant director or chairman?

A. No.

Q. Underneath you, Doctor -- do you teach in that capacity as chairman of the department?

A. I do not teach my colleagues. We teach each other.

Q. Do you teach residents as part of the program?

A. Yes.

Q. Is there a pecking order or chain of command among the residents?

A. There may be at the university, but not at the institution that I'm at,

Q At the university, is there a pecking order?

A Well, usually there is a -- not to use the barnyard phrase "pecking order," but there are different levels of seniority that seem to be associated with the interaction.

Q. If you're more comfortable with the use of the phrase "seniority," I have no problem with using semantic differences. But in the formative years of your residency, Doctor, was there a seniority among the residents?

A. Yes.

Q. Would you tell me what it was?

A. Seniority was based on the level of training that you were at, and it went from the medical student at the lowest, to the intern, to the second, third, or beyond residen to chief resident, then finally to attending, would be the ascending order of seniority.

Q. Were there fellows anywhere along the line in this?

A. In some institutions, yes.

Q. So is that the seniority that generally *is* ascribed

to a teaching center or setting?

A. Yes.

Q. I use "chain of command" or "pecking order" in the context in which you used "seniority." I'll be glad to use "seniority" if it offends you to use the other phrases. Okay?

A. That's fine.

Q. All right. The role and function of a medical student and intern and resident and chief resident is to both have hands-on care involvement and to be taught; correct?

A. Those are amongst their roles, yes.

Q. Right. And the same thing would hold true of a fellow; correct?

A. Yes

Q. The role of the attending is to, in fact, have involvement with these people and personnel in a teaching capacity, in those centers where that occurs?

A. That's amongst the things they do, yes.

Q. Is communication, in your medical opinion, importar in medicine?

A. I would say in medicine and in all human endeavor, yes.

Q. You smiled, Doctor, so you understand. I appreciat that, but I'm really being very serious. It is important, is it not?

A. Then perhaps you can refine the question for me.

Q. I'm saying, communication between those people in this seniority range we've just talked about -- there has to be communication between them, right, for the program to function properly in a teaching setting?

A. I will answer generally yes to a general question, but I'm not quite sure its applicability here.

Q. It is in either of two ways that you are aware of that there is a communication, either oral or written?

A. Yes.

Q. Oral being physician to physician, written being the chart and various portions of the chart to be available to be read by whoever chooses to; right?

A. Yes.

Q. Is there, in the same way that there's a seniority with regard to the medical student, intern, that line of seniority, the same kind of situation with reference to nursing?

A. I'm not as familiar with nursing organization. I would assume that there is some degree of seniority, but I don't think it's as richly layered as it is in medicine.

Q. Well, do **you** know what the phrase "patient's advocate" means, Doctor?

A. I have heard the phrase in many instances in many settings. I'm not quite sure which one you're referring to

Q. I'm referring to the one that's contained in the Joint Commission on Accreditation of Hospitals, which indicates and states, among other things, that the members of the medical team are supposed to act as the patient's advocate to see to it that proper and appropriate timely care is given. Have you ever heard of that?

A. I haven't heard that particular sentence, no.

Q. Well, I'll be glad to show it to you, but have you ever heard of the Joint Commission?

A. Yes.

Q. As a chairman, do you not have direct responsibility to see to it that the standards of that Joint Commission are met as it applies to your department?

A. Yes.

Q. You have to read it, to understand what those standards are, right? You have to read the standards to see whether or not your department will be in compliance with it; right?

A. Not necessarily.

Q. Not necessarily?

A. No.

Q. You mean you have learned it along the way that you could know what it is and what's expect of you without reading it?

A. Usually, you know what is expected of a good medica

center, and those are the aspects that have been emphasized b the Joint Commission.

Q. Is it your understanding and expectation with your residents that you expect them to act in the best interests o their patients?

A. Yes.

Q. And to bring to your attention in that reference a information, either orally or in writing or both, that would bear upon the need for intervention, care and treatment?

A. Could you --

Q. To bring to an attending physician whatever information is necessary for the care and proper care and treatment of that patient?

A. If that communication is one which is appropriate bring to the attending physician, yes.

Q. There is a type of information which should be brought to the attention of the attending, is there not?

A. In a general way, yes, to a general question.

Q. These are general questions, Doctor. Do you train and tell your residents that you have been involved with that there are certain types of patients and conditions that you want to be notified about?

A. I don't know if I have ever said it quite that way, sir.

Q. Mow would you say it?

A. Well, how would I say it?

Q. I happen to know how you have said it. But I want to hear what you recall as how you have said it and how you were trained to say it and to teach others. So let me hear what you think and recall.

A. In my interaction with residents, of which I have far less now than I have in the past, what I have told them is that I'm available for all of their queries and questions, tha I would like to be notified if there is a meaningful change in a patient's condition, and that the care of the patient is usually a collaborative effort amongst all the people related to the team, but don't wait for me to do the right thing. Do the right thing anyway. And it's my job, of course, to teach them what the right thing is.

Q. Is it your opinion that when you use "the right thing," would another proper phrase for that be the standard o care?

A. No, I don't think that's an exact substitute.

Q. Would you define "standard of care"?

A. Well, stanaard of care, of course, is a legal term.

Q. It's also a medical term. I teach in the medical school, so I'm familiar with what goes on, and it's now taught in all of the medical schools that I know of.

MS. McDONALD: I don't know that that makes it a medical term.

Q. It doesn't make it other than a term that is part of the syntax of a resident or an attending in this day and age, 1996. But what is your definition?

A. Again, it's not a medical term as I know it, at any rate, Chicago notwithstanding. The standard of care is that level of medical attention and care which is performed by a similar physician in a similar setting. I understand it from state to state it's either defined as an average physician; in New Mexico it's defined as the most minimally qualified physician, seems to change. My own personal concept of it is that the standard of care is that range of options available to a physician in managing a patient within which most good and reasonable and prudent physicians work. It's not usually one thing. It's usually a range.

Q. What a reasonably well-qualified physician would be expected to know and do and not do?

A. It's usually a range of choices available to reasonable physicians taking care of patients.

Q. Doctor, isn't it true that there are some instances where there is no choice?

A. Well, you'll have to tell me about that.

Q. When the patient stops breathing. There's only one thing to be done, isn't there?

A. Well, there's --

Q. There's different ways to approach it, but you give

resuscitation, CPR; right?

A. The goal is a single goal, but the means of achieving the goal nay differ from person to person.

Q. So is that what you're talking about, the options, the different ways to do something?

A. Not exactly. You gave me a very particular instance,

Q. I did that for a reason, because you were getting very vague with me, and I wanted to just get to the point that this concept you're using of there being many options -- options and goals may be achieved differently, but the end result is you demand and exact, do you not, of your residents that they act in a reasonable fashion, and whatever option the select in this myriad of options that you think exist has to b within the appropriate standard of care of reasonableness. isn't that true?

A. As I defined it, yes.

Q. There may be, for example, in your area of discipline more than one type of treatment for a particular disease process; right?

A. *Yes.*

Q. And if there are two or three that are acceptable, any one or two of those three may be used as an option; correct?

A. Yes.

Q. But the physician who is going to be called upon to treat that patient, if there are only three acceptable options which reasonably qualified physicians use, they would be called upon to use one of those three, right?

A. Yes.

Q. Is that the context that you're using it?

A. Well, that's one aspect of it. I mean, for many conditions, the options are not treatment options. They're evaluation options or management options. For example, there

other physicians would wait and observe. Certain physicians might hospitalize. Others would treat at home. They may all be very acceptable. It's not limited just to treatment options, but also to evaluation and management options and follow-up options, as well

Q. ***So*** within the context of reasonable care that's wha you're talking about? The ultimate goal is that the physician must, in whatever option he elects or she elects to follow, act reasonably; right?

A. Yes.

the time under the existing circumstances?

A. Yes.

Q. Okay. Let's just take a two-minute break.

(A recess was taken.)

Q. Doctor, page 11 of your CV, "The Clinical Evaluation of the Febrile Infant." Are there in that piece of literature sources of data that you use as references?

A. Yes

Q. Where was it published? Is that Primary Care?

A. Yes.

Q. Is that, in your opinion, a recognized referee journal?

A. It's not a referee journal. It was a requested article.

Q. What do you mean, requested article?

A. There's a series of issues in hardback form put out in the various disciplines by Saunders & Company of which this is the one for primary care. There are similar ones called Clinics of North America in particular specialties, and this particular issue was one on pediatric problems seen in primary care practice, and the editor requested an article from me regarding the evaluation of the febrile infant. It was reviewed by the editor, but it was not submitted blindly to experts for publication, as it would be in a peer review journal. It's similar to a book chapter in that sense.

Q. What was the audience this was intended to be for?

A. Primary care physicians, including pediatrics and family practice.

Q. Item number 13. "Duration of Treatment in Bacteria

Meningitis, *An* Historical Inquiry." Pediatric Infectious Disease Journal is a referee journal, is it not?

A. Yes.

Q. Are there'resources in here that you cited in the article?

A. Yes.

Q. *An* historical inquiry. What does that, first of all, mean?

A. The question I sought to answer in that article wa: how did the recommendations for duration of antibiotic therap in meningitis come about and how they changed over time. The answer to that was achieved through a review both through written and oral sources of treatment and the changes in treatment over time since the introduction of antibiotics in 1935.

Q. Written and oral sources?

A. Yes.

Q. Do you cite who the oral source or sources are in the article?

A. Yes.

Q. Who, to your memory? How many are we dealing with who **were** the oral sources?

A. Well, they're all included in the acknowledgments the end. I would say between five and ten individuals.

Q. Were they all physicians that were of senior years

to you?

A. Yes

Q. Were any of them physicians that were practicing in the 1970s and late 1960s?

A. Yes.

Q. Professors or associate professors at the time?

A. I don't know.

Q. How did you select them?

A. I selected them based on the fact that they were fundamentally involved in the care, treatment, and description of bacterial meningitis at different phases of medical history in that particular illness. For example, Dr. Lewis Weinstein was the first person to use streptomycin in the late 1940s for the treatment of meningitis, fundamentally involved. Or Br. Margaret Smith, Tulane, was in charge of the Contagious Diseas Hospital in Baltimore in the early 1940s. So dealing with people who were, in a way, standard bearers for infectious diseases during historical epochs.

Q. Written sources. Are they referenced in the article?

A. Yes.

Q. What **was** the audience for this?

A. People interested in pediatric infectious disease o meningitis in general, or the history of medicine. To my knowledge, it's the only article which looks at how

recommendations for duration of an infectious disease came about in any infection.

Q. Does it specifically deal with the issue in this case, as you perceive it?

A. It brings to bear certain biological information which is applicable to the issues involved in this case.

Q. What is the biological information you're referring to, and what are the issues that you're referring to?

A. One of the fundamental issues is the timetable of injury in meningitis and the influence of antibiotics on that timetable. And I think the principle that is established in this particular article is the insensitivity of the natural history of meningitis in certain areas to the treatment with antibiotics.

Q. Is that referenced specifically in the article, Doctor?

A. Excuse me?

Q. Is that referenced in the artic e, the insensitivit portion of it?

A. I think if one reads the article, the message comes through. It was not an article about that issue. But it does contain information which bears on the issue.

Q. What's the biological information that you're referring to?

A. Well, the duration of therapy in theory is

predicated on the need for a certain minimal duration to achieve a cure, which is a biological issue. And when one looks at that issue historically, one finds that the ability t achieve a cure is actually poorly correlated with any of the recommendations regarding duration, which is another example c the fact that outcome and cure do not rest exclusively on the use of antibiotics. It is a biological process which involves an interaction between the host, the host reaction, and therapy, and that is amplified in later articles that I have written.

Q. Did you recall certain of those types of questions being asked by me of Dr. Gotoff at the deposition?

A. I don't remember those specifically, sir.

Q. Do you recall my asking whether he felt in his opinion there was any type of host problems dealing with meningitis?

A. I don't recall that specifically.

a. When you say "host," define what you mean by "host

A. Host is the infected person.

Q. Host reaction?

A. Correct.

Q. Doctor, there are many articles, would you not agree, dealing with relationship between meningitis, time of intervention, and outcome?

A. I do not know of many articles that deal with that

issue as the focus of the article. But there are many articles in which information which reflects on that issue has been presented.

Q. There are, would you agree, a certain type of patient that the outcome, when studies have been done on a comparative basis, there are some patients that the antibiotic therapy and the timing of intervention has had inconsistent outcomes between patient populations?

A. I don't understand that.

Q. Some patients, Doctor, can go on to die or have serious problems, and others may go on to be well.

A. That's correct.

Q. With the same disease process.

A. That's correct.

Q. And one of the questions in the over 200 articles that I have read on the subject in my 29 years of doing malpractice -- one of the questions that everyone wonders is, why is it that in some patients you give with this disease the same medication and they are fine, and other patients, they die? And no one knows the answer. Do you know the answer?

A. I know the answer at a certain level.

Q. What level do you know the answer?

A. I know the answer.

Q. Because I'm going to make you a Nobel laureate if it's the right answer.

A. Thank you. I can retire then. I know it at a very crude level. I don't know it at a Nobel laureate level.

Q. What's the crude level that your explanation is for such a situation?

A. The answer is that it depends primarily on three host factors, which are the vigor of the inflammatory reaction the architecture of the vessels supplying the brain, and the integrity of blood vessels when inflamed.

Q. Prospectively, can you predict which patient will and will not respond to therapy?

A. No.

Q. Why not?

a. Because it can't be done.

Q. Why? Why can't it be done?

A. Because there is no reliable harbinger of outcome early in the disease.

Q. Is that a known medical fact or something peculiar to you?

A. It's the truth.

Q. The gospel, the truth; right?

A. It's not gospel. Gospel is a religious concept. I is the truth, however.

Q. You don't view medicine as a religion?

A. Well, it seems to occupy about as much time as religions do.

Q. In any case, Doctor, if one can't prospectively, with reasonable certainty, predict outcome, is there a standard of care, then, when physicians are to act reasonably that he or she should bring to bear upon a given patient, knowing that fact?

A. Yes.

Q. What is that standard?

A. You treat all patients the same.

Q. Why?

A. Because you cannot predict those in whom the treatment will be futile and those in whom the treatment does offer a benefit.

Q. Is that the way you were taught?

A. No.

Q. It is not that you treat all patients --

A. I was taught that you treat all patients the same. But I was not taught that the reason for that was the reason I just stated.

Q. What were you taught?

A. I was taught that the earlier you treat something, the better off you are. But that's not true.

Q. Well, let's take what you have just said and let's put it under a microscope. Are you saying that there are no instances where that general principle of medicine has been proven to be true in meningitis?

A. with meningitis?

Q. Yes

A. I know of no compelling evidence that shows that th earlier you treat -- put it this'way. That the timing of antibiotics in the context of an i1lness in which meningitis has been diagnosed alters the outcome.

Q. That's what you mean; right? The outcome -- doesn' affect the outcome, right?

A. I mean exactly what I said.

Q. Right. And compelling evidence, Doctor -- tell me what compelling evidence is to you. What would it take?

A. It would take an ample number of cases in which the timing of antibiotics could be related to outcome to make the case compelling.

Q. Well, have you ever sought or been involved in any research protocol to have human beings be used as subjects fox such a study?

A. No.

Q. That's unheard of in America, isn't it?

A. Correct.

Q. There's no way that, according to the law of medicine, law and medicine, such a research program could be put in effect; right?

A. Correct.

Q. Let's try the reverse. Is there a way you can prove

scientifically in the same question that you posit as a positive that early intervention doesn't make a difference? Scientifically prove it?

A. What do you mean by scientifically?

Q. Well, the same way, by compelling evidence, studies, using live patients.

A. Yes.

Q. Tell me how.

A. It can be done in two ways.

Q. Let me hear it.

A. One is an analysis of articles in which information is presented regarding duration of illness prior to the dosing of antibiotics in which patients then are followed up and outcome can be ascertained. And if one can collect enough of those cases and analyze it in a correct way, one can come out with an answer.

Q. If one could; right?

A. Yes.

Q. Can they?

A. Yes, it has been done.

Q. Where and when?

A. I published it in 1992.

Q. Which one of those articles is it?

A. Article number 14 on page 11.

Q. Now, this article, Doctor, that you have referred

to -- does it, in fact, have any statements in it that indicate, in your opinion, that this is a valid reliable statement, such that one should not treat early?

A. I'm sorry, I didn't understand that question.

Q. Is there any statement in any of these articles, in light of what you're saying, that suggests to the physician that when there's clinical evidence that a patient may have evidence of meningitis or a suspicion, high index of suspicion, that one need not treat early?

A. No, the article does not say that.

Q. Why not? Why doesn't it say that, if that's what you're positing?

A. I didn't posit that.

Q. What did you posit by the article, then?

A. The article showed that the timing of antibiotics in the context of an illness in which meningitis has been diagnosed does not alter outcome if the illness is one of general and nonspecific symptoms for less than three to five days or if the presenting syndrome is one of fulminant meningitis. That's what the articles show.

Q. Was this fulminating meningitis in this case?

A. No.

Q. Did it exist for less than three to five days?

MS. McDONALD: Prior to what?

MR. GOLDBERG: He understands the question.

A. Yes.

Q. It did exist for less than three to five days?

A. The general and nonspecific symptoms, yes.

Q. General and nonspecific symptoms in this patient, i your opinion, existed for less than three to five days?

A. The patient had general and nonspecific symptoms of illness prior to the diagnosis and treatment of meningitis being done in this case. Yes.

Q. Well, Qoctor, are you saying that there weren't symptoms that existed that could be considered meningitis, nevertheless, even though it wasn't diagnosed and treated thre to five days prior?

A. The child had no evidence of clinically overt meningitis prior to the 7th of January 1971.

Q. Clinically overt meningitis?

A. Correct.

Q. Versus meningitis.

A. I don't know how you're using the term "meningitis."

Q. I don't know how you're using "clinically overt."

A. I'm using it as findings which suggest that meningitis may be present.

Q. Reasonably honest, well-qualified physicians can differ with you on that opinion, I take it.

A. I don't know.

Q. You don't know?

A. I don't know.

Q. Did Dr. Livingston disagree with you on that point as to how long the symptoms had existed before treatment?

A. I don't believe that he suggested that the child hac clinically overt meningitis prior to the 7th.

Q. Did he indicate that symptoms that might or could be associated with meningitis existed before that time?

A. He certainly suggested that there were symptoms.

Q. Yes. A rose may be a rose, depending upon who sees it, Doctor, but is there and are there a category of symptoms associated with meningitis?

A. Yes.

Q. Recognized and accepted by pediatricians and infectious disease people?

A. In general, yes.

Q. Such that they can be overt?

A. Such that one Would, in seeing them, suggest that meningitis may, in fact, be the cause of them, yes.

Q. Well, are those symptoms specific as well as nonspecific for meningitis?

A. They are symptoms which raise a possibility of meningitis to the point of action, and it's those kinds of things that I have called clinically overt.

Q. To the point of action.

A. Yes. In other words, you do something about it.

Q. So there is a point at which there may be signs and symptoms of meningitis but not put you over the edge where you have to do something about it?

A. No.

Q. No what?

A. No, their signs and symptoms associated with clinically overt meningitis, it does lead to action.

Q. So once signs and symptoms of overt meningitis exis in the criteria the reasonably well-qualified physicians believe are acceptable, treatment is necessary?

A. Diagnosis is necessary.

Q. Diagnosis is necessary, One then doesn't treat before the diagnosis is made; is that what you're saying?

A. Usually not.

Q. Usually not? Aren't there exceptions to that rule?

A. Yes, there are exceptions.

Q. What are the exceptions?

A. If the definitive diagnostic test, which is usually a lumbar puncture, is contraindicated, one usually establishes treatment before performing it.

Q. Well, contraindicated, Doctor -- are you talking about pressure in the spinal fluid area? Are you talking abou something specific as contraindications?

A. Well, I can give you some instances which could be

contraindications.

Q. What would they be?

A. Contraindication would be if the child is manifesting signs of increased intracranial pressure.

Q. Which has never been proven to be a causative agent of any harm from that, by the way, or have you an article to prove that?

A. I didn't understand the question.

Q. Have you ever read an article that says increased intracranial pressure or pressure in the area that we're talking about caused harm by doing a tap?

A. There's never been a study in which individuals have been randomized to receive or not receive spinal taps, and therefore, by that kind of randomized study, there has not been proof of the proposition.

Q. I understand. What else would be a contraindication?

A. Someone whose general condition would deteriorate if the test were performed. For example, someone who's having severe respiratory difficulty.

Q. Anything else?

A. An example would be someone who was not capable of performing the test and if there would be an inordinate delay in getting them to a person who can perform the spinal tap, on begins therapy at that stage.

Q. Or you don't have the equipment, things like that?

A. Something like that.

Q. Anything that would prevent the doing of the test by

depressed level of consciousness includes those things such as they apply to meningitis. Words like "irritability," "behavioral changes," I think are not very good ones to use, since they have no common meaning and include too many things that are unrelated to anything that requires antibiotics.

Q. Well, Doctor, using as your guideline -- irritability and behavioral changes is too vague for it to in fact mean, as I understood you just to say, something that would be in the level of consciousness, things of that type Wouldn't you agree that there are standard recognized articles texts and literature and that the pediatric literature and the pediatric neurological literature and that the pediatric infectious disease literature uses those very words to describ signs and symptoms to give rise to the index of suspicion of meningitis? Irritability, behavioral changes in an infant wit a fever, an unexplained fever, for index of suspicion. Using those words, the reason I use those words, index of suspicion.

A. Certainly the term "irritability" has been used by others. I don't use it for reasons I have explained. I don't know that "altered behavior" has been used very often. But I' be happy to see *you* point it out to me.

Q. You would?

A. Sure.

Q. Feigin and Cherry, have you read the 1994 recent edition?

A. I have the recent edition.

Q. Have you read it regarding this case and meningitis

A. No, not regarding this case.

Q. Have you read Dr. Klein's literature on the subject

A. It's a vast literature, sir.

Q. Have you read any of the pediatric literature or surveys that are involved that were published in 1992, the white papers which you referred to?

A. Yes, I have read that.

Q. And is it your recollection it does not use the wor "irritability" or such to describe, along with fever of unknown origin, to be a symptom that may and is recognized or should be considered and associated with meningitis?

MS. McDONALD: Let me object. He said others us the word "irritability." Your last question had to do with changes in behavior.

Q. Do they use "irritability"?

A. I think if you review my answer, I said that others do use the word "irritability." I do not think that's a very useful phrase, since it has no common meaning.

Q. How about "fretful"?

A. A lot of words you use to mean in the person's mind who uses the word a meaningfully altered level of consciousness, and to the extent that that word, when used, means that, I would agree that that's what they mean when they

use the word.

Q. How about "lethargic"?

A. Same thing.

Q. Can you give me all of the words that you have read in recognized literature -- not just texts, but literature -- in peer review journals that, when you're dealing with what you describe as the altered level of consciousness, use other words?

A. I don't think I can make you a list like that, sir.

Q. Give me a list of ones you're comfortable with that you do recall.

A. I don't use those other words for reasons that I have already said, and I don't think I can make you an inclusive list of words that other people use.

Q. What is the reason you don't use those?

A. They have no common meaning and they're used in a very incontinent way, if I can use that phrase. And therefore the words themselves have taken on a shock value when used which may not have any applicability to the patient in general. We commonly get phone calls from mothers saying, "My child is lethargic," or, "My child is irritable."

I have heard nurses and doctors say that they themselves are lethargic today at work. These kinds of words don't convey information because they have been used both indiscriminately on the one hand, but they have also acquired

upon coming to see a child, would see that -- give me the kinds of examples we're talking about, from the most obvious downward to the beginning stage of the subtle, upward.

A. I'll describe it as best I can.

Q. Okay. Do you understand what I'm looking for?

A. No.

Q. Well, when someone is moribund, that's an end result, almost, isn't it?

A. An end result? I'm not quite sure I understand.

Q. That would be at the most severe level of altered level of consciousness. That's next to death, isn't it?

A. I don't know about moribund, but certainly coma is.

Q. Fine, if you like to use the word. So moribund and coma are different to you?

A. Moribund is --

Q. I'm trying to use the most extreme.

A. Coma is the most commonly used and best accepted term for someone who is nonrousable.

Q. But coma, Doctor, within it has several levels itself, one, two and three, depending on who -- I mean, I have read the literature, Doctor. I have some understanding of this. So I'm trying to find some example of an end result stage which I understand to be right before death a patient ma be considered moribund.

A. Let me give my answer to your original question,

sir, and maybe it will suffice. The kind of child one is booking for -- not actually wanting to see, but the kind of thing they're looking for -- is a child who, depending on thei age -- all of these things are very age-specific -- is noninteractive with the environment, noninteractive with family, has lack of attention, lack of activity, and there's n other explanation for it.

On the other hand, you might find a child who is unconsolable, crying at each manipulation, and whose entire level of interaction is one of crying for no apparent reason, who has a fever and cannot be brought back to normality.

Q. Is another level?

A. That's another --

Q. Extreme?

A. Yes, it's a child who has a meaningfully altered level of consciousness, It's not necessarily one that's depressed. It's lack of normal interactiveness and activity i a febrile child with no obvious explanation. And again, it's age-specific. The time of the day, the circumstances, associated illnesses all have to be figured in it, and it's something that's done all the time, every time a child is encountered by a physician.

Q. With that modification, Doctor, I don't have to ask what I was going to ask you. You have answered it.

With regard, Doctor, to that explanation that you

gave in the last answer, I take it as the disease process begins and continues and worsens, does each patient react the same way?

A. I don't think I understand that, sir.

Q. Well, is the pattern with every patient about these signs and symptoms the same that has meningitis? Do all of them have the same step-by-step progression?

A. No.

Q. When you were talking a moment ago, Doctor, about the correlation, if any, between intervention with antibiotics and outcome, and you described what you -- and I mean this respectfully -- used as a crude level of explanation for certain differences in certain kinds of patients, the vigor of the inflammatory reaction -- will that be the same in every patient?

A. No.

Q. So that there's a host relationship factor, isn't there?

A. Yes.

Q. How does one determine what, in any given patient, that: host reaction to the disease process will be, prospectively?

A" One does not.

Q. Can you tell retrospectively?

A. Yes.

Q. What was Mr. Turner's response to the disease process in that context?

A. I'm going to have to lump together the inflammatory reaction along with the other items that I listed there in his particular case.

Q. You can't keep them separate?

A. No, I can't.

Q. I'll accept what your answer is going to be, but the reason I'm trying to keep them separate is to use them as separate entities. Is there a point at which you just have to put it all together?

A. Yes.

Q. And why?

A. Because it's the only way the whole truth can be told.

Q. When you use "truth" in that answer, do you mean your opinion as to the explanation for it?

A. No. I'm sworn to tell the whole truth. And the only way I can tell the whole truth is to give you the picture of his illness based on all the factors. I can't isolate one out and speak to it with any degree of certainty, but if one puts together a couple of those elements, there is a degree of certainty to which I'm willing to swear.

Q. I'm going to give you that opportunity for the explanation in a moment. But the vigor of the inflammatory

reaction. is there some way that one can determine the vigor of an inflammatory reaction prospectively?

A. No.

Q. Is there some way on a temporal relationship with a patient that one can determine the vigor of that disease process?

A. I didn't understand the question.

Q. Well, point 1, time -- clock begins to run, day 1, clock minute 1. Can you follow the disease and determine its vigor?

A. No.

Q. Retrospectively, after the diagnosis, patient lives is there a way you can determine the growth and vigor of that disease with accuracy?

A. Again, you have to ally it with the other host factors as a single package.

Q. In your opinion, that's what you have to do to get the truth; right?

A. Correct.

Q. I'm not being whimsical with you when I say that, but I am using your words for a reason. With regard, Doctor - there are different schools of thought as to the rate of growt of a particular pathologic agent such as Hemophilus influenzae of the type B origin. Do you know how fast or rapid-growing this particular disease **was** in Mr. Turner? Can you plot it

with any accuracy?

A. Can I clarify your question?

Q. Yes.

A. Are you asking me if I know the speed of the growth of the numbers of bacteria in the spinal fluid of this patient?

Q. Yes.

A. I do not know that, and it cannot be plotted.

Q. Can you do it with regard to the risks?

A. No.

Q. Why? Why not as to the risks and the spinal fluids?

A. The growth of -- let me rephrase that. The census of the numbers of organisms seen in the spinal fluid cannot be known in a human being in a dynamic fashion unless one were to subject that human being to repeat spinal taps done on a regular basis.

Q. Which is a no-no.

A. Which is not done. That's the first. The second is that the growth in a human being of an organism of a bacteria like this does not mimic the growth of the organism on a culture plate in a laboratory.

Q. A Petri dish?

A. Correct. Because the human being is not a static, but is a dynamic biological medium with clearance mechanisms,

defense mechanisms, and the iike, whereas a Petri dish is riot, and therefore what is seen in a Petri dish has no relevance whatsoever to what goes on in the human body.

Q. Have you finished your answer?

A. Yes.

Q. Can you tell when, in this patient -- or strike that. Let me be more general for a moment. Can you tell in any patient when something in -- not something -- when Hemophilus influenzae type B is seeded in a given patient wick accuracy?

A. It depends what you mean by the word "seeded."

Q. Okay. I'll accept that. Are there differences, medically accepted differences in expression and the phrase "seeded" that you have seen written in the literature?

A. Again, it's not a word that I use, and therefore, I'd have to know what you mean by it.

Q. Well, **is** it a word that Dr. Klein uses or Dr. Feigi and Cherry use in their works regularly, "seeded," to describe a process?

A. I honestly don't know, sir.

Q. You don't know? Are you stating to me that you hav never heard the concept or use of the phrase in relation to meningitis when it was seeded?

A. That's not what I'm saying. I'm saying I don't use it.

Q. I see. Well, in the world of those people that do, do you know what it means?

A. I'd actually have to ask them exactly what they mean, because it's not a word which conveys, at least to my mind, the biological truth of a situation.

Q. Okay. We'll get into that, too. Biological truth of the situation. Doctor, meningitis, type B. And all my questions will be limited to that for the obvious reason that don't want to get off on the other types, pneumococcus, whatever. I don't want to deal with anything but this for the moment. Is there a time period when, from various sources of the human body, it can invade or enter the body, recognizing that there's some people that it's normally within them?

A. I don't understand what you mean by time period in that question,

Q. You don't? Well, is there a time that disease, meningitis, begins? Let's start with that. Is there a beginning for meningitis? Let's try t that way.

A. I don't believe there's a commonly accepted definition as to when meningitis begins.

Q. That being the case, nevertheless, is there an accepted definition of when it begins? Do you accept the proposition that there is some period of time when it does begin?

A. Well, given the various meanings attributed to the

phrase "begins" that are used, one can theoretically consider a point in time in which that particular criterion has been met theoretically. In actuality, usually not. But theoretically, yes.

Q. Well, let me try it this way. And I think that you're being reasonable with me, and I'm trying eo be artful and reasonable with you.

In medicine, in the treatment of meningitis, do you wait for actuality before you begin treatment? Proof of actuality?

A. Well, in meningitis, as I have said, you usually dc the definitive test before initiating therapy for meningitis. But there are some instances in which you do not.

Q. So, Doctor, getting back, then, to theoretically or can consider there very various criteria when it actually is met, what are the criteria that you would use, if at all, as t when that disease process begins?

A. For me, the most useful way to define "beginning" when one talks about meningitis beginning -- which to me is just a theoretical construct because it has no clinical applicability --

Q. It does not?

A. No, it does not. -- is meningitis begins when ther is the combined presence of bacteria and an inflammatory response in the spinal fluid.

Q. Can this type of meningitis, H. Influenzae, Doctor, type B -- can it seed other than in the meningeal fluid?

A. I don't understand that, sir.

Q. Can it be other than in the fluid of the spinal canal?

A. I still don't understand. Such as where?

Q. Can it enter a joint?

A. Oh. The bacteria themselves go everywhere the bloo goes, because of the fact that the bacteria are in the blood. It can certainly enter a joint space, yes.

Q. Can it enter at different times a joint space and the spinai fluid?

A. Based on animal experiences and experiments, it seems to be true that when the bacteria appear in the blood, the bacteria appear both in spinal fluid and probably in all joint fluid, as well, soon thereafter.

Q. How long have you known that?

A. How long have I personally known that?

Q. Yes, sir.

A, I would say since the latter part of the 1980s.

Q. How long, to your knowledge, has that statement tha we've just **had** you define how long you have known it been know in the medical field?

A. I don't know.

Q. "Beginning" having no theoretical -- let me restate

that. The beginning of this disease process theoretically, you say, can have a beginning, but the construct does not have any clinical applicability, that statement. Are you with me?

A. Yes.

Q. So that I'm clear, Doctor -- and understand that I have deposed lots of witnesses, and every witness is different and unique in their own personal syntax and theories, so I'm trying to work with yours now.

In the context of the beginning of the disease, in the context you just used it, does every patient from the beginning have a time clock that's the same as to when the clinical signs will appear?

A. No.

Q. Is it variable?

A. Yes.

Q. Are the signs and symptoms from the beginning something which all have to appear for the disease to be present clinically?

A. Could you say that again?

Q. Sure. For it to be diagnosed clinically -- because obviously, you can't diagnose it subclinically; right?

A. Correct.

Q. -- can a patient have the disease and yet not have all the signs and symptoms?

A. I would say probably yes, although there's really

very little data on which to base that statement.

Q. Thank you. Staying with that, Doctor, what I'm trying to do -- and I understand, I think, pretty well what you said about it has no clinical applicability -- do signs and symptoms in the same way that each patient and their host makeup will and may interreact and react differently with this disease process, is it also true about the signs and symptoms, evolution with each patient, in relation to the disease as well?

A. Each patient is unique, yes.

Q. And one doesn't know prospectively what the end result, outcome may be with a patient in whom that disease process is suspected; right?

A. Correct.

Q. Is there a time clock in meningitis of the H. Flu type B that we're talking about, from the beginning to when yc believe at the earliest or if latest, giving -- looking for those parameters, signs and symptoms as a range of population epidemiologically speaking will appear?

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

Q. Why not?

A. It can't be known, because there has been no -- there's no possibility that experiments to answer that questic can be performed on human beings.

Q. Well, Doctor, if that's true, then prospectively or

as a physician has to take into consideration the risk of the disease and whether and when to treat the patient; right?

A. I don't understand that at all.

Q. You don't? Well, if you know that there's no way t tell when it begins and when it ends in a patient, the actual disease clock, let me try it this way. I think I can do it this way.

If I were to draw two lines, Doctor, for you -- and I have done this in other cases, so I'll try it with you and see if it will be helpful. If there's a temporal clock in a given patient, this is subclinical, as to the disease growth, all right? And this clock is the signs and symptoms clinically. You understand what I'm saying? You understand that?

A. So far.

Q. I'm trying to keep it very simple, Doctor. Something that is very complex, I'm trying to keep it very simple. To you it may not be complex, but there are people that find this very complex.

If the number of bugs -- is there a number of bugs that it must have in the human body, whether it's seeded in the joints or whether it's seeded in the spinal fluid, before the disease is actually in existence?

MS. McDONALD: The disease of meningitis?

MR. GOLDBERG: Meningitis.

Q. Do you need a certain number of bugs before you say the disease is present?

A. Where are you asking for this census to be performed? Certain number of organisms in the blood or in the spinal fluid?

Q. Let's take all the places that you want to use. I'll be glad to go through all the bodily fluids. All the cultures. All of them. I'll be glad to take -- I don't care what you want to use. Let's use them all. I'm trying to find out and get to a point, Doctor, beyond where you're at. But I can't do it unless we get on ground level here. I'm trying to find out, what is the criterion you use subclinically to say the disease is present.

A. I think I have said there's no way to know that in human beings.

Q. I understand there's no way clinically to know that. But theory, theoretically there is some -- or are you saying if you have one bug or 100 such bugs, it's the same? You're pregnant or you're not pregnant?

A. No. What I'm saying is that theoretically, meningitis begins when you have the combined presence of both bacteria and an inflammatory reaction.

Q. Now, this inflammatory reaction, Doctor -- those are the two things you need, right? Bacteria and the inflammatory reaction; right?

A. That's what I would define as the theoretical beginning of meningitis.

Q. Now, does it make a difference which comes first? It can be both ways, can't it?

A. I don't know of an instance in which there would be an inflammatory reaction without bacteria present first.

Q. Well, Doctor, can't you have inflammatory reaction in the human body unrelated to the disease organism of H. Influenzae meningitis, have an inflammatory process, and then have that particular organism enter the body in a compromised state and have both the inflammatory process and bacteria present sufficient to have the beginning of meningitis?

A. With all due respect, I'm confused, because I was talking about the inflammatory reaction in the spinal fluid, and you have now generalized the inflammatory reaction to any part of the body.

Q. You're using it in the context, then, of inflammatory reaction? You're using it in limiting it to the spinal fluid?

A. That's correct.

MS. McDONALD: That would be true of bacteria also?

A. That's correct. The bacteria, the combined presenc in the spinal fluid of bacteria and an inflammatory reaction, theoretically are the beginning of meningitis as I define it.

(A discussion was held off the record.)

Q. Well, let's try it this way, in keeping with where we're at. Is your definition of meningitis of the H. Influenzae type B something that could only occur in the definition as you're using it when the meninges are involved? Is that what you're saying? That's the classical definition you're using; right?

A. No. What I'm saying is that for me, the beginning of meningitis as a theoretical issue is when in the spinal fluid you have the combined presence of both bacteria and an inflammatory response.

Q. Can that process be present, inflammation, inflammatory reaction and bacteria, in a joint and call it meningitis?

A. NO.

Q. Why not?

A. Because meningitis as a disease entity is infectiou inflammation of the spinal fluid and the covering of the brain

Q. The meninges?

A" Yes.

Q. That's the classical definition, then, of meningitis?

A. Yes. It should be extended, because it is the majo mechanism of injury to include blood vessels which traverse th spinal fluid space, as well.

Q. What do you call it when that same bacteria and inflammatory reaction enter the body either at the same time or surely one after the other and it enters a joint space? Is that bacteremia only?

A. Well, if the bacteria are in the blood, that is bacteremia. If you have bacteria in a joint space without an inflammatory reaction, I don't know what to call it. If you have an inflammatory reaction in the joint space along with bacteria, it has been called variously septic arthritis, bacterial arthritis, or pyogenic arthritis.

Q. Signs and symptoms, Doctor, clinically of meningitis -- do they begin before bacteria in the fluid and inflammatory reaction in the spinal fluid exist?

A. Yes, in the following sense: That the findings which I call clinically overt meningitis are not exclusive to meningitis. They may be seen in other disease processes, and therefore, you can have those findings without having meningitis. But the findings are compelling enough for the risk of meningitis that it would lead to action.

Q. Is it your opinion that bacteremia exists before meningitis, by your definition?

A. In the common form of meningitis that we're talking about, yes.

Q. Did this patient have the common form of meningitis?

A. Yes.

Q. So that if we talk about the common form of meningitis, we'd be talking about what happened to the child Turner?

A. Yes.

Q. Are there signs and symptoms -- let me restate it this way. Is there a point in time, Doctor, where signs and symptoms that -- well, try it this way. Are there signs and symptoms that may be associated classically by way of range of signs and symptoms with a true bacteremia?

A. I would say the only finding that is universally associated with bacteremia is an alteration in thermal regulation.

Q. Is that fever?

A. Well, it could be fever or hypo -- the other one, when your temperature is too low. Hypothermia. But in either case, it's an alteration in the thermal regulation. I don't know of anything else which is universally associated with bacteremia.

Q. I take it, Doctor, this patient was one that, in your opinion, had become bacteremic at some point in time.

A. Yes.

Q. Was this patient bacteremic before he was meningitic?

A. Yes.

Q. As to the hyperthermia category, Doctor, associated

with bacteremia, what is the temperature which in 1970 would b considered within the purview of a differential diagnosis of bacteremia?

MS. McDONALD: Well, you know the doctor wasn't practicing in 1970, and also he's not giving opinions on the standard of care.

MR. GOLDBERG: I'm not talking about the standar of care.

MS. McDONALD: He wasn't practicing in 1970.

MR. GOLDBERG: Doesn't mean a hoot to me. This man has written historical perspective and if he doesn't know, I'll accept that answer.

Q. (By Mr. Goldberg) On anything you don't know, just tell me, Doctor. But can you tell me what in 1970 was considered bacteremic as to the range?

A. I don't believe there really was a clearly articulated standard, and the reason is that if one looks at the history of the concept of fever and bacteremia, the investigations into that concept didn't begin until after the events of this case arose, probably around 1972 to 19'93.

Q. That doesn't mean, Doctor, that physicians didn't consider, nevertheless, that bacteremia may be present and be associated with certain temperature, did it?

A. I'm not suggesting that, but you asked me for a specific threshold or a specific definition, and as I have

said, I don't think that there was anything specifically articulated in 1970, 1971. It was known that fever could be a sign of a child who had an infection, including a bacteremia.

Q. What range of fever was published in the texts in 1965 through 1971? Let's go to 1973.

A. Again, the ranges that we've already talked about. Where do you define a fever to begin and end? Most people, the ranges go from maybe 100 to 100.5 Fahrenheit all the way up from it. I have already told you what I consider to be a workable threshold, but you know, we're just dealing with something used as a warning sign. We're not dealing with anything that has more of **a** potent biological fact connected with it for meaning that you never get a bacteremia below a certain amount and you always get a bacteremia above a certain amount. We're just asking when do people start to consider an infection in someone whose temperature was elevated.

Q. Not all infections are bacteremic; correct?

A. Correct.

Q. But all bacteremias are infection; correct?

A. Correct. Well, no. That's really not correct, because people can have silent self-resolving bacteremia with no signs of disease. So actually, that's not a correct statement.

Q. **All** right. I understand what you're saying. The majority of bacteremias are infectious; is that correct?

A. No, the majority of bacteremias that are symptomatic are infectious.

Q. Okay. Symptomatic is what you would require to be infectious; right?

A. Correct.

Q. Symptomatic being a fever.

A. Yes.

Q. Nothing beyond that, would you agree, would be classically associated with bacteremia?

A. Not universally associated.

Q. Now, Doctor, in then getting back to where we were, if a patient is bacteremic with infection and has a fever, there may in the temporal time period be a point in which that fever can be a sign of bacteremia and then will become also a sign of meningitis; correct?

A. Both bacteremia and meningitis have as a common sig fever.

Q. Doesn't have to be from the same time period or the same source?

A. It's only in the same patient.

Q. Right. And that sign of fever, bacteremia and feve that we just talked about, if the organism enters a joint, whe it enters the joint, that also may be a sign of whichever phrase you choose, septic arthritis, bacterial arthritis, or pyogenic arthritis; is that correct?

A. If a person has inflammatory response to the presence of bacteria in a joint, it is accompanied by a fever.

Q. And in the same patient, then, it's not mutually exclusive that fever may be present and be a sign of more than one ongoing process; correct?

A. Fever can be present and can be due to more than on ongoing process, yes.

Q. In the same patient, it may be from a bacteremia or it may be from a septic arthritis or meningitis; correct?

A. Yes, or anything else.

Q. Now, Doctor, in the temporal period that we've been talking about, in a patient in whom septic arthritis arises an there's a fever, are there classical signs or symptoms associated with this process, whether you call it arthritis, septic or bacterial or pyogenic arthritis? Are there signs an symptoms associated with that?

A. Yes.

Q. What are they?

A. Pain, joint swelling, sometimes redness cutaneously over the joint, and disuse of the joint.

Q. Is it your opinion that in a child six months of ag with a fever of unknown origin in whom a unilateral instead of bilateral septic joint is diagnosed, that that patient may be at risk for meningitis?

A. May I clarify the question?

Q. Can you clarify it?

A. May I?

Q. Sure.

A. Are you asking me, if you have a person who has a septic joint, are they at risk for meningitis from the organism causing the septic joint? Is that what you're asking me?

Q. Yes, sir. May they be at risk?

A. Rarely.

Q. Rarely, but nevertheless, some patients may be at risk; is that a correct statement?

A. Rarely.

Q. Is the answer yes?

A. The answer is rarely, yes.

Q. Okay. I'll accept "rarely," Doctor, but I have to know if it's yes. Okay? I don't want to imply or infer in an answer. I want to just know yes, but it's rarely. That's all. Is that what your answer is?

A. That's correct.

Q. Okay. I'll accept it. I'm not here to argue with you. I'm only here to try to get an answer.

Now, did this patient have a septic arthritis or a bacterial arthritis or a pyogenic arthritis, in your opinion?

A. Perhaps.

Q. Is the "perhaps" because you don't find sufficient data in the chart to confirm it, or take it out of the

differential?

A. Correct.

Q. Is that what you're saying?

A. Yes.

Q. Thanks. Did this patient have meningitis?

A. Yes.

Q. Type B group?

A. Hemophilus influenzae.

Q. Type B?

A. That's correct.

MS. McDONALD: Did you *say* type A?

MR. COLDBERG: No.

MS. McDONALD: Type B?

MR. GOLDBERG: Yes.

Q. If, hypothetically, this patient had sufficient findings charted that were present confirming that there was a septic arthritis, hypothetically -- I'm asking you to assume that for the moment -- would you be able to say which occurred first, the septic arthritis or the meningitis in this patient?

A. No.

Q. Why not?

A. Because one can never know the exact time of the onset of meningitis. That's why it's always a theoretical construct, and therefore, it's hard to answer a question as to which comes first.

Q. Can you tell me when this patient, in your opinion, subclinically had meningitis?

A. No, that can't be known.

Q. You have no opinion?

A. My opinion is that cannot be known.

Q. But you don't have an opinion?

A. That's correct.

Q. And your opinion further is you don't believe anyon could do that?

A. That's correct.

Q. If, Doctor, it is your opinion that one can never tell subclinically when one has meningitis, the only way you could ever say someone had meningitis is to have criteria and data to confirm it; right?

A. The only way you know for sure whether someone has meningitis is one of two ways.

Q. Which is?

A. There are individuals who have clinica meningitis very clear and, in fact, have meningitis, but the confirmatory test, which is the lumbar puncture, is the only way to absolutely confirm the diagnosis.

Q. **Now,** taking that statement and working with that, hypothetically, meningitis may be ongoing for a considerable period of time before a patient. dies; right? Let me restate that. There *is* a time period before a death in a patient who

has meningitis of this type that they have; correct?

A. Are you talking about an Untreated patient?

Q. Yes, sir.

A. Yes. That's true.

Q. Well, we'll deal with an untreated patient because it will be easier for the moment for me. So let's take a hypothetically untreated six-month-old that has meningitis typ B, Hemophilus influenzae type B, who does not get treated. There is a time when it begins; correct?

A. Theoretically, yes.

Q. And a time when the patient dies; right?

A. That is correct.

Q. So we have those two times. Doctor, I'm trying to work with a concept with you, so just bear with me, I'm tryin to do something reasonably with you.

Therefore, the only way, as I understand it, in those two time periods you could absolutely know you have meningitis is when the spinal tap is done; right?

A. Well, as I said, there are clinical pictures.

Q. I'm talking about absolutely.

A. Well, but there are clinical pictures in which someone absolutely has meningitis and you don't need the confirmatory tap in an untreated patient.

Q. So what you're saying is, there are some patients that if you're called to see that patient and you get an

accurate history -- because you do need a history, don't you, Doctor?

A. A history can be useful sometimes, yes.

Q. Are you telling me that there's a clinical picture without a history, that you can come across a patient and know it's meningitis without a history?

A. Yes.

Q. Really? Tell me that clinical picture without a history.

A. Sure. It's done all the time. An infant comes in, they're febrile, they have a bulging fontanelle, have depressed level of consciousness, they're arching, or perhaps they're stiff, or perhaps they're having a seizure, and the diagnosis is meningitis, and the parents have not made it to the emergency room or they're unavailable.

Q. Absent that picture, can you tell absolutely?

A. As I said, the confirmatory test is a lumbar puncture.

Q. Well, I wrote down the picture that you said clinically, absolutely you could tell. You said febrile, an infant, first. Bulging fontanelle, arching, stiffness and seizure. If I remove one of those, wouldn't it then make it subject to some other historical cause for the problem? That could be the same findings in a child?

A. I would say as a matter of practice, sir, that the

clinical diagnosis of meningitis rarely requires historical information, and is almost always made on the physical examination at the time of the diagnosis.

Q. Is it made because there's a bulging fontanelle?

A. It's made because there are findings present which define clinically overt meningitis.

Q. Well, is a bulging fontanelle necessary for the diagnosis to be made?

A. No.

Q. Is arching necessary for it to be made?

A. No.

Q. Is a stiffness necessary?

A. No.

Q. Are seizures necessary?

A. No.

Q. Febrile is necessary.

A. Almost always present.

Q. Thank you.

A. But in some children, of course, they're hypothermic, as we said.

Q. Now, getting back to what I was asking about a hypothetical patient in whom there's a beginning and a death, untreated patient, six-month-old, absent this clinical picture if one absolutely wanted to know if it was present and did a spinal tap, one of two things will occur. Tap is positive or

it's not; right?

A. Correct.

Q. Is there a point in time, Doctor, if you were to wait 30 minutes in a patient that a spinal tap could be done 3 minutes apart and one tap in the same patient, the process of the disease hasn't gone far enough to make the spinal tap positive and yet 30 minutes later it might be, in theory?

A. Well, there have been experiments of nature in whic actual real children have had spinal taps performed which had no cells in them, and half an hour later had a spinal tap performed and there were 1500 cells in it.

Q. *And* I have read about that, and that's why I'm asking you the question. So how do you explain that?

A. The explanation is that between those two spinal taps, the patient developed an inflammatory response.

Q. Does that mean that the organism in that 30-minute period entered the body?

A. No. The organism was present in order to induce th inflammatory response in the spinal fluid.

Q. How long, in your opinion -- if you can opine -- ha that organism been present before, to explain the positive tap

A. It can't be known.

Q. It's incapable of being scientifically, medically, reasonably known; correct?

A. Correct.

Q. What is the reason that you are of the opinion and others have published and are of the same opinion, but serial lumbar punctures are not done?

A. It provides no useful information on which management is based.

Q. Can septic joints nevertheless have serial taps?

A. Septic joints in their management may, in fact, have serial taps in order to evacuate the joint, not for the confirmation of a diagnosis.

Q. Not for --

A. No.

Q. -- confirmation. Can a tap nevertheless confirm th presence of the organism?

A. Yes.

Q. Can a tap be done of a joint and, if present in the joint on a probability basis, does that mean it may not be present in the meninges -- in the spinal fluid, rather? If you're to do a tap -- a tap of the joint and a lumbar puncture in the same patient -- could you have in one instance in that same patient a positive lumbar -- a positive tap of the joint, but a normal finding of the lumbar puncture?

A. Yes.

Q. Or is that unlikely?

A. No. Yes, and that's in the far majority of cases. As I said, the alternative scenario is rare.

Q. So what is -- I got Lost in your answer. You can have that occur, a joint be found to be positive, but the lumbar puncture be normal?

A. Yes, and that is true in almost all cases.

Q. But that is what is most likely to occur; right?

A. In almost all cases, yes,

Q. That means when you say almost all cases, you mean there are some cases where a patient may, if you do a joint tap, also have a positive lumbar puncture; right?

A. Yes. Rarely.

Q. Now, Doctor, do you know for how long, in light of the fact that a lumbar puncture was done on this patient -- which does confirm absolutely, by your definition, the patient had meningitis; correct?

A. Yes.

Q. H. flu type B meningitis; right?

A. Yes.

Q. And why is it that you can say absolutely? What di the lab report specifically say?

A. The spinal fluid had pus cells and the organism present concurrently.

Q. Does it make a difference how many pus cells?

A. I don't understand the question.

Q. Does it make a difference how many organisms you had?

A. I don't understand the question.

Q. There was a definition of how many cells were found wasn't there, Doctor, abnormal cells?

A. It counted the cells, yes.

Q. Is it the number of cells or just the fact that a single cell or more than one was present?

A. well, as you well know, sir, there is a range of normal white cells in the spinal fluid, and if one exceeds that, it is thought to be abnormal and therefore a pathologic state. Again, it's like temperature. There's no absolute biological threshold. Everyone, of course, would accept the fact that almost 3,000 white cells is abnormal, and that's wha was seen here

Q. It's your opinion that 3,000 white cells would be abnormal; correct?

A. Yes.

Q. And 3,000 white cells is what was seen here; right:

A. Almost, yes.

Q. Are you in a position and do you have an opinion tc say for how long, Doctor, this patient prior to the tap had meningitis?

A. I'm in a position to say that cannot be known.

Q. And you can't work backwards with the data from the spinal tap to determine when it began or how long it had been present; correct? Is that a fair statement?

A. Right.

Q. And in your opinion, no one could do that scientifically and reasonably medically?

A. Correct.

(A discussion was held off the record.)

(The deposition recessed at 1:07 p.m., and resumed at 1:42 p.m., as follows:)

Q. When we left off, Doctor, we were talking about som things that E want to carry forward with. I had asked you if you could tell for how long prior to the results being obtaine on the 7th of the lumbar puncture that meningitis had been present in the child, and you said you couldn't, and you further added, no one could. Do you recall that, my questioning?

A. Yes.

Q. I'm doing this to focus to come back to the point. Do you have an opinion, nevertheless, on a probability basis a to how long it had been present?

A. No.

Q. Is that then something which, likewise, you don't believe you could do?

A. Correct.

Q. Do you recall there being done a blood culture on the 4th?

A. Yes.

Q. And it was positive, was it not?
A. Yes.
Q. What was it positive for, Doctor?
A. Hemophilus influenzae type B.
Q. Well, if you know there was a positive blood culture on the 4th that was drawn and it was that type, Hemophilus infiuenzae type B, is it your opinion that on the 4th, this child, if a tap had been done, would have been also positive, the lumbar puncture would have been positive?
A. Let me try to answer it this way. No one can answe that question with certainty, one. Two, a spinal tap was not indicated. And three, I cannot tell whether a spinal tap, if performed, would have been positive or not for the reasons I have already stated.
Q. Now, let me just take them separately. A blood culture on the 4th was done, and it shows the presence of Hemophilus influenzae type B; correct?
A. Yes.
Q. And is it your opinion that on a probability basis, if a lumbar puncture would have been done, you cannot say one way or the other whether it would have been positive or not?
A. I don't think anybody can.
Q. I'm not asking about anybody. Move to strike. Can you tell? That's what I'm asking first.
A. Not to a reasonable degree of medical probability.

No.

Q. And why not, Doctor?

A. Because there's not enough information historically in the case record or biologically to actually answer your question.

Q. There's not enough information historically or bioiogically?

A. That's correct.

Q. To answer the question?

A. That's correct.

Q. What information would you need bioiogically that you don't have?

A. There is no information regarding human beings as t the duration of bacteremia prior to the onset of meningitis as I have defined, meaning the combined presence of pus cells and bacteria in the spinal fluid. Therefore, there's no bioiogica matrix in which to answer the question.

Q. Doctor, a blood culture which shows Hemophilus infiuenzae type B being present -- what does that mean to you?

A. It means that the child was bacteremic.

Q. That's all it means to you; right?

A. That's correct.

Q. And that the offending organism was Hemophilus influenzae type B?

A. Yes.

Q. Can you tell for how long that bacteremia had been ongoing?

A. No.

Q. With regard, Doctor, to historically, what would yo need to know? You said in response to my question you couldn' tell because historically there wasn't enough information. What are you referring to that you would like to know?

A. Things that might be helpful, although in the final analysis not totally helpful, would be a richer description of the child's physical condition, degree of interactiveness, alertness.

Q. Richer description of the child's condition regarding --

A. Alertness, interactiveness and general condition.

Q. And general condition; right?

A. Yes.

Q. Have you finished your answer?

A. Yes.

Q. At what point in time?

A. On the 4th, which is the --

Q. On the 4th.

A. Which *is* what you focused in on.

Q. Doctor, please understand, I'm being sincere when I say this. I'm going to use your words now to try to have you define so I can work with them. All right? A richer

description, as you use that phrase -- what does that mean?

A. Well, all I know is -- all that's available to me to recreate the child's condition is the medical record.

Q. I understand that. But what does "a richer description" mean?

A. I haven't finished my answer.

Q. I'm sorry.

A. The description of the child on the 4th includes a number of physician notes and some nursing notes, the longest of which is Dr. Gotoff's note from that point in time, but the

in detail to allow me to recreate the child's condition at that time. They obviously thought the child was not significantly ill, but my job is to recreate retrospectively what the child looked like in order to make expert pronouncements.

A. What I'd be looking for would be inappropriately altered level of consciousness that is clinically meaningful, along the lines that we've already talked about, and therefore all information bearing on that issue would be the information that I would seek from a richer description.

Q. Give me the kinds of words that would be appropriat

to use.

A. The best for me would be a description of what the child was doing, how the child interacted with mother, how the child interacted with examiners, the actual activity of the child. In other words, a neutral description of what the chil was like by an observer.

Q. What do you mean by "neutral"?

A. Neutral means that they're presenting the facts without making a value judgment of those facts.

Q. The criteria to reach a conclusion medically?

A. No. The actual description without saying that the child looked lethargic, irritable. These are all conclusory statements. That's different than saying the child is playing actively with a toy, the child is looking at mother, and so on.

Q. Insofar as alertness, the normal finding -- or tell me, describe a normal alert child, the way you believe the description would be, if you wanted to describe a normal child.

MS. McDONALD: At six months?

MR. GOLDBERG: Six months, alert.

A. A six-to-seven-month-old child is usually -- all th time has a great range of social interactions with people, the. dote and feel most comfortable with their mother and interact vividly with the mother in terms of eye contact, smiling,

reciprocal facial expressions, cooing, response to cuddling, and that sort of thing. A child of that age may manifest some strains'or anxiety, although that's not usually the rule. It usually happens somewhat later in their development. Certainly responds vigorously to noisome stimulus, like examinations, but they're engaged and engaging at that age.

Q. Are you finished with your answer?

A. Yes.

Q. You, in describing alertness, may or may not have included, by my notes, interactions and general condition. Is interactions different than what you just described?

A. Interactions?

Q. Interactions.

A. That's what I just described.

Q. So is alertness and interactions the same or different? Or is one of the criteria for alertness interactions?

A. The operative way one decides on alertness has -- part of which is the interactions that a child has with people and things in the environment.

Q. **Now,** you said a richer description regarding the general condition. What does general condition include?

A. Color, respiratory rate, the temperature of the extremities, the child's feeding. You know, basic vegetative functions.

Q. And there's an absence of that on the 4th, a richer description?

A. Yes, there's not a rich description of those things on the 4th.

Q. How about on the 5th? Is there such a description?

A. The note by Dr. Zarif on the 5th does include some of the general items, including a child who is Comfortable, without respiratory distress, but again, it's not a particularly rich description. Obviously, to Dr. Zarif, the child looked well enough not to proceed with any further diagnostic workup.

Q. How about on the 6th? Is there a rich enough description to tell you what you described?

A. The only thing that's there is that the child ate fairly well. The rest of the description has to do with the specific line items, physical findings and, of course, the not by Dr. Shostry regarding the child's right arm.

Q. Does that mean that there isn't a kind of rich description on the 6th, either, that you're referring to that you'd like to see on the 4th?

A. That's correct.

Q. Let's go to the 7th. Does it have the type of rich description that you're referring to?

A. No.

Q. How about the 8th?

A. There is the notation by Dr. Zarif on the 8th that the child is irritable, but that's the only description of the child, other than again some line item physical findings.

Q. would it be correct to say, then, that at no time c the 4th, 5th, 6th, 7th, or 8th in the written chart do you fin the kind of rich description you would like to see?

A. That's correct. And I say what I would like to see to help me in my job.

Q. I understand.

A. Not that they were obliged to put those things down but it would just help me out.

Q. I understand.

MS. McDONALD: In your job as an expert witness?

A. That's correct.

Q. Now, in your job as an. expert witness, Doctor, let' translate that now a little further into something more basic. Is it your medical opinion that communication regarding what you have described as a general description among the members of the team must and should be undertaken?

A. I don't quite understand that question.

Q. You don't?

A. And I'll tell you why.

Q. Sure. Tell me why.

A. Because members of the team don't usually discuss the description of a child's general state, because members of

the team can see it with their own eyes. It's not the sort of thing that needs to be communicated per se, unless someone is not there and you're talking to them on the telephone, for example.

Q. Well, Doctor, let's even get more basic. You just said uniess one, is not there and you're talking to them on the telephone. How about if someone wasn't there during a seven-or-eight-hour shift and you wanted to know what had gone on in those seven, eight hours before? Is that the kind of communication, either orally or written, that reasonably should be exchanged between members of the team?

A. No.

Q. No?

A. No. You usually exchange conclusions, not descriptions.

Q. I see. So is it your medical opinion, Doctor, that nowhere in the chart, according to the standard of care, is it necessary to describe what you described as being a more rich description in order to comply with proper charting and communication orally?

MS. McDONALD: Standard of care at what time? Again talking about standard of care --

MR. GOLDBERG: Standard of care. Just because he's not talking about it doesn't mean I can't ask him about it.

A. I'm unaware of any link between the degree of documentation and the standard of care

Q. And that includes orally, as well? Is that what you're saying, Doctor?

A. The degree of documentation and the standard of care. I'm unaware of any --

Q. I didn't limit it to documentation I said communication, either orally or in writing. Isn't it necessar and appropriate that among the members of the team, that information be made known?

MS. McDONALD: What information?

A. I can't answer that question as you phrased it.

Q. You can't? Well, Doctor, when you were in Colorado didn't you teach specifically residents and nursing personnel that you expected and exacted of them that they, in fact, report to you that very thing you have described as being a rich description --

A. No.

Q. -- concerning patients?

A. No.

Q. You never did that?

A. No. What I asked them to do, as I think I have already said before, is to let me know of meaningful changes i the child's condition.

Q. And you never asked them to be, sufficiently in

their descriptions, to be able to have a basis of comparison; right?

A. Correct. I usually would ask them for a conclusion not a description.

Q. How long did you work in Denver?

A. I was on faculty from 1982 to 1987. I returned in 1989 and left in 1991.

Q. I see. And how long did you work with Dr. Roger Barkin?

A. At the time that I was there in the early 1980s, Dr Barkin was the medical director of the Ambulatory Pediatric Clinic at the University of Colorado Health Science Center. I did a number of rotations through there, and therefore, I interacted with him on a number of occasions between 1978 and 1981. I don't know how many.

Thereafter, I was a colleague of his, and we would occasionally run into each other, but since we worked at separate institutions, it wasn't that common.

Q. With regard, Doctor, to -- going on, if it is your opinion that this particular patient had meningitis, do you have an opinion as to whether the giving of the antibiotic in question, which was given -- or those antibiotics -- strike the whole thing.

If, Doctor, in your opinion, knowing what you do now about the lab result from the lumbar puncture, this patient had

been given antibiotic of an appropriate regimen and dose and route, do you have an opinion as to whether it would have changed or altered or modified the outcome?

MS. McDONALD: Given when?

MR. GOLDBERG: At any time.

MS. McDONALD: Are you suggesting that it was never given?

Q. Before the 7th.

A. For me, it's an incomplete question. I would need to know when it was being given and for what indications it wa being given.

Q. No, you don't need to know for what indications.

A. Yes, I do.

Q. No, you don't.

MS. McDONALD: If he says he needs to, he needs to.

Q. No, you don't, Doctor. All you need to know is whether the giving of the medication before that would have in any way impacted the outcome of the disease, regardless, even if it was by chance. I'm asking you a biological answer. Do you have an opinion?

A. The only way that question can be answered with the whole truth is to know what the indications were.

Q. No, I don't agree with you, and I'm not going to accept your statement. If you can't answer it, tell me.

A. Well, I have told you I can't answer your question as stated.

Q. Okay. I'll accept that. And at the trial, you wil so answer and be bound to that.

Now, Doctor, with regard to your last statement, ar you telling me that in order to know as a physician and scientist whether the giving of medication, namely antibiotic, at a time earlier to this patient would have made a difference you have to know why the patient was being given that medication?

A. Yes.

Q. Really? Well, Doctor, whether it's for any number of reasons or not, will it have the same effect, no matter wha the indications are?

A. Take my word for it, sir. To answer that question truly, you need the information.

Q. Really. Well, you're the first doctor that I have ever deposed out of 4,500 that have ever said that. You are now in a unique class. And I have deposed 4,500 doctors, and no one has ever said that. And I have read over 40,000 articles. No one has ever written that. So tell me what you base that upon. I'd like to hear it. Give me a scientific basis for that answer. I want to hear this one. Let's have it. I'm waiting.

MS. McDONALD: Well, he's allowed to reflect on

something, so don't get pushy.

MR. GOLDBERG: I'm not interrupting. Just letting him know I'm ready. I'm waiting to hear it.

A. To make a determination in bacterial meningitis as to the effect of the timing of antibiotics, one needs to know what the indication is, because of the fact that when antibiotics are given for particular indications, the probability or the possibility of disease being present is raised or lowered by the indication.

For example, if I knew by some crystal, ball that next week I would be coming down with bacterial meningitis, I would start the antibiotics now. But that's fantasy. The real world is that people are given antibiotics for a reason, and the only way that an expert witness can answer the question to the whole truth is to know what the reason is.

Q. Now I appreciate what you have said, and I understand quite well your answer. Does the drug act differently because of the reason, Doctor, insofar as its biological processing or effect? Mode of action and the effect of the drug on the human body? Does the drug, the antibiotic, have to say, "I want to know what I'm being given for before 1/11do my thing," or will it still do the same thing, regardless of what it's given for?

A. Well,, as you know, sir, antibiotics don't act on the human body.

Q. It doesn't? What do they act on?

A. They act on dividing bacteria. At least these kinds of drugs act on dividing bacteria.

Q. Excuse me. When I use the human body, Doctor, I'm talking about all of those components. So are you saying to me under oath that the effect that an antibiotic such as ampicillin or the like that was given here will have on the bacteria will be different based upon the bacteria knowing what it's being given for or expected to do?

A. No. The mode of action is the same.

Q. Thanks. You know, respectfully, what node of actior means?

A" Yes. Do you?

Q. Yes, I do. I have done a little bit of work in this Doctor, for 30 years. I think I know. Have you read the PDR on ampicillin?

A. Not likely.

Q. Have you read it on the drugs that were given in this case?

A. No.

Q. Have you read it for the year 1970?

A. No.

Q. Do you know, Doctor, or have you looked at the package insert for the drugs that were given in this case?

A. No.

Q. I see. Have you done any scientific research on the drugs that were given in this case?

A. What do you mean by scientific research?

Q. Have you done any formal studies involving a protocol on these drugs?

A. I have not done drug studies per se on any of the drugs used here.

Q. What were the drugs given on the 7th, Doctor?

A. Ampicillin.

Q. What was the drug or drugs given on the 8th?

A. Well, are you talking about antibiotics, or all. drugs?

Q. Antibiotics, Doctor. Thank you. Even more specific, the drugs that were given for the diagnosis.

A. Oh, ampicillin.

Q. On the 8th?

A. That's correct.

Q. On the 9th?

A. The same.

Q. Was anything given other than ampicillin to this patient from the time of the tap, Doctor?

A. Yes. Chloramphenicol was given.

Q. On what date, Doctor?

A. The 14th. Looks like the first dose of chloramphenicol.

Q. Was any antibiotic given before the spinal tap?
A. I have no evidence of that, no.
Q. Doctor, the routes methodologies -- were they oral or was it parenteral?
A. Parenteral.
Q. All of those days?
A. Are you talking about all days?
Q. 7th, 8th, 9th, 14th.
A. Let's see. The 7th and the 8th and the 9th, parenteral. The 14th, parenteral.
Q. Is it your medical opinion, Doctor, that ampicillin was effective on the 7th in any way?
A. I believe it was.
Q. Even more specifically, was it efficacious?
A. In the sense that it killed the bacteria, yes.
Q. Was it efficacious on the 8th and 9th?
A. I believe so.
Q. Was the chloramphenicol efficacious?
A. Well, sir, that's a little hard to know. It was being given at a much later time, and I'm not entirely convinced that there were viable bacteria there causing infections to be killed at that time. But it certainly is, in general, an efficacious drug.
Q. Now, Doctor, in the same way that its effect took place on the 7th, do you have an opinion if it had been given

hours before, in the hours before, starting from midnight to when it was giver,, it would have had the same effect on this particular bacteria in the patient?

A. The antibiotic always has the same effect on bacteria, no matter when it's given.

Q. Would that hold true on the 6th, 5th, or 4th, if it was given?

A. Again, biologically, the antibiotic always has the same effect on bacteria whenever it's given and bacteria are present

Q. Does that mean yes to the question?

A. Yes, in the sense that I have already explained.

Q. Okay. Now, Doctor, with regard to the giving of antibiotic, in your opinion, if you have one, in 1970 for appropriate circumstances when they exist for the giving of antibiotic for meningitis or suspected meningitis, in that context, is there a time period within which, in your opinion, before the drug can extinguish or kill off or stop the replication -- whichever one you want to call it, different doctors have told me different things -- I believe it's stopping the replication -- but what do you believe is the tim period it takes for ampicillin to be effective?

A. With regard *to* bacterial meningitis?

Q. Yes, sir.

A. With regard to sterilization of the spinal fluid?

Q. Right.

A. It varies, depending on a number of factors

Q. Give me the factors.

A. The factors are the dose of the antibiotic, the degree of inflammation of the central nervous system, the number of bacteria that are present at the time that the antibiotic is first given, the degree of inflammatory response and its effectiveness, and any resistance factors that might be present in the bacteria itself.

Q. Doctor, have you read the PDR or the package insert for these drugs as to what they opine in their literature is the effective time within which the mode of operation and effectiveness will take place?

A. No.

Q. You have never read that?

A. No.

Q. Have you read any studies that indicate that?

A. I have read a large number of studies that look at antibiotics, spinal fluid and sterilization, yes.

Q. And Doctor, have you read any studies that give you a time period from the time of the drug being given parenterally until the time it has an effect on the organisms, as a range?

A. Well, the range is dependent on the factors that I have already outlined.

Q. Well.,Doctor, let me ask you something. Let's go through those factors. Are those things you can tell prospectively?

A. Prospectively?

Q. Yes.

A. Usually not.

Q. Are they things that you can tell retrospectively?

A. In some cases, yes.

Q. So there are many cases you cannot tell either retrospectively or prospectively; correct?

A. That's correct.

Q. I see. So that in those cases where you can't tell it retrospectively or prospectively, it's kind of like a crapshoot. Is that what you're saying?

A. I didn't use the word "crapshoot," as you know sir

Q. I'm asking you, is it a crapshoot?

A. It depends why you're making the inquiry. You see, these are not clinically relevant questions in a child who is improving, and all one needs to do is a spinal tap in order to ascertain whether sterility has occurred. So the kind of thin that you're talking about usually doesn't have much clinical importance, and is rarely engaged upon.

Q. If one doctor wants to prevent the risks of the disease from occurring, what does one have to do?

A. I don't understand the question.

Q. All right. Meningitis. When it is in a particular patient and has begun, are there risks for that patient?

A. Yes.

Q. Are there risks of serious bodily harm and/or death

A. Yes.

Q. If one wants to, as best one can, hope prospectively, I use that phrase appropriately, if you want to try to reduce or prevent that from occurring, do you give antibiotics?

A. Yes. One gives antibiotics.

Q. What is the reason you give antibiotics? In the effort or hope to do what?

A. The hope is that antibiotics are being given ta avoid death. That's the major reason for giving antibiotics. The secondary reason for giving antibiotics is the thought, unproven, but the thought that the degree of neurological injury can. be lessened or the risk of neurological injury can be lessened by a timely dosing of antibiotics.

Q. Have you ever treated patients, Doctor, that you gave antibiotics with known or suspected meningitis?

A. Yes.

Q. Was it your intent to try to prevent death and also reduce the risks from occurring?

A. Yes.

Q. Did it work in some instances?

A. The antibiotics certainly prevented death.

Q. I understand that. So it worked in some instances, yet?

A. In the sense that I have explained, yes.

Q. Did it work insofar as reducing or eliminating neurological deficits?

A. I don't know.

Q. You don't know?

A. I hope so, but I don't know.

Q. You hope so, but you don't know; right?

A. Hope in the sense that I have already explained. One gives antibiotics with those hopes. And you're asking me, as a treating physician, always filled with hope. You're not asking me hopefully with respect to an expert opinion as to th effect of antibiotics on my patients.

Q. Right. I understand. So do you treat your patient differently than you opine as an expert, as what should be done?

A. No, I treat them exactly the way I talk about it a an expert.

Q. Now, staying with what I have just been working towards, Doctor, if it is your hope and goal -- and by the way you don't give the antibiotics unless you think it's appropriate; correct?

A. Correct.

Q. And when you give it, you believe it is appropriate right?

A. Correct.

Q. And when you have given it, you believed you were acting reasonably as a physician; correct?

A. Yes.

Q. And when you have given those antibiotics, Doctor, did you know what the degree of inflammation was of the centra nervous system?

A. No.

Q. Did you know the number of bacteria present when first given?

A. No.

Q. Did you know the degree of inflammation and respons and effectiveness?

a. No.

Q. Did you know the resistance factors?

A. Not at the time of the first dose, no.

Q. That's what I'm asking. At the first dose, did you know that?

A. I have already said no.

Q. The dose -- did you give it parenterally or did you sometimes give it orally?

A. I sometimes gave it orally.

Q. So it would depend upon the age?

A. It depended upon the circumstances. The times I have given it orally was in Africa, where it wasn't capable of being given parenterally.

Q. So you did the best you could.

A. That's correct.

Q. When you went to Africa, Doctor, were you doing it in some research fashion, or were you doing it as a good Samaritan, or both?

A. I was trying to bring my medical skills there. It wasn't being done for research.

Q. When was that, please?

A' We went to Africa -- I'm trying to remember.

Q. Decade.

A. About ten years ago.

Q. Now, other than that you have given it parenterally other than in Africa --

A. That's correct.

Q. After the initial -- by the way, is there a startin dose when you gave the antibiotic?

A. The starting --

Q. Or a loading dose, whatever you want to call it?

A. The starting dose is -- recommendations have varied over the years -- usually a first dose between 50 and 100 milligrams per kilogram of ampicillin.

Q. And after the initial dose?

A. The dosing range was usually between 150 and 400 milligrams per kilogram per day.

Q. Did you in any of the patients you treated know the resistance factors?

A. Again, at the time of the first dose, usually not.

Q. How about after the first dose?

A. Yes, you would learn some of the resistance factors after the first dose.

Q. Did the results of the resistance factors cause you to change the medication, ampicillin?

A. Usually not, because when there was an awareness of the possibility of resistance, multiple drugs were used initially, and then one would select out the best appropriate drug, given the laboratory results.

Q. Did you know after the first dose the degree of inflammation of the central nervous system?

A. Usually not.

Q. Excuse me? Did you know what the degree of inflammation of the central nervous system was by the second dose?

A. Usually you never really knew that.

Q. That's my point. You would never know that, would you?

A. Usually not.

Q. Is there any way that you scientifically or

medically opined what you thought was probable or likely as to being the degree of inflammation of the central nervous system?

A. Well, I'm a little confused, sir. When you asked m about those particular items, you were asking me biologically what influences things.

Q. Right.

A. In a clinical sense, one rarely knows those things.

Q. Right. So those are biological factors, but not things that you would expect to know clinically at any time; right?

A. Usually not.

Q. By the way, Doctor, do you treat patients clinically, or do you treat them biologically?

A. You treat them clinically with a biological knowledge.

Q. Right. Isn't that exactly what you do?

A. Yes, sir.

Q. Thank you. Doctor, with regard to your personal experience with this type of meningitis in those patients that you said you diagnosed at 50 to 100 times, how many of those patients died?

A. I don't know.

Q. How many of those patients went on not to have severe central nervous system deficits?

A. I don't know exactly.

Q. In how many of them, Doctor, did you consider the treatment a success?

A. I don't think I ever thought about it in those terms.

Q. In how many did you think the drug was efficacious?

A. In 100 percent of the times sterility was achieved.

Q. Doctor, with meningitis, the mere -- strike that. With meningitis, elimination of the organism in and of itself isn't the only thing that can have deleterious effects on the human body; is that correct?

MS. McDONALD: You're saying elimination?

MR. GOLDBERG: Yes, elimination of the disease.

MS. McDONALD: I'm not sure I understand the question.

MR. GOLDBERG: The organism, the elimination of the organism, doesn't mean that you won't have other deleterious effects, nevertheless.

A. Well, I'm confused, because elimination of the organism is not a deleterious effect.

Q. Doctor, the mere elimination of the organism doesn't mean that there isn't an effect from the disease having been present that may cause harm.

A. That's a true statement.

Q. Right?

A. That's correct.

Q. So the mere fact that you achieved sterility or elimination of the disease organism doesn't mean that the patient's out of the forest; right?

A. As I understand your question, that's a correct statement.

Q. Well, I'll take it to the next step and you would understand what I'm getting to. As the disease multiplies, Doctor, describe the pathophysiological process as to bow it reacts with the body and what the body does concerning fightin the disease. What's the residue that's left?

A. I'm not quite sure I'm understanding what it is tha you want me to describe.

Q. Well, Doctor, describe all the deleterious effects from the disease. Let's try it that way. What is the pathophysiological disease process, if it goes untreated? Describe what happens.

A. If it goes untreated?

Q. Yes, if it *goes* untreated, what happens?

A. Well, Hemophilus influenzae meningitis was 96 percent fatal when untreated. 4 percent of people survived. The usual natural history was that approximately 1 percent of patients died in the first one to two days of malignant cerebral edema. The remainder, most *of* whom were destined to die, took an average of 20 days to die. Should I finish?

Q. Go ahead. I'm sorry. I'm just waiting.

A. The usual evolution of the disease in those childrer was a combination of three forces which moved at different speeds in different patients. One was vascular injury with infarction of brain tissue. The second was brain swelling. And the third one was some form of obstructive hydrocephalus. Ultimate death was caused usually either from increased intracranial pressure due to brain swelling or hydrocephalus, or from final infarction of a vital area of brain.

Q. As the disease multiplies, Doctor, and replicates, is there a residue or is there any additional problem that it causes as it multiplies at the cellular level?

A. I don't understand.

Q. Do you know Dr. Schulman?

A. I don't know him, no.

Q. I have deposed him three or four times involving meningitis, and if you haven't read his depositions, I can understand that. Let me try it this way. With regard to the destruction of the cells from the antibiotic, is there a residue that's left?

A. To my knowledge, the antibiotics don't destroy cells.

Q. Is there a process from the killing-off of the organism that has a deleterious separate effect, other than th disease growth?

A. I just don't understand your question.

Q. You don't understand it? I'll accept that. Now, Doctor, you were asked and given an assignment in this case. You were asked to review if there's any link between meningiti and the outcome in the focus; do you recall that?

A. No, I was asked to look for any link between the timing of antibiotics in the context of this illness and outcome.

Q. What was your opinion?

A. My opinion is that if antibiotics had been given at an earlier time for a similar indication, that the outcome would have been the same.

Q. What do you base that upon?

A. I base that upon the knowledge that the timing of antibiotics in the context of meningitis does not correlate with outcome when the illness preceding it is one of general and nonspecific symptoms and signs.

Q. Have you finished your answer?

A. Yes.

Q. Have you given me the bases and supporting reasons for all that?

A. I think that the bases and supporting reasons for that conclusion are well presented in my 1992 article.

Q. I appreciate that, but I'm not here to have you

have just opined, please.

A. Yes. The basis is that in --

Q. You understand that in deposing you, I have a right to ask you the questions and not have you refer me to an article, is what I'm trying to suggest. That's all.

A. That's fine.

Q. So you can give me the --

A. The basis is that in an analysis of all studies extant at the time that the article was written in which information was presented that could be used as a basis for reaching a conclusion, that that analysis ended with the conclusion I just stated. So it's a result *of* a standard epidemiologic analysis of extant literature published up to 1992, subsequently validated by other studies.

Q. Validated by other studies.

A. Yes.

Q. Tell me the other studies.

A. There have been two. One published in 993 in the Pediatric Infectious Disease Journal. Professor Peltola was the senior author on that. And one published in the Journal c the American Medical Association, 1994, again with Dr. Peltola as the senior author.

Q. Was the 1994 article the same as the 1993, but just published in 1994?

A. No. Two different articles.

Q. New data?

A. Additional data, yes.

Q. *Any* of the data published in your article, Doctor, as a result of specific research?

A. I did no laboratory research.

Q. That's what I'm talking about. It's all a review o the iterature?

A. No, it's an analysis of the available information.

Q. So what you did was you personally took anaiysis, made an analysis of the literature that was existing; correct?

A. That's correct.

Q. Who did you do it with?

A. No one.

Q. All yourself?

A. *Yes.*

Q. I see. Now, the 1993 article that you're referring to in the Pediatric Infectious Disease Journal -- do you know the name of the article?

A. I don't know the specific name.

Q. Do you have the article?

A. *Yes.*

Q. ***So*** ail I'm going to have to do is get the 1993 Pediatric Infectious Disease Journal and it would be there; right?

A. Yes.

Q. And does Dr. Peltoia do and base his conclusions on your article?

A. No, he did independent studies of patients.

Q. Do you believe, Doctor, that his conclusion is the same as yours?

A. Yes.

Q. And what is or are the number of patients that are involved in the research he did?

A. The only number I remember is for the JAMA article, and I believe it was 325 children with bacterial meningitis.

Q. Of what type?

A. Various types, but Hemophilus influenzae was the most highly represented causative organism.

Q. And did and does the article, Doctor, tell you the timing of the intervention and the signs and symptoms of the patient at the intervention?

A. Well, that particular article looked at children wn were brought in to see physicians and the interval -- well, le me describe the article to you, and then you can, I think, probably see what kind of article it is.

Q. Please.

A. He took these 325 patients and divided them into three groups. In group 1, the children had an illness and wer seen by a physician, had meningitis diagnosed, and treatment was begun on that visit, and they were admitted to the

hospital.

Group 2 were children who were brought in because of an illness, were seen by a physician, were sent home without therapy, were brought in the next day, had meningitis diagnosed and were admitted to the hospital.

Group 3 were children who had an illness, were brought in, seen by a physician and sent home, came back two days later, had meningitis diagnosed, and were admitted. All patients were followed up for at least six months, and there was no difference in outcome

Q. Is this a retrospective or prospective study?

A. It was a prospective study in the sense that they gathered the information as they were going along.

Q. It wasn't a protocol that was designed, that some patients would be seen with the idea that we'll send them home knowing that there's a possibility of suspected meningitis and then have them come back the next day or two days later; is that right?

A. That's correct

Q. And the basis of that study and the 1992 review of the literature and yours, that's what you're basing your opinion on exclusively; correct?

A. There's the 1993 study in the Pediatric Infectious Disease Journal in which the duration of symptoms prior to the diagnosis of meningitis being made was looked at and no

correlation could be found with outcome. There's that study, the 1994 article, and then all of the literature which went into the 1992 article formed the basis of the opinion.

Q. Anything else?

A. No.

Q. Does that cover the bases for that?

A. That's correct.

Q. Doctor, is it your medical opinion that any of these articles -- let's start with yours, 1992 -- is a sufficient scientific basis, then, to say that you can apply to this given patient whether the drug given earlier in his specific case would have made a difference?

A. Yes.

Q. And tell me the basis for that.

A. Because there is no other basis for expressing a conclusion.

Q. There isn't?

A. No.

Q. I see. With regard, Doctor, to your statement that there is no other basis for a conclusion, have you read the depositions of all of the experts in the plaintiffs' behalf in this case?

A. I think I listed the depositions that I did read

Q. Did Dr. Livingston give an opinion contrary to what you have just said?

A. Yes.
Q. What is his basis?
A. I don't know.
Q. You didn't read what he said?
A. Well, I read the words that he said, but I don't know what the actual basis for that was.
Q. I see. Is he board certified by the same infectiou: disease board that you are?
A. I believe he is.
Q. Have you heard of Johns Hopkins, where he was?
A. Yes, I have.
Q. Is that considered a recognized institution?
A. It's a recognized institution.
Q. I see. Have you heard of Dr. Roger Barkin?
A. Yes, I have.
Q. You haven't read his deposition as an expert in thi case, right?
A. No,
Q. Did you know he was an expert in this case?
A. No.
Q. Do you consider him *to* have any basis for opinions in the area of pediatrics, pediatric infectious disease or pediatric emergency medicine, Doctor?
MS. McDONALD: That's kind of a general question.

A. I would have to read his deposition, sir.

Q. I didn't ask him about his deposition opinion. Doe he have the basis to render opinions from your personal knowledge from his education and training on the subject of meningitis?

A. I can't answer it without knowing what the opinion is, and what the basis is that he states.

Q. I see. And that would hold true, I take it, for al of the experts on both sides in this case; right?

A. That's correct.

Q. would it be your opinion that anyone that disagrees with your conclusion would not scientifically be correct or medically correct?

A. I have two answers to that question.

Q. Please give them to me.

A. The first is, I would like to know what the basis is.

Q. Right.

A. And the second is, if the basis was insufficient, I would then have to conclude that they had no basis for opining what they just did.

Q. Now, Doctor, are you a statistician?

A. I'm not a professional statistician, no.

Q. Do you deal with statistics?

A. Yes.

Q. Are you familiar with the Nye principle?
A. Excuse me?
Q. The Nye principle?
A. I don't know what that is.
Q. Are you familiar, Doctor, with the proposition that to correlate statistics, there's a plus-or-minus factor?
A. i don't understand what you just said
Q. In studies that are done epidemiologically, have you read any on meningitis?
A. Many.
Q. Have you read any on the effects of antibiotics on meningitis?
A. Many.
Q. Isn't it correct, Doctor, that you can never take an epidemiological study in a statistical body of information from any study, scientifically performed, and apply it to a given patient?
A. What do you mean, apply it to a given patient?
Q. The principle that the data comes to a conclusion can be applied to a given patient.
A. It depends what the purpose of the application is.
Q. I see. Is it your opinion, scientifically and statistically, that you can take scientific studies done on meningitis or drugs and apply it, take that data and apply it to a given patient?

A. It depends for what purpose the information is beinc applied.

Q. For the purpose of saying whether or not that particular drug would be effective on a given patient, if giver sooner.

A. For the purposes for which I am here, the answer is yes, I can make that application.

Q. And tell me what you base that upon.

A. Because to answer those questions, an expert must have some basis. Now, if you find the basis insufficient, of course, that's your right. But that is the only information that is existing on which any expert can actually formulate an opinion that, I believe, can be expressed to a reasonable degree of medical certainty. In other words, one has to use existing information which has been published and analyzed in order to express opinions.

These opinions are not obtained by revelation. And therefore, I have done just that, using everything that I know of that actually exists that can reveal information on which a expert opinion can be used, and in my job as an expert witness I have applied it to this case.

Q. So if I understand you, you can say and are saying that with reasonable scientific certainty and medical certainty, there is sufficient scientific basis that as to if this patient were to have been given the antibiotic sooner, yo

can say absolutely it wouldn't have made a difference in the outcome; right?

A. What I can say is the following, which is what I di say. If antibiotics had been given earlier for a similar purpose, the outcome would have been the same to a reasonable degree of medical certainty.

Q. And Doctor, let's take that to its logical conclusion. If it had been given earlier, are you saying that it's the disease in and of itself that was going to cause this outcome, regardless of intervention?

A. No. What I'm saying is that the timing of antibiotics is not correlated with outcome. Therefore, if the antibiotics had been given earlier for a similar purpose, the outcome would have been the same. That's what I'm saying.

Q. So your statement that the timing of antibiotics -- which you are being very exact on, and I thank you -- is not correlated with outcome? Correlation, Doctor, means it's statistical correlation; isn't that correct? Correlation has specific meaning, does it not, Doctor? I have read the literature, too. Doesn't correlation have a meaning?

A. Yes, it has a meaning, certainly, as I have used it

Q. Right. And a meaning as you wrote about it, doesn' it?

A. Yes, sir.

Q. Right. And it has a meaning in the scientific

world, doesn't it?

A. Yes.

Q. And it has a meaning in the medical world, doesn't it?

A. Yes.

Q. What does your definition of correlation mean?

A. It means that the dependent factor, which is the outcome, does or does not have some relationship with the independent factor, which is the timing of the antibiotics. I there is a correlation, then the timing of the antibiotics would, in fact, influence outcome. If there is no correlation the opposite would be true.

Q. Now, Doctor, in total, do you know how many patients, in fact, were the subject of these articles that you are referring to that you did?

A. I believe the total number of patients in the 22 studies I reviewed numbered over 4,000.

Q. 22 studies is what I heard you say; right?

A. Yes.

Q. And the number of patients was 4,000?

A. Over 4,000.

Q. Did you have the raw data, underlying data and charts, when you reviewed those studies?

A. No.

Q. Did you have the charts?

A. No.

Q. Did you have the histories?

A. No.

Q. Did you have the differential diagnoses or discharge summaries or admit summaries?

A. No.

Q. What did you have?

A. I had the articles.

Q. The articles. The conclusions?

A. No, the articles.

Q. What articles? What did the articles have? Did they include the charts or the data?

A. The articles were relatively heterogeneous, and I can't give you an exact answer regarding all 22 studies as to what each of the studies contained.

Q. Do you have those 22 articles?

A. I believe so.

Q. You have a list of those 22 articles?

A. They're in the bibliography of the article that I wrote.

Q. Now, I, Doctor, would like to ask you, as an expert in this case, when you are reading literature such as you did in this case, those 22 articles, if I were to go to each of those articles, I would see what, in fact, would be the category or type of patients that were involved, would I not?

I would get general information on them?

A. To the extent that the articles presented that information, you would be aware of it.

Q. And Doctor, you understand that the specific history, the timing of the intervention, the outcome, the €allow-up -- did you have the follow-up of all these patients that were the subject of those 22 articles?

A. Again, the articles were uneven in terms of the degree of follow-up.

Q. Were they ail in referee journals?

A. I believe they were.

Q. Now, Doctor, have you read any articles or literature that disagree with your position paper?

A. In the individual articles which I used as the basi for my analysis, most of them -- I take that back. Some of them had in the discussion section some conclusions that they drew, and in some cases a statement would be made regarding th beneficial effect of "early therapy" on outcome in meningitis.

Q. Have you done any Medline or Index Medicus search o the beneficial effect of antibiotics and outcome?

A. Not since I wrote that article, no.

Q. Did you do it before you wrote the article?

A. What I did was a selected search regarding certain subject matter within the context of bacterial meningitis utilizing all sources in order to try to find out extant

literature to be used for the analysis.

Q. Did you find any literature that disagrees -- that are published in referee journals -- with your conclusions?

A. I found no literature that actually analyzed information that was beyond their own study.

Q. Well, Doctor, one doesn't have to analyze information for there to be data concerning the conclusions insofar as whether drugs have an effect, if given timely. You don't have to make the analysis. The conclusions can be there. One doesn't have to survey the literature to, in fact, reach a conclusion, does he?

A. I think I have already answered your question, sir In some of the articles, in the discussions section, they would make a statement of the sort that I have already said. But I could find no literature in which anyone independently made an analysis of the totality of what is known about the subject and reached a different conclusion.

Q. Doctor, in the 100 or so cases that you have been involved with, how many times did you opine opinions on the subject of meningitis involving this very conclusion?

A. To whom?

Q. In the deposition or at trial or to a lawyer.

A. Oh. I'm sorry. I was confused. I thought you were dealing with cases that I'd taken care of with meningitis. I don't know the number of cases in which the subject matter of

the timing of antibiotics and outcome were the charge of my expert involvement, so it's hard for me to answer with an exact number.

Q. Doctor, let me see if I can refine this a little further. Is it your medical opinion that there is no case where the actual timing of the giving of the antibiotic will ever affect the outcome?

A. No. The best that I could -- the best conclusion that I could arrive at, given what is known about the topic, is that if a child has clinically overt meningitis, a child or adult, and if proper medical therapy, including antibiotics, are inexcusably denied that person, then the duration or the interval until proper therapy is instituted probably incrementally increases the risk of a bad outcome.

But to make that conclusion, there is very little clinical data that can support it. It's mainly based on what is known about the biology of the disease.

Q. When you say there's no clinical documentation to support it, is that because no one would ever do that, except on an accidental or negligent basis?

A. It's because the information is not there to be had for whatever reason.

Q. Well, let's look at the reasons the information wouldn't be there. Would you recommend or ever teach or would you ever do that, Doctor? Would you withhold intentionally

from a patient such as you described the giving of antibiotics to see whether or not it would affect the outcome?

A. No.

Q. Have you read of malpractice cases or have you, in morbidity and mortality reviews that you may have read about that were reviewed -- would you encourage that to be done?

A. No.

Q. Doctor, has it been your experience that anyone whoever did that accidentally or negligently would go about publishing that in the Literature for the benefit of the community of medicine at large?

A. Well, I don't know what people's motivations would be. Such information might be included in large series in which there was a certain anonymity. So the answer is the information could be published, but I just haven't been able t find any that has been published.

Q. Have you looked for it?

A. I looked very hard.

Q. Let me ask you this, Doctor. Do you think what yoc described -- let me state it differently. If in a given patient hypothetically with meningitis proper antibiotic therapy was withheld knowingly, in your opinion would that be ,malpractice?

A. Yes.

(A discussion was held off the record.)

Q. If a doctor in the circumstances which reasonably well-qualified physicians said it should be given negligently withheld it, that would be malpractice, as well; correct?

A. I think that's a tautology. You already said it's negligently withheld, so it is malpractice.

Q. well, Doctor, what I'm trying to establish is, if a doctor intentionally did that or negligently did that, in both instances it would be malpractice; correct?

A. Yes.

Q. Now, you said that the time interval in which it wa withheld in the circumstances where it should be given in your opinion would increase the risk of a bad outcome. Have I used your words correctly?

MS. McDONALD: I think he said in the cases of clinically overt meningitis.

MR. GOLDBERG: I'm using --

Q. Are those the words you used, Doctor? The part I'm calling your attention to -- the risk of a child having a bad outcome would be increased, is what I'm calling your attention to.

A. Let me just restate it.

Q. Fine.

A. In clinically overt meningitis, if proper therapy including antibiotics was inappropriately withheld, the risk o a bad outcome would be incrementally increased. That's the

best conclusion one can arrive at, given what is available on which to draw such conclusions, which is primarily a sense of the biological underpinnings of damage in meningitis, not clinical information to be used for analysis. *And* there's no good animal data to be used, either, and so you're left with what you have got

Q. Staying with that statement that you just made, clinical overt meningitis, proper therapy, and antibiotic therapy is withheld, the risk of a bad outcome would be incrementally increased. That's the statement I'm going to be asking you some questions about. Are you with me? I don't want to keep repeating the statement that I'm referring to, so you'll keep that in mind for a moment?

A. Sure.

Q. Okay. Clinically overt meningitis in that statement -- what do you mean by it?

A. I think I have already answered that question.

MS. McDONALD: We talked about that before lunch.

Q. Is it the same criteria that you referred to earlier in this deposition?

A. That's correct.

Q. So when any of those criteria are met, that's what you mean by it; right?

A. I tried to define as best I could what clinically

overt meningitis was, and it's that same definition that I'm using in the statement I just made.

Q. I'm trying to use -- what you defined earlier is what applies in this sentence; right?

A. Correct.

Q. Okay. Proper therapy and antibiotics. Is there a therapy other than antibiotics which is proper for meningitis?

A. There are other aspects of therapy that do not include antibiotics, yes.

Q. What are they?

A. Well, there is proper attention to vital functions. There is fluid and electrolyte balance. There is the use of corticosteroids in certain specific instances. There may be the appropriate treatment of increased intracranial pressure that needs to be instituted. It's the totality of the care of the sick child that I'm referring to, a failure of which can also cause grievous damage.

Q. Added effects?

A. If, in fact, it is done inappropriately.

Q. So the sequelae that will flow from the effect of the disease, those sequelae, if not treated, may have an additive effect, is that what you're saying?

A. Independently, they can cause damage if not treated in a rational manner.

Q. Now, you said at the end, withheld, proper therapy,

risk *of* bad outcome would be increased incrementally. Bad outcome, Doctor. When you use that phrase, you're talking about central nervous system deficit or death; right?

A. Yes.

Q. Would you agree that in those patients in whom deat occurs, that that compiles the greater or greatest bulk of patients that are involved with the studies that you were talking about?

A. If I could respond to that just by redefining your former question, because I wanted to be accurate in that. The incremental risk of a bad outcome probably does not include death, and I'll tell you the reason why. Nowadays, most death in meningitis occurs in the context of a fulminant meningitis, which is insensitive to the timing of antibiotics. The kind of death that occurred in the old days, from untreated meningitis, is not seen now. So I would say that the increased risk of a bad outcome that I referred to is primarily neurological damage.

Q. Central nervous system?

A. Correct.

Q. But getting back to my question, would you agree that the 22 articles and 4,000 patients that were the subject of the articles you reviewed insofar as meningitis, most of those patients died?

A. No. That's not true.

Q. No? What percentage died, Doctor?

A. I don't know, because not all of the articles reported information on which a mortality rate could be calculated.

Q. would you define morbidity in that context?

A. I never actually added it up. What I did do was to look at those articles in which information was presented regarding the duration of symptoms, the timing Of the antibiotics, and the outcome, in which the outcome was neurological damage or intactness, as the case may be. But I did not calculate a morbidity rate.

Q. Morbidity, Doctor, is a pendulum of mild to severe? You use that phrase, or is there some specific phrase you use, or words?

A. Well, in the context of the article, I used whateve information was presented as the authors gave it.

Q. Isn't it true, Doctor, that pneumococcus, pneumococcal meningitis has more reported cases *of* bad outcome and death than Hemophilus influenzae?

A. Yes.

Q. Do you know what percentage in the 22 articles, the 4,000 patients, were pneumococcal and what percentage were Hemophilus influenzae?

A. Again, I didn't calculate individual organism rates for the total 4,000 cases. But I would guess that Hemophilus

infiuenzae constituted greater than 50 percent of the total number of cases.

Q. How much greater?

A. I don't know exactly. Just probably two-thirds or three-quarters of the cases, but more like two-thirds would be an accurate estimation.

Q. With regard, Doctor, to hearing loss, is that a type of central nervous system deficit reported in the articles you did?

A. Yes.

Q. Review?

A. Yes

Q. Right?

A. Yes.

Q. And isn't it true that in those studies and the articles you referred to, that hearing loss is a type of deficit which specifically is referred to as the timing of intervention not having an effect on outcome?

A. That is true.

Q. Can you cite me any article, other than as to hearing loss specifically, that says central motor system deficit, brain damage, cortical things of that type, that that has been the subject of any article or study that says that the giving timely of the antibiotic doesn't prevent or reduce the morbidity from that type of finding?

A. Well, the answer is, the two articles from the journals I named as appearing after my articles deals with that issue, and in my own article there are specific citations in the bibliography for studies in which that information is in fact presented. I don't have them memorized.

Q. And Doctor, what were the number of patients involved in that?

A. I'd have to go back to my article and look.

Q. When we resume, I'm going to ask you before that to look at that article. But let's carry forward on what I was asking.

Give me, please, your explanation medically and scientifically of why, and your -- let me restate that. Give me the basis for your opinion or your observation from what others have written and you analyzed, both of those, your own experience and what you analyzed, why the risk of bad outcome would be increased, incrementally increased, with the withholding of antibiotics. What are the reasons for that?

MS. McDONALD: In patients with clinically overt meningitis.

Q. In that statement.

A. The reason I concluded that -- and again, it's a conclusion not drawn from clinical information -- is that the pathology that results in neurological damage has to do with blood vessel injury and brain ischemia, and there is some

information which suggests that once meningitis becomes clinically overt, that the duration of the presence of inflammation, which is the basis of the overtness of the meningitis, will be prolonged, based on the timing of antibiotics. And therefore, if the inflammation is prolonged, the risk to blood vessels of being injured, thereby causing brain ischemia, will be increased.

Q. So that it is desirable to reduce the duration of that inflammation.

A. It is desirable to reduce the duration of the inflammation, and the dosing of antibiotics may be able to do that over many days. The trouble with that statement, which i set forth in the article, is that the duration of inflammation is very insensitive to the timing of antibiotics. And therefore, what I have just told you may be wrong, and it may be that the timing of antibiotics even in clinically overt meningitis may not have a major influence in outcome, either. But there's just nothing to gainsay the biological sense that that is the best conclusion to be held at this particular time.

Q. Have you given me the bases, all the bases, for tha statement?

A. Yes.

Q. Is there any article, journal, text or literature you can cite me to, to support that statement?

A. Again, it's all included in my article.

Q. Your one 1992 article is what you're referring to?

A. Yes, and the citations therein.

Q. Nothing else was -- we now exhausted your opinions on that?

A. Yes.

Q. Have we exhausted your opinions and your bases on the issue dealing with the question you were asked and initially looked at as to whether the giving of an antibiotic earlier to this patient would have any effect on the outcome?

A. Yes.

Q. So you have given me your opinions and the bases fc them; is that right?

A. I believe so yes.

Q. The reason I'm asking, Doctor, not to be picayune, is I don't want to hear new bases or opinion on that point at trial. I have a right to rely upon it, and if you say yes, I' going to go on to a different area.

A. Yes.

Q. Now, isn't it true, Doctor, that in this patient, meningitis on a probability basis was probably present on the 4th?

A. Well, I'll try and answer that the best I can, understanding that no one can know when meningitis begins, ever as I define the beginning of meningitis.

Q. I realize chat you have a certain definition and defining methodology and I'm saying, is it your opinion on a probability basis that on the 4th he had meningitis?

A. It is my opinion that he did not have clinically overt meningitis on the 4th, and that's all that can be known.

Q. Before it becomes clinically overt, can a patient still have meningitis, nevertheless, not using your definition of clinically overt or your criteria?

A. Well, that's a little hard to say, because of the fact that there's no information that can be derived from the human studies on which to answer that.

Q. Well, let me try it this way with you, Doctor. It' kind of like what comes first, the chicken or the egg. You have said that the only way you can be absolutely certain of meningitis in a patient is lumbar puncture or a certain clinical picture which you defined and described for me. You remember those two instances?

A. Yes.

Q. In the clinical picture you described for me with the bulging fontanelles, the seizures and the arching and ail, that patient, if a lumbar puncture was done, would clearly hav meningitis; right?

A. Yes.

Q. And would have clinically overt meningitis; right?

A. Yes.

Q. And obviously in the patient that needed a lumbar puncture, if the tap shows the organism is present in the spinal fluid, that patient has it; right?

A. Yes.

Q Taking those two instances, isn't it correct that a patient, before the clinical picture reaches what you used as the criteria as present, can also, if a lumbar puncture had been done, have the organisms in the cerebral spinal fluid but not yet have ail the manifestations clinically?

A. It is true that a person can have bacteria in the cerebral spinal fluid but not manifest clinically apparent meningitis

Q. And as a matter of fact, I think if I'm not mistaken, in the articles you're referring to, isn't it reported -- or some articles that you have read -- that by accident where a lumbar puncture has been done, okay, that in fact the organism has been found and the patient didn't have a clinical picture associated generally with meningitis?

A. That is true. But that's not necessarily showing that the patient had meningitis. Only that there were bacteri in the spinal fluid.

Q. Well, Doctor, if the bacteria is in the spinal flui you also need the inflammation; right?

A. That's correct.

Q. How can you determine if the inflammation is

present?

A. By way of a spinal tap.

Q. If the organism is present, then you have to deduce or you have to assume there's inflammation; correct?

A. No. The spinal fluid would show if there's inflammation.

Q. Then let's go back to what I just said a moment ago. I have read literature which I have in my possession that clearly shows there are instances where a lumbar puncture was done in patients that, in fact, those patients didn't have clinical signs and symptoms generally associated with meningitis, and yet the diagnosis was made in those instances. Now, is that something that you have ever read about?

A, Well, it's going to be a compound answer to your question.

Q. First of all, have you ever read about that?

A. I'm trying to answer your question.

Q. Okay.

A. There are reported cases in which individuals have had spinal taps done not because there was suspected meningiti at all, but they were being done for other purposes.

Q. Right.

A. And bacteria were found in the spinal fluid, yes. There are reported cases there. I haven't finished my compound answer.

Q. I'm sorry.

A. I'm unaware of literature which shows that individuals have had spinal taps done for purposes other than to exclude the diagnosis of meningitis in which bacteria and pus were both found in the spinal fluid and it came as a big surprise

Q. Have you read literature, Doctor, where patients on an accidental basis where lumbar punctures were done that bacteria and pus were found in patients that didn't clinically present with the classical signs and symptoms of meningitis?

A. Well, now you have added the classical signs and symptoms of meningitis.

Q. Right. That's right. I did.

A. Well, there was some reason for doing the spinal tap. If the spinal tap was done to exclude the diagnosis of meningitis, let's say in a "sepsis" workup, then there was the possibility of meningitis in the mind of the physician at the time. What I was referring to was literature in which the spinal tap was done not for the purposes of excluding meningitis, but to obtain spinal fluid for some other purpose entirely, and big surprise, the person had pus and bacteria. I'm unaware of those studies.

Q. You are unaware *of* those? Okay. Doctor, so as E understand you, you have never read an article in any of the years you have been reading in the literature where

accidentally cerebral spinal fluid was obtained from a lumbar puncture in which they found pus and bacteria in a patient that did not, in fact, manifest the classical signs of meningitis? You have never read that; right?

A. That's not at all what I said.

Q. Well, have you read such articles?

A. Oh, yes, but you u'nderstand that's not what I said in my prior answers.

Q. I understand what you said in your prior answer, and I'm going back to my question. Doctor, isn't it also true that in sepsis workup cases, they have found in the spinal fluid, cerebral spinal fluid, bacteria and pus in patients that hadn't gone on to have what you are describing as a clinical avert meningitis.

A. If you use my definition of clinically overt meningitis as fever and an inappropriately altered level of consciousness of some sort, which in the very young child can also be termed fever and a "toxic child," I believe that is a rather --

Q. It would subsume it?

A. Yes, rare or nonexistent event.

Q. Doctor, what you're saying is, by your definition, you subsume any patient in whom a sepsis workup in a child of that age would be done; right? It's subsumed in that?

A. If it's articulated that the child has the

inappropriately altered level of consciousness, looks toxic, o: for some other reason, that is the definition of clinically overt meningitis, and a spinal tap should be done in those instances.

Q. Now, Doctor, going back to what I have posited, hav you ever read a study in which neurologists in the process of doing a lumbar puncture unrelated to a septic workup in a patient whom they were concerned about contents of the cerebra spinal fluid did a tap and found chat the patient had meningitis that wasn't diagnosed?

A. Well, I have read an awful lot of literature, and i doesn't ring any bells, but one of the reasons it may not ring any bells is because I don't know the reason for the spinal ta being done.

Q. And Doctor, what I'm trying to find out is -- let's try it this way. Is it your opinion that the classic definition of meningitis that you use, one of the two, one of the two, a lumbar puncture being done where there is pus and bacteria, okay? Where that is found. Meningitis is where you find bacteria and pus in the cerebral spinal fluid; right?

A. That's my definition of -- for want of a better phrase -- biological meningitis.

Q. I'll be glad to use and separate them, Doctor, so now I'm going to connect it in one second with my next -- give me just two more bridges to build. There is a biological

meningitis; correct?

A. These things are arbitrary, but I have explained to you what I considered to be biological meningitis.

Q. Doctor, I'm trying to work with your language and your concepts, rather than what as -- a myriad of other opinions I have in literature. But I'm trying to work with you to take it to its logical or illogical conclusion, and I won't make that decision. The jury will. But there is, by your definition, a biological meningitis; correct?

A. Yes.

Q. There's a clinical meningitis, a clinically overt meningitis; correct?

A. Yes.

Q. All right. Now, this is the question that -- I'm putting these two together. Which comes first? Or are they always present at the same time?

A. There's no human data on which to make that pronouncement.

Q. So as we sit here now, you cannot rule out a biological meningitis as to whether it can be present before there's the clinically overt meningitis? You can't say it is or isn't, with scientific or reasonable certainty?

A. I can't say, because there's lack of human data.

Q. That's all I'm asking. Doctor, I'm not trying to argue with you. Because of the lack of human data, you can't

say that it can be present without clinically overt meningitis; right?

A. That's correct.

Q. And can you say the reverse of that? In all clinically overt meningitis will there at the same time be a biological meningitis present?

A. Again using my definitions of clinically overt, et cetera, et cetera. That's correct.

Q. Do you have any opinion as to it's likely or probable as to which of the two come first, or do they come simultaneously?

A. I think the best I can say is that it would be very unlikely to have biological meningitis for any prolonged perio of time without clinical findings of meningitis.

Q. Can you define how long a prolonged period would be? Are we talking hours or days or minutes?

A. Days.

Q. Days. Okay. Is it your opinion that on the 4th of the month in question, this patient had biological meningitis? Let me try it this way. On the 4th, 5th, 6th, or 7th, did this patient on any of those days, in your opinion, have biological meningitis?

A. All I can say for sure is the child didn't have clinical meningitis.

Q. No. I'm going to get to clinical. Let's keep them

separate.

(A discussion was held off the record.)

Q. It's easier for you to do the clinically overt first, right?

A. That's right.

Q. Let's do clinically overt. I'll accept that. Doctor, on the 4th, 5th, 6th, or 7th, did this child in your opinion, have clinically overt meningitis?

A. I do not believe so.

Q. On the 4th, nor the 5th, nor the 6th, nor the 7th?

A. On the 7th, yes.

Q. So the 7th, yes. The 6th, 5th, 4th, in your opinion, no?

A. Correct.

Q. Is it possible he had it on the 6th?

A. Well, again, I tried to explain the limitations of the information on which to make these kinds of judgments. Bu I'm stuck with what I have. And based on what is available here, I do not find evidence that there was clinical meningitis.

Q. Because there's nothing written in the chart; right?

MS. McDONALD: Things weren't in the chart --

Q The clinical evidence that you were looking for, right?

A. There was nothing to suggest that it's present.

Q. So it's not possible, in your opinion, it was present on the 6th?

A. No, that's not what I said about possibilities. What I'm saying is that based on what I have here, my best judgment, based on a more-likely-than-not standard, is that th child did not have clinical meningitis on the 4th, the 5th, or the 6th.

Q. Now, I'm asking you on the 6th, which is the day before the 7th, is it possible he had it, going back in time one day.

A. I understand. I don't want to retreat into anything, the is-it-possible sort of business. I can't expres an opinion about possibility, but I can about probability.

Q. Well, Doctor, in case you don't know this, in Illinois, experts are permitted and are asked whether somethin is possible, and the law now permits it. So even though it's historically that maybe what you don't want to retreat into, I have to know whether it's possible.

MS. McDONALD: Based on what's in the chart, or based on what could possibly have existed?

Q. Based on what you now know, irrespective of what's in the chart. Is it possible?

A. Again then if it's -- this is for my own clarification. If there now is the legal opportunity to

express an opinion based on possibility, I would need some guidance as to what the legal definition of possibility is.

Q. Possibility is the same standard based on reasonable degree of medical and -- medical possibility, as long as it's based on reasonable medicine. Is it possible?

A. That didn't help me, because probability I know, which is more likely than not. That one I can understand what the standard is. But I don't know what possibility is.

Q. That's fine. That's fine. Now, Doctor, let's play the next game. Next bridge. You say it's absolute and certain that he has it on the 7th, right? Isn't that because of the lumbar puncture results?

A. Well, we know that he has meningitis because of the lumbar puncture; that's correct.

Q. Isn't that the reason in the chart?

A. No. Because the physicians at the time, particularly Dr. Levin, examined the child and felt that the child had a clinical appearance which would warrant the spinal tap which was, in fact, performed.

MS. McDONALD: Do you mean Dr. Levin or Dr. Suhs?

A. Whoever the attending physician was. Whoever that doctor was who initiated or asked the spinal tap to be done. All that's written down by that doctor is "fontanelle slightly tense," so I don't know what the totality of the findings were that led the doctor to ask the spinal tab be performed.

Something was there.

Q. That's precisely my point.

A. I haven't finished. So all I can do at this remove was to say that the doctors -- at the time the child had clinically overt meningitis which warranted a spinal tap.

Q. A presumption you have made, right?

A. A presumption I have made? It's my best reading of the records.

Q. Does the doctor write -- whoever it is -- she says it's Dr. Suhs, you thought it was Levin -- doesn't make a

apparent meningitis part of it is fontanelles slightly tense.

clinically overt meningitis. And given that documentation, a spinal tap should have been performed.

Q. Now, Doctor, you don't know if that same doctor had come eight hours earlier, whether he would have found a slightly tense fontanelle, do you?

A. I don't know that.

Q. And you don't know if eight hours earlier the same spiking fever or a spiking fever was still present, or do you?

A. We do have some information about the fever, as you know.

Q. Yes, we do. We have a lot of information about the fever.

A. And the child did have daily fevers, which occurred prior to the spinal tap being performed.

Q. So that as you sit here now, if I were to hypothetically ask you to assume that if a doctor had come eight hours earlier and there was a fontanelle that was slightly tense in the same way, and the spiking fever was present, is there any way you can rule out that the doctor would have clinically deduced that a spinal tap at that point in time should have been done?

A. These are all hypotheticals. It's very hard for me to comment, because I don't know what he would have found and what 'hewould have done.

Q. But I'm asking you, if you assume it, you could giv

an answer to the question; righc?

MS. McDONALD: If he assumes what?

Q You understand my question, Doctor?

A Not entirely. Could you restate it?

Q. Whenever it would have been, as I understand what you're basing your opinion on, regarding the clinically overt meningitis being present, whenever any physician would have, in fact, clinically believed it to be present, and there would be a spiking fever or fontanelle slightly tense, present, that's when a spinal tap should be done.

A. No. That's not what I'm saying.

Q. It is not?

A. No.

Q. Well, let me ask you another hypothetical.

A. Would you like to know what I am saying?

Q. I'll come back to that. Isn't it correct, Doctor, in your opinion, that if any physician had come along on the 4th, 5th, 6th or 7th and felt or documented in this chart that they believed there were indications for the doing of a lumbar puncture, if that were to have been written on whatever date, 4th, 5th, 6th, 7th, hypothetically, you would then have assumed there was clinically overt meningitis?

A. I don't know if I can actually answer that in exactly that way, because you'll have to tell me what was written in the chart at the same time.

Q. Assume everything written in the chart except that one factor.

MS. McDONALD: It said spinal tap to be done?

A. If the same note on the 7th had been written on the 6th, and a spinal tap had been performed on the 6th, the resul of which I don't know, my conclusion would be that the child had clinically overt meningitis at that time, based on the onl extant recording of the findings and the thought processes of the physician at the time.

MS. McDONALD: I just want to clarify.

MR. GOLDBERG: This is not a time to clarify. You will have your chance.

MS. McDONALD: Barry, come on.

MR. GOLDBERG: You'll have your chance in a moment.

MS. McDONALD: I can speak and I want to.

MR. GOLDBERG: We're not going to clarify at thi time.

A. May I go to the bathroom?

Q. You may go to the bathroom, by all means, Doctor.

MR. GOLDBERG: We're not going to have you clarify while I'm questioning the witness any more than I didn't clarify when you were questioning. I made objections.

(A discussion was held off the record.)

(A recess was taken.)

Q. Doctor, on the record, the doctor has to leave at 4:00. It's 3:20 what?

A. Almost 3:30 now

Q. All right. Just getting back to where I was, Doctor, here's what I'm just trying to find cut. Let me see i I can make it simple.

Clinically overt meningitis as you have defined it and described it repeatedly in this deposition -- if in this chart at any point in time a physician, any of these physicians, had written that they believe a spinal tap was indicated, does that mean to you that there was clinically overt meningitis present?

A. It means to me that they thought it was present. And if I could just finish the sentence.

Q. Forgive me.

A. If there is present more of a description of their findings, I would be able to be in a better position to independently assess whether clinically overt meningitis was indeed present, but certainly in the absence of that, I would have to assume that they thought it was present.

Q. And if they thought it was present and ordered a spinal tap, then you would then at least say there's a presumption clinically overt meningitis is present?

A. That's correct.

Q. Taking that same concept that we're talking about,

you mentioned that if the criteria were written in the chart, separate from the doctor saying that he was ordering or she was ordering a lumbar puncture, if you saw evidence of fever and a level of -- I'm trying to use the words that you used --

A. Meaningfully altered level of consciousness without another explanation.

Q. Meaningfully altered level cf consciousness without other explanation. Plus fever, right?

A. Usually, yes.

Q. If in the chart there was data which would fall within the definition you have given of those two things, you would then be able to make your own independent assessment of whether there was clinically overt meningitis; right?

A. Yes. By the way, there can be other things seen than this. For example, stiffening, bulging fontanelles.

Q. You went through those. I remember the very most -- the most -- the one that you had the seizures, the arching, that whole thing. I remember that, as well. With regard, Doctor, to a patient that you have treated -- have you ever ha a suspicion or index of suspicion of meningitis?

A. I'm sorry? What's the question?

Q. Have you ever used or made the -- have you ever use this expression, index of suspicion?

A. I probably have. It's kind of a catch phrase that I think was first used in a case book, really, that was publishe

in Internal Medicine, index of suspicion, some years ago, and it's a phrase which sort of caught an, and I think it had its day. I don't hear much of it these days.

Q. Do you use the phrase?

A. Hardly ever.

Q. Do you know what it meant when it was used?

A. Yes.

Q. What does it mean?

A. It means that you thought the condition was there.

Q. Is that the same or different than clinical y overt? Here's what I want to know. Are they the same? Is on before the other, or one after the other?

A I think probably when one boils each of them down, we're talking about the same thing.

Q. I see. So they're simultaneous. When the data or the criteria are present, those people that would call that an index of suspicion -- you believe it's clinically overt and both of them should act accordingly?

A. You know, I can't really speak for other people in the way they use a phrase, as I think you have already learned. I would assume that they're the same thing. Now, it may be that other people would have a different definition of index of suspicion, and therefore, I prefer not to be held for their concepts when they use their words.

Q. Well, those people I'm referring to, Doctor, are

people like Dr. Klein, like Feigin and Cherry, bike Nelson, like -- I could go through about 30 sources I have with me that use that exact phrase, "clinical index of suspicion" in the chapters that I wrote, I have got other 200 articles that use the clinical phrase, the phrase index of suspicion when dealing with meningitis, of various types. So I'm just wondering, in your reading of the literature, did you ever see those people or articles that used that, regularly?

A. Again, I have seen that phrase used. Usually phrases are best interpreted in light of the context of the phrase itself.

Q. Have you seen written "clinically overt meningitis" written in any articles?

A. In a couple of articles.

Q. Whose?

A. Mine, certainly.

Q. Yes, I know yours. I know that.

A. In the 1994 JAMA article I believe it was used. It may be that I originated the phrase. I honestly don't know.

Q. Doctor, on the 4th, 5th, 6th or 7th, is it your opinion this patient had a septic joint? By the way, we used septic arthritis, we used all three of the pyogenic -- can we, when I refer to it -- if I say septic, will you include all three of those?

A. Certainly.

arrival of pus cells, swelling, pain.

The other is a reactive joint in which you do not have actively multiplying bacteria, but what you have is antigen and antibody complexes in the joint which cause joint inflammation. But in that instance, there's not an infection to be cured. It's a reaction to the joint because of the presence of these other materials, and I don't know what he had. He had arthritis. I think that's quite clear. But I don't know whether It was the infectious kind or the reactive kind.

Q. Both of them, infectious and reactive, are abnormal in a six-month old; correct?

A. Yes. I mean, you --

Q. You feel comfortable in saying that?

A. Yes.

Q. Same answers if I were to ask you the 6th, 5th, 4th? 6th, 5th -- excuse me, 6th and 5th.

A. The 4th it doesn't seem to be anything wrong with the hand.

Q. I misspoke.

A. **Yes**, I think so.

Q. I, Doctor, am trying to at least button down, I hope, one area completely, because I haven't touched upon several other things, otitis media and all that other stuff, but I'm trying at least to button down there this.

On your CV in the articles, Doctor, 13 and 14 -- I had a copy, gave you back the original. I had a copy made for me.

(A discussion was held off the record.)

Q. Number 14, "Duration of Symptoms and Outcome of Bacterial Meningitis," that's the 1992 paper you're referring to?

A. Right.

Q. And 17, "The Timing of Antimicrobial Outcome in Serious Bacterial Infection," is that an overlapping of the information in 14, or --

A. Some of the information in 14 is presented in that. But it extends the subject into other areas not covered by the one on 14.

Q. Does it repeat, in other words, what's on meningiti in 14?

A. Yes.

Q. So there's nothing new or different, is what I'm saying, on meningitis.

A. No, I believe I included in reference to the 1993 article that I referred to that had not been published at the time of my article.

Q. But substantively, it may refer in the bibliography but there's no new substantive data?

A. Just the validating effect of that subsequent study

Q. I'm going cG go into great depth on this, but I'm going to ask you one simple direct question. If it can be answered simply, fine. If it can't, that's fine. Is it your opinion that this child did have otitis media?

A. More likely than not, he did not.

Q. More likely than not, he did not? Okay.

A. In retrospect.

Q. And when you say more likely than not he did not, that's on a probability basis you're saying it; right?

A. Correct.

Q. And that, again, is because I take it there's not sufficient data to be certain, but based upon what you see, it's what you think is likely; right?

A. well, I'll tell you what it's based on. Maybe that's a better way of answering the question.

Q. What is it based on?

A. It's based on a description of the tympanic membran as contained in the notes, and it's based on the natural history as contained in the record.

Q. The description of the tympanic membrane that you'r referring to -- is it a specific date?

A. There's a description of the tympanic membrane on the 27th, the admission history and physical examination. And there's a description on the 27th -- the same doctor -- maybe he's just describing things twice on the 27th. Let's see.

There's a description again on the 28th, a description on the 29th, all by Dr. Dellatorre. There's a description on the 31s by Dr. Zarif. And that's the end of the descriptions on the child until the 3rd, in which the tympanic membrane is normal. I presume that's what "clear" means by Dr. Zarif.

Q. I'm going to come back to that at great length next time. But in the same context, Doctor, is there a clinical association between otitis media untreated and meningitis, or correlation?

A. The answer is no, if one is dealing with hematogenous bacterial meningitis such as we are here.

Q. Did you note and look at the charts of Rush Pres St Luke?

A. Yes.

Q. I looked at Exhibit 7 and scanned it just for a brief moment. Excuse me, not 7. Exhibit 4. I looked at that Doctor, and noted the last several pages. On page, 13, 14, or 15, do I find anyplace where you made any reference to what wa the examination by the physicians at Rush Pres St. Luke about the ear? There's a total void of that. Is that intentional o just an oversight?

A. No, if you'll look on 13, the pediatric history and physical examination report, I just put down the summary positive findings, the TMs were decreased, light reflex, you can see that it's written righc there.

Q. That's tympanic membrane?

A. That's correct.

Q. So you were aware of what they found at Rush; right?

A. Yes, sir.

Q. How many cases of otitis media Doctor, have you been involved with c irect y? Hundreds? housands?

A. Many. Yes.

Q. You know, I'm just trying to get a ballpark?

A, Hundreds.

Q. Severa1 hundreds?

A. Probably thousands.

Q. It's not a rare finding; right?

A. No. We do that all day long.

Q. Is it correct that although a low percentage in number, there are cases of otitis media where the patient ultimately gets meningitis?

A. There are cases in wnich otitis media and bacterial meningitis overlap in the same patient.

Q. You have read about that; right? You have read about that occurring; right?

A. Read about it and experienced it.

Q. Is there any correlation in those instances between the otitis media and the meningitis?

A. The answer is no, if you're asking for otitis media

as a risk factor €or meningitis

Q. Have you ever read to the contrary of that statement, Doctor, in recognized articles or journal where it has been reported to be a risk factor for meningitis?

A. Nothing which provided for me any compelling evidence to the contrary

Q. Nevertheless, have you ever read something that sai(in a recognized journal that didn't give you compelling evidence?

A. Maybe ■ have. I don't remember, because it never gave me any compelling evidence.

Q. Okay. I won't belabor that. I'll come back into that point.

Did you know anything now about the qualifications and experience of Dr. Gotoff? You read his dep. You know about his qualifications and experience; right?

A. I know everything that he told us about himself during his deposition, yes.

Q. And you knew about Cr. Dellatorre and Dr. Voorhees' qualifications and experience at the time in question; right?

A. **Yes.**

Q. Do you know anything about any of the other doctors or nurses and their qualifications and experience at the time in question?

MS. McDONALD: Other than what might be in Dr.

Dellatorre and Dr. Zarif's and Dr. Gotoff's depositions?

Q. Absolutely.

A. No, I had no other independent knowledge of the other players.

(A discussion was held off the record.)

Q. When I come back, Doctor, I'm going to go through Exhibit 3 and 4 with you. Exhibits 2 and 3, rather. With regard to the Exhibit 7, the plaintiffs' supplemental answers to rule 220 interrogatories, would you just turn to that for a moment? Can you tell me --

a. I don't know if I have it. You have it. Here it is.

Q. I told her to give you back all the originals.

A. You're right.

MR. GOLDBERG: Barbara, this doesn't tell me who or where did you get this?

MS. McDONALD: Your office.

MR. GOLDBERG: No, there's crossing out here. I was used in a deposition.

MS. McDONALD: I did that.

MR. GOLDBERG: You did that?

MS. McDONALD: Based on your expert s withdrawin opinions.

MR. GOLDBERG: Okay. So that where it's scratched out, you did it?

MS. McDONALD: Right.

MR. GOLDBERG: when you got it, it didn't have that scratching out; right?

MS. McDONALD: That's correct.

MR. GOLDBERG: And where it says "continued treatment for," you added that; right?

MS. McDONALD: That's correct.

Q. (By Mr. Goldberg) Now, Doctor, when we resume, so that you know, I'm going to be going through this exhibit and the opinions whether you agree or disagree with certain

wasn't done with an intent to say whether, on those matters, you would agree or disagree with that; right?

A. That's correct.

Q. Have you ever used the phrase "fretful" to describe a child?

A. I may have.

Q. What does it mean to you, when you use it?

A. Oh, what does it mean to me? A child who -- a worried expression on his face, clings close to mother, perhap whines some. That kind of thing.

Q. Not normal? Not a normal finding?

A. Well, it may be normal in the context.

Q. So you'd have to know the context?

A. Right.

Q. Had you, Doctor, ever read various task force paper put out by the American Academy of Pediatricians dealing with meningitis?

A. With the American Academy of Pediatrics?

Q. Thank you, American Academy of Pediatrics.

A. I believe there have been a couple task force reports published, particularly with regard to choice of antibiotics and the use of dexamethasone, and I have read those.

Q. Do you know which was the one most recent in point of time pertaining or closest to the year of 1970 when this care and treatment is involved?

A. No, I do not.

Q. The white paper that you referred to -- is that a position paper?

A. No, it's not.

Q. How would you describe it?

A. It was a summary description of the topic of meningitis put together by three doctors, first edition of which was published in Pediatrics, 1986, I believe, the second edition of which was published in Pediatric Infectious Disease Journal I believe 1992, and it did not represent any statement on the part of the Academy, but was a compendium of knowledge that the three physicians put together for the public good.

Q. You're talking about Feigin and McCracken?

A. Feigin and McCracken were two of the three.

Q. With regard, Doctor, to the other processes or elements that we talked about, have you had the occasion to deal with pyogenic arthritis, septic arthritis, those kinds of things?

A. Yes.

Q. How many times would you estimate you have been involved with diagnosis, management or treatment of those categories, infectious and non?

A. You understand all these estimates are only orders-of-magnitude estimates. In a career that spans a long period of time, it's very hard to know exact numbers.

Q. The reason I ask you, Doctor, is that you may be qualified at the trial, and most doctors I deal with are reasonably honest and give their best estimate, and that's all I'm looking for with you.

A. I would say 50 to 100 times.

Q. How many taps have you done?
A. Personally?
Q. Yes?
A. Hundreds.
Q. Three, four?
A. I don't know.
Q. Three, four, five?
A. I don't know. That order of magnitude, however.
Q. Have you ever not done a spinal tap or lumbar puncture -- do you use the same interchangeably?
A. Yes.
Q. -- in a child that you believed clinically overtly had it?
A. Yes.
Q. You have not done it?
A. I have deferred it, yes.
Q. For what reason or reasons?
A. Because I felt it was medically contraindicated.
Q. But did you then begin to treat that patient nevertheless?
A. Yes.
Q. So you didn't withhold treatment?
A. No.
Q. Infectious gastroenteritis. Is that something you commonly come in contact with?

A. Yes.

Q. Are there classical signs and sympeoms eo that?

A. Diarrhea is always present.

Q. Is and are the signs and symptoms of infectious gastroenteritis the same or different than the clinically overt meningitis?

A. There are some overlaps and some differences.

Q. What are the differences?

A. The overlaps is that fever is common to both, although infectious gastroenteritis may not have fever. But sometimes it does. The differences have to do with the findings referable to the gastrointestinal tract in the one, and to the level of consciousness in the other.

Q. You don't generally associate level of consciousness, the kind of which you were describing earlier, altered level of consciousness with gastroenteritis; correct?

A. No. It can happen.

Q. You don't generally associate --

A. No, but I'm trying to answer because it can be seen and there are no generalities due to the heterogeneous groups of organisms causing gastroenteritis. So if you have certain organisms, alteration of consciousness may be common. If dehydration is part of the gastroenteritis, altered level of consciousness may be common. That's why when one defines clinically apparent meningitis, one always has to include no

other explanation.

Q. Dehydration would be another explanation

A. As I said.

Q. All right. Subdural effusion is a phrase you earlier used. Does that fall within the arthritic joint categories we've been describing, or is it a separate entity entirely?

A. Separate.

Q. Did this child, in your opinion, have a subdural effusion?

A. Yes.

Q. How many times have you been involved with -- the question was, .howmany times have you been involved with subdural effusions?

A. Well, subdural effusions are seen in 30 percent of cases of bacterial meningitis, so it's 30 percent of my total number of cases of bacterial meningitis.

Q. To differentiate -- how does one diagnose a subdural effusion from an arthritic joint?

A. Subdural effusion is a collection of fluid between the dura and the arachnoid membrane in the skull, and an arthritis is a swelling pain and inflammation of a peripheral joint. Two different anatomical sites.

Q. Right. How does one go about ruling in or ruling out the presence of subdural effusion?

A. You can either do it by a transillumination, a subdural tap, a brain scan, an arteriogram, CT scan, MRI.

Q. Is it a clinical observation as made, diagnosis?

A. Well, the transillumination is a clinical technique yes. The others require specialized imaging procedures or neurosurgery.

Q. Did anyone diagnose it before the tap?

A. We're talking about this case again?

Q. Yes.

A. Well, it was suspected, and based on that, a confirmatory procedure was performed, as you know

Q. What date was it suspected? Was it before or after the 7th?

A. After.

Q. Seizures and stroke. Did this patient, in your opinion, have a stroke?

A. Yes.

Q. When?

A. I believe the first clinical evidence of the stroke occurred on the 25th of January.

Q. **Is** it your opinion that as a result of the stroke, he developed seizures or unrelated to the stroke he had seizures?

A. He had seizures prior to the stroke.

Q. What were the cause of the seizures, in your

opinion?

A. The cause of seizures at that stage I believe was a infarct of the brain.

Q. From?

A. From vascular injury secondary to an inflammatory reaction in the bacterial meningitis.

Q. The invoices that you described, Doctor, if you could be kind enough, when we resume, to bring it. If you giv me a date or dates in the next several weeks that are good for you, even on a Saturday, if I can accommodate you, I'll try to come to refinish this deposition.

And I know we can never plan ahead, but if you coul try and block out a time that I could just -- I would bike to finish this. I know that you would also.

Would you also, Barbara, if there's a problem, tell me now? I would like him to get those articles I had asked hi about. If you have a problem with that --

MS. McDONALD No, no problem.

MR. GOLDBERG If not, I'll rely that you will get them, Doctor, and have those materials.

MS. McDONALD Those four that he identified fro **his** CV?

MR. GOLDBERG: Well, the articles, and I did ask him regarding -- there was a position paper; Feigin and so forth. Whatever those that you referred to are the ones I'm

looking for.

(A recess was taken.)

(The deposition recessed at 4:00 p.m.)

IN THE CIRCUIT COURT OF COOK COUNTY, ILLINOIS
COUNTY DEPARTMENT, LAW DIVISION

NO: 91 l 21091

MARK TURNER, a disabled person by his co-guardians, DIANE TURNER and WILL TURNER,

Plaintiffs,

v.

CITY OF CHICAGO, a municipal corporation, d/b/a MUNICIPAL CONTAGIOUS DISEASE HOSPITAL, et al.,

Defendants.

CERTIFICATE OF COMPLETION OF DEPOSITION

I, MARY ABERNATHY SEAL, New Mexico CCR #69, DO HEREBY CERTIFY that on January 11, **1996**, the deposition of MICHAEL S. RADETSKY, M.D., was taken before me at the request of, and sealed original thereof,retained by:

Mr. Barry Goldberg
Attorney for Plaintiffs
33 North Dearborn Street, Suite 1930
Chicago, Illinois **60603-4297**

I FURTHER CERTIFY that copies of this certificate have bee) mailed or delivered to the following counsel and parties not represented by counsel appearing at the taking of the deposition.

Ms. Barbara A. McDonald
Attorney for Defendants
30 North LaSalle Street, Room 800
Chicago, Illinois **60602**

I FURTHER CERTIFY that examination of this transcript and signature of the witness was required by the witness and all parties present.

I FURTHER CERTIFY that the cost of the original and one copy of the deposition to the PLAINTIFFS is $_____

I FURTHER CERTIFY that I did administer the oath to the witness herein prior to the taking of this deposition; that E did thereafter report in stenographic shorthand the questions

and answers set forth herein, and the foregoing is a true and correct transcript of the proceeding had upon the taking of this deposition to the best of my ability.

I FURTHER CERTIFY that I am neither employed by nor relate to any of the parties or attorneys in this case, and that I have no interest whatsoever in the final disposition of this case in any court.

Mary Abernathy Seal
Certified Court Reporter #69
License expires: 12-31-96

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