IN THE CIRCUIT COURT OF MARYLAND FOR BALTIMORE CITY

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ELEFTERIOS J. KALFAS, ETC., ET AL.,

Plaintiffs,

v.

CASE NO.
24-C-16-003427MM

JOHNS HOPKINS BAYVIEW MEDICAL CENTER, INC., ET AL.,

Defendants.

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DEPOSITION of BRUCE CHARASH, M.D., taken by Defendants at the offices of Fink & Carney Reporting and Video Services, 39 West 37th Street, Sixth Floor, New York, New York 10018, on Tuesday, April 18, 2017, commencing at 11:00 o'clock a.m., before Tina DeRosa, a Shorthand (Stenotype) Reporter and Notary Public within and for the State of New York.

APPEARANCES:

CARDARO & PEEK, LLC
Attorneys for Plaintiffs
201 North Charles Street, Suite 2100
Baltimore, Maryland 21201
BY: JEFFREY L. PEEK, Esq.

CHASON, ROSNER, LEARY & MARSHALL, LLC
Attorneys for Defendants
401 Washington Avenue, Suite 1100
Towson, Maryland 21204
BY: ERIKA ALSID SHORT, Esq.

Charash, M.D.

BRUCE CHARASH, M.D., called as a witness, having been first duly sworn by Tina DeRosa, a Notary Public within and for the State of New York, was examined and testified as follows:

EXAMINATION

BY MS. SHORT:

Q Good morning, Dr. Charash. We just met briefly off the record, but my name is Erika Short. I represent the Defendant in a case brought by Ms. Kalfas' Estate and her family against Baltimore-Washington -- pardon me, Johns Hopkins Bayview Medical Center. I'M looking at a record from Baltimore-Washington.

We are here today to take your deposition. I know that you have been deposed numerous times before. Are you okay with me skipping the general deposition rules?

A Yes.

Q Other than if you do not understand a question that I have asked and you answer it I'm going to assume that you understood unless you tell me otherwise; is that fair?

Charash, M.D.

A Yes.

Q Okay. You brought with you it looks like your file today and a number of documents for me that we will have marked.

I would like to start with an updated CV you provided this morning.

MS. SHORT: We'll mark this as Exhibit 1.

(Curriculum vitae was marked as Deposition Exhibit No. 1 for identification, as of this date.)

BY MS. SHORT:

Q All right. And in looking at the CV that you provided to me this morning it looks like you are currently an attending physician at Lenox Hill.

A Correct.

Q Okay. And tell me what your role as an attending physician at Lenox Hill encompasses.

A It means that I have admitting privileges to Lenox Hill Hospital and with that comes teaching responsibilities of the doctors in training at that institution including NYU

Charash, M.D.

medical students who rotate there.

Q Are you employed by Lenox Hill?

A No.

Q Are you in private practice?

A Yes.

Q Does your private practice have a name?

A Just my name. I'm an unincorporated business.

Q Can you describe for me what your private practice entails?

A Yes. I have office hours Monday to Friday. Fifty percent of my patients are cardiac patients who still have their own primary care doctor. Twenty-five percent of my patients were patients referred to me as a cardiologist, but over the course of time asked me to additionally become their primary care doctor, and 25 percent of my patients came to me for primary care without a preexisting cardiac diagnosis or concern and over time about half of them have developed some form of heart issue.

I do stress tests and echocardiograms in my office and I admit them to

Charash, M.D.

Lenox Hill Hospital when required and do consultations at Lenox Hill Hospital.

Q When did you begin your private practice?

A In 2006. For the first 20 years of my practice, from '87 to 2006 I was employed by medical schools and hospitals by which I spent 90 plus percent of my time in the hospital and ten percent of my time in an out-patient practice owned by those institutions, but my own practice, and in the last ten years that's reversed to now 90 percent office to five, ten percent of my time in the hospital.

Q Okay. So if I'm looking at your CV where you have listed on Page 2 senior attending physician Lenox Hill Hospital '91 to 2005, you were actually employed by Lenox Hill Hospital at that time?

A Correct.

Q And then in 2006 you started your own private practice?

A Correct.

Q Through today?

A Yes.

Charash, M.D.

Q Okay. Do you have any partners in that practice?

A No.

Q All right. So you have admitting privileges at Lenox Hill at which you are admitting your own private practice patients?

A And/or seeing patients in consultation.

Q Okay. How does that break out that you are seeing patients in consultation versus admitting your own?

A I would say about one-quarter of my own and 75 percent are consults.

Q And these are obviously cardiac consults that you're 0doing?

A The consults are cardiac. My own patients could be admitted with a variety of problems, although more than half of those are cardiac.

Q And when you are called in to do a consult on a patient that is not from your private practice, is this occurring as a result of a patient that's been admitted and they would like for you to come in and do a cardiac consult

Charash, M.D.

or is this occurring in order for a patient to be admitted?

A Both. The ones that are pre-admission are typically surgical clearance patients, but otherwise the remainder are patients in the hospital that develop some issue that needs a cardiologist.

Q And when you say that the quarter of the patients that are your own that you are admitting have a variety of problems, more than half of those problems being cardiac, what other types of problem would you be admitting your own patients for and continuing to follow them at Lenox Hill?

A If a patient falls and breaks their hip or if a patient needs a joint replacement, a patient might develop pneumonia, gall bladder disease.

Anyone who develops a medical or even surgical illness in my practice whether I am a cardiologist or not, if they get admitted I will be the admitting doctor or the one following them from the medical side.

Q And then you also told me that you

Charash, M.D.

have a teaching component.

A Yes.

Q So tell me about that.

A Teaching occurs on multiple levels. The day-to-day level is if I have a patient in the hospital there are teams of interns, residents, and medical students following them and there's an expectation to, of course, engage in the education of the doctors in training involved in my specific patients and that could be in small huddles outside the room for five minutes or longer.

One month a year we rotate to be the attending of the month on the cardiology consult service where there are a team of doctors in training and that's more of a three to four hour a day commitment five days a week to go over the consult service with weekend coverage.

I deliver several lectures a year about the assessment of emergency cardiac conditions, chest pain evaluation in the emergency room, shortness of breath evaluation.

Several times a year I'm invited

Charash, M.D.

to give the morning report where residents gather with the more complicated medical cases and discuss them with the attending. So they select two or three of the more challenging admissions for an academic and clinical discussion.

Q The teaching component that you just described for me it looks like four different components actually, subparts of that.

Other than lecturing a few times a year at Lenox Hill regarding the recognition of chest pain, shortness of breath in patients who present to the hospital, are you teaching in the emergency room or in the field of emergency medicine?

A Not general emergency medicine, but cardiac related issues with regards to the emergency room I would.

Q Are you teaching anywhere else besides Lenox Hill Hospital?

A No.

Q And these teaching positions, are they paid?

A No.

Charash, M.D.

Q Do you have any materials, Power Point slides, presentation materials from any of the lectures that you have given regarding cardiac emergency room medicine issue?

A No.

Q How often per year do you give that specific lecture?

A Averaging two.

Q And who are you giving that lecture to?

A To the medical house staff and medical students on the internal medicine rotation. So generally a group of 70 people.

Q Have you ever worked as an emergency room physician?

A Not since my fellowship where I from '84 to '87 most of the cardiology fellows including myself did moonlighting at St. Barnabas Hospital in New York for general ER rotations, but not since then. But for the 14 years I was at Lenox Hill I was engaged in the cardiac center in the ER. I served on the emergency room committee. I saw patients with potential heart disease as an ER physician. I

Charash, M.D.

was authorized to see them to speed people through. So I would write the ER note, but only with regard to cardiac or potential cardiac presentations, not general ER.

I set up the protocols for the cardiac center in the ER. I did peer review, quality improvement. I served on multiple committees. I assessed performance of nurses and doctors in the ER.

So I was deeply integrated into the emergency room and was there virtually every day, but only from the point of view of cardiac or suspected cardiac presentations.

Q And that was up through 2005?

A Correct.

Q Okay. And did you do that the entire time from '91 through 2005?

A Yes.

Q Okay. What are you currently Board-certified in?

A Internal medicine since '84 and cardiology since '87, and those certifications were permanent because they occurred before they changed the system for recertification.

Charash, M.D.

Q Okay. I take it from that that you have never been Board-certified in emergency room medicine; right?

A Correct.

Q Okay. Have you ever been licensed to practice in Maryland?

A No.

Q Okay. Have you authored any articles or books on emergency medicine?

A No.

Q Have you authored any articles or books on myocardial infarction?

A Yes.

Q Okay. And I'm happy to give you a copy of your CV, but when I look here you have a book entitled Heart Myths and there are a few peer reviewed journals and abstracts.

Can you help me figure out which ones relate to emergency medicine?

A Certainly.

Q Okay.

A You said heart attack, not emergency medicine.

Q Pardon me. You are exactly right.

Charash, M.D.

On heart attack.

A Well, we did animal studies. The first two peer reviewed publication journals from '81 and '82 were on heart attacks in dogs.

The article in Seminars and Nuclear Medicine from '87 was on nuclear studies in acute myocardial infarction.

I should take that back. I did write one article for emergency medicine from 1990 which was in the Journal of Emergency Medicine where I took care of a patient with a very complex and bizarre poisoning reaction to an unauthorized medication and I published it with the head of poison control of New York City at the time, Diane Sauter, S-A-U-T-E-R, and I was co-author of the article.

The book Heart Myths talks about heart attacks generally.

Q I'm sorry, is that publication listed on your CV with Diane Sauter?

A Yes.

Q Which number is that?

A Well, it's the last of the peer reviewed journals.

Charash, M.D.

Q Thank you.

A My book does discuss general principles of heart attacks.

Q It looks like your book Heart Myths was first published in '91 and then again in '92 would be the most recent thing that you have published related to heart attacks?

A Correct.

Q I know that you have been asked this question a number of times, but can you tell me what the current percentage of your time spent on medical/legal matters is in relationship to your professional work?

A Yes. A great deal of my medical/legal work is actually done on my own hours at night and weekends, but the best estimate is it's ten to 15 percent of my time.

Q Have you ever spent more than 20 percent of your time on medical/legal matters?

A No, I have never approached 20 percent. It's always been under 15 percent of my time.

Q Regarding your review and opinions in this case, is there any specific literature

Charash, M.D.

upon which you will rely?

A No.

Q You brought with you and I will mark as Exhibit 2 a trial list. It begins in May of 2012.

A Yes. It's the last five years.

Q Okay.

A I haven't updated the last month, but that's the most updated version I have.

Q Okay.

(Trial list was marked as Deposition Exhibit No. 2 for identification, as of this date.)

Q In this trial list the last one you have is March 7, 2017. The case is Garfunkel.

Have you testified in trial since March 7th this year?

A I don't believe so.

Q Okay. Have you previously worked with Mr. Peek's office?

A Yes.

Q Do you know on how many occasions?

A No, but I would estimate a half a

Charash, M.D.

dozen. But that's just a guess. I don't really remember.

Q Do you know for what period of time that encompasses?

A A number of years. I think if you look at my testimony list there may have been some depositions and/or trials in the last five years, but I don't recall when we first worked together.

Q Other than this case do you have any other current cases that you are reviewing or working on for Mr. Peek or anyone in his office?

A I honestly don't remember. I may or may not have an open case. I don't think there are. If there are any it wouldn't be more than one or two, but I don't even know if I have any.

Q Okay. The case in which you most recently provided trial testimony in Maryland March 1, 2017, Baylor, what did that case involve?

A I don't remember. I really need you to understand that my memory is very

Charash, M.D.

peculiar from the point of view that I store a great deal of it in passive form which means if I was given one thing that would trigger my memory. I would remember everything about it.

If I was given something to remember a previous case with Mr. Peek's firm I would be able to do it, but I don't.

I did a deposition in this office last week. I don't even remember the name of the case right now. It's just how my memory works. If I was given one thing to trigger to unlock that memory I would remember everything. I just put it behind me. So I honestly don't remember what that case was about.

Q Do you recall of the five trials -- no, six that you have testified in this year, do you recall if any of them involve similar issues to this case?

A I don't recall directly, but this is an unusual case. So I would say it's unlikely that I have testified in a case too similar to this ever.

I mean I may have had a case, there have probably been some cases of people,

Charash, M.D.

it depends how general you want to go, who are admitted with a medical illness where I have argued they required some form of monitoring that wasn't done out of concern for primary or cardiac -- primary or secondary cardiac complications.

So I would not be surprised if I had cases like that. But the more detailed you get about this case the more isolated it becomes. So in general I'm sure I have testified about people who required some form of cardiac monitoring before, but I don't think ever due to a foreign body in an appendage.

(Discussion off the record.)

MS. SHORT: I'm going to mark as Exhibit 3, you brought this morning your deposition list. It also goes back five years. It begins April of 2012.

(Deposition list was marked as Deposition Exhibit No. 3 for identification, as of this date.)

BY MS. SHORT:

Q How does your caseload break down

Charash, M.D.

plaintiff versus defense currently?

A Averaging for my entire career and in the last five years about 15 percent of what I review are for defense firms, but for a number of reasons based on really the different requirements of an expert witness in defense versus plaintiff less than five percent of my testimony is for defense.

Q Do you know if you have ever offered testimony as a defense witness in Maryland?

A I have not. I have never been approached by a defense firm in Maryland, although I have defended doctors in Maryland by advising defense lawyers not to pursue a case, but not hired by a defense firm.

(Invoice was marked as Deposition Exhibit No. 4 for identification, as of this date.)

Q Marking as Exhibit 4 an invoice that you brought today dated January 15, 2016 in the amount of $675, and I believe what you told me is that there is an additional invoice?

A Just sent last night which I

Charash, M.D.

didn't bring a copy, I should have, for I think five and a half hours for review of all the records, rereview of them, the depositions that I received, our hour telephone discussion yesterday and preparation for today's deposition which means I have spent about seven hours on this case.

Q What is your -- oh, I see $450 an hour. Is that for all work you do in the case outside of testimony?

A Correct. Anything that I can do on my time is $450 an hour. Deposition time during work hours for trial or deposition is $500 an hour.

Q This is Exhibit 5. I'm marking a cover letter you brought today dated April 14th of this year which is from Mr. Peek's legal assistant enclosing additional materials.

(Letter dated April 14, 2017 was marked as Deposition Exhibit No. 5 for identification, as of this date.)

Q Do you know what those additional materials are?

Charash, M.D.

A Yes. I had received the depositions, the three discovery depositions I read in this case electronically, but I asked prior to my deposition to have hard copies in case I needed to mark them, which I didn't, but these are the three.

Q There are more than three depositions that have occurred in the case, so could you tell me then which depositions you have?

A Well, I asked for all of the depositions, but I have Dr. Hoffmann, H-O-F-F-M-A-N-N. Dr. Hill and Nurse practitioner Rowe, R-O-W-E.

(Cover page to medical records was marked as Deposition Exhibit No. 6 for identification, as of this date.)

Q What I am marking as Exhibit 6 is the cover page to the medical records that you received with a table of contents.

Is this something that you prepared or it came with the records?

A That came with the records.

Charash, M.D.

Q All right. Outside of the medical records listed here, have you received any other medical records in the case?

A No.

Q Okay. Have you requested any other medical records?

A I have an open request for anything that comes up. I asked for any medical records available in the case and I was told that I received everything.

Q Okay. If I could take a look at your stack of records there, too, please.

A These are my report and certificate of qualified expert.

Q Okay.

A Even though I received the full set of records I think some of the pages are missing and I don't know why. No relevant page is missing, but I don't think it adds up to the total number of pages I initially received.

Q Okay. So I'm going to mark as Exhibit 7 your report because the one that you handed me has very colorful highlighting along with a number of notes.

Charash, M.D.

A Well, they are not notes. It's literally writing what's on the page, but, yes, notes.

(Report of Dr. Charash was marked as Deposition Exhibit No. 7 for identification, as of this date.)

Q Okay.

A And allow me to just simplify the deposition by saying that I use different color highlights and different color Post-its to help separate things so I can more quickly identify anything, but there is no significance to the color chosen. It's purely random.

So there is no color coding of Post-its or notes. I just find when I am going through records I can identify things more rapidly than if everything was one color.

Q Okay. The report does not have a date on it. Do you know when it was prepared?

A Well, it would have been shortly after I reviewed the record. So it probably would have been late January or early February, 2016, but actually I didn't realize there was no

Charash, M.D.

date.

Q Okay. And did you prepare Exhibit 7 yourself?

A No.

Q Who prepared Exhibit 7?

A I don't know. It was provided to me. It was based on our extensive conversation of the case, but I do not know who prepared it.

Q It was provided to you by Plaintiffs' counsel?

A Yes.

Q When it was provided to you did you make any changes to it?

A I don't know. I don't recall.

Q Do you know if it was provided to you in electronic format or in hard copy as it was here?

A It was most likely not by memory, but by custom, sent to me electronically.

Q Did you bring any e-mails that you have exchanges with Plaintiffs' counsel with you today?

A I don't know. I don't save the e-mails.

Charash, M.D.

Q What did you do with them?

A Delete them. Other than an e-mail that has content or something I need, but there are none in this case.

Q Did Plaintiffs' counsel ever tell you that you should not delete any correspondence or documentation that you create in the case?

A No. But on the other hand I assumed that if they were necessary they have my e-mails in return. I just don't need to keep 50,000 e-mails.

Q If I wanted to know if you made any changes to the draft that was provided to you by Plaintiffs' counsel how would I go about doing that?

A I have no idea.

Q Because you can't remember?

A Correct.

Q The notes that you have here you said that it is just a restatement of what is already typewritten?

A Everything is just a restatement so that way it kind of serves as an index.

Charash, M.D.

Q Did you request that Plaintiffs' counsel prepare this report for you?

A No. It's just been the tradition of cases from Maryland, that in some states like New Jersey and Pennsylvania I have always been asked to generate a report. In cases in the states of Massachusetts and Maryland the tradition has been that they send me a draft report.

Q I'm marking as Exhibit 8 your certificate of qualified expert in the case. I'm guessing Plaintiffs' counsel drafted that?

A Yes.

(Certificate of qualified expert was marked as Deposition Exhibit No. 8 for identification, as of this date.)

Q Okay. Did you make any changes to it?

A I have no memory of that.

Q Are you aware of any way that we could figure out whether or not you made any changes?

Charash, M.D.

A No.

Q Do you recall signing Exhibit 8?

A Only by the fact that it's signed.

Q Do the stickey notes that are on the medical records correlate to the color of the highlights on the report?

A No. Again, it's totally random the colors that are chosen.

(Discussion off the record.)

Q I'm going to mark your highlighted and tabbed medical chart of Ms. Kalfas' records that you reviewed as Exhibit 9.

(Highlighted and tabbed medical chart was marked as Deposition Exhibit No. 9 for identification, as of this date.)

Q And we'll get a rubberband.

A Not now because I'm going to want to refer to it.

Q No. No. Just so we keep it all together and don't pull things out. Here you are.

A Thank you. I don't need these earlier exhibits. I'll just hold on to seven

Charash, M.D.

and eight and nine. I don't even need eight. Just seven and nine.

Q Outside of the documents that we have gone over, Exhibits 1 through 9 we will go over in greater detail, have you made any other notes in the case?

A No.

Q I didn't look at the transcripts themselves that you told me that you reviewed. Did you make any notes on those?

A No. And I don't believe I did any highlighting either.

Q Okay.

A No.

Q Okay. Have you spoken with anyone in Ms. Kalfas' family?

A No.

Q Have you spoken with any of the treating physicians involved in Ms. Kalfas' care at any point in time?

A No.

Q How about any of the other experts in the case?

A No.

Charash, M.D.

Q Do you know any of the other experts in the case?

A I don't even know the names of the other experts.

Q It's an easy answer then.

Do you know any of the treating providers that you saw as you reviewed Ms. Kalfas' medical record?

A No.

Q You said that you spoke with Mr. Peek yesterday for about an hour?

A Correct.

Q And I'm assuming it was Mr. Peek. It could have been Mr. Cardaro or someone else. Was it Mr. Peek?

A It was Mr. Peek.

Q Okay. And what did you discuss in that conversation?

A My opinions in this case.

Q Did you discuss anything that is not outlined in your report which is Exhibit 7?

A Well, I think that my report established the foundation for a case, but many of the details are specific in the records. So

Charash, M.D.

I provided the foundation of my opinion, but I think my report is just the beginning of my opinions. I have no new overall opinions, but there is a lot of evidence in the chart to support my opinions.

Q Okay. We're going to go through that.

A Of course.

Q Okay. But outside of walking me through the support for your opinions in the case, did you discuss anything else with Mr. Peek other than what you'll walk me through in the chart and what is in Exhibit 7?

A No.

Q You met with him briefly today before this deposition?

A Correct.

Q Did you discuss anything with him outside of what is in Exhibit 7 and what we will go through in the medical chart?

A No.

Q And then I believe that you said there was one prior conversation with Mr. Peek or his office?

Charash, M.D.

A Yes, when I first reviewed the records to establish my support of the case.

Q And do you recall when that conversation occurred?

A It would have been very close to the time of the invoice, but I do not recall when.

Q The other invoice, not the one we have here today?

A No. The one invoice would have been when I first reviewed the file and I would have spoken somewhere close to the time of that invoice in, you know, late January of 2016.

Q At the time of that call did you discuss anything with Mr. Peek or anyone in his office other than what is contained now in Exhibit 7 and what we'll go through in the medical chart?

A I would think not. I don't have an independent memory, but there would have been nothing else to discuss.

Q All right. Why don't we walk through your report. If you give me kind of a bulletproof form maybe. I'm trying to think of

Charash, M.D.

the easiest way for us to do this since you have things tabbed in the records that are supportive of your opinions that might not necessarily be in the report itself. I want to make sure that I'm getting the complete foundation for each of your opinions.

A Well, why don't I give you my opinions and then we can establish a foundation?

Q It's fine. Your opinions are in report so I didn't want to spend an hour going through your opinions since I have them.

A I think if I give you a summary it might be a foundation for you to ask me questions.

Q That's fine.

A I'm not going to go through the report.

My central opinion and there are others is that Mr. Kalfas required to be on a cardiac monitor -- Ms. Kalfas, sorry. And had she been on a cardiac monitor she would have survived the cardiac arrest.

So that's a central opinion is that she required monitoring because of her

Charash, M.D.

complex cardiac history, her abnormal EKG, and the fact that she came in with a significant medical illness that could carry with it primary and secondary cardiac complications the standard of care required she been on monitored unit and her failure to survive the cardiac arrest was directly related to the failure of her being on a monitored unit and a large part of that opinion will be based on the code sheet itself.

The other opinions are that she presented with an infectious disease with high risk indicators including, but not limited to her dropping glucose levels which is usually the sign of a significant infection. And as a result with her cardiac history even without the abnormal EKG would have required cardiac monitoring.

The other opinion is that keeping a foreign body in her foot, in her toe I think, made her condition worse because an infection with a foreign body becomes somewhat like a reactor and it appears the timeframe from her presentation to her cardiac arrest was 12 to 13 hours and I believe that every hour it the

Charash, M.D.

foreign body would have been removed would have carried a more significant reduction of her risk of having a cardiac arrest.

And I think that we can say reasonably safely that because this is expediential growth and expediential damage that if it was removed less than six hours prior to her cardiac arrest the likelihood of the arrest would have been reduced by greater than 50 percent and every hour more than six hours would have given her a progressively increased likelihood of preventing cardiac arrest.

So the arrest would have been more likely than not been prevented with aggressive therapy and removing the foreign body up until about six hours prior to the arrest.

Regardless, had she been on a monitored unit within reasonable medical certainty she would have survived the arrest.

Q Okay. Thank you. So let's talk about that first main opinion relating to the need for Ms. Kalfas to be on a cardiac monitor and it sounds to me like the basis for that opinion if I listed this correctly is the

Charash, M.D.

abnormal EKG, the complex history, and the fact that from your viewpoint the illness that she presented with it carried primary and secondary cardiac complications.

A Because she was presenting with a very significant bacterial infection. As a diabetic with a foot infection who is having dropping sugars meant that she had a serious infection and somebody with a complicated cardiac history that's a bad complication and they just require cardiac monitoring for that reason alone given the abnormal EKG and given the fact that when they went backwards and looked at her cardiac enzymes in the emergency room she was already ruling in for some level of heart attack which means that the medical illness, the infection was stressing her heart to an unreasonable level.

Although that retrospectively confirmed why she needed to be monitored protectively this serious medical illness showing the ability to drop her sugars and all of the high risk septic, pre-septic indicators required monitoring and then the abnormal EKG,

Charash, M.D.

of course.

Q So let's kind of go through each of those subparts so that I can make sure I fully understand your basis and let's start with the EKG.

Have you had a chance to review the EKG that was first done. There are two of them. Do you have that one in front of you timed 2111?

A Yes.

Q And can you tell me what your read of this EKG is?

A Well, there is a wavy baseline so the reading is impacted by that. But there is ST segment elevation in Leads V1, V2, and V3 which are suggestive, but not diagnostic of an acute anterior wall heart attack.

There is also evidence of an old anterior wall heart attack based on the poor R wave progression in the anterior leads.

There are nonspecific ST abnormalities in what we call the limb leads. Leads I, 2, 3, AVL and AVF. The magnitude of ST segment elevation in Lead V2 is the one that is

Charash, M.D.

most difficult to assess because of the wavy baseline. The EKG computer reads it as acute myocardial infarction in capital letters largely because of the wavy baseline in V2.

So looking at this EKG you would have to conclude that she may be having an acute anterior wall heart attack. So that is the reading of this EKG consistent with, but not diagnostic of an acute anterior wall heart attack.

Q Will you be giving an opinion in this case that she was having a heart attack?

A Well, she definitely was having a heart attack from the point of view of enzyme release. I don't believe she was having a primary heart attack. But I believe that with her long history of coronary disease and bypass surgery and even though the autopsy confirmed that the bypass grafts were open it was not meant to, nor did it answer an extensive mapping of coronary disease. But I believe that within reasonable medical certainty her heart was being negatively impacted by her septic presentation or pre-septic presentation.

Charash, M.D.

Just having a heart rate of 120 which she had frequently is like having an ongoing stress test you cannot control. So I believe with reasonable medical certainty her heart was being negatively impacted by her medical illness which was the primary reason she needed to be on a monitor.

Q Okay. So you disagree with the computer reading that this is acute MI?

A No, I don't disagree with it. I'm just saying that because of the wavy baseline you can't resolve it with any more clarity.

This EKG is appropriately consistent with an acute MI. Clinically I think that when you look at all the data points she was not evolving a ST segment elevation heart attack. But this EKG is consistent with that. You must diagnose a patient, not just the EKG.

Q Sure. And Ms. Kalfas had a cardiac history before coming into the Emergency Department; right?

A Yes.

Q Okay. Have you reviewed any of the EKG's that were performed on Ms. Kalfas

Charash, M.D.

prior to March 21st of 2013?

A I don't recall.

Q Other than the records of her primary care physician which appear to be in what you were sent, did you review any records from her cardiologist?

A Was that on the list. I know that she had an extensive cardiac history and I did not have access to her bypass record. I am aware of her past history through the records included.

Q This has her primary care, Dr. John Sebastian, Tab 4?

A Yes.

Q Anything else that you can tell me about the EKG done on March 21st at 2111?

A Well, there is a slightly prolonged -- well, there is a prolonged QT interval which in and of itself supports the reason to monitor her.

The corrected QT known as QTC in a woman should be under 450. If it's over 500 that carries an imminent risk of sudden death and hers was 491. That alone is not an

Charash, M.D.

overwhelming risk, although it is high risk for cardiac arrest, but in the context of the repolarization changes, in the context of her runaway heart rate, in the context of her medical illness and her underlying cardiac disease those all support the reason why she needed to be monitored.

Q All right. Anything else about that EKG that supports the basis for your opinion that she needed to be on a cardiac monitor?

A That's all the contribution of the EKG provides.

Q Did you review the read by Dr. Meyer on that EKG?

A I did.

Q Okay. Do you agree with her read?

A I don't agree or disagree. I think it's incomplete, but I think that she is making assumptions about ST elevations in V2 which you can't make. The really only way to read this EKG would be to repeat it without a wavy baseline.

Q Is that an opinion that you will

be offering in the case that the medical provider should have repeated the EKG based on the wavy baseline?

A. No. I'm just saying that's one way to remedy the uncertainty in Lead V2. I'm saying this EKG is consistent with a cardiac impact of her medical illness which was confirmed by her enzymes.

Since I will not be offering an opinion she needed an emergency catheterization or any emergency cardiac intervention I don't have a criticism for not repeating the EKG. I only criticize the failure to monitor this patient.

Q. Okay. All right. The next basis that you provided for the opinion regarding cardiac monitoring was her complex history.

Tell me what about her complex history supports that opinion.

A. Okay. Well, the history is both her past medical history and her current illness. Her past medical history is that of a woman that has a history of coronary disease, previous bypass surgery, and a reduced ejection

fraction.

Patients with reduced left ventricular ejection fractions from coronary disease are much higher risk for inducing a cardiac arrest under stress than those with normal ejection fractions.

Her ejection fraction in the past I believe was 35 to 40 percent. I don't want to get that wrong. And when you've had an ischemic cardiomyopathy with a reduced ejection fraction from coronary disease you are far more vulnerable to cardiac arrest under any level of stress. It was 30 to 40 percent. So she has a reduced EF putting her at risk for cardiac arrest. She has known coronary disease and bypass and multiple stents.

As of the time that she presented to Johns Hopkins Bayview no one had any ability to know what the current status was of her coronaries. We knew her pump was badly damaged. They had no idea as to whether her grafts were open, as to any previous angioplasty site had closed.

So she is unknown in terms of the

magnitude of her coronary disease progression. She has a reduced ejection fraction. That puts her at high risk with a low EF and uncertain coronaries for having cardiac arrest established.

She came in with a complicated illness because it was characterized by a number of symptoms including dizziness, shortness of breath, lethargy as well as dropping glucose levels and clearly an infectious source in her foot with the clear recognition of a foreign body.

When your sugar drops from 47 down to 31 down to 26, sure, that could be due to excessive insulin intake, that could be due to not eating and taking regular insulin, but in a person consistent with a presentation consistent with infection that is independently high risk marker that the infection is more serious than it looks.

Quite frankly, that's the most likely mechanism. But even if you dispute what the likelihood is mechanism is, that is necessary part of the differential diagnosis,

that the infection is more serious than it first appears.

She was a diabetic and she was elderly, I think 70 -- I'm sorry, what was her age, 71. Seventy-one year old diabetics can easily mask the magnitude of their infectious spread. They don't look as toxic at the beginning.

But having a drop in sugar, having lethargy and having a heart rate that was often as high as 120 or higher, even though the heart rate went up and down all both indicate a potentially very serious underlying infection and with a foreign body an infection that has no chance of reaching stability with the foreign body in place, but also a clearly dangerous provocation on the heart.

So her illness presented with that of a significant infection with mental status changes and shortness of breath, with an abnormal EKG. And we know in retrospect that when they did check the cardiac enzyme from the ER blood her heart was being affected with enzymes and that's not a surprise given her fast

Charash, M.D.

heart rate, her underlying cardiac disease, and the stress of this illness.

Q Can you direct me in the record to where Ms. Kalfas was short of breath?

(Discussion off the record.)

A I thought she complained of shortness of breath in the ER, but I'm trying to find where that is referenced. Let me look here.

Here it says at 1848 in the emergency room on Page 24 that she complained of shortness of breath, nausea, and right foot pain.

Q Okay. Does it say what the shortness of breath appears to be arising from?

A No. She had gone to the bathroom and we know she had chronic obstructive lung disease and was on home oxygen, and then on Page 25 --

Q And I'm sorry, of course this is what counsel, we always do this. We don't have the same page number, so if you could direct me to a time or --

MR. PEEK: Tell her what

Charash, M.D.

time.

A What I call Page 24 is an ER nursing note.

MR. PEEK: This is the EDM patient record. Page 12 was the prior discussion. What he's talking about now is EDM patient record Page 13 and the numbers for those things are in the upper right corner of the printout. So it's independent from the Bates stamping.

Q Other than the notation that Ms. Kalfas was reassessed after going to the bathroom and complained of shortness of breath which as you said we know that she had lung disease, we know she was on home oxygen, do you see anywhere else in the record that she complained of shortness of breath?

A I'd have to look, but right now offhand, no. But this case and my reasons why she needed monitoring isn't limited to shortness of breath, of course. It's limited to the toxicity of her presentation. The fact that she has chronic obstructive lung disease and a

Charash, M.D.

history of heart failure and a reduced ejection fraction and coronary disease just make her much higher risk for the addition of another illness.

Q And I certainly understand that that's your position. I'm just trying to make sure that I am getting all the basis for your opinions in the case. So if you are saying she was short of breath in the Emergency Department that I'm understanding what it is that you are saying, where in the record that is.

A I can't find my copy of the EMS report. Do you have yours. I just need to look at it for one moment, please.

(Discussion off the record.)

(A short recess was taken at this time.)

(The deposition resumed with all parties present.)

BRUCE CHARASH, M.D., resumed, and testified further as follows:

BY MS. SHORT:

Q All right. I think that we just established that there is not shortness of breath mentioned anywhere else in the medical

Charash, M.D.

record, at least that any of us could find.

The issue of dizziness, are you aware of that being mentioned anywhere else in the medical record other than Page 13 of the EDM which actually has a code for 7780.4, dizziness.

A Not by memory. I mean I would have to go extensively through the record.

Q Is that something you think you would have noted in your review?

A No. I didn't reference the source of that information, but it was in the record.

Q Anything else about Ms. Kalfas' past medical history that forms the basis for your opinion that she needed to be on a cardiac monitor?

A Well, again, based on her complex comorbid conditions of COPD, heart failure, coronary disease and a reduced ejection fraction and an uncertainty of the status of her coronary arteries and based on the significance of an infectious presentation with a dropping sugars which were very prominent as well as runaway heart rates, meaning 120's which is a fast rate for somebody with uncertain coronary disease,

Charash, M.D.

those establish the primary foundation of why she needs to be monitored.

Peripherally dizziness, shortness of breath, weakness, lethargy are kind of more consequences of what is objectified by her fast heart rate and her dropping sugar which are the objective markers of a potentially serious infection.

Then you have the abnormal EKG and of course the fact that she had positive enzymes upon presentation which kind of demonstrates the whole point of why she needed to be monitored. When they checked that level it was not a surprise because she was under a stress state with underlying disease.

Q I know that as part of the basis for your opinion you are including in the infectious process that she presents with. But are you of the opinion that no matter what Ms. Kalfas presented with, whether she had sprained her left ankle, whether she had a nosebleed, whatever it was that she should have been placed on a cardiac monitor?

A I can't answer the question

Charash, M.D.

limited to a simple yes, no. The reason why I can't is that any reason why her heart rate is that high would put her at high risk for her underlying condition and there is no threat to the patient of being monitored.

Now, people with a sprained ankle or a nosebleed would not typically need admission. If their condition was more profound that led to the need for admission there certainly would be a case to be made that they should be monitored, but that would be based on the specifics of that presentation. But because she came in with an infection and dropping sugars that is a condition that has a progressive nature to it or a threat of progression.

So I would say that it's possible she would need monitoring. If she had a nosebleed so severe that she needed surgical correction, yes, bleeding makes you hypercoaguable. If she had a high heart rate I would make a case she should be monitored if she needed admission for cauterization.

But this is a far more dangerous

Charash, M.D.

presentation because infections do progress and infections based on foreign bodies when you start seeing a dropping sugar level that is very concerning. Now, again you may not be able to prove upon admission with certainty that the sugar is related to infection, but you must work for her safety with that as your operating principle until proven otherwise. And, therefore, monitoring her was unquestionably indicated.

If you create a very specific alternative presentation I could give you an opinion based on those facts.

Q What I was trying to understand is when you are giving me her history of coronary artery disease, bypass surgery, et cetera, if that alone was sufficient for you to say that she needed to be on a cardiac monitor or if it was the addition of the sugars and the heart rate. That's what I was trying to figure out if that's what you are saying.

A Well, 6her underlying condition, she is not on a monitor at home, so the point is that having underlying heart disease alone

Charash, M.D.

doesn't require being on a monitor, but it would depend on the nature of the illness because there is a combustibility of the two together.

Based on the specifics of what was wrong with her you could make a decision whether she needs to be monitored. What I was saying is that it doesn't take much to demonstrate a clear benefit of being monitored because there is no danger to her.

In this case with an infectious presentation and the factors I have given she did need monitoring. You raised nosebleed. She had a minor nosebleed and was being sent home from the emergency room I would say no. If she had an extensive nosebleed that required cauterization and recurrent bleeding I would say yes. So you really need to give me the facts.

I think I have established the fact with her underlying preexisting and comorbid conditions the threshold of requiring a monitor is low. But based on the specifics of what threat she faces would impact that decision to monitor her, but it wouldn't take much to require monitoring.

Charash, M.D.

It's never wrong to monitor her because there is no downside to watching her heart respond to an illness. Just the need and the requirement grows based on the severity of the threat she faces.

Q All right. Anything else about her history and presentation to the hospital that form the basis for your opinion that she needed to be on a cardiac monitor?

A No.

Q All right. The third subpart of that opinion was that her presentation carried with it primary and secondary cardiac complications. This went to the bacterial infection, the dropping sugars.

Is there anything in addition to what we have already discussed that forms the basis for your opinion that she required a cardiac monitor for that reason?

A No, but included in that is of course the abnormal EKG and everything else.

Q I'm just trying to walk through the subparts and make sure I fully understand what you are relying on.

Charash, M.D.

Okay. I think as another subpart that you added was the troponin level. That this forms the basis for why she needed to be on a cardiac monitor.

A Well, no, that's not legitimate. I'm saying that a troponin level was drawn after she decompensated, but it demonstrated in retrospect that indeed even at the time of her admission her heart was not responding well to her illness. That impacts the causation as to why she had a cardiac arrest.

Clearly any patient with uncertain coronary disease and the magnitude of her history would benefit from having a troponin when they come in. So had they drawn a troponin they would have seen that her heart was reacting. Now, I'm not going to argue that they needed to do one when she came in. I'm saying she needed to be monitored.

All I'm saying is the troponin shows us that her heart was already being impacted before she had her cardiac arrest from those very factors that I was mentioning.

Q Okay. And thanks for the

Charash, M.D.

clarification because that's what I was getting at, whether you were going to say it was a breach to not order the troponin in the ED or whether you were saying that retrospectively the fact that it was ordered after her arrest is demonstrating further support for your opinion. So I think you have answered that question, so thank you.

Okay. Any other basis for your opinion that Ms. Kalfas required cardiac monitoring that we have not already discussed?

A No.

Q And just so I'm clear, when exactly do you believe she should have been placed on cardiac monitor?

A From the moment she came into the ER through her entire hospital course until she was stable.

So certainly when she left the emergency room the standard of care required her to be put on a telemetry unit or an appropriate step-down unit with continuous cardiac monitoring.

Q Did the standard of care require

Charash, M.D.

her to be on cardiac monitoring in the Emergency Department?

A Yes.

Q All right. The second opinion that I wrote down was that you were going to be discussing causation as it relates to the code sheet.

A Yes.

Q Okay. Let's talk about that.

Go ahead and tell me your opinion and basis.

A I'm sorry.

Q That's okay. You're a very talkative person. So I figured you would start telling me.

A I'm not sure if that is a compliment or not.

Q It is. Go ahead.

A Thank you. Okay.

Q Go ahead.

A Okay. In order to discuss the code sheet I need to first discuss the three ways a person can have a cardiac arrest. Fair enough?

Charash, M.D.

Q Sure.

A One is a person can have a cardiac arrest as a consequence of a mechanically catastrophic event. And in that category it would mean something that mechanically occurred in the body that's not survivable like a ruptured aortic aneurysm, a ruptured left ventricle, a massive pulmonary embolism. A massive bleed in the brain to even trauma, gunshot wound and stabbings.

So if a person has a cardiac arrest from a mechanically catastrophic event then there is no causation about monitoring because if something blows up in their body nothing is going to save them unless they were on a trauma table.

So some people die spontaneously from a mechanically catastrophic event by which when they code there is no coming back and there would no causation to monitoring.

And I said three categories. The second two both fall within the category of a non-mechanically catastrophic event and if it's a non-mechanically catastrophic event then it's

Charash, M.D.

an arrhythmia, an electrical event. In an arrhythmia there are two categories. One, a person who is on a monitor that is dealt with very rapidly and the second category is somebody who is not on a monitor and not dealt with rapidly.

We know from cardiac studies and from the electrophysiology lab where people with very sick hearts, every day thousands in the United States are put on tables in electrophysiology labs and thrown into sudden cardiac death and they are shocked within ten to 15 seconds. The study's goal is to throws them into sudden cardiac death and the resuscitation rate is as close to 100 percent as anything in medicine. The death rate is as close to zero as anything we could report.

We know that if you have a primary electrical death, if you are shocked within 15 seconds that the resuscitation rate is virtually 100 percent.

Now, of the electrical, I broke into two categories, the rapidly responding one versus the person who has a delay in responding.

Charash, M.D.

We know that every minute that goes by before you respond to the electrical event their chances of survival plummet. If you have an electrical arrest and you get shocked within 15 seconds it's 100 percent survival. Within 30 seconds it's closer to 95 percent survival or five percent death rate. If you take a minute there is a ten percent death rate of people who should have lived. If you take two minutes it's 20 percent death rate. If you take three minutes it's 30 percent death rate.

So the point is every minute it takes even with effective CPR and this is on the condition of effective CPR, every minute that goes by you see a progressively increased number of people who die that should have lived from their electrical event.

Which means if a person is on a monitored floor and get shocked within 30 seconds as she should, the death rate would be five percent. If it takes a minute which is the outside it would be ten percent. If it takes three minutes to determine the rhythm the death rate goes up to 30 percent which means that it's

Charash, M.D.

three to six times worse because of the three minute delay in recognizing the cardiac rhythm.

Now, also people who have sudden electric death often have precursors to their sudden death showing that it's on the way. People who have V-fib often have V-tach beforehand providing an opportunity to intervene even before the arrest.

So if Ms. Kalfas suffered a mechanically catastrophic event then there would be no causation to her need for monitoring. Even though the standard of care would have required a monitor it wouldn't have mattered if she was on a monitor.

Now, we know two things. Her autopsy did not demonstrate a mechanical catastrophic event. There was no mechanical change that was unsurvivable and we know that during the course of her resuscitation even with the delay in seeing what the mechanism of the arrest was and a delay in providing her even with epinephrine which is a first line drug and I'm going to go into the specifics, she was able to regain a spontaneous heart rate and blood

Charash, M.D.

pressure both 11 minutes into the cardiac arrest and then an even stronger one 19 minutes into the cardiac arrest from 5:45 to 6:04 a.m.

So the fact -- now, let's go into her arrest. I believe she had an electrical cardiac arrest. At 5:45 a.m. she had a cardiac arrest. Prior to her cardiac arrest she noticed something was wrong with her. She was screaming that she was on fire. That's an unusual symptom for whatever she had, but she clearly was in a distressed state before she had a cardiac arrest.

Now, the arrest was witnessed by people in the room, but they had no long idea what was going on electrically. With reasonable medical certainty given the fact that there is no other explanation as to why she was suddenly screaming that things were on fire, more likely than not prior to her V-fib arrest she had ventricular tachycardia, and although the response of feeling you are on fire and things are going wrong is not typical of any disease I have known, given that this acute awareness of something was wrong was occurred in this,

Charash, M.D.

whatever it was, 30 seconds or so before she had a cardiac arrest more likely than not, and that's the best I can give you, she was in V-tach and went to V-fib.

Had she been on a monitor she would have been shocked right away and she would have survived. Now, she cardiac arrested at 5:45 and began CPR immediately, but they don't have any sense of the electrical system for three minutes. They said she was in pulseless electrical activity, but they don't describe what the rhythm was. You could have sinus rhythm, have a heart rate of 70 and have no blood pressure. That is called pulseless electrical activity from a tamponade.

But we don't know what the rhythm was. I don't know if it was V-tach with no pulse or whether it was sinus rhythm with not pulse. There is no sense of what it was. But the point is there was no even measurement of the electricity for the first three minutes.

Then you don't even give a dose of epinephrine until five minutes into the code. And these are unacceptable delays that would not

Charash, M.D.

have occurred if this patient were on a monitored unit.

Now, the point I'm making is in spite of receiving three minutes of CPR before they even get the first electrical rhythm where things change over those three minutes and five minutes before the first therapy is introduced which was epinephrine, it is astonishing that 11 minutes into the code she had some restoration of blood pressure, a heart rate of 91 and a blood pressure of 78 systolic and that at 6:04, again 19 minutes into the code she was able to have a blood pressure of 117 over 75. Actually, at 6:00 o'clock a.m. she even had a heart rate of a hundred in sinus rhythm. So in 15 minutes she had a return of sinus rhythm.

Given that she had a return of spontaneous heart rate and blood pressure after what was an unquestionably delayed response to her arrest, that would not have occurred if she was on monitor, after 15 minutes of a resuscitation to get back to sinus rhythm indicates that had they gotten to her earlier with reasonable medical certainty she would have

Charash, M.D.

had an abrupt return of her rhythm and survived because the delay in implementing treatment and the delay in restoring rhythm carries with it progressive damage to the left ventricle from oxygen depravation during the code.

CPR does not keep you alive. It slows the rate in which you are dying. In this case the fact that after pulseless electrical activity at the three-minute mark, very few people would ever have any form of recovery and she was able to get back to spontaneous pulse. That means that if she was on a monitor with reasonable medical certainty -- A, it means it was electric because if it was mechanical there would be no chance. If something mechanically led to her losing her blood pressure and heart rate and coding. And you add to that condition her underlying weak heart and damaged lungs 15 minutes of CPR and oxygen deprivation, there would be zero possibility within medical reason that she could have returned her electrical activity and get a pulse.

So the fact they were able to return even for a short period of time means

Charash, M.D.

this was an electrical event and given that there was no cardiac monitor in spite of being witnessed by health care providers in the room at the time of her collapse the delay in recognizing the heart rate, the delay in giving epinephrine she still was able to almost come close to surviving. So with reasonable certainty if she were monitored when she had her code she would be alive today.

Q Outside of the code sheet any other basis for your opinion on causation, other than the code sheet and of course what you already told me today?

A And the autopsy. No, no other basis.

Q Will you be giving an opinion that goes beyond the fact that she would have survived?

MR. PEEK: Like life expectancy.

MS. SHORT: Yes.

MR. PEEK: No opinions on life expectancy.

MS. SHORT: Thank you.

Charash, M.D.

(Discussion off the record.)

Q Okay. The next opinion that I think we have already gone over a bit, but was the fact that she presented with an infectious disease process with high risk indicators. Is there anything additional in the record or that you would offer at trial regarding that as a basis for your opinion in this matter that we have not already talked about?

A No.

Q Okay.

A Actually, one subopinion and maybe we should bring it up that if you look at her vital signs and this sheet says the internal is patient discharge report and it has Page 5 on the bottom. That's the hospital number. And it gives you the vital signs for March 20th to March 21st up through her admission and death and her blood pressure at 1655 was 116 over 56 and her heart rate was 120. At 1845 her blood pressure was 141 over 64 and her heart rate was 123. If you jump to 1:19 a.m. her blood pressure had dropped to 94 over 65, and then if you look at 5:16 prior to her code her blood

Charash, M.D.

pressure was 97 over 44.

Her systolic and diastolic were dropping after midnight from a reasonable blood pressure to a menacingly low blood pressure for a woman her age. That supports the progressive septic nature of her illness and a dropping blood pressure is an independent marker of high risk in addition to the glucose drop we mentioned earlier, and certainly in retrospect confirms this as a progressive septic stress on a heart at risk and prospectively highlighted the danger she was facing due to her infectious illness.

Q Anything else on that opinion?

A No.

Q All right. And then the next thing you had summarized for me was your opinion that if the foreign body itself had been removed sooner.

A Yes.

Q That would have changed the outcome.

A Yes.

Q So let's talk about that and by

Charash, M.D.

that I mean you tell me what the basis is for your opinion.

A Okay. This is a general medical opinion, but it applies to this case in specific and that is if you have an infectious source it is accelerated by the presence of a foreign body. The inflammatory response is worsened by a foreign body and the impact on the systemic presentation of the illness is worsened by the foreign body.

Infections grow expedientially. So if a bacterial divide time is 20 minutes, in the 20 minutes before her code more bacteria grew in those 20 minutes than in the entire period of time she was infected because it doubles every cycle.

So you have an expediential impact of a bacterial infection that is accelerated like gasoline on a fire by a foreign body. Had the foreign body been removed it would have dramatically reduced the impact on the infection on her body and the stress of the infection on her body.

So it's a loose opinion because

Charash, M.D.

it's not as specific as the cardiac arrest evidence, but basically if the foreign body had been removed it would have improved the trajectory of her infectious presentation. The reason why I said six hours is that that's a comfortable mark to say 50/50. It's probably less than six hours it would have helped, but by six hours because it's expediential. The last six hours as opposed to the first six hour in the ER I think you would have had enough of an impact on the inflammatory and septic response that it would have been less likely that the sepsis would have provoked a cardiac arrest when it did.

Q And are you saying six hours prior to her arrest?

A Yes.

Q Okay. And are you saying that if the surgery had been performed at that point in time she would not have suffered cardiac arrest?

A More likely than not, correct.

Q Any other basis, foundation for that opinion other than what you have already given me?

Charash, M.D.

A No.

Q Okay. The opinions that you have given me today are very much in addition to what is contained in your report, so I want to make sure that the opinions in your report we go over those as well.

I know some of them may be encompassed generally, but Page 2 of the report you indicate that you are critical of the health care providers in the emergency room including Dr. Pham and Dr. Record for failing to timely perform an EKG.

A Yes.

Q And failing to investigate the cause of her extremely low glucose levels.

Is that still an opinion that you are going to be offering?

A Well, I guess it's not a simple opinion. The first is that an EKG should have been done promptly given her heart rate and her past history as promptly as possible and it was basically a pre-admission afterthought. But based on the fact that her EKG was not acted upon it's hard to say there would have been

Charash, M.D.

causation if it was done two hours earlier.

In terms of the hypoglycemia it's less about investigating the source of it rather than recognizing the significance of it. The low sugar should have been viewed from the prism of her having an infection and recognizing that that was a threatening medical illness on top of a woman with her risk factors.

Q Okay. Then the next sentence, I'm critical of Dr. Hill for not taking any action upon review of the EKG.

Okay. We discussed that of course you feel that she should have been placed on a cardiac monitor. Is there anything else that you think that Dr. Hill should have done?

A Yes. Check the cardiac enzymes from presentation and follow them which would have then proven she was having a cardiac response to her illness.

Q Anything else?

A No.

Q Then you indicate that you are critical of the health care providers including Amanda Gaines, RN and Christian Rowe, CRNP

Charash, M.D.

responsible for transferring and receiving Ms. Kalfas as an in-patient Ms. Kalfas' full chart including EKG should have been sent and if it was not present on arrival it should have been retrieved and reviewed.

Will you be testifying at trial CRNP Rowe and Nurse Gaines breached the standard of care?

A Well, I think the standard of care breach was not putting her on a monitored unit and anything that they failed to have that would have provided them further information to make that decision would be a part of it, but with what they had she should have been monitored.

So not getting the old records, if their defense is that they were unaware of certain conditions that could be significant, but that's not their defense.

Q Will you be giving the opinion in the case that Nurse Gaines was responsible for determining whether or not Ms. Kalfas should be on a monitored unit?

A No.

Q And how about for Christian Rowe?

Charash, M.D.

A Nurse Rowe was an admitting health care provider. She was responsible to determine that the patient needed to be on a monitored unit. She was the admitting primary care provider. So she carries that responsibility to either consult with more senior people or make the right decision.

If her answer is she didn't know the medicine well enough, then the hospital is responsible for that or she is responsible to get help. Yes, she carries the responsibility as anyone who is the admitting health care authority.

(A short recess was taken at this time.)

(The deposition resumed with all parties present.)

BRUCE CHARASH, M.D., resumed, and testified further as follows:

BY MS. SHORT:

Q On the EKG performed in the ED do you agree that the computer reading as to acute MI is inaccurate?

A I think that it can't be

Charash, M.D.

determined by the EKG itself because there is enough artifact that Lead V2 is not determinant.

So I think we know in retrospect she was not having an acute ST segment elevation MI, but the EKG raised a concern and your remedy is either to repeat it or not.

Q For the troponin that we know was added on after her arrest, the level that came back I think it was .3, something like that 38?

A I think so.

Q We can pull it. Let's do that.

A .32.

Q Is there anything about that particular level that informs you in this case?

A Nothing more than saying that by the time she was in the hospital she was already suffering ischemic damage to her heart due to the medical illness she presented with.

Q Could that troponin level have been related to sepsis?

A No.

Q And why is that?

A Well, sepsis affecting the heart or pre-sepsis, yes. Her fast heart rate was

Charash, M.D.

more likely the reason plus the dropping sugar levels, but there are no septic related artifacts.

Now, if you have deep sepsis and massive renal failure your troponin can creep up, but people that get septic when they release troponins are usually due to the stress on the heart. Now, even a healthy heart can start to release enzymes with enough psychological stress. This isn't a person presenting in septic crisis requiring drugs to elevate blood pressure and acid building up in the blood. So it was cardiac stress due to her illness.

Q I think you just started to give me a few of them, but what outside of a true cardiac condition causing the increase in troponin, what else, what other conditions could cause an increase?

A I don't understand your question. You could have troponins increase by total renal failure or massive renal failure and then over time your troponin might creep up a little bit.

We don't have more than one measurement. We will never know if it was a

Charash, M.D.

curve or how it presented. When you have a troponin that significantly elevated upon presentation it means that the heart has had permanent damage to cells. Now, either it's from a primary coronary artery occlusion or it's due to physiologic stress on the heart without a complete occlusion.

Q And in your opinion it's due to stress on the heart?

A Absolutely.

Q In her case?

A Yes.

Q Okay. You reviewed the autopsy report as well; correct?

A Of course.

Q Okay. And you agree that the autopsy was benign for a cardiac issue other than preexisting condition?

A Well, there is nothing else it could possibly have shown. It didn't show a thrombotic artery which confirms that this was not a primary ST segment elevation MI.

Whatever damage occurred coming in, A, it would have been small enough that it

Charash, M.D.

would have been difficult to find on an autopsy, but you don't see cellular changes unless you have a heart attack and live until 24 hours. In the first 24 hours there is zero manifestation of a heart attack at a cellular level. So the damage cannot have been seen because she died as quickly as she did.

Q Do you agree that anyone that has cardiomyopathy will have an elevated troponin I level?

A No. Most people with cardiomyopathy won't.

Q And Why is that?

A Anyone that has heart muscle damage at the time of the damage will release cardiac enzymes, but if they have a chronic cardiomyopathy there won't be any enzyme release. It's released during the process of death of heart muscle cells, but it's not a chronic release.

Q And I guess what I'm saying is that once that happens, that damage, will subsequent troponin I tests be elevated as a result of that?

Charash, M.D.

A No. Only if there is more damage to the heart.

Q Okay. Have you seen any of Ms. Kalfas' prior troponin levels --

A No.

Q -- before this admission?

A No.

Q Do you do serial troponin levels on your cardiac patients?

A And on some patients without known heart disease. Based on the situation, yes.

Q What type of situation would cause you to do serial troponin levels?

A Anybody presenting with either suspicion of a primary coronary event or a person with a known coronary disease coming in with a significant medical event.

Surgery often requires serial cardiac enzymes after surgery or somebody with a significant medical illness like sepsis would require the heart to be monitored the same way.

Q Did Ms. Kalfas report chest pain at any time to the providers?

A No.

Charash, M.D.

Q Or chest tightness?

A No.

Q Okay. Does that have any impact on your viewpoint of what was happening with her when she presented?

A None whatsoever.

Q Why is that?

A Well, she was an elderly woman, diabetic. They don't often have pain and with another medical illness going on it makes it even less likely that they will feel pain. And if you are having a secondary cardiac damage from a medical illness usually you don't feel pain.

If she were having a primary thrombotic anterior wall MI she may or may not have pain. So there is no expectation of pain especially as a diabetic woman, but a secondary heart attack which is what she was having almost never has chest pain associated which is why we draw surveillance enzymes.

Q When we reviewed the EKG earlier and we talked about prolonged QT interval that you mentioned, is that something that occurs in

Charash, M.D.

a patient that has a preexisting cardiac condition or is that something that indicates to you there is some form of an active process going on?

A Well, people who have damage to the ventricle are more predisposed to a long QT which is part of the reflection of their increased risk of arrhythmias, but an acute medical illness and acute ischemia tend to prolong it further.

So there would be no way based on her initial EKG to determine what her baseline QT interval was, but it was another reflection of the stress she was undergoing and the reason for cardiac monitoring.

Q Will you be offering any opinions in this case regarding any health care providers other than those we have discussed here today and contained in your certificate and report?

A No.

Q Any other opinions that you will offer in this case that we have not discussed here today?

A No.

Charash, M.D.

Q If you are provided with any additional records and they add to or change your opinions in any way, if you would let Mr. Peek know so I would have an opportunity to come back and ask you questions about that. Is that fair?

A Yes. And of course being unable to anticipate what defense experts might say, if they say something that requires a specific rebuttal I will let Mr. Peek know as well.

Q Okay. That's fair. At this moment do you plan to do any other work in the case other than appear for trial and provide testimony?

A No.

Q Let me just ask you in the designation that we were provided in the case by Mr. Peek it indicates that the standard of care required that Ms. Kalfas be admitted to a monitored bed which we have talked about at length. But then it also says that she receive medical therapy.

Will you be giving any opinion that she should have received some type of

Charash, M.D.

medical therapy?

A Well, extraction of the foreign body.

Q Okay. Outside of extraction of the foreign body anything else?

A No.

Q It also says that she should have received more aggressive fluid resuscitation.

Will you be giving that opinion?

A No.

Q And we have talked about her glucose levels, but this says that her glucose levels should have been more tightly controlled.

Will you be giving an opinion that it was a breach in the standard of care for the health care providers to not tightly control her glucose levels?

A No.

Q Approximately how many patients do you admit and if it's easier on a monthly or annual basis to Lenox Hill?

A I'd say between ten and 15 a month.

Q And of that ten to 15 is it

Charash, M.D.

accurate that 75 percent of those are not your primary patient?

A Yes.

Q And are all of those patients being admitted for some type of cardiac issue?

A No.

Q Okay. And is that the same breakdown that you told me earlier?

A Yes.

Q All right. Do you have anything else with you today that you have brought that leads to your opinions in the case that you have made notations on that you have created a report of?

A No.

Q Do you have anything at home that fits that category?

A No.

MS. SHORT: At this time I have no further questions.

EXAMINATION

BY MR. PEEK:

Q Let me just, we found out in discovery in this case, Doctor, that Dr. Pham

and Dr. Record were not the ER doctors really involved with Ms. Kalfas, but that Dr. Hoffmann was and your report doesn't speak to Dr. Hoffmann.

Are you critical of Dr. Hoffmann for the reasons you have discussed here today and for the reasons that are in the report?

A Correct. My report -- my opinions haven't changed, but the role of different health care providers have been clarified.

MR. PEEK: That's all I want to put on the record and then we will read and sign.

(Discussion off the record.)

MR. PEEK: Jlp@cardarolaw, C-A-R-D-A-R-O, L-A-W, .com. Just an electronic Mini with any exhibits attached.

MS. SHORT: E-Tran and PDF colored exhibits.

(Whereupon, at 1:10 o'clock p.m., the deposition was concluded.)

CAPTION

The Deposition of BRUCE CHARASH, M.D., 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.

The Deponent will read and sign the transcript of said deposition.

CERTIFICATE

STATE OF_____:

COUNTY/CITY OF_____:

Before me, this day, personally appeared BRUCE CHARASH, M.D., 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, M.D.

SUBSCRIBED and SWORN to before me this_____ day of _____, 2017, in the jurisdiction aforesaid.

_____ _____

My Commission Expires Notary Public

DEPOSITION ERRATA SHEET

RE:
FILE NO.
CASE CAPTION: ELEFTERIOS J. KALFAS, ETC., ET AL. vs. JOHNS HOPKINS BAYVIEW
DEPONENT: BRUCE CHARASH, M.D.
DEPOSITION DATE: APRIL 18, 2017

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.

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SIGNATURE:_____ DATE:_____
BRUCE CHARASH, M.D.

INDEX

EXHIBITS

CERTIFICATE

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

I, TINA DeROSA, a Shorthand (Stenotype) Reporter and Notary Public of the State of New York, do hereby certify that the foregoing Deposition, of the witness, BRUCE 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 21st day of April, 2017.

_____
TINA DeROSA