B. CHARASH 20
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In The Matter Of:

JOHNSON v.
MEDLANTIC

BRUCE CHARASH
November 13, 2001

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IN THE SUPERIOR COURT OF THE DISTRICT OF COLUMBIA
CIVIL DIVISION

DEON JOHNSON, ET AL.,

Plaintiffs,

-against- Civil Action
No. 00008265

MEDLANTIC HEALTHCARE GROUP, INC., ET AL.,

Defendants.

DEPOSITION of BRUCE D. CHARASH, M.D., taken by Defendants at the offices of HG Global Workplace, 730 Fifth Avenue, New York, New York 10019, on Tuesday, November 13, 2001, pursuant to Notice, commencing at 10:21 o'clock a.m., before Karen Ann Carney, a Certified Shorthand (Stenotype) Reporter and Notary Public within and for the State of New York.

APPEARANCES:

REGAN, HALPERIN & LONG
Attorneys for Plaintiffs
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Washington, D.C. 20006

BY: PATRICK M. REGAN, Esq., of Counsel

(Via Videoconference)

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BY: MARIAN L. HOGAN, Esq., of Counsel

(Via Videoconference)

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BY: ANDREW J. SPENCE, Esq., of Counsel

IT IS HEREBY STIPULATED AND AGREED that the filing and sealing of the within deposition be, and the same are hereby waived;

IT IS FURTHER STIPULATED AND AGREED that all objections, except as to the form of the question, be and the same are hereby reserved to the time of the trial;

IT IS FURTHER STIPULATED AND AGREED that the within deposition may be sworn to before any Notary Public with the same force and effect as if sworn to before a Judge of this Court;

IT IS FURTHER STIPULATED that the transcript is to be certified by the reporter.

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BRUCE D. C HARASH, called as a witness, having been first duly sworn by Karen Ann Carney, a Notary Public of the State of New York, was examined and testified as follows:

EXAMINATION

BY MS. HOGAN:

Q: Dr. Charash, I'm Marian Hogan and I'm representing the Washington Hospital Center in this action; and, as you probably know, I'll be asking you a series of questions about your opinions, and I would like you to please interrupt me or stop me if I ask a question that's unclear to you in any way.

Is that acceptable to you?

A: Yes.

Q: Because if you don't ask me to clarify a question, I'm going to assume that you did understand it as phrased.

Would you please state your name and business address for the record?

A: Yes. My name is Bruce Charash, and my address is Lenox Hill Hospital, 100 East 77th Street, New York, New York 10021.

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Q: Dr. Charash, I have a copy of your CV that was provided to me by counsel. It does not have a date on it, but the last publication appears to be a book called "Heart Myths," in 1991.

A: Yes. Although, if you turn to the first page to see if it's more current, if the bottom entry says "Visiting Associate Professor" —

Q: Yes, it does; October '98 to the present —

A: Yes. Then —

Q: — SUNY.

A: Then that's updated.

Q: And SUNY Brooklyn?

A: Yes. That would be the most current edition.

Q: Okay. When was this edition published?

A: I don't remember. Obviously after October '98.

Q: Okay. Are there any additions, deletions or corrections that are needed for this particular CV to make it up to date?

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A: No.

Q: Do you have any particular position within the division of cardiology at Lenox Hill?

A: Yes. I think it states I'm chief of the Cardiac Care Unit.

Q: I'm sorry. It does state that at the bottom. I see that now.

And you've been chief for ten years?

A: Yes.

Q: Do you hold positions at any other hospitals in New York?

A: No.

Q: Are you licensed to practice medicine in any state or jurisdiction other than New York?

A: No.

Q: Have you ever practiced medicine in the District of Columbia?

A: No.

Q: Have you ever been accepted as an expert in a court in the District of Columbia?

A: Yes.

Q: When was that?

A: Well, I think I've been an expert in

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the District of Columbia in trial testimony I believe on two occasions; the first one was probably back in 1996, and then the second one was somewhere probably in '99 — '98 or '99.

Q: In '9 — do you remember for whom you testified in those cases?

A: I remember the one in '96 was for a firm called Oberland and Berlin, and the one afterwards, I don't recall which firm.

Q: Was it for the plaintiff?

A: Both cases were for the plaintiff.

Q: Did either case involve a woman who had given birth within the last two years before the events that form the basis of the lawsuit?

A: No.

Q: Do you recall in a general way the facts of either case?

A: No.

Q: So, would you be able to state definitively that the cases didn't have anything to do with the issues involved in the Crystal Johnson case?

A: Yes.

Q: You would be able to state that?

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A: Yes. The reason I can state it is that I've testified or reviewed or been an expert in many, many cases; however, they fall into different categories. Sometimes they're chest pain that is not well recognized, a patient's symptoms being dismissed.

This case is relatively unique in that I don't recall having reviewed up until now a case of a woman with a cardiomyopathy after birth whose issue was about the medical management prior to sudden death.

I cannot recall the details of the many cases I've reviewed over the years, but I can recall when one is relatively unique, and this one is relatively unique.

So, I can't say with certainty what my cases were like in the past, but I can state they were not with comparable issues.

Q: Okay. So, this would be the first time you will ever have given testimony on a case involving peripartum cardiomyopathy or any related issues?

A: That's to the best of my recollection. And, again, I want to qualify that

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by saying that I have reviewed — and I'll volunteer this before we get to this — probably in the range of 300 malpractice potential cases for defense and plaintiffs lawyers in 15 years.

However, during that same period of time I've probably seen or been involved with 20 to 30,000 patients.

I've had patients with postpartum cardiomyopathy. And the reality is I just can't keep clear track with that many patients mixed in, with that many clinical cases, and then with the handful, comparatively, of legal cases, I don't believe I've ever reviewed a case quite like this before; but I can't be absolutely certain because I know I've seen clinical cases in the hospital and they kind of mix together after a while. To the best my memory, this case is unique in terms of my medical-legal experience.

Q: Okay. In the last ten years, am I correct that you have only practiced out of Lenox Hill Hospital?

A: Yes.

Q: In those ten years, approximately how many patients have you seen in any capacity,

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whether it's consultative or your primary patient, who had the diagnosis or you made the diagnosis of peripartum cardiomyopathy?

A: In the past ten years, I would say in the range of a dozen.

Q: Okay. Are you able to tell me of those dozen how many already had the diagnosis when you saw them?

A: Probably in the range of half. I mean, probably half of them came to my floor with a diagnosis, and probably half I was asked to consult on and made the diagnosis.

Q: Of that dozen, how many would you consider to have been your patients?

A: Well, all of them were at one time or another my patient. But, in part, you see it's a complex arrangement.

When patients come to our intensive care unit or stepdown floor where I'm chief, I get involved on a working daily relationship with all those patients. Many of the patients have their own cardiologist, but because I'm full-time present in the hospital, I deal with patients on a day-to-day basis, round on them, and I work with

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the private doctor. I even have the authority to override the private doctor when it comes to hospital-based management.

But of those patients, probably about half of them were mine exclusively and half of them I supervised over other doctors' care. Probably the six I diagnosed were all mine.

Q: Do you know when the last one was of those six, the last woman you saw?

A: I don't know. Somewhere in the last year. Probably more than six months ago, but I don't remember. I mean, again, it's not exactly steady, but I mean at least once a year or more we get a patient with this diagnosis. But I can't be —

Q: Do you — as you sit here today, do you know the status of that one patient you saw within about the last six months?

A: No.

Q: Do you know — are you able to tell me the status of any of the twelve patients you've seen who had the diagnosis of peripartum cardiomyopathy?

A: Not with certainty. I mean the

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problem is that many of these patients — the six went to their private doctors. I wouldn't know their status.

Those that were mine, I generally refer them back out. Many of them come from other hospitals and I refer them back to their primary doctors and get called only for consults.

At this point I'm not actually following any of them; so, I couldn't tell you their status.

Q: Would that mean you couldn't even tell me whether they were dead or alive?

A: That's correct. They may all be alive, they may all have died. I can't be sure.

Q: Would you agree with me that the diagnosis of peripartum cardiomyopathy is an ominous diagnosis?

A: You'd have to qualify what you mean by that.

Q: Well, you tell me —

A: Okay. Well, the point is 50 percent of — just over 50 percent of people who have postpartum cardiomyopathy get spontaneous improvement. For them it's not ominous. Just

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over half the people who get it, it improves, and you just make sure they don't die while waiting to improve.

For the other half that don't improve, supportive therapy extends their life expectancy, and cardiac transplant is an option.

And for that just under 50 percent of the population, it is certainly quite serious that they have that condition, and many of them will die and many of them will live.

So, when you say "ominous," you see, you could refer to ominous for a disease that kills everybody. You are using an emotional term as opposed to a clinical term.

Q: You've never seen the term "ominous" with respect to a diagnosis of peripartum cardiomyopathy in the medical literature?

A: I've seen the term "ominous" used many times. But depending on the context, ominous can mean many different things.

And in something as important as a legal case, where conveying the true prognosis carries quite an important significance to a jury who will be reviewing the situation, resorting to

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a generalized term that in different situations can mean different things — I can tell you that Ebola virus carries an ominous prognosis because 85 percent of the people die. Now, if you say — in weeks.

Is that the case with this disease?

Of course not.

My problem is that ominous is used many times, and in someone's mind I think it's more confusing than it is revealing because you're not being specific.

Q: And you just testified that particularly in a legal case when you are going in front of a jury, would you agree with me that it would be just as important to determine whether it's ominous, to use that label, for a medical case when you are dealing with a patient?

A: No.

I think it's more important to be specific about statistical availability rather than using visceral terms that can be mean different things to different people.

I think I told you just over 50 percent of the people with cardiomyopathy

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postpartum get better on their own.

In fact, one of the treating doctors, I think it's Dr. Ross, wrote cardiomyopathy with an expectation of improvement.

Is that ominous?

Again, your term, I believe, is confusing. I think I'm trying to be statistical.

THE WITNESS: Will you pardon me one second?

MS. HOGAN: Sure.

THE WITNESS: Off the record.

(Discussion off the record.)

(Whereupon, at 10:36 o'clock a.m. the witness leaves the conference room.)

(Whereupon, at 10:40 o'clock a.m., the deposition resumes.)

MS. HOGAN: We're back on the record.

BRUCE D. C HARASH, resumed and testified further as follows:

BY MS. HOGAN:

Q: Dr. Charash, you mentioned that just over 50 percent of the patients who have

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postpartum cardiomyopathy who, for whatever reason, have spontaneous improvement.
Is the physiologic mechanism known for why just over half of the patients do spontaneously improve?
A: We do know that the disease is more likely than not an immunological one, and we know that in nature immunological illnesses can become — can improve spontaneously and regress or can continue.
We do not know why those that get better individually were the ones that got better or not. I mean, we have an improving sense of self-physiology, but I don't think that our scientific ability can right now answer that question beyond the fact that that's just the statistical presentation.
Q: And it's not known what subset of immunologic disease causes this, is it?
A: No.
Q: Whether it's autoimmune, et cetera?
A: Oh, I think we believe it is autoimmune, but I don't think there is a greater revelation of mechanism than that.

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Q: Okay. And, similarly, am I correct that physicians, including yourself, are not able to predict into which category any particular patient will fall?
A: No. You just have to follow them empirically.
Q: What do you mean when you say "follow them empirically"?
A: It means that a patient who develops this condition must have serial echocardiograms to determine whether or not the heart shows improvement in general. By six months to a year, those that are going to spontaneously improve will have done so; those that have not improved will not improve, and then they need to be followed clinically, and in most cases be followed by a cardiac transplant center, as well as optimal medical therapy while waiting.
Q: We'll get to the optimal medical therapy in a bit.
THE WITNESS: May I ask you a question?
Is this being recorded or are we just on visual contact with each

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other?
MS. HOGAN: I think it's being recorded.
THE WITNESS: This is being videotape recorded?
MS. HOGAN: Yes.
MR. REGAN: It's being video recorded?
MS. HOGAN: Yes.
MR. REGAN: At which end?
MS. HOGAN: At your end, I think.
MR. SPENCE: No. I think it's at this end.
THE WITNESS: Well, do you have a videographer there to certify the copy?
MS. HOGAN: No. We're not using it for anything.
THE WITNESS: Okay. I just wanted to know. I mean, first, let me — when I'm being video recorded, I would, one, like to know it; and, two, want to know whether it is a video

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representation that will be used in court or usable in court.
MS. HOGAN: No, it will not be. It will not be.
THE WITNESS: The answer is it will not be, it cannot be?
MS. HOGAN: I don't think it can be. I mean, I wouldn't agree to it.
MR. REGAN: It wasn't noted. I certainly would not agree to it. It was not noted to be a video depo.
MR. SPENCE: She just stuck a video in, so we said okay.
MS. HOGAN: Pop it out, please.
THE WITNESS: Was it on your end or our end? I'm confused.
MR. REGAN: No. It's on their end.
MS. HOGAN: Well, I think it was noted as a video depo.
MR. REGAN: Well, if it is, then we reserve the right to use it at

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trial. I just want to know.
THE WITNESS: But then —
MS. HOGAN: It is noted as a video depo. But we'll argue about that, whether it's usable later.
THE WITNESS: May I ask a question? I'm sorry. But don't you need a videographer to certify a video copy? Can you just —
MS. HOGAN: That's what Mr. Regan and Mr. Spence and I will argue about later.
MR. REGAN: No, it does not say — we're not going to proceed. It does not say it's being videotaped.
It says videoteleconference — videoconferencing, which is what this is, without a videotape.
MR. SPENCE: I don't really —
MS. HOGAN: I don't really care.
MR. SPENCE: I don't care myself. It's not a big deal to me.
MR. REGAN: Okay. Good. Just

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pop it out.
MS. HOGAN: Can you pop it out?
MR. SPENCE: I'll try.
MS. HOGAN: Fine.
THE WITNESS: I don't mean to be difficult, but, quite frankly, I find it —
MS. HOGAN: We did mention in the beginning that we were waiting for her to put the tape in.
MR. REGAN: I wasn't in the room at that time.
THE WITNESS: It just went over my head.
MS. HOGAN: Andy is not able to. We're going to ask the lady to take it out because we can't easily do it.
MR. REGAN: Just stop for a minute. I'm going to get coffee.
MS. HOGAN: All right, Pat.
MR. REGAN: I'm going to get coffee. Hang on one minute.

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(Whereupon, at 10:45 o'clock a.m., a recess was taken.)
(Whereupon, at 10:50 o'clock a.m., the deposition resumed.)
MS. HOGAN: On the record.
BRUCE D. C HARASH, resumed and testified further as follows:
BY MS. HOGAN:
Q: I'm sorry, Doctor, I lost my spot. Let's see. We'll get back to your background.
Are there any teaching appointments which you hold noted on your CV?
A: Yes.
Q: What percentage of your time is spent in teaching?
A: A large percentage of my time is teaching while I practice clinical care as chief of the Cardiac Care Unit, which is a 15-bed intensive care unit and a 38-bed stepdown unit.
I engage in the daily morning rounds in that unit with interns, residents, medical students, nurse practitioners and physician assistants, and we round on all patients on our service and go bedside to every patient in the

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intensive care unit.
And then after that I see individual patients and bring doctors in training to the room with me.
The point I'm trying to make is that virtually in all of my clinical activities I'm teaching a doctor in training what I do while I do it. So, a great deal of my clinical care is indistinguishable from teaching. However —
Q: How about —
A: — classroom teaching, we do classroom discussions with didactics for about a half hour every morning. I give a formal lecture probably once a month.
Q: And where is that formal lecture given?
A: Either at Lenox Hill or at NYU. I probably give one or two lectures at NYU Medical School a year; otherwise, I'm giving most of my lectures at the hospital itself, and I've given also probably 500 lectures over the last 20 years to hospitals in the region.
Q: Are you a faculty member of a particular portion of the curriculum at NYU

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Medical School; for instance, do you give the yearly —

A: No.

Q: — lecture?

A: Pardon me. I'm sorry.

I'm only a guest invited speaker; therefore, I'm not part of the curriculum.

Q: Okay.

A: But I am part of their elective of cardiac intensive care units; so, their students do rotate to us. But in terms of classroom teaching, I'm not part of the full-time medical faculty, nor am I on their curriculum.

Q: And that elective intensive care rotation is more on-the-job training for the residents, correct?

A: Yes.

Q: How many beds total does Lenox Hill have?

A: I don't know. It's probably between 350 and 400, but that's my guess. I don't know the number.

Q: Do you know anything about the obstetrical service at Lenox Hill?

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A: I just know it has an outstanding reputation as a general service, but I don't know anything more than that.

Q: For instance, you don't know how many babies are delivered a year and that kind of thing?

A: No.

MS. HOGAN: Pat, am I correct that Dr. Charash will not be giving any obstetrical opinions?

MR. REGAN: It depends if you ask.

Q: Well, Dr. Charash, are you going to be giving opinions about the standard of care for any of the obstetricians and gynecologists in this case?

MR. REGAN: No.

A: No.

Q: What percentage of cases do you review on behalf of plaintiffs versus defendants?

A: Approximately 60 percent that I review are for plaintiff and approximately 40 percent are for defense.

Q: What percentage of that 40 percent

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for defense are located in the State of New York?

A: That's too complicated.

I think that New York has a higher ratio of defense to plaintiff, about 50-50, where out of New York it's a little less. But New York isn't the majority of cases I review. Florida would be the state where I have the biggest number of cases.

Q: Biggest number of defense cases or total cases?

A: Total cases. But I think I have more defense cases in Florida than New York, because I have more cases in Florida than New York.

Q: Are you licensed to practice in any jurisdiction other than New York?

A: No, I am not.

Q: Do you own a home in Florida?

A: No.

Q: Do you have any publications which are not listed on this CV?

A: No.

Q: Are any of the publications that you do have listed germane to the medical issues in

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the Crystal Johnson case?

A: No.

Q: Are there any sources in the medical literature which you would consider to be reasonably reliable references on the topic of peripartum cardiomyopathy?

A: Well, I'm not too sure what the implication of "reasonably reliable."

I think all textbooks pose themselves in the same way, and that is I consider all medical textbooks to be absolutely authoritative in their presentation of statistics and in the accuracy of quotation, like an encyclopedia.

I would consider all textbooks of medicine in all fields to be considered to be general guidelines.

When it comes to the practice, management and diagnosis of disease, the standard of care, all of these areas where it comes to the practice of medicine, books are guidelines; and sometimes the guidelines are the same as the standard, sometimes the guidelines do not approach the standard. The point is that they're not meant

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to be a standard. Textbooks are written as a rough approach to the practice, but an authoritative approach to the statistics. And that's with the literature, too.

So, as a result, I consider all books the same.

Q: And also journal articles?

A: All journal articles I think are meant to be authoritative, I think, when it comes to the introduction section for statistics. But when it comes to the conclusions of the article, they're even at a different standard than textbooks because they are just data.

Some articles are poorly written and designed and are published in lesser journals; others are better written and designed and published in better journals. But even so, it's just information that gets integrated into the large complexity of practice that may or may not influence the standard of care.

You could find obscure articles that say almost anything.

The point is that the standard of care does take into account information published

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in important research studies. But even so, a large major trial may or may not influence the standard of care and may or may not be reflective of what is happening in the clinical world.

So, it's even more tricky. An article is just a research study, but you have to realize that when they give the statistics at the end of a research article, and for literature, they want something called the P value to be under .05. What that says is that one in twenty articles are expected to be wrong.

So, as a result, you can't include research articles as standard of care. They are purely information to be integrated into clinical practice or not.

Q: Are you able to tell me any of the 19 and 20 articles that would then be expected to be correct which do reflect any standard of care for management of a patient who has peripartum cardiomyopathy?

A: I don't consider research articles to be involved in the standard of care. They are supposed to be data points to be integrated by clinical practice; so, I don't recognize any

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articles being the standard of care.

Q: Would the same be true for information regarding the cause of peripartum cardiomyopathy and/or its prognosis?

A: That's correct. One article alone doesn't define anything.

Q: What are some of the better journals to which you subscribe?

A: Again, there's a subjective impression that some journals, because of more rigor in their review boards, have a higher quality article base. But I want to qualify that by saying I've seen terrible articles in the best journals and good articles in weaker journals.

So, I'll tell you the journals that have better reputations, but in no way am I endorsing articles as being anything more than what they are, regardless of the journal.

But that would include the New England Journal of Medicine, which I subscribe to; The Journal of the American College of Cardiology; and Circulation. Those are the three full-time journals that I subscribe to. However, I read in our library other journals regularly, which

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include Lancet, sometimes the Journal of the American Medical Association. And then I read odd articles in odd journals from time to time. But those are the only ones that I read regularly.

Q: Do you serve on any editorial boards for any journals relating to cardiac issues?

A: No.

Q: Did you answer, Doctor? I'm sorry.

A: I said "no."

MR. SPENCE: I can't hear you.

THE WITNESS: Can you hear me now?

I said could you hear me?

MS. HOGAN: I can't hear.

THE WITNESS: I am talking. Hello, hello.

MS. HOGAN: No, we didn't push anything. Can you hear us?

MR. REGAN: Yes.

MS. HOGAN: We can't hear you.

MR. SPENCE: It's not your end?

THE WITNESS: You still can't hear me?

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(No response.)
THE WITNESS: Hello.
MR. REGAN: They didn't do anything on their end.
THE WITNESS: Hello. Hello. Hello.
(No response.)
MR. REGAN: They can't — it has to be their feed.
(Discussion off the record.)
MS. HOGAN: Could the court reporter — I asked the doctor a question, whether he had served on the editorial board of any journal relating to cardiac issues.
THE WITNESS: And I said "no."
MS. HOGAN: Okay. That's when we lost you. Thank you, Doctor.

BY MS. HOGAN:

Q: You are Board-certified in which specialties, Dr. Charash?
A: Internal medicine and cardiology.
Q: Are you Board-eligible in any other subspecialty or specialty?

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A: I believe I'm Board-eligible for critical care because I was grandfathered in as eligible, but I never took the boards because I have no interest.
Q: Do you have to be recertified in either internal medicine or cardiology?
A: No.
Q: What have you reviewed in preparation for your deposition?
A: I reviewed medical records and depositions relating to this case; the medical records relating to Crystal Johnson, the deceased, included prenatal records from Dr. Downing; Washington Hospital Center records from 11-16 to 11-19 when she gave birth; an emergency room visit at Washington Hospital Center on [redacted] an emergency room visit at Greater Southeast emergency room from 12-22-99; the hospitalization at Washington Hospital Center from 12-28 to 12-31 of '99.
I reviewed the emergency room visit at Washington Hospital Center on January 5, 2000; I reviewed the Greater Southeast emergency room records at the time of her cardiac arrest on

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January 24, 2000; I reviewed the autopsy records in this case; I reviewed outpatient records from Washington Hospital Center from 12-22-99 through her various visits in January of 2000.
I reviewed home health records concerning the same patient, too, after her discharge in the New Year of January 2000.
I reviewed a number of depositions, and I pointed out to Mr. Regan this morning that he had sent me a mailing of multiple depositions of different parties — pardon me — earlier this year, and although I reviewed them and I have a general familiarity with the issues of this case, I literally can't find the stack of them.
More recently he sent me Dr. Latchis, L-a-t-c-h-i-s, the emergency room doctor of January 5th, and he sent me the records from the depo of Deon Johnson, the husband of the deceased.
But the other depos of multiple parties, for reasons I don't know, I just literally can't find the stack of them; so, I don't have them here today and I did not rereview them prior to this depo. I reviewed them

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originally in the range of two to three months ago.
Q: Are you able to tell me today any sort of general recollection about any of those, for instance, the deposition of Dr. Steinway?
MR. REGAN: Marian, if you will allow me.
Those depositions were sent by cover letter dated August 9, 2001. I'll give you a copy of the cover letter. I'll give you a copy of all the correspondence with Dr. Charash. And I can list those depositions, if you would like.
MS. HOGAN: Well, we don't need to list them. We can just attach a copy of the cover letter as an Exhibit 1. That's fine.
MR. REGAN: Fine.

BY MS. HOGAN:

Q: But I had a different question for Dr. Charash, and that was: As you sit here today, are you able to tell me any specific recollection you have from having read the deposition of Dr.

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Steinweg as opposed to Dr. Kokotakis?
A: Is it Steinweg or Steinway?
MR. REGAN: — weg.
MS. HOGAN: Steinweg.
A: I remember Dr. Steinweg was the internist on the hospitalization on December 28, 2000, and I read his notes and I read his depo. I don't recall anything in his depo that is going to influence my opinions today as opposed to the written records in the chart.
Q: Would the same be true for Dr. Kokotakis?
A: Dr. Kokotakis is the doctor who saw the patient I think — I'm just trying to remember. (Perusing document.) Again, I don't recall anything in the depos that ultimately will influence — I read all the depos of most of the parties, and the opinions I'm going to give today are going to be documented by evidence and record. And when I spoke with Mr. Regan about both my concerns in terms of the management of this case and my recollection of the depositions, I do not believe the depositions

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offered illuminating testimony to influence the criticism I have of the standard of care in any party.
Q: Do you remember when you first began to review materials for Mr. Regan in this case?
A: I believe it was in the year 2000, last year. I don't have my original cover letter. I think he has a copy of it, and it was December 14, 2000.
Q: Have you read any medical articles on the topic of peripartum cardiomyopathy since the beginning of the year 2001?
A: I might have covered some in different journal clubs. But I did not make any review specifically for this case, and it certainly has been a half year or more since I think I've read an article.
Q: Do you remember reading any particular articles in the last year or so on that topic?
A: No.
Q: Have you made any notes?
A: No.
Q: Did you underline or make notations

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in any of the medical records?
A: I put down little Post-its on pages that I thought would be relevant when it comes to explaining my position, but I don't have any notes, per se. I just wanted to be able to find — for example, the first Post-it is on the page that shows you when she had her delivery, so I remember that. Another Post-it — one Post-it — on one or two of them I wrote the date of the event so I would know what I was looking at, and this is a note in the hospital (indicating). But I don't have any specific notations.
Q: Would it be correct that you don't have any opinion type notations on any of those little stickies you may have written on; they are just factual dates and that sort of thing?
A: Exactly. They are purely to serve as an index for the purpose of expediting my ability to recall information.
Q: Dr. Charash, before I get into your specific opinions, would you please give me an overview of what you understand to be the salient facts in this case?

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A: Well, I'm not too sure I understand. You want me to describe what happened to Crystal Johnson without any editorial or comment —
Q: No. No. You can editorialize, and then I'll go back for your specific opinions. But I want to hear you give me an overview of what you understand to be the facts of the case.
A: But, again, do you want me to give you an overview with the facts of the case as I explained where I think the standard of care deviations occurred or you don't want me to do that?
Q: Yes, I do want you to do that and then I'll come back to the individual —
A: So, you want me to give an overview of my opinions in this case?
Q: Well, all right, we'll break it down.
Why don't you first give me an overview of the facts about your opinions, and then I'll come back and get the opinions.
A: Okay. Crystal Marie Johnson gave birth on [redacted] by Caesarean section.

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She then presented in on November 20, '99, to Washington Hospital Center with, I think, leg edema five days after her Caesarean section. She was treated and released.

She appeared at the emergency room of Greater Southeast Emergency. Here she had shortness of breath, which was considered to be infectious, I believe. She was treated and released, as well.

On January 28, 2000 —

MR. REGAN: December.

A: — December 28th — thank you — 1999, she was seen as an outpatient at Washington Hospital Center where a diagnosis of cardiac illness was made and she was admitted to the hospital to what proved to be a three-day hospitalization, being sent home on New Year's Eve, 12-31-99.

She then had phone contact, I believe, on January 3rd with a visiting nurse and was doing all right.

She was seen on a few occasions by visiting nurses.

On January 5th she came back to

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Washington Hospital Center emergency room with chest pain and other symptoms; was treated and released, as well.

She had an appointment for a cardiac follow-up, I believe, on January 20th of 2000. It was a snowy day, and I believe her aunt, I think, called up and because of the snow was told to reschedule, which was scheduled for perhaps, I think, a week later or so; and in the interim she died on January 24th of sudden cardiac death.

So, that's kind of the timeline as I understand it.

Q: Okay. Chronologically in that timeline, when do you have your first criticism of the care that you would consider to be a violation of the standard of care?

A: For me it is December 30, 1999.

Q: And who is the individual or the individuals responsible for this violation of the standard of care on December 30, 1999?

A: Nurses and medical staff at Washington Hospital Center.

Q: Would you please tell me first with respect to the nurses, the nursing, what the

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nursing violations of the standard of care would have been on December 30, 1999.

A: And, again, I really understand this is your deposition, but it would be probably a little bit more organized if I tell you where I think the standard of care violation occurred and what the nature of it was, and then integrate the different parties into it, because it will be very chopped this way.

Q: That's fine. That's fine, Doctor. Do it your way.

A: Thanks.

Q: That's fine.

A: On December 28, '99, Crystal Johnson was recognized appropriately to have a cardiomyopathy, which was suspected and I think appropriately diagnosed as one that came after delivery, called postpartum.

As I mentioned earlier in this deposition, there is a slightly greater than 50 percent chance of spontaneous recovery, and a slightly less than 50 percent chance of never recovering and ultimately needing lifelong supportive therapy and hopefully a transplant.

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Given that, the critical issue with this illness is to give the most aggressive supportive therapy, clearly, until either the condition resolves or until they can go on to get a transplant, which is obviously not going to apply to everybody, but would certainly be more applicable to a young woman because that clearly there is an age and general medical condition stratification.

And given that, to optimize someone's therapy there are three arenas of risk to the heart in anybody; and I always break it down very simply as the pump, the plumbing, and the electricity.

The pump is the ejection fraction, which we know is reduced in her. That's the nature of her disease.

The supportive therapy are vasodilator drugs in general, as well as Digitalis, if needed, and Coumadin, if needed, but drugs to help the heart beat better and protect against certain issues.

I have no criticism of the management of her pump. Indeed, when she was

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discharged in January of 2000, she was actually in pretty good shape. There's a visiting nurse note from January 10, 2000, which says she has no complaints of chest pain or shortness of breath. And although her heart is weak, and we call that heart failure, the issue is was she an active and deteriorating pump dysfunction, and the answer is no, she was not.

She clearly demonstrated that up until the time of December 28th, before her diagnosis, because it was unrecognized and untreated, but with diuretics and vasodilators and other supportive drugs, I think she responded very well to therapy.

There are only — well, that's the pump. So, the pump can kill you, but if you are going to die a pump death, a mechanical death because the heart can't take it, it's usually progressive with slow deterioration where you go into severe unremitting congestive heart failure with severe swelling and breathing problems that deteriorate and eventually you die of it. And some people get support devices and mechanical devices until they can do transplant. But she was

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nowhere near that at this point. She was actually extraordinarily well-compensated from the pump.

So, for this case, both from a standard of care, treating with the pump, and from a causation, I think her pump was doing better than anything. Given how weak it was, it just shows you how well-compensated the young patient can be and how the rest of her body was healthy enough that she was doing well. So, the pump was diagnosed, managed and actually doing well.

The plumbing are the fuel lines that the heart depends on to stay alive, and that would be coronary artery disease, which is responsible for most myopathy, most weakness of the heart muscle.

However, in this case that is not a factor, because we know that from autopsy and clinical suspicion there was never an issue of her having coronary disease of any importance.

So, her pump was okay and optimally managed, in my opinion. And they were talking about sending her to a transplant center.

There are other physician notes recognizing that she had a chance — actually, a

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presumption of recovery.

So, ultimately, I think her pump and plumbing were not an issue.

It gets us to electricity. My criticisms will be relating to the failure to appreciate and manage electrical risk.

A person dies once a minute in the United States. These deaths are electrical sudden deaths.

It will be my opinion that both cause of death was a arrhythmia, a short-circuit of the heart's electrical system, which is the predictable high-risk reason why people die of cardiomyopathy. The majority of people with cardiomyopathy will not die of pump failure but will die of sudden electrical death.

Now, those who are optimized for that will be in danger of one day dying of pump failure if statistically that's where they go.

Now, electrical sudden death has a virtual 100 percent save rate if they are shocked with a defibrillator within one minute of the event, and every minute that goes by without a

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shock, their chance of dying increases — goes up an absolute ten percent. That's why the invention of implantable defibrillators, which were the standard of care and available in 1999 and 2000, became more and more widely used.

Now, there are several issues. You have a young woman with a newly recognized cardiomyopathy with certain EKGs that showed subtle shifts, which could suggest that the substrate was under shift of her muscle, would had — she was young, with a new myopathy. The number one reason why she's going to die is going to be electrical sudden death, prospectively. We just know that on December 28th of 2000, because that's the biggest cause of her death.

Now, a defibrillator, which can be implanted, after studies that are often done to help figure out how to use the defibrillator best, carries virtually no substantial risk. It's like a pacemaker being put in which carries less than a 1 in 500 risk of a major event and will be lifesaving. Had one been put in her, she would be alive today.

And given just the first principle

that she was young with a catastrophic disease that will kill her by an electrical death as the leading cause, there are specific features in the chart that I believe went unheeded that further amplify her need and her danger of electric risk, and that is where it begins on December 30, 2000.

Besides the first principle of a catastrophically damaged heart and an active environment, which we know this type of immune disease is, that it's a dynamic substrate of the muscle, on December 30th of '99 there's a nursing note from 2:30 a.m. in the progress notes, which is a nursing note and it says, "X cover, 12-30-99, 2:30 a.m."

Q: Doctor, do you happen to have a page reference for that?

MR. REGAN: No, he does not have a paginated set. It was sent before litigation.

I might, though. I have my set, Marian.

MS. HOGAN: Okay. Let me see if I can find it, just for our reference.

I think I see it. I think it is Page 144 or 34.

BY MS. HOGAN:

Q: Doctor, it says NFX there?

A: Yes.

Q: I have it.

A: Okay. (Perusing document.) It says — I can't read it. It says CTSP. I don't know what that means.

But it says: Secondary vague symptom of lightheadedness and palpitations. Patient worried about heart condition. Reassured the patient is being closely monitored on telemetry.

Now, I have several issues here: Lightheadedness can have two implications. The first is that you could be lightheaded because your heart muscles is weaker and you are getting less blood to the brain in general; although, actually, young women — her blood pressure was running in the 90 to 100 range systolic, on vasodilators, and would not be expected to be lightheaded at that blood pressure range. You could be lightheaded from an

arrhythmia if you have a momentary change of electricity.

Palpitations and lightheadedness would be a very concerning symptom and would make one very concerned about whether or not they, in fact, had an arrhythmia in that time frame.

Now, what I want to point out is that she was presumably on telemetry. Now, this is 2:30 in the morning.

I looked at the telemetry strips later in the chart and there is no strip identified as coming from that time frame.

As a director of a monitored unit and having worked with many different symptoms, they are all less capable than Holter monitoring because they miss many arrhythmias, and the alarm system misses it.

So, for example, with review retrospectively of the rhythm abnormalities, we have clearly had documented examples of finding arrhythmias that no one knew about until someone specifically looked back and looked for it. That if you are the nurse at the bedside and a patient says they have a symptom, it's not enough to

simply say, well, no one called for an alarm, so I assume everything is okay. Somebody must specifically go back and review the rhythm abnormality at that time. If they do that, then you have to document with a strip whether or not there was a run of ventricular tachycardia or not.

We do see multiple VPCs documented throughout different rhythm strips, which shows that she had some electrical activity going on. And with her myopathy alone, I would be worried about putting in a defibrillator. But with the lightheaded episode and palpitations, that is extremely germane and there is, again, no strip documented to be 2:30 or 2:00 o'clock in the morning, whenever her symptom was, to prove or disprove whether at that moment there may or may not have been extra beats clumped together. That was critical and mandatory.

In addition, even if there were strips, not everything is always seen on telemetry, but you must start there.

So, the nurse has an obligation to document the strip at that moment and highlight it to show what she had, because that's the classic

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symptom that you have to worry about.
The next morning, the same day —
Q: Wait a minute, Doctor. Hold it before we get to the next morning.
On that telemetry strip, you said you reviewed telemetry strips. Do you have them there?
A: Yes.
MS. HOGAN: Pat, where are they in your chart?
MR. REGAN: We'll try to find them in a minute. I only have a portion of the chart, Marian. I may not have everything.
MS. HOGAN: Okay.
Q: How many sheets do you have on telemetry?
A: Well, the telemetry strips are attached to broader nursing flow sheets.
First of all, I want to go to one.
(Perusing document.) There's a flow sheet of vital signs which is not telemetry, which says 12-29 to 12-30, where vital signs are measured; and of note, at 2400 hours, which is

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midnight on the 29th to 30th, there are vitals, but nothing is recorded at two in the morning on the flow sheet, which I would expect a full set of vitals to be noted, and that wasn't done by the nursing deficiency.
Additionally, I have here a flow sheet which has three rhythm strips on it; one is December 29, '99 at 12:05:34 p.m.; one is at 12-29-99 at 5:06 p.m. and the third strip is covered and, therefore, the timeline is not defined.
Q: Doctor, could you please hold that page up so I can try to find that? Hold it up as close as you can to the camera?
A: I'll come up.
MR. REGAN: Marian, I'll tell you what is on the bottom.
MS. HOGAN: Okay.
MR. REGAN: On the bottom is the Addressograph label in the lower right-hand corner. I think it's Page 168.
THE WITNESS: Here, can you see this (indicating)?

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Here, let me move it.
MS. HOGAN: Let me see if I can find that.
THE WITNESS: It's Page 5 of a flow sheet. Meanwhile, while you are looking, may I answer a page? I'm going off the record.
MS. HOGAN: I have — it's not my Page 168, but I have a Page 169 that is different than that.
MR. REGAN: Marian, let's go off the record. He's returning a page.
MS. HOGAN: Okay.
(Discussion off the record.)
(Document on letterhead of Regan, Halperin & Long, dated August 9, 2001, to Bruce Charash, M.D., from Patrick M. Regan, was marked as Charash Exhibit No. 1 for identification, as of this date.)
(Whereupon, at 11:20 o'clock a.m., a recess was taken.)
(Whereupon, at 11:30 o'clock

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a.m., the deposition resumed.)
THE WITNESS: Thank you for that break.
MS. HOGAN: Are we back on the record, madam reporter?
THE COURT REPORTER: Yes, we are.
BRUCE D. C HARASH, resumed and testified further as follows:

BY MS. HOGAN:

Q: Doctor, do you recall where you left off?
A: Yes. I was pointing out that the EKG strips, that there is no clearly documented strip from December 30th at either somewhere between 2:00 and 2:30 in the morning.
The nursing note is written at 2:30. It doesn't clarify what time the patient's symptom was, so that's a little bit of a problem.
So, the question is, we do not have a telemetry strip to correspond to the time of the symptom; we don't see an effort on the nurse to highlight such a strip; we don't see an effort on the nurse to inform medical staff outside of the

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writing of the note.

And then what we see is the next day, the next morning, the same calendar day — this is where I was with you before — what we see is Dr. Kokotakis, the medical attending, makes no reference to the lightheadedness and palpitations from the night before, nor does Dr. Ross, who is the cardiologist, make reference to the documented symptom, which I think is a red flag symptom in a high-risk lady who is having multiple extra beats throughout her time there.

The point is that, one, telemetry is not as good as a Holter monitor which has to be placed upon discharge anyway; but, number two, she had a potential index symptom in the hospital, and the doctors do not make reference to it, and it is a major symptom that cannot be ignored.

The nurse does not highlight it, and we will not know unless that strip from the entire, I would say, hour before 2:30, because we don't know what time this patient felt her symptom. We just know the nurse wrote a note at 2:30 that she had palpitations and lightheadedness.

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I would want to see the entire hour of telemetry to see if there was a multiple run of ventricular tachycardia that would have then mandated a defibrillator, would have taken it away from any even possibility of not putting it in.

I believe once you —

Q: Go on, Doctor, I didn't mean to interrupt you.

A: I believe one should have been put on the first principles of her young age and her extra beats and her myopathy, to begin with.

But feeling lightheaded would have demanded an evaluation and almost certainly a defibrillator, as well as a Holter monitor.

So, my standard of care deviation begins at 2:30 in the morning when a nurse documents two pivotal symptoms, lightheadedness and palpitations; fails to document it with the rhythm strip corresponding to the time of the symptom, by failing to document the time of the symptom, just the time of her note; failing to have rhythm strips to demonstrate what was happening; the failure on the part of two physicians, Ross, and I'll call him "Dr. K," the

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medical attending from the hospital; failure to arrange Holter monitors; failure to ultimately have a defibrillator put in, are my criticisms from that admission.

Q: Doctor, would you tell me which needed to be implanted first, the defibrillator or a Holter monitor, in your view, to comport with the standard of care?

A: I believe that if the rhythm strip had been found from the time of her symptom, which we don't even know what that time is, in view of the extra beats she was showing, more likely than not she would have had three or more beats of what we call the attack, and would have then had a defibrillator inevitably placed before discharge.

If the rhythm strip was borderline or unfindable the next day, then a Holter monitor would have been organized, which I think more likely than not over a period of 48 hours of discharge would have shown extra beats that would have mandated a Holter monitor.

I believe she should have had a stress test prior to discharge, not to worry about coronary disease, but to demonstrate whether or

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not during activity she had electrical excitability.

I think that between an aggressive evaluation by Holter monitors and a treadmill EKG, I believe that it would have demonstrated, either by looking at the rhythm strip from the 12-30, that date when she had her symptom, which we don't even know the time of the symptom, between a Holter monitor and/or a stress test she would have, in fact, had demonstration of electrical risk.

I believe she was discharged after just the 28th — of less than three days in the hospital. Three days in the hospital, I don't believe that's an adequate time.

Just because it's New Year's Eve on the Millennium, to get somebody home when their life depends on a proper evaluation, I believe it was a rush discharge.

So, these are the multiple deviations.

I believe that inevitably had the proper work-up been done and the proper evaluation been done, inevitably she would have had a

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defibrillator.
Q: Dr. Charash, where in the chart did you see that this patient was discharged because it was the New Year's Eve of the Millennium?
A: I'm basing it on the fact that she was sent home at three days before a full evaluation was done, and I certainly know that hospitals tend to discharge people before holidays.
Q: What experience, if any, do you have with the discharge practices of the Washington Hospital Center?
A: Nothing, other than recognizing that this was highly inadequate and premature.
Q: But, as for your attribution of the discharge on the 31st to the fact that you believe it was a rush job relating to the advent of the Millennium, do you have any basis, in fact, for that statement?
A: I'll modify the statement. It was a rush job that was inappropriately early, regardless of what holiday appeared on that date.
Q: Would a patient have to be under

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anesthesia in order to have a defibrillator placed?
A: No.
Q: How about for a Holter monitor?
A: No.
Both are done — the Holter monitor is done to any awake person. And a defibrillator is like a pacemaker; it's under local anesthesia and it takes place in less than a half hour to an hour.
Q: What are the risks, if any, attendant to implantation of a defibrillator and/or a Holter?
A: Well, a Holter has no risk. A Holter is just an EKG you wear around your body.
A defibrillator has the same risk, slightly more of a pacemaker. There's a risk of perforating the heart, of causing what we say is a pneumothorax, causing infection locally. And I guess there is an extraordinarily remote chance of dying. But for major complications altogether, it's under one percent.
It's considered extraordinarily safe. And the key is it's weighed against what is

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a much higher predictive rate of having sudden death at home and having an absolute shield against electrical sudden death, which will not — which overwhelms the risk of, the small risk of the procedure.
Q: Is it your testimony that both of these devices had to be implanted or just one and then depending on the results the other?
A: A Holter monitor is just an EKG 24-hour tape you wear like a tape deck. It's a diagnostic tool and it is not implanted; it's just applied. You just wear it for a day.
I'm saying that the EKG strip, which appears not to be presented from 2:30 a.m. on December 30th — and, again, it can't just be even 2:30; it has to be the time she felt her symptom. The nurse documented the note at 2:30, but does not document what time the symptom was. She writes a note at 2:30. For all we know, the symptom was at 2:10. But you need the nurse to document the time of the rhythm abnormality — of the symptom, and then you need a strip that corresponds to the exact moment and document it.
I believe that more likely than not

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had that appeared, it would have shown an arrhythmia that would have demanded a defibrillator.
I believe that absent that being available, you would need Holter monitors, a stress test to look at the electrical activity of the heart, those two things; on top of the fact that I believe the standards already promoted a defibrillator, being that she's very young with a large myopathy that is dynamic, and the fact that she has enough ectopy on the monitor and those symptoms alone, I believe, inevitably must lead to a defibrillator.
I believe that hard evidence been sought out by Holter monitors, a longer hospital stay, a stress test to see how the electrical system responds to activity, I believe that she would have had more objective evidence to demand a defibrillator, which I think should have been implanted just by the extra beats, her underlying condition and young age, since the number one reason why she's going to die is electrical instability. And I think evidence mounts that she needs a more aggressive electrical approach.

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Q: Do you have an opinion to a reasonable degree of medical probability that Ms. Johnson should have been discharged with a defibrillator in place?

A: I believe that had the proper work-up been done in the hospital, which would have been a longer stay on monitoring, with a stress test and a Holter, and proper review of that episode, yes, I believe that would have occurred.

I also believe that even in the absence of anything more than what is seen on the chart, she required a defibrillator, since it was a low risk way of preventing the high risk cause of death for people like her.

Q: And who is it that would monitor the patient who would be discharged on a defibrillator?

A: Cardiologists.

Q: On the topic of the telemetry strips, is it your understanding that there actually were continuous telemetry strips and these portions that you see in the chart merely are representative pieces of those?

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A: I have no presumption at all. I'm just saying that every telemetry system that I'm aware of — and I have surveyed many hospitals, and I've surveyed many different companies — I certainly have no awareness of the specifics at the hospital, Washington Hospital Center, but almost every telemetry center today has the ability to pull a segment out of memory for a specific time that you are interested in, and typically by routine, nurses post certain examples either to show routine rhythm or to show anything abnormal.

But there is also an expectation of going back to the memory and looking at certain times when symptoms occurred.

And if you have the fortuitous opportunity to have a symptom reported in the middle of the night, it is critical to pull out the timeline from the moment the symptom occurred. You must document from the patient when did you feel that, and then pull out the strips.

And I would expect that either the system has an absolute ability to do that. And if it doesn't, I believe that Washington Hospital

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Center has an obligation to have a system that can provide it, or they should have been having a Holter monitor at the same time, which some hospitals do do. Some people come into the telemetry which can't record things, but they get a contemporaneous Holter monitor.

So, I mean the hospital had a responsibility to provide it. I have no preconceived idea as to what system that hospital uses because I have not seen testimony to that fact.

Q: With respect to the telemetry system, whatever it is that the Washington Hospital Center uses, correct me if I'm wrong, but when you are talking about pulling the strips out of memory, you are talking about while the patient is in the hospital, you are not talking about today, in 2001, correct?

A: No; I'm talking about right then and there the nurse should have done it.

Q: But you are not saying that the systems you are familiar with are capable two or three years later of pulling out information from that patient, are you?

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A: No. It should be cleared when the patient goes home. That's why nurses have the obligation to make sure that they document, as well as the physicians the next day, they have the ability to go back — somebody should have gone back and been specific.

I have a criticism that the doctors, both Ross and the internist, failed to even acknowledge the symptom, much less look at the telemetry strip; and that the nurse that night failed to look for the telemetry strip, identify the time of her symptom and correlate it. All of these, I think, are breaches of the standard of care that directly impacted upon this patient's, what I considered deviation of the standard of care and her death.

Q: And is it your testimony that had any of the physicians addressed the issue of the lightheadedness and what you call the index symptoms, I believe, then they would have comported with the standard of care?

A: For that issue they would have; not for the other issues.

Q: Okay. I think you left off — is

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there anything else about the nursing note of 2:30 in the morning on the 30th of December that brings to mind violations of the standard of care for you?

A: No. Again, that was my first criticism because that's the first time in her course that I think a high risk index symptom occurred.

As I told you, I think that reviewing that strip would have probably revealed at least three beats of V-tach, which would have then mandated a defibrillator.

I believe if it did not, even though I think it more likely than not would have, in the case it did not, then I believe that still there was an obligation for a longer hospital stay, Holter monitoring and a stress test, because this lady is expected to go back and take care of a baby and carry on life, and how is she expected to do that as a 26-year-old without the hospital having a clue how her heart's electrical system will respond the first time there is adrenaline in her body.

You know, she's going to have a lot

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of life stress, emotional and physical stress of not only dealing with a new heart disease, which carries an emotional weight which is stressful, as we've seen in the hospital, but she's going to go home to be taking care of a baby and carry on activities of life.

And given that, there is no way these doctors had any clue how her heart is going to respond to the first time there is any adrenaline in her body.

And the way you do that, because that irritates the electrical system, is a stress test for her own safety and to know how far she can go.

It was below the standard of care to not perform that test. It was below the standard of care not to have a longer period of monitoring. It was below the standard of care not to have Holter monitors for their greater sensitivity than a hospital telemetry unit now placed for at least 48 hours.

And I believe, just given her symptoms and the fact that sudden death is what is going to kill her electrically, just putting in a

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defibrillator in view of her young age, serious heart condition and her symptoms alone I think would have demanded it.

But had they done the modicum of a proper work-up, I think objectively they would have would have proven what we already know.

So, I think it was premature discharge, not looking at telemetry, failure to get monitoring, are all part of this diagnosis.

My only nursing criticism from that admission happens to be the failure of the nurses to provide the data on the telemetry.

Q: And if the nurses had advised a resident or physician, cardiologist, whatever, any kind of an M.D., then the nurses at least would have fulfilled their standard of care?

A: Yes. Had they, you know, printed out strips from the proper time, which is within their realm of responsibility, and notified physicians, yes, they would have.

I give the nurse credit for documenting the symptom.

I think she does an inadequate job of documenting the mandatory monitoring; and I

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certainly blame the doctors for not following through the next morning.

Q: Well, assume hypothetically that the nurse did not actually print out the strip for that time, I think you said the hour before 2:30, but did bring it to the attention of the physician. Would the nurse at least have comported with the standard of care?

A: She would have more so. I think the point is that both doctors and nurses have an equal responsibility to print it out.

I deal with nurses all the time on telemetry. If there is a symptom, they print out the strip from the time that they observed the symptom, because they're contemporary to that symptom.

But the next morning when they report in, if they fail to do it, I or other physicians on the floor will do it.

But the point is both parties must be held to that simple standard. The nurses know how the machine works and so do the doctors. They both have a responsibility to do it.

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If the doctors did it, then the nurse would be off the hook because it was done.

But I believe they both have a responsibility equal to each other, because if you do not have redundancy and back-up, things go wrong, and it doesn't happen. So I blame both the nurse and the doctor, because even if the nurse notified the doctor, which is not documented here, I believe she had an independent responsibility to show the rhythm abnormality.

Q: What's the next violation of the standard of care?

A: Well, now I've already gone through discharge from the hospital.

The next violation of the standard of care is the emergency room visit at the same hospital on January 5, 2001, when the patient appears in the emergency room.

On the nursing note —

Q: Wait. Before we get into that, Doctor, let me interrupt you.

So, have you completely cataloged your violations of the standard of care for that hospitalization from 12-28 until what you consider

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to be the premature discharge on 12-31?

A: Yes; except for one other caveat. I think they arranged a follow-up on January 20th is their plan, which was three weeks after discharge, which I think is unacceptably long, considering the severity of her condition in terms of short-term risk.

I believe there should have been Holter monitors arranged at home.

However, I think she should have had her defibrillator beforehand, because she shouldn't have been sent home.

It's kind of a Catch 22. If they had discharged her prematurely, there should have been more cardiac monitoring and a better outpatient follow-up. However, that shouldn't have happened because she shouldn't have been discharged until a more thorough hospitalization occurred.

Q: Who was responsible for the outpatient monitoring that you believe the standard of care required, as well as for the Holter monitoring and the defibrillator?

A: I believe that Dr. Ross and Dr. Lee

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as the cardiologists share the primary responsibility.

I believe that doctor "Kokotanis" —

Q: Kokotakis.

A: — Kokotakis — pardon me — as the admitting doctor, not the consultant, had a partial responsibility to make sure that there was a more thorough cardiac evaluation; although he did have some reasonability in deferring to the cardiologist, but that doesn't absolve him if they are completely misguided in an overly short hospital stay. But I do put more responsibilities on the cardiologists.

Q: Okay. Let's go to the ER visit of the 5th.

A: (Perusing document.) On January 5th, 2000, Mrs. Johnson came to the emergency room and the nursing note says, "Left-sided chest pressure, radiating to right shoulder and back, no nausea or vomiting, no shortness of breath, no diaphoresis, positive lightheadedness since yesterday."

Now, the blood pressure on admission is 100/45, which is a good blood pressure for

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somebody with a cardiomyopathy. I've seen women in their 20s who have had the exact same condition whose blood pressure I ran at 60/30 and they were happy at that blood pressure.

The blood pressure is repeated throughout the evening and it's 110/67 — sorry — 109/67, 108/71, 109/68.

One thing I'm convinced of is that Crystal Johnson had a more than adequate blood pressure. If anything, she could have afforded to have a lower blood pressure with more vasodilator therapy.

So, I don't believe that there would be any reasonability in assuming that lightheadedness was coming from her blood pressure, which is actually higher than the average person should have with her underlying heart disease.

It doesn't mean that their lightheadedness could not have been from a hemodynamic basis, which is always a possibility. But it does require a thorough history to know if the lightheadedness is episodic or continuous, to know the nature of it, to know the severity of it,

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to know how it relates to the lightheadedness in the hospitalization on 12-30.

Also, it's clear that she was lightheaded since January 4th. That clearly is a new phenomenon that was not there on January 3rd or 2nd or 1st.

Given that, it certainly demands an evaluation, a cardiac consultation and a focus on the issue that I believe was abandoned on her December hospitalization.

However, the emergency room doctor, and I have read his deposition, Dr. Latchis, L-a-t-c-h-i-s, doesn't even make reference to the symptom. It's not followed through.

This is the second time a nurse has made reference to a symptom that is an index symptom, and it's the second time that physicians have totally ignored the nurses.

So, to that degree, I believe — and she was monitored for a brief period of time in the emergency room, but certainly not for the extensive level that I had mentioned earlier.

I believe that it's a major shortcoming of Dr. Latchis to not have demanded an

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independent evaluation. I believe this was a second chance to save her after the failed first hospitalization, and I believe the second chance was abandoned.

Q: So, exactly where did Dr. Latchis violate the standard of care? In failing to get a cardiac consult, is that the failure?

A: First, failing to get the adequate history to the lightheadedness, to describe it, its duration and nature and severity; then the second, to get a cardiologist involved so that a proper electrical evaluation could now be entertained; and the third is to keep her until that occurred or was hospitalized.

Q: Anything else for that hospitalization of January 5th?

A: No.

Q: The next violation of the standard of care?

A: Well, I think that my violations are continuous violations in that at this point I believe she did show up on January 10th, I believe, for a — (Perusing document) — was it January 10th?

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MR. REGAN: Yes.

A: She has a visit on January 10th for her outpatient follow-up on the internal medicine side.

And although I have no specific symptom or high risk barometer identified there, I believe that the delay — that her electrical rhythm should have been worked up and that there was always the opportunity to save her. And I think by the 10th they could have mobilized that effort.

So, really my only criticism is that as an ongoing risk it was never paid attention to.

MR. REGAN: I'm showing the doctor my copy so he doesn't have to keep shuffling through. It's Page 203.

THE WITNESS: I know I have a copy. We were discussing my copy earlier. I just can't find it.

Q: Okay.

A: Let me just take a look again.

(Perusing document.)

I mean, again, it's a smaller

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violation in its own right, but on this visit there's no extraction of the history of lightheadedness, which is an important question to ask as a general evaluation of a person with myopathy, especially when it was a prominent part of her symptom just five days earlier.

I don't know whether or not — how this hospital works in terms of the access of records from the emergency room to a treating doctor five days later, but it is the same institution. I would expect some sense of continuity of care.

It's a much lower criticism. It's the ongoing failure to evaluate the symptom, to ask about the symptom and to do it properly.

So, to the degree that she was not seen earlier enough for the cardiologist, that her electrical symptoms were not pursued, that the work-up was not pursued, I think it's just a continuing problem.

I think that it's more apparent on the admissions where I think nurses pick up symptoms that doctors ignore, but in this case I think this is just more of the same; that there is

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no communication and a failure to pursue what needed to be done.
Q: Would it be fair to say that on that office visit of 1-10-2000, you are not able to determine from the information present whether or not the internal medicine physician did ask about such a symptom as lightheadedness, since the patient specifically states that she was doing well and there are many other questions about review of systems —
A: Let me —
Q: — is it fair to say you don't know that?
A: Let me actually answer that by saying that there are many pieces of information we ask patients.
If there is a positive result, meaning an abnormality, we absolutely have an obligation as medical care providers to document it.
There are many negatives; things we ask people and they don't have, and I certainly acknowledge that in medicine we do not record every negative, because clearly it would be

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difficult to do.
However, there are certain negatives that have critical implications towards patients' well-being. One of them is palpitations and lightheadedness, which has enormous implications for somebody with a cardiomyopathy. It is a negative that must be documented individually and cannot be assumed because it was not mentioned as a positive.
And even though they say everything is okay, that is hardly adequate; especially if a patient has had that symptom twice, once in a hospital, once in a emergency room, and may have already assumed the symptom is benign. Because it's not the magnitude of dizziness alone that matters, it's presence has implications and this patient is not expected to know it.
So, if she was feeling episodic dizziness but already assumed that doctors thought it was okay, she may not be reporting it. You can't make any assumption like that.
Q: Is it —
A: So, my answer —
Q: Is your assumption —

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A: My assumption is it's not documented.
Q: Okay. Is it your assumption that the term "lightheadedness" meant dizziness for Crystal Johnson?
A: It's my assumption that it was not explored properly.
It's my assumption that there is no documentation or exploration of the symptom or proper monitoring by history or by objective testing.
That is all I'm assuming. I'm just showing that there was a breakdown in the doctors here, and the only reason why I can't know for sure is the doctors' breach of the standard of care at multiple levels; on the 30th, on January 5th, and then to a lesser degree on January 10th.
Q: Okay. The next violation?
A: That's it.
Q: Okay.
A: I mean, it's ongoing. It's just a continual failure to observe her for the highest risk reason why she might die.
You know, I certainly think that

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when she couldn't make it on the 20th due to the snowstorm, I think it was not within the standard of care to defer her for a week. However, I don't believe by causation realistically we can expect by the 21st, if she had shown up, to necessarily prevent her death on the 24th by a work-up. So, I'm restricting myself by causations from my viewpoint for those visits up until then.
Q: As a part of your recitation to me of the violations of the standard of care, have you given me the basis for all of your opinions, or is there something else you would like to add to the basis for any opinion regarding the violation of the standard of care?
A: No; I'm holding back one or two things to surprise at trial, but otherwise I'm complete.
Q: Well, just to be on the safe side, why don't you tell me those one or two things. You're telling me you're kidding?
A: I'm kidding. I've given you the entire basis of my opinion.
Q: Okay. I believe you referenced earlier that you were going to be giving testimony

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as to the cause of Crystal Johnson's death?
A: Yes.
Q: Is that true?
A: Yes.
Q: And I believe you testified that the cause of Crystal Johnson's death was an arrhythmia?
A: Yes, it was.
Q: What is the basis for that opinion?
A: The basis for that opinion requires a small discussion.
If somebody dies and is found unfortunately dead, you know, as she was, there are only two reasons why you can die; one is mechanical, and one is electric.
Mechanical death means that something has happened to your body that once it occurred, you can no longer live with it: a gunshot wound, a rupture of the heart, an aneurysm exploding in the body, an infectious, sepsis that spreads through the body where the body is damaged, cancer riddling every major organ.
When some people die, the medical examiner finds a condition and says, you know

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what, here is a mechanical thing that killed the person, which meant that unless that mechanical thing went away, which sometimes it can't, there is no way you can live with it.
Other people die of cardiac arrhythmias, which is a large number of deaths, where on autopsy everything that is found was in the body the exact same way a week before they died, as is the case here.
Crystal Johnson had a myopathy and heart and lungs, but there was nothing on autopsy that — her autopsy would have been the same had she died the same earlier. The point is there was nothing in her body that was inconsistent with remaining alive indefinitely. She had a weak heart, but she was not in pump failure.
So, the overwhelming cause of death in people in general is arrhythmic. With a weak heart, it's overwhelmingly due to an arrhythmia. And there is no smoking gun in her body. Given that, I guess in the world of is there anything possible, she might have been killed with a poison they didn't know how to detect, but that's unreasonable to assume when arrhythmic death is

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the overwhelming cause of death.
Q: Would it be fair to say that you're arriving at your conclusion that Ms. Johnson died of an arrhythmic death by process of elimination?
A: Well, both elimination, as well as recognizing the natural history of what is the most likely thing that is going to kill her, which was a prospective decision that I face every day with Crystal Johnsons in my practice.
The number one cause why she's going to die is arrhythmic death, which is why she needs a defibrillator if she hiccups wrong, and she did that. So, she has an overwhelmingly higher chance of dying with arrhythmia on the day she was recognized on the 28th of December to have a myopathy. That is even amplified by her electrical irritability seen on monitor strips and her multiple symptoms which I feel were not pursued properly.
The fact she is now found dead suddenly with nothing mechanical on autopsy to explain it, it makes it overwhelmingly, 99.9 percent likely that it was due to an arrhythmia. But that doesn't mean I'm being absolute; I'm

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saying it's as absolute as you can be in medicine.
Q: So, would it be fair to say that your conclusion that the patient died from an arrhythmia is a statistically based process of elimination?
A: No. It's based on statistics, her individual course and her autopsy. You put it all together, it would not be reasonable to conclude anything other than that.
Q: What specific objective proof is there in the autopsy that points to arrhythmia?
A: The absence of a mechanical cause of death.
Q: Is there any specific positive objective proof that says this patient had an arrhythmia?
A: It is done by the failure to show a mechanical cause of death. And then you take her medical condition and her story, it amplifies that conclusion.
Q: So, is the answer to my question that there is no specific objective proof which positively identifies arrhythmia as the cause of death?

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A: I'm saying the absence of a mechanical cause would give rise to the presumption of an arrhythmia; the presence of a myopathic heart would amplify it, and then her clinical cause further amplifies it. Conclusions are based on the sum of all information together.

And I am suspicious that perhaps I'm being asked to give an over-simplified sound byte that taken out of context might make it seem less conclusive than it really is.

I've answered it as best I can.

Q: Well, can you disagree with me — no. No. I know you can disagree with me.

Don't you have to agree with me that looking at the autopsy report there is no objective positive proof that says this patient died of an arrhythmia?

A: I think there is.

Q: Where in the autopsy report is it?

A: The failure to have a mechanical cause of death.

There is never a positive abnormality that marks the arrhythmia. It is done by several factors. The two most significant is

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the absence of a mechanical cause of death, the second is the presence of organic heart disease, and then the third would be a clinical course that amplifies it. In this case all of them are present.

So, there is no clinical doubt she died of an arrhythmia.

But the problem is you can't do an autopsy and find the little box checked off saying arrhythmia.

It's the absence of other causes that pretty much proves an arrhythmia in anybody, but once there is organic heart disease, it absolutely proves it.

Q: Are there areas in the heart that can be examined pathologically to determine whether there has been an arrhythmia?

A: No.

Q: What are the SA nodes and AV nodes?

A: Those are aspects of the electrical system that serve to produce and control the electrical impulse which can be abnormal in many people but have nothing to do with the mechanism of sudden death in these patients.

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Q: What specific part of the heart, if any, does have to do with the sudden death of Crystal Johnson?

A: Somewhere within the disrupted fibers of her heart she developed a ventricular arrhythmia that killed her.

But there is no way to pinpoint that because she didn't live long enough to have the proper studies, or she didn't have the proper studies done in a timely manner before she died.

In any case, it is irrelevant. There is no affirmative abnormality that confirms an arrhythmia in any person.

It's the absence of a mechanical cause, plus the substrate of the heart, plus a clinical story to support it, and she has all of them in spades.

If anybody proposes a theory that she died of something other than an arrhythmia, is not representing fairly the clear evidence of this case statistically and physically. It would be a fiction that somebody is promoting, in my opinion.

Q: Would it be your opinion that even if one were to examine the SA node and the AV node

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of Crystal Johnson by pathology confirmation, that you would expect those to be normal?

A: That's right. An examination of the heart would in no way be able to in any person ever prove an arrhythmic basis to death. It is done by the absence of mechanical abnormalities, the predisposition of cardiac abnormality, and the clinical story; and in this case they all proved the point. There is nothing that an autopsy could be done to discourage that has the overwhelming certainty within the ability of medicine to be certain.

Q: And what training, if any, do you have in pathology?

A: Other than the fact that in medical school we all rotated through pathology, I took an elective in cardiac pathology, and I've witnessed dozens of cardiac autopsies over the years and still do. I'm not presenting myself as a pathologist, but I am an expert on cause of death in cardiac patients.

Q: Would you defer to a cardiac pathologist on examination of postpartum tissues from a cardiac patient?

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A: I would defer to a pathologist in terms of the skills that the pathologist has in terms of the analysis of dead tissue under a microscope, but I would not defer to anybody when it comes to the cause of death, which I think I'm as expert.

And certainly if there is an expert, whether it's a clinician or a pathologist, if they are going to try and raise the theory that something other than arrhythmia caused this woman's death, I think it would be completely fictional, and I would guarantee that they would not have a compelling argument as clear as mine to explain it.

And if somebody can come up with a more rational theory to explain it, I will pay attention to it. I think that it will be nonsense and does not exist, and I think that they will be creating a fiction. If they believe it themselves, it's their business, but it has no basis of reality.

This woman died of an arrhythmia. There is absolutely no way around that.

Q: Are you able to tell me how long Ms.

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Johnson suffered from an arrhythmia in her heart?

A: Not how long. She was probably having multiple bursts of arrhythmia that could have been detected and demanded a defibrillator, but she died whenever she died. I don't know the exact time of death. I know that she was discovered dead outside of her bedroom or near her bedroom, but I don't know the moment of her death.

Q: Maybe I wasn't clear in my question. Are you able to tell me to a reasonable degree of medical probability when Crystal Johnson first began to exhibit an arrhythmia in her heart, whether it was a burst of an arrhythmia or a continuous arrhythmia?

A: She was showing technically arrhythmias throughout her entire stay at Washington Hospital Center by the extra VPCs she had.

I think her symptoms of lightheadedness and palpitations indicated on that moment, as we discussed, the probability of a more profound arrhythmia.

But I believe that even more intensive scrutiny would have shown it. I think

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it was intermittent over a long period of time and I think that there was an ample opportunity to diagnose it and save her.

Q: Would you agree that she also was showing evidence of arrhythmia when she visited the Greater Southeast Community Hospital in December 1999, a week before her Washington Hospital Center hospitalization?

A: Probably.

Q: Can you fault the nurses or physicians at the Greater Southeast Community Hospital for not obtaining a cardiac consultation or providing further work-up, including Holter monitoring or defibrillation for Ms. Johnson, given that she was exhibiting signs and symptoms of arrhythmia?

A: One hundred percent I do. Although I want to qualify by saying that had she died after that emergency room, I think they would have had a gross deviation of the standard of care.

However, since I think there is no causation, since I think that she — from my viewpoint, I've always been at least made aware

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that the legal standard, which is the proceeding here, and certainly the medical standard, is not only a deviation but a causation, as well.

I believe that although there are deviations by other people not recognizing — I believe that when she came in with leg edema to Washington Hospital Center in November, they should have had an obligation to pursue it more instead of just dismissing it. But I don't think that has any causative impact.

I believe that the December admission to the emergency room a week before her hospitalization was a deviation not to look for a cardiac basis.

However, since I don't believe it has anything to do with her death, because she was finally hospitalized and identified thoroughly with what her underlying disease was, those deviations are no longer relevant.

Deviations that don't lead to a bad outcome are not ones that I'm exploring in this deposition, and in the trial I will have no comment about them because I feel they have nothing to do with what happened to her.

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Q: Did you look at the EKG report from the Greater Southeast Community Hospital?
A: Yes.
Q: Did you determine that that was abnormal?
A: (Perusing document.) Now, just to be clear, we are talking about the December 22nd emergency room visit?
Q: Yes.
A: (Perusing documents.) Okay. I have it here. It is abnormal.
Q: What does it show?
A: (Perusing document.) It shows the heart beating at 135 beats a minute, which is very fast, which suggests some kind of body stress.
It shows a greatly diminished R wave in leads B2, B3 and B4; suggesting the potential for a previous anterior wall heart attack, but it's also consistent with a myopathy.
And that's the principal abnormalities. I think that given her symptoms of shortness of breath and the EKG, it would have demanded a cardiac evaluation.
And had she died, there would have

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been both a deviation and a causation. But since she was admitted to another hospital a week later with a full recognition of her underlying condition and every opportunity to save her, I did not consider that admission, nor the November emergency room visit at Washington Hospital Center, to have any relevance to this case.
Q: If the physicians caring for Crystal Johnson at Southeast Community Hospital had placed her on a defibrillator and/or a Holter monitor, would you agree that she would probably be alive today?
A: I guess then if the theory is that had that hospital admitted her and done the right thing, it would have spared her from going to a hospital where malpractice was committed; so, to that degree, yes, it would have.
Q: So, the answer to my question is that had the physicians at Greater Southeast Community Hospital not violated the standard of care, Crystal Johnson would be alive today, correct?
A: No — well, again, if the argument is that they could have — she made it in perfect

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condition to a different hospital where she was admitted and worked up and improperly treated. Clearly, had she been treated properly in November and had been recognized at Washington Heart Center before it, she wouldn't have been at that emergency room. So, it can go on and on, frankly.
She had leg edema at the same hospital, Washington Hospital Center, in November. I believe that required a work-up, which wasn't done. Had that been done properly, she wouldn't have been at the other hospital with that same symptom, because she would be on the right drug. So, this can go on forever as a theory.
The reality is that December 28th is the pivotal visit. She's admitted to a hospital for a work-up and it is not done properly.
I cannot within any reason think that the previous emergency rooms are relevant, and I certainly would not expect any reasonable person objectively looking at this case to blame a different hospital when she made it to a hospital that should have done everything and had all the evidence they needed.
Q: But the bottom line is that if

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Crystal Johnson had been treated appropriately in Greater Southeast Community Hospital and the physicians there had not committed the violations of the standard of care which you just elucidated, that she would be alive today?
MR. REGAN: That's your testimony, Marian. He answered that now two times for you, same question.
MS. HOGAN: I'm just asking him whether he agrees or disagrees.
MR. REGAN: He answered the question. He's not going to agree to your terminology of an irrelevant point. He has testified to his opinions on two separate occasions. You can ask him his opinion, but don't try to rephrase his testimony.
BY MS. HOGAN:
Q: Let me ask you this question, then, Dr. Charash: If Crystal Johnson had been placed on a defibrillator and/or Holter monitor as of December 23, 1999, would she be alive today, more likely than not?
A: It is hard to say, because there are

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too many hypotheticals.
And her lightheadedness clearly occurred on December 30th, on the watch of your hospital.
I can't speculate at this point because there's too many questions.
Had they done a work-up, it's possible. But as it is, the responsibility didn't fall on them. Again, the responsibility fell on Washington Heart Center, which is clearly her primary treating center, which had every opportunity to do this.
And I think it is, in my opinion, a very dubious, if not double-edged way to try and defend yourself by saying, well, our malpractice would be irrelevant if a more competent hospital that doesn't commit malpractice treated her instead of us. That is not a very solid defense, and that's my opinion.
Q: Doctor, am I correct that you do not hold yourself out as an expert in the area of pathology?
A: That is correct. I do not put myself as an expert in pathology, but I am an

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expert on cause of death, based on pathology records and clinical course. I've certainly watched more patients die than any pathologist. They take care of them after they are dead.
Q: Are these your patients that you watch die?
A: Mine, as well as other patients. Patients in our cardiac care unit die. We have approximately an eight percent mortality rate. Out of 800 admissions a year, we probably see 60 to 70 deaths. Those who get autopsies, most of them I watch.
Q: Dr. Charash, are you going to be offering testimony as to what Crystal Johnson's life expectancy would have been had she been placed on a Holter monitor or a defibrillator?
A: Well, again, don't link them together. A Holter monitor is one of the diagnostic tools that would have been used to end up with a defibrillator.
So, my testimony will be that had she been properly treated, inevitably she should have been put an implanted defibrillator. Had that occurred, it will be my testimony that there

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would have been two tracks she could have fallen on, and to come up with life expectancies you must consider both. The first one is substantial recovery of the cardiac muscle, which she had a greater than 50 percent chance of occurring. And, by the way, to amplify that point, I'm want to point out that on the January 5th emergency visit at Washington Heart Center, Dr. —
MR. REGAN: Hospital Center.
A: — Hospital Center, pardon me, Dr. Latchis wrote down: EF 10 percent, which actually was called 20 percent on the echo, presumed to be autoimmune and reversible. I agree with him.
There's a slight presumption of reversibility, which means she would have a near normal life expectancy if it reversed. If it did not reverse, which is the other track, then she would have obviously a more diminished life expectancy. If she were put on a transplant list, she would have a median ten to twenty-year life expectancy, but it could be indefinite.
So, given the two, you would have to say that on one hand she has a 50 percent life expectancy if she gets better, which is slightly

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more likely than not, and then she has a probably ten to fifteen-year life expectancy if she doesn't get better. You combine it and say it's an average 30-year life expectancy or more. But it depends on which way she went, but she never lived long enough to have that opportunity.
Q: Are you able to give me an opinion to a reasonable degree of medical probability in Crystal Johnson's case how many more years you believe she would have lived?
A: Well, since the standard of legal discussion is more likely than not, which is all I can work with, more likely than not the statistics say she would have had substantial reversibility, which means I think she had another 50 years to live. But, realistically, since there is a very large minority possibility, but near 50 percent, that she would not get better, I'm being realistic in the way I'm tempering that statistic.
But if you had to commit to one path or the other, the statistics slightly favor getting better. But I think that there was a meaningful chance she wouldn't; so, I'm being generous in my statistics.

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Q: So, what is the life expectancy that you would give to Crystal Johnson had she been given the treatment that you believe she needed?
MR. REGAN: He just answered that.
MS. HOGAN: Well, he went back and forth.
Q: Is there or is there not a number that you will be testifying to at trial?
A: I will say at trial that there was a greater than 50 percent likelihood that she would have had substantial to near total recovery, which would have afforded her a nearly normal life expectancy of greater than 50 years.
I will testify at trial that there is a slightly less than 50 percent possibility that she would not have recovered, in which case with aggressive management, including the benefits of transplant, it would average out to a ten to fifteen-year life expectancy.
Given all that, if you want to be fair, you can weigh the normal life expectancy of slightly more than the other, and that would give her an average of over 30 to 35 years; although

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it's an odd statistic, because it's either normal or not normal. But I would say that if you had to commit to one path, you have to pick the one that was statistically more likely which was normal. But I'm being reasonable in this case by factoring in the significant possibility of her not living that long because of failure to get better.
Q: So, all these considered, and your being reasonable and factoring all these things together in Crystal Johnson's case, is it going to be your testimony that a reasonable estimate of her life expectancy would be 30 to 35 years?
MR. REGAN: He answered this question, Marian.
A: Yes, but I'm doing that as an odd way of averaging in the slightly more likely than not possibility of normal life expectancy versus the meaningful possibility of it being substantially reduced, and coming up with a fair average the best I know how.
Q: Is it your understanding that the type of peripartum cardiomyopathy from which Crystal Johnson suffered is thought to be genetic?
A: No.

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Q: Would you agree with me that at the time of Crystal Johnson's death in January 2000, she was not a candidate for transplant?
A: No. She was always a candidate for transplant. I don't think it was required at that point.
Q: I take it you will not be giving testimony at trial as to the likelihood of her obtaining a cardiac transplant in January 2000?
A: I don't think she should have had one in January of 2000 clinically.
I think you wait a minimum of six months to see if she gets better, and then you put her on a transplant list and you factor in, once you've prevented arrhythmic death with a defibrillator, which is simple to do, you watch her in terms of hemodynamics, which is a predictable decline, if it occurs; and as a young woman who has no other medical problems, she would have been a high priority for a transplant, but certainly not a guarantee.
Q: Did you have occasion to read Mr. Johnson's testimony?
A: Yes.

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Q: Deon Johnson?
A: Yes.
Q: Was there anything in his factual testimony regarding Crystal Johnson that added to or subtracted from your opinions?
A: No. He was asked specifically whether he knew of dizziness or lightheadedness and he didn't recall.
That means he's not capable of shedding any further light on this case because he didn't know what his wife's symptom were.
Q: Hold on for just a second here.
A: Sure.
(Pause in the proceeding.)
BY MS. HOGAN:
Q: Dr. Charash, would it be fair to say that — and I think I understood you correctly on this, but please tell me if I'm wrong — as far as the medications that were prescribed to Crystal Johnson at the Washington Hospital Center at the end of December 1999, you don't quarrel with those; those were acceptable medications, and that medication management was within the standard of care?

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A: Well, the classes of drugs were appropriate, and since I do not believe that the medications that were used were related to the mechanism of her death, I don't find any relevance in discussing them.

I think that the general approach was correct. I don't remember the exact doses. But, again, her death was certainly an arrhythmia which would not have been impacted upon by the drugs she was on.

Q: Do you believe that the standard of care required that Crystal Johnson undergo a cardiac catheterization when she was in the hospital at the end of December 1999?

A: No. Although a primary focus of working up people with weak hearts is to explore the coronary arteries.

Given the circumstances of this evolving after delivery, and her young age and the lack of extraordinary code morbid conditions like diabetes since she was ten, I think that there was no — there was no reasonable expectation she had coronary disease. I mean, it was a remote possibility, but a catheterization might be done

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as a matter of formality, but I don't think it was required.

Q: And in this particular case, knowing what you know from the autopsy, I believe you testified that she did not have anything wrong with her coronary arteries; is that accurate?

A: Yes, it is.

Q: Dr. Charash, have you completed your testimony to me regarding violations of the standard of care and the basis for those violations as related to my client, the Washington Hospital Center and the treating internal medical physicians and emergency room physicians?

A: Yes, I am complete.

Q: When did Mr. Regan first contact you in this case?

A: December 2000.

Q: How many cases have you reviewed for Mr. Regan in the past?

A: I believe this is the only one.

Q: Do you know how he got your name?

A: No, I don't.

Q: Did your father mention anything to you prior to Mr. Regan's contacting you?

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A: No.

Q: Have you talked to any other physicians about this case?

A: No.

Q: What is your hourly fee?

A: $300 an hour.

Q: Is that for everything?

A: Yes.

Q: About how many hours have you spent thus far on this case?

A: Not including this deposition time, which I haven't factored in yet, probably seven hours.

Q: Doctor, am I correct that you never had your license to practice medicine or your privileges to practice medicine adversely acted upon in any way?

A: Correct.

Q: Have you ever advertised yourself as an expert to testify in medical malpractice cases?

A: No.

Q: Have you ever been disqualified from testifying as an expert in any jurisdiction?

A: No.

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I do have one qualification to that. Once in Florida I went down to testify in a trial against an emergency room doctor and a cardiologist. There were multiple times I've testified and been qualified in Florida as an expert against emergency room doctors. When I went down to testify, I was asked to leave the courtroom. There was a conference. There was an issue of Florida law that was being discussed that I don't know anything about. When I came in, my lawyer advised me to testify against only the cardiologist.

A couple of years later a defense attorney told me I had been disqualified against the doctor.

And once I signed an affidavit from a defense firm in Florida that said I had been disqualified in that trial from testifying against an emergency room doctor, I signed an affidavit saying that. But subsequent to that I called up the lawyers who I worked with at that one trial and they said it was absolutely incorrect, I was never disqualified. It's on the record. A decision was made just to use me against the

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cardiologist; therefore, once I signed an affidavit under the complete misimpression from a defense lawyer that I was disqualified.

So, the answer is I've never been disqualified in any court at any time. However, there was a brief window where I actually was misled by a different attorney into believing I had been, and it was out of my own ignorance that I signed an affidavit.

Q: Do you remember the name of that case?

A: No. It was a while — it was years ago. And since then there has never even been a remote issue of qualification. So, I've never been disqualified, but for a brief moment I thought I had been.

Q: Have you ever been sued?

A: Yes.

Q: Just give me a very brief summary of the number of times and the general allegation of the cases, like one sentence.

A: It's simple. I was once sued as a patient died at New York Hospital where I was on staff. I gave the man thrombolytic therapy. My

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involvement ended that day. He died several days later of an issue that was the subject of malpractice. I was named, as every person on the chart was. There was never a complaint raised against the actions of my involvement. There was never expert testimony against the actions I did on the chart. I was simply deposed to discover whether or not I was involved in the issues that were part of the suit.

Once in discovery it was clear that I had absolutely nothing to do with the issues of the case, it was unilaterally dropped by the plaintiff.

The family wrote me a letter of apology, because they liked me and they knew I had nothing to do with it, explaining this was a formality they were advised to do.

And the law firm that had me in the lawsuit and dropped me two years later hired me as an expert witness.

So, it was a happy ending for all of us.

Q: That was a long sentence, but I did get the whole story.

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A: I didn't want you to be misinformed.

Q: Did Mr. Regan or Mrs. Dougherty or anyone from Mr. Regan's firm tell you any information or any facts about this case that in any way influenced your opinion that would not have been something contained in either a medical record or deposition?

A: No. Everything that I've stated today is supported by information whose source I've made clear today.

Q: Have you ever prepared a list of the cases that you've testified in?

A: Oh, many years ago I was in a federal court, and I don't even remember if I made a list. Since then, I'm not aware of one.

MS. HOGAN: I'm just going to look over my notes, but I really think I'm finished. If Mr. Spence wants to start questioning.

THE WITNESS: Why don't you, then. You can always come back.

EXAMINATION BY MR. SPENCE:

Q: Dr. Charash, we met before the

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deposition started. My name is Andrew Spence. I'm here only behalf of Dr. Elizabeth Ross, Dr. Kenneth Lee and their practice.

Like Ms. Hogan, if I ask you a question that you don't understand, don't hear or doesn't make sense to you for some reason, will you please tell me so I can rephrase the question?

A: Yes.

Q: I want to ask you a little bit more about your medical practice.

Do you have a private practice of cardiology?

A: Yes.

Q: What percentage of your patients are seen in an office setting?

A: I don't know how to put it by percentage.

I see on average two to five patients an afternoon in my office at the hospital as an outpatient. I mean, I'm certainly rounding on 50-some-odd patients in the hospital at any one day.

Q: What percentage of the patients that you see are in the hospital, not in your office,

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which may be on the grounds of the hospital?
A: I'm not sure I understand what you said.
Q: What percentage of your patients are in the cardiac care unit or on a floor of the hospital of any kind as opposed to being seen in an office setting?
A: Well, again, I'm rounding on 53 patients a day in the hospital. However, the number of patients I'm personally the cardiologist of record for is probably in the range of three to five a day, and I'm probably seeing somewhere between two and five outpatients a day.
Q: What percentage of the patients that you see are not acutely ill?
A: I don't know how to — that's a weird way of saying it. I mean, I can't answer that question.
Q: Well, what percentage of the patients that you see do not have symptoms as a result of their underlying cardiac condition when you are seeing them?
A: Are you talking about the critical care patients, the general floor consults or my

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office practice?
The people who are coming to my office are not critically ill.
The people in the hospital have varying degrees of medical problems; some of them cardiac, others not.
And the people on the cardiac intensive floor are generally driven by their cardiac problems.
It's a strange way — I don't know how to break it down for you.
Q: Well, I think you've helped me, though, because I think you have broken it down.
Let me just follow up by asking you what percentage of your time is spent in the cardiac intensive care unit?
A: About half my day.
Q: What percentage of your time is spent on floors seeing patients and rounding to see patients?
A: An hour or two. It depends on the day.
Q: And then what percentage of your time is spent seeing patients in the office?

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A: Again, an hour or two.
Q: Have you ever been involved in any medical research that relates to postpartum or peripartum cardiomyopathy, congestive heart failure or cardiomyopathy of any kind?
A: No.
Q: Have you participated in the development of any policies and procedures or protocols that relate to peripartum cardiomyopathy, congestive heart failure or cardiomyopathy of any kind?
A: No.
Q: Have you published anything in the medical literature that relates to postpartum cardiomyopathy, congestive heart failure or cardiomyopathy of any kind?
A: No.
Q: Have you given any kind of lecture or presentation, whether you were an invited lecturer or whether you were serving as a faculty member, on the subjects of postpartum cardiomyopathy, congestive heart failure, or cardiomyopathy of any kind?
A: I've lectured on heart failure many

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times, but it's been a number of years probably and I have no course outline.
Q: Does your medical practice have any policy and procedure or protocol with respect to the treatment of patients with postpartum cardiomyopathy?
A: I my treatment practice and I adhere to the standards of care and do what the clinical condition requires.
Q: Do you have a written policy and procedure or protocol related to the treatment of patients with postpartum cardiomyopathy?
A: I don't have a written protocol for anything, including postpartum cardiomyopathy.
Q: Do you have any practice or policy that relates to how patients are scheduled to see you in the office for a follow-up visit?
A: No. It's based on clinical need. I don't have a written policy.
Q: How is a patient instructed to make — in other words, how are appointments made in your office?
A: Through me directly.
Q: Can you please elaborate?

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A: I don't know what part is unclear. Patients call me up, I either book an appointment in advance or they call me up and I make an appointment on a stat basis.

Q: Do you ever instruct your patients to contact your office for purposes of scheduling an appointment?

A: No. I always give them an appointment date. I am my scheduling secretary. When I speak to patients, I work out the date with them directly. I don't have them call me later. I work it out before they leave the hospital or when they call me.

Q: Do you carry your calendar with you?

A: Yes.

Q: That's what I'm trying to understand.

Do you have a policy as to when a patient is to see you in the office after being first diagnosed with postpartum cardiomyopathy?

A: That first follow-up visit depends on the issues that were discovered and how the management was properly conducted in the hospital. Assuming a proper and complete

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hospitalization, which is how it begins, with thorough attention to the pump, the plumbing and the electricity, as I mentioned, then I would probably see them within a week or ten days of their discharge, assuming everything was done properly in the hospital.

Now, if they're on anticoagulation therapy, I might see them two days after discharge to check blood levels.

If they have unresolved issues or things that are still in dynamic play, I might see them the day after they go home.

I can't be that absolute. It depends on the specifics of the case.

Q: Right. And in your practice, do you jointly follow patients with internal medicine?

A: Yes, I do.

Q: I'm talking about patients with postpartum cardiomyopathy or congestive heart failure or cardiomyopathy.

A: Yes, I have and do.

Q: If the internal medicine physician sees the patient after discharge, after being diagnosed with postpartum cardiomyopathy or

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congestive heart failure, and that doctor sees the patient within ten days, does that change the time when you see the patient?

A: No. My appointment is made independently of the internal medicine doctor.

Q: Does your office cancel patients when there is severe weather, like a very heavy snowstorm?

A: I am my office, and if there is an extraordinary circumstance, I call up patients and discuss with them whether they can make it or not and reschedule based on need.

Q: Now, Ms. Hogan asked you a number of questions about your experience with peripartum cardiomyopathy in the last ten years, and I simply want to clarify.

Do you have any experience or have you had any experience with patients with postpartum cardiomyopathy that was more than ten years ago?

A: Yes.

Q: And what experience do you have that goes back more than ten years?

A: From 1984 to 1991 I was a cardiology

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fellow — from '84 to '87; and then from '87 to '91 an attending at the New York Hospital in New York, and I'm certain I saw cases of the same condition while there. Again, I can never give an exact count. But I would assume it averaged a little more than one a year. So, I saw cases at least a half a dozen or more cases while at Cornell.

Q: Can you remember any of those patients?

A: Yes.

Q: I asked that simply because you said that you assume it was one per year and I didn't know why you were assuming that.

Why did you assume it is one per year?

A: Just because I have a general sense of the frequency which I saw cases. There was no predictability. But it was a condition that I kindly have a general impression of about one or more a year appearing. It's not that common a condition, but it's not so rare that we didn't see our fair share by direct management in a busy obstetrical program, as well as by referral.

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Q: What percentage of the patients that you have seen either as a cardiac — excuse me — either as a cardiology fellow, as attending or in your own practice, have died as a result of their peripartum cardiomyopathy?

A: I don't know, because I don't believe I have the longitudinal follow-up on the majority of those patients.

Q: Who has the longitudinal follow-up?

A: The doctors that ultimately assume the long-term management.

In most of these cases I served as a consultant to launch their care and then referred them back out to their treating doctor.

Q: Have you ever maintained any kind of patient census that would indicate the number of patients you've seen for various conditions?

A: No. I am compulsive but not that compulsive.

Q: Is it your understanding that Dr. Kenneth Lee did not see the patient at any time after the patient was reported to have the lightheadedness and palpitations that you made reference to on or about December 29, 1999?

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A: I did not see Dr. Lee's note appear after the lightheadedness. I saw Dr. Ross' on December 30th, and, you know, the upcoming discharge. I did not see Dr. Lee's name at that point.

Q: And I simply wish to clarify. Do you expect to testify at trial that Dr. Kenneth Lee departed from the standard of care?

A: Yes, I do.

Q: And how do you contend that Dr. Lee violated the standard of care?

A: Because, as I stated earlier, my criticism is not exclusive to what I consider the completely ignored symptom of lightheadedness and palpitations by Dr. Ross on the 30th, but my opinion is also that there had to be a strategy of aggressive evaluation of this patient's electrical system, independent of that symptom which would have included Holter monitoring, a longer hospital stay, and a stress test, to see how the electrical system withstood adrenaline and activity; To the degree that Dr. Lee was a part of this patient's management in the hospital, to whatever degree he contributed to the failure

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to achieve a more aggressive plan to look for the number one cause of this patient's death, and to not recognize that as an extraordinarily young patient with enough electrical noise to begin with, he should have been leaning toward putting in a defibrillator until proven otherwise.

So, I think he failed by not being aggressive in his evaluation or management of this patient.

So, in that regard I don't think he's party to the lightheadedness if he wasn't there, but there were other complaints I have, which include a failure to properly evaluate this patient and a rush discharge.

Q: Was there anything in the record as of the time that Dr. Kenneth Lee saw this patient suggesting that she was at risk for rhythm disturbance, an arrhythmia, or any kind of abnormal electrical activity of the heart?

A: I'm not too sure. What's your question? I heard the second part. I didn't hear the first part of your question.

Q: Sure. What do you see in the chart as of the time that Dr. Kenneth Lee saw the

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patient which suggests that Crystal Johnson was at risk for any kind of rhythm disturbance, an arrhythmia, or abnormal electrical activity of the heart?

A: (Perusing document.) Sure, there's many things.

The fact that he recognized this patient to have a cardiomyopathy automatically means that that's the number one reason why she's going to die in the short future.

She had extra beats on multiple rhythm strips documented even before the 30th. But I think that just her underlying condition alone, by the nature of its diagnosis, meant that Dr. Lee automatically, as a cardiologist, had an absolute obligation to factor into his management and treatment plan an aggressive evaluation to evaluate her electrical stability, which would have included Holter monitors, careful attention to symptoms, and a stress test to assess the electrical system under stress. And I don't believe he did any of them.

Q: Do you contend that Dr. Lee deviated from the standard of care in any other way?

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A: No.
Q: Now, I know Ms. Hogan asked you some questions and it came out in your testimony that you have opinions regarding Dr. Ross.
I simply want to clarify how you contend that Dr. Elizabeth Ross departed from the standard of care. If you could list the ways, I would be grateful.
A: Certainly.
I think it would include everything I said about Dr. Lee.
By not having an extensive evaluation of this patient's electrical risk by prolonged monitoring, including Holter monitoring in the hospital; if necessary, a stress test; and a longer period of time of being on a monitor.
The second area for Dr. Ross is the failure to in any way acknowledge by her hospital presence and written note the symptoms of 12-30-99 of lightheadedness and palpitations; to fail to review the history system, if one existed, of the telemetry system in the hospital; to fail to at that point demand what should have been done already, which was a longer evaluation and the

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testing I mentioned.
And then finally the third category is with an improper early discharge there is a failure for an aggressive outpatient evaluation which I don't think should have occurred because it should have been done in the hospital.
But that's my criticisms of Dr. Ross.
MR. REGAN: Need to take a quick break.
(Whereupon, at 12:50 o'clock p.m., a recess was taken.)
(Whereupon, at 1:00 o'clock p.m., the deposition resumed.)
BRUCE D. C HARASH, resumed and testified further as follows:
BY MR. SPENCE:
Q: All right. Dr. Charash, are you ready to proceed?
A: Yes.
Q: Do you hold any opinion other than what you've already expressed regarding the medical practice of Elizabeth Ross, M.D. and Kenneth Lee, M.D., P.C.?

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A: No.
Q: How do you know that any other physician would agree with your opinions as to the deviations from the standard of care that you attribute to Dr. Ross, Dr. Lee, and their practice?
A: I'm not here to account for other people's opinions.
If somebody has an opinion that differs from mine, I guess it will be up to a jury to determine if they have any compelling explanation that I think fits the facts of this case.
I believe mine does, and I will be astonished if somebody can come up with a model or mechanism that will be more reasonable based on the facts of that case.
Q: But I do want to know, do you know if any other physicians would, in fact, agree with your opinions as to the deviations from the standard of care that you've attributed to Dr. Ross, Dr. Lee, and their practice?
A: I've given the deviations and the reasons for the deviations. I cannot possibly

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comment about how other people — I would imagine that responsible doctors would recognize the opinions I gave, but the reality is it not relevant.
I'm giving the standard of care as an expert with a large clinical practice awareness, with a large awareness of other doctors in my community and other communities, having lectured 200 times on the road.
But in this case I've given reasons for my opinions and explanations and models. If somebody has a differing opinion, they are going to have to see if they have a sensible answer.
Q: Are you aware of any medical textbooks that support your opinions as to the deviations from the standard of care that you attribute to my clients?
A: I would be astonished if a textbook discussed these issues. That's not their role.
I mentioned earlier that textbooks do not delve into the standard of care. Sometimes they overlap with it, but they do not discuss it.
Q: Are you aware of any journals or medical articles that support your opinions as to

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the standard of care related to Dr. Ross, Dr. Lee, and their practice?

A: It should not be discussed in articles.

Let me make it simple. One of my standard of care criticisms is that Dr. Ross failed to acknowledge important symptoms the night before and acknowledge what the electrical rhythm is.

Now, I cannot find a book, to my knowledge, that will say the standard of care is that a doctor should be thorough and listen for symptoms that are relevant. That's common sense.

I could not tell you where in a textbook of medicine or surgery it says people who are hemorrhaging should be transfused or people who have had a gunshot wound need emergency surgery.

The point is —

Q: Okay. I heard your answer.

A: The standard of care does not appear in books or in journals.

Q: Okay. I heard you.

And I'm going to persist in my line

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of questioning, so just bear with me.

Are you aware of any medical bulletins that support your opinions as to the standard of care and the deviations therefrom that you would attribute to Dr. Ross, Dr. Lee, and their practice?

A: I don't think that there would be any applicability at all.

Q: Are you aware of any published standards or policies and procedures or protocols that are followed across the country that support your opinions as to how Dr. Ross and Dr. Lee and their practice allegedly departed from the standard of care?

A: They would not be applicable on any level.

Q: Are you familiar with any information given out at the national meetings for your profession that support your opinions concerning Dr. Ross, Dr. Lee and their practice?

A: It would not be applicable.

Q: Are you aware of any information given out by the professional societies, professional colleges and other professional

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organizations that support your opinions as to Dr. Ross, Dr. Lee and their practice?

A: It would not be applicable.

Q: Are you aware of any conversations that you have had with other physicians that support your opinions as to Dr. Ross, Dr. Lee and their practice?

A: Oh, I think there have been many a time that I've had discussions with doctors in training who I helped in their education, to remind them that they have a very critical job of asking for symptoms; to not just passively expect everything to be told to them by the patient, but to read all information, including nursing notes.

I think I've told physicians on many occasions to ask patients about symptoms, even if they don't report them, and document the significant negatives.

I certainly have discussed with doctors in training the need to worry about electrical death in people with a myopathic heart.

Q: Are you aware of any conversations that you have had with physicians who are not physicians in training?

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A: I'm sure I've discussed issues of patient symptoms and evaluation for electrical risk with doctors who are not in training. I can't relate to any specifically. All my career I'm discussing patients.

Q: I apologize if I was talking over you, and I apologize especially to the court reporter.

Did I hear you correctly that you cannot recall any such conversations with physicians who are not physicians in training?

A: Well, I mean, I have so many, I just can't possibly recall a specific conversation over every aspect of cardiology.

It's part of my life of discussing with doctors who have patients in the hospital in their care. I wouldn't know a specific conversation, you know, out of tens of thousands of them every year.

Q: How do you define the standard of care?

A: The standard of care is defined by the standard of practice that an average treating doctor in various types of communities is expected

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to practice, which is a combination of the average approach to illness, as well as the common sense expectation of basic safety that a physician is expected to practice.

Q: And how does a doctor learn what the standard of care requires?

A: A combination of their training and ongoing education through a community of experience and through thoughtful approach towards common sense safety for patients.

I think there's an expectation that doctors will perform common sense practice standards that have a benefit of improving patient safety, as well as certain specifics based on the community of practice.

Q: What caused Crystal Johnson to experience the arrhythmia she had that resulted in her death?

A: The underlying cardiac disease.

Q: And, Doctor, since I'm not a physician, could you explain the mechanism as to how that occurs?

A: Only on a general level; that inflamed or damaged cardiac muscle fibers have the

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potential to disrupt electrical impulses, leading to electrical disruption that leads to sudden death. It's a predisposition that occurs with any form of organic heart disease. It certainly is amplified in an inflammatory myopathy or a postpartum myopathy.

Q: You have made reference to your opinion that the standard of care required a longer hospitalization of Crystal Johnson.

How long do you contend the standard of care required Crystal to be kept in the hospital for further monitoring?

A: Long enough to perform either Holter monitors or more quantitative monitoring, a stress test, and, you know, a sense of progressive activity on a Holter monitor. So, it would have been a few more days.

Obviously, the length would have been dependent on what findings occurred.

The failure to have a stress test, Holter monitoring and attention to that specific symptom are, in part, a function of the short hospital stay.

Q: . Did I hear you say that you take

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the position that the hospitalization should have been, quotation marks, a few days longer?

A: Well, again, the specifics of the length of stay isn't as important as it is what testing needed to be done and what inevitably would have shown up.

Q: Do you contend that the standard of care required Dr. Ross and Dr. Lee to perform an echocardiogram at any time other than what was performed?

A: No. A stress test is what I mentioned, not an echocardiogram and a Holter monitor. Those are the tests that I submitted, not an echo.

Q: Do you contend that the standard of care required any additional cardiac catheterization?

A: No. I mentioned that earlier.

Q: The fact that Crystal Johnson lost weight between the time of admission on December 28th and the time of discharge on December 31st was consistent with her becoming compensated, correct?

A: It was consistent with removing

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excessive fluid and improving cardiac performance, which I have no complaints over in this case.

Q: How many defibrillators have you implanted in patients of yours with postpartum or peripartum cardiomyopathy?

A: You mean how many have I recommended? Because I don't implant them.

Q: Yes. Thank you for the clarification.

A: I would think we started implanting defibrillators pretty much routinely after 1993 or 1994 when they improved in their size and shape. Beforehand, there was less implantation.

So, by 1999, for those years, most of them, if not all of them, went home with defibrillators.

But, again, there's only been a handful in those years. Most people with badly myopathic hearts with those symptoms would get a defibrillator.

Q: Doctor, are you familiar with the medication called didoxin?

A: Digoxin?

Q: Digoxin.

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A: Yes, I am; digoxin.
Q: Thank you. What is the purpose of digoxin?
A: It's a medicine that assists the heart in improving its ability to contract.
Q: Is it fair to say that digoxin is a medication that is also used to prevent and discourage arrhythmias?
A: No. If anything, it might encourage arrhythmias.
Q: Why would digoxin encourage arrhythmias?
A: How do you answer why to an empiric observation?
Digoxin helps prevent a specific form of supraventricular arrhythmia. But, actually, when it comes to atrial fibrillation and ventricular tachycardia, it not only fails to have a preventive effect; it has a slightly irritating effect. But you can't give a reason why to an empiric observation.
Q: Okay. So, you don't believe that any of the medications that Crystal Johnson was discharged on would have any role in discouraging

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abnormal rhythm disturbances or arrhythmias?
A: No, not to any clinical meaningful level and certainly not to a level to abrogate the parties that deviated from the standard of care from meeting their responsibility; no.
Q: If most cases of peripartum cardiomyopathy spontaneously resolve, why implant a defibrillator?
A: Because lots of these people are going to die before they get better. The first six months while waiting leads to many deaths. If somebody is showing electrical irritability and having high risk symptoms, then they are going to have — Crystal Johnson might have gotten better in six months, but she died suddenly before that opportunity came. That's why. It's a very good investment in life.
Q: Okay. How do you know that the lightheadedness and palpitations that Crystal Johnson had around 2:30 a.m. in the morning late in December 1999 was not the result of a hemodynamic process?
A: I don't, other than the fact that her blood pressures were not recorded to be

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anything aberrant.
On the other hand, the complete lack of evaluation is part of the problem we have here.
The nurses did not do immediately vital signs, by the chart; the rhythm strip was not obtained; nor did your clients, Dr. Ross, demonstrate any appreciation of that symptom having occurred.
It's a bit of a self-fueling cycle when the defense raises issues of the lack of certainty of the nature of a symptom and the only reason why there's a lack of certainty of the symptom is the complete failure to evaluate it by the healthcare providers, and that's their act of malpractice.
Q: Well, Doctor, you know, you can make those kinds of comments, but it's just going to take me longer to get through my questioning, and I do have a deadline I'm trying to work against.
A: I understand that. I'm just telling you that the healthcare providers totally failed to evaluate the symptom, and in that regard we can only go by statistics.

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In view of what happened to her and in view of the fact that she did die, I think more likely than not it was arrhythmia. That's retrospect.
Prospectively, the standard doesn't care. It needed evaluation, and I believe with proper evaluation they would have seen the risk for death; because we know she did die, you know, three weeks after discharge from the hospital.
She died sudden death in just over three weeks. If she died three weeks later of sudden death, more likely than not the proper work-up would have revealed that predisposition on top of the information we had, but there was no work-up because of the shortcoming of the defendants.
Q: Okay, Doctor. I understand your position on that.
Are you able to state to a reasonable degree of medical probability that the lightheadedness and palpitations that Crystal had in the early morning hours in late December '99 was the result of arrhythmia as opposed to a hemodynamic problem?

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A: Yes; because there were no hemodynamic abnormalities.
Palpitations are rarely due to hemodynamic abnormalities; are usually due to arrhythmias.
So, yes, I think statistically it's more likely to be an arrhythmia that was missed.
Q: Are you able to state to a reasonable degree of medical probability that Crystal Johnson's peripartum cardiomyopathy was not from the stresses of her hemodynamic state as opposed to an autoimmune etiology?
A: I have no idea what you just said.
By definition, a postpartum myopathy is what she had, and most of the time we assume it to be autoimmune.
Q: Well, do you consider yourself to be an expert on peripartum cardiomyopathy?
A: Yes; as expert as one can be.
Q: What other than your treatment of several patients in the last ten years qualifies you as an expert on postpartum cardiomyopathy?
A: To begin with, I've treated probably as many patients as any other cardiologist will

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have treated.
This is a disease of cardiology. I doubt there are too many cardiologists — there are some who have more experience, but there aren't many. I've seen many cases. I have certainly been aware of the literature at different times. I've reviewed it. I've been in conferences. I've treated it. I've spoken to other people in the nation about it.
I think I'm as expert as one can be, other than being expert on experimental treatments of people who don't get better. But reality is, in terms of the natural history and the responsibility of the evaluation, at the level of this hospitalization, I think I'm an expert, and I think that you should not dismiss the number of patients I have seen as irrelevant. I think it's quite relevant.
Q: Well, when have you given lectures or made presentations to other people in the country about peripartum cardiomyopathy?
A: Just because I haven't published or given lectures doesn't mean I don't have clinical expertise in the field.

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Q: I'm sorry. I thought I heard you say that you have given lectures, and that's what I was trying to qualify or clarify.
A: Pardon me. You asked me earlier if I gave lectures on heart failure, and I said yes.
Q: Was Crystal Johnson experiencing heart failure when she was discharged on December 31, 1999?
A: She was not in decompensated heart failure, but she had a weak heart.
I'm not too sure I understand what you are asking.
Q: How many patients with compensated heart failure have you followed on an outpatient basis in the last ten years?
A: More than I can count.
Q: Can you state to a reasonable degree of medical probability that if Crystal Johnson was seen sooner by Dr. Ross or Dr. Lee in their office, that she would have survived?
A: She would have only survived had the proper evaluation been done and proper remedy been done.
If she had multiple visits and they

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failed to do what was needed to be done, she wouldn't have survived.
I'm not talking about quantitative visits; I'm talking about what medical management and intervention was required and that was abandoned.
Q: What kind of reputation does the Johns Hopkins University Medical Center have with respect to cardiology?
A: They're a solid institution.
Q: And by "solid," they have a good reputation?
A: I don't know.
Q: Or a solid reputation?
A: Solid reputation.
Q: Same question regarding to Temple University?
A: I don't know their reputation.
Q: Do you know Dr. Howard Eisen?
A: No.
Q: And for clarification, do you read JAMA on a fairly regular basis?
A: No. On an intermittent basis.
Q: Do you read their cardiology

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articles when they are of interest to you?
A: Sometimes. Not always.
Q: Why do you read the journals that you read? To keep up with the profession?
A: Yes. I mean, general awareness of literature. That is one of the sources of my continuing education.
Q: Do you have any understanding as to the role of the National Heart, Lung and Blood Institute with respect to the development of knowledge related to the treatment of patients with cardiac problems?
A: I have no idea what you are asking.
Q: Well, do you know what the National Heart, Lung and Blood Institute is?
A: Yes. But I don't understand your question.
Q: Okay. Well, does it serve the cardiology community?
A: It is one of the many resources that involves a clinical and basic research.
Q: Have you ever attended any of their workshops?
A: No. I'm aware they have workshops,

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but I have not gone.
Q: Have you read any of their publications?
A: Probably.
Q: And for the same reason that you read the other medical literature, just to keep up with the science of medicine?
A: Yes. I read things on my own. I'm part of journal clubs at our hospital. I attend varying conferences and rounds where literature is discussed.
Q: Are the publications of the National Institutes of Health of value to the medical community?
A: I think everything published has value weighted on the nature of the specific article.
Q: Would you agree that their publications provide guidance with respect to the treatment of various cardiologic conditions?
A: Some do/some don't.
Q: Doctor, have you given testimony either in your individual capacity as a doctor or as an expert witness in any other case where the

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prevention of an arrhythmia or rhythm disturbance was an issue?
A: I think so.
Q: Can you remember any of those cases?
A: No.
Q: Can you remember any of the attorneys that you worked with on those cases?
A: No.
Q: Can you remember where any of them were filed?
A: No.
Q: Doctor, your curriculum vitae makes mention of a book that you published.
A: Yes.
Q: Is that a book that was published for the benefit of the medical community?
A: No. That book was for the public.
Q: Is that book still in print?
A: No.
Q: Do you know who the publisher was?
A: Of course. The hard back was published by Viking, and the paperback by Penguin. I believe Viking is mentioned in my CV.
Q: And do you know why the book is no

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longer in print?
A: There was a certain time limit where they discontinued printing it. We only had a first printing of both the paperback and the hard back.
Q: Do you know what the sales were on the book?
A: I don't know.
Q: You are unable to estimate the number of copies that were sold?
A: No. I was given an advance on the book and I know that I didn't get any money passed the advanced, but I don't know how many copies were sold. It got good reviews, if that helps.
Q: Do you know where one could get a copy of that book or see that book?
A: Many libraries have them. Also, if you go on the internet on certain book sellers, you could buy one off the internet.
Q: Do you still have your book?
A: I have one mint copy left, which is not to be touched. It's a time vault copy.
Q: Okay.
MS. HOGAN: Is it in a vault?

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THE WITNESS: No. It's on a bookshelf.

BY MR. SPENCE:

Q: Doctor, what percentage of patients who have implanted defibrillators experience arrhythmias anyway?

A: Well, most people who have defibrillators get arrhythmias, and then the defibrillator saves them.

Q: Let me rephrase my question. What percentage of patients who have defibrillators die as a result of an arrhythmia or some kind of electrical problem in the heart?

A: Almost zero. It should be zero. You could die of other things. And, in fact, statistics will show that one hundred percent of the people who get defibrillators will eventually die.

Q: Do you have an opinion to a reasonable degree of medical probability as to what a stress test would have shown if it was performed before Crystal Johnson was discharged from the hospital center when you contend she should have been kept in the hospital?

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A: Yes, I have an opinion.

Q: What is the opinion?

A: It would have had a more likely than not probability of showing extra beats that were provoked by exercise, but not much more than 50 percent, slightly more likely than not.

Q: And is it your contention that the standard of care required Crystal to wear the Holter monitor for the foreseeable future?

How long was she supposed to wear that is what I'm trying to understand.

A: Well, I would want — the standard of care would require 48 hours of monitoring with solid, you know, memory as reliable as a Holter.

Q: And do you have an opinion to a reasonable degree of medical probability as to what Holter monitoring would have disclosed if it had been ordered in Crystal Johnson's case?

A: Yes. It would have shown high risk extra beats that would have demanded the intervention of a defibrillator.

Q: Now, are you able to state to a reasonable degree of medical probability that if Crystal Johnson had received a defibrillator

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before she was discharged from the hospital center, had received Holter monitoring and had received stress testing and had received further hospitalization, that she would have survived?

A: Yes.

Q: Well, if you can't say that a defibrillator and Holter monitoring placed at Greater Southeast Community Hospital on December 23, '99 would have saved her, how can you say those same interventions would have saved her if they were placed eight days later?

A: I think I made my position on that point quite clear.

I was saying that I found it hardly rational to put blame on a hospital when the argument is that if they had practiced according to the standard of care, it would have compensated for the fact that we did not.

The reality is that I find there is no relationship to causation by the other hospital, because she was admitted to your hospital, to your doctors, with every opportunity to do what was necessary, with an acknowledgment of her diagnosis, with no harm performed in that

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period of a week.

Given that, the responsibility fell upon Washington Hospital Center.

If you want to argue to the jury that had the other hospital complied with the standard of care it would have then meant that your hospital would have never been in a position to commit malpractice, I don't know about the legality of that argument, but it certainly makes no sense to me.

Q: Well, Doctor, you misunderstood me. I'm not here to blame Greater Southeast Community Hospital. I'm simply here to ask you a question on causation.

You testified previously that you could not state that placing a defibrillator and ordering Holter monitoring on December 23, 1999 would have saved Crystal Johnson's life.

A: I did not say that.

MS. HOGAN: Objection.

A: At any point had she received a defibrillator before her death, she would not have died.

I just was not ascribing any

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responsibility to the other hospital because I believe there was no relationship to causation, because there was an intervening hospitalization that took responsibility.

Had she died, I mentioned earlier, before she made it back to your hospital, then there would have been both and issue of standard of care and causation. But that was negated the moment she went to your hospital; so, I really don't have any opinions about the previous ER visit.

Q: Clarification, since I'm a lay person: What do you mean when you say extra beats?

A: Ventricular premature contraction.

Q: Did you say "ventricular premature contraction"?

A: Yes.

Q: And, again, I know that you explained a lot for Ms. Hogan, and I was trying to follow you and write notes as best I could. So, I apologize if this question is somewhat repetitive.

However, I feel that I must ask where do you contend that the extra beats are

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demonstrated in the Washington Hospital Center chart for the admission of December 28, 1999?

A: On multiple rhythm strips.

Q: Where are they apparent on the rhythm strips of December 29, 1999?

A: I said "multiple rhythm strips," not every rhythm strip.

Q: I understand.

A: Well, then —

Q: If they're not apparent, then just tell me and I'll move on.

And I'm going to ask you about the 30th.

A: Well, on which date did you mention?

Q: December 29, 1999, I know you made reference to one at 12:05 p.m. and one at 5:06 p.m. and then there was a third strip on the same page that is not timed.

MR. REGAN: Here it is (handing).

A: (Perusing document.)

MS. HOGAN: And that was a copy that was to be marked as an exhibit, remember?

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(A rhythm strip was marked as Charash Exhibit No. 2 for identification, as of this date.)

MR. REGAN: I remember. It will be.

A: (Perusing document.) On 12-29, the bottom strip of the three, shows three extra beats.

The top strip — it is hard to tell if on the top strip that third complex is an extra beat.

But there are other rhythm strips earlier that show extra beats. It appears throughout the chart.

There is one rhythm strip on 12:28 that shows an extra beat. It is represented on multiple rhythm strips in the chart.

Q: Is the only significance that one could assign to the extra beats an increased risk of abnormal electrical activity or an arrhythmia?

A: Yes; that's a conclusion — that's the clinically relevant conclusion.

Q: There is no other clinically relevant conclusion that can be drawn?

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A: No. But in their own right, they don't alone show the highest risk that can be appearing, which would be two or three extra beats lumped together; called a couplet or a triplet, which would be more important. But in view of her symptoms, her age, her underlying condition and those beats, I think the constellation showed evidence that she needed a more aggressive work-up, and being we know she died three to four weeks later demonstrates that in retrospect the work-up would have been revealing.

Q: Okay. And I guess, just for clarification, did you see any couplets or triplets?

A: No, I did not.

Q: What is the chance for recovery if a person has postpartum cardiomyopathy that is secondary to a genetic problem?

A: I have no idea what you are talking about.

Q: Why?

A: Because a postpartum cardiomyopathy is an acquired problem after pregnancy that is a single diagnosis. I don't know of anyone who

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legitimately would break that into two different types of postpartum cardiomyopathy.
Q: Well, I'm just asking about the different etiologic factors that are taken into account.
Are you aware or do you agree that genetics can be an etiologic factor?
A: In every condition there may be a proclivity in a given family which in and of itself may or may not have some genetic predisposition, but that does not have an independent breakdown in prognosis which would not be effective.
Q: Okay. Have you ever served on a cardiac transplantation team?
A: No.
Q: Have you ever conducted histocompatibility for somebody in search of a compatible heart?
A: No. I've sent patients, but I have not done it.
Q: Do you refer all of your patients who need cardiac transplantation out?
A: Yes.

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Q: Have you ever been involved in managing a patient whom was a cardiac transplant patient?
A: Yes.
Q: Were you involved in their cardiac transplant care?
A: Not the short-term care, but I've had patients who have had transplants.
Q: Okay. Have you ever worked as a transplant cardiologist is what I guess I'm driving at?
A: No.
Q: Do you know what the histocompatibility would have shown in Crystal Johnson had she ever needed it?
A: No.
Q: Do you have an opinion to a reasonable degree of medical probability as to whether Crystal Johnson would have received a compatible heart if it had ever been determined that she needed one?
A: Of course not.
Q: Doctor, have you ever been affiliated with any kind of organization or

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service that has as its purpose placing attorneys in touch with medical experts?
A: Not with my consent.
Q: You have been involved in quality assurance meetings, haven't you?
A: Multiple.
Q: What is the purpose of quality assurance?
A: Actually, the term now is QI, quality improvement. And that's to evaluate a problem, a bad outcome, and determine whether a bad outcome was the problem of an individual, and to determine what remedy was needed or a system and then determine what remedy was needed for the system.
And, finally, the third would be to see if it was just in spite of optimal management, regardless of what we do.
Q: Do other doctors participate in those meetings?
A: Yes.
Q: Are there often differences of opinion expressed about what the standard of care required?

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A: Rarely on standard of care. I think within the standard of care there are heated discussions.
Q: Are there often legitimate differences of opinion as to what the standard of care required?
A: Not usually standard of care. Usually they are heated discussions within the standard of care.
Q: Are there ever reasonable differences of opinion, however, regarding what the standard of care required, even though that may not occur that often?
A: I think the heated discussions are about alternatives within the standard of care, not without it.
Q: Doctor, do you know of any physician in your medical community where you practice that would agree with your opinions as to the standard of care concerning Dr. Ross, Dr. Lee and their practice?
A: You would have to ask them.
MR. SPENCE: Doctor, thank you very much.

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MS. HOGAN: Doctor, I just have about three or four quick follow-up questions.

EXAMINATION (Continued)

BY MS. HOGAN:

Q: First, I think it is Page 169, the other telemetry sheets.

MR. REGAN: Yes, we have it.

Q: It is pretty well marked on my copy, 169.

MS. HOGAN: Do you have it?

MR. REGAN: Yes.

Q: Dr. Charash, the bottom strip there, do you see any abnormalities on that?

A: (Perusing document.) No, I don't see on any of them.

Q: Next question: Did you read plaintiff's Answers to Interrogatories?

A: Yes.

Q: Do you give any significance to the fact that the patient experienced hives in the week or so before her death?

A: Yes.

Q: What significance?

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A: It means she had a mild allergic reaction a week before she died.

Q: Were you familiar with her prior records from Greater Southeast Community Hospital indicating she had had allergic reactions to penicillin?

A: I remember that being discussed, but I don't remember the source of knowing that. But I wouldn't be surprised. I mean, people get allergies all the time.

Q: I know your opinions about arrhythmia. We won't go into that.

Putting that aside, are you able to rule out the condition known as anaphylaxis from your review of the autopsy report?

A: Yes.

Q: Basis?

A: The basis of the fact is that statistically overwhelmingly she's at risk for sudden cardiac death and her evidence appears to be that of sudden cardiac death. There is no discussion of anaphylactic type findings in the body. There is no reason to think it happened.

I mean, it certainly is not

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impossible, just extremely unlikely.

Q: In your experience with patients' complaints and evaluations of them by nurses and other physician staff members at the hospital, is there a difference between palpitations and chest tightness?

A: Yes, of course.

Q: How would you describe the difference?

A: One is a feeling of tightness in the chest; the other is a feeling of the heart beating harder or faster. But palpitations can cause chest tightness.

Q: If hypothetically the nurse, regarding that nursing order of the 30th, the patient had only had lightheadedness and not palpitations, would that affect your opinions in any way?

A: No. There still is an absolute obligation to look for arrhythmia in view of her hard risk.

MS. HOGAN: That's all I have. Thanks, Doctor.

THE WITNESS: Sure.

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MR. REGAN: Thank you.

THE WITNESS: I'll read.

MR. SPENCE: Nice to meet you.

(Whereupon, at 1:45 o'clock p.m., the deposition was concluded.)

C_A_P_T_I_O_N

The Deposition of BRUCE CHARASH, taken in the matter, on the date, and at the time and place set out on the title page hereof.

It was requested that the deposition be taken by the reporter and that same be reduced to typewritten form.

It was agreed by and between counsel and the parties that the Deponent will read and sign the transcript of said deposition.

C_E_R_T_I_F_I_C_A_T_E

STATE OF_____:

COUNTY/CITY OF_____:

Before me, this day, personally appeared BRUCE CHARASH, who, being duly sworn, states that the foregoing transcript of his/her Deposition, taken in the matter, on the date, and at the time and place set out on the title page hereof, constitutes a true and accurate transcript of said deposition.

BRUCE CHARASH

SUBSCRIBED and SWORN to before me this _____ day of _____, 2001, in the jurisdiction aforesaid.

My Commission Expires Notary Public

DEPOSITION_ERRATA_SHEET

RE:
FILE NO.
CASE CAPTION: JOHNSON vs. MEDLANTIC HEALTHCARE
DEPONENT: BRUCE D. CHARASH
DEPOSITION DATE: 11-13-2001

To the Reporter:
I have read the entire transcript of my Deposition taken in the captioned matter or the same has been read to me. I request for the following changes be entered upon the record for the reasons indicated.
I have signed my name to the Errata Sheet and the appropriate Certificate and authorize you to attach both to the original transcript.

SIGNATURE:_____ DATE:_____
BRUCE CHARASH

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Witness: Bruce D. Charash, M.D.

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EXHIBITS

Charash For Iden.	Description	Page
1	Document on letterhead of Regan, Halperin & Long, PLLC, dated August 9, 2001, to Bruce Charash, M.D., from Patrick M. Regan	54
2	A rhythm strip	158

November 13, 2001
New York, New York

CERTIFICATE

STATE OF NEW YORK)
) ss.
COUNTY OF NEW YORK)

I, KAREN ANN CARNEY, a Certified Shorthand (Stenotype) Reporter and Notary Public of the State of New York, do hereby certify that the foregoing Deposition, of the witness, BRUCE D. CHARASH, M.D., taken at the time and place aforesaid, is a true and correct transcription of my shorthand notes.

I further certify that I am neither counsel for nor related to any party to said action, nor in any wise interested in the result or outcome thereof.

IN WITNESS WHEREOF, I have hereunto set my hand this 26th day of November, 2001.

KAREN ANN CARNEY, CSR, RPR, CMRS