IN THE COURT OF COMMON PLEAS
OF CUYAHOGA COUNTY, OHIO

KEVIN KISS, a minor by
and Through his next friend
and mother, Anne Kiss,
et al,
vs. Case No.
ANDREAS MARCOTTY, M.D. 402393

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Deposition of SAMUEL NEFF, M.D., taken pursuant to notice, held at his offices, 17 White Horse Pike, Suite 3, Haddon Heights, New Jersey, on Monday, November 19, 2001, commencing at or about 9:00 p.m., before Tanya M. Croce, Court Stenographer Notary Public and Commissioner of the Commonwealth of Pennsylvania.

APPEARANCES:

On behalf of the Plaintiffs,
Becker & Mishkind Co., L.P.A., by
JEANNE M. TOSTI, ESQ.
Suite 660 Skylight Office Tower
1660 West Second Street
Cleveland, Ohio 44113

On behalf of Defendant,
Cleveland Clinic,
Roetzel & Andress, by
ANNA CARUM, ESQ.
1375 East Ninth Street
One Cleveland Center, Tenth floor
Cleveland, Ohio 44114

SAMUEL NEFF, M.D., after having first been duly sworn, was examined and testified as follows:

EXAMINATION OF
SAMUEL NEFF, M.D.

BY MS. CARUM:

Q. Would you please state your full name for the record.

A. Samuel Neff.

Q. Dr. Neff, I already introduced myself. My name is Anna Carulas and I represent the Cleveland Clinic in this matter.

It is my understanding that you have been identified as an expert witness on behalf of the Plaintiff is that correct?

A. Yes.

Q. What I'd like to do is just begin by talking a little bit about your background and then we will get into your actual opinions in this case.

As I mentioned, Ms. Tosti has been kind enough to provide me with a copy of your CV, the date of which is

April 23rd of this year. You believe there may be some additional --

A. Publications and I was awarded part of a grant in October.

Q. And what would that be, what subject?

A. Brain deformation.

Q. And just tell me briefly about that, what would that study entail?

A. We're working together with a group at John's Hopkins, the principle investigator is Christos Devastacost (phonetic). We're doing computer models of how people's brains deform during surgery in response to brain tumors.

Q. And would that be in adult patients or pediatric patients?

A. The initial modeling will be in adult patients.

Q. And when you say initial, you mean subsequently there may be some expansion into children?

A. The goal is to come up with a universal computerized approach to

determining how far brains can be deformed and under what circumstances the deformation leads to stresses that are unacceptable. The initial focus is what happens when tumors are removed, but the goal is to create a clinical tool that would be usable in all sorts of operations.

Q. Now, I know we're here today at one of your two offices; is that correct?

A. Yes. I have offices. I'll just explain to save the trouble of asking a bunch of questions.

This is an office where I practice adult and pediatric neurosurgery. I maintain an office at Graduate Hospital in Philadelphia where I practice adult neurosurgery, and I am 50 percent employed by Saint Christopher's Hospital for Children in the practice of pediatric neurosurgery.

Q. So half of your practice would be at Saint Christopher's and the other half would be split between

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coming here at this office 17 White Horse Pike and Graduate'
A. Yes.
Q. And what is -- I'm sorry. I didn't catch -- Graduate --
A. Graduate Hospital is a hospital which deals almost exclusively with adults and is in Philadelphia.
Q. And is that a teaching institution or a communtty hospital'
A. It is a teaching institution as defined by the fact that it has residents in various specialties.
Q. So as far as your practice here at this office in Haddon Heights, New Jersey, would that be about 25 percent of your total practice?
A. Yes.
Q. Why don't you just give me an overview as to the nature of your neurosurgical practice?
A. The best way to describe my practice is a general adult practice combined with a specialized pediatric neurosurgical practice.

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I've maintained a research interest for some years in brain deformation and computer modeling of brain deformation, so that although I don't particularly promote myself as focused on one particular area, I've had a particular interest in patients with problems related to brain deformation and hydrocephalus. In the common scope of neurosurgical practice the only common procedures that I do not do are complex spine instrumentation.
Q. Do you do any type of spine surgery?
A. Yes.
Q. What type of spine surgery would you do?
A. Common spine operations such as cervical disc operations, lumbar disc operations, but complex spine operations such as scoliosis and pedicle screws and so forth are not procedures that I do.
Q. What percentage of your practice would be doing spine surgery?
A. About 25 percent, and that

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includes adult and pediatric.
Q. And looking strictly at that 25 percent of your total practice which k spine practice, how would you split that up between pediatric and adult'
A. The vast majority is adult, 95 percent adult -- make that 90 percent.
Q. Now, you mention that you have research interest, do you spend a certain day out of the week doing research? How does the research fit in?
A. I squeeze it in nights, weekends. Now that I have the grant which will pay part of my salary at Saint Christopher's I will be a fixed ten percent of my time. I'll probably end up spending a half day during the week doing research.
Q. As one would look at your practice, the '75 percent chunk of your practice which would be operating on the brain and seeing patients in the office regarding --

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A. I think that the statistics did not work out the way -- I didn't answer the questions that you thought you were asking.
Of the practice here on the White Horse Pike a good bit of this is spine, The practice at Graduate Hospital about 50/50 spine and brain and the practice at Saint Christopher's is probably 75 percent brain and 25 percent spine.
Q. So let's look at the total picture and what would you say of your total practice would be dealing with children and brain issues?
A. About 30 to 40 percent.
Q. Now, did you actually do any type of fellowship training in pediatric neurosurgery?
A. No.
Q. So your training as far as the pediatric aspect would be as part of your general neurosurgery training?
A. Yes.
Q. I know there are various

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societies that those that practice pediatric neurosurgery belong to that are specifically geared to pediatric neurosurgery, are you a member of any of those?

A. I believe I'm a member of the section on pediatric neurosurgery of the American Association of Neurological Surgeons. There is no -- there is a pediatric neurosurgery society -- I forget the exact name -- that I'm not a member of.

Q. And given the nature of your practice would you be eligible to be a member of that?

A. Actually, I've written away to the Pediatric Neurosurgery society once and didn't receive a reply, so I have no way of answering that question.

Q. So what you are telling me is you attempted to become part of that group but never heard back from them basically?

A. Yes.

Q. And you don't know what the

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specific requirements are for that?

A. That's correct.

Q. What is the nature of your pediatric neurosurgery practice that you say *is* 30 to 40 percent of your total practice, you said some is pediatric spine?

A. Yes.

Q. What type of pediatric --

A. The other illnesses, without looking at a complete list right here, I would say in the past few months I've taken care of children with brain tumors, with spinal cords tumors, with hydrocephalus, skull tumors and head injuries and infections.

Q. Can you give me an idea as to in a given year how many cyst fenestrations you would perform, or if it's easier per month, however it's easier.

A. I would say about two.

Q. Two per --

A. Year.

Q. And as far as placements of

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shunts, such as what was done in this case, would you approximate for me how many of those you would perform per year?

A. I can tell you exactly in the previous six years I performed 172 shunt operations up to May of 2001.

Q. And how is it you know the exact amount?

A. I'm reviewing my data for an article.

Q. And so that's something that you have a listing that you've printed off of how many you have performed7

A. Yes.

Q. And is that something that would be readily available for you to provide to us?

A. Yes, within the requirements of patient confidentiality.

Q. Redacting patient names?

A. Yes.

Q. If you would be kind enough to provide that to Ms. Tosti.

A. Sure.

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Q. I would appreciate it.

You say you've performed 172 shunts, now is that in children or is that --

A. Children and adults. I actually was playing with histograms, most of the shunts, the most common age range is between zero to two years.

Q. And is that for hydrocephalus?

A. Most of the shunts are placed for hydrocephalus. A minority are placed for cysts. Let me clarify my previous answer and say when you say cyst fenestrations, I answered the question in a broad sense of all operations for intracranial cysts, you will probably later get into whether those operations should be fenestrations or shunts, but I was lumping them all together.

Q. Meaning what, I don't understand what you are saying?

A. Meaning that -- not trying to get ahead of you. In my opinion

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shunting is a better operation for cysts than Fenestration, so that that's the primary procedure I usually do for a person, a child or an adult with a symptomatic cyst

Q. And that's the reason for so few fenestrations in your hands?

A. That's the reason for so few fenestrations, yes.

Q. In a given week give me an idea, if you would, how often you are in the operating room verses seeing patients in the office'

A. I do about five case5 a week on the average and I have -- my big office days are Wednesday and Thursday morning, and then we squeeze other patients in and every other week I see patients on Saturdays over at Saint Christopher's.

Q. Now, I note from your CV it mentions that you have privileges at Wills --

A. That's an old CV. That hospital no longer exists in that form.

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It was dosed and converted into an outpatient facility and the building was sold to Thomas Jefferson University. That's of historic interest.

Q. But the name is still there, right?

A. The entity still assists as of the endowment, but the building has been renamed and is no longer used for eye surgery, so at the time I was on staff there it was used for neurosurgery and eye surgery. It ceased to exists in the year 2000, I believe.

Q. The reason I look at you with puzzlement, we were just there a couple weeks ago and I looked out the window and it says Wills Eye Hospital right up on it with bold neon lights.

A. They may have changed that -- you were probably there more recently than I was, but the -- not to sound like a TV show, but the Wills Eye Hospital that I had privileges at was a combined ophthalmology neurosurgery facility that no longer exists -- the

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Inpatient unIt no longer exist. The operating rooms no longer exist as owned by Wills Eye Hospital. Operating rooms owned by Wills Eye Hospital are now all outpatient facilities.

Q. So you no reason to go there because you don't see any patients on an outpatient basis there'

A. Correct.

Q. Prior to it changing from an inpatient to an outpatient facility did you actually operate there?

A. Yes.

Q. And how often would you operate there?

A. For the period of time between 1995 and -- probably from July, '95 to July, '96, most of my adult surgery was done there.

Q. Did you do any pediatric surgery there?

A. I did -- no, I did no pediatric surgery there,

Q. And what was the reason for this change from an inpatient facility

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to an outpatient facility?

A. I do not know why they changed. I think it was a financial thing having to do with the fact that inpatient eye surgery doesn't really exist anymore in the way it did ten years ago.

Q. Do you know Dr. Stavino?

A. I know who he is.

Q. Have you ever met him?

A. Yes. He was a professor at the University of Pennsylvania when I was a student there from '80 to '84.

Q. Since practicing have you come in contact with him?

A. I suspect I came into contact with him once or twice during my time when I was doing a lot of inpatient neurosurgery at Wills Eye, but I don't have any specific recollection, any specific encounters.

Q. You never referred a patient to him per se?

A. I might well have in that '95 to '96 period and he might have

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referred a patient to me during that period, but no one that I've seen in the past few years have I written a letter to him about.

Q. Were there any other neuro-ophthalmologistsat the Wills Eye Hospital that you worked with?

A. Well, there was -- let's see, Mark Cohen, Nancy Schwartz and a guy name Thomas Bosley.

Q. And did you ever refer patients to any of them?

A. Yes.

Q. Do you still work with any of those folks?

A. I have most contact with Schwa& and Cohen and that just sort of fell out. They send me a lot of patients and I would end up talking to them a lot and before you know it other patients got squeezed into conversation. They have offices in a tot of places. It just worked out to be convenient. If I have a good reason to send a patient to Dr. Stavino I wouldn't

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hesitate.

Q. Presently are there any neuro-ophthalmologiststhat you work with?

A. As we sit here right now there are a number of patients I have that have seen a neuro-ophthalmologist, but there is no particular neuro-ophthalmologistthat I have any kind of exclusive relationship to, and if a patient I have needs a neuro-ophthalmologic consultation it generally is dictated more by insurance issues and geography than any particular desire to refer a patient to one person or another.

Q. Who would be the various neuro-ophthalmologiststhat you work with or refer patients to from time to time?

A. There is a guy at the University of Pennsylvania who I would have to look up his name in a patient's chart to tell you who he is. Schwartz and Cohen are still around and Stavino

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is in Philadelphia, so if it became an issue I would end up referring someone to him.

Q. What about pediatric ophthalmologists, do you deal with any ti pediatric ophthalmologists?

A. Yes. Allthepediatric ophthalmologists I do is through Gary Diamond at Saint Chris and his new associate whose name I cannot recall right now.

Q. Do you deal actually with pediatric ophthalmologists more than neuro-ophthalmologists in your practice?

A. I deal with pediatric ophthalmologists more than neuro-ophthalmologists, yes.

Q. Now, since I just received your CV briefly before coming in here I didn't have a chance to study it in any great detail.

Have you authored anything that at all would relate to the issues of this case?

A. One abstract and two papers

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are relatively germane to this issue.

Q. Would you be kind enough to tell us which ones those are?

A. On this list referring to this 4-25 copy of the CV, we have number 13 on page five.

Q. And is that a published article?

A. That's a presentation at a meeting.

Q. So that would be the abstract you mentioned?

A. Yes.

Q. And would you have a copy of that? That's not something that I could get off of MEDUNE, is it?

A. No, you couldn't get it off of MEDUNE and I probably don't even have a copy of it anymore. I could probably reconstitute some of it from rough drafts, but it's subsumed by the other artides that I'm going to show you anyway.

Q. Okay.

A. Numbers nine and ten here on

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page seven are published articles on brain deformation and hydrocephalus.
Q. And basically is the data contained in nine and ten, that would be the same as what would be in this other abstract lecture?
A. Yes.
Q. I won't make you go through all of the work of digging it up.
You mentioned that when I log onto your website and put in the password and all that that I would have some additional articles, Is there anything pertinent that you have published since or lectured on since April of 2001?
A I was probably listed as a coauthor on an abstract that was presented at an engineering meeting by one of my collaborators named Astilios Kereachew (phonetic) at John's Hopkins, but that dealt more specifically with brain deformation, and without getting into the technical details the models we were using don't account for fluid Row

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through the brain, so it isn't particularly relevant to these issues here today.
Q. Do you teach at the present time?
A. I am assigned to give lectures to residents at Saint Christopher's and at Graduate Hospital.
Q. Do you actually have a position at medical school?
A. My understanding is that I have a position as a associate professor -- a part-time position as an associate professor in the MCP Hahnemann University School of Medicine. That school of medicine is emerging from the Allegheny Hospital bankruptcy which created turmoil in health care in this area, and so if I'm a liffle bit vague about where my academic appointment actually is, it's been a liffle bit vague whether this University is separate from Drexel University or combined with it.
Q. I just noticed in looking at

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your CV now that I'm glancing at it, you don't have that listed per se, is that because it's a liffle foggy'
A. A little foggy.
Q. So as far as an official academic appointment'
A. I signed an agreement saying I will conform to the bylaws of this entity, so I do have an official academic appointment. I would have to dig into the records to get you whether it was with MCP Hahnemann University School of Medicine or Drexel, and the best record I could give you is the form that we actually submitted to the INH for the grant, which is the official thing, but to be honest I got a sheet of paper, submitted it and didn't read it very carefully.
Q. So from a practical standpoint are you actually using that appointment, do you go out and teach whether didactic or having residents and fellows?
A. I'm assigned -- as far as

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can tell I'm assigned tasks of teaching residents and fellows as though I was -- the same as the other people who I know who have academic appointments.
I'm expected to fill out the same evaluation forms that they fill out. I'm asked to write recommendations for residents for ongoing programs, so that's -- since the salary structure at Saint Christopher's -- I'm actually paid by an entity called Saint Christopher's Pediatric Associates. I don't have a paycheck that I can refer to. I apologize for the fogginess, and no disrespect to my colleagues intended, but I really don't care about the details of that. What I care about is doing my research and my operations and so forth.
Q. So from a practical standpoint on a given month or whatever who do you teach?
A. Most of my teaching is to residents at Saint Christopher's and minority is to residents at Graduate

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Hospital.
Q. And Saint Christopher's has a neurosurgery residency program?
A. They have neither a neurosurgery residency program nor a neurosurgery fellowship.
Q. These would be what type of --
A. Residents in general surgery and residents in pediatrics, some pediatric fellows, and at Graduate Hospital they would be residents in general surgery.
Q. Are you presently involved at all in teaching any neurosurgical residents?
A. I'm asked to present cases at ground rounds at Medical College of Pennsylvania every week Attending the presentation are residents from an osteopathic neurosurgery program, but I don't know my exact status with relevance to that program. I'm not currently teaching any residents in an allopathic neurosurgery residency

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program.
Q. So the extent of teaching neurosurgical residents would be in the didactic form, this lecture form that you give?
A. Actually, a case presentation Form.
Q. Like the ground rounds type of thing?
A. Yes.
Q. And how often do you do that?
A. Every week
Q. And you go there or they come to you?
A. I go there. We have a multi-hospital meeting; Medical College of Pennsylvania, Hahnemann, Saint Christopher's and Graduate, all the attendings get together and present cases with the residents.
Q. Now, Saint Christopher's is strictly a pediatric hospital?
A. Yes.
Q. And how many neurosurgeons

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would there be on staff at Saint Christopher's7
A. There are probably five listed on staff but essentially all the pediatric neurosurgery is done by the chief of pediatric neurosurgery and myself.
Q. And who is that?
A. Joseph Piatt, P-I-A-T-T.
Q. And then there is three or so others listed but they practically speaking --
A. They have privileges and they are qualified and their role is to fulfill some of the former requirements, which require if Dr. Piatt and I are both in the operating room there would be somebody else to call if an injured child came in.
Q. And Dr. Piatt is full time at Saint Christopher's?
A. Yes.
Q. And is he actually what would be considered a pediatric neurosurgeon?

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A. He has done a fellowship in pediatric neurosurgery, yes,
Q. As far as dealing with the type of problem that Kevin Kiss had, which was an arachnoid cyst?
A. Yes.
Q. How often do you deal with situations like that?
A. About once every month to once every two months.
Q. And you've looked at actually his films in this case?
A. Yes.
Q. It's my understanding that he had a large arachnoid cyst?
A. That's correct.
Q. How would you characterize it, if one would say Dr. Neff, what was the size of this from --
A. Large or very large.
Q. And what would your experience be with seeing cysts of that size; is it unusual?
A. That's one of the largest cysts I've ever seen. I can't say it's

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the largest cyst I ever saw but it's large or very large, larger than most
Q. And in a given year do you wen see one dose to that size?
A. Probably see about one a year dose to that size.
Q. Do you know how it is, Dr. Neff, that the Kiss' attorney found you in this case?
A. No, I don't. I think I got an e-mail message from them.
Q. Do you know whether or not they had initially contacted someone else who referred them to you?
A. I donotknow.
Q. Do you know whether or not there was any referral based -- do Dr. Stavino and Dr. Piatt know each other?
A. Probably, because Dr. Piatt was also a student at the University of Pennsylvania a few years before I was.
Q. Do you know if Dr. Piatt was initially in this mix as far as looking at this case?
A. I know that he wasn't.

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Q. That he was not?
A. That he was not.
Q. So you were contacted directly from whom?
A. He think this law firm.
Q. And tell me what you were told at that time?
A. Oh, I have no recollection of what I was told at that time. I was asked to review a case and I said sure, I'd be happy to look at the case but I'll give you my honest opinion and that's that.
Q. Give me an idea as to how often you review matters like this?
A. I probably get one e-mail every other month or maybe between every other month and every fourth month I get an e-mail from someone looking for someone to look at a case.
Q. And I'm obviously not as techie as you are but how would one find your e-mail?
A. They could get it from my web site, so if someone went to a

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search engine and were looking for neurosurgeons it would come up. There k nothing on my web site that implies that I would perform any type of legal consultation, so someone would have to make that cdd call themselves.
Q. Have you ever dealt with Ms. Tosti or Mr. Becker, anyone from their firm before?
A. At some point they asked me to look at another case. I have no recollection whether it was before or after they asked me to look at this case.
Q. And what was the nature of this case, do you recall?
A. Am I allowed to say?
MS. TOSTI: I'm not sure if It's a case still pending or not. You can tell the subject matter but beyond that I would not have you say anything else about it.
A. Stop me when you want. It was a child who underwent a spine operation and ended up with an

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unexpected neurologic deficit after that operation.
Q. And did you agree to serve as the expert for them?
A. In my view of these things I agreed to look at the case and give them an opinion about it, and whether someone, you know, likes my opinion or not, that probably determines whether or not it goes beyond that.
Q. Did you actually author a report?
MS. TOSTI: At this point he's not going to answer anymore. I'm not sure if this is a case that's pending or not. I'm not going to have him jeopardize -- it may be from our other office. Doctor, please do not answer any additional questions. Do you know if the case is still pending or not?
THE WITNESS: I don't know.
MS. CARULAS: I guess the problem is how do we know that and how

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do I subsequently say it's a --
MS. TOSTI: He's told you the subject matter of the case, but as to whether he's authored a report, etcetera, if it's a pending case you are not entitled to that information. For all I know it could be with your office, so at this point I don't know anything about the case and he's not going to answer any additional questions.
Q. Here's the question I'm going to ask, and I need to find this out one way or the other. I think this is a fair question. In your assessment of the case did you advise their office that you felt the defendant deviated from acceptable standards of care or in your opinion did he not deviate from standards of care?
A. I advised him that he did not deviate from the accepted standards of care.
Q. And so that's the last contact you had?

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A. Like I said and Ms. Tosti said, the status of that case is a little vague right now.
Q. You say that you receive an e-mail every --
A. Few months.
Q. How often would you say you actually review cases? Give me an idea in a given year how many cases you would review?
A. Twoorthree.
Q. And how many depositions, processes like we are doing right now have you given?
A. This is my second in a plaintiffs and I've probabfy given a deposition or two in a defense situatlon, although one of them was for a bar that was being sued.
Q. Have you ever testified on behalf of a defendant physician in a medical negligence case?
A. I don't think so but I've given opinions. Let me elaborate on that answer. When these law firms

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e-mail me they often don't -- so far I don't think they ever specifically state whether they are for the plaintiff or not. My goal is to improve the tort process by providing a good answer. Now, you can give people a good answer and they can use it or not, but my goal is to at least provide people with a good answer. Probably some of the people I never hear back from who are people who didn't like the answer that I gave them, and that's the best that I can do.
Q. So as far as going through a process like this where you have actualty defended the care of a physician, can you think of any such circumstances?
A. I don't think I have.
Q. So you say as far as actually in a situation such as this where you proposed opinions critical of the defendant doctor, this would be the second time?
MS. TOSTI: At

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deposition?
A. At deposition, yes.
Q. What was the first case about?
A. The first case was about a man who had a broken neck and was taken -- in a car accident -- and was taken to an emergency room. Due to a combination of unfortunate circumstances the doctors who knew he had a broken neck didn't tell the doctors who were taking care of him he had a broken neck and he was sent home and deteriorated and became partially paralyzed.
Q. And where was that case venued?
A. I don't know exactly. One of the defendants was Cooper Hospital, so I presume it was somewhere in this area. In that case I was a treating physician for the -- a subsequent treating physician for the patient, so I sort of stumbled into it.
Q. Have you ever testified at trial?

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A. Yes. Actually, I'm going to amended my previous answer and say this is the third time that I've been deposed in this circumstance. I testified at trial in a civil case where I was the Plaintiff; in a murder case where I was an *expert* witness; in a product liability *case* where I was an expert witness; and in *one* medical malpractice case.

Q. Was the one medical malpractice the *case* we just discussed?

A. The one *case* I skipped over was a case where a patient was injured, developed an injury during a ulnar nerve operation, and this is another case where I was a subsequent treating physician and was asked to provide an opinion. There was a question of whether or not the operation had been indicated.

Q. So that's the one you testified in court'

A. That's the one that I testified in court.

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Q. And where was that case from?

A. Baltimore, at least that's where I went to testify.

Q. And you were a subsequent treating physician and also gave opinions as to the prior care?

A. I became a subsequent treating physician first and then was asked to provide opinions about the prior care.

Q. And you criticized the prior care?

A. Not -- yeah, yeah. The operation in question was done perfectly well, the question was only the indications for the operation.

Q. Now, you mentioned that you were a Plaintiff yourself?

A. In a civil case,

Q. What was the nature of that case?

A. Disagreement over severance pay with a former employer.

Q. And I guess I didn't go into

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all of your -- you are presently in actual private practice'

A. Half in private practice and half employed by Saint Christopher's.

Q. How long have you been in the private practice?

A. Since 1995.

Q. And this disagreement you had with an employer, when was that7

A. Well, I was employed by Cooper Hospital from 1991 to 1995 and when I left there was a little disagreement.

Q. And then you went into private practice?

A. After I left Cooper Hospital I went into private practice. I was solely in private practice until about 1999 when I was partially hired by Saint Christopher's.

Q. And what was the nature of you leaving Cooper Hospital'

A. Disagreement over reimbursement not to be -- are you going to ask more questions about this,

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because I can just tell you in like a paragraph --

Q. Soundsgood.

A. Okay. A large amount of my earnings were being accumulated in an account known to me that contractually was supposed to be dispersed to me after expenses were taken out, however, the hospital began using that money that was earned through my practice for operating expenses or for paying other physicians whose practices were not working out as well, and when it became clear that the hospital never intended to give me that money I left.

Q. So as far as the decision to leave Cooper, that was your decision7

A. Yes.

Q. And then you filed a lawsuit in order to attempt to recoup?

A. Correct.

Q. And were you satisfied with the outcome of the case?

A. Yes. After a seven-day trial the jury found that I was owed

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the money and they awarded me the money plus interest. Cooper initially indicated that they were going to appeal but then the U.S. District Court in Philadelphia has a mandatory mediation thing, and the mediator convinced them to give me basically everything the jury had awarded.

Q. Why don't you tell me, if you would, it looks like you are pretty organized there. Tell me what you reviewed in this case?

A. I reviewed the medical records of Kevin Kiss from the Cleveland Clinic, Signature Eye Associates, Kids in the Sun, Bruce Cohen, M.D., an entity called Southwest General and Amy Jeffries, M.D.. I've seen his MRI and CT scans. I've looked at the depositions of Dr. Luciano, Dr. Cohen, Dr. Kosmorsky, of Mr. Kiss' parents, of Dr. Marcotty and I've seen the letters from Dr. Boop, B-0-0-P and Dr. Hedges.

Q. Do you know Dr. Boop?

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A. No.

Q. Do you know him by reputation?

A. No.

Q. Have you ever read any of his writings at all on pediatric neurosurgery?

A. I may have but I don't recall him particularly being the author of them.

Q. Do you know Dr. Luciano?

A. No.

Q. Do you know him at all by reputation?

A. Yes.

Q. How do you know him by reputation?

A. I think he was the head of the hydrocephalus research foundation at a time when I was a member. I went to one meeting that he chaired and then the research foundation sort of dissolved or got subsumed into another entity and ceased to exist.

Q. And did you have any

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personal one-to-one interaction with Dr. Luciano at that time?

A. No.

Q. So you simply --

A. Sat at a table where he was at the head.

Q. And how many people were at that meeting?

A. 30.

Q. And what was your impression of Dr. Luciano?

A. Seemed like a perfectly reasonable person. He was well dressed.

Q. Did you agree with his points that he was making and so forth?

A. I don't have any recollection of that.

Q. You don't have any recollection that you disagreed with his thinking?

A. Correct. I think this meeting was more of a planning meeting and strategy meeting for the foundation than any particular scientific --

Q. Do you know Dr. Luciano by

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reputation in his writings?

A. Yes.

Q. In what way?

A. I've seen articles written by him from time to time.

Q. You would agree that he has significant experience with hydrocephalus and shunts and so forth?

A. Yes.

Q. And in looking strictly at his writings and his experience verses yours, would you agree that he has more experience in that area than you do?

A. I'm going to answer the question two different ways. I'm going to say that without looking at his writings I presume he's published more papers on hydrocephalus than I have. I'm going to say that without knowing how busy he is, I suspect he's doing more surgery than I am and my understanding is -- but I can't be sure of that, however, it's my understanding that he limits his practice to pediatric neurosurgery and it's likety that's he's

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doing more pediatric neurosurgery than I am.
Q. And I know you read over his deposition?
A. Yes.
Q. Did you look at his CV at all?
A. I don't recall.
Q. Do you think you may have or you just don't know?
A. I don't know.
Q. And you say as far as Dr. Boop you have no knowledge of him one way or the other as far as his expertise?
A. As far as I can recall. I may well have read artides that he wrote but the authorship did not stick out in my mind. The main reason Dr. Luciano's authorship sticks out in my mind is because I remember him from that meeting.
Q. Do you subscribe to any pediatric neurosurgical publications?
A. Yes, I subscribe to

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pediatric neurosurgery.
Q. And how often does that come out?
A. Once a month.
Q. And is that something that you regularly read?
A. Yes.
Q. What other journals would you subscribe to and read regularly?
A. Science and Nature, General Neurosurgery, Neurosurgery, Annuls of Neurology, Annuls of Internal Medicine, New England General Medicine, Journal of the American Medical Association, Archives Enterology.
Q. And I notice you have a fairly extensive library here. Are there any text that are specifically pediatric texts?
A. Yes. There is a pediatric neurosurgery textbook put out as a combined work by one of the neurosurgery organizations. It's usually reedited.
Q. Who is the editor or author of that?

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A. I don't know who the editor of the latest incarnation of that is. It commutes between my office here and at Saint Christopher's. It may be over there today. Oh, there it is. I don't even know if this is the latest edition. I'd have to see if I have a fourth edition over at Saint Christopher's.
Q. So I see here you have the third edition entitled Pediatric Neurosurgery published by the American Society of Pediatric Neurosurgeons, Neurosurgery of the AANS. We talked eariier about the society that you had sent away for, is that the American Society of Pediatric Neurosurgery?
A. Yes, I believe so.
Q. That's what we were talking about earlier?
A. Yes, and the section on pediatric neurosurgery of the American Association of Neurologic Surgeons is the part that I am a member of.
Q. So explain that again to me,

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the difference?
A. The American Association of Neurologic Surgeons have separate interest sections for members and the society for pediatric neurosurgery is a separate society entirely.
Q. And just so we know this, the editors of this, the Editor in Chief is William Cheek, C-H-E-E-K. And there is other section editors; Marlin, McClone, Walker. Besides this particular text would you have any other pediatric neurosurgery textbooks that you refer to from time to time either here or at Saint Christopher's?
A. Yes.
Q. What would the names of those be?
A. I believe there is at least one other book entitled Pediatric Neurosurgery or Principals of Pediatric Neurosurgery. We have two other books over at Saint Christopher's. One of my roles at Saint Christopher's is teaching, so we feel compelled to keep

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up-to-date versions of these multi-authored textbooks.
Q. So most of the Pediatric Neurosurgery Texts you would be familiar with?
A. I think so, yes.
Q. How about any textbooks specifically on hydrocephalus or shunt placement?
A. I think I've seen -- there is not a large textbook on hydrocephalus. There have been some small monographs on hydrocephalus written and a couple multi-authored books on hydrocephalus written. There is also an international conference held every couple years that puts out a summary of their presentations, and I usually try and get a copy of that as well. Recently there has been a number of FDA reports because the issue of shunt infection has come to their attention, and the issue of shunt malfunction had come to their attention as well.

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Q. So most of this literature you would be familiar with to some extent?
A. Yes.
Q. It's something you would keep up with and read?
A. Yes.
Q. You just read off for me what you reviewed in this case and before you came in here I leafed through it. Was anything removed from your file?
MS. TOSTI: I'll volunteer that I removed our correspondence from our office.
Q. So any letters back and forth?
A. That's my understanding of what she removed.
Q. Anything else to your knowledge that was removed?
A. No.
Q. Prior to authoring your report in this case did you review any literature yourself?

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A. Not that I can recall.
Q. Nothing specific for this7
A. Nothing specific for this.
Q. Did you speak with anyone about this case, what do you think about this or what do you thlnk about that?
A. No. After I authored my opinion I may have discussed the case with other neurosurgeons in general terms, not quoting anything.
Q. Well, anything that may enter into your mind set may have some bearing on your opinions, whether It's before or after you wrote your report. Did you speak with Dr. Piatt about the nature of this case?
A. No. I did mention that I was reviewing a -- he knows Dr. Luciano very well. I mentioned to him I was reviewing a case about Dr. Luciano. He said oh, I eat dinner with Dr. Luciano, and I shrugged and said well, I hope it goes well for him. Not to get into philosophy here, but any time a

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malpractice claim occurs is because something bad has happened to someone.
Q. I don't understand what you are saying when you said to Dr. Piatt I hope it goes well?
A. I was just trying to be nice, In my opinion here obviously in this case it is that Dr. Luciano could have done better, and so what can you say to a friend of a friend who you may end up doing something that he won't feel good about.
Q. Besides Dr. Piatt did you talk to anyone else?
A. We keep a -- we in our minds keep an anecdotal list of mishaps that can occur with shunts and intracranial pressure, because they unfortunately are all too common and they are easy to lull yourself into. I have in my own mind a mental list of mishaps that I've seen other neurosurgeons get into in shunt situations and this is probably added to my list, so when I'm teaching the residents what to do in this

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situation or what to do in that
situation and I give them a lit of bad
things I've seen happen, it will
probably include in general terms what I
saw happen in this case.
Q. So this may be something
that you had in your ground round
discussions?
A. No, Ihappentoknowthat
particular thing was not done in ground
rounds, but bedside teaching is where I
would bring this up. Anecdotes are
usually not for ground rounds in my
opinion.
Q. Anyone else that you would
have discussed this case with7
A. No.
Q. Do you know any of the
players in this case other than what
we've discussed?
A. Dr. Hedges I know because he
was one of my neuro-ophthalmologists at
New England Medical Center where I did
my residency, so he was involved in my
training from '84 to 91.

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Q. You had training both from
Dr. Hedges and Dr**Stavino?
A. Correct.
Q. And what would be the
timeframe that you were trained by Dr.
Stavino?
A. In the course of lectures
and neurology and ophthalmology courses
at the University of Pennsylvania
probably in '83 to '84.
Q. And what was your impression
of Dr. Hedges?
A. I liked him a lot. He and I
actually were quite friendly.
Q. And he was a very respected
neuro-ophthalmologist?
A. In his own domain I can't
say how respected he is because he was
realty the only neuro-opthalmologist I
got to know well, but we all were very
pleased with the consultative help that
he provided.
Q. Besides running into Dr.
Stavino occasionally, Dr. Hedges and
this one meeting with Dr. Luciano do

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you know any other players in the mix?
A. I saw Allen Cohen's name
come up in the mix, and he was one of
my attendings when I was a resident in
New England Medical Center, so I know
him very, very well, but I haven't seen
him in a few years.
Q. Anything else that has gone
into your review of this case other
than what you have told me7
A. No.
Q. We have here a report that
you authored which is two pages here
dated May 25th, 2001?
A. Yes.
Q. Besides this two-page report
have you authored any other letters,
reports in this case7
A. Not to my recollection. Of
course I've had phone conversations.
Q. And when you say phone
conversations, that would be with Ms.
Tosti or someone from her office7
A. Yes.
Q. Do you know when it was that

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you were first contacted?
A. No.
Q. And we're in a disagreement
as far as whether or not letters or
that sort of thing is discoverable, but
would those letters that were removed
from your file give you an idea as to
when it was you were contacted?
A. I suspect, but remember the
first contact was by e-mail, so it's
probably long since deleted. I'm sure
when this e-mail came in there was
nothing in particular to distinguish
from any other and no particular reason
for me to place a lot of weight on it.
Q. Besides this one report of
May 25th, 2001 were there any other
drafts to this or was this basically --
A. I composed this on the word
processor, so this is the draft and the
final copy.
Q. And I'm sure before today
you had a chance to review this again?
A. I reviewed it this morning,
Q. Is there anything as you sit

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here today that you would like to change in your report?
A. No.
Q. Does this basically encapsulate your opinions in this case?
A. Yes,
Q. There is nothing glaring that you feel should be added to this report that's not in here?
MS. TOSTI: Can I make one addition? He indicated the x-rays were reviewed even though they are not mentioned in here, they were reviewed prior to the time of this report?
A. Yes.
Q. So you mention a number of things that you reviewed and I saw you had some handwriting there, some of those obviously depositions that you would have reviewed after the fact. The x-rays were something that you reviewed prior to authoring this report?
A. Correct.
Q. But as far as the actual substance of your report is there

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anything glaring that's not included in there that you think you should have been added?
A. No.
Q. Why don't you then tell me in your own words your opinions in this case? It is my understanding you are going to say in your opinion Dr. Luciano deviated from acceptable standards of care?
A. Yes.
Q. Before we get into that, do you plan to offer any opinions as to any other health-care providers other than Dr. Luciano?
A. I'm not going to offer opinions about whether or not they deviated from the standard of care because it's outside what I consider myself an expert on. Whether or not they did or not I can't say. Some of the things that I'm going to say that Dr. Luciano could have done could have been done by other people as well, but whether that constitutes a deviation or

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not I really wouldn't address,
Q. Okay. Just so I understand and you understands the purpose of coming out here to take your deposition is for me to learn what you plan to testify to later at trial, so it's my understanding that the onty opinions you plan to give critical of a health care provider are as related to Dr. Luciano?
A. That is correct.
Q. Why don't you tell me what your criticisms of Dr. Luciano are?
A. Well, the essence of the issue is that after an otherwise -- an apparently completely successful fenestration procedure Kevin continued to have symptoms or even develop new symptoms. So although he was asymptomatic prior to the procedure he developed complaints after the procedure, and initially these complaints were indistinguishable from ordinary complaints that a child might have after this procedure, but at some point it became clear that he was

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having more than the average post-operative difficulties. Additional examinations and evaluations were performed, ultimately additional consultations were obtained with Dr. Marcotty and Dr. Bruce Cohen. Treatment for increased intracranial pressure was started with Acetazolamide, also known as Diamox in Some of these reports and ultimately a shunt was inserted. After the shunt was inserted Kevin's symptoms eventually revoked and it was determined that he had a severe visual loss in the left eye and some visual loss in the right eye. The process didn't need to be as prolonged as it was. Kevin could have been checked for papilledema at any point in his post-operative course, and while it's not necessarily the case that every child should be checked for papilledema after every operation, it's certainly is the case that a symptomatic child who complains of headaches that he did not have before and has Some fluid under

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his scalp flap should be checked for other signs of increased intra-cranial pressure, and one of those checks would be to see if there was papilledema.

That may not necessarily need to be done on the first postoperative visit, maybe not even at the second post-operative visit, but at some point during the post-operative course as this gradually escalating cascade of symptoms is developing. Then in February, I believe, when papilledema was additionally noted -- so now there is no question that there is increased pressure in the child's head, the level of treatment should have been more intense because it's well-known that people can go from having papilledema to having papilledema with severe visual loss without a lot of warning. When the papilledema was noted the visual acuity should have been checked, and during Acetazolamide therapy visual acuity should have been checked and at the first sign of visual acuity

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deteriorating treatment increased intracranial pressure -- more effective treatment for the for the increased intracranial pressure should have been done. Now, there is no particular standard of care that says you should check intracranial pressure 36 hours after starting Acetazolamide or 72 hours or something like that, but there is an implication that if you are treating someone with Acetazolamide to prevent compiications of intracranial pressure, that you are checking for those complications, too. Certainly there is many situations where Acetazolamide does not work and you would put a shunt in to prevent visual loss, so you should be checking frequently for visual loss to make sure there is none so you know when to put a shunt in. My opinion is going to be that through a combination of not assessing the post-operative symptoms correctly and then not treating the increased intracranial pressure rapidly enough, the pressure remained

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high enough long enough to result in this visual loss.

Q. Let me see if I can dissect it down somewhat. Let's start off that even following this type of procedure, the fenestration, what are the complaints that a patient can have following that procedure?

A. If they are fenestrating a large cyst the child might complain of headaches, might complain of nausea, vomiting, there might be fever. One of the challenges of pediatric neurosurgery is that the post-operative symptoms after this kind of operation can mimic the post-operative complications after this kind of operation.

Q. So the normal complaints afterwards --

A. Can be indistinguishable from the complaints that would indicate a problem, so that's why I said there is no particular point in time when you can say that on this day Dr. Luciano should have done X, Y and Z, because

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probably any day you name a reasonable person might say no, the day before or the day after. It's clear that by February even Dr. Luciano was concerned about the way things were going, even if we throw out the parents concerns and so forth, and that would have been the time to act, even if things had been left up to that time that would have been the time to act more aggressively,

Q. So, and I think you mentioned in your report you referenced the February 11th visit?

A. Yes.

Q. And we'll talk about that in a second. Do you plan to testify that prior to that point in time Dr. Luciano was negligent?

MS. TOSTI: I'm going to object to the word negligent. Negligence calls for a legal conclusion.

Q. Do you understand what --

A. Let me answer the question

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this way. There is a concept promoted by the American Association of Neurological Surgeons that something may be an unusual or non-standard approach but still considered acceptable by a learned minority of neurosurgeons. I think that most neurosurgeons would have attended to these post-operative issues more assiduously than Dr. Ludano did. I don't think it falls below the level of what some learned minority might have considered acceptable.

Q. While you may have done something more and you think others may have there would be a reasonable school of thought, whether it's a minority or majority, that Dr. Luciano's care would fall into, and we're talking up to February 11th.

A. There would be a minority who believe that's correct who are deemed to be reasonable.

Q. So can we say that you will not be testifying at the time of trial that Dr. Luciano's care, we're talking

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about the timeframe now up until February 11th, was unreasonable?

A. Correct. Well, fell below the standard of -- into the negligence range.

Q. So we know the patient then was referred to Dr. Luciano for the visit of February 11th after Dr. Marcotty, the pediatric ophthalmologist noted the papilledema?

A. Yes.

Q. Or I think he said --

A. Optic disc swelling, I believe.

Q. Now, at that point in time Dr. Luciano elected to start the patient on the Diamox. Is there a school of thought that recognizes the use of a medication such as Diamox as opposed to rushing in with a shunt procedure?

A. I'm going to say yes and then add a clarification. There is a school of thought that believes that giving Acetazolamide or Diamox is a reasonable approach in this situation,

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however, I would not agree with the characterization of rushing in with a shunt. The other thing to note is that through -- I didn't see it in Dr. Luciano's deposition but in Kevin's mother's deposition there was a lot of talk back and forth between her and the office about keeping Kevin in an upright position, which presumably was done because Dr. Ludano was already concerned that the intracranial pressure was high and that's why he wanted Kevin to be kept with his head up as much as possible. So it's already been a few months after surgery and he's been concerned all that time that the pressure is high but has not looked for papilledema himself, and than upon finding that there is swelling of the optic nerve, which most likety causes papilledema due to the increased pressure, he himself has suspected -- I do not agree with the use of Acetazolamide in that situation, but there is a learned minority that would

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do that first.

Now, what is going on in Dr. Luciano's mind I don't really understand since the problem has gotten worse since surgery and not better and Acetazolamide is generally thought of as a sort-term solution to this sort of problem, but I suspect Dr. Luciano himself suspected an anatomic abnormality which is why he went ahead and ordered an MRI study.

Q. What is the role of doing CTs and MRIs after the surgery?

A. Well, in certain circumstances imaging studies -- the anatomy can give you answer, for example, if the cyst has resealed itself after the fenestration and is now bigger than it was pre-operatively then you could reliably say that that's the problem that Kevin is having and you could act appropriately. My opinion is that re-fenestration under those circumstances is futile and you wouid go right to a shunt. It probably would be -- there probably is a learned minority

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that would by fenestrating the shunt a second time, but certainty after a third time you would not do that. So can you repeat your question7

Q. I was just asking what the role of MRI and CT scans *is* for monitonng it post-fenestration?

A. Positive result on the MRI or CT can lead you directly to an answer. The unfortunate thing is a negahve result doesn't necessarily reassure you that things are fine. The optic nerve swelling is a real physical finding, it's swollen for a reason. Now, it could be swollen from multiple sclerosis. Kevin could have developed an entirely new disease separate from what was going on but there is no reason to invoke that. The simplest explanation is that the increased pressure is what is causing the optic nerve swelling. The supporting factor is the fluid accumulating under the scalp flap, which also supports the diagnosis of increased pressure in the

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child's head.

Q. As you looked at those films he had both an MRI and CT scan initially post-op?

A. Yes.

Q. And subsequently an MRI?

A. Yes.

Q. What did the initial CT scan of January tell you?

A. It did not look appreciatively different.

Q. Different from?

A. From the preoperative CT.

Q. Was there any improvement whatsoever in the size of the fluid?

A. I would have -- can I look at the x-rays?

Q. Sure.

A. We're talking about the CT of January of '98?

Q. Right.

A. Yeah, the CT scan of January of '98 shows that the fluid has redistributed somewhat, and that's about what would be expected if a cyst was

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fenestrated.

Q. And does that give any encouragement as far as how the patient was doing to a neurosurgeon7

A. It *gives* a little bit of encouragement in the sense that the cyst has probably not resealed itself, however, It does nothing for the issue of what is the pressure in the child's head, The pressure could be quite high with the fluid just redistributing in a different area, so you are left with -- as I said, a positive could be very useful and a negative *study* isn't all that useful.

Q. So you are saying that basically that study would not help you at all as far as the evaluation of the amount of pressure on the optic disc?

A. Absolutely, that's exactly what I'm saying. In fact, the way I often present it to the residents is an MRI can show you if two things are touching but not how hard they are pressing against each other. The

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inability to measure pressures by just looking at MRIs is actually the basis of this research that I was talking to you about earlier, to try and learn how to infer how much brains are shifted on MRIs, what the pressures they are experiencing actually are.

Q. Let me just ask you a couple of general questions. What in general are the risks of a shunt placement in a child such as this?

A. In a child such as this there are two usual risks, which are the shunt may malfunction, shunt infection is much less of a risk than it used to be, but that's still realty more of a nuisance than anything else. With any kind of intracranial surgery there is always risk of bleeding. In a child with a large arachnoid cyst or an adult with a large arachnoid cyst, there would be the additional risk of draining too much fluid off too fast and that can cause blood clots to form on the opposite sides of the head or persistent

headaches or a bunch of different problems.

Q. Have you ever seen or heard of visual disturbances after placement of a shunt?

A. I've not seen any visual deficits after placement of a shunt.

Q. Have you seen a patient have visual deficits after a shunt when they had some complaints of visual disturbances before the shunt?

A. Yes.

Q. And in what setting?

A. In the setting of severe papilledema prior to shunt surgery you may get some visual improvement by reducing intracranial pressure, but you can't guarantee the patient that all the preoperative visual loss will recover.

Q. So once the patient has some sort of disc swelling is there a risk of visual disturbances with the placement of a shunt?

A. It's easy to tell. You can just measure the patient's visual acuity

before surgery and you can tell them that your vision is going to be this good or better, probably not worse, but not necessarily normal. If the visual acuity is almost normal pre-op it's probably going to be pretty good or normal post-op. If the visual acuity is severely impaired, if 28,000 or down to finger counting, then it's less likely to improve to normal.

Q. Is there ever a risk that the placement of a shunt can make visual worse?

A. I think the best answer would be no, although you can always invoke the argument that anything can happen. There is no particular way that reducing the pressure in the head should damage an optic nerve,

Q. I apologize if I asked you this before, but have you reviewed the report of Dr. Stavino?

MS. TOSTI: It hasn't been provided to him.

A. I guess not.

Q. And you haven't reviewed his deposition?

A. No, I have not reviewed his deposition.

Q. And to state the obvious, you haven't spoken with him about this?

A. That's correct.

Q. This case, when I say this?

A. That's correct.

Q. What in general are the risks to a patient of having a large arachnoid cyst like Kevin had?

A. I don't think anyone can say that. There is a suspicion and a number of neurosurgeons have postulated that these children are increased risk for intracranial bleeding if they hit their head, but there has been no prospective study ever to validate that, so we're really left with a big unknown. I don't think that anyone can answer this question with any kind of scientific certainty.

Q. What are the risks associated with performing a

fenestration?

A. The small risk associated with any kind of intracranial surgery, which include bleeding, infection, the risk of seizures is thought to be quite low, and the risk that the cyst will close off and need another procedure. Now, in addition, most neurosurgeons mention to patients that hydrocephalus can result from any intracranial procedure, and that's a generally accepted risk of any intracranial procedure.

Q. I know we talked about different schools of thought and you certainly acknowledged that in medicine there can be more than one approach, reasonable approach for how to deal with a problem?

A. Yes.

Q. And that's what we've talked about in these different schools of thought?

A. Yes.

Q. And you may prefer one

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approach and another surgeon may prefer another approach and both can be reasonable or acceptable approaches?

A. Based on the current state of knowledge. If the state of knowledge arrives at a point where one approach is clearly shown to be better, presumably everyone switches, but in an imperfect state of knowledge reasonable people might choose among the range of approaches.

Q. And even today neurosurgeons are in an imperfect state of knowledge as to this particular problem?

A. Yes.

Q. And the same obviously would have been true in '97 or '98?

A. Yes.

Q. Now, you mention that you personally would have performed a shunt -- you may have even performed a shunt at the very get-go, and that's a different approach between preferring fenestration verses shunt?

A. Yes, but let me go further

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and just clarify my position would have been I would have recommended nothing for this particular patient.

Q. We already talked about looking up towards February 11th and you are not going to say he deviated from acceptable standards of care, it's just a different approach to dealing with this problem?

A. Correct.

Q. And let me just talk about what you would have done hypothetically had you performed the fenestration and then you saw this patient on February 11th, '98 as Dr. Luciano did, with the understanding that what you do specifically may not be specifically the only standard of care, let's talk about what you would have done. Would you at that point in time have performed a shunt or would you have watched the patient for a while or can you say?

A. I think I would have tried to look at the fundi myself. Sometimes that's hard to look at in a seven-year

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old, but I would have at least tried, tried to get a visual acuity exam on a seven-year old, which can almost always be done with a seven-year old, because that's just the eye chart they do in school, and then made a decision about either performing a shunt or starting the child on Acetazolamide therapy. In all honesty, I would have either decided to put a shunt in or not, because I think that the long-term use of Acetazolamide therapy has not been shown to be all that helpful, and although there are neurosurgeons who will treat a patient for a short time with Acetazolamide, I don't think anyone has ever kept a child like this on Acetazolamide for a year. Seven months post-operatively Kevin has had an escalating series of problems and I would have just recommended shunting him at that point.

Q. If Kevin would have had some complaints of headache in a similar constellation of symptoms before the

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fenestration procedure, first of all, would that have changed your mind as far as doing something or not doing something if he was symptomatic?

A. Yes, and I'll go so far as to say most neurosurgeons will recommend a procedure for the cyst, on the assumption that it's the most likely explanation that it should be treated and based on their symptoms.

Q. If the patient did have some symptoms beforehand, then had the fenestration and then had some symptoms afterwards, would that change your approach to this?

A. Sure, and basically if the child is the same as they were before the operation than your suspicion for a post-operative complication is essentially by definition zero, since the child is the same as they were before the operation. At that point let's say you are lumping together headaches and some vague visual complaints and you want to say that

hypothetically those were the same as before the operation, then the first sign of problem is when Kevin complains he can't see out of one eye, I guess, which leads to the ophthalmology visit and then there you are.

Q. Now, we know that the day prior to Dr. Luciano seeing this patient he had been evaluated by the pediatric ophthalmologist, Dr. Marcotty, who actually look at the fundi and did a visual acuity, are you aware of that?

A. Yes.

Q. I know you mentioned that you personally, the steps that you personally would have taken would have been to look at the fundi yourself if you could and should be to get a visual acuity?

A. Yes.

Q. Anything else that would play a role in your decisions at that point? You said then you probably would make a decision either shunt or Diamox.

A. Physical examination and

neurologic examination of the child, and Dr. Luciano has an advantage over me because he saw the child before the operation, too, so he had the baseline to compare as well. If the child looks well and is running around and playing and a whole bunch of other cues you get when a child is in the office, then your index is sufficient that the problem has lowered. If the chiid who was previously running around and playing before is now miserable, then there is a tremendous burden on you to find out why the child is miserable.

Q. So the answer to the question is basically what you told me would go into your assessment, basically that this physical examination and the general --

A. Right, and I'll say further and speak for all pediatric neurosurgeons that this is one of the most difficult assessments that we do because if you fail to diagnose increased intracranial pressure, the

consequence could be death, not just loss of vision, so everyone does worry about it.

Q. So in this particular circumstance we know that Dr. Luciano knew the visual acuity as of the day before based on Dr. Marcotty and also what the pediatric ophthalmologists had seen as far as the fundi and the degree of papilledema?

A. Yes.

Q. Was it reasonable for him to rely on a pediatric ophthalmologist as far as those two pieces of data from just the day prior?

A. The preference would be to repeat it yourself, and the purpose of getting two visual acuities on separate days is to see if they are getting rapidly worse, but in the absolute absence of the inability to do this, if the child is totally uncooperative or some other reason, it certainly is reasonable to rely on the exam from the day before, especially in the situation

where the risk of missing a problem is high.

Q. Hypothetically, had Dr. Luciano attempted to do a fundi examination also this Snellen chart on that date, are you able to state to a reasonable degree of medical probability, and you understand greater than 50 percent, that the results would have been any different than what they were a day earlier?

A. I don't think anyone can say.

Q. Including yourself?

A. Including myself. It could have been worse, and again, hypothetically I'm not saying I know this, it could have been, you know, 50 percent of the way to complete blindness the next day or it might have been exactly the same. I don't think anyone is ever going to really know, and you guys will settle this issue based on probabilities. It would have been a useful piece of data to have.

Q. What would your, if you have an opinion, if you don't have an opinion, that's fine, too, that's what I'm here to find out. Do you have an opinion as to what would be more likely?

A. I think it's unlikely that you would have seen a major change, but you might get lucky. The same thing with the MRI, it's not likely to show a major useful piece of information, but you might get lucky and see something that clearly tells you what to do.

Q. But as far as you being able to say that more likely than not Dr Luciano doing these two pieces of the exam we talked about, looking at the fundi and the visual acuity, whether or not it's more likely than not that it would have shown a change, you are unable to say that?

A. I think I'm unable to say that -- yes, I'm unable to say that.

Q. Now, you said you would then make a decision as to whether or not to

start the Diamox or place the shunt?

A. And I think everyone would have done something at that point.

Q. And we talked about the school of thought recording the Diamox. What, in your opinion, would be a reasonable time for the institution of Diamox? You had mentioned that no one keeps a patient on Diamox for a year and I understand that. What would be a reasonable timeframe for a trial of Diamox?

A. It depends on your subjective assessment of how sick the child is, what his other symptoms are, how reliable he and his parents are and a number of interacting factors, Obviously, the goal is to avoid any additional deterioration and if you can't, to detect additional deterioration as soon as possible, thereby minimizing the risk of additional permanent damage. In a 15-year old who is complaining that they can't see the fine print on cereal

boxes, you can say well, call me tomorrow if you can't see the fine print. In a Seven year old it's a little more complicated and it depends on the seven-year old. I think it depends on how -- it also depends on the parents, how good observers they are and whether you are going to let them subsume some of the responsibility for telling whether things are worse or not. I think that most people would have brought the child back within a week. I might have brought the child back within a couple days. I feel comfortable saying that a reasonably prudent neurosurgeon would have brought the child back in a week or had someone check the visual acuity within a week to make sure Acetazolamide was working.

Q. Is there a certain time period that Acetazolamide needs to be given to show some benefit?

A. Assuming for the sake of your question that there is a benefit to be had, it should show a benefit

within a few days, but more importantly, the follow-up visit in a week falls in the realm of other things. It may show you nothing. Things may be exactly the same as before, at least it hasn't shown you any deterioration. It's reassuring you that things are happening on a week-to-week time scale and not a day-to-day time scale.

(Whereupon, a short break was taken.)

BY MS. CARULAS:

Q. Before the break we were talking about had you hypothetically started the patient on Diamox what your approach would be, and you would say you would see the patient in a couple days or possibly a week?

A. Yes.

Q. And what would your evaluation at a week entail?

A. Well, you know, the history of the previous week, physical examination, but with a special focus on visual acuity and headaches and the fluid under the scalp flap.

Q. So for a non-brain surgeon tell me what that means? Kevin would come back in and see you and --

A. And I would say how are you doing, and a lot of the subliminal things that I was mentioning earlier; does he run in and go to play with the toys, etcetera, etcetera?

Q. You just watch him and see how does he look?

A. Right. I ask him how he is doing. Seven-year olds will tell you, especially if they know you from last week. I would see if you can get a funduscopic examination on him and test his visual acuity. You might do some distracting things if he's a liffle bit irritable like weigh him or check the blood pressure.

Q. Just to get him to calm down?

A. And to distract him and get him to feel more comfortable. I usually reassure the kids at the outset that there will be no needles and that

often helps. The key issues are that you want to address the intracranial pressure as best as you can tell and the surrogates you have for intracranial pressure are the papilledema and the surrogate you have for the papilledema is the visual acuity.

Q. And when you check the visual acuity, that's the Snellen chart?

A. Yes, the Snelten chart. Now, on the other hand, if the child feels wonderful and looks like a new child it's not necessarily an error to fail to do the Snellen chart, but if the chiid continues to do poorly and the symptoms have not improved with Acetazolamide, the burden shifts to the physician trying to prove that everything is okay.

Q. So say at that particular visit that your assessment is the patient -- let me go back. I don't know whether you plan to give any what we call causation opinions here, but I can go step by step along the way.

Hypothetically, had Dr. Luciano seen this patient back in one week are you able to state to a reasonable degree of medical probability what he would have found?

A. Yes, I'm able to state to a reasonable degree of medical probability he would have found the patient to be the same or worse than he had been the week before. There is certainly no indication in the medical record, no plausible explanation for him to have been better and then gotten worse later.

Q. Can you ever have a fluctuation in symptoms in a situation such as this?

A. Sure. For example, if Kevin looks better the next week and maybe even his visual acuity is a liffle better, that doesn't necessarily mean you are out of the woods. You need to maintain him under a high degree of scrutiny and furthermore now in that situation you know the Acetazolamide was working, so by implication you know that

the problem was high pressure in the head, so if you know that you are treating a situation where there is high pressure in the head enough to cause papilledema, the level of scrutiny remains the same although the pleasure with the success increases.

Q. What could be the other causes? You say if there is improvement than it makes you feel that the Diamox is working so that tells you this was increased intracranial pressure causing the papilledema?

A. Yes. To jump on your question, if there is no improvement than either the Diamox is not working or it's not working enough or there is something totally different going on, but still the most likely thing is if the child is the same the next week the most likely two diagnoses is whether the Acetazolamide is not working or it's not working enough.

Q. From the mind set of the neurosurgeon, what else could be causing

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or could be the etiology for the papilledema other than the increased intracranial pressure?

A. There are other diseases that can cause optic nerve swelling that can mimic papilledema, but the prospect of Kevin developing one of them in the middle of this other illness with these other symptoms would be extremely small. For example, optic neuritis, which some people feel is a form of multiple sclerosis can cause optic nerve swelling that can look like papilledema, but there is no reason to think that a seven-year old would get MS and no reason to think that he would get it in the middle of this Illness, and the normal MRI pretty much excludes that. Lack of blood flow to the optic nerve common in elderly people can give optic nerve swelling transiently that is similar to papilledema, but most neuro-ophthalmologists that I've spoken to say they can distinguish that from papilledema due to increased pressure,

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and you would expect other signs of vascular disease on funduscopic examination, not just the optic nerve swelling, so I could formulate as a scientific exercise a list, but all reasonable neurosurgeons, I'm sure Dr. Luciano, too, were thinking about increased pressure as the etiology.

Q. You said that in your opinion while there can be some fluctuation in how a patient -- you mentioned that there could be a fluctuation in one's condition, so had Dr. Luciano seen this patient back in a week, at that point in time the patient could have appeared better, could have appeared the same or couid have appeared worse; is that a fair statement?

A, Yes, that is a fair statement.

Q. And for you to be able to say to a reasonable degree of medical probability which of those three would have been reality one week later, you are unable to say that?

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A. If we define reasonable degree of medical probability as more likety, greater than 50 percent, based on what happened to Kevin subsequently and based on my experience with this disease process, which is that although there are fluctuations they are usually a pretty small compared to the overall magnitude of the disease.

Based on the fact that any neurosurgeons' examination has its own little error rate as well, I think the most likely thing is Dr. Luciano would not have seen much of a difference if he had seen him a week later as opposed to what he would have been hoping for, which would have been a significant improvement, a history from the mother that Kevin's behavior had improved in his complaints of headaches, and maybe from Kevin that his eye didn't bother him as much.

Q. So if there was basically not a lot of difference in that point in time between -- if hypothetically, we

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know that this visit was on the 11th of February, say there was another on the 18th of February, if it did not show much of a difference what would have been the reasonable options at that time?

A. Well, let me answer a slightly different question which I think will get to the point you are trying to make, which is that after a series of weekly visits if the papilledema does not resolve and the visual acuity does not return to normal, a reasonable neurosurgeon would judge the Acetazolamide to be a failure and go to a shunt.

Now, if the child is perfectly stable by every means you can detect, whether a reasonable neurosurgeon would make that decision at one week, two weeks, three weeks or even four weeks, I cannot say. Probably reasonable neurosurgeons would fall in a bell-shaped curve there. We know that prolonged papilledema usually leads to

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visual loss, so a reasonable prudent neurosurgeon would not leave the papilledema unattended for a prolonged period of time. And in this context I suspect Dr. Luciano was hoping to get additional information studies he had ordered and the treatment plan got delayed because there was some difficulties in scheduling that.

Q. Hypothetically had Dr. Luciano been seeing this patient on a weekly basis during this time period can you say at what point in time -- I think you just answered that you couldn't but I want to make sure -- at what point in time this would be considered a Diamox failure and the standard of care would require a shunt at that time7

A. Assuming the exam is exactly the same, reasonable people might differ, and I think that most neurosurgeons would consider it a failure within the month in the presence of visible papilledema, but that

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presupposes the visual acuity stays the same. Although we talked about fluctuations you certainly want to see an equal number of positive and negative fluctuations. The first negative fluctuation you might call a fluctuation and the second one in a row you have to start to question. *Also,* in Dr. Luciano's mind -- and also there are the issue of the fluid under the scalp flap, which Dr. Luciano can examine and we can't here. Finally, in his mind I'm sure there is the issue of he wants to put the MRI information together with this clinical information in order to make a decision. Now, I suspect that if in his mind he was thinking that if the MRI showed hydrocephalus of the standard variety that he would put a shunt in and that would be that, but he sort of -- I can't get into another person's mind, but I think the clinical plan is sort of paralyzed at this point because the imaging study isn't obtained and everything just got stalled.

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Q. Was it reasonable for Dr. Luciano to want that additional MRI to look at the picture of this patient?

A. Yes.

Q. And we know that the patient became claustrophobic and had a difficult time proceeding with that procedure, are you aware of that?

A. I saw that in the record, yes.

Q. Have you *ever* seen that happen with children?

A. Sure.

Q. The fact that that circumstance happened, you would agree we can't blame Dr. Luciano for that?

A. No, actually I'm going to come down a little harder on that and say that if a study is indicated, it's indicated and one of the things about pediatric neurosurgery, and even adult neurosurgery, too, is sometimes patients have trouble cooperating with the *tests* that are in their best interest and in adults, even if they really want to

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they may be too claustrophobic for an MRI and this is a standard problem with that machine. However, the patients having difficulty adhering to the plan doesn't relieve the physician of the obligation to see the plan is carried out. It's different when a competent adult refuses recommended therapy, but when a child can't cooperate with a plan then there are ways to get the child to cooperate with the plan and additional delays injected by that are something that shouldn't occur.

Q. So when this patient became claustrophobic and Dr. Luciano knew that that MRI cannot be accomplished that day what in your opinion did the standard of care require for his evaluation at that six-week point in time?

MS. TOSTI: I'm going to object here to your use of the word claustrophobic. I don't know that that's what happened. There was difficulty in carrying out the exam and I agree that Kevin couldn't cooperate

with it, but I don't brow that anybody described him as being claustrophobic.
A. Let me answer that question in the following way. It is easy to fall into the trap of delaying a needed study because it's difficult to do, however, that k a -- I described that as a trap because it's not some place you want to be. From bme to time I'm in a situation where a child can't cooperate with the study and then I need to make a very difficult decision of do we hold the text over and do I call up anesthesia and get them down to do the study then. I've seen other situations where other physicians have acceptable subsptimal studies when sudation would have given a better study. It almost never leads to anything that you are proud of afterwards, and so I have to say that if the study was indicated, it was still indicated when Kevin was unable to hold still for it and therefore it should still have been done.

Q. When?
A. When it was ordered. The fact that he's claustrophobic or unable to cooperate does not suddenly make his disease two week less urgent.
Q. And correct me if I'm misunderstanding, but your opinion is that that same day when he was unable to complete the MRI for whatever reason, we know that the patient then came to Dr. Luciano's office because they had a scheduled appointment and the decision was made to reschedule the MRI and see him again and it ended up being two weeks,
A. Yes.
Q. And it's your opinion that Dr. Luciano should have sent that patient back that very same day and whatever it takes, get this MRI done on this child and then bring him back in twoweeks?
A. Actually, it's my opinion the MRI should have been done when he Rrst showed up with the papilledema and

not wen waited for the next appointment. A delay of a day might have been reasonable, but this is exactly the kind of trap -- the reason I describe this as a trap Is because before you know it you've delayed for two weeks to get It scheduled convenientiy and then you delayed another two weeks because he couldn't do it, and then before you know it a month has elapsed and no one would have said at the outset it was a good idea to wait a month before figuring out what to do with this child.
Q. We had discussed before what would have taken place back in February and you believe an MRI as well? We know this patient had just had a CT scan relatively --
A. January 28th.
Q. So you believe another study should have been done? And that's fine if you do. I just need to know what your thought is.
A. Basically you make a

decision whether you believe the child had papilledema two weeks earlier when the CT was done, in which case you can use that CT as useful anatomic data Papilledema can develop in two weeks and you may say that scan looked pretty good but maybe now something is different. Either way that decision goes, you are either -- if you believe that the CT scan from two weeks ago was the relevant one, then you are treating a child who has papilledema and that particular CT and then the MRI, the follow-up MRI is not so relevant. My previous statements are based on the hypothesis that Dr. Luciano was delaying making a decision about how the Diamox worked or would work or whether he had hydrocephalus based on waiting for the MRI to happen.
Q. So you are saying if he felt it was important in March --
A. Right.
Q. You are not necessarily saying that the standard of care

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required it on February 11th?
A. Correct.
Q. Your basic statement is when this patient had a follow-up visit in the end of March --
A. Right, and you've decided rightly or wrongly that that's when you are going to get the MRI, but although my opinion is that's the very outside of what people would consider acceptable, certainly waiting another two weeks because it's inconvenient to get the MRI is not within what's considered acceptable. Again, if the child was markedly improved, if the visual acuity was better, if the papilledema had resolved, if his symptoms were much better, if the fluid under the flap were better, if you had any solid evidence that things were going well, then you could say to the parents, well, things look pretty good and he's back in school and he's playing, we will hold off on the MRI a while. Absolutely none of these things

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are happening. All of the symptoms are there, all of the complaints. Maybe you could say well, you can the visual acuity yourself when the MRI can't be done to really make sure that no deteriorate has occurred, but that isn't done either in this case.
Q. So tell me if I'm rephrasing so we're on the same page here. I know that visit was the end of March. Your opinion is as of that follow-up visit at the six-week point in time, it was March 24th, at that point in time Dr. Luciano should have fully evaluated the patient and/or obtained an MRI at that time, gotten it accomplished?
A. Yes, and my hypothesis is that from what I infer from his clinical plan, the plan was to gather a bunch of data along with the MRI and then make a decision about whether or not the Diamox had worked, and then that plan was put on hold for two weeks for no particular reason other than it was inconvenient to get the MRI.

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Q. And so up until that point in time, a six-week timeframe assuming that visual acuity had basically stayed the same, would have reasonable?
A. Assuming the visual acuity stayed the same, a six-week timeframe would have been reasonable.
Q. So then we came back two weeks later and in your review of the records what did Dr. Ludano do at that time'
A. I would have to look at the record.
Q. I will find it for you to make it easier.
A. Continued to have severe headaches and diplopia, which means double vision.
MS. TOSTI: This is April 7th.
A. So I'm looking at the visit. What can I tell you about it?
Q. So basically that's the day that the patient came back, had the MRI and then saw Dr. Luciano?

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A. Correct.
Q. Was the MRI in your opinion helpful to this whole assessment?
A. No.
Q. And why is that?
A. Well, it shows the distribution of fluid roughly comparable of what was seen on the CT scan and as I stated before, these anatomic studies are useful if they show a distortion of the brain that clearly shows increased pressure in a particular area, however, if they don't show that distortion there still can be a global increase in pressure sufficient to cause damage, and in particular that kind of global increase in pressure characteristically causes optic nerve damage before anything else.
Q. Now, based on the fact that this patient had gone now, not quite, but almost two months from that visit of March 11th --
MR. TOSTI: February.
Q. February 11th. Sorry. At

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that point in time Dr. Luciano recommended that this patient have a shunt; is that correct?
A. Yes.
Q. The patient went to a neurologist?
A. Yes.
Q. For an opinion prior to the shunt procedure?
A. Yes.
Q. In your opinion was that a reasonable thing to do, to have a neurologist evaluate the patient?
A. I think that it's a detour. Again, I think Dr. Luciano should have checked the visual acuity right then and unless it was really good, admit the kid to the hospital that day and put the shunt in. I don't see a comment about fluid under the flap, maybe it's gone, maybe it's not -- temporal swelling, so there is still fluid under there. Under those circumstances there is -- he had Acetazolamide failure and I would have -- I think it's a waste of

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time to have a pediatric neurologist see him for what's obviously a situation that has increased pressure in the head. Whether it's an error or not, he doesn't even gather the data about the visual acuity, which as I said before, I think is the critical thing here. That's the only thing you worry about when there is global increase in pressure -- well, people can die, but is the loss of visual acuity and it would have been a simple matter to test both eyes at that time.
Q. Your recommendation would be admit the patient right then and there or the next day for the shunt placement?
A. Yes.
Q. And I guess my question to you is, and I think you may have answered it but you may not have, but was it a deviation from acceptable standards of care for him to request a neurologic examination, or for the family or whoever requested a neurologic

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examination prior to the --
A. By itself, no, but we can't really tell what the visual acuity was doing at this point. It could already have been much worse, and so did it suddenly decline in the next 24 hours or was it already bad enough? We don't have that information. If I knew the visual acuity was unchanged I would say fine; visual acuity is unchanged, you want to spend a week seeing the pediatric neurologist, that's fine. I can't imagine what he's going to say except the kid doesn't have MS, which you can tell from the MRI, so I can't imagine how it's going to help, but if the child is clinically stable then stable is stable and there is not a rush, but you don't know.
Q. Hypothetically had this patient been seen by Dr. Luciano March 24th, that's the date that the MRI was cancelled for whatever reason, had he seen the patient that day and had decided let's move forward with a shunt

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at that point in time --
A. Yes.
Q. -- so that hypothetically this shunt would have been placed anywhere from two to three weeks earlier than it was?
A. Yes.
Q. Do you plan to give an opinion to a reasonable degree of medical probability that the visual outcome would have been any different or is that something that you plan to defer or what can you say?
A. Hypothetically if the shunt had been placed when, in February?
Q. Had it been placed two to three weeks earlier, Just to have the dates, we know that March 24th was the date that the MRI was cancelled and then we know it was rescheduled for two weeks later.
A. And then sometime in April the shunt was put in.
Q. So about a three-week time period between that cancelled

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appointment and MRI until the time the shunt was placed, if my math is correct?
A. Yes.
Q. Are you able to state to a reasonable degree of medical probability that the vision would have been any different?
A. When the question is narrowed down that narrow I don't think I can say it, but since Dr. Ludano has declined to gather the Information about the visual acuity during this period From January on, it's not possible to say exactly when it deteriorated. It's not possible to narrow the deterioration down to a particular two-week period or three-week period.
Q. Now, you read over a number of depositions in this case?
A. Yes.
Q. You read over Dr. Kosmarsky, Dr. Luciano and Dr. Bruce Cohen?
A. Yes.
Q. Dr. Bruce Cohen, a

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neurologist, has testified that when he saw the patient that one week later, which we know was actually April 14th of 1998, that both he and his resident checked this child's vision and that it was fine. Do you have any reason to doubt that?
MS. TOSTI: Doctor, if I could point out to you what she's refemng to. I think he testified at this deposition normal visual fields.
A. Normal visual fields doesn't really -- isn't really germane to the issue in question. The kind of visual loss that people get from global increased pressure in their head that's easy to detect is loss of visual acuity. And again, no one seems to be gathering that information except the ophthalmologist Most ophthalmologists will say if a child has three plus papilledema, which is fairly severe, whether that includes hemorrhage or not depends on the individual neurologist's rating scale. Maybe people with three

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plus papilledema will not have a complete recovery even if treated immediately. Visual acuity is really the preferred way for a neurosurgeon to test it because it doesn't require you dilating the eye and it can be done with using -- the pyridine of the test encourages the patient to cooperate as opposed to looking in the fundus, which you are fighting against the patient, especially in a seven-year old.
Q. Visual fields are often very difficult to obtain on the --
A. Difficult to obtain and also you could have substantial visual loss, important visual loss and still have normal visual fields, so if this visual field was done the way most neurologists do it, which is holding out moving fingers, neurons in the retina to detect a moving finger, that's not nearly enough to have you read, for example.
Q. So to you as a neurosurgeon, visual acuity is much more important than visual fields in this setting?

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A. In this setting, right, visual acuity is much more important, that's likety to be lost. That's the thing that -- I'm not going to testify as an expert on this, but that's the thing that's more likely to affect the person's life. Many people get buy without a visual field. If you have normal acuity in the other field you can read just fine, but if you lose visual acuity, that eye is useless or useless for reading.
Q. Now, Doctor, do you remember Dr. Cohen testifying at all as far as checking the patient's visual acuity?
A. No, I do not.
Q. He testified that both and he and his resident would have tested this patient's visual acuity and that Kevin at that point in time was seeing well. If that was the case what would that indicate to you?
A. Well, if --
MS. TOSTI: I'm going to object to your characterization of

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the testimony. The doctor has stated his test for visual acuity was from a Snellen acuity chart and I don't believe there has been any testimony in this case Dr. Cohen tested this child with a Snellen Chart.

MS. CARULAS: Just for the record, I move to strike counsel's comments, I don't think it's an appropriate objection.

MS. TOSTI: If you are asking a hypothetical, that's one thing, but if you are mischaracterizing the evidence in this case to date then I have to object to it.

MS. CARULAS: I think the testimony is what the testimony is as far as Dr. Cohen's assessment of this patient's vision.

BY MS. CARULAS:

Q. Goahead.

A. When people refer to visual acuity they refer to specifically the ability to distinguish fine print or you can describe in terms of angles, the

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smallest angle that your eye can discern, although there is more to it than that. Visual acuity determines whether you can read something at two feet or five feet or ten feet. Visual fields refers to how wide the particular eye can see. You could have perfectly normal visual acuity and have what's called tunnel vision, only to be able to see a very narrow field out into the distance, and a classic neuro-ophthalmology trick is people who can see a 20-dollar bill at 20 feet but can't tell who is standing in front of them, it's because they have to scan the whole person with this little narrow field of view to pick up the picture. So visual fields refers to that broadness of the field; can you see things in your peripheral vision or not, You could have normal visual fields and have very poor acuity. You can have vety good acuity and horrible visual fields or just see with good acuity in one little spot. As it turns out, my

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understanding of the literature and my testimony here is that when monitonng someone for problems with the opbc nerve due to increased intracranial pressure, it's better to monitor the visual acuity than the visual field. In my opinion it's more repeatable and it is easier in a less cooperative patient and less variance from examiner to examiner.

Q. Now, how did this patient do after the placement of a shunt7

A. From what 1 understand from reading the various things in the records and depositions, by the end of the school year he was fine, with of the exception of complaints of persistent visual problems in the right eye. I saw one notation that he was back in school getting A's, although he was an average student beforehand. I saw another notation that he was fine with some persistent symptoms but they were not nearly as bad as before. There seems to be a general sense

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through the records that he was much better after the shunt than before.

Q. Now, just so I'm clear, you are not critical of any of Dr. Luciano's technical abilities here in the performance of the procedures, anything of that nature?

A. Correct.

Q. And so basically we've covered your criticisms of Dr. Luciano?

A. Yes.

Q. And you do not plan to criticize anyone else in this case as far as any other care?

A. Within the scope of I'm only presenting myself as an expert on what a neurosurgeon would do for those parts of this case.

Q. And that's just what I wanted to find out, that's what you feel comfortable with because that's your specialty?

A. Correct.

Q. And it would be inappropriate for you to come in and

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establish the standard of care for other --
A. For neuro-ophthalmology, for example.
Q. Or a neurologist or any pediatric ophthalmologist or anything like that?
A. Correct, beyond certain general things.
Q. All right. So we've basically covered your standard of care opinions; fair enough?
A. As far as I can tell, yes.
Q. Now, as far as how Kevin -- how his visual loss was diagnosed, do you know how that came about?
A. As I recall from the depositions of his parents, he kept complaining about problems seeing after he was otherwise well. I think when he went back to baseball he couldn't see the balls and that led to additional evaluations
Q. Now, do you have experience at all with children that have lost

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vision in one eye such as Kevin has?
A. Yes.
Q. How many patients would you have in your --
A. I wouldn't even begin to say, because many patients like that, if they had normal vision in the other eye can function in normal life with only a few limitations and they quickly learn to not bother themselves with those limitations, so I'm sure I see two or three children a week in routine office who have essentially no useful vision in one eye.
Q. And one of the notes, while the parents testified that the visual loss was discovered because of baseball, I think one of the notes reflected that when Kevin, when the vision loss was detected upon examination Kevin wasn't even aware of it?
A. Depending on how the examination was done and depending on how you formulate the question, that would not be surprising at all. As I

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said, the children very quickty learn to avoid those things that require good binocular vision or good vision in the bad eye and don't even miss it, whereas you might pick up the pieces of a pen and put them together and not think anything of it. These children will not bother, they will throw out the pen. That's a crude example how you can easily get around these things. Now, if someone like that had -- and I'm not going to testify about the details of what this disability amounts to, but if someone like that wanted to be a jeweler, he would not be able to do that or, for example, a pediatric neurosurgeon, that would be a significant limitation, although there are surgeons who have vision in only one eye.
Q. From a practical standpoint, I think you already testified today, that most children who have lost vision in one eye compensate well?
A. It has been my observation

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that they compensate well, but that observation is made in the context of the pediatric neurosurgery visit. I always teach the residents that parents and children are happy to get out without hearing they need a new operation, and so the level of complaints are toned down a little bit, and certainly children don't bother complaining about things that they are already used to. They graduate high school and go to college, and if someone has a burning desire to be X and can't do it because of vision in one eye, I'm not the person they probably complain to anyway, and I certainly don't include as part of my ordinary database.
Q. So basically you deal with so many very, very serious problems in children that as you mentioned, their concern is more operations, life threatening surgery --
A. Is my tumor back and so forth, not gee, this weak eye is still

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bothering me for ten years.
Q. As far as giving testimony as to what this particular child or any child with the loss of vision in one eye will be able to do or won't be able to do throughout his life, that won't be something that you would be giving testimonyon?
A. I can answer questions if asked, but I wouldn't present myself as an expert on the social issues or the economic issues related to having vision in only one eye.
Q. That's all I needed to know. You would not hold yourself out as an expert in that, per se?
A. Correct.
Q. And as far as the list of occupations, professions, vocations that one with vision in one eye verses two can or cannot do won't be something that you will present yourself as an expert on?
A. Beyond asking particular biophysical questions, about what you

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mean by binocular vision from what you don't, no.
Q. Now that you opened that up --
A. Let me elaborate a little bit. If someone were to ask me, Dr. Neff, would a person with vision in only one eye be able to put the parts of a Rolex watch back together I would say no, and I could consider myself expert enough to give an expert no on that, because I know that putting the parts of a watch together required the binocular vision that you need two eyes for. There are other questions that I would not be able to answer and I would say I have no idea whether you could be a bus driver. Now, in Pennsylvania you are allowed to hold a driver's license with vision in only one eye, but I certainly don't know about Ohio and I don't know whether you are allowed to hold a commercial license in either state, so in that situation I would not be an expert. I'm not trying to be

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difficult at all, but there are certain narrow areas of this question where I would have an expert opinion, but they are relatively narrow and don't go to the broader issues.
Q. Do you know whether or not the FAA has allowed people with vision in one eye to fly an airplane?
A. I do not know.
Q. What are the limitations that a child or person that has a shunt in place chronically, what are the limitations that one has with that7
A. Well, there is no scientific basis or accepted, for example, FDA limitations. Children on certain drugs, the FDA will promulgate certain restrictions. If a person gets a pacemaker in, the pacemaker manufacturer will promulgate certain restrictions. In shunts there are no such official promulgated restrictions and many children with shunts and adults with shunts lead entirely unrestricted lives, including athletic activities. There

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are pediatric neurosurgeons and adult neurosurgeons who try to encourage people to restrict their activities when they have shunts in, but there is no prospective data supported validating a particular set of restrictions or another.
Q. If you had a child like Kevin Kiss with a shunt in place, I know, for instance, he had been told, I believe, by Dr. Allen Cohen that he wouldn't recommend playing football. Do you agree with that or would you allow your patients to play football?
A. Dr. Cohen and I disagree on that. My reasoning is that seven-year olds will, as Kevin proved when this all started, will run around and bump their heads no matter what you do. Telling them not to do it in the structure setting of football is an un-validated restriction of their activity. I think in the absence of evidence a problem should not be assumed to exist. Other presumably equally

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reasonable people assume in the absence of evidence a problem should be assumed to exist.

Q. So again, it's another one of these different schools of thought?

A. Correct, without scientific validation for either.

Q. What about the loss of vision in one eye. If you had a patient such as Kevin who didn't have a shunt, would you say it's okay in that circumstance for him to play football?

A. With appropriate eye protection, sure. These discussions are always held with shunted kids and with not and even for just simple physical education I explain to the parents the pros and cons of it. Some parents choose to restrict their children anyway. One of the things that parents need to think about it is the best predictor of active lifestyle as an adult is an active lifestyle as a child, and the proven health benefits of an active lifestyle as an adult in my

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opinion outweigh these theoretical risks of a problem with a shunt as a child, that's an opinion. I explained the pros and cons of each to the parents and I've seen different families make different decisions with the same information.

Q. So basically your thought process on this is whether or not they had lost vision in one eye or whether or not they have a shunt in place is the healthy thing for a child to attempt to live a normal life style and not basically make them feel that they are any different?

THE WITNESS: Excuse me one second.

(Whereupon, a short break was taken.)

BY MS. CARULAS:

Q. Your mind set on how children should live their lives whether they have a shunt in place or whether or not they had lost vision in one eye is it's important for them to have an active lifestyle?

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A. Yes.

Q. And is it important for them to try to live as much of a normal lifestyle and not necessarily focus on the health issue?

A. That's my opinion, but kids are encumbered by the value systems of their parents, so I try to get the parents as involved as possible because -- planning is risk free, and nothing about raising children is risk free, but I need to give the parents enough information to match the risks to their value system. Some people think the risk of not playing high school football is so high that they will accept any health risk for their child so he could play high school football. Other people are exactly the opposite, but families make choices about risky activities for their children all the time and I believe the surgeon's job is to supply them with as much scientific information as you can and help them make a decision they are comfortable

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with.

Q. Tell me, have you ever seen a child -- you've told us that this would be one of the biggest arachnoid cysts you've ever seen?

A. Yes. Q. Have you ever personally seen a patient develop loss of vision in one or both eyes from chronic papilledema?

A. Yes.

Q. Tell me the circumstances?

A. Pseudotumor cerebri is a disease where the spinal fluid circulation is not normal. High pressure builds up in the head and people get headaches and papilledema and if not treated properly they will always go blind.

Q. For neurosurgeons looking at Kevin's situation and then looking at pseudotumor cerebri, I understand the mechanism may be different but are they basically the same concept in dealing with the patient?

A. That itself is a

controversial issue, but most of what we know about papilledema and the damage it does to people's eyes comes from dinical pseudotumor cerebri, first of all, that was where it was -- that's the most common use for Acetazolamide, Diamox and other similar drugs, and that's the easiest situation which demonstrates they reduce intracranial pressure, and in that situation patients are always monitored with visual field exams, but also with visual acuity exams, and they can lose visual acuity quite suddenly if they are not treated properly.

Q. So it's somewhat of a similar --

A. The issues are very similar. In addition, in Kevin's case there is the issue of, and also this was in the back of Dr. Luciano's mind, I'm sure, is that if he has ordinary hydrocephalus and is this sick he could suffer complications worse than blindness.

Q. What is the longest period

of time that you have monitored a person with pseudotumor cerebri?

A. I have some patients that I've been following for years.

Q. And do they have papilledema?

A. I've never had someone have papilledema for more than a month before we treated it.

Q. And when you say treated?

A. In one or two cases neuro-ophthalmologists gave the patients Acetazolamide and got it under control and they were fine and in other cases more commonly the way I get involved is I'm sent a patient who has failed Acetazolamide, the visual acuity is getting worse despite that and we put a shunt in.

Q. There was some mention in some of the depositions of this optic nerve sheet fenestration?

A. Yes.

Q. You don't perform that?

A. No. Its generally performed

by ophthalmologists or neuro-ophthalmologists.

Q. Have you ever referred a patient for that'

A. No -- yes, actually I have referred a patient to Dr. Bosley at Wills Eye, of whom I spoke earlier. He told me that the long-term success had not been what the initial reports had suggested and he sent the patient back to me for a shunt.

Q. So all in all you --

A. I've taken care of a couple people that have had fenestrations that failed eventually and they were sent to me because the fenestrations failed.

Q. The optic nerve fenestration is not something that you personally would have recommended for Kevin Kiss?

A. I wouldn't have recommended it, but certainly if the neuro-ophthalmologist had recommended it I would have said by all means, fenestrate the optic nerve and presumably that will protect the optic

nerves from the papilledema and we can deal with intracranial pressure separately.

Q. I think that's it. Thank you very much. Do you actualiy have an actual fee schedule?

A. We have a fee schedule and I feel real bad all of the sudden that you came here without seeing it, because I was sure I e-mailed it.

Q. Is that something we can get before we leave so I can have it?

A. Yes.

MS. TOSTI: He can produce it to me and we will forward it.

Q. What we can do is for the time we've been here which is, if you want to round it up to three hours, we've been here two hours and 45 minutes, bill me for that time. What I'm going to need is a bill with your tax ID and all that sort of thing. My only last request is if you ever at any point in time review anything more --

A. Regarding this case.
Q. Regarding this case that leads you to have any different opinions, please let counsel know that so I'm aware of it, because my understanding when we kave here today is that your opinions are what we discussed; fair enough?
A. Yes.
(Whereupon, the deposition concluded at 11:45 p.m.)

CEFARATTI GROUP FILE NO. 6035
CASE CAPTION: KEVIN KISS V. ANDREAS MARCOTTY, M.D.
DEPONENT: SAMUEL NEFF, M.D.
DEPOSITION DATE: NOVEMBER 19, 2001

(SIGN HERE)

The State of)
County of) SS:

Before me, a Notary Public in and for said County and State, personally appeared SAMUEL NEFF, M.D., who acknowledged that he/she did read his/her transcript in the above-captioned matter, listed any necessary corrections on the accompanying errata sheet, and did sign the foregoing sworn statement and that the same is his/her free act and deed.

IN TESTIMONY WHEREOF, I have hereunto affixed my name and official seal at ,this day of , A.D. 2001.

Notary Public Commission Expires

ERRATA SHEET

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