IN THE COURT OF COMMON PLEAS

OF CUYAHOGA COUNTY, OHIO

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MARIA O'DONNELL, et al,

Plaintiff,

- against -

DAVID C. PARRIS, M.D.,

Defendant.

Case No. 414050

----------X

133 East 58th Street
New York, New York

June 4, 2003
10:40 a.m.

Deposition of Expert Witness,

BENJAMIN E. ZOLA, M.D., before Rita Persichetty, a Notary Public of the State of New York.

ELLEN GRAUER COURT REPORTING CO.
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New York, New York 10022
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S T I P U L A T I O N S

IT IS STIPULATED AND AGREED by and between the attorneys for the respective parties herein that the filing, sealing, and certification of the within deposition be waived.

IT IS FURTHER STIPULATED AND AGREED that all objections, except as to the form of the question, shall be reserved to the time of the trial.

IT IS FURTHER STIPULATED AND AGREED that the within deposition may be sworn to and signed before any officer authorized to administer an oath, with the same force and effect as if signed to before the court.

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B E N J A M I N E. Z O L A, M.D.,
called as a witness, having been sworn by the Notary Public, was examined and testified as follows:

EXAMINATION BY
MS. HARRIS:

Q. Doctor, my name is Beverly Harris, and I'm here on behalf of Dr. Balanson. I'm going to ask you a number of questions today. Since I am on the telephone, if you have any problem, please let me know, okay?

A. Yes.

Q. I cannot see your responses, and so if I interrupt you, that is not my intent. Please stop me, okay?

A. Yes.

Q. Just before we started the deposition, Howard indicated that you have a new CV. I have one, would you believe, came with your report sometime in 2001?

A. Yes, it's an old CV.

Q. Are there things to be added to it, changed to it?

A. A few things probably.

Q. Could you give me some idea what the

changes would be?

A. Let me just look at my most recent one. I'm pretty sure I know what the changes are. I don't think on this CV you have my most current affiliation in terms of hospitals.

Q. Okay. What's the difference?

A. On the new CV, it says year 2000 to the present, although I think it's actually 2001 to the present. So I think that's an error on this printing of the CV.

Q. The one I have is Lenox Hill Hospital --

A. I'm saying 2001 to the present, that takes you up to 2000.

Q. Still at Lenox Hill?

A. No, let me finish, please. Sorry. 2001 to the present, it should -- the new CV says North Shore University Hospital at Forest Hills, Director Robert Davino, M.D.

Q. Is that your only hospital affiliation right now?

A. Yes.

Q. Anything to do with Lenox Hill Hospital?

A. No. I mean, not officially, in

other words, I still send patients there and work with the doctors there, but I don't actually admit there.

Q. What else is different, Doctor?

A. I guess everything else looks pretty up to date. I know on this is -- I don't know where -- they must have pulled this off the old computer or something, but I know on my most recent updated CV, it also lists me as having served as a member of the Aetna northeast regional or tristate area, northeast regional quality assurance committees, that is I sat on them as a physician panelist. That's, again, for Aetna, the insurance company. And also I also took part in at least one -- some kind of physician appeals board, so, again, northeast regional quality assurance committee and at least one appeals board.

Q. Anything else, Doctor?

A. I don't think so. I think everything else is pretty up to date.

Q. In going through your CV here, can you tell me why you changed from Lenox Hill Hospital to North Shore Hospital?

A. Business reasons. Just working with

other doctors, other opportunities, other referrals.

Q. Your practice is what, Doctor?

A. I'm a non-invasive cardiologist and internal medicine office based, although I do still see patients in the hospital or in the emergency room, but about 60 to 70 percent of what I do is cardiology in the office, 30 percent internal medicine, 5 to 10 percent medical malpractice consulting. A couple of percentage points actually seeing patients in the hospital or in the emergency room.

Q. When you say couple percentage points, how frequently do you get into the hospital?

A. Well, if it's for half an hour a day and I work at least a 12-hour day, then figure out whatever that percentage is.

Q. So are you saying that you're in the hospital every day?

A. No, I mean, I'm not. Sometimes I am, sometimes I'm not, it just depends on who is admitted and who needs to be seen.

Q. The patients that you see in the hospital, are they patients of yours or are you

asked to consult?

A. Both.

Q. What percentage would be your patients versus those that you have to see as a consultant?

A. Sorry, I didn't follow that, I missed.

Q. What percentage of the patients that you see in the hospital are your patients that you've elected to hospitalize for whatever reason and those patients that you've been asked to consult on by other physicians?

A. The majority would be mine. Well, the majority would be mine because even if I consult, I would be consulting as a cardiologist and I would take over their cardiology care or I already do their cardiology care, even though they have an internist or an internal medicine doctor.

So I'm not sure how to answer that. It's not like it's an ownership situation. I would be co-managing them with an internist or just managing them alone in terms of internal medicine and non-invasive cardiology. Of course, if they're in the hospital having

invasive or interventional cardiology, then there's another cardiologist involved who specifically would be doing their cardio catheterization or their angioplasty or a surgeon involved doing their bypass surgery or something like that.

Q. In your practice as a cardiologist, are you a solo practitioner?

A. Yes.

Q. Medical practice, do patients come to you just for general medical care or are you seeing them incidental to a cardiac problem?

A. Both, but definitely a reasonable percentage of that 30 percent is patients just walking in off the street or, you know, making appointments to see me as an internal medicine doctor or as their primary care doctor. They may also have cardiology problems, but I also get young people having sore throats or women with urinary tract infections, so it could be anything.

Q. In reviewing your CV, I was a little confused and maybe you can help me. You received your medical degree at Harvard medical school?

A. No, if you look at the --

Q. Sorry, I read the wrong one. John Hopkins?

A. Johns Hopkins University Medical School.

Q. Then you have here Brown University 1980 and then Harvard again for hematology and then UCL for infectious diseases. Were they courses -- did they lead to specialization? Explain that, if you would, please.

A. They're actually what they say on the curriculum vitae, they were electives that were done during those years while I was actually in medical school at those different medical schools for, say, a month at a time to take different courses at those different medical schools.

In addition, 1976 to 1977 is when I was an undergraduate at Harvard University. I took electives at Harvard University medical school in immunology, in neural physiology.

Q. So when you did infectious disease at UCLA, was that about a month long program?

A. Yes, that's when I was a medical student at Johns Hopkins but doing an exchange

elective in infectious diseases at the UCLA medical school but getting credit for it at Johns Hopkins.

Q. Do you have any teaching responsibilities today?

A. Not formal ones in terms of giving formal lectures, but almost any time I'm taking care of a patient in the hospital, I'm interacting with medical students, interns, residents, fellows and other attending physicians, all of whom I will be discussing the patient with and teaching.

Q. Cardiology or internal medicine or any other subspecialties?

A. Cardiology and internal medicine. Occasionally emergency medicine when I'm in the emergency room and I need to be discussing the case with someone in the emergency room, with whoever is in the emergency room, whether it be an intern, a resident, a fellow or an emergency room physician.

Q. Does North Shore Hospital have a residency or fellowship in cardiology?

A. There are cardiology fellows that rotate through there, but it's not the official

residency or fellowship of that hospital.

Q. They rotate through what period of time?

A. That, I don't -- I can't tell you.

Q. Is it rotation through full cardiology, though?

A. You mean do -- yes, they rotate through for a cardiology elective of some sort. I mean, again, I'm not in charge of the program or I don't really know the program, so I can't tell you what their elective actually is.

Q. Do they have a residency program for internal medicine?

A. I believe so since I'm dealing with interns and residents that are in internal medicine, but again, I don't know who administers it, if they're affiliated, what medical school they're affiliated with specifically, who runs the program, who funds it, you know, I don't know any of that stuff because I'm not part of the administration anymore.

Q. In terms of publications, Doctor, am I correct that you have not published on anything in the area of rheumatic heart disease

and/or infectious endocarditis?

A. I don't believe so.

Q. Am I also correct that you have done no research in these areas?

A. Correct.

Q. Do you review echocardiograms?

A. Every day.

Q. Have you looked at the echocardiogram in this case?

A. I've looked at three echocardiograms in this case dated January 28, '99, 2/25/99 and 2/26/99.

Q. Are you presently involved in any kind of research, Doctor?

A. I'm not a principal investigator on any specific research projects. I do, however, work with some of the physicians at New York Hospital and also at Lenox Hill Hospital enrolling my patients in their studies having to do with cholesterol control and different devices such as defibrillators or stents or other cardiology treatments for coronary artery disease.

Q. You indicated previously that you spent about 5 to 10 percent of your time in the

medical legal arena. Is that reviewing cases for lawsuits?

A. Yes, that would be reviewing cases, testifying, writing reports, attorney conferences.

Q. How many cases do you typically review a year?

A. Probably somewhere around a case every two weeks, so anywhere from 20 to 25 cases a year.

Q. What percentage for defendants, what percentage for plaintiffs?

A. Probably about 90 percent of the cases that I review are for plaintiffs, about 10 percent for defense firms.

Q. Are you listed with any services -- expert witness services?

A. I believe I am at present, but I'll just give you a list of all the ones that I can think of off the top of my head that have listed me at various times. When I say listed, I don't know exactly what they do except for the fact they call me at times and say that there is a case that an attorney is looking for an expert witness on, would I be willing to

review it, so I presume they have me listed somewhere, but those firms include MedQuest, Macrotech, and some of these firms may not even exist anymore, I don't really know, I have not heard from some of them in a year or two.

The head of at least one of the firms I know doesn't exist anymore, he is now my patient. In fact, many of them become my patients or constantly call me for advice, so sometimes the only way I know they still exist or don't, but MedQuest MacroTech, Learner's Second Opinion, TAB or Technical Assistance Bureau, some outfit in San Francisco like Medical Forensic Specialists or something, Cases Incorporated, that's a good smattering. I may have left one or two out.

Q. You charge for reviewing records?

A. I charge a standard across-the-board fee of $350 an hour for all review work, attorney conferences, reports.

MR. MISHKIND: Bev, let me interrupt for one second to let you know that Paul Dzenitis just walked in, he's here for Ron Wilts. We had started the deposition and the record should probably reflect that

Paul's secretary called and indicated that he was hung up at the airport and that we should go ahead and start the deposition. We are only about 15, 20 minutes actually into the depo.

MR. DZENITIS: Great.

Q. Doctor, you ended with you charged 350 for a report. What do you charge for depositions?

A. Depositions are a standard fee of $2,000 for four-hour time block that I have to cancel all patients and make available for the deposition plus travel expenses, meaning taxis, whatever, plus $250 an hour for travel time outside of the four-hour deposition.

Q. What about trials?

A. Also I should say that beyond the four hours, it's $500 an hour or any part thereof that it goes over the four hours because if it is going to do that and I can do that for you, then I have to call the office and cancel patients.

Trial is $5,000 a day for a nine to five day at trial plus all expenses, plus travel time's $250 an hour and I charge the

travel time for time I actually travel that I cannot work, I don't charge for time I am sleeping or eating dinner or anything like that.

Q. How many times have you been deposed say this year, the year 2003?

A. I couldn't tell you, I'm sure it's been at least six times.

Q. Have you testified at any trials this year?

A. Yes, you know, it kind of blurs together, so I'm not sure what is this year and what's in the fall, but I'm sure I've testified at least once at trial, if not more than that.

Q. Have you ever reviewed a case for Mr. Mishkind or anyone in his firm?

A. I don't believe so. I don't -- I believe this is the only case I've reviewed for them.

Q. Do you know how he got your name?

A. I have no idea. They contacted me somewhere around early 2001 or late 2000 and I have no idea how they found me.

Q. Have you reviewed any cases in Ohio for any attorneys?

A. Yes.

Q. Do you recall who?

A. I know I've worked with the firm of Walsky & Blue or Walsky & Barclay (phonetic), I think they are now, I'm not sure what name they go by now. And I've testified at trial for them at least two times also, and I think there is an attorney named Jeff Bowsay or something like that in Columbus who used to be a defense attorney and became a plaintiff's attorney and contacted me after he became a plaintiff's attorney and asked me to review cases for him.

Q. Anyone else you can think of?

A. They're very -- well, maybe others in Ohio, that's all I can think of right now.

Q. When you were contacted in this case, did you receive any summaries of the records or anything of that sort?

A. I may have been just contacted by telephone, I honestly don't remember what the initial contact was, but what was sent to me initially, I believe, were partial medical records, and that's about all I can tell you. I mean, I've had different things sent to me at different times throughout the last two years.

Q. Doctor, you have a report here dated January 17, 2001?

A. Yes.

Q. Is that the only report you had written?

A. That's the only written that I've generated, yes.

Q. Then you list nine things that you have looked at?

A. Then those are the things that I would have looked at at that time when I did the report.

Q. Since that time, what else have you reviewed?

A. Well, since that time, I know I got more complete records from Dr. Hollin, I believe I had more complete records from Dr. Zirafi, Dr. Balanson and Dr. Parris or at least got another set of copies maybe with some sheets that were missing, and I've gotten depositions since then.

Q. Let me stop you at those records. Doctor, did you receive the complete Mt. Sinai medical records, as best you could tell?

A. I believe so. I received an updated

set of records from Mt. Sinai sometime around February of 2001. It's certainly a more complete set of records. I can't tell you off the top of my head now, I can't tell you if it's absolutely everything, but it's certainly more complete and certainly is -- contains, I believe, everything that I need. It doesn't change my opinions in the initial report, but it gives me more records to bolster those opinions.

MR. MISHKIND: Bev, so you're aware also, and it's right here, I did send him, just for information purposes, some of the most recent records from Dr. Winkelman and Dr. Perzi within the last, I don't know, month or so, and he has them in the stack of stuff that is in front of him.

Q. What depositions?

A. Also I -- just so you know, so before I answer that question, I also have some expert reports.

Q. We'll get to those, Doctor. Let's talk about depositions first.

A. Depositions, I have the deposition of Dr. Zirafi, the deposition of Dr. Balanson,

the deposition of Dr. Parris, the deposition of -- I thought I had the deposition of Dr. Hollin here somewhere.

MR. MISHKIND: You do.

A. I'm not sure where it is, but I know I've gone over the deposition of Dr. Hollin. I also have answers to interrogatories.

Q. From who?

MR. MISHKIND: From Dr. Hollin, they have the full set of his records that he didn't have at the time. If you recall, there was the questionnaire that was attached, so I sent him a copy of the interrogatories with the questionnaire that was filled out by Maria when she saw Dr. Hollin.

Q. Whose expert reports?

A. We found Dr. Hollin's depo in my pile. Did I also say Dr. Kalucis?

Q. No, you didn't, but I'll put it down.

A. I have the deposition of --

MR. MISHKIND: Your question was which expert reports, Bev?

MS. HARRIS: Yes.

A. I have expert reports from Dr. Kaberline and Dr. Berkowitz and also from Dr. Mitek, Dr. Lerner, Dr. Irene, Dr. McKinsey and Dr. Josephson, Dr. George, Dr. Kose, Dr. Resnik and Dr. Armitage.

Q. Anything else that we haven't talked about?

MR. MISHKIND: Bev, he has two notebooks which also include all of the records from Dr. Zirafi. Sorry, you were about to --

A. Well, I can tell you what's in the two notebooks. They include records from Dr. Jim Cuglewski, C U G L E W S K I, records from Dr. Kalucis, K A L U C I S, records from Dr. Zirafi, records from Dr. Parris, records from Dr. Balanson, records from Dr. Hollin and the urgent care or MedCenter.

Q. Did you receive any summary of the records or any indexes or anything of that sort?

A. No.

Q. Did you make any notes?

A. Yes.

Q. Do you have the notes with you?

A. Yes, I have one page of some notes that's just kind of a time line and little bit of a summary of some of the things from the different office visits.

Q. When were those notes made?

A. In the last two or three days.

Q. Can you hand those to the court reporter and have that marked as Exhibit 2. We'll mark the new CV as 1 if we can.

A. Again, the CV is actually not the very newest, it's almost the newest.

(Zola Exhibit 1, CV, marked for identification.)

(Zola Exhibit 2, Dr. Zola's notes, marked for identification.)

A. Also in terms of the notebook, there are some selected Metro Health Medical Center records in terms of admission and discharge summaries going from March of '99 up until February of 2000. That's in one of the volumes. I think the other volume is just Mt. Sinai Hospital medical records pertaining to 2/24/99 to 3/11/99.

Q. Doctor, would you hand -- the court reporter has handed you Exhibit 2, which is

notes that you referred to, it's one page.

A. Right.

Q. That was made about two to three days ago?

A. Within the last two to three days. Some of them I added early this morning.

Q. Would you hand them to Nancy Moody so she can rereview it?

MR. MISHKIND: She actually already has.

MS. MOODY: I have looked at it, Bev.

Q. Doctor, did you make any marks on the records or depositions or, you know, anything of that sort?

A. Just underlinings and highlights, I believe. Miss Moody has looked through it so...

Q. I'll leave that to her then.

A. She would know what I did. I think it's just highlights pretty much, right.

Q. Doctor, would you define for me what infectious bacterial endocarditis is?

A. Bacterial endocarditis means a bacterial infection of the heart usually

involving the valves at first and then sometimes spreading from the valves into the cardiac tissue, but it basically means bacterial infection of the heart itself.

Q. What is rheumatic heart fever, if you can define it?

A. Well, you mean rheumatic fever or you mean rheumatic heart disease?

Q. Rheumatic heart disease is probably better.

MR. MISHKIND: I was wondering what you were talking about.

A. Rheumatic heart disease implies that the patient has had an episode of rheumatic fever -- an episode or episodes of rheumatic fever that has left their heart damaged in some way from that rheumatic fever. Oftentimes with scarring, thickening, nodulate, leak or blockage of the heart valves, but also with some, the same thing potentially occurring in the heart tissue that is the muscular tissue.

Q. What are the signs and symptoms of bacterial endocarditis?

A. The signs and symptoms of bacterial endocarditis can be a whole myriad of things, a

lot of different things, but they'll frequently involve the typical signs and symptoms of any infection, fevers, chills, aches, weakness, fatigue, weight loss, and then all sorts of other things depending on how the bacterial endocarditis progresses, how it spreads, whether or not pieces of infected material break off from the heart and/or its valves and spread to the rest of the body.

If a piece breaks off and goes to the brain and blocks an artery feeding blood there, it will cause a stroke. If it goes to the heart artery, it will cause a heart attack. If it goes to the finger, it will frequently cause an area of finger death or finger attack. And also, any infected material that breaks off from the valve and goes somewhere in the body will not only damage that part of the body but frequently spread the infection to that area of the body. Those would be some of the typical things that would occur with endocarditis.

Q. Would you define what it means to have vegetation on the valves?

A. Vegetation is what's used to describe a growth of inflammatory tissue and

infection that is bacterial growth literally growing like a vegetable or looking like a nodule or a little piece of infected material growing on the valve or on the heart somewhere.

Q. How does one get vegetation on the valves?

A. One gets vegetations by having an infection on the valve and then by having an immune system that mounts an immune response to try to fight that infection. So it's a combination of the infection and the body attempting to ward off that infection.

In other areas of the body if there's an infection, the body will surround it with scar tissue or attempt to surround it with scar tissue to wallet off and form an abscess. You can't -- it's very difficult to form an abscess on a valve, but in a sense that's what a vegetation is, it's like an abscess like growth that's growing right on the tip of the valve.

Q. How does one get the infection on the valve?

A. By bacteria floating through the bloodstream and sticking to and invading the

valve itself. That usually only happens when there's been some sort of damage to the valve making it susceptible to being infected and usually also only when there is a leak or abnormal blood flow creating a high-speed jet of blood flowing in one direction or another next to the valve causing some fibrin-like tissue, fibrin being a protein in the blood, but causing protein to stick to that valve at that point making it more susceptible to also having bacteria stick to the valve at that point.

Q. How does one diagnose bacterial endocarditis?

A. It is diagnosed made on a base of a variety of things, but mostly by blood culture and the presence of symptoms of an infection and often the detection of abnormalities on the valves of the heart or in the heart itself that is evidence of an infection of the heart or its valves.

Q. How do you determine evidence of an infection of the heart or valve?

A. By performing some sort of imaging study such as an echocardiogram.

Q. Can we agree, Doctor, that the fact that one has had rheumatic fever which has caused some damage to the heart valve, that patient can have an infection which does not involve the valve?

A. I'm not -- I don't understand your question. You asked -- you're asking something that is obvious, any patient with damage to the valve can have an infection, she can have a runny nose and cause a cold. Do you mean an infection of the heart or the heart valve? You have to be more specific in what you're asking.

Q. The fact that a patient has had damage to the valve through rheumatic heart fever, rheumatic fever, does not preclude that patient from having an infection going on in the body unrelated to the valve, correct?

A. Correct.

Q. Can we agree that if you have an infection unrelated to the valve, one can have fever, weakness and fatigue?

A. Yes, but at the same time in a patient with rheumatic heart disease and damage to their valve, any infection anywhere in that patient's body is at risk to spread to the

valve because most, if not all, infections in the body have the ability to send the infected material into the bloodstream, and once in the bloodstream, bacterial infections in particular, when the bacteria get into the bloodstream, they can stick to that valve, so any infection anywhere in the body is automatically a high risk for a patient with rheumatic heart disease, that is a high risk for them developing an infection on their heart valves secondary to that infection anywhere else in the body.

Q. Can we agree that then the goal of a -- with a patient such as that is to treat the infection before it spreads to the valve?

A. Correct, yes.

Q. Am I correct that the way one would treat the infection is to prevent the spread to the valves through the use of antibiotics?

A. Yes, provided that we are talking about a bacterial infection.

Q. I stand corrected. As long as we are talking about a bacterial infection, the goal is to treat that infection with antibiotics hopefully to preclude it spreading

to the valve?

A. That is correct.

Q. Am I correct -- and let's assume for the sake of this question, I'm talking about bacterial infections, Doctor.

A. Sorry, it came through jumbled, but did you say we should assume from now on any infection we discuss is going to be a bacterial infection?

Q. Yes. Can you do that?

A. Yes, I can.

Q. If you assume that we are talking about a bacterial infection that has not spread through the bloodstream to the valve and we also assume that the goal was to prevent that from occurring by using antibiotics, can we agree that the antibiotics chosen are usually chosen empirically?

A. Your question is a little bit broad and nonspecific, but I believe the answer is yes, that is, any infection anywhere in the body that is bacterial will frequently be treated empirically, that is treated based on the most likely organisms that are there with antibiotics to cover the most likely organisms

without necessarily getting a culture or without necessarily identifying each and every bacterium that is actually involved in the infection.

Q. In patients who have had valvular damage from rheumatic heart disease, do those patients require prophylactic antibiotics every time they develop fever?

A. Not necessarily. However, the suspicion and the worry about them developing bacterial infections has got to be extremely high and part of the standard of care would be that physicians treating those patients should err on the side of treating them with antibiotics rather than err on the side of not treating them with antibiotics.

Q. In a situation where a patient has a fever but it has not spread to the valve, what antibiotics would one choose?

A. Your question doesn't make any sense because, again, it all depends on what the infection is, where it is, what the suspected bugs are, so the antibiotics would be appropriate to the given circumstances.

Q. The patient was complaining of

fever, weakness and general malaise?

A. If the patient was complaining of fever, weakness and general malaise and nothing else and no other source of an infection could be identified, then it would be extremely important to rule out an infection in the bloodstream and the heart valves as the source and cause of those symptoms and findings, and therefore, do blood cultures and be ready to treat that patient based on their clinical course and possibly results of blood cultures and/or other blood testing and/or other diagnostic testing also such as echocardiograms.

Q. Doctor, what is -- what is generally referred to by the lay public as the flu?

A. Is this supposed to be an expert opinion as to what the lay public refers to?

Q. No, I'm using the term "flu." Do you use that term?

A. I do usually when it means influenza, but I believe that the lay public frequently refers to flu-like symptoms when they're talking about almost any viral illness.

However, flu-like symptoms can also

occur with any bacterial illness.

Q. In dealing with flu-like symptoms, how would you make a determination that it was due to a viral or bacterial infection?

A. It's based on a combination of the patient's clinical presentation, blood testing and potentially other types of testing such as chest x-rays or echocardiograms.

Q. If one believes one has a viral origin with flu-like symptoms, does standard of care require that blood tests and chest x-rays be done?

A. I can't answer your question the way you've asked it because there is a presumption in it that has nothing to do with medicine. It is not a matter of -- so I'll try to answer the best way I can, but it's not a matter of if one believes it's viral.

The idea is in a patient like this, in a patient like Maria O'Donnell who has underlying rheumatic heart disease and therefore is known to be at greatly increased susceptibility to developing bacterial infections on her heart valve which can be potentially devastating or lethal, the

obligation of the treating physician is not to believe that a patient has a viral illness and treat her accordingly, it is rather to make sure that a differential diagnosis is produced of the different things that can be occurring with a patient and diagnostic testing be done to determine what is actually going on with the patient and to treat the patient whenever possible or necessary for more serious infections based upon that testing and its results.

So in other words, the idea is not to necessarily come up with an answer that the doctor believes in and follow that course, but rather to have a differential diagnosis, have it working that there are many things that could be going on and that testing be done to try to differentiate between the many things, but if that differentiation cannot be made, rather than having a belief or making an educated guess in one way or the other, the patient should be treated in a way that protects the patient from the more serious problem such as endocarditis, and again, that gets back to what I said before about erring on

the side of treating with antibiotics rather than not treating with antibiotics.

Q. Doctor, am I hearing you correctly that a patient who has had rheumatic heart disease who has then had valve damage, that every time that patient develops a fever malaise, a workup has to be done including blood cultures?

A. No, not necessarily every time; however, especially in any patient with recurrent fevers, with prolonged fever, with exceptionally high fever, a blood culture is just literally a couple ounces or even an ounce of blood that is taken out and put into a culture bottle.

So given the fact that developing endocarditis is potentially lethal or devastating and given the fact that a patient with rheumatic heart disease has the potential for having the devastating and life-threatening infection, whenever a patient with rheumatic heart disease has a fever or a fever pattern suggestive of the possibility of endocarditis, a blood culture should be done, or not just a blood culture but blood cultures and blood

testing should be done.

Now, if a patient has one fever and feels perfectly fine and goes to the doctor two weeks later and reports that two weeks ago that they had a fever for one day and has absolutely no symptoms anymore, then blood cultures are not necessary at that point in time. So this is not an all-inclusive sort of thing.

You have to look at the situation at any given moment and/or over time to determine when to do blood cultures in a patient with rheumatic heart disease that has had a fever. There is a very big difference between a patient that has a fever that is ongoing or intermittent over twelve days and a patient that has a fever that's only 100.5 degrees for one day and feels perfectly fine otherwise and has had nothing happen for a week. So it just depends on the situation.

In a patient with an extremely high fever, such as 103.8 the way this patient had, that's extremely worrisome, and in a patient -- not just in a patient like Maria O'Donnell but literally specifically in Maria O'Donnell, when she presented with a fever of 103.8, the risks

of her having underlying endocarditis were, without question, high enough that blood testing needed to be done at that point in time to be -- to help to diagnose whether or not she had underlying endocarditis.

Q. In your opinion, Doctor, when did she develop endocarditis?

A. In my opinion, I believe she developed the endocarditis sometime after 12/15/98, that is I believe she either developed the endocarditis from bacterial seeding or showering through her bloodstream from the scope that was done by Dr. Kalucis, or sometime after that, some local infection that she had either in her throat, her mouth or her nose or sinuses seeded bacteria through her bloodstream onto her heart valve and she started her infectious endocarditis illness and it became subacute, that is it became an illness that the bacteria were growing on the valve, but the course of that illness was such that it was getting better, getting worse, getting better, getting worse and at times was partially treated with antibiotics.

Q. I'm going to get you out of order,

Doctor, so bear with me, please. She received doxycycline and she also received Biaxin, and as I understand it, you have reviewed the Mt. Sinai records; is that correct?

A. That's correct. She received doxycycline for a ten-day period from February 8th onwards.

Q. And then she was also receiving Biaxin, correct?

A. Then from, I believe, the 18th very late at night, so maybe starting on the 19th is when she started taking Biaxin. I don't believe she took the Biaxin until after she actually called Dr. Parris at approximately one o'clock in the morning on the 19th.

Q. Would those -- would the bacteria be sensitive to those drugs?

A. I'd have to go back and look specifically, but it doesn't really matter if it were to be sensitive or not sensitive because in endocarditis, because the bacteria is in a pocket or a ball or a nodule, antibiotics by mouth will most of the time not be sufficient enough to treat and cure the endocarditis. The endocarditis has to be

treated with very high levels of intravenous antibiotics in order to ensure adequate penetration of the antibiotic into the infected area in order to sterilize it and kill the bacteria.

So what frequently will happen is antibiotics that are given by mouth when the patient has underlying subacute bacterial endocarditis will frequently suppress it, change its course, but not cure it.

Q. The question again is, were the two drugs given sensitive to those drugs so that it would change the course?

A. To answer that question, you can turn to the hospital records from Mt. Sinai and look at the microbiology blood culture reports from the initial blood cultures to see that the bacteria strain -- the bacterial strain that grew on the valve was Strep. mitis, a viridans group that was resistant to tetracycline, and doxycycline is essentially a form of tetracycline, so the doxycycline did not likely kill the strep bugs that were on the valve, although they might have suppressed it a little bit.

In order words, these sensitivities are basically what kind of concentration you need to actually inhibit growth, so it might have inhibited it a little bit, but it certainly wouldn't likely have treated it effectively.

I think that the -- that Strep. mitis is likely to have been at least somewhat sensitive to the Biaxin, although it's not specifically listed on this sensitivity profile, but also that Biaxin is not known to be effective or, I should say, is known specifically to not be effective treatment for this kind of subacute bacterial endocarditis, so again, although the Biaxin likely would have helped suppress things, it certainly would not have effectively and/or adequately treated the infection, and so the infection would have continued while the patient was taking Biaxin.

Q. How long does it take to sterilize the patient?

A. That's different for every patient. The standard of care is to treat a patient with endocarditis for a minimum of four weeks of intravenous antibiotics. That is, treating for

two weeks will only sterilize perhaps 70 to 80 percent of patients. I mean, I don't know the specific numbers, I don't have them on the top of my head, but I'm giving you an example.

The idea is that the shorter periods of time treating with antibiotics are not likely to sterilize everybody, so it's only four weeks of antibiotics that is likely to sterilize more than, say, 95 to 98 percent of patients with endocarditis, but it's not just four weeks of antibiotics, it's at least four weeks of antibiotics with other indicators that the patient's valve has possibly been sterilized, such as follow repeat echocardiograms, sedimentation, CBC, repeat blood cultures, in other words, doing other testing also to be certain that the patient doesn't still have bacteria that are alive and infecting the heart or heart valves.

Q. Am I correct, Doctor, I'll try to sum up what I think you said, that it will take approximately two weeks in a minimum to reach almost all of the bacteria being eradicated?

A. No, that's not what I said at all.

Q. Okay. What did I miss, the bacteria

will continue to be there up to two weeks?

A. No, my answer stands the way I answered it. You've just paraphrased it completely wrong. I'll try to say it again without having to repeat my entire answer, but the bottom line is there will be some patients that have less infected material and they may respond to two weeks of antibiotics. However, there will also be patients such as Maria O'Donnell who will have much more infected material, and they are more likely to require a minimum of four weeks of antibiotics to be sterilized. It will be different for every patient.

Q. In Maria O'Donnell's case, on the 24th of February, am I paraphrasing this correctly, that she would more likely need four weeks of treatment to completely sterilize all the bacteria?

A. More likely than what, more likely to need four weeks than what?

Q. Than not.

A. Yes, on the 24th, Maria O'Donnell more likely than not needed four weeks of intravenous antibiotic therapy to sterilize the

valve.

Q. Am I also correct that even though the valve has been sterilized, the vegetation remains?

A. No, what you've said is not true. Maria O'Donnell had a vegetation that was mobile, that means it had a stalk, it was flapping around in the breeze. When she had an echocardiogram performed on February 25 in the hospital, that vegetation subsequently broke off, floated downstream and went to her brain where it caused a stroke, so that vegetation was no longer on her valve because, of course, it caused her stroke.

However, she had other vegetations on the valve, that is other infected areas on the valve that were growing as vegetations, and those areas were sterilized with the four weeks of antibiotics that she received by vein in the hospital and/or the center she was sent to afterwards, but there's still residual scar tissue that was left behind afterwards.

Q. Doctor, I don't think my question was clear, and I apologize. Assuming that the vegetation hadn't broken off, assume the

patient with vegetation on the valve, if you give them a course of antibiotics, the vegetation remains, although it becomes sterile; is that a fair statement?

A. Although it becomes?

Q. Sterile.

A. No, that's not completely true because the vegetation is made up of a mass of infected material, inflammatory material and scar tissue, and so as you kill the bacteria, you remove the bacteria from the vegetation, as you kill the bacteria and sterilize it, inflammation in the area also goes down. So vegetations will frequently shrink and/or possibly resolve depending on how big they are, but yes, there always will be some residual scar tissue left afterwards. It's just a question of how much is actually left afterwards depending on how it heals.

Q. Is there any rule of thumb as to how long it takes vegetation to shrink and/or resolve?

A. It will shrink and tend to resolve over that four-week period, but it may -- it, of course, will continue to shrink after it's

sterile, possibly for many months afterwards, just the way any scar tissue continues to shrink.

Just like if you have a scar or a cut on your skin, even though it looks healed over after a couple of days, it may take many weeks or months before the scar is really truly very small and overwhelmingly healed, and any scar that forms does tend to shrink a little bit over many years even though that amount of shrinkage may be very, very small after the first couple weeks and/or couple months.

Q. Am I correct, though, that even with the antibiotics and the bacteria -- the vegetation being sterilized --

A. Sorry, before you go any further, some of your words -- you may as well start again.

Q. Sure. It wasn't going to be a good question, so I'll back up, Doctor.

MR. MISHKIND: I was going to object anyway, so you might as well start over.

Q. Am I correct that even if the vegetation has been sterilized through the use of antibiotics, that the sterile vegetation can

break off and result in if it goes to the brain, a stroke or to the heart a heart attack?

MR. MISHKIND: Objection, but go ahead.

A. Yes, I believe the answer is yes to the way you've asked the question, and if we make it a little bit more specific and anticipate your question for this case, I believe for this case specifically that by the 24th, this patient had a vegetation that was mobile and needed to be treated with antibiotics almost immediately upon being seen in the emergency room. And when I say almost immediately, I mean as soon as three sets of blood cultures were drawn, which should have occurred within an hour or maybe two hours of her actually coming through the emergency room, so antibiotics should have been started by approximately two hours of this patient being admitted to the hospital.

Had those antibiotics been given at that time and they would have been given empirically, that is without knowing what bug was involved, but she would still have been started on exactly what she was put on later

essentially empirically, which would have been vancomycin and genomycin, and if those antibiotics had been started within two hours of her being admitted to the emergency room, then within a reasonable degree of medical certainty or more likely than not that would have diminished the likelihood of her having had that vegetation break off and having had the stroke that she had.

Now, at the same time, I cannot say that more likely than not had she been treated, she would not have had the stroke. I can only say more likely than not the chance of her having that stroke would have been diminished. Was that clear enough?

Q. So in other words, vegetation could have still broken off more likely than not?

MR. MISHKIND: Objection to the form of the question, but go ahead.

A. I can't answer it the way you've asked it.

Q. Am I correct that if she had been started --

A. Sorry, I'm sorry, I'm still thinking I can actually answer it the way you've asked

it, the answer is no. I'll say it again, more likely than not, her chance of having a stroke would have been diminished. I cannot say more likely than not it would not have happened. That means I also cannot say more likely than not that it would have happened. It doesn't mean that, but I mean it. So I just can't give you a specific percentage of the likelihood of her having had a stroke if she had been treated within a couple of hours with antibiotics after being admitted to the hospital.

I can only tell you that the likelihood of her having had a stroke would have been significantly decreased, and that statement is within a reasonable degree of medical certainty or more likely than not. For instance, to make it clearer since there seems to be confusion here, it's possible that she had a 50/50 chance of having had a stroke at that point in time, and that's why I can't answer more likely than not one way or the other she would or wouldn't have had a stroke if she had been treated with antibiotics. However, as I said already a couple times, if she had been treated with antibiotics, whatever

the percentage chance she had of having a stroke would have been diminished.

Q. You have a patient who you suspect may have a bacterial endocarditis. Do you call in consultants such as infectious disease specialists?

A. Yes, I frequently will. In fact, I take it back, I almost always will. The infectious disease consultants will be especially helpful at calling the microbiology lab, finding out what the bugs are, what the sensitivities are and helping to adjust the dose of antibiotics and will also play a crucial role in helping to choose the proper antibiotics.

This doesn't mean that I don't know which antibiotics to treat the patient with. It just means I try to get the very best medical care for my patients, so I will usually involve an infectious disease specialist to help me achieve that and to help me with some of the work as I've already described.

Q. Would it be appropriate in keeping with the standard of care if Dr. Balanson contacted an infectious disease specialist to

assist you in the management of this patient?

A. Absolutely.

Q. In keeping with the standard of care for Dr. Balanson, should have contacted a cardiologist to help her in the management of this patient?

A. Absolutely; however, given the fact that this patient -- that the working diagnosis of this patient when the patient was admitted was infectious endocarditis, both the cardiologist and the infectious disease specialist should have been contacted right away and should have been involved in the decision-making process right away.

Q. Do you know when they were called?

A. I believe they were -- well, I can only tell you that -- I'm sorry, they should have been called and seeing the patient or had input into the patient's care right away. I can only tell you that both of them were involved in the patient's care the next day after the patient was admitted.

Q. Do you see Dr. Balanson's office record?

A. Do I see or did I see? Yes, I did

see.

Q. Are you aware that she called them from her office while the patient was en route to the hospital for advice?

A. Do you want to point me to something specific in the medical records? In her note on 2/24/99 it says, I did discuss this with Dr. Cuglewski and Dr. Mosto, so I did believe she did discuss the case with those two doctors on 2/24/99.

Q. Are you aware that that was after she made the impression of endocarditis and had the patient sent to the hospital that she had those phone calls?

A. I believe so, that's what it looks like here, yes.

Q. Were you aware that Dr. Cuglewski, I'm not sure if I'm saying this correctly, recommended that antibiotics not be started after three sets of blood cultures from 24 hours to 48 hours apart?

A. Actually we have a variety of different recommendations being made by Dr. Cuglewski and his team, so you can look at all the different notes that were done to try

to put all of them together but -- and if you want, I'll go through that with you right now in terms of answering your questions.

Q. The progress notes, Dr. Cuglewski's progress notes?

A. His progress note on 2/25/99.

Q. That's the one I'm referring to.

A. Reads, will repeat additional blood cultures in next 24 hours and decide on antibiotic therapy.

In addition, there is a consult sheet that was filled out that was performed by Dr. Cuglewski and whoever his associate, in which the recommendation was made initially after blood cultures, should treat with antibiotics until blood culture results back and adjust medicines, and then that note is followed up by Dr. Cuglewski saying, see progress notes, so there is, if not an actual contradict in what is written, there's a slight change in terms of, and I should say, a change and a vagueness in terms of what's actually written in terms of when antibiotics should be started.

I believe that it's very clear and I

agree with the fact that antibiotics should be started after three sets of blood cultures were done, and as I've already said, those three sets of blood cultures could have been done within the first couple of hours from when the patient first got to the emergency room. I think it's a deviation from the standard of care in Maria O'Donnell to have waited for anything beyond those first two hours to actually start her on antibiotics.

Q. Well, Doctor, did Dr. Balanson who contacted the infectious disease specialist immediately have a right to rely on his recommendations as to what to do regarding antibiotics and blood cultures?

A. Up to a certain point. At the same time, Dr. Balanson is a treating physician and she should be aware of how to treat infectious endocarditis and how to treat infections in patients that have history of rheumatic heart disease and recurrent fever the way this patient had.

In addition, on the 25th -- on the 25th of February in 1999, she was called by Dr. Mosto and informed of the fact that the

patient had a vegetation on the mitral valve. So especially by that time she knew that this patient undoubtedly had endocarditis and had a very high-risk state for having a stroke being that the patient had a vegetation that was actually mobile or flopping around in the bloodstream on that mitral valve.

Q. Doctor, I also note that she called Dr. Cuglewski immediately after hearing from Dr. Mosto?

A. I believe that's in her note also, yes.

Q. Are you saying that Dr. Balanson should have overruled the specialist in infectious disease and gone ahead and treated this patient even though he did not want it to be at that time?

A. It's not a matter of overruling, it's a matter of the two of them treating the patient in an appropriate manner. She is an internal medicine physician that is in charge of this patient's care; and therefore, she along with Dr. Cuglewski need to make the decision as to how to treat the patient. And the standard of care in a patient that is

infected the way that this patient was and in -- especially in a patient with a known mobile vegetation is that the sooner and quicker a patient like this receives antibiotics, the more likely they are to do well.

Q. Well, Doctor, let me go back to my question then. If Dr. Cuglewski felt that this patient should not be treated immediately but wait until another set of blood cultures were gotten, did Dr. Balanson have an obligation to adhere to that advice?

A. If you want to put it that way, then Dr. Balanson had an obligation to draw another blood culture, that takes all of five minutes, and then to treat the patient with antibiotics.

Q. Did Dr. Balanson have an obligation to overrule any clinical advice given by Dr. Cuglewski and go away and treat this patient?

A. Again, it's not a matter of overruling but, yes, if Dr. Cuglewski gave advice that flies in the face of standard medical care, then it is her obligation to practice medicine within the standard of care

and treat this patient with antibiotics.

Q. Well, are you saying then that Dr. Cuglewski deviated from the standard of care in this case as well?

MR. MISHKIND: Objection.

Go ahead.

A. In terms of his recommendation to wait on giving antibiotics to this patient, yes, I believe he did.

Q. Do you disagree with the recommendation that the blood cultures should be done three hours apart?

A. Yes, the blood cultures are merely a matter of drawing a certain amount of blood to increase the likelihood of detecting bacteria in the bloodstream and growing them out. So there was no need to wait further and draw other cultures before starting the patient on antibiotics, rather the need was to draw the blood cultures over a relatively short period of time, get all the blood cultures in and start treating the patient with antibiotics.

Q. So the advice on 2/25 at 3:00 p.m. by Dr. Cuglewski to receive blood cultures in the next 24 hours is improper medical care?

MR. MISHKIND: Objection.

Go ahead.

A. Yes, in the sense that it deviates from what the standard of care would be at that point in time. Now, again, I'm not sure -- you said 3:00 p.m., so I'm not positive if at 3:00 p.m. he knew about the vegetation that Dr. Mosto had seen on the patient valve.

Knowing about the vegetation makes it that much more imperative that this patient be treated with antibiotics right away; however, it doesn't change what I said before, that the patient should have been treated with antibiotics empirically after a couple of hours after being admitted to the hospital.

Q. Did Dr. Mosto deviate from the standard of care when did he not come in immediately and do the echocardiogram?

MR. MISHKIND: Objection.

Go ahead.

A. No, I don't believe so because the echocardiogram was not ordered that way.

Q. Sorry, I don't understand that answer. Can you explain it?

A. Meaning that unless Dr. Balanson

directed him to both see the patient and do an echocardiogram as an image, then he did not deviate from standard of care.

Q. If Dr. Mosto knew on the afternoon of the 25th when the patient was admitted to the hospital that Dr. Balanson expected endocarditis, did he have an obligation in keeping with the standard of care to come in immediately to do an echocardiogram to assist in the diagnosis?

MR. MISHKIND: Objection.

Go ahead.

A. Your question doesn't make sense because he did do an echocardiogram on the 25th.

Q. Sorry, I had the wrong date. On the 24th at 5 p.m. when Dr. Balanson talked to Dr. Mosto and told him of her suspected diagnosis, did he have an obligation to come in immediately and perform the echocardiogram?

MR. MISHKIND: Objection.

Go ahead.

A. No, he did not because doing the echocardiogram or not doing the echocardiogram did not change what needed to be done for this

patient. That is, the patient needed to have blood cultures done, at least three sets, and within two hours or so started on empiric antibiotic therapy for infectious endocarditis or other deep-seated infection, and having done the echo or not doing the echo wouldn't have changed that; and therefore, it was perfectly within the standard of care and appropriate to have done the echocardiogram on the next day.

And again, as I said before, even the findings on the echocardiogram did not change what the standard of care dictated should have been done for this patient, it only bolstered it and made it that much more important that the patient be started on antibiotic therapy.

Theoretically, the patient should have already been on that antibiotic therapy by the time the echocardiogram was done, but once the echocardiogram was done on the 25th and the patient was still not on antibiotic therapy, it made it that much more imperative that the patient be started on empiric antibiotic therapy.

Q. You then disagree also and feel that

Dr. Cuglewksi deviated from the standard of care when he wanted to have the results of the blood culture back before starting treatment?

MR. MISHKIND: Objection.

Go ahead.

A. Yes, I've already answered that question and I've already said yes, he did deviate from the standard of care by wanting to wait for the blood culture results back before treating this patient with antibiotics.

Q. Did he also deviate from the standard of care by not recommending starting antibiotics before the results were back?

A. Yes.

Q. Do you know anything about Dr. Cuglewski's background?

A. I don't believe so. It's possible -- well, I mean, with exception of -- no, actually, I don't recall reading anything about his background.

Q. Are you aware that he's a infectious disease specialist?

A. With the exception of him being an infectious disease specialist?

MR. MISHKIND: Are you aware that he

was an infectious disease specialist, I believe that was the question.

A. Yes, I am aware of that.

Q. Can we agree, however, that if antibiotics are started in this case before the blood cultures -- the blood is drawn for culture, then you will not be sure what organism you're dealing with?

A. That is a possibility, but that's not what I said should have been done, according to the standard, I said that three sets of blood cultures should have been drawn before, then the antibiotics should have been given.

Q. So you are agreeing then that you take the blood samples and then start the antibiotics, not start antibiotics empirically and do the blood cultures?

A. Correct. However, in grave difference to what was done with this patient, this patient should have had the blood cultures done right away, as the first two sets were done, had the third set done very soon after and then started antibiotics, again, within two hours or so of being admitted to the hospital.

Q. In your opinion, did she have bacterial endocarditis on January 25, 1999?

A. Yes, I believe that the patient did have early infectious subacute bacterial endocarditis.

Q. What are you basing that on?

A. Based upon the circumstances of this case, her history, the procedure that she had on 12/15/98, the bug or organism or bacterium species that was eventually cultured out and presumed to be growing on her valve and the findings on echocardiogram from January 28, '99.

Q. What was the findings on the echocardiogram that leads to that conclusion?

A. On echocardiogram on January 28, '99, there is severe thickening and nodularity of the mitral valve leaflets, specifically severe thickening and nodular tissue in the area that this patient did develop a mobile vegetation, and so I believe that given her circumstances and presentation, that -- and knowing the natural history of subacute bacterial endocarditis caused by Strep. mitis, that this patient had underlying endocarditis

in a relatively early stage in late January of 1999 and it subsequently progressed after that point in time.

Q. What clinically was available to Dr. Zirafi to indicate that she might have endocarditis?

A. Not very much, in that Dr. Zirafi knew that the patient had a history of rheumatic heart disease and would have known or should have known that the patient had had some procedures recently, but based on Dr. Zirafi's medical records, which are very thorough and complete, the patient didn't have much else in the way of complaints at that point in time to suggest that she had underlying endocarditis.

So although I believe she did have it at that time when seeing Dr. Zirafi, she did not have much in the way of complaints or enough in the way of complaints to suggest that she had underlying endocarditis or that she required a workup or diagnostic testing for the presence or absence of underlying endocarditis.

Q. Is it your opinion then that Dr. Zirafi met the standard of care?

A. Yes. In terms of in her office

visit at that point in time.

Q. How about after the echocardiogram came back?

A. Although the echocardiogram was abnormal and though -- although it was required based upon that that Dr. Zirafi communicate those abnormalities to the patient, I believe she may have deviated from standard of care initially in not discussing those findings with the patient and/or making sure that the patient had adequate follow-up except for the fact that this patient did have follow-up after that point in time, and eventually Dr. Zirafi did send the results of that echocardiogram to the location at which Maria O'Donnell was having medical follow-up.

Q. She sent it to Dr. Mosto, correct?

A. No, she sent it to Dr. Rosenfeld, but at that clinic where I believe Dr. Parris was also.

Q. She also sent it to doctor --

A. She may have sent it to Dr. Mosto eventually, but I'm talking about she sent it on the 19th of February to Dr. Rosenfeld, I think the name is.

MR. MISHKIND: Correct.

Q. Doctor, let me just tie this and then I'll move on because the other attorneys will have to ask questions as well.

Did Dr. Zirafi's care in any manner deviate from the standard of care?

MR. DZENITIS: Objection.

MR. MISHKIND: Do you understand her question?

THE WITNESS: Yes, I do.

Q. No, I don't believe it did. I believe I would have done things a little differently in terms of making sure that the medicine doctors following her knew about her findings on the echocardiogram earlier, but I don't believe that Dr. Zirafi not doing that was a deviation from standard of care.

In other words, again, I would do it somewhat differently, but that doesn't mean she deviated from the standard of care, because eventually this patient did get medicine follow-up and she did get the results of her echocardiogram to the doctors that were following her.

Q. Turning to Dr. Hollin, did

Dr. Hollin deviate from the standard of care?

A. Yes, he did.

Q. In what manner?

A. In a number of manners, but very specifically when he saw the patient on the 18th of February, he did not obtain an adequate history or appreciate adequately the history from this patient of her having had a history of rheumatic heart disease.

Given the fact that this patient had a history of rheumatic heart disease and was complaining of 12 days of fever on and off, he should have had a very strong suspicion for the patient having underlying endocarditis, and therefore, should have made sure that the patient had an EKG, blood work including a CBC and differential, a Westergren sedimentation rate and blood cultures performed at that point in time.

In addition, for whatever reason, whether it be a broken machine or lack of technician or whatever, if the blood testing could not be performed that evening at his office or at the MedCenter or wherever, then he had an obligation to send the patient for all

the testing that I just described as soon as possible, whether it be to an emergency room, to a hospital or to some other facility, and ensure that this patient did receive that kind of testing as soon as possible. Had that testing been done, this patient should have been admitted to the hospital for an underlying deep-seated infection and presumptive infectious endocarditis and should have been treated according to the standard of care for that infection with antibiotics in a very timely fashion.

And had all that been done, then this patient would not -- would more likely than not not have had her stroke and more likely than not not have required valve replacement when she did. Although it is possible that she would have required valve replacement eventually, whether it be five, ten or twenty years down the line.

Q. What were the indications for the valve replacement?

A. The indications would have been worsening of her mitral regurgitation, enlargement of the chambers of her heart and

increasing in symptoms consistent with that valve regurgitation such as shortness of breath, weakness, fatigue.

Q. Should she have this valve replaced shortly after the initial stroke?

A. No.

Q. Why not?

A. Because there wasn't a specific need for it at the time.

Q. Did she ultimately flick off vegetation resulting in the optic artery being impaired?

A. I don't know if it's a vegetation, but she had an embolus or she had something -- most likely something from her heart valve that broke off and eventually caused her to lose her vision in one of her eyes.

Q. Should that valve have been replaced earlier?

MR. MISHKIND: Objection.

Go ahead.

A. Again, I already answered that question.

Q. How could that embolus have been prevented?

MR. MISHKIND: Objection.

A. Yes, if her valve had been replaced earlier, it might have prevented that embolic event in terms of her losing her vision and it also might have been fraught with other complications. You don't replace a valve when it doesn't need to be replaced because of what may happen in the future.

In this particular case, it is possible that replacing that valve would have prevented that particular event, but it wasn't indicated at the time.

Q. It was replaced shortly thereafter, was it not, Doctor?

A. Correct.

Q. I'm saying that that valve replacement was timely.

A. I think that replacing her valve at that time was a judgment call, but it was within the standard of care to replace her valve at that time, especially given the fact that she had had a second embolic event from problems with that valve.

However, if the valve had not been replaced at that point in time, that also would

have been within the standard of care. Undoubtedly her valve would need to be replaced at some point in time, but the longer that you don't have to replace the valve, the longer you put off her being exposed to the risks of dying from the operation, the longer you put off her having to be on Coumadin or blood thinners or have the risks of bleeding to death or bleeding complications from being on Coumadin.

So again, you don't replace a valve unless it's specifically indicated, but there will be times when it may or may not be indicated and that's when it is within the standard of care to do it either way. That's when it becomes a judgment call, that is, a judgment call still has to fall within the standard of care whatever that judgment may be.

Q. The date of the diagnosis of endocarditis --

A. Sorry, repeat the question, we missed the first two words.

Q. Was the impression endocarditis, is it not a judgment call as to the exact timing of starting antibiotics?

MR. MISHKIND: Objection.

Go ahead.

A. I can't answer the question the way you've asked it because you used the phrase "exact timing." I've already answered that question in the sense that I've said that it's within the standard of care to treat patients with infectious endocarditis or any deep-seated infection, and especially an infection like endocarditis, as an infection in the bloodstream. It's the standard of care to treat those patients with antibiotics as soon as possible because their likelihood of doing well is directly related to how quickly they get antibiotics.

To delay antibiotics in a patient that has an underlying deep-seated infection such as infectious endocarditis would be in deviation from the standard of care unless there were an overwhelming reason to delay that treatment.

Q. What would those reasons be?

A. None that are present in Maria O'Donnell in this particular case.

Q. What kind of -- give me some examples, however, whether or not in this case.

MR. MISHKIND: Objection.

Go ahead.

A. An example might be if the patient had already received intravenous antibiotics multiple times in the past, had already had an echocardiogram showing that there was no large vegetations and if it were felt that the patient was at low risk for having a delay in treating her with antibiotics or treating the patient with antibiotics, and so in that sort of circumstance, a brief delay in treating with antibiotics may be warranted within the standard of care but certainly not in a patient that has had a history of high spiking fevers, of fevers going on for a long period of time, with a history of rheumatic heart disease and without question not in a patient that has a mobile vegetation on the mitral valve.

Q. Do you have any criticisms of Dr. Kalucis?

A. Yes, I did, as I outlined in my report.

Q. What are those criticisms?

MR. MISHKIND: Objection.

Go ahead.

A. Those criticisms have to do mainly with the February 22, 1999 visit in which there is some ambiguity in terms of the history that he took from his patient in which he describes the patient as having her symptoms all returned, and it's unclear to me whether or not the symptoms that all returned were the hoarseness or whether the symptoms were also cough, fever and indigestion. I think it's possible to interpret the note that the patient had an episode of cough, fever and indigestion at some point prior to February 22, 1999 that mostly resolved but that gave her a return of her symptoms of hoarseness.

It's also possible that he wrote the note meaning that her symptoms of cough, fever and indigestion had returned; and therefore, I believe he deviated from standard of care, if indeed this patient had recurrent fevers, by not either treating the patient and/or doing diagnostic testing for the source of her fever or ensuring that the patient had adequate and immediate follow-up to do the same, that is treatment and diagnostic testing for those fevers.

So in order for him to comply with the standard of care, he would either have started the patient on empiric antibiotics on the 22nd or ensure that by the 23rd this patient was being seen by a medical physician, that is internal medicine, cardiology, whatever, by a medical physician to either diagnostically test and/or treat those fevers.

Q. Are you also suggesting that his deviations from the standard of care if he did what you said he should have done, that the consequences, embolic event would have been either attenuated or avoided?

A. No, I believe that on February 22, 1999 when he saw the patient, at that point in time, again, having started the patient on antibiotics that day or the next day more likely than not would have diminished the likelihood of this patient having had a stroke. However, again, on the 22nd, I cannot say more likely than not that treating this patient with antibiotics would have prevented the stroke.

Q. That's on the 22nd, I'm sorry, that's the date you said?

A. Yes, that's the date that

Dr. Kalucis saw the patient.

Q. Why is it you can't say that, Doctor?

A. Because I believe that this patient developed her mobile vegetation some time soon after, approximately the 20th or the 21st of February, and therefore, essentially after the 21st of February, treating with antibiotics would have diminished the likelihood of that mobile vegetation from growing and breaking off and causing a stroke, but I believe that by that time, it was too late to say within a reasonable degree of medical certainty or more likely than not that treating with antibiotics would have prevented the stroke.

Whereas before the 21st of February, I believe I can say that treating with antibiotics, that is appropriate antibiotics for endocarditis, would have prevented growth of her vegetation and eventual breaking off of the vegetation and eventual stroke. I think I said that correctly. I'll probably figure that out when we actually read the transcript of this deposition.

Q. Are you critical of Dr. Parris?

A. Yes.

Q. What manner?

A. How about before we get to that, we take a two-minute break?

MR. MISHKIND: Let's take a five-minute break.

(Short recess taken.)

Q. Doctor, I think where I left off, you have criticisms of the care of Dr. Parris?

A. Yes.

Q. Why don't you tell us what those are?

A. Okay. I'll try to summarize them as best I can. But basically when Dr. Parris saw the patient on 2/8/99, I believe that he had no appreciation of her history of rheumatic fever and rheumatic heart disease, that he inappropriately and deviating from the standard of care treated her history of hoarseness, fatigue, calf cramps, fever, sinus troubles and a temperature of 103.8 on 2/7 p.m. and also of 104.4 basically and also not having symptoms of an upper respiratory illness, basically that he treated those findings with doxycycline and in deviation of the standard of care did not do

blood work including a CBC, sedimentation rate and blood cultures and did not perform an EKG.

Essentially the same criticism or criticisms or whatever apply to the 2/11/99 visit, and essentially the same criticisms applied to any time from 2/17 on, that is, on 2/17, he received a phone call from the patient that fevers and chills were still present, he didn't get back to the patient until a day and a half later at 8:30 p.m. on 2/18 leaving her a message because the patient had already gone to the MedCenter, that he got a telephone call from the patient at 1 o'clock in the morning on 2/19 and was told that she had continued fevers to 103 and told her to take the Biaxin and didn't have her come in for diagnostic testing and/or treatment the next day, whether it be to the office or to the emergency room at the hospital, that on a second telephone -- that on the second telephone call of 2/19, he noted that the patient's CBC came back with a white count that was elevated at 11.4 and didn't attribute enough significance to that abnormal white count, again, to do what I said already, that is to ensure the patient had diagnostic

testing with blood work and EKG as discussed and eventually admit the patient to the hospital.

He also missed the significance of a rheumatic crit of 30, which is low and very clearly anemic and also consistent with her underlying infection. Basically that he didn't see her to do these things. And I should say either see her or ensure that she be seen by someone either in his office or in an emergency room or hospital or somewhere else to perform the testing and treatment that I've already discussed.

I think that pretty much outlines the major deviations from standard of care by Dr. Parris. Had he practiced medicine within the standard of care and ensured that this patient got the diagnostic testing of the blood work and the EKG in a timely fashion from February 8, 1999 on, then I believe she would not have had the subsequent stroke she suffered and would not have required her valve replacement at the early time that she then did have valve replacement.

Q. Doctor, have you told us the

criticisms of all the caretakers in this case?

A. I believe so, although some of it may be in kind of a summary form. I haven't given you a detailed line by line critique of every visit and every note by every doctor, that is, there may be other deviations in terms of not listing aspects of a physical exam or not properly documenting things in the medical records or not obtaining old reports or medical records when they should have been obtained, all sorts of things like that, but either way, I believe that the way that I've answered effectively summarizes the vast majority of my opinions and lays out the reasons for my opinions in terms of deviations from standard of care of the doctors involved in this case.

Q. Did you give me all of your criticisms of Dr. Balanson?

A. I believe so. If on relooking at my deposition or relooking at the records I realize that something has been omitted, then I will, of course, let Mr. Mishkind know as soon as possible so that he may inform you.

Q. At the time that you wrote your report on July -- January 17, sorry, 2001, not

seeing Dr. Balanson's deposition, correct?

A. Correct, I had also not seen the full and complete records from Dr. Hollin nor the full and complete records from Dr. Balanson nor the full and complete records from Mt. Sinai, but I'd clearly seen the majority of things as was outlined in my report, I believe, and certainly had enough of the records to form my opinions. And I don't believe my opinions have significantly changed since that point, they've only been bolstered by other materials that I've subsequently obtained.

With the understanding also that my opinions about Dr. Hollin in my report involved me discussing whether or not he actually had the information or whether or not Maria O'Donnell had communicated information about her rheumatic heart disease to Dr. Hollin, but at that time I did not have the intake questionnaire that was provided to me eventually in a more complete copy of his medical records in which I did see that he did have the information of her having had rheumatic heart disease and/or heart murmur in the past.

Q. Doctor, at the time of your report, Dr. Balanson's office notes are complete office notes?

A. I know that I didn't have complete office notes because I subsequently received a more complete copy of those office notes after issuing my report.

Q. And the initial set of records that you had at the time of your report did not include communications about her with Dr. Mosto and Dr. Cuglewski?

A. Correct.

Q. Also you did not have the complete Mt. Sinai records when we have the progress notes on 2/25 of Dr. Cuglewski, correct?

A. No, I believe I had that progress note.

Q. You had the consult, not the progress notes; is that correct, Doctor?

A. No, I believe I had both when I did my initial report. Let me just see. Yes, I had the progress note also from 2/25/99.

Q. Blood culture results, correct?

A. What about the blood culture results? I had those when I did my report

also.

MS. HARRIS: Okay. I don't have any further questions, Doctor. I'm going to scan my notes and let someone else go ahead of me first.

MS. MOODY: I'll go, David, if you want.

MR. MOSS: That's fine.

EXAMINATION BY

MS. MOODY:

Q. Doctor, I'm Nancy Moody and representing Dr. Parris and his medical group in this case. I just have a few follow-up questions here, I'll try not to be redundant.

How much vegetation does it take to cause a stroke?

A. Very small.

Q. How long does it take for an amount of vegetation capable of causing a stroke to form?

A. It may only take a day or a couple of days for the amount to form; however, the amount has to be formed and changed in a way that it's also likely to break off, so not only does a vegetation have to form as a growth on

the valve but it has to extend out, it has to have a stalk, it has to in some way become mobile or change in a way that little pieces start breaking off in the bloodstream.

Q. In this case, can you tell me to a reasonable degree of medical probability when the formation of the vegetation began?

A. Well, the formation of the vegetation began when the patient developed endocarditis sometime in late December and/or in January, December of '98 or January of 1999. By the time the echocardiogram was done on 1/28/99, there was undoubtedly vegetation material that existed on the valve, but none of it was specifically mobile or flicking around or looking like it was likely to break off.

So sometime after the 28th of January 1999 is when the vegetation would have -- vegetation material on this -- on Maria O'Donnell's valve would have changed in form and basically taken the form that was more likely to break off and embolies and cause a stroke. Given the fact that we see what it looked like on 2/25/99, given her clinical course in terms of fevers, when she first

spiked a large fever, which was at least on 2/7/99, I believe by 2/7/99 she already had a significant amount of infectious material on the valve to create a very high fever.

However, knowing how long it takes to form vegetations and their likelihood of breaking off and causing strokes, I believe she formed the mobile vegetation somewhere around the 21st of February or possibly even a little bit beforehand. That is, it may have already been mobile before then, but it continued to grow from that point on and become much more likely to break off and cause a stroke from, say, the 22nd -- or 21st to 22nd onward.

Q. Did you just say that on February 2nd of '99, she had enough vegetation on the valve to cause the high fever?

A. No, on February 7th.

Q. Wait a second. Strike that.

MR. MISHKIND: We knew what you meant.

Q. On February 7 of 1999, did you say that she had enough vegetation on her valve at that point to cause the high fever of 103?

A. Yes.

Q. Is it your opinion that the fevers that she claimed to have been spiking or actually had been noted were related to the vegetation?

A. That's simplifying things too much, it's not just the vegetation. She undoubtedly had infection on her valve, most likely in more than one isolated spot, and the vegetation grows out of one of the spots, but the vegetation is like a stalk of broccoli that's growing out of an area that is infected, but the area that is infected that the stalk of broccoli grows out of is also called a vegetation, it's just not the vegetation that also looks like a stalk of broccoli that's flying in the wind or flipping around in the bloodstream.

Q. I just wanted to be clear on whether or not you were saying that the temperature issue is related to vegetations and if there hadn't been vegetation, she wouldn't have had the spiking temperatures?

A. Yes and no in the sense that any endocarditis is, by definition, vegetation, okay, so vegetation just means growth on the

valve, but that's what endocarditis is, growth on the valve, it's a growth on any part of the heart, but in her case, she had growth on her damaged valves, so she had bacteria growing on her valves that started way back in either December soon after her -- the scope down her nose and then to the back of her throat or some time soon after that from another infection that she had, but either way, as soon as the valve was infected, it has vegetation on it.

The vegetation may just be a surface infection, it may not be flipping around in the bloodstream, but it's still a vegetation.

Q. And this vegetation, do you believe the vegetation that was forming was not visible on the echocardiogram that Dr. Zirafi did?

A. Well, no, on the echocardiogram that Dr. Zirafi did shows clear abnormalities that are nodules and thickened areas of the valve that could have been vegetations. But there's no way to know what they are at that point in time. They were just looking at the echo with her history at that point in time, there would be no way of knowing what they were.

In retrospect, I believe that there

were areas of infection on her valve especially given where her mobile vegetation eventually arises from. But again, at that point in time, to be fair to Dr. Zirafi, there would be no way for her to know what those thickenings were with the exception of saying that they're thickenings and they could have been there for 20 years from her rheumatic fever.

Q. Would your opinion be different if Dr. Zirafi knew of the history of fever and fatigue?

A. Absolutely.

MR. DZENITIS: Objection.

A. In other words, that's very clearly not present in her very detailed and comprehensive note. But in the --

MR. MISHKIND: She's saying hypothetically.

A. In the hypothetical that she knew that this patient was having fevers and fatigue, and the fatigue is almost meaningless, it's the fevers, but in the presence of this patient having fevers and having that echocardiogram, then the standard of care would have required her to have performed blood

testing, blood cultures, et cetera.

Q. Does every patient with rheumatic heart disease develop heart valve damage?

A. Not necessarily, but, yes, in that you've already described it as rheumatic heart disease, but sometimes rheumatic heart disease may be just some damage of the tissue, not of the valve specifically, so there's always the exception, but within a reasonable degree of certainty, anyone with rheumatic heart disease has damage to their valves or to a valve somewhere. Now, anyone with rheumatic fever may or may not develop damage to their valves.

Q. But it's your opinion that she developed damage to her valves as a result of rheumatic fever based upon the echocardiogram of January of 1999?

A. Yes.

Q. Even in retrospect?

A. Oh, absolutely.

Q. What caused the fever in this case to wax and wane?

A. That's the natural cause of subacute bacterial endocarditis with a organism like Strep. mitis in addition to the fact that she's

being treated with antibiotics at various times.

Q. You're aware, are you not, that there has been some testimony that Maria took antibiotics on her own that were not ordered by a physician at various times?

A. I believe so, yes, and therefore, those antibiotics may have also altered the course of her underlying endocarditis, not curing it, but making it wax and wane.

Q. Do you think that she caused her condition to be worse?

MR. MISHKIND: Objection.

A. Not specifically, no, she didn't cause her condition to be worse. If the infection was there, the infection was there. She may have partially treated it at times because she did or didn't take -- let's say she had taken other antibiotics at various times, it would have been partial treatment and so it would have made her -- her clinical course be something of intermittent fevers, but it -- that didn't specifically make her worse, if anything, it made her a little bit better, not curing her but, again, partially treating the

underlying infection.

Q. So in other words, you don't place much significance on the fact that she was taking antibiotics without a doctor's order?

MR. MISHKIND: Objection.

Go ahead.

A. Your question doesn't make sense. There is a significance to her taking antibiotics without a doctor's order is what may be contributing to the waxing and waning course of her fevers, of her infection, of her symptoms.

Q. Making it more difficult to diagnose?

MR. MISHKIND: Objection.

A. It may or may not make it more difficult to diagnose. It is not hard to diagnose someone with rheumatic heart disease who has endocarditis when they present with a fever of 103.8 and then 104.4, all you need to do is draw blood cultures, that takes all of five minutes.

Q. Did you see any place in the records that you reviewed where a health care practitioner actually took a temperature that

high on Maria O'Donnell?

MR. MISHKIND: What high?

Q. 103, 101.

A. I recall a temperature of 100 point something by either Dr. Hollin or Dr. Parris.

Q. Is it your recollection that the temperatures of 103 and 104 were reported by Maria as opposed to being temperatures that were actually taken by a health care practitioner?

A. Correct. In other words, at MedCenter by Dr. Hollin we have a temperature of 100.0, Dr. Parris has a temperature that was taken of 37.1.

Q. Which would be what?

A. Which I'd have to look at the conversion scale, but somewhere in the near normal range, and he just lists that the patient ran a temperature of 103.8 at night. In fact, her fever pattern was such that most of her fevers did seem to occur at night.

Q. Are there other illnesses where that is the case, that fevers tend to occur at night?

A. I'm -- almost anything that causes

fevers can have fevers that occur at night.

Q. But there aren't any particular diseases that you can think of that?

A. There may be, but it's not a diagnostic point. In other words, it's not going to make the diagnosis one way. Anything that is a bacterial illness can have fevers that tend to spike in the afternoon or evening, whatever, once a day.

Q. What, if anything, did the hoarseness play in this whole scenario, did it have anything to do with the bacterial endocarditis?

A. Well, only in that her hoarseness may have been a residual of an illness that she had that helped seed her valve with the bacteria. In other words, she might have had a viral illness that caused her hoarseness, she may have had laryngitis, a tracheal bronchitis that was viral, but if it also had a bacterial component to it and seeded her valve during that time, then that's what helped cause her infection, or her hoarseness is what got her to the ear, nose and throat doctor, Dr. Kalucis, that caused him to do the scope that he did

which may have seeded her valve with bacteria on 12/15/98, so that's how it played a role, but as a specific symptom, it's not diagnostic of anything except hoarseness.

Q. You have already answered this in discussing antibiotics and IV antibiotics and then needing to generally carry on with those four weeks. During that four-week time period, during the first week, is it -- is the vegetation continuing to grow or will giving antibiotic therapy stop the vegetation from growing as soon as the antibiotic therapy is given?

A. It would be different for a given individual patient, but as a general rule, once appropriate antibiotics are started, there should be no further growth of bacteria, and the inflammatory process should begin to subside because the bacteria are being killed and cleared.

Q. Is there any mechanical way to remove this flapping vegetation from the heart?

A. Yes.

Q. How would you do that?

A. Surgery.

Q. Was that indicated in this case?

MR. MISHKIND: At what point in time?

A. Indicated doesn't make sense in that it was indicated at lots of different times. Yes, it could have been performed any time after the 25th of February once that vegetation was seen. And once that mobile vegetation was seen on the 25th, the consideration for surgery was there, that is it could have been considered; however, it's infrequent that patients will be operated on for a single mobile vegetation alone without having already been started on antibiotics.

In other words, it would be within the standard of care to have operated on her and removed that vegetation because of the risks of stroke, but it would have also been within the standard of care to have done what I already described, which is to start the patient on antibiotics empirically within a couple of hours after admission and after having drawn her blood cultures and then followed her clinically with repeat echos to see what the vegetation was doing, and if the

vegetation was either growing or becoming more mobile, again, a decision could have been made at any point to either do surgery or not do surgery depending upon the findings of echocardiogram and/or her clinical course, that is, other things, like if she continued to spike fevers, if it looked like they couldn't clear the infection with antibiotics alone, that would also be an indication for doing an operation.

Q. Would the appearance of the flap, as we've been calling it --

A. The vegetation that was flapping in the bloodstream.

Q. Would the size of that or the appearance of the movement of the flap increase if that were -- if the movement was increasing or there was a fair amount of movement, would that increase the desire to treat it mechanically as opposed to medically?

MR. MISHKIND: Objection.

Go ahead.

A. Absolutely. And, in fact, she had a very mobile vegetation on the 25th. However, it's usually a size of 1 centimeter or so, that

is kind of the breakpoint at which point you start to consider doing surgery or not doing surgery, so hers was kind of a borderline case for considering doing surgery even on the 25th, but that's why I said, at that point in time on the 25th, it would have been within the standard of care to either do surgery and treat it with antibiotics right away or to just treat her with antibiotics right away.

Q. When you say that Dr. Zirafi did not have information regarding fever and fatigue, are you discounting what Dr. Balanson's records and Dr. Parris's records, indicating that at least she did have that information?

MR. DZENITIS: Objection.

Q. Let me refer you to Dr. Balanson's discharge summary on, I guess, Page 1. Under the past medical history, Dr. Balanson says, significant for rheumatic fever as a child, she does use antibiotic prophylaxis before dental procedures. She has not had dental work recently but relates visit to ENT in December 1998 for hoarseness.

A. Before you go any further, let me see.

Q. The discharge summary, it's dated 2/14/99 through 3/11/99.

A. I need to see the top part.

Yes, okay.

Q. In the paragraph beginning, past medical history, second paragraph.

A. Yes.

Q. I've read part of it to you, about four lines down, fever began about one month after the ENT visit, so the ENT visit we know was mid December, so based upon at least this dictation, the fever would have begun by mid January?

MR. DZENITIS: Objection.

A. Again, says about one month, that's not extremely precise as to when she had a fever, not only that but it's a retrospective past medical history given by Dr. Balanson in the hospital and dictated sometime on or around 3/11/99. I would just refer you back to Dr. Zirafi's note in which she clearly documents a detailed, you know, medical history and physical exam at which point she says the patient or she, Maria O'Donnell, denies any fevers or chills.

Q. Then in Dr. Parris's office visit of 2/8/99, he -- in the second paragraph of that dictation he says, about -- I'll start the third line down, he started her on Prevacid for possible laryngitis, her voice came back, but she seemed to have fever and fatigue. She saw Dr. Zirafi as an internist for fever and fatigue.

MR. MISHKIND: Now, your question is -- before he answered, I want to make sure I understand your question.

Q. I'm asking if you took those -- that information into account when you made the decision -- the determination that Dr. Zirafi did not have that information?

MR. DZENITIS: Object to the form.

A. Yes, I did, in that, again, this is Dr. Parris writing things based upon his impression and talking to the patient Maria O'Donnell about what was supposedly happening when the patient saw Dr. Zirafi, whereas we have a very detailed and complete documentation by Dr. Zirafi about what actually did happen when she saw the patient.

Q. That is certainly important to take

into account what the patient tells you about what has been happening, correct?

A. Yes, absolutely.

Q. Do you know Dr. Zirafi?

A. Not at all.

Q. Do you know any of the other Defendants in this case?

A. I don't believe so. Remember, I've already answered -- well, okay.

MR. MISHKIND: Wait for the next question.

Q. I believe you've answered this question, Doctor, but would Maria O'Donnell likely have needed a valve replacement at some point even if she had not developed bacterial endocarditis?

MR. MISHKIND: Objection.

Go ahead.

A. I can't answer that because the only study that I've seen on her was from -- the first echo is from 1/28/99 at which point she already had endocarditis and already had moderately severe mitral regurgitation, although her left atrium was only very mildly enlarged implying that the mitral regurgitation

had either been there for a short period of time, and actually I should have -- that should have been part of my answer when you asked me why did I think she had endocarditis when she saw Dr. Zirafi.

Part of the reason is also, I said the clinical course and didn't necessarily list every detail, but that's actually an important detail that at that point in time, she had moderately severe mitral regurgitation on her echocardiogram, but her left atrium was not particularly enlarged implying that the moderately severe mitral regurgitation had only been there for a short period of time. And since there's no other specific process that occurred with Maria O'Donnell to make her suddenly have worsening mitral regurgitation, her worsening mitral regurgitation must have been secondary to endocarditis causing damage to her valve and causing more leak.

So that's another reason why we know that she had underlying endocarditis at that point in time on 1/28/99, understanding that's all retrospective, looking at the size of the left atrium and what subsequently happened to

her left atrium. However, that is the first echocardiogram that I have on this patient, and so I can't tell you how much mitral regurgitation she had before that except that it must have been less than before that, she had to have at least a reasonable sized left atrium, if not normal, and therefore, that there is no way to say that she necessarily would have required ever having to have that valve replaced. We just don't know what the state of her valve was before that point in time.

Q. Would you agree that of the practitioners that treated Maria between January of 1999 and her admission to the hospital on February 24, that Dr. Zirafi had the most specialized training for diagnosing and treating bacterial endocarditis?

MR. MISHKIND: Objection.

Go ahead.

A. I can't answer the question the way you've asked it, it's a yes and no answer, because obviously she has more training in cardiology and she would have seen more cardiology cases, but the diagnosis is an

internal medicine type of problem that any internal medicine doctor or any internal medicine type of doctor should be able to diagnose.

Q. Is there any specialty of physician that you believe would not have a duty to be able to diagnose bacterial endocarditis?

MR. MISHKIND: Objection.

Go ahead.

A. Well, yes and no. Again, any physician should be able to recognize that someone has a potentially serious infection and make sure that they get appropriate help, but, for instance, Dr. Kalucis, who is an ear, nose and throat physician, would not really be adept at or typically making -- doing the diagnostic workup for endocarditis. It's easy enough for him to have blood cultures drawn on the patient, has an infection, if she has a fever that's ongoing and make sure that patient gets to proper medical care, but proper medical care would be an internal medicine or primary care type of physician ensuring that the patient had blood cultures, and blood cultures are easy to do.

Q. Certainly Dr. Kalucis could have ordered those, correct?

A. He could have, but that wouldn't have been his job to do so, in that his job would have been more to make sure that the patient was seen by an internal medicine type of doctor to ensure that the proper tests would have been done and proper follow-up was arranged.

Q. Doctor, in your letter -- your opinion letter, you indicated that at the time Dr. Parris saw the patient, that he knew of a history of mitral regurgitation and post-rheumatic fever, correct? You want to look at your --

A. I want to look at both records.

Q. It's on Page 2 of your report.

A. What are you referring to specifically?

Q. The third paragraph on Page 2.

A. You mean the first sentence?

Q. Yes.

A. At which time the important findings included her history of mitral regurgitation, post-rheumatic fever.

Q. That's one thing that you noted that Dr. Parris had information about?

A. Yes. Do you want to know why I came to that conclusion?

Q. Sure.

A. Because we have in Dr. Parris's note, the typewritten note from 2/8/99 where it says very specifically, the patient's past medical, allergic and surgical history is reviewed and notations made on the problem list. We then have the forms that were filled out by Maria O'Donnell, which are dated 2/9/99, but I believe that that is a mistake since these forms were reviewed by Dr. Parris on 2/8/99, and on those forms it very clearly states that the patient listed herself as having rheumatic fever and heart murmur in 1958 and rheumatic fever and also under illness or surgery, 1958, rheumatic fever at Rainbows Hospital.

Q. So you're basing your opinion on Dr. Parris having reviewed the -- what did you call this document?

A. It's a medical history sheet, but it's also -- it's noted in here as todays

written questionnaire in Dr. Parris's note.

Q. You also note in your opinion letter or mention her positive skin test for tuberculosis. What significance, if any, does that have to this case?

A. Only in that anyone complaining of persistent fevers and, again, lack of other types of symptoms or findings to point to a specific type of infection, you'd have to worry that the patient might also have disseminated tuberculosis, actually, I shouldn't say disseminated tuberculosis, an infection with tuberculosis, whether it be disseminated or in an individual area.

Q. And he notes -- you note that she had complaints of fever, fatigue, chills and a heart murmur dating back to 1958?

A. Are you reading from my note now?

Q. Yes, and all of the findings that -- all of the history and findings that were available to Dr. Parris were also available to Drs. Balanson, Kalucis and Hollin, would that be fair?

A. I believe so, yes. I mean, in one form or another -- well, no, that's not

necessarily true. They weren't necessarily all available to Dr. Kalucis, he wouldn't have had the same intake forms.

Q. He could have asked the same questions?

A. Yes, he could have.

Q. If one doctor has a duty to take an accurate history, then all the doctors have a duty to take an accurate history, wouldn't that be fair?

A. Yes.

Q. Doctor, can you tell me, you talked a little bit about your practice, you say you're in a solo practice. How many patients do you see a week?

A. Let's say an average of 15 a day times 5 days would be 75, plus whomever else I might see, hospital or shots or something like that, so I don't know, anywhere from 75 to 100 patients a day -- I mean a week, except if I take a day off to testify or do something like that, that will, of course, cut back on the number of patients that I saw that week.

Q. But an average week when you're in the office for the whole week or working the

whole week, you see a total of about 75 patients?

A. That's probably a reasonable estimation.

Q. Do you take a day off during the week?

A. No, not usually.

Q. Now, I think you testified about this before, you spend really very little time in the hospital; is that --

A. Compared to the amount of time I spend in the office, yes.

Q. The report that you wrote, and I'm sorry if I asked these questions over again because I'm kind of forgetting some of the things that Bev asked you, did you change the report in any way at any time?

A. This is my final report. I mean, there were undoubtedly drafts that existed that I might have had to word things differently or put commas in or, you know, punctuation or whatever, but I mean, I didn't write this perfectly right from my head as if I was Mozart composing music.

Q. Did you ever provide a draft report

to Mr. Mishkind and then ultimately dictate another report or change the report that had been submitted?

A. It's possible I may have done it, but I don't recall having done that specifically. I mean, I usually do at least a first draft if not five drafts while I'm writing the report thinking about it some more and getting it down on paper and changing it and everything else, so it's possible that at any point in time while I was working on it, I might have sent him something just to see what I was formulating for opinions, but I just don't have a specific recollection of that right now.

Q. Were you ever asked to make changes in the report?

A. Not that I recall. I mean, I don't usually get asked to make changes, nor would I necessarily make changes in a report. If it's my opinions, those are going to be my opinions based upon my review of the material.

I might make additions to it if I receive further information that I think changes the opinions in some way, and when I

received the further records that I did receive, it changed things subtly in that I now had clear-cut evidence, for instance, that Dr. Hollin did have this intake form that Maria O'Donnell listed her heart disease, rheumatic fever type stuff on it. But that still didn't change the opinion that Dr. Hollin had an obligation to either review that form or ask the questions himself and get that information when deciding on how to treat Mrs. O'Donnell, or Miss O'Donnell, I'm not sure which one it is.

MR. MISHKIND: Mrs.

Q. Did you discuss this case with any other physicians?

A. No.

Q. I notice in your CV that you've practiced at a number of various facilities since you started practicing medicine, sometimes for a couple of years, sometimes for more. Were your changes from one facility to another always related to business or monetary factors?

A. Well, no, they may have been related to a different job. I mean, I was full-time

faculty for, whatever, seven years at New York Hospital. I then took a position as the vice chairman of medicine and chief of cardiology at Brookdale Hospital. I then came back in private practice in Manhattan, and I then changed affiliations with various hospitals, various doctors, changing office practices and the different physicians that I'd been working with depending on how different business situations arose or opportunities arose.

Q. Were you ever a full professor in medicine?

A. No, I was only in a full-time academician for approximately ten years, so the usual sequence of events would be assistant professor for approximately seven years, associate professor for seven years, full professor after that.

Q. You've discussed the fees that you charged for reviewing cases. In 19 -- no, let's say in 2002, how much did you earn doing medical legal reviewing and testifying?

MR. MISHKIND: Objection.

If you know, go ahead.

A. I don't know. I haven't done my

taxes for 2002 yet, so I couldn't give you a total. I'll estimate it at somewhere -- estimate it as somewhere in the neighborhood of $150,000.

Q. I assume that you've never had your license to practice revoked, suspended, modified in any way?

A. Well, whether you assume or you don't, I haven't.

MR. MISHKIND: It was an accurate assumption on your part.

Q. You're board certified in what specialties?

A. In internal medicine and cardiology, as listed in my curriculum vitae. In terms of when I took the boards, having passed them the first that I took them and having taken them the first time that they were available to me.

Q. In, I think, the initial CV that I had, it mentioned that you were a fellow of the chest surgery?

A. American College of Chest Physicians.

Q. What does that mean?

A. That means there's an American

College of Chest Physicians made up of chest surgeons, pulmonologists, internal medicine doctors, and to become a fellow, you had to have contributed to the field in terms of teaching, research, practice, in some way been deemed outstanding enough to qualify as a fellow in the society. And so I -- whatever I earned the title fellow, you know, through my publications, teaching, that sort of thing, same thing as a fellow in the American College of Cardiology.

Q. You mentioned that you had done a number of, I think you called them, exchange electives?

A. When I was a medical student, yes.

Q. What is the purpose of doing exchange electives?

A. So that you get to live in a different city, meet new people, see different types of medicine practiced in different parts of the country in different subspecialties; for instance, when you practice infectious diseases in southern Los Angeles, you -- some of the things that I saw that I wouldn't have seen otherwise were probably things like leprosy or

parasitic diseases or valve infections in patients that had endocarditis from that part of the country, which might involve different organisms than the valve infections that I had seen in Baltimore at Hopkins or the valve infections I might have seen up in Boston at Harvard medical school and its hospitals, those sort of things.

Q. Is this something that is typically done by physicians in training?

A. I can't tell you typical or not, a lot of people do it. I don't know if typical means more than 50 percent or not, so I don't want to give you a legal definition that way, but lots of people do it because the medical schools, to some degree, encourage it. It would be the same thing as being an exchange student in college where you took courses at another university.

Q. I think perhaps you were asked this question. What percentage of your income is derived from medical legal work?

MR. MISHKIND: Objection, but go ahead.

A. I'd guess approximately 10 percent.

Q. Have you ever practiced with a group?

A. Well, yes, when I was full-time faculty at either Cornell or full-time employee at the hospital, I was a member of groups of physicians at that time, but otherwise since 1997, I've been in solo practice. I've been in offices with other physicians, but we all have separate practices, we just share facilities or rent or space or whatever.

Q. Have you ever treated a patient with bacterial endocarditis?

A. I'd say probably hundreds of times.

Q. When was the last time you treated a patient with bacterial endocarditis?

A. Within the last year.

Q. How many have you treated within the last year?

A. Only one or two that I can think of. In other words, there may have been other patients that I treated that had bacteria in their bloodstream and that we were worried about it being endocarditis and ended up treating it as if it were endocarditis, but I can't say for certain that it was endocarditis.

Q. You listed a number of companies or affiliations related to perhaps having your CV and forwarding cases to you for review, but do you do any type of advertising yourself as far as medical legal expertise?

A. No. I don't even know how some of those companies contacted me. I believe some of them found me in the Jury Verdict Reporter because I was listed as having been listed as an expert witness, I can't even tell you. The only time that I ever actually even submitted anything to anyone was at the request of a lawyer from a defense firm in Manhattan who asked me to send him a CV or curriculum vitae and outlining, you know, what I've done for medical malpractice, and so I wrote him a little cover letter and sent my curriculum vitae to that law firm.

Q. Have you ever been sued for malpractice yourself?

MR. MISHKIND: Objection.

A. Yes.

Q. How many times?

MR. MISHKIND: Objection. Let me show a continuing line of objection, but

you can continue to answer the question.

A. I believed I was a named defendant three times, although it might have been twice with me as a nonparty witness once. All of this is written down somewhere, it automatically gets submitted for all credentialing and things like that.

One or two of the cases were, I think, dismissed without or with prejudice or something like that. One of them involved a patient that had a cardiac arrest in the electrophysiology lab that ended up in my CCU when I was the full-time associate director of that CCU. In fact, these all date back when I was full-time faculty at New York Hospital, so they all date back to before 1995, I believe.

Another one, I don't even remember the circumstances of that case, another one was for a patient that had a rare reaction to Heparin or a blood thinning drip, he was in the intensive care unit, who ended up losing a piece of his hand.

Q. You treat only adults?

A. No, I have seen whatever you would call human beings under the age of 18, whether

you call them children or not, usually they tend to be big children.

MR. MISHKIND: Depends upon which parent you're speaking to.

A. So overwhelmingly, more than 99 percent of my patients are over the age of 18.

MS. MOODY: I don't think I have anything further.

MR. MISHKIND: David, you want to go next?

MR. MOSS: Let me go.

EXAMINATION BY

MR. MOSS:

Q. I don't have too much, Doctor, I'm going to be skipping around a little bit, so bear with me, please.

I want to just go -- and I represent Dr. Hollin. As I took down your opinions with respect to Dr. Hollin, you indicated that he deviated from the standard of care on February 18th of 1999 in failing to obtain an adequate history to appreciate the patient's history of rheumatic heart disease, and in light of her history of rheumatic heart disease

with a history of 12 days of fever, Dr. Hollin should have had a strong suspicion for endocarditis and therefore should have ordered an EKG, blood work including a CBC and differential and a sedimentation rate and blood cultures.

Is that essentially the sum total of your criticisms of Dr. Hollin in this case? I'm going to have some follow-up questions, but I want to make sure I took everything down.

A. No, it's not. My general total is whatever I testified to already, so you've paraphrased it and I believe you've left some things out, but some of the things you left out also include making sure that the patient had adequate follow-up or having then admitted the patient to the hospital or send the patient to the hospital or, you know, all the other things that I talked about beforehand.

Q. All right. Some of these criticisms you're offering for the first time today with respect to Dr. Hollin, in other words, they were not included in your report; is that fair?

MR. MISHKIND: Objection.

A. I don't think that's true, but let

me just see. It's quite possible that some of my criticisms are more specific today.

Q. There's no mention in your report that Dr. Hollin deviated from the standard of care in failing to order an EKG, is there?

A. That's true, but -- at the same time that's true, but it's true because in my report I didn't include it, because although I think it's a deviation from standard of care that he didn't order an EKG, I do not think the findings of the EKG at the time would have been important in the care of this patient at that point in time.

Q. Okay. So you would agree then that that failure did not cause or contribute to any harm to this patient?

A. Correct.

Q. All right. Maybe this will streamline everything if that's the basis upon which you left some of these things out of your report.

With respect to the blood work, your report does not mention anywhere that Dr. Hollin deviated from the standard of care in failing to order a WESD, a sed rate,

correct?

A. Correct.

Q. Is that because you don't believe that would have made any difference in the ultimate outcome?

A. No, it's because he did get a CBC and I'd actually thought that he had ordered a sedimentation rate at the time, because when I went through the records, I mixed up the test that was done in the hospital with what I thought he had ordered, so I thought it actually had been done. But upon relooking through the records, it should have been done at that time, and it would have been markedly elevated, but it still would have played a backseat role to have -- obtaining blood cultures.

Q. All right. I just want to -- need to know whether or not you believe that Dr. Hollin's failure to get a sed rate was a proximate cause of any harm to this patient.

MR. MISHKIND: Objection. Are you talking about in isolation or in conjunction?

MR. MOSS: He just explained,

Howard, the basis upon which he's saying that that's a criticism. I want to know whether he has an opinion that that criticism or that failure to get the sed rate caused any harm to this patient.

MR. MISHKIND: Okay. I'm going to object to the form of the question, but go ahead.

A. Yes, I believe it did.

Q. Okay. Tell me what that was.

A. Well, I believe that if he had done a sedimentation rate, it would have been markedly elevated, and that would have been another piece of information along with this patient's CBC test results and blood culture results which would have caused either him or someone that he sent the patient to very shortly thereafter to have hospitalized this patient and gotten her proper treatment for her endocarditis.

Q. Now, you also indicated in your deposition earlier that you mention that he deviated from the standard of care in failing to get blood work including CBC and differential. Dr. Hollin did, in fact, order a

CBC and differential on this patient, did he not?

A. Well, he didn't get it that night. I believe he got it the next morning.

Q. All right. And are you critical of the fact that he was unable or did not get it that night?

A. Yes, I am, although I don't believe that him not getting it that night was an overwhelming cause of this patient's stroke, or I should say, was a significant contributing factor to this patient's stroke, but it's hard to say that, only in that I can't isolate these things out individually in a sense this patient had physicians deviating from the standard of care back to February 8, and everything that happened after that point contributed to her eventually having a stroke from an infection that was not properly treated within the standard of care.

Q. Appreciate that, Doctor, but you understand that the legal standard for medical malpractice includes deviation from standard of care but approximate cause, you understand that, correct?

A. Yes.

Q. That's why I'm asking these questions, these specific questions, and I need -- I really need to know what your opinion is with respect to each of these criticisms.

A. Okay. Then him --

Q. I'm asking --

A. So let me answer your question as best as I can in saying that him not obtaining a CBC that night contributed to this patient's stroke.

Q. In what way, Doctor?

A. In that it delayed her diagnosis that much more further or at least the potential to diagnose her that much more further.

Q. How long did it delay her diagnosis or potential for diagnosis?

A. It put off her blood testing for another eight to twelve hours.

Q. It's your opinion that that eight to twelve-hour delay resulted in additional harm to this patient; is that your testimony?

A. Yes, in the sense that all the delays from February 8, 1999 on contributed to

this patient's stroke, that is all the delays in treating this patient with antibiotics.

Q. Is there a particular reason, Doctor, why you did not include the opinion about the failure to do an EKG and a failure to obtain sedimentation rate, CBC and differentiation that night in your report?

A. No. I just focused on what I thought was the most important thing at that point in time.

Q. Do you understand that the purpose of your report is to outline your opinions so that we know what your opinions are and can defend our respective clients, correct?

MR. MISHKIND: Objection.

Go ahead.

A. If you tell me so, yes.

Q. Well, isn't that -- in your work in this field, isn't that typically the purpose of a report, so that the other side knows what your opinions are going to be at trial?

A. Yes, or at least knows what my opinions are likely to be at the time of deposition. In other words, I also knew that I was going to be deposed, and therefore, I would

have a chance to expand upon my opinions as listed in the report, and so I didn't feel that I needed to detail and list every single thing that I could think of going down every single line of the medical records, but rather to try to give both a broad overview of my opinions and what I thought were at least some of the more important details.

Q. How many pages of medical records are there from Dr. Hollin in this case, Doctor?

MR. MISHKIND: Do you want him to count the records?

Q. Essentially one page, is there not?

A. I've got about nine pages here which include the MedCenter front sheet, a chest X-ray report, a CBC report, a MedCenter, I don't know what this is, a registration sheet of some sort.

Q. I'll take your word for it, there's nine pages of records?

A. See, that's not one.

Q. There's only one page that has Dr. Hollin's writing on it, is there not?

A. I don't know because my discharge sheet for the patient has writing on it that, I

think, is probably not Dr. Hollin's writing because it is actually legible and readable, but I'm not sure whose it is. It doesn't look like his writing, but I also have a prescription from Dr. Hollin with his writing on it, that's in my records.

Q. Okay. Is it your opinion, Doctor, that Dr. Hollin should have had a duty to make a diagnosis of bacterial endocarditis in the urgent care center on April -- sorry, on February 18 of '99?

A. No, it was not his duty to diagnose the patient with endocarditis. It was his duty to recognize that this patient was extremely high risk for having endocarditis and to ensure that diagnostic testing was performed which would help make that diagnosis and that the patient was sent to a practice facility or provider or health care provider such that they could get treatment for presumptive endocarditis.

Q. And one of the providers to provide such treatment would be Ms. O'Donnell's primary care physician, correct?

A. Correct.

Q. And Dr. Hollin did make a referral to her primary care physician for follow-up, correct?

A. Yes, but not for three to five days, according to what is listed in his little follow-up box on the front sheet from the MedCenter, which was a deviation from standard of care.

Q. But he did see that the diagnostic test results were provided to the primary care physician the following day, correct?

A. No, he did see that his incomplete and inadequate diagnostic testing was provided to her primary care physician the next day.

MR. MOSS: I'm going to move to strike the characterization.

Q. He did see, Doctor, that the blood work that he ordered and the chest X-ray that he ordered, both of which are diagnostic tests, were provided to her primary care physician the following day, can we agree to that?

MR. MISHKIND: Note my objection.

A. I believe so. I'd have to go back through Dr. Parris's records to determine when precisely he received the CBC and the chest

X-ray from Dr. Hollin or from the MedCenter, but I believe it was the next day.

Q. You have offered criticisms of Dr. Kalucis and of Dr. Cuglewski in this case, correct?

MR. MISHKIND: Objection.

Go ahead.

A. Yes.

Q. Is it your opinion from the deviations from standard of care by Drs. Kalucis, Cuglewski, were the proximate cause of harm to this patient?

A. I can only say that both those physicians, that their deviations from standard of care reduced the likelihood of her not having a stroke, and I'm making all these opinions within a reasonable degree of medical certainty or more likely than not; however, I cannot say that their deviations more likely than not caused her stroke.

Q. I understand, but what you are saying is that their deviations increased the likelihood or not -- that's not the way to say it -- strike that.

Their deviations increased her

chance of having a stroke?

MR. MISHKIND: Objection, but go ahead.

Q. May not prevented it, but increased the chance of it occurring?

MR. MISHKIND: Same objection, but go ahead.

A. Yes, I think that that's another way of saying it.

Q. Okay.

Doctor, do you have an opinion -- well, let me back up.

Miss O'Donnell had just completed a ten-day cycle of doxycycline when she saw Dr. Hollin on February 18, '99 correct?

A. Yes.

Q. You would agree that that fact may have resulted in blood cultures having -- if blood cultures had been taken on the 18th, the fact that the patient had just completed that cycle of antibiotics may have resulted in those cultures coming back negative?

MR. MISHKIND: Objection.

Go ahead.

A. No, it would not have since we

specifically know that the bug she grew out on her valve was essentially resistant to that antibiotic.

Q. You hold that opinion to the reasonable degree of medical probability?

A. Yes.

Q. You would agree that the physicians who treated her in the hospital had concerns about the validity of the initial set of blood cultures because of the patient's recent antibiotic therapy, correct?

A. Correct, but at the same time, their concerns involved her having had doxycycline beforehand but specifically her being on Biaxin at that point in time when she was hospitalized.

Q. That's because Biaxin probably was somewhat effective in treating the strep viridans and Strep. mitis organisms that Mrs. O'Donnell had, correct?

A. Yes, it would have been somewhat effective, it wouldn't have cured it, it might have suppressed it to some degree, and it might have interfered with the ability to -- it might have interfered with the ability to grow things

out in culture. Of course we know that it actually did not interfere with the blood cultures because she had her blood cultures drawn upon hitting the emergency room and those cultures grew out the organism.

Q. Is the fact that a patient has undergone recent antibiotic therapy ever an appropriate justification for delaying the administration of antibiotics in a patient who's suspected of having infectious endocarditis?

MR. MISHKIND: Objection to the form, but go ahead.

A. Yes, but only in a very clear-cut, low risk case, that is, only when it's been documented and felt that the patient's at low risk for having complications from their endocarditis, and therefore, the benefits of waiting a short period of time and drawing repeat blood cultures while antibiotics might be clearing out of the bloodstream is that the benefits outweigh the risks of not treating an underlying, ongoing, potentially lethal infection.

Q. Doctor, would you agree that the

criteria for diagnosing endocarditis are positive blood cultures, positive echocardiogram, new regurgitant murmur and fever?

A. Those are some of the criteria. The only one that really matters would be the positive blood cultures in that in a patient with positive blood cultures, I might have an echocardiogram that doesn't show any vegetations, but echocardiograms only show a certain amount, and you can have small vegetations that won't show up on an echocardiogram, you may also have no change in the patient's heart murmur if the endocarditis is very early when it's caught and hasn't significantly damaged the valve.

So the reality is it's the positive blood cultures that, by definition, mean that there's an infection in the bloodstream and if a patient has any history of rheumatic fever in the past or any abnormalities of their heart valve, then it almost needs to be -- it almost needs to be presumed according to the standard of care that that patient has an infected heart valve. In other words, you have to go out of

your way to prove that the valve is not infected.

Q. Is there any evidence in that record, Doctor, that this patient --

A. Sorry, let me finish my answer too because I've been thinking about it a little bit more.

The other thing is that it also depends very strongly on the organism involved, and with Strep. mitis of viridan strep species like this, this is the type of bug that is absolutely classic for infecting the heart valve. There are very few other types of things that you're likely to see this type of bloodstream infection in with this type of organism, although a sinus abscess or a tooth abscess or something like that might cause the patient to have bacterium or bacteria in the blood stream from that particular bug, but without question in a patient with no other source of infection with a damaged heart valve and Strep. mitis in the bloodstream, then the diagnosis will be endocarditis or Strep. mitis infection of the heart valve.

Q. Thank you, Doctor.

Based upon your review of these records, have you seen any evidence pathologically that this woman had rheumatic heart disease?

A. Yes.

Q. Where have you seen that?

A. On her echo from 1/28/99 and then on the subsequent echos. The echo from 1/28/99 has changes on the valves that are very consistent with rheumatic heart disease. Now, at the same time they are also consistent with a valve with rheumatic heart disease that's been infected.

Q. So that, in your opinion, is significant to determine that this patient, in fact, had rheumatic heart disease?

A. Yes, with her history of having been hospitalized with rheumatic fever and with those echocardiographic findings, then more likely than not this patient has underlying rheumatic heart disease.

Q. What exact findings on the echo are you referring to?

A. The pattern of thickening of her heart valves.

Q. What is that pattern?

A. That her valves are thickened all the way throughout.

Q. Why is that indicative of rheumatic heart disease?

A. Because there are -- at her age and without any other types of illnesses, there are very few things that will thicken the heart valves like that, and given her past history of rheumatic fever, then it's overwhelmingly likely she has underlying rheumatic heart disease. This is not a mystery and this is not very difficult, this is very straightforward.

Q. Did you review the pathology after the removal of her valve?

A. At some point, yes.

Q. Is there any histopathological evidence there that this valve was, in fact, diseased with rheumatic disease?

A. I don't think it was necessarily adequately addressed, but you want to put the report in front of me, if you know where it is without having me go throughout all the records to find it.

If you want, I will review the

report with you now or do you want to just keep moving on?

Q. I just want you to answer my question and I'd like to move on too.

A. Okay. Then I'll leave my answer the way I left it.

Q. Well, I guess I'm not sure what your answer is. Did you see any evidence in the report?

A. As we speak, I can't recall, I'd have to go back and look at the report again.

Q. I would like an answer then.

MR. MISHKIND: He's doing that right now.

A. Do you have the report in front of you, by any chance?

Q. I'm looking for it myself.

MR. MISHKIND: We are all looking for it now, David.

Q. I'm convinced I don't have it with me.

MR. MISHKIND: The doctor is looking at the operative report, but I don't think any of us are locating the path report very readily, David.

I've got the surgical report which doesn't really say much of anything. I'm not sure we can address --

MR. MOSS: Let's just leave the record as it is at this point.

MR. MISHKIND: Okay. Obviously if there was something specific to it...

A. I'll be more than happy to answer questions on it when we find it in either interrogatory form or if you want to do a telephone continue of this for ten minutes or something, we'll do whatever you want to do.

Q. Doctor, have you ever spoken or given presentations to any attorney groups?

A. Not that I know of. Well, I mean, as like a formal lecture or speech?

Q. I'm talking about, you know, continuing legal education seminars or groups of attorneys that are getting together for a particular -- to review a particular issue.

A. I wish, but no, I haven't.

Q. Are there any particular texts that you consider important or particularly reliable on any of the issues that you are testifying about in this case?

MR. MISHKIND: Objection to the form of the question, but go ahead, Doctor.

A. No, not specifically.

Q. Have you done any specific research in connection with this case?

A. No, it wasn't necessary. The facets of this case are very, very straightforward.

Q. The temperature that was recorded at the time Dr. Hollin saw Mrs. O'Donnell in the urgent care facility was 100.0, correct?

A. Yes.

Q. Is there anything to indicate that Mrs. O'Donnell ever reported the temperatures of 103.8 or 104.4, I think it was that you mentioned, to Dr. Hollin?

A. No, not in the medical records of Dr. Hollin, no, those are listed in Dr. Parris's records.

Q. The opinion that you've offered that had Mrs. O'Donnell been diagnosed and treated earlier, it would have diminished the chance that she had a stroke, can you quantify how much that chance would have been diminished?

MR. MISHKIND: I'm going to object to the form of the question because you --

he has testified to a probability on certain dates, he's testified, reduce chance on other dates, you've just sort of thrown that out in general, so note my objection to the form of your question, David.

A. I would also say, I can't really answer that unless you get more specific.

Q. Well, let me ask it this way: At any point in time, can you say -- can you quantify -- at any point in time, can you quantify the degree to which Mrs. O'Donnell's chance of suffering a stroke would have been diminished had treatment been instituted?

MR. MISHKIND: Objection.

A. I've already answered that question. I said, you know, all the way up until, say, the morning of 2/26/99, having treated her with antibiotics -- appropriate antibiotics intravenously before that time would have diminished her chance of a stroke.

Q. What I'm getting at, how much would it have diminished?

A. I can't give you a number. I can only say it would have diminished it. It's

obviously a smaller and smaller amount. The later and later in the course of her illness that the doctors waited such that on February 21 or 22, thereabouts, that's the approximate time when treatment with antibiotics no longer had a 51 percent chance or more of preventing a stroke in Mrs. O'Donnell.

Q. And why is it that you select that date?

A. Because of the appearance of the mobile vegetation on 2/25 which was approximately four days later, because of how long it takes to draw blood cultures, start antibiotics, get the patient into the hospital, all those sorts of things. I think approximately four or five days would -- sorry, I think three or four days would be a reasonable amount of time to have gotten in there before the 25th and started her on antibiotics and that that would have likely have prevented her stroke.

After that point in time, I just think the closer and closer you get to the 25th, the more likely that that vegetation is

already there and mobile and growing further and, of course, not only is it mobile and flopping around like on a stalk, but the head of it is growing even more and getting heavier and heavier, making it more likely to break off and cause a stroke.

So I'm trying my best to give you a time period in which it was more likely to not happen if you treated her with antibiotics, but after that point in time, I can't be that precise except to say that it's less of a chance.

Q. How large a hospital is North Shore University Hospital at Forest Hills?

A. I honestly don't know. I don't keep track of it. It's a community hospital in the New York City area. I couldn't tell you if it's 300 beds or 500 beds.

Q. You have no idea?

A. I honestly don't know. It changes every month, when they close down one unit or open up another unit, I don't even know what counts as inpatient or outpatient these days. They have all these outpatient centers treating patients in the hospital, but I think they

count as outpatient not as inpatient beds, so I don't --

Q. Give me a range.

A. I would say it's a medium-sized community hospital.

Q. Give me a range of beds.

A. I can't do that. I would guess 300 beds, I don't know.

MR. MISHKIND: It's okay if you can't, that's your best answer.

Q. Participating in some studies of cholesterol controlled medications and medical devices at New York Hospital and Lenox Hill, do you recall that testimony several hours ago?

A. Yes.

Q. You have no active role in actually conducting those studies, correct?

A. With the exception of actually taking care of the patients in my practice and referring to the -- referring them or enrolling them in those studies, no.

MR. MOSS: Thank you, Doctor, those are all the questions I have.

THE WITNESS: You guys realize it's after 2 o'clock?

MR. MISHKIND: Shortly.

EXAMINATION BY

MR. DZENITIS:

Q. My name is Paul Dzenitis, I represent Dr. Zirafi. That doesn't count as a question.

You did not identify any criticisms of Dr. Zirafi in your January 17, 2001 report, correct?

A. Correct.

Q. You are of the opinion, and I think you testified, that Dr. Zirafi acted reasonably in treating Ms. O'Donnell?

A. Yes.

Q. Nonetheless, Ms. O'Donnell had infective endocarditis on January 25, 1999?

A. Yes.

Q. How is it that Dr. Zirafi could be acting reasonably when she's a cardiologist, she has specialized training in this area and Ms. O'Donnell has infectious endocarditis when she sees her?

A. Because her infectious endocarditis at that time was subacute, also maybe subclinical, as it's called, in other words,

she didn't have clinical symptoms or findings at that point in time to indicate that she had an underlying infection. It was brewing underneath. It is also possible that Maria O'Donnell had taken antibiotics on her own some time soon before she saw Dr. Zirafi which basically suppressed all of her symptoms and made her look healthy or healthier at that point in time such that there was nothing going on at that time that would have clued Dr. Zirafi in -- or clued in Dr. Zirafi to the idea that she had an active infection that was active at that point in time.

So if -- and again, I've already answered the hypothetical, if it turns out that Dr. Zirafi did somehow know that she had a fever at that point or that she had just had a fever the day before or, you know, very, very shortly before that or had had a long series of fevers beforehand or had spiking fevers or intermittent fevers, it's a whole different issue, but that's very clearly not documented in her well-documented, thorough and well-written report, so there's no reason to think that -- that she didn't take that history

appropriately and get that history.

Q. You were asked questions about communication of the results of the echocardiogram to the other medical doctors, and I think you indicated that you would have done things differently, but you didn't think that Dr. Zirafi deviated from the standard of care in her actions; is that correct?

A. Correct.

Q. Why is it your opinion that she did not deviate from the standard of care in communicating the results of the echocardiogram?

A. Well, because the results of the echocardiogram did not require emergency notification of anyone. They really just required making sure that Maria O'Donnell had a physician that was going to take care of her, that knew she had rheumatic heart disease, that knew she had mitral regurgitation and that should have known, therefore, that Maria O'Donnell would have needed antibiotics before dental work, which she was taking already anyway, that sort of thing, for general informational purposes and routine medical care

and follow-up, but it wasn't an emergency.

So whereas I would have followed up with a patient specifically and made sure that the patient knew and told the patient that she needed to notify me when she saw the other doctor so we could be sure to get that information to the other doctor, as long as that information got to the other doctor and as long as Maria O'Donnell was being followed by another doctor such as Dr. Parris, then it was -- then things got done.

Q. Let's assume there were not results, or the information from the report was not given to the subsequent treating physicians. Was there sufficient information on February 8 for the physician treating her to order the proper tests resulting in the diagnosis of infective endocarditis?

MS. MOODY: Objection.

A. Absolutely, in that we've already discussed that they -- Dr. Parris knew on February 8, again, from that intake form, from the other things we've discussed, that she had a history of rheumatic heart disease, that she had a history of a particularly high fever at

103.8 and 104.4, and therefore, was extremely high risk for having underlying endocarditis, so it almost doesn't matter what the results of her echocardiogram were or were not beforehand. The same thing would have still needed to be done, which is the diagnostic testing that I said to help make the diagnosis of infectious endocarditis.

Q. In your words, did it matter what the results of the echocardiogram tests were to the physicians treating her on February 11?

A. No, it did not. Again, if they had seen the echo, perhaps it would -- might have stimulated them to be more vigorous in ordering the blood tests on this patient, but you don't need the echocardiogram results to know that the patient has a history of rheumatic heart disease.

Q. Same question with February 18?

A. Same answer all the way through.

Q. And February 22?

A. Same answer all the way through.

Q. Do you spend over 50 percent of your professional time in the active practice of medicine or teaching?

A. If you mean by medicine, medicine -- internal medicine and cardiology, yes, as I've already answered, I spend -- maybe you didn't hear it before because it was before, but it's more than 90 percent.

Q. And you're licensed to practice medicine in New York?

A. Yes.

Q. Are you familiar with the standard of care as it applies to internal medicine physicians?

A. Yes.

MR. DZENITIS: Thank you.

MR. MISHKIND: Any follow-up?

MS. HARRIS: I just have a couple of questions and I'll be real quick, Doctor.

FURTHER EXAMINATION

BY MS. HARRIS:

Q. The closer that you get to the stroke, the chances of her having a stroke increase without antibiotics; is that correct? Does that make sense to you, Doctor?

A. No, it doesn't really because the chances of her having a stroke without antibiotics are increased all the way through.

I'm not sure what the antibiotics have to do with it one way or the other. In fact, I just don't understand your question. Let's start again.

Q. She would have a better chance not having the stroke on the 22nd as opposed to the 24th if antibiotics were given, correct?

A. Yes.

Q. You just can't quantify that amount; is that right?

A. No, I just can't -- yes, that's true in the sense that I can't quantify it at more than 50 percent likelihood of them preventing the stroke after approximately the 22nd of February.

Q. You can't give us -- regardless of whether it's 50 percent or not, you can't give us a percentage at all?

A. No, because it's less than 50 percent and then it just keeps diminishing the closer and closer you get to the stroke. That is, the likelihood of them preventing a stroke with antibiotics is less than 50 percent after approximately February 22nd and that likelihood of preventing a stroke diminishes

every day, every moment, every hour after the 22nd as you approach the 26th of February.

Q. I appreciate that and I just -- so you can't say what the percentage chance would be on the 24th versus the 25th versus the evening of the 25th?

MR. MISHKIND: Objection.

Q. That's all I want to know.

MR. MISHKIND: Objection, asked and answered.

Go ahead.

A. I -- yes, I believe the answer to that is yes.

MR. MISHKIND: That's it. Thank you, Doctor.

Doctor will read and please extend the 7 day to 28 days for signature all counsel.

(Time noted: 2:15 p.m.)

A C K N O W L E D G M E N T

STATE OF NEW YORK)
:ss
COUNTY OF)

I, BENJAMIN E. ZOLA, MD, hereby certify that I have read the transcript of my testimony taken under oath in my deposition of June 4, 2003; that the transcript is a true, complete and correct record of my testimony, and that the answers on the record as given by me are true and correct.

_____
BENJAMIN E. ZOLA, MD

Signed and subscribed to before me
this _____ day of _____, 2003

_____
Notary Public, State of New York

---------- I N D E X ----------

---------- EXHIBITS ----------

C E R T I F I C A T E

STATE OF New York)
:ss
COUNTY OF Richmond)

I, RITA M. PERSICHETTY, a Notary Public within and for the State of New York, do hereby certify:

That BENJAMIN E. ZOLA, MD, the witness whose deposition is hereinbefore set forth, was duly sworn by me and that such deposition is a true record of the testimony given by such witness.

I further certify that I am not related to any of the parties to this action by blood or marriage; and that I am in no way interested in the outcome of this matter.

IN WITNESS WHEREOF, I have hereunto set my hand this 16th day of June, 2003.

Rita Persichetty
RITA M. PERSICHETTY

Concordance Report
Unique Words: 1,985
Total Occurrences: 9,000
Noise Words: 384
Total Words In File: 25,542
Single File Concordance
Case Insensitive
Noise Word List(s): NOISE.NOI
Cover Pages = 0
Includes ALL Text Occurrences
Dates ON
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* * DATES * *

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A C K N O W L E D G M E N T

STATE OF NEW YORK)
:ss
COUNTY OF MANHATTAN)

I, BENJAMIN E. ZOLA, MD, hereby certify that I have read the transcript of my testimony taken under oath in my deposition of June 4, 2003; that the transcript is a true, complete and correct record of my testimony, and that the answers on the record as given by me are true and correct.

BENJAMIN E. ZOLA, MD

Signed and subscribed to before me this 7th day of July, 2003

Notary Public, State of New York

DAYANARA HERNANDEZ
Notary Public, State of New York
No. 01HE6088145
Qualified in Bronx County
Commission Expires March 3, 2007

7/7/03

*** ERRATA SHEET ***

ELLEN GRAUER COURT REPORTING
133 East 58th Street, Suite 1201
NEW YORK, NEW YORK 10022
212-750-6434

NAME OF CASE:
DATE OF DEPOSITION:
NAME OF WITNESS:

PAGE	LINE	FROM	TO
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73	10	Bloodstream.	bloodstream,
80	5	rheumatic crit	hematocrit
108	18	or shots	(?)
135	23	diagnosis will be	differential diagnosis list must include, with high likelihood,

Subscribed and sworn before me
this 7th day of July, 2003.

(Notary Public)

My Commission Expires: 3/8/07

DAYANARA HERNANDEZ
Notary Public, State of New York
No. 01HE6088148
Qualified in Bronx County
Commission Expires March 3, 2007

7/7/03