DEPOSITION OF

Michael Radetsky, MD

RE: *Williams v. Hrabal, et al.*

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IN THE STATE COURT OF CHATHAM COUNTY
STATE OF GEORGIA

TRAVIS M. WILLIAMS, a minor, by next friends W. MICHAEL WILLIAMS and NANCY C. WILLIAMS, and W. MICHAEL WILLIAMS and NANCY C. WILLIAMS, individually and as parents of TRAVIS M. WILLIAMS,

Plaintiffs, CIVIL ACTION NO. 198-0640-F

-vs-

TANYA L. HRABAL, M.D., GEORGIA EMERGENCY ASSOCIATES, P.C. and STATESBORO HMA, INC. d/b/a BULLOCH MEMORIAL HOSPITAL,

Defendants.

Deposition of Michael S. Radetsky, M.D., called by the Plaintiffs, before Gail F. Davidson, Certified Court Reporter in and for the State of New Mexico, taken at 300, Central Southwest, Suite 1500-E, Albuquerque, New Mexico on the 20th day of May, 1999, commencing at 9:00 a.m.

TAKEN BY: MR. J. SHERROD TAYLOR
Attorney for Defendant

REPORTED BY: GAIL F. DAVIDSON, CSR, RPR, NM CCR #79
Proctor, Davidson & Orbinati, Inc.
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A P P E A R A N C E S

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BY: MR. WILLIAM H. PINSON, JR.

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STIPULATIONS

IT IS STIPULATED AND AGREED by and between counsel appearing for the respective parties that:

1) The oral deposition of MICHAEL S. RADETSKY, M.D., called by the plaintiffs, taken before Gail F. Davidson Certified Court Reporter in and for the State of New Mexico, at 300 Central, Southwest, Suite 1500-E, Albuquerque, New Mexico, commencing at 9:00 a.m., on the 20 of May, 1999;

2) ALL FORMALITIES with reference to notice of taking, notice of time and place of taking, qualifications of the Court Reporter, and all other matters precedent to the taking of depositions are WAIVED;

3) With the consent of deponent, the reading and signing of the deposition by deponent is NOT WAIVED;

4) ALL OBJECTIONS, EXCEPT as to the form of the question and responsiveness of the answer, are RESERVED to the time of the hearing of the case; and

5) ALL FORMALITIES with reference to the filing of depositions, including notice of filing, etc., are WAIVED.

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COURT REPORTER'S DISCLOSURE STATEMENT

I, Gail F. Davidson, New Mexico Certified Court Reporter, Certificate Number 79, for compliance with Code Section 9-11-28 and Code Section 15-14-37, make the following disclosure about all arrangements, financial and otherwise, involving the following deposition:

1) My office was contacted directly by telephone regarding scheduling of the deposition as to date, time and place by the office of the scheduling attorney, with scheduling of the deposition as to date, time and place confirmed, and no prior financial arrangements were negotiated between counsel and myself.

This 2nd day of June, 1999.

Gail F. Davidson, CSR #79

MICHAEL S. RADETSKY, M.D.

After having been first duly sworn under oath, was questioned and testified as follows:

MR. TAYLOR: This will be the deposition of Dr. Michael Radetsky pursuant to notice and agreement of Counsel taken by the Plaintiffs for discovery and all others purposes provided by the Georgia Civil Practice Act. I gave the court reporter this morning a copy of the stipulations that we have used in this case, particularly for Dr. Radetsky's deposition.

MR. PINSON: That's fine.

MR. TAYLOR: Is that agreeable that we would use that?

MR. PINSON: Yes.

MR. TAYLOR: Dr. Radetsky, it's my understanding from the court reporter that you customarily waive your signature?

DR. RADETSKY: No, no, I would like to read and sign.

MR. PINSON: And I'd ask that the court reporter provide him with a copy and he be permitted to do that in the presence of any witness, if we can stipulate to that.

MR. TAYLOR: Sure. And the original --

MR. PINSON: The original will go to you.

TAYLOR: And then he will provide --

MR. PINSON: He will provide it to the court reporter with an errata sheet and attestation page.

EXAMINATION

BY MR. TAYLOR:

Q. Doctor, would you please state your full name, address, date of birth and Social Security number for the record?

A. Michael A. Radetsky, date of birth 11/19/45, professional address, Lovelace Pediatrics, 5400 Gibson Boulevard, Southeast, Albuquerque, New Mexico, 87108. And the purpose of my Social Security number, sir?

Q. Yes, sir, just for the record.

A. Would it be all right with you if I didn't divulge that?

Q. Is that --

A. I've never been asked that before, and unless there is some peculiar purpose for your state, I prefer not to divulge that information.

Q. All right. Now, excuse me, Doctor, so that we may move along relatively quickly, because I know your time is valuable. Let me say that I'm somewhat familiar with your general opinions that you've given in medical malpractice cases, and that I have read depositions that you have given in some of your previous cases, including McDonald versus Osteopathic Hospital Association from February 12 of '88, Simon versus Bazzano from July 19, 1998 -- '88, from Little versus Parrino, April 29, 1989, from Peterson versus Caldwell, September 28, 1990, from Villaflor versus United States, January 26, 1993, from Croeger

versus Sifril and Children's Hospital from February 3rd, 1993, from Kennedy versus Ratliff from March 24, 1993, from Kuhl versus Prairie Medical Group, March 29, 1993, Bechstein versus Children's Emergency Services, Inc. from December 2, 1993, from Weichland versus North Kentucky Pediatric Group, May 24, '94, Pugh versus Kaiser Foundation Health Plan of Colorado, January 6, 1996, Turner versus City of Chicago, which I believe was taken on two dates, January 11th, 1996 and begun again on February 8th, 1996, and Giroux versus Quintana, December 20, 1996, and Long-Pederson versus Gee from March 11th, 1998. Those would all be depositions that you have given in the past, is that correct?

A. I trust you that those are depositions that I have given, sir.

Q. Okay. Now, do I understand correctly that you plan to come to Savannah, Georgia to testify on behalf of the Defendants in this case who are Tanya L. Hrabal, M.D, Georgia Emergency Associates, P.C., and Statesboro HMA, Inc. doing business as Bulloch Memorial Hospital in this lawsuit which has been brought by Travis Williams and his parents?

A. Yes.

Q. Do you understand that I am here today representing Travis Williams and his parents who are the Plaintiffs in this case?

A. Yes.

Q. And do you understand that your testimony today is under oath?

A. Yes.

Q. At various times I'm sure we're going to be talking about what is called the standard of care. Are you familiar with the term, standard of care?

A. Yes.

Q. Do you know that in Georgia when medical professionals provide care to patients, that those professionals have a duty to exercise that degree of skill and care ordinarily required of medical professionals in general under like conditions in similar circumstances?

A. I didn't know that exact wording, but it's not too far different from what I am used to hearing attorneys tell me is the standard of care in their respective states.

Q. All right, because that's known as a national standard of care, is that correct?

A. Well, let me put it this way, sir. I have found that there are states that differ in their specific wording. New Mexico is not like the wording that you just mentioned. Consequently, I was glad for you to provide me the wording for the State of Georgia.

Q. Okay, so that I won't have to repeat that definition, can we agree that when you respond to my questions that you will be referring to that standard of care that I have just defined

for you?

A. That would be fine.

Q. Okay. Now, do you understand that the circumstances which led to this lawsuit happened in the first week of May of 1996?

A. Yes.

Q. When you respond to my questions, will you agree to provide me with information and opinions that were current for the first week of May, 1996?

A. Yes.

Q. Okay.

A. By way of clarification, there may be biological questions that you ask me, and I'm sure that the biology has not changed between 1996 and 1999, but as regards the standard of care issues, I would certainly express those as current for the particular date of these circumstances.

Q. Right, because you understand that's the -- that is the standard by which the jury is going to be evaluating this case, the circumstances and the care which should have been provided in the first week of May, 1996?

A. For standard of care, yes.

Q. For standard of care, right. And would you be kind enough to identify for me any response that would not be applicable for the first week of May, 1996, should that come up?

A. Certainly.

Q. Okay. Thank you. When were you first contacted about this case?

A. I don't have the exact date, sir, I think it was probably towards the end of last year.

Q. By whom were you contacted?

A. By Mr. Franklin's office.

Q. Have you ever been retained as an expert and asked to review or give a deposition or testify in any case by any of the lawyers representing the Defendants in this case, and that would be Mr. Pinson and his law firm, Ms. Yates and Mr. Franklin in their law firm?

A. I have been retained once previously by Mr. Pinson's firm. Ms. Yates' and Mr. Franklins' firm, I don't recall, I don't believe so.

Q. And what was the name of the case that you were retained by Mr. Pinson in?

A. I don't remember, I'm sorry.

Q. Was that a case in the State of Georgia?

A. It was.

Q. Was it a case that involved any of the subject matter which might come up in this case?

A. I'm sorry, I just don't remember the specific details of the case, it was some time ago.

Q. Okay. Now, when you work as an expert witness, do I assume correctly that you charge a fee for your services?

A. I do.

Q. And would you describe your fee structure for me, please?

A. For review of medical records, for literature research, if required, conferences and travel time, $350 an hour; for actual deposition time, $400 an hour with a minimum of two-and-one-half hours; and finally at trial, if I travel, and I charge that at my travel time rate with a maximum of 12 hours a day door to door, in addition to which I charge $450 an hour for actual testimony in court.

Q. Okay. And do you also get your expenses back, airplane tickets, lodging and that sort of thing as a separate item?

A. Yes, that's correct, sir.

Q. So then, am I correct then in assuming that the charge for my client here today will be your deposition rate of $400 per hour, with a minimum of at least two-and-a-half hours, which would mean at least a payment to you of a thousand dollars?

A. That is correct.

Q. Okay. And do I also understand correctly that you want to receive your fee today at the conclusion of your deposition?

A. I did make that request, yes.

Q. Okay, and I have brought you a check. Now, as of today's date, how many hours have you spent reviewing this case:

A. Well, I would say the total amount of time I've spent is around 20 hours, more or less. I haven't added it all up,

but I would say around that.

Q. Okay, is that -- can you break that down as between the Defendants in this case, or the law firms in this case?

A. No, all of the materials and records were sent to me through Ms. Yates' firm. I did meet with Mr. Pinson and Ms. Yates yesterday, but I have not had direct dealings with Mr. Pinson and his firm before yesterday.

Q. I see, all right. But nonetheless, you will be appearing as an expert witness on behalf of the clients of both Mr. Pinson and Ms. Yates and Mr. Franklin, is that correct?

A. I believe they both endorsed me as a witness for their respective clients.

Q. Right, that's what I'm saying. Have you consequently not sent a bill to Mr. Pinson?

A. I have not.

Q. Have you sent a bill to Mr. Franklin or Ms. Yates?

A. Yes, I have.

Q. What is the amount of the bill that you've sent to them?

A. I've only billed them once, and that was for $3500.

Q. And has that been paid?

A. It has.

Q. And did they pay you any more money as of this date?

A. I have not sent them an invoice as of this date.

Q. If you wene to send them an invoice as of this date, do

you know what that invoice would be for?

A. I actually don't know, sir, much has to do with the amount of time I spend in travel today, the time it takes to correct the deposition and so on.

Q. How much time was paid for with the $3500 payment?

A. Ten hours.

Q. Okay. Now, would you please tell me what document, records or other such tangible items that you have reviewed in connection with this case?

A. I brought them all with me.

(Exhibit 1 identified for the record)

Q. Okay, could you just look through those quickly just by listing them. If you're getting those out, you were kind enough to bring me a copy of your current CV, which we've marked as Plaintiff's Exhibit 1 is that correct?

A. That is correct, sir.

MR. TAYLOR: We tender that into the record.

A. This is going to be in no particular order.

Q. If you would just list the documents that you've -- and they can be in any order you want, but any documents that you reviewed in connection with this case?

A. I will. I received the medical records on the case in two batches, together they're combined to give me the copies of the original medical records from Bulloch Memorial Hospital, from Medical College of Georgia, from Walton Rehabilitation

Hospital. I also received the summons in the case that was originally filed.

Q. The complaint, the lawsuit?

A. Yes, I'm sorry the complaint of the lawsuit.

Q. Okay.

A. I apologize.

Q. No problem.

A. Then I've reviewed a number of depositions.

Q. Okay, if you could just list those for me?

A. W. Michael Williams, Nancy Williams, Rebecca Holmes, Nurse Judy Amos, Nurse Lisa Hood, Nurse Melissa Joiner, Nurse Christopher Sergeant, Dr. Hrabal, Dr. Edward Truemper, Dr. Anthony Pearson-Shaver, Nurse Mary Wysochansky, Dr. Roger Barkin, and then a copy of a fax that was sent originally to Mr. Franklin from Dr. Talen, that is a copy of an article.

Q. Okay, thank you very much. And would that be all of the items that you have reviewed in connection with this case to this date?

A. That's correct.

Q. Okay. Now, do you agree that Travis Williams is quadriplegic today as a result of a meningococcal infection?

A. Yes.

Q. And it was the pathogen known as Neisseria meningitidis that caused that meningococcal infection?

A. Yes.

Q. Are you aware that the Defendant, Statesboro HMA, Inc. doing business as Bulloch Memorial Hospital has provided us with copies of certain policies and procedures of that hospital that were in full force and effect during the first week of May, 1996?

A. I am aware that certain policies and procedures have entered the case, because they were appended as an attachment to one of the depositions. I did not receive a booklet entitled policies and procedures, nor do I know the extent to which the hospital provided policies and procedures in this case.

Q. So you have just looked at the policies and procedures that were exhibits to the depositions that you have named for us, is that right?

A. Correct.

Q. Why do hospitals have written policies and procedures?

A. I suppose there are two answers to that, sir: One is in order to standardize the mechanics of delivering hospital care. Inasmuch as it is provided by a number of individuals, policies and procedures serve to regularize the mechanics of care in a hospital; and secondly, that it is a national requirement for hospital accreditation.

Q. Right.

A. One is a high and one a relatively low purpose.

Q. Okay. Are hospital policies and procedures required to be consistent with the standard of care?

A. I don't know the answer to that because I never was told, nor am I aware of any standard of care as it relates to policies and procedures.

Q. *So* is your answer that you don't know whether they are required to be consistent with the standard of care?

A. That is correct.

Q. Okay. Do you think it would be proper for the jury which hears this case to use the policies and procedures of the Bulloch Memorial Hospital in evaluating the standard of care given to Travis William if they want to?

MR. PINSON: I'm going to object to the form *of* the question on the use of the word "proper" as being vague and overly broad. And secondly, I object to the form to the extent that you're asking this witness to render a legal opinion. You may answer the question subject to that objection, Doctor.

Q. Go ahead.

A. I have no way of answering that question, sir.

Q. Okay. Are you aware of any policies and procedures of the Bulloch Memorial Hospital which were not followed in connection with the standard of care provided to Travis Williams?

A. Again, sir, I've already answered that I'm unaware of a link between hospital policies and procedures and standard of care. It would be very difficult for me then to answer your question.

Q. Are you aware of any policies and procedures of the Bulloch Memorial Hospital that were not followed?

A. There are some allegations presented in some of the depositions that the emergency department policies and procedures were not followed in some respect, but inasmuch as I did not review those particular policies and procedures, I can't comment on it.

Q. So even though the policy and procedure was referred to in a deposition, you did not seek to measure the testimony given by the witness in the deposition against the policy and procedure, is that what you're saying?

A. No, what I'm saying is that I did not use the policies and procedures for making my own determinations as to the standard of care. Consequently, I did not make the further analysis as to whether each and everything done for the child on the two visits to the hospital comported with policies and procedures, because it was not an issue for me.

Q. I see. Now, do you agree that in order to comply with the standard of care, Nurse Joiner was required to take a complete and thorough history from Travis Williams and/or his parents?

A. I would not phrase it that way, no.

Q. So would you disagree with that?

A. I would disagree with the statement as you read it.

Q. Okay. Do you agree that in order to comply with the

standard of care, nurses must record the history that they take in the patient's medical. records?

A. No, I would not: agree with that statement.

Q. Okay. Do you agree that in order to comply with the standard of care, nurses must record their observations of the patients in the patient's records?

A. No, I would not agree with that statement.

Q. Do you agree that in order to comply with the standard of care, emergency department nurses must assess the patient's condition and institute a nursing care plan for each of the patient's symptoms?

A. I can't agree or disagree with that because it's an incomplete statement, as far as I can tell.

Q. How is it incomplete?

A. Nurses obviously work in conjunction with medical staff, and the management choices that are made with regard to each individual patient have to do with the medical as well as nursing imperatives. Nurses do not work in a vacuum and therefore would not independently institute nursing care plans independent of physician orders.

Q. Are nursing care plans formulated in the emergency department prior to physicians even seeing the patient?

A. There are, for want of a better phrase, usual ways of doing things in terms of processing patients when they come to the emergency department, but these are modified and are meant

to be **modified** by physician orders.

Q. Well, when you reviewed the hospital records of Travis Williams for the period of 2117 on May the 3rd, **1996** through 0020 on May the 4th, **1996,** did you notice that Travis Williams was first seen in triage by nurse Chris Sergeant?

A. Yes.

Q. And at that point no one else had seen Travis Williams, is that right?

A. That's my understanding.

Q. And then the second person to see Travis was Nurse Joiner, is that correct?

A. That's my understanding.

Q. And at that point when Nurse Joiner saw Travis, no one other than herself and Mr. Sergeant had seen Travis, would that be true?

A. I believe that's true. Now, of course, there must be a registration office there and so on, but in terms of the medical team, I believe she would have been the second to see the patient.

Q. Right. And then there was a physician's assistant named Ken Burkhalter, he would be the third person to have seen Travis?

A. I believe so.

Q. And at that point, no one on the medical team other than Nurse Sergeant: Nurse Joiner and Mr. Berkhalter would have

seen Travis, is that right?

A. Well, that's correct. Now, of course, you've just named three-quarters of the medical team, so by that time seventy-five percent of the team had seen the patient.

Q. But I've not named a physician at this point, have I?

A. That is correct.

Q. And at this point, where we are in going through Travis's treatment, Nurse Joiner has already formulated a nursing care plan for Travis, is that correct?

A. I don't know if I can answer the question because I did not find specific documentation for Nurse Joiner listing the nursing care plan, per se.

Q. Okay. Do hospital policies and procedures generally contain nursing care plans?

A. Well, maybe I'm having a semantic difficulty with you, sir. There are usually procedures for the mechanics of bringing a patient into an emergency department. For example, what is usually done first, second, third, all subject to modification based on the patient's condition, obviously, but a usual way of doing things. When I talk about nursing care plans for the most part, those are care plans that are usually formulated by nurses after a physician has seen the patient, has compiled orders, has defined the illness, and then the nurses would go through a nursing care plan with modifications based on what the physician is highlighting as the target for medical management. There are

certain aspects of a nursing care plan that I think are kind of generic in terms of sequencing the vital signs, for example, emotional support, so on and so forth. But again, in terms of an actual nursing care plan at our institution, for example, a nursing care plan is formulated after the physician sees the patient, writes the orders. And we will oftentimes say, follow the X care plan, which is a preset care plan for a particular problem, but that's not invoked by nurses, for example, before the physician actually sees the patient.

Q. I see. Would you turn, if you would, please, to the hospital records that you have there for this time frame we're talking about.

A. This is 5/3/96?

Q. 5/3/96.

A. I have them here.

Q. Let me ask you to turn to this --

A. I have it already.

Q. -- page that is headed up in the top left-hand corner as "Nursing Diagnoses," do you see that?

A. I do.

Q. Okay. And what I need for you to do is just tell me, is it your understanding that at the time the block, "fluid volume, alteration in," was checked by Nurse Joiner, that Dr. Hrabal had seen Travis Williams?

A. I don't recall when it was checked in, sir.

Q. Based on your understanding of how these blocks should be filled out, the ones we've just been talking about under nursing diagnosis, should those blocks have been filled out after Dr. Hrabal saw Travis?

A. I think it could probably be filled out either before or after, and could be revised at a later time or added to at a Later time based on the physician's perceptions and the patient's condition. I'm unaware of a particular requirement that they be filled out at one time or another.

Q. Does this list of things appear to have been filled out only at one time?

A. Well, only one thing is checked, but I don't know when it was checked.

Q. Right, but it couldn't have been modified or changed, because there is only one block checked, is that right?

A. I agree. I had thought in the prior question you were asking me a somewhat generic question.

Q. Right. But it doesn't appear from looking at the opportunities to check blocks under the nursing diagnosis, that there was any reevaluation of Travis's condition, vis-a-vis the subjects offered in that set of blocks, does it?

A. Well, I don't know if I would jump to that conclusion, but I think that it is true that only one block has been checked, therefore there was not subsequent checking of another block at any particular time.

Q. Right. Do you agree that in order to comply with the standard of care, emergency nurses are required to reassess the patient periodically to determine if there are any changes in the patient's condition?

A. I would agree with the statement with the proviso that periodically is a term which should invoke a time interval that is dependent on the patient's condition and other responsibilities of the nurse in an emergency department.

Q. And what time interval is customary?

A. I don't think there is a customary time interval, I think it's quite elastic.

Q. Okay. So, do you think that there are hospital policies and procedures that prescribe how often a patient in an emergency room like Bulloch Memorial Hospital is supposed to be reassessed?

A. You know, sir, there are policies and procedures for almost anything in the hospital. I wouldn't be surprised if there wasn't such a policy and procedure.

Q. Now, do you agree that in order to comply with the standard of care, the emergency department nurses are required to ensure that all laboratory and other tests that are ordered are performed?

A. I don't think that it's related to the standard of care, but I think that's probably a good goal to have.

Q. And why do you think it is not related to the standard

of care?

A. That's a good one, I don't know if I can answer that pestion. It's never been an issue which was ever related to the standard of care in my mind. I guess one should ask the opposite question as to why it should be related to the standard of care.

Q. Are you aware in this case, Doctor, that there were certain laboratory tests that were ordered for Travis Williams but for which there is no record of those tests ever having been performed?

A. I believe there was a urinalysis that was asked for. My understanding was that the patient was not able to produce urine for the test. I'm unaware beyond the urinalysis that there was an important test that was ordered but not performed.

Q. And where did you get your understanding that Travis Williams was unable to produce urine for the urinalysis test?

A. You know, I either got it from reading the depositions or from one of the attorneys during conversation, I honestly don't recall.

Q. You did not get it from the medical records, did you, Doctor?

A. No, I don't believe there is a notation on the medical records, although there is no notation of urine being produced by the patient.

Q. And there is no notation of urine not being produced b

the patient?

A. It's mute.

Q. Now, do you think that a 14-year-old boy who receives two liters of fluid by I.V. during a three-hour period in the emergency room should be able to produce a urine sample?

A. Well, I'm confused' sir. It was my understanding that the patient received one liter of fluid.

Q. Okay. And did you form the opinions which you have in this case based on your assumption that Travis Williams received one liter of fluid?

A. It actually doesn't matter to me one way or the other whether it's one or two liters, but as a factual matter I see no indication that two liters in fact, were given.

Q. So you've reviewed the medical records of Travis Williams and you find only that one liter of fluid was given to him?

A. That's correct.

Q. Between 2117 on May 3rd '96 and 0020 on May 4th, 1996, is that correct?

A. That's correct, two bags of I.V. fluid were used, but I interpret them as two, five-hundred milliliter bags equaling one liter. I see no indication in the medical records that more than one liter was given.

Q. Okay. Now, do you agree that in order to comply with the standard of care, that emergency department nurses are

required to track down information such as lab work which has not been provided in a timely manner?

A. Well, there is a word in there, "timely," which I don't entirely understand. But to try to answer your question as best I can given that limitation, I don't believe it's an aspect of standard of care that nurses track down laboratory results.

Q. Okay, just so you understand where I'm headed on the question. Of course you understand, I want you to understand my questions, so if you don't understand them I appreciate you pointing out to me that you don't understand them.

A. Certainly.

Q. Do you agree that the standard of care requires emergency department nurses to track down information such as lab work which has not been provided before the patient is discharged from the emergency department?

A. No, that's not an aspect of the standard of care that has ever been presented to me or on which I have the opinion.

Q. Do you agree that in order to comply with the standard of care, emergency department nurses are required to inform treating physicians of any lab work that was ordered that has not been promptly returned?

A. Again, just listening to the way you phrased the question, I would say no, that's not part of standard of care.

Q. Do you agree that that is routinely done?

A. I would say routinely that the different members of a

nedical team will eventually round up all of the appropriate laboratory studies.

Q. **Do you** agree that in order to comply with the standard of care, that emergency department nurses are required to inform the treating physician about anything that the patient or family member has told the nurse about the patient's condition?

A. I believe it is good nursing practice for nurses to relate to physicians historical information that the physician doesn't know if it's of an important nature and bears on the diagnosis or management of the case.

Q. So would the answer to my question be yes?

A. Well, I think the answer is the way I phrased it, if I could just leave it at that.

Q. Do you agree that in order to comply with the standard of care, emergency department nurses are required to inform the treating physician about any sign or symptom of disease that the nurse has observed?

A. Again, I believe that's good nursing practice, yes.

Q. Do you agree that in order to comply with the standard of care, emergency department nurses are required to accurately chart in the medical records every significant thing that happens to a patient while the patient is under that nurse's care?

A. No.

Q. Do you agree that in order to comply with the standard

of care, nurses in the emergency department are required to be familiar with all hospital policies and procedures?

A. No.

Q. Do you agree that in order to comply with the standard of care, that emergency department nurses are required to follow all hospital policies and procedures?

A. No.

Q. Do you agree that in order to comply with the standard of care, emergency department nurses should be familiar with the signs and symptoms of meningococcal disease?

A. I would not agree with that statement.

Q. Do you agree that in order to comply with the standard of care, emergency department nurses should be familiar with the signs and symptoms of bacteremia?

A. I would not agree with that statement.

Q. Do you agree that in order to comply with the standard of care, emergency nurses should be familiar with the signs and symptoms of sepsis?

A. I would not agree with that statement.

Q. Do you agree that in order to comply with the standard of care that emergency department nurses should be familiar with the signs and symptoms of septicemia?

A. Well, I'm not quite sure what sepsis and septicemia have as a difference between them, but again, I would not agree with the statement.

Q. Okay, sepsis and septicemia would be the same thing?

A. I believe most people use them interchangeably. There are purists who say sepsis is a generalized medical syndrome characterized by a number of physiological aberrations. Septicemia is a more microbiological phrase meaning bacteria in the bloodstream along within clinical disease. But in the workaday world, most people use them interchangeably.

Q. And most medical literature uses them interchangeably as well?

A. I think so, although as I said, more recently people have tried to be very pure about these matters.

Q. Do you agree that in order to comply with the standard of care, emergency department nurses should be familiar with the signs and symptoms of shock?

A. Yes.

Q. Do you agree that in order to comply with the standard of care, emergency department nurses should be familiar with the signs and symptoms of hypotension?

A. I don't think I can answer that as phrased, sir, because there are no signs or symptoms of hypotension, it's a -- that's a number measurement.

Q. You just take the blood pressure and it is what it is?

A. I believe nurses, again, good nursing practice would entail the ability to obtain a blood pressure, yes.

Q. Do you agree that in order to comply with the standard

of care, emergency department nurses should know when a patient has low blood pressure?

A. Let me put it this way, I believe it would be below the standard of care for a nurse to see someone who had hypotension and low blood pressure as measured by a blood pressure cuff or a blood pressure measurement, and not be aware of it.

Q. Okay, good enough. Do you agree that in order to comply with the standard of care, emergency department nurses should be able to recognize when a patient has widened pulse pressure?

A. No.

Q. What is widened pulse pressure?

A. It's a poorly defined concept which looks at the difference in pressure between the systolic and the diastolic pressures.

Q. Is an LPN a licensed practical nurse?

A. I'm sorry, I was waiting, is that the entire question?

Q. Yes, sir.

A. Yes, sir, it is.

Q. Is an RN a registered nurse?

A. Yes.

Q. Is an LPN different from an RN?

A. Yes.

Q. What is the difference?

A. There is a difference in duration of training and in

curriculum, and there is a difference in licensure in each state which manifests itself as a difference in the capacity to perform certain tasks that are accorded to an RN but are denied to an LPN.

Q So, an RN would be higher in the hierarchy based on licensure and their training?

A. They would have a longer period of training, and they are thought to be generally capable of doing more complex nursing tasks, such as doing basic nursing in intensive care units and distributing drugs on wards and that sort of thing

Q And that would be the RN that you're talking about?

A. Yes, sir.

Q. Now, so you agree it would be a violation of the standard of care for an LPN to si a medical record which is designed to be signed by an RN?

A. No.

Q. Does a nurse have a responsibility to the patient to delay discharge from an emergency department if that nurse disagrees with a physician's decision to discharge the patient?

A. I would not phrase the nurse's obligation in that way, no sir

Q. How would you phrase the nurse's obligation?

A. I think a nurse has an obligation to be part of the medical team, and as such, the discharge of a patient from the hospital or an emergency department, or even from a clinic, is

iependent upon general agreement amongst the medical. team
iembers that it's a safe thing to do. If the nurse has worries
ibout discharging the patient for any one of a large number of
reasons, those concerns should be discussed amongst the medical
team members.

Q. And are there methods for resolving the conflict
between a nurse and a physician regarding discharge of a patient
from an emergency room? Suppose they can't agree?

A. It's never been my experience that people couldn't
agree. These things are usually worked out quite informally.

Q. Are there formal structures at most hospitals for
resolving that conflict?

MR. PINSON: I'm going to object to the form of the
question to the extent of the use *of* the word "conflict,"
because it doesn't define the type of conflict that you are
referring **to**. You may answer the question, Doctor.

Q. Let me rephrase it, I think that's a good objection
there. Let me just make sure that we're on the same wavelength
here, Doctor. What I need to know is, that if a nurse in the
emergency department disagrees with a physician's decision to
discharge a patient from the emergency department, and that
disagreement cannot be resolved between the nurse and the
physician, are there other methods for resolving that situation?

A. **I** can't answer your question, sir. It's never been
part of my experience that that's ever been an issue.

Q. Okay. So you're not aware, for example, of hospitals usually having policies and procedures that deal with that kind of issue?

A. Well, as I've already tried to state, hospitals have 11 kinds of policies and procedures, I am sure, and that one in act may be dealt with in some hospitals. It's never been an ssue in my experience in medicine.

Q. Okay. Now, going back to Travis's records for just a econd. Do you -- you've still got the records from May the rd, 1996, I believe, right in front of you, is that right?

A. I do, sir.

Q. Will you turn to the page of those records which is narked the triage assessment form?

A. Is that this page, sir?

Q. Yes, sir, for May 3, 1996, you see it right there, don't you?

A. I see it.

Q. Why do triage assessment forms have a place for noting how a patient arrives in the emergency room?

A. That's a good question. I don't know the answer to that. It's probably part of a desire to be as complete in documentation as one can be.

Q. Do you agree that the arrival mode notation gives the nurses and physicians who later see a patient in the emergency room important information about that patient's physical

capabilities?

A. I suppose it could.

Q. Does the standard of care require that the notation about arrival mode be accurate?

A. No.

Q. So it would be okay under the standard of care for the arrival mode on this triage assessment form to be incorrect?

A. Yes, standard of care is different than standard of ocumentation.

Q. Well, is it the standard of documentation that all edical records be accurate?

A. That's certainly a goal.

Q. And that's what is expected in the ordinary situation, s it not?

A. I think as I said that's certainly a goal. Human beings unfortunately are fallible, and that goal is not all the time realized, but that's certainly the goal in hospital documentation to make it as accurate as possible.

Q. And arrival mode is a pretty easy thing to make accurate, would you agree with that?

A. I suppose. I can actually think of instances in which someone might arrive one way but be viewed by the triage individual as being in another arrival mode, having missed the fact that they actually came in by wheelchair or something of this sort. I know that's an issue here, sir. But one would

think that that's a piece of information that could be secured.

Q. And of course, you see on this form that Travis Williams' arrival mode for May 3, 1996 is listed in all caps, "AMB-POV," right?

A. I see it.

Q. And that notation means that when Travis arrived in the emergency department he was ambulatory and had come by privately owned vehicle, is that correct?

A. Well, I knew the ambulatory part, the POV was a big mystery to me, but you've cleared it up.

Q. When you formed your opinions in this case, did you assume that Travis Williams had arrived by a privately owned vehicle and that he was ambulatory upon arrival?

A. Well, I believe I knew that he was in a wheelchair when I formulated my opinions in the case.

Q. And how did you know that?

A. It may have been from reading the depositions that I read at the time that I was also reviewing the records, I don't know exactly. But I was aware of the fact that he was complaining of pain and was in a wheelchair.

Q. And did you realize that it was Nurse Sergeant who wrote this "ambulatory POV" on his triage record?

A. I am aware of that. When I first looked at it I couldn't exactly read that signature.

Q. Right.

A. So I didn't know specifically the name of the nurse, so -- but I knew it was Nurse X who saw them, and I filled in the X as being Nurse Sergeant when I eventually knew the name.

Q. And you saw those initials typed out, CLS for Chris Sergeant, right?

A. I did see them, but I didn't know what they stood for.

Q. And when you read the deposition of Mr. Sergeant, did you see that it was, in fact, Mr. Sergeant who sent the wheelchair out to the vehicle in which Travis came to the hospital, to bring him into the hospital in the wheelchair?

A. I think I did read that, sir.

Q. So it would be fairly careless of Mr. Sergeant to have seen to it that Travis Williams was provided with a wheelchair and then to come in and type "ambulatory POV" on this form, wouldn't you agree?

A. I would say it was an inaccurate notation.

Q. Because ambulatory means that a patient is able to walk under their own power, is that right?

A. No, I think in this instance ambulatory means that the patient did walk, whether they're capable of walking or not is another issue.

Q. So ambulatory here on this record that we're talking about, the triage assessment form, means to you that Travis Williams did walk?

A. No, I think that was a different question. You asked

ne the question in general, what does ambulatory mean in this particular type of notation. And I said it means that the patient did in fact walk in. Whether they were capable of walking or not is another issue.

Q. I see. Well, let me put it this way, was Travis Williams ambulatory that night?

A. Well, Dr. Hrabal, I believe has the memory that she did see Travis walk. Her's is the only memory of him walking, I don't believe anyone else stated that they saw Travis walk. In the medical records itself there is no notation as to whether he did walk, whether he was incapable of walking, there is just no information about that.

Q. Is there indication in the medical records that any time it is mentioned how Travis Williams moved from one place in the hospital to another place, that he was always taken by wheelchair?

A. I believe he was taken by wheelchair.

Q. To every place?

A. I don't know how many places we're talking about, certainly x-ray was one place. The labs, I believe were drawn in his room. When he was discharged he was taken by wheelchair to the car. Those are the only places that I know.

Q. So he came into the emergency room that night in a wheelchair, is that right?

A. Yes, and in fact, I believe it's Nurse Joiner's note

that the patient arrives -- excuse me, goes to room via a wheelchair, and also the same note that the patient is discharged in a wheelchair.

Q. Right. And also, 2215, Nurse Joiner records that the patient went to x-ray in a wheelchair, is that right?

A. That's correct, and came back in the same wheelchair.

Q. Came back in a wheelchair, is that right?

A. Yes.

Q. Now, do you agree that the standard of care requires that an emergency physician's discharge summary be accurate?

A. No.

Q. No. Do you agree that the standard of care requires that the emergency physician prepare a discharge summary at or about the time the patient is discharged?

A. No.

Q. When do physicians generally prepare their discharge summaries?

A. I would say they prepare them in and around the time of discharge if they're able to do it. They may, in fact, prepare it before discharge, and then assuming nothing has changed in the patient's condition, they let the discharge documentation stand as written, or they may prepare it many hours or sometimes days after discharge. Time being what it is, it gets filled with other things.

Q. When a discharge summary is prepared in accordance with

the standard of care, does that discharge summary contain information about the patient's vital signs at the time of discharge?

A. It sometimes does and sometimes doesn't.

Q. Does it ever -- does a discharge summary that complies with the standard of care ever contain information only about vital signs that are not current at the time of discharge?

A. There is no obligation to record vital signs one way or another on a discharge summary.

Q. But when vital signs are recorded on a discharge summary, Doctor, would you agree that those should be the discharge vital signs?

A. No.

Q. So, in your view it's perfectly acceptable medical practice for a physician to record arrival discharge, and arrival vital signs rather than discharge vital signs on a discharge summary?

A. It is acceptable.

Q. Okay. What is the Fahrenheit equivalent of a temperature of 38 degrees centigrade?

A. It is 100.6 degrees Fahrenheit.

Q. And what is the Fahrenheit equivalent of 39 degrees centigrade?

A. Approximately 102.2, as I recall.

Q. And what is the Fahrenheit equivalent of 40 degrees

:ent igrade?

A. 104 degrees Fahrenheit.

Q. What is the symptom of illness?

A. A symptom is a piece of historical information.

Q. When a patient complains of a subjectively experienced problem, is that complaint a symptom?

A. It is.

Q. What is a sign of illness?

A. A sign is a 'finding at physical examination.

Q. So that a sign of illness would be a problem that is observed by a health care professional who is providing care to a patient?

A. It's not a problem, it's a finding that is found on physical examination.

Q. So when you say found, that would be observed by the health care professional?

A. It could be observed, it could be elicited during the course of a physical examination.

Q. All right. Is a sign of illness an objective finding?

A. It has been called objective in the format that was popularized in the mid-1950s by Dr. Lawrence Weed from the University of Vermont, who tried to create a new way of recording medical information, the so-called SOAP format. And rather than using the word sign, which he felt people misused, he came up with objective as being part of the acronym, SOAP.

Q. But doctors generally recognize that a sign of illness would be an objective finding?

A. I think so, I would say in all agreement with Dr. Weed, people sometimes use sign to cover a subjective finding. Again, it's a certain imprecision in the use of these words, but most people know what they're talking about.

Q. What is a localized sign?

A. A localized sign is a finding at physical examination referable to a single part of the body.

Q. And is a localized sign the same thing as a focal sign?

A. I believe so.

Q. And is a localized sign a specific sign of illness?

A. I don't know, sir, I don't understand the use of the word "specific" in the sentence.

Q. Would it be correct to say that a localized sign is different from a nonspecific sign or symptom?

A. Yes, and again, sometimes only the person who uses the word knows what they mean by the word. If you read the literature of people who talk about physical examination, they do try to separate out focal findings from nonspecific findings of illness. For example, a focal finding would be an enlarged liver. A nonspecific sign of illness might be fever. The focal finding refers to a particular part of the body. The nonspecific finding refers to illness in general, but without narrowing the cause of the finding to a particular part of the

ody.

May I take a break at this point, sir?

Q. Sure.

Recess taken at 10:00 a.m.)

(Deposition resumed at 10:05 a.m.)

Q. I just would like to pick up for just a moment or two continuing our discussion of the localized signs and ask you next, when health care professionals conduct physical examinations of patients, do they usually look for localized signs of illness?

A. Usually.

Q. Okay, and why is it that they do that?

A. Inasmuch as the diagnosis and choice of management plan is dependent on the definition of the illness, all one has for that definition are four things: The history, physical examination, x-ray and laboratory findings, consequently it's one of the pillars of diagnosis. And focal findings oftentimes indicate focal disease, and one would then direct one's attention to focal findings.

Q. I see. Would it be correct then based on what you just said that a localized sign, for example, would be focal infection which explains an illness?

A. Possibly.

Q. I mean, is that usually so?

A. Again, every patient's illness seems to be somewhat

different, and it's very hard to generalize. Sometimes a focal finding is present which has nothing to do with the overall illness, sometimes it explains the overall illness, it all depends on the clinical setting.

Q. Do you agree that disuse of an arm or leg would be a focal finding which can explain an illness?

A. Well, disuse of an arm or leg is a focal condition I would say. Sometimes it's a challenge to find out why there is in fact disuse. It can be an explanation for illness, it may have something to do with another preexisting condition. Again, you have to take the whole patient, obviously.

Q. Right, but specifically to my question then, would it be correct to say that disuse of an arm or leg would be a focal finding which can explain an illness?

A. It all depends on the situation, sir, it can't be answered better than that I'm afraid.

Q. How about septic arthritis?

A. Well, that's a final diagnosis. That's a diagnosis that's made at the end of the evaluation process, and that is a focal infection.

Q. Would it be correct to say that septic arthritis would be pain and disuse of a limb?

A. Those are certainly some of the symptoms associated with septic arthritis.

Q. So, would pain and disuse of a limb be a focal finding?

A. No, a focal finding actually would be what you would see on examination of the joint, whereas the pain and disuse are subjective, and in that sense they're symptoms.

Q. So is it your testimony then that pain and disuse of a limb would not be a focal finding?

A. It depends how it's phrased. For example, if I do a physical examination and on manipulation of a limb or a joint the person experiences pain, that in fact is a focal finding, meaning a sign, but if the person says, you know, my arm hurts, that's a symptom. It all depends on where the information comes in on the diagnostic process.

Q. Okay. Well, in this particular case I would appreciate it, because the wording is important to me. Would you tell me whether or not pain and disuse of a limb would be focal finding?

MR. PINSON: Are you asking him to make that opinion based upon what's in the records in this case?

MR. TAYLOR: No, no, no.

MR. PINSON: Oh, I'm sorry, okay.

MR. TAYLOR: We're talking about --

MR. PINSON: You're still talking about general.

MR. TAYLOR: We're talking about localized signs, focal findings.

MR. PINSON: In general.

MR. TAYLOR: Yes.

MR. PINSON: I'm sorry

Q. What I need to know, and the wording is important in this particular situation, and what I'm asking you to tell me is, would pain and disuse of a limb be a focal finding?

A. If these things were elicited during the physical examination, yes.

Q. Okay. Now, would a rash be a focal finding that can explain an illness?

A. Rash is a -- I guess you might say it's a specific finding in the sense that it may be a total body rash, not very focal. It is however, an important finding which may or may not explain an illness.

Q. Okay, but a rash is a specific sign, is that right?

A. Yes, it's a specific abnormality of the skin.

Q. Okay, and hence a sign?

A. And it is a sign.

Q. Yes, okay. And not to beat a dead horse, but a specific sign?

A. In the sense that I just explained it.

Q. Now, let me see if I can refresh your recollection on some of the points that we've been talking about, and let me mark this page here as Exhibit 2 to the deposition.

(Exhibit 2 marked for identification)

Q. Doctor, I think we talked about earlier, the depositior in the case of Mark Turner versus City of Chicago which you gave in two parts, but the part I'm interested in at this point is

'olume II from February 8, 1996. And do you see there in the op left-hand page that I gave you, I believe, is it 394? Do 'ou see that 394, and particularly I'd like for you to take a ioment if you would and read Lines 9 through 21 of Page 394 of :hat deposition, of your deposition?

A. I see it, sir.

Q. Okay. Do you see there at Line 10 that you agreed that 'A localized sign, for example, would be a focal infection which explains the illness"?

A. Yes, in the context of this particular line of questioning, that's how I answered it.

Q. Okay, and do you also see there at Line 12, when you gave an example of a localized sign that would explain an illness, that you listed a rash?

A. Yes.

Q. Okay. And you also noted that disuse of an arm or leg would be an example of a focal finding which would explain an illness, is that correct?

A. Yes, if it were elicited during the physical examination.

Q. Right. And then at Line 16, the question was posed, "How about septic arthritis," is that right?

A. Yes.

Q. And so you agree that septic arthritis would be pain and disuse of a limb, is that correct?

A. Well, I think what I actually said was that septic arthritis itself was not a focal finding, but that the pain and disuse of the limb were a focal finding.

Q. And where did you say that?

A. Well, as I interpret what I said, that's what I thought I said on Line 17, I say, "Again, that would be pain and disuse of a limb, and that is a focal finding," and "that" referred to pain and disuse of a limb. The septic arthritis is a final diagnosis.

Q. I see, so pain and disuse of a limb is a focal finding?

A. Yes, if elicited during the physical examination.

Q. So arthritis, or septic arthritis can be a local finding?

A. No, that's a final diagnosis.

Q. When the question at Line 19 was posed, "So an arthritis or a septic arthritis can be a local finding," did you answer, "That's correct"?

A. I answered, that's correct, but I believe in the context of how that question and answer went, I had defined what I meant by correct, that pain and the disuse of the limb are the focal findings. Certainly septic arthritis is a focal infection, I can certainly agree with that.

Q. Okay, I see, thank you.

A. By the way, sir, I admire your bravery, I believe that deposition went on for eight or nine hours in two parts.

Q. I believe it did too.

A. So you have tremendous stamina.

Q. And you do, too. What *is* hypotension?

A. Hypotension is a blood pressure which is lower than an arbitrarily defined threshold.

Q. Just so we can put that in normal lay language, is hypotension abnormally low blood pressure?

A. I didn't want to use the word abnormal because hypotension is usually defined based on statistics, in other words, a blood pressure which is lower than some statistically defined threshold. It may not be abnormal at all, but it is lower than a threshold which has been arbitrarily set based upon statistics.

Q. And that threshold which has been arbitrarily set has been set by the medical profession generally?

A. There is no universal threshold or universal definition, the statistics out of which such determination comes have been gathered by medical personnel.

Q. And medical textbooks frequently contain charts showing blood pressures that are high, normal and low by number?

A. Most textbooks will have one or two things, they'll either have a mean blood pressure at a particular age, or they will have a graph which shows mean blood pressures, and then percentiles above and below the mean.

Q. What is a tachycardia?

A. Tachycardia is a heart rate which is more rapid than is normally seen at a given age, given the general statistics of children at that age.

Q. And by heart rate, do we mean pulse?

A. Pulse rate, yes.

Q. Does a 14-year-old boy with a pulse of 110 have tachycardia?

A. It depends on the clinical situation. Let me put it this way, it may be appropriate or inappropriate tachycardia, depending on the clinical situation.

Q. But would you agree that a pulse of 110 is abnormal in a 14-year-old boy?

A. It depends on the setting.

Q. How would that depend?

A. There are a number of ways: For example, someone is in pain, someone who is exercising, someone who has a fever may have tachycardia, but it's appropriate tachycardia for their condition.

Q. Well, all tachycardia would be appropriate for a patient's condition, wouldn't it, Doctor?

A. I think ultimately you're correct, sir. The way tachycardia however is used clinically is to ask the question, is the tachycardia one which is easily explained by a nonserious condition versus a tachycardia which has no such explanation? So, for example, if I see someone who while they're sleeping has

a very elevated heart rate and does not appear to be ill, that night raise the possibility that the person has a condition that might be serious giving rise to the. But if I see someone with a fever, for example, who has an appropriate rise in their pulse rate, then the pulse rate is appropriate for the fever and does not give me information about an underlying condition, if I could explain it that way.

Q. Do you agree that nurses and physicians would generally say that a 14-year-old boy with a pulse of 110 has tachycardia?

A. Yes.

Q. Do you agree --

A. But as I said, it may be appropriate or inappropriate given the situation.

Q. But they would agree that he has tachycardia?

A. Yes, I think so.

Q. So consequently, do you agree that nurses and physicians would say that a 14-year-old boy with a pulse of 114 would have tachycardia?

A. Again, I could see instances in'which the tachycardia is appropriate. And if someone says that's not tachycardia, they might mean that's not a pathological tachycardia, it's explained by something very simple. I think if you pinned that person down and said, wait a minute, is it tachycardia or not, they'd say, well, yeah, it's tachycardia, but it's appropriate for the situation. ,Therefore they don't consider it

pathological tachycardia and may not use the word tachycardia. Words are flexible things and oftentimes they mean exactly what the person who says it thinks that it means, and they just have to be able to explain themselves.

Q. Right, but most nurses and physicians who encounter a 14-year-old boy with a pulse of 114 would say that he had tachycardia.

A. Yes, but with the reservations that I've expressed in my prior answer.

Q. Does a 14-year-old boy with a blood pressure of 113 over 49 have hypotension?

A. No.

Q. Does a 14-year-old boy with a blood pressure of 107 over 34 have hypotension?

A. No.

Q. Why does a 14-year-old boy with a blood pressure of 113 over 49 not have hypotension?

A. Well, I'm taking your question in the context of an emergency department, for example. Clearly that diastolic pressure is lower than a perfectly well child would normally have. But if one is looking for blood pressure as a definition of serious illness, which is what happens in the emergency departments for the most part, one actually looks at the systolic pressure. And the systolic pressure is fine for a child of that age. I think one might say that there is a

widened pulse pressure, but I don't think that anyone looking at that would say this is a hypotensive individual.

Q. Okay. Do you think that nurses and physicians generally looking at a 14-year-old boy with a blood pressure of 107 over 34 would consider that boy to be hypotensive?

A. I would not.

Q. But --

A. So if I'm a physician in general, I would say the answer is no.

Q. Okay. When you say the diastolic blood pressure on those two blood pressure ratings I've just given you, in the first one, would the 49 be the diastolic, and in the second one the 34 would be the diastolic?

A. That's correct.

Q. What does a blood pressure of 113 over 49 in a 14-year-old boy indicate about that boy's condition?

A. All it really indicates about that boy's condition is that there is some degree of peripheral vascular dilatation, it doesn't tell you anything more.

Q. Does it indicate that that boy is sick?

A. No.

Q. So you can be a 14-year-old boy with a blood pressure of 113 over 49 and be perfectly well?

A. You used the word sick, so I said the answer was no, there is usually some explanation for a widened pulse pressure

of that sort, but the explanation may not be illness.

Q. Okay. What other explanations other than illness would he nurse or a physician be considering under a blood pressure f **113** over 49 in a 14-year-old boy?

A. Well, in this clinical context there are children who ave fevers who have widened pulse pressures because fever in nd of itself causes dilation of vessels and may cause the iastolic pressure to go down lower. So fever just by itself ould cause exactly that kind of blood pressure, which is an llness, but it's certainly not necessarily a serious illness.)ther things one thinks of is whether the child is taking ledications to cause peripheral dilation of the blood vessels,)r whether the child has some other illness that might explain it. But I think in the context of this illness, the fever alone is a perfectly adequate explanation.

Q. What does a blood pressure of 107 over 34 in a 14-year-old boy indicate about that boy's condition?

A. It doesn't indicate anything.

Q. Is a 14-year-old boy with a blood pressure of 107 over 34 sick?

A. From that blood pressure you can't tell one way or the other. You have to look at the child, not the blood pressure.

Q. Does a blood pressure of 107 over 34 indicate that a 14-year-old boy is shocky?

A. No.

Q. Does a blood pressure of 107 over 34 in a 14-year-old boy indicate that he is in shock?

A. No.

Q. What blood pressure would a 14-year-old boy have to have before he would be in a shocky condition?

A. Well, in pediatrics we don't define shock by blood pressures at all. One could be in shock with a normal blood pressure, and one could be in shock with an abnormal blood pressure. A blood pressure does not define shock.

Q. Is a blood pressure of 113 over 49 normal for a 14-year-old boy?

A. It may be. There are people who run widened pulse pressures all the time. I think that in this particular situation it's appropriate given the condition of the child.

Q. Do you think physicians in general would agree that a blood pressure of 113 over 49 in a 14-year-old boy is normal?

A. Well, I don't think people would use the words normal or abnormal, I think most people would say that that's a vital sign which is not in the expected range, but it may be normal for the person. I think that using the word expected is probably a more useful term than normal.

Q. Do you think that physicians in general would agree that a 14-year-old boy with a blood pressure of 107 over 34 is normal?

A. Again, I think the same answer applies. It's not in

he expected range of blood pressures, but it may be normal nder the circumstances.

Q. Are you familiar with the medical journal known as The nnals of Emergency Medicine?

A. Sure.

Q. Is that medical journal found in most hospital ibraries?

A. I would guess it would be found in many hospital ibraries, I can't speak for all hospitals. With budget cuts coming around, you don't know what they've allowed to expire.

Q. Is The Annals of Emergency Medicine a journal commonly read by emergency physicians?

A. I would think so, it's one of the publications that comes from the American College of Emergency Physicians, and as such it's one of the professional journals that people who do emergency medicine might pick up.

Q. So do I take it that since it comes from the American College of Emergency Physicians, that it is considered to be a reputable, authoritative medical journal?

A. I don't know if I'd use the word reputable or authoritative, but it certainly is a journal that provides sometimes useful information, put it that way.

Q. Do you have occasion to read The Annals of Emergency Medicine?

A. Sure.

Q. You do?

A. Fortunately our budget cuts haven't interfered with our journal subscriptions yet.

Q. Do you agree that a patient has a sick presentation with bacterial meningitis when he has hypotension and tachycardia?

A. I would say the bacterial meningitis is not necessarily associated with either hypotension or tachycardia.

Q. Well, let me just make sure that you understand the question. What I'm asking is, when a patient does have hypotension and tachycardia, do you agree that that patient has a sick presentation with bacterial meningitis?

A. That's a confusing question to me, I thought I had answered the question, but perhaps not.

Q. Are you saying you don't understand the question?

A. I don't understand the question. I thought I had answered it.

Q. Okay, again let me rephrase it, because I do want you to understand the question, okay? Are you familiar with the phrase "sick presentation of bacterial meningitis"?

A. I guess I can imagine what it might mean, but it's not a phrase that I've commonly used myself.

Q. Have you ever seen the words "sick presentation" used in connection with bacterial meningitis in any medical article?

A. I don't recall seeing that, but perhaps I did.

Q. Can we agree that if a person has hypotension and tachycardia, that that person would have a sick presentation of bacterial meningitis?

A. I'm sorry, it's a confusing question to me, and I don't think I can answer it.

Q. Okay. I don't know any other way to ask it other than the ways I have. Would you propose a way that you could answer it?

A. Well, I thought I had answered it. Children with bacterial meningitis don't necessarily have either tachycardia or hypotension, and children with hypotension and tachycardia don't necessarily have bacterial meningitis, and it's hard for me to answer the question any better than that.

Q. But we needed to take it just one step further, what I'm saying is, that if a patient does have hypotension and tachycardia, do you agree that that patient has a sick presentation of bacterial meningitis?

A. Again, it's confusing for me, I don't quite understand the question.

Q. So you're not able to assume that a person has hypotension and tachycardia, and based on that assumption make a conclusion as to whether a person has a sick presentation of bacterial meningitis, is that what you're telling me?

A. No, what I'm saying is I can't understand the question as it is phrased, I'm sorry. If you put in it some other way I

may have a better shot at it.

Q. I'll take one more shot at it. If you assume, and I ask you to assume, that a person has hypotension and tachycardia, if you assume those two things, would you agree that that person has a sick presentation of bacterial meningitis?

A. I can't answer it, I'm sorry.

Q. Okay. When emergency department personnel conduct physical examination; of patients, are the patients unclothed during those examinations?

A. It varies from physician to physician and emergency room to emergency room. I don't think there is ever an instance in which a patient is entirely unclothed.

Q. Let's go back to Plaintiff's Exhibit 2. Look at Line 4 on Page 394. Does this help refresh your recollection as to whether or not a child should be looked at unclothed during a physical examination?

A. Well, I'm afraid it doesn't. Looks like it's a continuation of a discussion that occurred on Page 393, the benefits of which I don't have.

Q. Would you like to look at Page 393?

A. Sure. Thank you, sir.

Q. You're welcome.

A. All right sir, I've read it, thank you.

Q. Is there anything on Page 393 that suggests to you that

during physical examination in the emergency department a child should not be unclothed?

A. That was a double negative, should not be unclothed. The discussion here was of a completely different issue, and I don't think is relevant to the question you're asking me about in the emergency department. This was a small child under the age of one or two years of age who had a fever and was being evaluated, and in that instance you usually try to evaluate that child with a diaper on only, if you can. That, of course, is different than a 14-year-old boy in the emergency department, so it's really a different issue.

Q. So do I take it then that it would be your testimony, or would it be your testimony -- just answer the question, should a 14-year-old boy in an emergency room be unclothed during physical examination by emergency room personnel?

A. I think it would depend on the circumstances, as I said. I don't know of any instance in which someone is naked lying there waiting to be examined. The answer to that is probably no, they should not be unclothed, certainly not in the sense of this deposition, or in the sense that deposition took, that was a small child with a fever and that, of course, is a different kind of issue.

Q. Does an emergency room nurse have a responsibility to assess a patient for rash?

A. I think an emergency room nurse has the responsibility

to notice a rash if present, but I have never assumed that an emergency room nurse should be doing comprehensive evaluations for rashes the way a physician might do it.

Q. Would emergency room nurses have the responsibility to check to see if a patient has a rash?

A. No.

Q. Now, when bacterial meningitis is included in an emergency department patient's differential diagnosis, do physicians ordinarily look for Brudzinski's sign?

A. Rarely.

Q. When bacterial meningitis is included in an emergency department patient's differential diagnosis, do physicians ordinarily look for Kernig's?

A. Rarely.

Q. Is finding a positive Brudzinski's sign one objective way of determining if a patient has nuchal rigidity?

A. No.

Q. Is finding a positive Kernig's sign one objective way of determining if a patient has nuchal rigidity?

A. No.

Q. Is finding a positive Brudzinski's sign one objective way of determining whether a patient has meningeal infection?

A. By meningeal infection, can you tell me what you mean by that?

Q. An infection of the meninges.

A. A positive Brudzinski's sign, if performed, would raise that possibility.

Q. And would a positive Kernig's sign also indicate meningeal infection?

A. Yes, it's one of the possible causes of a positive Kernig's test.

Q. And is a physician who performs the test for Brudzinski's sign seeking to learn whether the patient has meningeal infection?

A. If the physician chooses to perform that, that's usually the reason why they are performing it.

Q. And similarly, that's usually the reason they perform the examination seeking the Kernig's, is that correct?

A. The usual reason for performing either one of those tests is that the physician is interested in gaining more information regarding the possibility of bacterial meningitis or infective meningitis, but as I said, those two tests are rarely performed.

Q. What is the, in your opinion, the acceptable way to determine if a patient has meningeal infection?

A. The hallmark of a meningitis, bacterial meningitis is fever with an altered level of consciousness. Excuse me, I should add on, that cannot be explained by another cause, let me put it that way.

Q. Is bacteremia the presence of viable bacteria in the

blood?

A. I would say by definition, yes, it's a microbiological word which means the recovery of bacteria from blood. Now, with modern means you may in fact recover not live bacteria but portions of the bacteria from the blood by using noncultural means. So I would say that the modern definition of bacteremia is the detection of bacteria in the blood by cultural or noncultural means.

Q. When bacteria are in the blood, can they always be detected on blood cultures?

A. It depends on the setting.

Q. Because sometimes bacteria are detected in blood cultures and sometimes they're not?

A. No, that's not exactly what I meant. It depends on what the clinical setting is, in other words, what is the illness and what is the bacteria? Without knowledge of what the purported illness is and the purported bacteria is, it's hard to answer that question as a general question.

Q. Okay. In your opinion, does blood infected with Neisseria meningitidis always -- does that pathogen always appear on a blood culture?

A. Well, I don't know if you can ever use the word always in medicine for any question, sir. So I would answer that greater than 95 to 98 percent of the time you will recover the organism on a blood culture in meningococcemia. The times that

you don't recover it these days are in individuals who have been
retreated with an antibiotic of one sort or another.

Q. In May of 1996, do you agree that only in about 50 percent of cases would a Neisseria meningitidis be recovered in the blood culture?

A. No, that's incorrect.

Q. What percentage would you say?

A. 95 to 98 percent.

Q. Is meningitis associated with bacteremia?

A. Hematogenous meningitis is. There are forms of meningitis in which there is local invasion from an area in the head and neck, and they may not be associated with bacteremia in some cases, but in meningococcal meningitis the answer is yes.

Q. So in meningococcal meningitis, that is associated with bacteremia?

A. It is.

Q. Does bacteremia always precede or come before bacterial meningitis?

A. In meningococcal meningitis, yes.

Q. That would be meningitis caused by the Neisseria meningitidis?

A. That's correct, sir.

Q. Is fever a common manifestation of sepsis?

A. Yes.

Q. Is leukocytosis a common manifestation of sepsis?

A. Yes.

Q. Is tachycardia a common manifestation of sepsis?

A. Yes.

Q. Are myalgias a common manifestation of sepsis?

A. Yes, but you understand in answer to all of these yeses, these questions, it's a manifestation of sepsis and many, many other things besides sepsis.

Q. Okay.

A. And in the world of people who have fever and tachycardia and myalgias, sepsis is extremely uncommon.

Q. If a person has a temperature of more than 38 degrees centigrade and a white blood cell count of more than 12,000 cubic millimeters, does that person have sepsis?

A. No.

Q. If a person has a temperature of more than 38 degrees centigrade and a pulse of more than 90, does that person have sepsis?

A. No.

Q. If a person has a white blood cell count of greater than 12,000 cubic millimeters, and a pulse of greater than 90, does that person have sepsis?

A. No.

Q. Okay. And when I say cubic millimeters, you understand I'm talking about mm cubed?

A. I am understanding that, sir, thank you.

Q. Okay. If a person has sepsis associated with hypotension, does that person have severe sepsis?

A. That person may have severe sepsis, yes.

Q. Are sepsis and septic shock among the most frequent Life threatening infectious diseases encountered in emergency nedicine practice?

A. Could you say that one more time, sir, I'm sorry?

Q. Yes. Are sepsis and septic shock among the most frequent life threatening infectious disease problems incountered in emergency medicine practice?

A. Yes, understanding that life threatening infections are rare in an emergency room practice.

Q. Is hypotension or low blood pressure associated with septic shock?

A. Can be.

Q. Do you agree that sepsis always precedes meningitis?

A. No.

Q. Do you agree that septicemia always precedes meningitis?

A. No.

Q. Do you recall ever having said that?

A. I don't recall ever having said that, but if I said it then I, like many people, was incontinent in my use of words. What I probably meant was bacteremia always precedes meningitis, but sepsis or septicemia is bacteremia with clinical illness,

and that does not always precede meningitis.

Q. **Do you** agree that a complete septic workup includes a spinal tap in order to acquire the proof that a child doesn't have meningitis?

A. **I** think it depends on the clinical setting. There may be people in which you do a, quote, septic workup, unquote, in which you do not do a spinal tap because there is no clinical indication for doing it. It depends very much on the clinical setting.

Q. Do you recall ever having discussed a septic workup and said that such a workup includes a spinal tap in order to acquire the proof that the child doesn't have meningitis?

A. I think I probably said it, but I'm sure that my saying it was very case specific.

Q. Do you agree that in order to comply with the standard of care in an emergency department, a physician is required to rule out each condition included in a differential diagnosis until the proper condition is identified?

A. That's a very interesting question. I would say the answer is yes, but only in the following sense, that most portions of a differential diagnosis are excluded based on clinical evidence without resorting to laboratory or x-ray evidence. I would also say that the items on a differential diagnosis should be clinically excluded, if that's proper, to the point that it appears safe to the physician and family that

the patient be discharged home with follow-up capable of handling those conditions that might be rare or unlikely.

Q. And when you use the words clinically diagnosed, what do you mean?

A. Well, for example, sir, I know that you do not have bacterial meningitis now, and I can tell that by your behavior and the clarity of your questions and so on and so forth. And I know you laugh at that, but that's where it usually resides when you're examining someone. In other words, most doctors, particularly emergency room doctors think of bad things, it's their training to think of bad things, but you exclude the realistic possibility of those bad things based on how the patient looks and acts and what your physical examination is. You may use accessory testing, laboratory testing or x-rays to help you along with that, but these are exclusions based primarily on clinical evaluation, and that's what happens in most emergency departments.

Q. All right. So it would be your opinion that it's the clinical examination or the physical examination of the patient that is the most important thing done in the emergency department?

A. No, I would say it's the clinical decision making based on history, physical and appropriate laboratory and x-ray studies that is the most important thing done in emergency departments.

Q. Are all those of equal weight, or does one have more weight than the others? Because I had understood you to say physical examination you thought, had more weight, maybe I misunderstood it.

A. Let me put it this way, they're all important in their proper place.

Q. I understand.

A. History comes first, physical examination second, and then you choose whether to resort to laboratory or x-ray studies usually based on the first two. And the physical examination is a directed physical examination, directed towards the issues that concern you at the time. So I would say those are the bases for making the clinical inclusion or exclusion of possibilities of illness in the medical decision making process.

Q. When we use the word rule out, does that mean eliminate or exclude?

A. I think what it means is to reduce possibilities to a manageable level. In other words, you may not be willing to do the ultimate test to rule out a condition, but based on a clinical appearance or physical examination you think a condition is unlikely. So rule out really means reducing the possibility of an illness to a very manageable level.

Q. Do physicians generally agree that the words "rule out" mean exclude or eliminate?

A. Well, I can't speak for most physicians, sir, it

depends on how the phrase is used.

Q. Sir, are you saying you're unable to speak for physicians generally?

A. No, I'm unable to speak for physicians when asked that question, because I think most physicians would like some clinical context in order to tell you what they mean when they or someone else uses the words "rule out." Again, it's one of those phrases which is very context specific and means what the person says that it means.

Q. So you're saying that the medical profession in genera does not understand the words "rule out" to mean exclude?

A. I think the medical profession in general approaches it the way that I approach it, which is case or context specific, and depending on what the person meant when they said the phrase.

Q. Is it possible for pregnancy to ever be included in the differential diagnosis of a 14-year-old boy?

A. Pregnancy?

Q. Yes, sir.

A. Well, that would be quite an unusual possibility to include in a 14-year-old boy.

Q. Would it be ridiculous?

A. Well, I think it would be fairly farfetched, sure. Fourteen-year-olds are never pregnant, are they?

Q. Are they?, Are 14-year-old boys ever pregnant?

A. Not to my knowledge.

Q. How do emergency department physicians ordinarily go about ruling out migraine headaches?

A. I don't think they can ever be ruled out, frankly, if someone has a clinical history that is suggestive of a migraine headache.

Q. There is no test for migraine headache?

A. No, sir, migraine headaches are defined based on certain clinical criteria anyway which have to do with the presence of a preceding aura, usually a lateralizing headache, usually a disabling headache, oftentimes with vomiting or abdominal pain, and someone with a family history of migraine headaches. And if that headache becomes recurrent, periodic and persistent, then you make the working diagnosis of a migraine headache, once you have satisfied yourself that other possibilities seem unlikely.

Q. How do emergency department physicians ordinarily go about ruling out ear infections?

A. Well, you usually examine the tympanic membrane to make that decision. Most of the time you're able to see the tympanic membrane, sometimes you'll see a tympanic membrane in which you don't know whether it's infected or not infected. You're rarely motivated to do more advance testing that could completely exclude the presence or absence of otitis media, such as a tympanocentesis with aspiration. There are instances in which

it's a clinical issue and you may not be willing to do the test to absolutely exclude the possibility, but you may have reduced the possibility to a manageable level. This is a good example of what rule out means in a clinical context,

Q. How do emergency room physicians go about ruling out tonsillitis?

A. It's usually done on physical examination, but you can have tonsils that are tricky in which you're not entirely sure that there is tonsillar infection present or not present.

Q. How do the emergency department physicians go about ruling out pneumonia?

A. Well, usually they rely on physical findings, respiratory rate, evidence of retractions or other chest wall abnormalities, and the listening to the chest along with the history. If there is a question, then they may resort to a chest x-ray, but that's not done all the.time. It depends on whether your physical examination and your history make you comfortable enough to exclude the possibility.

Q. How do emergency department physicians ordinarily go about ruling out trauma to the lower extremity?

A. Usually done by physical examination, and then if there is a question you can always get an x-ray to look for bony fractures, abnormalities, things of that sort.

Q. Is fulminant meningitis a very spectacular and very memorable condition?

A. Well, before you go on with this, perhaps you can tell me what you mean by fulminant meningitis?

Q. Do you agree that in fulminant cases of meningitis, the patient presents with rapidly developing fever, headache, stiff necks, photophobia, disordered cognition?

A. A person with fulminant meningitis, as I define it at any rate, have some of those features, but the key there is that the onset of the symptoms and signs referable to meningitis occur in a very rapid fashion and are usually not of long duration prior to the diagnosis of meningitis being made, and then the clinical course is one of catastrophic deterioration, almost all the time associated either with severe brain swelling, increase in intercranial pressure, and oftentimes vascular injuries.

Q. In fact, I believe in one of your depositions you said that the fulminant presentation of bacterial meningitis in a child is one in which the duration of symptoms is very short, very explosive, and the child has a very quickly disastrous course leading either to rapid death or an early indication of massive brain damage, does that sound like something you would have said?

A. Yes, as long as one understands that the symptoms I'm referring to are the symptoms of meningitis, not general symptoms. These fulminant cases are oftentimes preceded by another illness with maybe having some fever, vomiting or

whatever, but the demarcation between that general illness and the onset of the meningitis symptoms usually is quite clear and it is a very truncated course.

Q. Right, and the symptoms **I** think you said are recognized to include fever, headache, stiff neck, photophobia and disordered cognition?

A. **I** think that those are some of the things one can see, but one is actually seeing a number of those things happening at the same time, it's rare to just have one of those items as a demarcating point to the beginning of meningitis. It's an explosive illness and the patient becomes ill really quite rapidly and hospital attention is sought usually early on in this deteriorating course.

Q. You wouldn't be surprised to learn that the policies and procedures of the Bulloch Memorial Hospital say that patients with fulminant meningitis present with rapidly developing fever, headaches, stiff necks, photophobia and disorderd cognition, would you, Doctor?

A. Well, again, I've never seen the policies and procedures. Nothing much surprises me in policies and procedures, unfortunately.

Q. Okay. So consequently I would understand, correct me if I'm wrong, that fulminant meningitis then would be a very spectacular and memorable condition?

A. For people who have taken care of children with

fulminant meningitis, it's usually a memorable condition.

Q. And that's what you said when you testified in the Long-Pederson case, is that right?

A. I don't recall, sir.

Q. Does fulminant meningitis present a clear and nmistakable deterioration in the patient's condition?

A. Usually.

Q. Is fulminant meningitis apparent to all who examine the atient?

A. Usually. May I take my Starbuck's break?

Recess taken at 11:00 a.m.)

Deposition resumed at 11:11 a.m.)

Q. Do you agree that in the fulminant case of meningitis there is little diagnostic challenge presented to emergency department personnel?

A. I would say yes, in the sense that you know they're terribly ill, you may not know exactly why, but you know they're ill.

Q. Would it be a violation of standard of care to discharge a patient with fulminant meningitis from the emergenc, department back to his or her home?

A. I would say yes if, in fact, they were displaying the characteristic findings of fulminant meningitis.

Q. And under the definition of fulminant meningitis they would have to display those things, because as we've said,

that's open and obvious to everyone in the emergency room, is that right?

A. Correct.

Q. Okay. Does the standard of care require that all emergency department patients with fulminant meningitis be admitted to the hospital for follow-up care?

A. Yes.

Q. What is photophobia?

A. Discomfort dn being presented with light.

Q. What is disordered cognition?

A. Someone who has blunted alertness, understanding of their situation, evidence of confusion, decreased level of alertness, things of that sort.

Q. How are patients with fulminant meningitis ordinarily dealt with in the emergency room?

A. Their vital functions are stabilized, and one tries to quickly arrange for a disposition to an intensive care unit.

Q. Do you agree that one of the most frequent presentations in the emergency department is a child with a fever?

A. I would say that's one of the most frequent presenting complaints, yes.

Q. Is fever a marker of possible infection?

A. Yes.

Q. In your opinion, is the standard of care that fever

works as a warning sign?

A. I would say it works as a stop sign.

Q. And by working as a stop sign, what do you mean?

A. To quote the old adage from my grammar school days, you stop, look, listen, and proceed with caution.

Q. Does fever act as a warning that something may be happening that is not being appreciated by the emergency room personnel?

A. Well, I think that's included in the stop, look, listen and proceed with caution rubric.

Q. But where I got that quote from was from the Villaflor deposition, I think that's what you had said there, that fever acts as a clinical stop sign, a warning that something may be happening which is not appreciated. That would be something that you would say, is that right?

A. Evidently it's something I did say.

Q. Okay. Now, would you agree that fever is the most potentially dangerous symptom in pediatrics?

A. Yes. When I wrote that, of course, it was in a context that I go on to explain what I mean by that phrase.

Q. All right, but that statement is true?

A. Yes, in the context in which I wrote it. And you understand I wrote that in the context of fever in small children, which is a different clinical entity than we're dealing with here.

Q. So you're saying that fever in a small child is different from fever in a 14-year-old child?

A. Issues are different.

Q. Okay. Would you agree that it is -- the specific level of fever is not as important as the fact that a patient has a fever?

A. Yes and no.

Q. Okay, tell me what you mean?

A. Sure. Studies have shown that extremely high fevers, usually well above 104, usually does imply a higher risk of a serious illness. Not that it is -- I'm trying to think of the right word, not that it equals serious illness, but that it implies a high risk of serious illness. Also, studies have shown that lower levels of fever, usually below 39 degrees centigrade, in small children at any rate, are infrequently associated with serious illness. But from the point of view of the practicing clinician, the importance is that there is fever, because you approach fever in a similar way, independent of its level.

Q. And that's because a fever is really a clinical stop sign, as you've defined it, whether you are one month old or 14 years old?

A. That is true, but, of course, what you do with the stop sign is dependent on the age and the clinical issues involved with the particular patient. And there are different issues

nvolved in small children than there are in 14-year-old boys.

Q. Do you agree that fever is generally present in children with bacterial meningitis?

A. Yes.

Q. Do **you** agree that bacterial meningitis should be part of the differential diagnosis of every sick child with a fever?

A. Yes. And if **I** could just elaborate on that bald Statement, what it means is, you always think of bad things, wen if you quickly exclude them based on clinical grounds.

Q. And that bald statement was one of the statements you nade in the Bechstein case?

A. Again, since you're taking excerpts from depositions which are very case specific, I wanted to add clarifying statements to a single sentence that you took out of a single deposition.

Q. Okay. **Now,** if a child is febrile, that doesn't relieve the clinician of the obligation to take heed of the fever just because it may later go away, does it?

A. I don't understand the question.

Q. Well, if a child has had a fever and it goes away, the fact that the child had a fever is what is important to the clinician, is that right?

A. It depends on what the question is that's being asked.

Q. Well, the clinician still has to heed the fever whether the fever later goes away or not?

A. Again, it depends on the question that's asked. If I'm seeing a patient who doesn't happen to have a fever when I'm seeing him, but has a history of fever, most people deal with that child as a febrile child. But if you're sequentially following the case of a child who you've seen with a fever, and subsequently the fever goes away, that's a good sign. So it kind of depends on the question you're asking at the phase of the illness in which the question is being asked.

Q. Is an infection an inflammatory response to microorganisms that are present in the human body?

A. Yes.

Q. Is infection also an invasion of normally sterile places in the body?

A. Usually.

Q. Is urine a normally sterile place?

A. No.

Q. Is joint fluid a normally sterile substance in the human body?

A. Yes.

Q. Is cerebral spinal fluid normally a sterile fluid in the body?

A. Yes.

Q. Is blood normally a sterile fluid in the body?

A. Well, that's a very interesting question. Every normal person periodically has bacteria in the blood, but they clear

the bacteria from the blood. Consequently, I think what you have to say is that the persistent presence of bacteria in the blood is an abnormal state.

Q. When physicians use the word "normally sterile," does that mean that germs or bacteria are not found in the healthy person?

A. Yes, with the provisos that I've already given you with regard to blood and urine.

Q. Do you agree that most bacterial infections -- that with most bacterial infections, leukocytosis is reflected primarily as neutrophilia?

A. In bacterial infections, if there is a leukocytosis caused by a bacterial infection, it's usually made up of an increased number of neutrophils.

Q. Is that the same thing as saying that with most bacterial infections, leukocytosis is reflected primarily in neutrophilia?

A. I think you might have detected the conditional phrases I inserted, and my answer would be I think the true statement is.

Q. Is a joint infection an example of a serious bacterial infection?

A. Again, yes and no, it's a serious infection, but it's usually not life threatening in the way some other infections might be. I guess it all depends on what one means by serious.

Q. Are pain, redness or erythema, swelling and disuse of a joint signs and symptoms of a joint infection?

A. Yes.

Q. Is a Gram's stain one method of rapidly diagnosing gram-negative infections in the emergency department?

A. It can be used if there is a suitable fluid for looking at.

Q. Can a Gram's stain be performed within minutes at the time of initial evaluation of a patient in the emergency department?

A. Well, it can be, but it is usually sent to a laboratory and the turn-around time is usually not minutes, but it's not a technique that takes very long to perform once you sit down to perform it.

Q. What is the turn-around time if it is sent to a laboratory?

A. If you ask them to rush it you can get the results in an hour.

Q. Does septic arthritis lend itself to Gram's stain evaluation?

A. If an aspiration of the joint is performed and fluid is recovered, it can be Gram stained.

Q. So you would agree that Gram stain of joint fluid has proved useful in the diagnosis of septic arthritis?

A. Yes, but you usually have to do an aspiration to get

the fluid to look at.

Q. That's right, the doctor inserts a needle, takes out the fluid from the joint and subjects the fluid to a Gram's stain, is that right?

A. That's correct.

Q. So, that is to say, if a patient has septic arthritis in an ankle joint, fluid can be removed from the joint space and Gram stained in an effort to detect gram-negative infections, would that be correct?

A. That's one option.

Q. Now, if a person has a petechial rash, can blood from that rash be extracted, aspirated, scraped, and Gram stained in an effort to detect gram-negative infection?

A. It can be, that's an option.

Q. And would that also be true for macular rashes?

A. I don't think anyone has ever done that for a macular rash.

Q. Do you agree that Gram stain of blood has proved useful in diagnosing bacterial meningitis?

A. Rarely.

Q. If a person has bacterial meningitis, can cerebral spinal fluid be withdrawn from that person using a lumbar puncture or spinal tap and Gram stained in an effort to detect gram-negative infections?

A. Yes.

Q. And is the infection of Neisseria meningitidis a gram-negative infection?

A. Yes, it is.

Q. Do you agree that diarrhea could exist with meningitis?

A. Anything is possible.

Q. So the answer is yes?

A. Actually, the answer is yes, anything is possible, but in bacterial meningitis children rarely have concomitant diarrhea, but anythihg is possible.

Q. Do you agree that when bacteria is present in a patient's urine that that bacteria will show up on a urinalysis?

A. Are you saying a microscopic urinalysis?

Q. Yes.

A. Sometimes, depending on the concentration of bacteria.

Q. So you don't agree that bacteria generally shows up in urine subjected to urinalysis?

A. It only shows up if it's there in a certain concentration.

Q. Do you agree that protein would be an abnormal finding on urinalysis?

A. It depends on the urine that's involved, trace or one plus protein, particularly in a concentrated urine, is seen in normal individuals.

Q. Do you agree that when a patient has meningococcal disease the presence of protein can often be revealed in

rinalysis?

A. I don't know of a study that's ever looked at that, I ould doubt that, but I don't know of a study that has ever ooked at it.

Q. You would doubt it, or you would not doubt it?

A. I would doubt that that's the case, but I don't know of study that's looked at that.

Q. So it's your opinion, Doctor, that when a patient has neningococcal disease' the presence of protein would not often be revealed in urinalysis?

A. My opinion is as follows: I doubt that protein in the urine is correlated with meningococcal disease, but I know of nc study that's actually looked at that.

Q. Do you agree that protein does not ordinarily appear in the urine of patients who have viral gastroenteritis with viral exanthem?

A. No, that's not true. As I said, in some individuals trace to one plus protein is found in concentrated urines all the time, and people with gastroenteritis tend to have concentrated urines.

Q. When a urinalysis test has been ordered for a patient, do you agree that the standard of care requires that the result: of that test be known before that patient is discharged from the emergency department?

A. No.

Q. Does the word petechial mean pinpoint in size?

A. I don't know about the etymologic derivation of the words, but when people talk about petechiae, they are talking about a pinpoint rash whose diameter is no more than one to two millimeters.

Q. So pinpoint is often used to describe petechial rash?

A. Many people would use that, yes.

Q. Physicians in general would use that word?

A. I think so.

Q. Are you aware of any type of rash other than a petechial rash in which the word pinpoint would be accurately used?

A. Oh, sure.

Q. What kind of rash would pinpoint be associated with that would not be petechial?

A. Macular rash, vesicular, pustular rashes, pinpoint just describes the diameter, it doesn't describe anything more than that.

Q. You're saying that the word pinpoint, I mean rather, the word -- that the word pinpoint can be accurately used to describe a macular rash?

A. Sure, because pinpoint only refers to the diameter of the rash, or the lesion of the rash.

Q. Do you agree that fever plus a petechial rash could indicate meningococcal disease until that disease is ruled out?

A. I don't know if I would say it exactly that way, but one of the causes of fever and a petechial rash can be meningococcal infection, and one needs to rule it out in the sense that I've already defined rule out, which is reduce the possibility to a manageable level by one means or another.

Q. And when you say manageable level, what do you mean?

A. Well, medicine is quintessentially the art of weighing risks, we do it all the time. In fact, life is quintessentially the experience of weighing risks. You get into your car there is a risk of being killed while you're driving the car. We all assume that risk. Medicine is no different than that. The job of a physician is to analyze signs and symptoms of illness in order to judge the possibility of causes and to do whatever management is appropriate given the relative ranking of those possibilities. So that if an illness is seemingly unlikely to be present, then one may do nothing more than allow the natural history to evolve, because that illness is unlikely to be present. It's very infrequently that one can totally exclude almost any illness, truly, so one lives with these residual risks all the time in medicine. This would be no different tha that general proposition in medicine.

Q. As between meningococcal disease and viral gastroenteritis viral exanthem, which one presents the greater risk to the patient?

A. Meningococcemia.

Q. And meningococcal disease?

A. Well, it depends on what kind of meningococcal disease one is talking about, but if you're talking about a rash associated with a meningococcus, that's a higher risk disease.

Q. Just so we'll be clear on that, did you agree that neningococcemia presents a greater risk to the patient than viral gastroenteritis with viral exanthem?

A. The answer is usually yes.

Q. Would you also agree that bacterial meningitis presents a greater risk to the patient than viral gastroenteritis with viral exanthem?

A. Yes.

Q. Now, if a person has a petechial rash, does that suggest that the person has an infection caused by a gram-negative organism such as Neisseria meningitidis?

A. No, it's only one of a number of possibilities and a rare possibility at that.

Q. Do you agree that the relatively sudden onset of fever and a petechial rash must be considered and treated as meningococcemia unless another etiology can be established with absolute certainty?

A. No.

Q. Do you agree that in patients who have rashes, a rapid presumptive diagnosis of meningococcemia can be made by needle aspiration and Gram stain of the rash?

A. I believe that can be done around 60 percent of the time, perhaps 50 percent of the time.

Q. When patients have migraine headaches, do they ordinarily also have a rash on their arms, chest and lower extremities?

A. Pure migraine headache is not associated with a rash, but migraine headaches can occur in the context of other illnesses.

Q. When patients have ear infections, do they ordinarily also have a rash on their arms, chest and lower extremities?

A. Ear infections are usually associated with another illness, and the other illness would be a rash-producing illness, and in some studies of petechial rashes, the only thing that could be found was an ear infection.

Q. When patients have tonsillitis, do they ordinarily also have a rash on their arms, chest and lower extremities?

A. They may.

Q. When patients have pneumonia, do they ordinarily also have a rash on their arms, chest and lower extremities?

A. They may.

Q. Doctor, you answered the last two questions about tonsillitis and pneumonia with "they may," my question was do they ordinarily, and I need an answer to ordinarily?

A. Well, it cannot be answered ordinarily because of the fact that in studies of rashes and in studies of tonsillitis and

pneumonia, there are patients that do have rashes and that don't have rashes, and therefore they may have a rash.

Q. Do they commonly have a rash?

A. Again, they may have a rash. You can't -- I don't think ordinarily can really be used in context, because it depends on the individual.

Q. So you're not able to tell our jury in this case as to whether or not patients who have tonsillitis ordinarily do or do not have a rash on their arms, chest and lower extremities?

A. Well, again, it's hard to answer using that word, ordinarily, because rashes are seen with those conditions.

Q. Are you able to tell this jury whether patients with pneumonia ordinarily have a rash on their arms, chest and lower extremities?

A. Again, rashes are seen with patients who have pneumonia, so it certainly can happen.

Q. Is it common?

A. It is seen and well recognized and compatible with the diagnosis of pneumonia.

Q. And tonsillitis?

A. Correct.

Q. Having rash on your arms, chest and lower extremities?

A. Correct.

Q. When patients have viral gastroenteritis, do they ordinarily have a rash on their arms, chest and lower

extremities?

A. They certainly can.

Q. Are you aware of any authoritative medical literature that says a rash on the arms, chest and lower extremities is a ign or symptom of migraine headache?

A. As I said, my opinion is that pure migraine headache is ot associated with a rash, but the migraine headaches can occur n the context of other illnesses which are associated with ash.

Q. Are you aware of any authoritative medical literature .hat says rash on arms, chest and lower extremities is a sign or symptom of tonsillitis?

A. Well, that's a confusing question, sir, because tonsillitis is diagnosed by observation of the tonsils, but rashes associated with tonsillitis are described all the time. And, for example, if you look at the literature on petechial rashes, you will see that there are patients represented in those studies who have nothing else but tonsillitis and there is petechial rash, so these phenomena are known. But a sign of tonsillitis is looking at the tonsils and not looking at the rash.

Q. Are you aware of any authoritative medical literature that says rash on the arms, chest and lower extremities is associated with pneumonia?

A. Exactly the same answer.

Q. Are you aware of any authoritative medical literature chat says a rash on the arms, chest and lower extremities is a sign or symptom of pregnancy?

A. I don't know about the pregnancy question, I'm sorry.

Q. So you don't know?

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

Q. Do you recognize that pregnancy was included in the differential diagnosis of Dr. Hrabal in this case, sir?

MS. YATES: I want to object to the form, I think that's misstating her deposition testimony.

A. Again, sir, I'm unaware that Dr. Hrabal seriously considered pregnancy in a 14-year-old boy.

Q. Are you aware of any virus which is known to cause viral gastroenteritis, which also causes a petechial rash?

A. Sure.

Q. What?

A. Adeno virus.

Q. Pardon?

A. Adeno, a-d-e-n-o, adeno virus. And by the way, there are many bacterial causes of gastroenteritis that produce rashes, but you didn't ask me that question, I know.

Q. That is because Dr. Hrabal didn't diagnose bacterial gastroenteritis, did she, Doctor?

A. She put down her working diagnosis, let me put it that way, was viral gastroenteritis, but she did not do any cultures

of the stool to know one way or the other, but there was a working diagnosis.

Q. Well, sir, was her final diagnosis for Travis Williams on the night of May 3rd and 4th that we've been talking about, 2117 on May 3, 1996 to 0020 on May 4, 1996, was her final diagnosis for that time frame viral gastroenteritis with viral exanthem?

A. I think you put a lot emphasis on the word final. All these diagnoses are working diagnoses that are, I suppose rebuttable if testing is sent away and come back, or if the natural history changes. We do this all the time. The diagnosis is put down, is never final in the sense that it can't change or be disproved by subsequent events, but that was her working diagnosis at the time, and I think appropriate,

Q. From your review of this case, Doctor' do you know that Dr. Hrabal expected to see Travis Williams back in the emergency room following 0020 on May 4th?

A. I don't know whether she knew she'd see him again or not. I'm sure she hoped that she wouldn't, that he would get better.

Q. Is it your testimony that viral gastroenteritis with viral exanthem was not her final diagnosis for that period of time?

A. Well, again, I think we may be quibbling over words, you use final diagnosis, I use working diagnosis. I think if

he question were posed to any physician, Dr. Hrabal included, hey would say no diagnosis is final until the illness goes .way, then you may not even know the ultimate cause of a)articular illness, so that all diagnoses are provisional or 'orking diagnoses until the illness goes away.

Q. Does the fact that Travis Williams had an elevated or ibnormal white blood cell count on May 3, 1996 indicate that he iad an infection?

A. I think that would be the best interpretation of that :levated white blood count.

Q. Are lymphocytes white blood cells that are premier in :ighting viral infections?

A. Well, from any viral infection, they're the only white)lood cells you have to fight the viral infection. That's not a iundred percent true, but they're the primary ones for fighting certain viral infections.

Q. And you've reviewed Travis Williams' hematology report from May 3, 1996, did you see that his lymphocytes were reported to be low?

A. If I could just refer to my notes here. Yes.

Q. Do you agree that if Travis Williams' body was attempting to fight a viral illness on May 3, 1996, that one would expect his lymphocytes to be high?

A. No.

Q. Do you agree that if a child has a positive

rudzinski's or Kernig's signs, that a lumbar puncture should be performed?

A. If a child has a positive Kernig's or Brudzinski's sign because the doctor elected to do those tests, and if they were positive and there is no other explanation for their positivity, and if the child's clinical condition is supportive of the pending diagnosis of bacterial meningitis, then a lumbar puncture should be performed, if safe.

Q. Okay. What again is the Brudzinski's sign designed to reveal?

A. Well, as I said, both the Kernig's and the Brudzinski's signs are very uncommonly used. If one elects to use them they're designed to reveal pain on stretching of the spinal cord, and that in the Brudzinski's sign, that pain is manifest by arching.

Q. But what is the purpose of looking for the Brudzinski's and Kernig's signs?

A. I'm sorry, I thought I had explained that although it's uncommonly done, if one does it one is looking for inflammation of the spinal cord.

Q. And hence if one finds inflammation of the spinal cord by virtue of a positive Brudzinski's or Kernig's sign, one would do a lumbar puncture, is that correct?

A. Well, I think I tried to answer that with perhaps a little bit more long-winded answer. These are uncommon tests.

I know of no significant experience where the diagnosis of meningitis depended on the finding of one of these two tests. If the doctor elects to perform these tests, and if positive, and if there is no other explanation, and if it's compatible with a working diagnosis of meningitis, then a spinal tap should be performed if it's a safe procedure to do.

Q. Do you recall ever having said that a positive Brudzinski's or Kernig's sign would lead one to perform a lumbar puncture?

A. I may have said it, sir, but I'm certainly clarifying the response to that particular question in the answer I just gave.

Q. Do you agree that if one wants to have absolute knowledge that a patient has bacterial meningitis, a spinal tap is the only way to gain that knowledge?

A. Yes, it's the final confirmatory test.

Q. Do you agree that when bacterial meningitis is suspected, the first diagnostic procedure of choice is the lumbar puncture?

A. I think the answer is yes, but everything hinges on the meaning of the word "suspected."

Q. Is a lumbar puncture also called a spinal tap?

A. It is, but as I said, everything hinges on the use of the word suspected and what one means by suspected.

Q. Do you agree that older children with bacterial

meningitis are likely to complain of headache?

A. They may.

Q. Well, are they likely to complain of headache?

A. Again, they certainly may complain of headache. I'm rying to think of a series on teenage children in bacterial eningitis and the percentage that, in fact, had headache as a resenting complaint. It may have been greater than 50 percent, f course, out of all causes of headache, it's a very rare ause.

Q. So is that to say that in older children with bacterial eningitis, they are likely to complain of headache?

A. I would say the complete answer to the question is, hat probably more than 50 percent of children who are teenagers who have bacterial meningitis would complain of a headache, but out of the total causes of headache, bacterial meningitis is extremely rare.

Q. When bacterial meningitis is included in the differential diagnosis of an emergency department patient, and when that patient develops a headache while in the emergency room, do emergency physicians ordinarily take action to rule out bacterial meningitis as the cause of the patient's headache?

A. I would say that that would not be a usual approach to someone who develops a headache if based on your clinical examination your conclusion is that bacterial meningitis is unlikely in the person. There are so many causes of headaches,

t's hard to make headache the defining factor in doing a spinal ap, frankly.

Q. Do you agree that the presence of a petechial rash hould alert the physician to the possibility of meningococcemia r Rocky Mountain Spotted Fever?

A. Well, I think that a petechial rash in a febrile atient does have meningococcemia as one of the possible hoices. With regards to Rocky Mountain Spotted Fever, I think n an endemic area one would normally think of that as a possible cause.

Q. Do you agree that the absence of nuchal rigidity does ot eliminate the possibility of meningitis?

A. Correct.

Q. Do you agree that meningococcemia produces distal lesions mostly on the extremities and the trunk?

A. Are you talking about the rash that may be associated with a meningococcemia?

Q. Yes.

A. It can produce lesions anywhere on the body,

Q. Do you agree that they're mostly on extremity and trunk in cases of meningococcemia?

A. I guess I can't answer it unless you tell me in comparison to what.

Q. Do you agree that in cases of meningococcemia that a rash may be initially macular and then may become petechial?

A. I think that that sequence is relatively unusual, although it has been reported.

Q. Do you agree that of all infectious disease processes that produce these skin findings, meningococcemia is the most urgent -- most urgently demands prompt diagnosis and early initiation of therapy?

A. It's one of them, but not the only one.

Q. Can you name me an infectious disease process that produces skin findings that is equal to or greater than meningococcemia in demanding prompt diagnosis and early initiation of therapy?

A. Well, other serious conditions that are characterized by rash include bacterial endocarditis, Rocky Mountain Spotted Fever, other rickettsial diseases including typhus, rose spots of typhoid fever, ecthyma gangrenosa in someone who has a Pseudomonas disease, septic emboli from a source, those are the ones that I can think of at this stage.

Q. Do you agree that patients with meningococcemia usually appear septic with malaise, weakness, headache and hypertension in addition to the rash?

A. Could you name those items again.

Q. Yes, sir. Malaise, weakness, headache, hypotension and rash.

A. Those are some of the things that can be seen in meningococcemia, but they may not be seen in meningococcemia,

and there are other things that are seen in meningococcemia.

Q. What other things are seen in meningococcemia?

A. Well, I think most people would call meningococcemia a case of septic shock associated with meningococcal infections. As such, the hallmark of meningococcemia is shock.

Q. Do you agree that the onset of gram-negative bacteremia may be heralded by fever, nausea, vomiting, diarrhea, rashes?

A. Well, you used the word "may," and everything is possible, but I would say that would be an unusual presentation.

Q. So you do not agree that the onset of gram-negative bacteremia is commonly heralded by fever, nausea, vomiting, diarrhea and rashes?

A. Yes, I would say that constellation is not a common one that is seen in gram-negative sepsis.

Q. What about being seen in gram-negative bacteremia?

A. Same thing.

Q. Do you agree that meningococcemia usually follows an upper respiratory tract infection with flu-like symptoms of headache, myalgias, nausea and vomiting?

A. That was a very precise question you asked. I would say that greater than 50 percent of meningococcemia occurs in the context of or following a general nonspecific illness that either may be respiratory or gastrointestinal.

Q. And would it include symptoms of headaches, myalgia, nausea and vomiting?

A. They may, but not necessarily just confined to that List. As I said, it could be respiratory, gastrointestinal, that sort of thing.

Q. But those are common symptoms?

A. Well, those are common symptoms of all kinds of illness, but I don't want to be restricted to that list.

Q. But that includes meningococcemia, they're common symptoms of meningococcemia?

A. I'm confused, sir, I thought your question was being asked to me as to whether or not meningococcemia follows a viral illness in which some of those symptoms may be found. And I said, yes, greater than 50 percent of the cases of invasive meningococcal disease occur in the context of or following a viral illness, usually of a respiratory or gastrointestinal type, in which some of those symptoms may be found, but not necessarily all of them, and there are other symptoms that may be present as well.

Q. Did you understand me to use the word viral in any part of the questions I asked you in that regard?

A. I believe you said viral.

Q. Would it be correct to say that the most frequent complication of meningococcemia is meningitis?

A. Well, now we're getting to the use of terms. Meningococcemia implies meningococcal septic shock. As such, meningitis is probably only present 30 to 40 percent of the time

n meningococcal septic shock. But one of the common presentations of invasive meningococcal disease *is* meningitis.

Q. Has rapid antibiotic treatment been shown in medical studies to favorably affect the prognosis of patients with Tram-negative infections?

A. Are you talking about all gram-negative infections or meningococcemia infections?

Q. I'm talking about just the question **I** asked you, sir. Has rapid antibiotic therapy been shown in medical studies to favorably affect the prognosis of patients with gram-negative infections?

A. I don't know if I can answer it because of the confusion I have regarding the word rapid.

Q. And what does rapid mean to you?

A. Well, I don't know, you were asking me the question.

Q. I say what does it mean to you?

A. Well, I just don't know, I don't usually use the word rapid, I don't use that phrase, so I'm sorry.

Q. So you don't use the word rapid?

A. Not in the context in which you used it.

Q. Do you know what the word rapid means?

A. It means different things in different sentences.

Q. Like, give me an example of how the word rapid would mean something different from fast or quick?

A. But again, fast and quick don't convey to me exactly

what you mean by the question, so I can't answer the question as stated, I'm sorry.

Q. Could you answer the question if we substituted the word fast?

A. No, I don't think I can.

Q. Could you answer the question if we substituted the word quick?

A, No.

Q. Could you apply your own definition of rapid as you commonly use it and answer the question?

A. Let me put it this way, the timing of antibiotics in the context of an illness which is gram-negative septicemia, to my knowledge has not been shown to be related to outcome.

Q. Have medical studies shown that antibiotics significantly improve clinical outcome in patients with shock associated with gram-negative bacteria?

A. Again, I do not know of a convincing series of studies that show that the timing of antibiotics is related to the outcome in gram-negative shock.

Q. Now, do you agree that in emergency departments antibiotic therapy is based on a prediction of the most likely pathogen?

A. The choice of antibiotics is based on a prediction of the most likely pathogens, yes.

Q. Do you agree that the mortality rate of bacterial

meningitis has been reduced from virtually a hundred percent to five to ten percent since the arrival of effective antibiotics?

A. Well, I don't think those numbers are accurate, but the overall reduction of mortality has been seen with antibiotics.

Q. So would you disagree that the mortality rate of bacterial meningitis has been reduced from virtually 100 percent to five to ten percent since the arrival of effective antibiotics?

A. Well, the virtually 100 percent number is not entirely accurate. It really depends on the organism one is talking about. In H. flu and pneumococcal disease it was about 95 or 96 percent fatal. In meningococcal disease it was only about 50 percent fatal. But in all instances the arrival of antibiotics has indeed brought that down to a lower level, yes.

Q. And that lower level would be five to ten percent?

A. Well, the best studies on pneumococcal disease would be about 15 percent, with meningococcal disease in general, in meningitis it's probably two to three percent, meningococcemia more like five to ten percent, H. flu about five percent.

Q. And the effectiveness of antibiotics in dealing with meningitis is because when a patient has meningitis as opposed to meningococcemia, that's actually a good sign, is that right?

A. There are many studies that say that in the context of meningococcal disease, the presence of meningitis is a good prognostic sign from the point of view of death. There have

been some recent studies that have questioned that, however.

Q. Who were the authors of those studies?

A. Which studies, sir?

Q. The ones you just mentioned that questioned that?

A. I would have to go back to my files to find out the authors, I'm sorry.

Q. Would you be kind enough to do that and provide that information to counsel to where I can have that?

A. If I can fihd it, I'll do it.

Q. Is the purpose for giving antibiotic therapy to people suspected of having bacterial meningitis to decrease the mortality of the disease and to prevent further growth of the bacteria?

A. A compound question, I'll try to answer them independently. Yes, the purpose of giving antibiotics fundamentally is to save the life of individuals from a disease that was highly fatal. As regards the killing of the bacteria, the mechanism of action of antibiotics is to kill bacteria.

Q. I was just trying to state it the way you stated it in the Bechstein deposition, that's the reason I phrased it that way. I'm phrasing it the way you're phrasing it.

A. Well, of course, my answers in particular depositions have to do with the case involved and the way questions are being asked.

Q. Right. Do, physicians generally withhold antibiotics

from children suspected of having bacterial meningitis?

A. No.

Q. Do you agree that presumptive use of antibiotics is given when a child has an unreasonable risk of having meningitis until one knows that the child does or doesn't have meningitis?

A. Yes.

Q. And I believe you have already said the purpose of mtibiotics in these cases is to kill the bacteria, is that right?

A. Yes, sir.

Q. And antibiotics will kill Neisseria meningitidis bacteria, is that correct?

A. The correct antibiotics will.

Q. And what are those?

A. Normally one uses the penicillin family drug or a cephalosporin family drug. In some parts of the world they use chloramphenicol for the same purposes.

Q. And killing the bacteria with antibiotics reduces the inflammatory response of the body to those bacteria, is that right?

A. Over the long run, yes.

Q. And --

A. But not over the short run, by the way.

Q. And it's the inflammatory response which causes injury in bacterial meningitis cases, is that right?

A. That's correct, but the inflammatory response is not affected in the short run, so that if injury happens in the short run, the antibiotics could not have prevented that.

Q. Do you agree that it is logical to conclude that more rapid diagnosis and treatment will improve outcome *of* patients with bacterial meningitis?

A. At this stage of knowledge of the entity, I doubt it very much.

Q. And the stage of knowledge, of course, that we're interested in, Doctor, is the first week of May, 1996, and so with that context let me ask you, do you agree that it is logical to conclude that a more rapid diagnosis and treatment will improve the outcome of patients with bacterial meningitis?

A. Well, you're asking a biological question, and biological questions I think, have to be'answeredgiven the most informed state *of* knowledge. And I believe that it was true in 1996 and it is true now as well, that probably earlier diagnosis is not going to alter the outcome of bacterial meningitis. The outcome will be altered by prevention of meningitis entirely.

Q. So you would disagree with the statement that it is logical to conclude that more rapid diagnosis and treatment will improve the outcome of patients with bacterial meningitis?

A. **I** don't believe that's so now, sir, no, given the state of illness that we have.

Q. Again, sir, I'm not trying to quibble with you, but

making an answer that you don't believe that's so now, that is violating **your** promise to me to tell me what was so in the first week of May, **1996,** and so if we want to proceed with this deposition you understand that you've got to stick with your -- with the arrangement that we made.

A. Yes.

MR. PINSON: I'm going to object to that as being a misstatement of what he agreed to at the beginning of the deposition, and clearly the record will show he stated that he would give you that time limitation as it related to standard of care, but he also noted there were biological questions that would not be limited by time, and that's how he has responded to this question.

MS. YATES: I'll join in that.

Q. Doctor, in the first week of May of 1996, do you agree that it was logical to conclude that more rapid diagnosis and treatment will improve the outcome of patients with bacterial meningitis?

A. Well, I think you're asking me two questions there, sir, you're asking me for what is the truth of the question, and you're asking me what was the state of the knowledge in 1996. In 1996 I think that there was growing evidence that the timing of antibiotics didn't really influence outcome. In 1999 we know that the closest answer to the truth is that it does not affect outcome.

Q. So you would disagree with that statement?

A. I would disagree with that statement as embodying the best answer that gets to the truth.

Q. For May, the first, week of May 1996?

A. I just -- you're asking now a state of knowledge question, and in 1996 I think there was growing evidence that the timing of antibiotics was not related to outcome in bacterial meningitis. This is a biological question, and one can only answer biological questions based on the most accurate information whenever one has it.

Q. Do you agree that if bacterial meningitis is suspected, antibiotic therapy should not be unnecessarily delayed for any reason?

A. Yes, the key word there is unnecessarily delayed. Antibiotics may not be given because there are other priorities involved, but they should not be withheld for no reason at all.

Q. And what would those other priorities be?

A. For example, stabilization of shock, an individual may have a serious coexisting condition that needs to be addressed first, things of that sort.

Q. Do you agree that it's quite clear that the earlier you treat meningitis the better the outcome?.

A. No, that's a false statement.

Q. Does that sound like a statement that you may have made?

A. I think I probably made it within the following setting, one was a particular case, situation. There are instances in which timing does influence outcome, for example, if a child has clinically apparent meningitis. The best data supports the notion still that inappropriate delays incrementally worsen the outcome. But if that were a statement made before I did my fundamental research in trying to answer the question, and if that were a statement that was made before the validating studies that occurred after my own study, then I would say the state of medical knowledge has evolved from the time in which that statement was made.

Q. Do you agree the longer a child goes without therapy the worse the outcome?

A. I think I've answered the question in my prior answer, sir.

Q. So your prior answer would be the answer to this question?

A. Correct.

Q. You don't disagree that you said that at one time?

A. I don't disagree that I probably said that at one time, but I think it was, A, case specific, and B, it was probably said at a time prior to the evolution of medical knowledge.

Q. Would it be correct to say that experimental studies regarding withholding of antibiotic treatment in human beings with bacterial meningitis have never been done?

A. That's correct.

Q. Would it be unethical and immoral to conduct such a study?

A. Well, I thought unethical and immoral were pretty much the same thing, but, yes, no one would go about conducting that study, clearly.

Q. Do you agree that most physicians administer antibiotics immediately when they suspect a patient has a meningococcal infection?

A. Yes, immediately includes the proviso that I've mentioned before, that there may be other even more serious priorities that you would attend to first before giving the antibiotics. But you certainly give the antibiotics in a timely manner once you've made the clinical diagnosis.

Q. Do you agree that the treatment for bacterial meningitis in 1996 included antibiotic therapy and general supportive care?

A. Yes.

Q. Does general supportive care include fever control, addressing issues of fluid and electrolyte management, the search for other organ injury, and management of that injury in dealing with issues of the brain itself which can manifest themselves as seizures, brain edema or increased intercranial pressure?

A. Yes, yes.

Q. Do you agree that corticosteroids should be given in any case of suspected bacterial meningitis in children?

A. No.

Q. Are corticosteroids used to reduce brain swelling and intercranial pressure?

A. No, not in bacterial meningitis. They are in other conditions, but not this condition. By the way, there is nothing wrong with giving the steroids, but it's not mandatory except in cases of H. flu meningitis. There is a great debate as to whether steroids, in fact, improve outcome and that of course, is another portion of the evolving nature of medical knowledge.

Q. I think we've probably established these things, but I want to run quickly over a couple of things with you. We've said that the Neisseria meningitidis is a bacteria, correct?

A. Yes.

Q. And it's a gram-negative bacteria, right?

A. Yes.

Q. It's microorganism, right?

A. Yes.

Q. And also called a pathogen, right?

A. Yes.

Q. And lay people might refer to it as a germ.

A. Absolutely.

Q. Okay. And in the same -- Neisseria meningitidis causes

gram-negative infection?

A. Well, it is a gram-negative organism, and it does cause infections.

Q. Right. And do you agree that bacterial meningitis is a potentially rapidly progressive and life threatening disorder?

A. Yes.

Q. Do you agree because bacterial meningitis is potentially a rapidly progressive and life threatening disorder, that clinicians must be able to diagnose the disease and initiate appropriate therapy quickly?

A. Yes, with the proviso that quickly is used in the same sense and with the same philosophy that I've answered all previous questions.

Q. Is bacterial meningitis one of the true infectious disease emergencies?

A. I would not say that it's an emergency in the sense that we talk about heart attacks, suffocation, things that are going to kill you immediately, those truly are emergencies. It certainly is a medical urgency, and many people might say a medical emergency, but they would clearly differentiate it from true emergencies which are those things where your heart stops or you're not breathing.

Q. Have you seen medical literature that said bacterial meningitis is one of the true infectious disease emergencies?

A. Yes, I've seen literature like that, but here's one of

those instances again where everything depends on what someone means by the word they use.

Q. Is bacterial meningitis predominantly a childhood disease?

A. Yes, up until the last year.

Q. Now I'm the one that's confused. What does that mean?

A. Well, over the last year the evidence suggests now that the peak age for bacterial meningitis has changed because of vaccines, and is now becoming a disease of teenagers and young adults and the very aged.

Q. So in May 1996, it would be a childhood disease predominantly, to include teenagers if they were included now too?

A. It can happen at any age, certainly.

Q. Right. Do you agree that the presence of bacterial meningitis must be a primary concern in evaluating any child with symptoms or signs suggesting infection?

A. I'm going -- it's too broad a statement, and it's very hard to agree with such a broad statement, I'm sorry.

Q. So you don't agree?

A. It's too broad a statement to be able to agree.

Q. Okay. Do you agree that one common mistake that health care professionals make is to assume that the presence of one infectious syndrome excludes the coexistence of bacterial meningitis?

A. I think that can be a pitfall.

Q. Are commonly accepted signs and symptoms of bacterial neningitis, do they include fever, vomiting, headache?

A. I'm sorry, sir, I was waiting for the end of your question.

Q. That was the end of it.

A. Oh, that was the end of it. They can be seen in bacterial meningitis, but they're seen in so many illnesses in childhood that bacterial meningitis is an uncommon cause of those things.

Q. Is petechial rash classically associated with septic shock and meningococcemia?

A. A petechial rash is not associated with shock necessarily.

Q. Septic shock.

A. That's what I mean, not associated with shock, and septic shock includes you're both infected and you're in shock.

Q. Okay.

A. But it is seen in cases of meningococcemia although not exclusively, obviously. But of all causes of petechiae, meningococcemia is a rare cause.

Q. Is that to say that petechial rashes are classically associated with meningococcemia?

A. It is to say that petechial rashes are seen commonly in meningococcemia, but meningococcemia is not seen commonly in

petechial rashes

Q But you do not agree that petechial rashes are classically associated with septic shock?

A. As a general proposition, no

Q Do you agree that urinalysis and urine culture tests, both of those tests, may be used to provide an indication of a source for seating of the meninges in bacterial meningitis cases?

A. No.

Q What is the average time found in bacterial meningitis cases from the time of presentation in the emergency department until the time of the first administration of antibiotics?

A. There have been two studies, and I believe the median time in children who have the diagnosis of meningitis made on that visit in the emergency department is somewhere between three and four hours.

Q Do you agree that the standard of care is that if there is a possibility of meningitis, a spinal tap is performed?

A. Everything depends on the use of the word possibility, I can't answer the question

Q. How so?

A. Well, i there is a meaningful possibility, an actionable possibility of bacterial meningitis a spinal tap should be performed But, you know, as the vic said, we're all either about to get meningitis, getting meningitis, or not going

to get meningitis, if you understand what I mean. So that one always thinks of bad things in children who are ill, but things are rarely there. They're unlikely, and unless something has a likelihood of being present, to the extent that it would normally induce a further evaluation, that evaluation should not be done.

Q. Should bacterial meningitis be part of the differential diagnosis in every child sick with a fever?

A. Yes, in the'sense that I've just mentioned, that you always think of bad things, but you usually end up excluding them as a reasonable possibility based on your clinical impression and examination.

Q. When 14-year-old boys come to an emergency department with viral gastroenteritis with viral exanthem, do they usually come into the emergency department in a wheelchair?

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

Q. When 14-year-old boys come to an emergency department with viral gastroenteritis with viral exanthem, are they usually unable to walk?

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

Q. When 14-year-old boys come to the emergency room with viral gastroenteritis with viral exanthem, are they usually unable to stand upon scales in order to be weighed?

A. It depends upon the patient.

Q. When 14-year-old boys come to an emergency department

with viral gastroenteritis with viral exanthem, do they usually lave left foot pain?

A. No.

Q. When 14-year-old boys come to the emergency department with viral gastroenteritis with viral exanthem, do they usually nave tenderness to palpation of the left ankle joint?

A. I would suspect not.

Q. When 14-year-old boys come to the emergency room with viral gastroenteritis with viral exanthem, do they usually have a high white blood cell count?

A. It's certainly common, I just don't know what the percentages would be.

Q. When 14-year-old boys come to the emergency room with viral gastroenteritis with viral exanthem, do they usually have abnormally high neutrophils?

A. It's commonly seen, I just don't know what the percentages are.

Q. Do they usually have under those circumstances, hypotension?

A. Is this a hypothetical question, sir?

Q. When 14-year-old boys come to the emergency room with viral gastroenteritis with viral exanthem, do they usually have hypotension?

A. It depends on the patient.

Q. Do they usually have respirations of 20?

A. It depends on the patient.

Q. Do they usually have a pulse rate of 110?

A. It depends on the patient.

Q. Do they usually have a pulse rate of 114?

A. It depends on the patient.

Q. Do you they usually have a widened pulse pressure?

A. Depends on the patient.

Q. Do they usually have a petechial rash?

A. Depends on the patient.

Q. Is it your testimony that a 14-year-old boy in an emergency room with a petechial rash is likely to have viral gastroenteritis with viral exanthem?

A. Is this a hypothetical question?

Q. Yes, sir.

A. It would depend on what else is being seen in that particular patient. I'm not convinced that this patient had a petechial rash. But if this patient did have a petechial rash, that could be entirely due to the vomiting, the diarrhea and the presence of the viral exanthem.

Q. Do you agree that patients who have viral gastroenteritis also have abdominal cramps?

A. Yes.

Q. Do you agree that patients who have viral gastroenteritis ordinarily also have hyperactive bowel sounds?

A They may.

Q. Are hyperactive bowel sounds common in cases of viral gastroenteritis?

A. Yes, they can be seen commonly.

Q. Would it be correct to say that the diagnosis of the viruses which cause viral gastroenteritis require microscopic examination of a stool specimen?

A. Well, conventional microscopy can't make a diagnosis, you would have to use electromicroscopy, or you'd have to use actual growth or otherwise cultivation of the virus. Conventional microscopy cannot make the diagnosis.

Q. Do patients with viral gastroenteritis ordinarily have pain and disuse of a limb?

A. They can.

Q. Is that common?

A. Not as common as the other things you just asked me about.

Q. Are you aware of any medical literature which says that pain and disuse of a limb is a sign of viral gastroenteritis with viral exanthem?

A. I think the medical literature goes towards looking at viral and gastrointestinal causes of arthralgia. I don't know of a study per se that looks at the incidence of arthralgia in children with viral gastroenteritis.

Q. So if one did a study of viral gastroenteritis in Medline or some other standard source of research, one would not

expect to find any study which associated viral gastroenteritis with viral exanthem with pain and disuse of a limb, is that right?

A. No, you would have to go after it by looking up arthralgia and arthritis and looking at the various causes of arthralgia and arthritis. And you will see listed in those various causes viral illnesses, some of the viruses causing gastroenteritis and bacterial illnesses, some of the bacterial causes *of* gastroenteritis that might look viral to a clinician. That would be the way to approach it.

Q. Because medical literature on viral gastroenteritis with viral exanthem does not show pain and disuse of a limb to be signs and symptoms of viral gastroenteritis with viral exanthem, does it?

A. I'm not surprised.

Q. It does not?

A. I've not done the search myself, but I'm not surprised.

(Discussion off the record)

Q. Okay. Do you agree that pain and disuse of a limb would not explain viral gastroenteritis with viral exanthem?

A. I don't understand the question, I'm sorry.

Q. Well, previously in your testimony, as I have understood your testimony, you have said that there were certain signs and symptoms that would explain illness. We talked about that at length.

A. At the beginning, we talked about that as a general proposition.

Q. Right. And now I'm interesting in focusing in on those signs and symptoms which we talked about. And one of those signs and symptoms that we talked about was disuse of a limb, which I am now seeking to apply to this diagnosis that we have in this case. So my question is, do you agree that pain and disuse of a limb would not explain viral gastroenteritis with viral exanthem?

A. It's just confusing the way you're asking the question. The gastroenteritis is one thing, and exanthem is another thing, pain and disuse of a limb is another thing. They all may be caused by the same thing.

Q. So is it your testimony then that a diagnosis of viral gastroenteritis with viral exanthem can be explained by pain and disuse of a limb?

MR. PINSON: At this point I'm going to object to the form of the question, to the use of your words, or your terms "can be explained," I think that's the problem and he is not understanding what that means, I would object to that on the basis of form. If you can answer it, Doctor, go ahead.

A. I'm sorry, sir, I can't answer the question as stated. I tried to give you what I thought was the answer to what I thought you were asking me in my prior answer.

Q. Do you agree that septic arthritis would not explain

viral gastroenteritis with viral exanthem?

A. Two separate conditions.

Q. So septic arthritis is not associated with viral gastroenteritis with viral exanthem?

A. That's correct, those are two different medical conditions.

Q. Do you agree that a petechial rash would not explain the diagnosis of viral gastroenteritis with viral exanthem?

A. Again, it's the way of asking the question that confuses me, and I can't answer it. I apologize.

Q. Are all of the signs and symptoms exhibited by Travis Williams on the night of May 3, 1996, 2117 to 0020 May the 4th, explained by a diagnosis of viral gastroenteritis with viral exanthem?

A. All of the signs and symptoms can be associated with causative agents leading to viral gastroenteritis with an exanthem, so it's an adequate working diagnosis, yes.

Q. What is your definition, Doctor, of a working diagnosis?

A. The old joke is that the only person who is absolutely right in medicine is the pathologist. All diagnoses are working diagnoses in the sense that you are making your best estimate as to what the cause of an illness is. But if things change or if the results of tests come back that push you away from that diagnosis, then you reformulate it as another working diagnosis

A working diagnosis is the best estimate of illness given the information available at the time.

Q. And what is your definition of a final diagnosis?

A. Final diagnosis can usually only be given retrospectively.

Q. And by that, what do you mean?

A. Well, once the illness has played itself out, or once the tests are all in, or once the tissue has been submitted to the pathologist, one is able much of the time to come up with a final answer as to what the cause of the illness was. But that can only be done retrospectively, in many cases.

Q. So is it your testimony that Dr. Hrabal's diagnosis of viral gastroenteritis with viral exanthem made on the night of May 3, 1996 was merely a working diagnosis?

A. It was a working diagnosis for her at the time. I believe that it was the true diagnosis in retrospect. But she couldn't know that because she's dealing in real-time at the time of seeing the patient.

Q. But it's your opinion that it was the true diagnosis?

A. That is correct.

Q. The correct diagnosis?

A. Correct.

Q. Now, is it within the standard of care to discharge a 14-year-old boy from the emergency room with vital signs of temperature of 102 degrees, pulse of 114, respirations of 18,

and blood pressure of 107 over 34?

A. In this case, yes.

Q. And why do you say that?

A. Because globally this was a child who was clinically improving, who did not have an apparent serious illness which demanded further therapy, and under those -- and had a working diagnosis that made sense. And under those conditions the set of vital signs that you just enumerated would not dissuade a reasonable doctor from sending the child home as long as there were -- there was adequate follow-up suggested to the family, and the family was willing to contact the medical community again if the child got worse.

Q. You said, I believe, that at the time of his discharge Travis was in an improved condition, is that correct?

A. That's correct.

Q. Okay, looking at Travis's vital signs, did he have a temperature of 102.1 degrees when he came to the emergency room?

A. Yes.

Q. Did he receive fluids while he was in the emergency room?

A. Yes.

Q. Did he receive Motrin and Tylenol while he was in the emergency room?

A. I believe he received both of those, yes.

Q. Do you --

A. I have this memory that he may have thrown up something, so I don't know how much of everything got down, but I believe an attempt was made to give him something for the fever.

Q. Do you think -- in your opinion, had Travis's temperature significantly improved between the time of arrival and the time of discharge?

A. It was about at the same level.

Q. Because it was 102.1 upon arrival, and 102 upon discharge, is that right?

A. Correct.

Q. So the temperature was the same?

A. Correct.

Q. Now, his pulse on arrival was 110, is that right?

A. Correct.

Q. And his pulse on discharge was 114?

A. Correct, about at the same level.

Q. So that had not improved?

A. Well, under the circumstances it was the pulse rate you would expect with someone with that degree of fever, so there was nothing to improve.

Q. I'm not following you.

A. Pulse rate rises with fever. With a fever of 102, you would expect a pulse rate around that level in a normal individual. Consequently, if he left with a fever, you would

not expect his pulse rate to have come down at all.

Q. You would agree that a 114 pulse rate is worse than 110?

A. In all honesty, sir, it's the same level of pulse rate. These things are usually determined either by counting for 15 seconds and multiplying by four, or more usually looking up at a monitor. And a monitor measures two heart beats, integrates the time between the two heart beats and projects out what the rate would be per minute. So it changes second to second and gives you numbers that go up and down and up and down. But they're all in the same range. So a heart rate of 114 and 110 are not significantly different.

Q. Well, 114 is four beats worse.

A. It's a different number, but it's not significantly different than 110.

Q. Okay.

A. And it's expected with this level of fever.

Q. And blood pressure, he came in with 113 over 49, correct?

A. Correct.

Q. And he was discharged with 107 over 34?

A. Correct.

Q. Would you agree that that is a substantial difference in blood pressure?

A. His diastolic is lower, yes.

Q. Much lower, substantially lower, correct?

A. It's certainly lower.

Q. Significantly lower.

A. I would say it's lower.

Q. So with respect to his vital signs, Travis Williams had not improved while he was in the hospital, is that correct?

A. I would say his vital signs were about the same when he left as when he came in.

Q. And in addition to his vital signs, he had developed a headache while he was in the emergency room that night, correct?

A. Correct.

Q. So his condition was worse because of that as well, correct?

A. Well, that's a new finding or new complaint, certainly. I don't think that that's a worsening condition, but it's a new complaint.

Q. And that complaint was registered and recorded at midnight on May 3, 1996, is that right?

A. Correct.

Q. That's just 20 minutes before he was discharged, is that right?

A. Correct.

Q. What do the records indicate that Dr. Hrabal did to evaluate that headache?

A. The records indicate nothing at all. Let me put it

this way, the records indicate -- they're mute on the topic you just asked me about. The records have no indication one way or the other.

Q. Well, they're not mute on the fact that he had the headache at midnight.

A. I didn't say that.

Q. They're not though, that's correct?

A. No, they're not.

Q. The only thing is that you can't look at this record and tell that Dr. Hrabal did anything about that headache, is that correct?

A. There is no notation in the records one way or the other.

Now, while Travis Williams was in the emergency department that night, May 3rd, May 4th time frame we're talking about, do the records indicate that he had a stiff neck?

A. No.

Q. Do they indicate that he had photophobia?

A. I believe so.

Q. Do they indicate that he had disordered cognition?

A. No.

Q. Do they indicate that he had fulminant meningitis?

No.

Do they indicate that he had fulminant meningococcemia?

A. No.

Q. And he didn't have any of those things that I've just listed?

A. No, he didn't have any of those things.

Q. Does a diagnosis of viral gastroenteritis with viral exanthem adequately explain why Travis could not walk that night?

A. Yes.

Q. And how does it do that?

A. My best interpretation is that he had arthralgia, meaning pain in his joints due to the organism that was causing his gastroenteritis and exanthem, not an uncommon occurrence.

Q. And similarly, would you say that the diagnosis of viral gastroenteritis with viral exanthem adequately explains why he couldn't stand on the scales to be weighed?

A. Well, yes.

Q. For the same reason?

A. For the same reason.

Q. And would you say that adequately explains why he was in the wheelchair when he came into the emergency room, while he was in the emergency room and when he left the emergency room?

A. Sure.

Q. For the same reasons?

A. Sure.

Q. Do you agree that joint pain can be the sole organ manifestation of bacterial infection?

A. In septic arthritis, yes, or infection of the bone around the joint, yes.

Q. What did you find in the records, if anything, to indicate what was done to assess the problem that he was having with his left ankle joint that night?

A. There was just an examination. I say just, there was an examination done of the limb.

Q. In other words, the people working in the emergency room looked at it?

A. No, examined it and palpated it.

Q. Okay. And the palpation revealed that he had tenderness to palpation on the left ankle joint?

A. Yes, tenderness of palpation without signs of cellulitis or infection.

Q. What does the term "sad affect" mean?

A. I saw that. I presume it means that to someone on the outside he looked sad, his demeanor was one of a person who was sad.

Q. Is sad affect a proper clinical diagnosis by a nurse?

A. Actually, it's quite descriptive, I thought.

Q. Does a 14-year-old boy with sad affect have a normal mental status?

A. Yes.

Q. So is that to say 14-year-old boys normally have sad affect?

A. Well, that's assuming 14-year-old boys ever have a normal mental status, I suppose. Expression of emotion is normal. People who have blunted consciousness do not express emotion very well. Sad affect is a good thing to see because it is an expression of emotion.

Q. What does the word malaise mean?

A. It means feeling bad.

Q. Does a 14-year-old boy with malaise have a normal mental status?

A. It has nothing to do with mental status. But someone who can tell you that they don't feel bad is normal, and that is reassuring as regard to mental status.

Q. So what is malaise?

A. Feeling bad.

Q. What does the word lethargic mean?

A. Different things to different people.

Q. So you can't tell me what the accepted definition of lethargic is?

A. There is no definition of lethargic. I have nurses who come in and say, I feel really lethargic today.

Q. Is there a definition of lethargy?

A. Not one that everyone agrees to. That's why people have tried to come up with objective ways to score. For example, the Glasgow coma scale is an example of an objective scoring system that does not rely on the vagaries of individual

use.

Q. If a 14-year boy has malaise, sad affect and is sleepy during normal hours of wakefulness, can he properly be described as lethargic?

A. You'd have to ask the person who uses the word.

Q. Would you agree that altered level of consciousness is correctly defined as a meaningful deviation from the normal expected behavior for a child at this age?

A. That's a beautiful definition.

Q. That's one you gave.

A. Oh, well, that's good.

Q. It's yours. Do you agree that hallmark signs of bacterial meningitis include fever, and an altered level of consciousness?

A. Yes, I think I've already said that.

Q. Do you agree that a spinal tap should be performed in anybody with a fever and altered level of consciousness that has no other explanation?

A. I think it should be strongly considered. It's usually done. You know, as a general rule probably so. There may be some mitigating circumstances in individual cases.

Q. And I believe you previously said that that would be true for all ages?

A. Yes, even adults.

Q. Okay. Mr. Franklin has sent me a letter telling me, o

advising me what your and Dr. Talen's anticipated testimony would be, and he says this, "With regard to the follow-up telephone conversation between Dr. Hrabal and Mr. Williams, Doctors Talen and Radetsky will testify that if Dr. Hrabal's version of the telephone conversation is accurate, that the advice that she gave was well within the standards of care." Do you recall enough about that telephone conversation to answer whether that would be your opinion as Mr. Franklin stated?

A. Yes, I recall.

Q. And is that your opinion?

A. Yes.

Q. Okay, then he goes further. He says, "On the other hand, if Doctors Talen and Radetsky are to assume that Mr. Williams' version of the telephone conversation is accurate, then Dr. Hrabal violated the standard of care." Is that also your opinion?

A. Yes.

Q. So if Mr. Williams' version of the telephone conversation is accurate, then Dr. Hrabal violated the standard of care, correct?

A. Yes, correct.

Q. Okay. In 1992, did you write an article published in the Pediatric Infectious Disease Journal entitled, "Duration of symptoms on outcome in bacterial meningitis: And analysis of causation and the implications of a delay in diagnosis"?

A. Yes.

Q. Did that article address the timing of antibiotics in connection with bacteremia?

A. No.

Q. Have you ever published an article about the timing of mtibiotics in connection with bacteremia?

A. No, no one to my knowledge has..

Q. Okay. And did your article address the timing of mtibiotics in connection with sepsis?

A. No.

Q. Okay.

A. And to any knowledge, no one has.

Q. And you haven't, and no one has?

A. Correct.

Q. Okay, and did your article address the timing of antibiotics in connection with meningococcemia?

A. No, and to my knowledge no one has. But if I could just say, when I say no one has, no one knows when a bacteremia begins, or when sepsis defined as bacteremia with infection begins, or when meningococcemia begins. Therefore, no one, in human beings at any rate, can conduct studies in which you vary the timing of antibiotics in someone that you know has a bacteremic disease. For that reason, no one has been able to publish such a study.

Q. Right, and that's what we were talking about when we

said it would be immoral to conduct such a study, is that right?

A. Yes.

Q. And there cannot be a study like that because no physician is supposed to withhold antibiotics to a patient who has bacterial meningitis, is that correct?

A. That's correct, sir.

Q. Okay. So there would never be any way to verify by a prospective study whether timing of antibiotics has an effect on outcome or not, is that correct?

A. You could never do in a prospective study an analysis of the effect of timing of antibiotics in known meningitis or bacteremia. All you can do is look at the symptoms and outcome.

Q. And because you can't withhold antibiotics from somebody that has bacterial meningitis?

A. That's correct.

MR. PINSON: Let's take about five minutes.

MR. TAYLOR: Sure.

(Recess taken at 1:06 p.m.)

(Deposition resumed at 1:12 p.m.)

Q. Okay, we were talking about this 1992 article, Doctor, just to get back on track here. Would it be correct to say that in this article you presented your views in connection with the timing of antibiotics in connection with meningitis?

A. No, that's not accurate.

Q. Okay, what did you do in this article?

A. What I did was to utilize the existing data that had been reported in every study that had relevant data, and subjected them to a standard epidemiologic analysis, out of which came conclusions which I expressed in the article.

Q. I see. Is that to say that you did not do any original research on your own?

A. Well, this was original research.

Q. In the sense of medical studies?

A. Well, this was an original article with original research. In order to try to answer questions like this, one needs a very, very large number of patients, more than anyone can accumulate in their own single experience. Therefore, in order to try to investigate the area, one actually needs too use the data of other investigators, which is what I did. I did not enroll patients, but in no way does that mean this was not original research.

Q. Did you use any data that you collected yourself on patients?

A. I did not enroll patients.

Q. Okay, by not enrolling patients, you did not have any contact with any of the patients mentioned in your study, is that correct?

A. Correct.

Q. You don't know any *of* the patients mentioned in your study, do you?

A. I don't believe so.

Q. Okay. Did you look at the medical records of any of the patients involved in your study?

A. No.

Q. What you looked at was articles that had been written by doctors who had worked with those patients and had access to their medical records, would that be correct?

A. No, what I looked at were the data presented in articles published by other investigators.

Q. Right. In other words, you looked at, I believe there were 22 studies, is that correct?

A. Well, there are only 22 studies that had the relevant data points that I could use for my analysis.

Q. Right, but that's the 22 that you picked to use in this article, is that correct?

A. Yes. I reviewed more than 22 studies, but only 22 studies had the relevant data for analysis.

Q. I see. What is a minimum design standard?

A. It was a concept that I created for the sake of this one particular article in which I asked the question, did the data units derived from these studies clearly express a definition of the meaning of duration of illness; did they present clearly outcome criteria; and did they analyze their information by a statistical means?

Q. And out of your 22 studies, how many studies met the

minimum design standard?

A. Nine percent.

Q. Out of 22?

A. Correct.

Q. Now, when a medical study does meet the minimum design standards, does that mean that the result of the study is more powerful when judged against other studies?

A. No.

Q. Have you ever testified to that effect, Doctor?

A. I don't honestly know the answer to that question, sir. But the most powerful aspect of these studies was whether it was a prospective or retrospective study. The minimum design standard from my point of view was a useful concept because it gave me better information as to the meaning of some of the data. But the most important piece of information about a study was whether it was prospective or retrospective in nature.

Q. But you would agree that only two of your 22 studies that you discussed in your article met the minimum design standard, is that right?

A. That's correct.

Q. Other studies were flawed in some way?

A. All the studies were flawed in some way.

Q. Even the two that met the minimum design standard?

A. Sure, because they were both retrospective.

Q. And the two that did meet the minimum design, did

either one of them deal with bacterial meningitis caused by Neisseria meningitidis?

A. I honestly don't recall, sir. I think one of them was the one by Dr. Hodd and Dr. Herson, which was primarily hemophilus influenza disease.

Q. And in fact, both of them were hemophilus influenza disease?

A. I trust you with that.

Q. At any time relevant to this case, has Travis Williams had hemophilus influenza disease?

A. No.

Q. Now, when we're talking about whether there is an association between duration of symptoms and outcome, are we talking about the shorter or longer a patient has symptoms relative to the outcome, is that what that means?

A. Yes.

Q. Okay. And would it be correct to say that the shorter the duration of symptoms, then generally.the better the outcome is?

A. No.

Q. Did 59 percent of the studies that you wrote about in your 1992 article find an association between duration of symptoms and outcome?

A. If you'll recall from the article that I analyze the data two ways. In the statistical -- well, a better word, in

he arithmetic analysis, 59 percent of the studies seemed to show an association between duration and outcome. All of them were retrospective, as you know. Forty-one percent showed no relationship, all of the prospective studies were included in that group. And then as you know from reading the article, that I reanalyzed it depending on the presenting type of meningitis in terms of constellation, and those were the three subcategories of meningitis.

Q. But with your arithmetic analysis, 59 percent of the studies that you wrote about in your article found that the shorter the duration of symptoms, the better off the patient's outcome was, is that correct?

A. No, they showed an association between duration and outcome. The studies, in fact, showed that extremely short periods of illness were related to a poor outcome, and then they showed that durations of illness for a longer period of time were related to a worse outcome. In a way, it was a double-humped result.

Q. Are you aware of any published scientific medical study which has shown that the timing of antibiotics in bacterial meningitis cases does not affect patient outcome, and by that I'm talking about a prospective study?

A. Well, as I said, you can't conduct a study that looks at the timing of antibiotics in relationship to bacterial meningitis. All you can do is look at duration of symptoms.

Q. So the answer to that is you're not aware?

A. I think we've already said that you can't conduct such a study.

Q. All right. Now, do you contend that your theory which you expressed in this article about the timing of antibiotics in bacterial meningitis cases, has gained general acceptance within the medical community?

A. Yes, I think it's probably now the mainstream view as expressed in more recent textbooks.

Q. Okay. Recalling that we're interested in knowing what the situation was in the first weeks of May 1956, do you contend that your theory about the timing of antibiotics in bacterial meningitis cases had, in the first week of May 1996, gained general acceptance within the medical community?

A. Well, again, this is one of those biological issues. When you're asking me questions about biological connections, you're asking me what is the truth of the situation, irrespective of time. In 1996 there had been not only my study but a sequence of confirmatory studies that had occurred in and around the time mine was published, and subsequent to that. And I believe that there was then an open questioning of the older viewpoint that the earlier one gives antibiotics the better the outcome in bacterial meningitis, that I believe was occurring around 1996. And I believe the outcome of that questioning is that the mainstream view as to the biological truth of the

matter now is, that the timing of antibiotics is not related to outcome except if you have clinically apparent meningitis.

Q. Recognizing that was an open question, in May of 1996, wouldn't it be correct to say that at that time, your theory had not gained general acceptance in the medical community at that time because it was an open question?

A. I believe that's so.

Q. While we're talking about that, as I understood it in your article that you divided people into -- people who had bacterial meningitis into three categories, is that right?

A. That is correct.

Q. Is that correct?

A. Yes.

Q. Okay. And the three categories would be those people who had nonspecific symptoms, is that right?

A. Category one.

Q. Category one.

A. Would be individuals who had general and nonspecific symptoms for less than three to five days prior to the diagnosis and therapy of their meningitis.

Q. And it was your opinion that you expressed in the article that the timing of the administration of antibiotics did not affect outcome for those patients, is that correct?

A. My conclusion was that the timing of antibiotics in that illness in which meningitis was diagnosed was not related

to outcome, and that has been, as I said, confirmed by other validating studies.

Q. And could you name other authors of other validating studies?

A. I can send you a reading list.

Q. Would you do that for me?

A. If I could send it through Ms. Yates.

Q. Oh, yes, I would appreciate it. Okay, your second category in the article was those people who had fulminant meningitis, is that right?

A. That's correct.

Q. And your conclusion was the same?

A. Yes, that antibiotics had no influence over the course of their malignant disease.

Q. Right. And then your third category was the category in which you found that the timing of the antibiotics did have an effect on outcome, is that correct?

A. The third category were individuals who had clinically apparent meningitis, and there the biology of the disease suggested that inappropriate delays in therapy incrementally worsened the outcome.

Q. Okay, so is that to say that the longer a person goes without having antibiotics the worse the outcome would be expected to be?

A. Yes, in an incremental way.

Q. Incremental means with each day longer it gets worse?

A. That's correct.

Q. Okay. And so, it would be people who have bacterial meningitis in that category that should do better if they get earlier treatment with antibiotics, is that right?

A. Oh, I guess I express it as the converse, that people who have clinically apparent meningitis incur a worse outcome if inappropriate delays of antibiotics occur.

Q. Oh, I see, they get a worse outcome if they don't get the antibiotics.

A. That's correct. Even with timely diagnosis and therapy of meningitis and clinically apparent meningitis, there is going to be a spectrum of outcome, some of it very bad. But as a general proposition, inappropriate delays will incrementally worsen the chances of a good outcome.

Q. So in your opinion you've already told us Travis Williams did not have fulminant meningitis, is that right?

A. I didn't say that.

Q. Did he have fulminant meningitis?

A. I believe he fits best into the category of a fulminant meningitis syndrome, meaning an illness with onset of symptoms less than 12 to 24 hours prior to the obvious diagnosis of meningitis, and then a clinical course characterized by severe brain swelling, particularly of the cerebellum portion of the brain underneath the tentorium, and severe strokes. He's a bit

of an unusual category, because he had not only severe brain swelling, but he also had severe strokes. *And* there has been a separate line of articles and **of** opinions having to do with stroke in meningitis, which suggest that the timing of antibiotics has no influence over the appearance or the severity of strokes in meningitis, that that is a peculiar propensity that certain individuals display that have to do with the nature of the architecture of blood vessels, the caliber of blood vessels, and the ability of those blood vessels to be easily injured. And that since antibiotics do not alter inflammation in the short-term, and since most of these strokes occur quite early on in illness in the fulminant form, that antibiotics have no influence on that kind of disease. So there is a couple of strains that go into his illness which is a bit of an in-betweener, because he had terrible brain swelling but of a particular part of the brain, not of the whole brain early on, and he had all of these strokes. But I would consider them to be of the fulminant sort, meaning a malignant form of brain inflammation leading to brain swelling and strokes.

Q. And when did he become fulminant?

A. It's a little bit hard to tell. There is the disputed telephone call which might have been useful as a marker of timing, but because it is disputed it's very hard to know what weight to give to either side of that story.

Q. But that's the reason you said that it's a violation of

the standard of care if Mr. Williams' version. is correct, and it's not a violation of the standard of care if Dr. Hrabab is correct?

A. That's correct. I must say parenthetically that it seems to be quite extraordinary that a practicing physician would ignore a phone call from a parent in which the parent is relating clear signs of bacterial meningitis, but that's obviously something for another day. When one looks at the recounting of illness done at the second visit to Bulloch Memorial Hospital, and then again at the Medical College of Georgia, it seems to be that the patient worsened on the day in which he presented to the emergency department, that there was a quantitative change in his level of alertness, interactiveness, his ability to make sense and so on. *So* I am starting my clock from the onset of the symptoms of meningitis from about that time.

Q. You're saying May 5th?

A. Sometime in the morning of May 5th.

Q. The morning of May 5th.

A. Correct. But that obviously would be revised if more information of a reliable sort came out.

Q. What, in your opinion, did he have in connection with meningitis for the period of May 3rd and 4th?

A. He didn't have meningitis.

Q. He didn't gave meningitis?

because in the short run antibiotics do not alter this form of malignant inflammatory injury.

Q. And that's what I expected you to say, I just wanted to make sure you said it. Because what you're saying here is, in the period of time between 2117 on May the 3rd, and 0020, it was not a violation of the standard of care to fail to diagnose and treat bacterial meningitis in Travis Williams, that's your opinion, correct?

A. That's correct, he didn't have meningitis.

Q. The jury desides that, Doctor. I just want to make sure it's your opinion that he didn't have meningitis, and that's your opinion?

A. Correct.

Q. And that it was not a failure on the part of the nurses and doctors at Bulloch Memorial Hospital to fail to diagnose any meningitis he had, and to treat that during that time frame.

MR. PINSON: Objection to the form of the question to the extent you place an obligation on the nurses to make a diagnosis of meningitis, which is a medical diagnosis and beyond their parameters. You may answer the question subject to that objection.

A. Doctors and nurses did not violate the standard of care applicable to that situation at that time. That's opinion number one. Opinion number two, he did not have bacterial meningitis at that time.

Q. I understand what you're saying. Opinion number three, if Mr. Williams is right, there was a clear violation of the standard of care by Dr. Hrabal, correct?

A. Correct.

Q. You're saying that the violation of the standard of care by Dr. Hrabal, if Mr. Williams is right, did not cause any harm to Travis Williams, is that correct?

A. If you are giving me the hypothetical that Travis at the time of that telephone call did in fact have bacterial meningitis, and if he had been brought in, the diagnosis made and therapy instituted, it's my opinion the outcome would have been the same.

Q. Okay, and then of course, the last opinion is that he had the meningitis on the 5th and they did everything they could for him, and there was nothing that could be done, and the outcome was what the outcome was.

A. Well, they saved his life.

Q. Okay. No further questions.

MR. PINSON: I don't have anything.

MS. YATES: Nothing for me.

(Deposition concluded at 1:40 p.m.)

TRAVIS M. WILLIAMS, et al **vs** TANYA **L.** HRABAL, M.D., et al

DEPONENT SIGNATURE/CORRECTION PAGE

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I, Michael ***S.*** Radetsky, M.D., do hereby certify that I have read the foregoing pages of my testimony as transcribed, and that the same is a true and correct transcript of the testimony given by me in this deposition, except for the changes made.

_____

MICHAEL S. RADETSKY, M.D.

I 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 deposition to Mr. J. Sherrod Taylor is $_____

I FURTHER CERTIFY that I did administer the oath to the witness herein prior to the taking of this deposition; that I 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 related 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.

Gail Davidson

GAIL F. DAVIDSON, C.C.R,
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