Volume 1

Pages 1 - 225

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

Before The Honorable Vince Chhabria, Judge

IN RE: ROUNDUP PRODUCTS LIABILITY LITIGATION	)	**NO. 16-md-02741 VC**

San Francisco, California
Monday, January 28, 2019

TRANSCRIPT OF PROCEEDINGS

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I N D E X

Monday, January 28, 2019 - Volume 1

E X H I B I T S

Monday - January 28, 2019 **9:26 a.m.**

P R O C E E D I N G S

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THE CLERK: Calling Civil 16-MD-2741, In Re: Roundup Products Liability Litigation.

Counsel, please step forward and state your appearances for the record.

THE COURT: If one person wants to introduce everyone, that's fine. Whatever your preference is.

MS. WAGSTAFF: Good morning. Aimee Wagstaff for the Plaintiff. I have with me Brent Wisner and Michael Baum.

MR. STEKLOFF: Brian Stekloff. Along with me are Rakesh Kilaru and Tamarra Matthews Johnson and Michael Imbroscio and Eric Hollingsworth on behalf of Monsanto.

THE COURT: Does anyone else need to make an appearance?

MS. BEACH: Nadina Beach on behalf of the Plaintiffs.

MR. TSADIK: Tesfay Tsadik.

THE COURT: This morning we are here to talk about the evidentiary issues and, I guess, maybe how to instruct the jury on this causation question. I don't know what is the best place to start. Maybe let's start with some of the evidence because it is a little more fresh on my mind, and maybe we could start with the materials that the Plaintiff submitted, the three -- the three items, the tumor discovery, Monsanto's

criticism of AHS and the Parry report. And I think this process of submitting exhibits and thinking about them and whether they should be admitted or not is a useful one, whether they should be admitted in Phase I is a useful one because I do think it allows us to pull out some principles -- some guided principles that will apply to the admission of other exhibits.

And I guess my preliminary reaction -- my tentative reaction could the three documents that the Plaintiffs' submitted is that they probably are admissible in Phase I. The principle that I use there -- a lot of it has to do, I guess I should say also this comment also applies to the McDuffie stuff that the Defendants teed up. My sense is that if you have an internal Monsanto document, that is taking a position on the science or on a particular study that is going to be at issue with respect to causation, that that is admissible in Phase I. However, to the extent that we have internal Monsanto communications about how to sway a scientist, right, about how, for example, McDuffie -- how were we going to get McDuffie to change his mind about, you know, whether there is an association or -- I'm oversimplifying the issues about McDuffie, but you get the basic point -- I would say that generally saying that should not be admissible in Phase I unless McDuffie actually later changed his mind and renounced his prior position, right.

So I think that is the sort of the general guiding

principle that I have identified, and this is all tentative; but that is the general guiding principle I have identified for the admission of these documents. So if we -- you know, we apply that principle, I don't know how much of it applies to the tumor discovery issue necessarily; but just generally speaking, I mean, this is actually about a study that is relevant to the causation question; and there is a debate about, you know, what happened with the study and how Monsanto later found the tumor and how could a jury -- how could that be kept from a jury. You know, there sounds like there is potentially, quote-unquote, innocent plans support the finding of the tumor. How could that be kept from the jury?

And then on the -- on Monsanto's criticism of AHS, I mean we have this document the Plaintiffs have put forward and the -- you know, the reason that it's not a no-brainer, I think, that the document is admissible at Phase I, is that it is a little bit more of a -- it is not clear how much Monsanto actually believes what is being said in that document. In other words, the document does not appear to be an objective analysis of what is good and what is bad about the AHS study. It seems to be more a document about the ways we can attack the AHS study, kind of a political strategy document. Here is where we can attack them. Here is where we are not going to be successful in attacking them. And so because it seems to be less of an objective assessment of what is good and bad about

the AHS study, it's not obvious to me that it should come in; but on balance it seems to me that you have Monsanto saying, here is what is good about the AHS study and here is what is bad about the AHS study; and it is potentially different from what Monsanto is going to be saying at this trial about what is good about the AHS study and what is bad about the AHS study. So an internal document like that, it is hard to imagine excluding that from Phase I.

Furthermore, we would have -- we have testimony from a Monsanto person in this case saying, I agree with the criticisms that were articulated by this document of the AHS study. All of this -- by the way, I mean, I think most if not all of this is a 403 analysis; right? I mean, I think the internal dialogue about McDuffie,for example, or the internal dialogue about Parry, for example, I think it is -- strictly speaking it is relevant under Rule 401. I just think that under Rule 403, it is not admissible because is -- it's -- it's only tangentially relevant to the primary at hand in Phase I; and as we have already discussed, it is a significant distraction.

As to Parry -- going onto the third item that the Plaintiffs teed up -- again, my understanding about Parry -- and you all can correct me if I'm wrong, my understanding about Parry is Parry took a position initially based on a subset of papers and then Monsanto -- there is a lot of internal dialogue

within Monsanto about how to get Parry to move from his position; and then there is a subsequent paper, I believe, based on a broader array of papers -- of studies, and Parry effectively takes the same position. So Monsanto was effectively unsuccessful in getting Parry to change his mind; and so if I'm understanding the backdrop of that correctly, I would think Parry's papers -- for example, the paper that you have put in as your favorite exhibit on the Parry-related issue -- would think that would come in, but the internal dialogue about trying to get Parry to try to change his mind would not come in.

So that's -- that's sort of -- that is my initial tentative analysis of all of this. That is mostly -- you might be disappointed on both sides. It is mostly disappointing for Monsanto. Why don't you go ahead and respond to any of that.

MR. KILARU: If I can start by making one point about the orienting principle and talking through some of the pieces of evidence would be helpful. On the orienting principle our view is that -- I think we are all in agreement on this -- that the focus of Phase I should be on the question of whether there is a scientific basis of concluding that Roundup can cause a particular Plaintiffs' cancer. And I think the core of Phase I, as a result, needs to be the independent studies -- the wide variety independent studies that have been done on Roundup; getting the jury's take essentially on what those studies show.

The reason why we have come in with the disposition that most of these pieces of evidence should come out is a concern that some of these pieces of evidence don't go to that question at all, and others involve real sideshows that would mislead the jury from those studies and focus on what was said in the company and what was discussed in the company and so on.

THE COURT: I think we agreed on the framework. The question is how to apply that framework to particular pieces of evidence, and I'm not sure you say, Well, some of this is not relevant to the causation issue at all. It is not relevant to the science issue at all and other pieces of evidence are a sideshow; and I'm just not sure that these three pieces of evidence that the Plaintiffs put forward fit that description. I agree with you that if they did, they should not come in in Phase 1.

MR. KILARU: I guess what is -- maybe start with the Parry example. I think it illustrates what we think is a helpful guiding principle for determining whether something is relevant to causation or not, and that is -- do any of the experts think that this matters? Certainly the Parry papers -- Parry looked at four underlying studies.

THE COURT: Parry's internal analysis has any bearing on an expert's conclusion, and he does so -- paid by Monsanto -- and Parry concludes from his analysis of those four papers --

MR. KILARU: So certainly the Parry underlying papers. So Parry looked at four underlying studies and then prepared an initial analysis that he gave to Monsanto.

THE COURT: Okay.

MR. KILARU: And then there were further studies that were provided to him, and he then provided the second paper you mentioned.

There's actually a third piece to the story, which I think we mentioned in our brief, which is that there was then a variety of testing done after that second paper and Parry ultimately came to the conclusion that glyphosate is not genotoxic. That's memorialized in e-mails. That's his position at the end of the day, and we think certainly that's the position --

THE COURT: That's memorialized in e-mails?

MR. KILARU: Yes. It's the last exhibit to our brief. I believe it was Exhibit 11 to the filing, but essentially it summarizes the discussion with Parry in which he mentions -- in which the conclusion --

THE COURT: Is Parry on the witness list?

MR. KILARU: No. He's deceased. He passed away awhile ago, Your Honor.

THE COURT: And so his deposition wasn't taken?

MR. KILARU: No. I believe it was well before -- I believe it was well before anything -- this litigation got

started.

THE COURT: Okay.

MR. KILARU: But just on that point, both sides have assembled a variety of experts to talk about the scientific evidence of causation, and I don't think any of those experts believe that Dr. Parry's internal analysis to Monsanto bears on the causation question at all.

And so if all of the experts are of the view, I think both plaintiffs and defendants, that --

THE COURT: But that's not -- I think that you're setting up a false inquiry there. The inquiry is not whether Parry's internal analysis has any bearing on an expert's conclusion. I think the inquiry is this: Let's say Parry analyzes four papers and he does so paid by Monsanto. Okay? And Parry concludes from his analysis of those four papers that glyphosate is genotoxic or potentially genotoxic I think is what he said; right? And then let's say Monsanto brings experts into the courtroom who testify that "I've reviewed the literature, including those four papers or including those 12 papers or whatever, and I'm telling you that there's no way that glyphosate is genotoxic."

Well, excuse me, now we have an internal Monsanto person, somebody who is paid for by Monsanto to analyze these papers, who concluded internally, based on his own analysis, that glyphosate is potentially genotoxic. So how can it be that

Monsanto could bring in an expert into the courtroom to testify that based on the materials that are out there, glyphosate is definitely not genotoxic and conceal from the jury that one of its own people internally reviewing the same papers, or perhaps a subset of those papers, concluded that it was potentially genotoxic?

MR. KILARU: I think the answer to that, Your Honor, is it's not just our experts that I'm focusing on here. I think --

THE COURT: Well, I'm focusing on your experts.

MR. KILARU: I understand that, but I think that in determining --

THE COURT: And my question is: How can Monsanto bring in an expert to testify as I just described without also opening the door to the admission of an analysis by an internal Monsanto person of some of the same literature which reached a different conclusion?

MR. KILARU: Because I think -- for a couple of reasons. I think, one, the initial analysis, as the whole story goes to show -- the initial analysis, the second analysis, and the subsequent conclusion -- is only a small piece of what Dr. Parry ultimately did.

THE COURT: But then if you think that the entirety of what Dr. Parry did should be admissible, then I would think that since Dr. Parry initially took the position it was

potentially genotoxic and then later took the position, apparently, later took the position that it was not genotoxic, then I would think that if Monsanto is going to rely on that, then also relevant would be all the internal machinations by which Monsanto prevailed upon Dr. Parry that glyphosate was not genotoxic.

MR. KILARU: Sure, Your Honor, but I don't think we take the position that anything. Our position is that Dr. Parry's analysis as a whole doesn't relate to causation. I'm not coming in and saying we get the bottom line of what Dr. Parry said.

THE COURT: But I don't understand how that can be. I don't know how you can say that Dr. Parry's analysis as a whole does not relate to causation.

MR. KILARU: Because in our view, Your Honor, what relates to causation is what those studies actually show, and we have a variety of experts from both sides that have looked at those studies and are going to come in and talk about what aspects of those studies are relevant, including theirs.

THE COURT: Right. But if Monsanto brings in an expert and says -- just to oversimplify, take it outside of Dr. Parry. Okay? If Monsanto brings in an expert that says 100 lab rats were tested and exposed to glyphosate and none of them developed tumors -- right?

MR. KILARU: Uh-huh.

THE COURT: -- and there was an internal Monsanto document from a scientist that reviewed the same data and came to the conclusion that two out of 100 mice developed tumors -- okay? -- how could that document not be used to impeach Monsanto's expert who testified that zero out of the 100 mice developed tumors from the glyphosate exposure?

MR. KILARU: I think there's two responses to that. I think the first is that if that story ended as this one did with, in fact, the two tumors, you know, having been found and we ended up back where we started, then I think that the question is what are we spending time on in this phase of the trial as opposed to what are we spending time on in this phase of the trial looking into.

And our bottom line position --

THE COURT: I don't understand your answer.

MR. KILARU: Sorry.

THE COURT: The question is -- let's stick with my hypothetical.

MR. KILARU: Okay.

THE COURT: Okay?

Monsanto brings in an expert that says zero out of 100 mice develops tumors. There's an internal memo from a Monsanto scientist -- by the way, just to be clear, this didn't happen.

MR. KILARU: Right.

THE COURT: This is a hypothetical.

But there's an internal Monsanto memo that says two out of the 100 mice developed tumors. Monsanto brings in its expert that says zero out of 100. How can it possibly be that the plaintiffs are -- do you agree that the plaintiffs would be allowed to use that internal Monsanto memo to cross-examine the Monsanto expert?

MR. KILARU: Our position is that if that were the end of the story, perhaps; but if that story culminated with it turning out that, in fact, there weren't two tumors and, in fact, there were zero all along, then it wouldn't be an appropriate use of the jury's time to go into that long back and forth.

THE COURT: But if there's a question -- if there's a true -- if there's a true question about whether there were two tumors or zero tumors and the Monsanto scientist who concluded that there were two and who later changed his mind and concluded that there were zero reached that conclusion as a result of significant education by Monsanto -- right? -- Monsanto sort of barraging the scientist with its own view of the matter, then certainly that also would be relevant to the jury that, hey, one time there was a Monsanto scientist who concluded that there were two and eventually he changed his mind and decided there were zero but it was after this barrage of information from Monsanto to the scientist, and look at all these internal e-mails which reflect Monsanto strategizing

about how to change this person's mind, how to influence this person.

I would think at that point that all of that would be relevant. I mean, if you could establish as a factual matter to a certainty that, in fact, it was zero and that the scientist's conclusion that there were two was a mistake, then maybe you would say all of this stuff is inadmissible because it's not relevant; but if there remains a question about whether there are two or zero, then I think that entire story does come in and I think that it seems like -- I don't see how that could be irrelevant or I don't see how that can be inadmissible in a Phase I.

MR. KILARU: Well, just two points on that then, Your Honor. I think the first is that one way to tell whether this was appropriate substantive evidence versus just impeachment -- and I'd like to get to the impeachment versus substantive evidence distinction in a second --

THE COURT: Well, okay, fair enough. I'm not sure "impeachment" is the right word. I may have used the wrong word.

MR. KILARU: Well, I think if we're talking about impeachment, then I think your example --

THE COURT: Well, I'm not sure I was talking about impeachment. I think I was talking about substantively this is relevant evidence that the jury should be able to consider when

it's assessing both experts' opinions.

MR. KILARU: Well, I think, then, Your Honor if we're talking about it as substantive evidence, I do think that we have substantial 403 concerns with this being a true sideshow because going through the timeline of what Parry said initially, then what the study showed, and then what he ultimately concluded doesn't sort of advance the ball in terms of the bottom line of what the science shows.

And the reason we think that that's the case is that the plaintiffs have hired experts to look at all of the science and they've been provided with a variety of the relevant documents; and if those experts have looked at all of this science and ultimately think that this Parry issue is a sideshow -- their experts, not ours -- then we think it's a 403 concern about what the Court and the jury should be spending time on in Phase I.

If there were -- if I could, Your Honor, if there were an example of actual impeachment, so, for example, what Your Honor gave where there's a document saying one thing or there's an initial position saying one thing and then internal company documents that say the opposite of that, that's an impeachment point that goes to what the company's saying.

But if we're talking about substantive evidence generally of causation, then a whole bucket of issues where a scientist looks at something, keeps looking at it, ultimately reaches a

conclusion that doesn't support the argument that the other side is making, that is the concern that we have with the sideshow and that's where their experts matter in terms of what they look at.

THE COURT: Well, I understand what you're saying and perhaps I'm taking too simplistic a view of it, but the question again -- and this is the one that, you know, I need an answer to for you to prevail on these evidentiary issues; right? This is the question I need a satisfying answer to. Okay?

Again, stick with the hypothetical; right? Monsanto brings in an expert who says out of these 100 mice, there is no tumor. Okay? There's an internal Monsanto document from a scientist where he looked at it and he concluded there were two tumors.

Monsanto goes to work on this scientist and eventually prevails upon the scientist that, in fact, there are zero tumors. Okay? But there's this factual debate out there about whether there really are zero tumors or two tumors. How is it fair for Monsanto to bring in its paid expert witness who has concluded that there are zero tumors and not have the jury consider the fact that one of Monsanto's own scientists concluded that there were two tumors and only changed his mind after Monsanto went to work on him in a very strategic and methodical way? How would that be fair? How would that be a

fair trial?

MR. KILARU: It would be fair if no expert or no scientist on either side thinks the zero-to-two debate matters to the causation inquiry. That's why we think it's fair.

If it were the case that there were a debate where, say, the plaintiffs' experts came in and said "This Parry study, this is the key to genotoxicity, this proves it because Monsanto's expert looked at that," that might be one thing.

THE COURT: Okay.

MR. KILARU: But what we have here is a different situation. The plaintiffs have had access to these studies. They've looked at Parry, they're well aware of it, and their experts have not said in looking at this scientific issue that Parry is an essential piece of the puzzle and that it goes to disprove Monsanto's arguments about causation; and that's why we think it's fair because it's not --

THE COURT: And I would assume, I don't know this because I haven't read the expert reports on this topic yet, but I would assume that an expert would say -- an expert for the plaintiffs would say, "Well, of course, that's not one of the pieces. I'm relying on independent studies. I'm relying on independent papers, and I'm going to form my own opinion based on the independent literature that's out there."

But that doesn't change the fact that when Monsanto brings one of its experts in and Monsanto's experts testify

inconsistent with an internal Monsanto document, it seems very unfair to have a trial where the jury doesn't get to consider the inconsistent external -- internal Monsanto documents.

MR. KILARU: I think ultimately we disagree on that, Your Honor, because --

THE COURT: And that's -- I mean, Rule 403 at the end of the day is about fairness.

MR. KILARU: It's both about fairness but it's also about ensuring that we're focusing on the central issues in the case and not engaging in --

THE COURT: Right.

MR. KILARU: -- efforts that waste the jury's time and ultimately don't advance the ball.

THE COURT: But if the issue -- but in 403 if the issue is super-relevant, then even if it takes a lot of time, it's not a waste of time.

MR. KILARU: But under Rule 403, if it were indeed super-relevant, then I think that's true, Your Honor. Just the fact that something takes a long period of time doesn't mean that it is excluded under 403.

But here we are talking about essentially a minitrial on what Dr. Parry looked at in his variety of papers -- in his initial paper, in his second assessment, and his final assessment -- and going through some subset. I think actually not every piece of evidence related to Parry should come in for

the reasons you mentioned. So I think, for example, some of the e-mails where Monsanto employees are talking about what to do with Dr. Parry wouldn't come in even under this analysis you.

THE COURT: Well, that depends. That depends. Because, you know, if Monsanto is going to say, "Ha, look. Look where Dr. Parry ended up at the end of the day, he ended up in the same place as our experts that we're bringing to testify at trial," then the question is: How did he end up there?

MR. KILARU: Well, I think the answer in this case at least, Your Honor, is that Monsanto did a variety of tests that Dr. -- some of which Dr. Parry recommended and some of which were similar to the ones he recommended, and on that basis Dr. Parry concluded that there wasn't a genotoxic effect to glyphosate.

So the end of the story isn't this sort of -- you know, this is where we sort of get back to the question of sort of spin that we talked about at the last hearing because one of the e-mails that's talked about in plaintiffs' paper on this issue is an e-mail from Dr. Heydens in which he says "We're not going to do the test Dr. Parry suggests," and in fact those tests were done.

So I think getting into -- then just to take that e-mail for example, that e-mail is one we clearly think shouldn't come

in because the way in which it's being used doesn't represent the facts that actually occurred on the ground.

THE COURT: Can we pull up that e-mail?

MR. KILARU: Sure.

THE COURT: But before we do that, let me just look at Parry -- I'm looking at -- so the study that the plaintiffs put in --

MR. KILARU: Uh-huh.

THE COURT: -- not study, the paper from Parry that plaintiffs put in, that was the second paper? Am I right?

MR. KILARU: I believe it is the second paper, yes.

THE COURT: All right. I'm just looking at the overall conclusions to that study just to make sure I'm remembering it right.

MR. WISNER: I think they start on page 10, Your Honor.

THE COURT: Yeah.

(Pause in proceedings.)

MR. WISNER: And the ones that we've sort of been focusing on at trial, at least in the *Johnson* case, were on page 12 under the heading "Specific Evaluation of the Genotoxicity of Glyphosate," "Specific Evaluation of Genotoxicity of Glyphosate Mixtures," and then "Specific Evaluation of Surfactants."

THE COURT: What does clastogenic mean or clastogenic?

MR. WISNER: It means capable of producing mutations in the cell.

THE COURT: So is it the same thing as genotoxic --

MR. WISNER: No.

MR. KILARU: -- or a subset of genotoxic?

MR. WISNER: It's a type of genotoxicity.

(Pause in proceedings.)

THE COURT: So that is the -- and what you're saying is Dr. Parry came off with these conclusions after Monsanto communicated whatever it communicated to Dr. Parry?

MR. KILARU: After further testing was conducted and those results were communicated to him, yes.

THE COURT: Okay. And --

MR. WISNER: Your Honor, while you're on the document, though, there's another portion of it that we also focus on just so you have the full context. It starts on page 32.

THE COURT: Okay. All right.

MR. WISNER: And there's key questions, there's deficiencies in the dataset, and then there's actions recommended starting on the next page.

THE COURT: I'm not sure I'm on the right page.

MR. WISNER: Okay. Well, it's a page ending in 264 and it's page 32 in the document.

MR. KILARU: I think it's 33 of the exhibit you have, Your Honor.

THE COURT: 33.

MR. WISNER: Oh, yes, because of the cover page. I'm sorry.

THE COURT: What do you want me to look at?

MR. WISNER: Well, there's the key questions, the sufficiency in the dataset, and then on the next page there's the actions recommended; and then it goes on for A, you know, through I, and then there's a final paragraph at the bottom of that talking about, you know, what sort of research needs to be done. And I say that because they talk about the tests that they did and this is what that issue is here.

I'll let -- I don't want to take over the argument, but I just -- that's what I want to talk about so...

THE COURT: Okay. Let me read that real quick.

(Pause in proceedings.)

THE COURT: Okay. And then you wanted me to look at an e-mail exchange I think?

MR. KILARU: Oh, yes. I think if you look at --

MR. WISNER: It's Exhibit 9.

MR. KILARU: It's Exhibit 9, yes.

(Pause in proceedings.)

THE COURT: Okay.

MR. KILARU: So this e-mail I think played a big role in the last trial, and I think it's an e-mail that the plaintiffs have highlighted in general, and I think it's fairly

described as at best, though we think it doesn't actually reflect the company conduct but much more of a company conduct e-mail than a science e-mail.

THE COURT: Okay.

MR. KILARU: It's an e-mail where Dr. Parry [sic] says, "We're not" -- he says in the e-mail, "We're not going to do the tests he suggests." Now, that is the sound bite that I think --

THE COURT: Wait. Hold on a second.

This is an e-mail where who says "We're not going to do the test"?

MR. KILARU: I'm sorry. Dr. Heydens. I might have said Dr. Parry.

THE COURT: Okay.

(Pause in proceedings.)

THE COURT: Okay. So it says -- so this is Dr. Heydens of Monsanto talking about Dr. Parry. And so this e-mail was written -- Dr. Heydens wrote this e-mail after Parry wrote the paper that we just looked at --

MR. KILARU: Yes.

THE COURT: -- where he concluded that glyphosate was possibly genotoxic?

MR. KILARU: Uh-huh.

THE COURT: Okay. And so what he says is (reading):

"We want to find and develop someone who is

comfortable with the genotox profile of glyphosate Roundup and who can be influential with regulators and scientific outreach operations when genotox issues arise. My read is that Parry is not currently such a person and it would take quite some time and money/studies to get him there. We simply aren't going to do the studies Parry suggests.

"Mark, do you think Parry can become a strong advocate without doing this work Parry? If not, we should seriously start looking for one or more other individuals to work with. Even if we think we can eventually bring Parry around closer to where we need him, we should be currently looking for a second backup genotox supporter. We have not made much progress and are currently very vulnerable in this area. We have time to fix that but only if we make this a high priority now."

And what you're saying is that even if Parry's paper that prompted this e-mail came in and even if Parry's later conclusions changing his mind came in, this e-mail should not come in?

MR. KILARU: I think our view is that none of it should come in; but, yes, I think that would follow from that. If Your Honor is inclined to let in the study, Parry's study itself, we think that getting into the company conduct in between and around those is a sideshow and is irrelevant and raises 403 concerns because of how that story ultimately ends.

THE COURT: But assuming the paper comes in, and we can have further discussion about whether the initial paper should come in -- again, I'm having a hard time understanding how it couldn't -- but assuming it comes in, if Monsanto wants to counter with Parry changed his mind later after he examined the issue more closely, then I don't see how it would be appropriate for this e-mail not to come in.

MR. KILARU: Because I think --

THE COURT: I don't understand your theory of inadmissibility for this e-mail in response -- for an attempt to admit this e-mail in response to the point by Monsanto that Parry later changes his mind after looking at the issue more closely.

MR. KILARU: Yes. I think our first-line theory is that the results of the published studies that the experts think are relevant is what matters to the causation inquiry. I think going beyond that one could -- I think if the Parry paper were to come in, there would be a second principle that I think would encompass that, that in some way the Parry e-mail is still -- the Parry report is still an assessment of the science if nothing else.

But I think once we get past the scientific evidence regarding causation and we start focusing on what was said in certain e-mails, what was meant by certain e-mails, what people later said in response to those e-mails, we're getting into a

whole morass and a sideshow about what internal discussions were being had and we're not focusing on the science, and I think there is a real risk of the jury getting distracted from the ultimate question of what those studies actually show.

THE COURT: But why isn't the answer to that that it's Monsanto's choice? That either Monsanto -- the plaintiffs put in Parry's initial papers, which take the position that glyphosate is possibly genotoxic -- or whatever they say, I don't remember the exact words -- the plaintiffs put that in and they cross-examine Monsanto's experts about it, "Hey, Monsanto expert, you conclude that it's not genotoxic and there's no possible way it's genotoxic. Here's an internal -- here's a paper written by a Monsanto-paid scientist that concludes that it's possibly genotoxic. Can you explain, you know, why you didn't take this into account; or if you did, why it's wrong?"

And then the Monsanto expert can say, "Here's why I think it's wrong. Here's what I think Dr. Parry failed to consider at that time."

And then if Monsanto wants, it could also put in Dr. Parry's later conclusions or not. Up to Monsanto. But if Monsanto puts in Parry's later conclusions, then the plaintiffs, it would seem, would have the right to put in these e-mails, or at least this e-mail, to establish that Monsanto went to work on Parry.

MR. KILARU: I think what we are talking about now, Your Honor, is sort of a classic impeachment scenario on cross-examination of one of our experts based on comments that that expert makes, but I think that's different from viewing this as substantive evidence that could be admitted, for example, in the plaintiffs' case-in-chief before any position is taken by the experts on whether there's a genotoxic effect or not.

THE COURT: But as a practical matter, what's the difference? I mean, your expert is going to get up and testify presumably that it's not genotoxic.

MR. KILARU: Well, I think it would depend on what experts we called and at what point in the trial we called them. If, for example, we didn't decide to contest the -- I wouldn't say contest, but we didn't call an expert on the issue of genotoxicity and addressed it only on cross-examination, then this distinction would actually matter quite a bit. As to whether it can come in as substance in the plaintiffs case-in-chief is --

THE COURT: Well, I would agree with that. And then the question would probably be, you know: At what point does Monsanto open the door through cross-examination to allowing, you know, the Parry report to come in and potentially the e-mails about going to work on Parry to come in? And that would be a question that would need to be decided at trial I

would think.

But that's not what this discussion that you and I have been having so far has been about. All right? This discussion has been about Monsanto bringing in an expert to testify that glyphosate is not genotoxic; right?

MR. KILARU: If -- sorry. I apologize because I misunderstood the way in which we were talking about this. The way I've been focusing on this and what I've been thinking about is whether this comes in as substantive evidence as part of the plaintiffs' effort to prove causation in their case-in-chief, and that's why I've been taking the position throughout that we don't think all of this -- Parry's analysis, the back and forth, et cetera -- should come in because I take your point that it could be valid impeachment material of an expert who said "Glyphosate isn't genotoxic. I looked at those studies."

But I think that's very different from it coming in in their case-in-chief and having in the plaintiffs' presentation of evidence witnesses talk about internal company e-mails on an issue that really is at most an impeachment issue as to Monsanto's position.

THE COURT: Okay. I understand that. That may be right.

So your point is, yeah, if we bring in an expert that says it's not genotoxic, this has -- well, you don't say this has to

come in, but, you know, we're not going to argue as strenuously with you on whether this has to come in; but if we choose not to bring such an expert whose testimony by its nature would contradict the Parry papers, then the question would be -- then they shouldn't automatically be permitted to include it.

The question would be -- you know, at trial would be: Is Monsanto opening the door to allowing this in? Is Monsanto creating some impression that's contrary to? For example, if Monsanto were to create the impression during cross-examination that nobody has ever concluded, you know, or there's been no -- nobody's ever done a thorough analysis and concluded that it's possibly genotoxic, and you say, "Well, your own scientists didn't do a thorough analysis," then you probably would have opened the door to all of this coming in but that it wouldn't come in automatically.

MR. KILARU: That's fair, Your Honor. I think we might disagree about whether this was a thorough analysis at all. I think our position is that it wasn't in the first instance, but that is essentially the bottom line.

THE COURT: I have a feeling Monsanto would have viewed it as a thorough analysis if it would have come to a different conclusion but, anyway.

Okay. That's helpful on Parry. Since we're on Parry, do you want to respond to that?

MR. WISNER: Yeah. I don't want to spend too much

time since we have limited time this morning, but the first issue is it really just depends how far we go down this rabbit hole, at least how Monsanto wants to take it. They hold -- they're sort of holding --

THE COURT: Wait a minute. Before -- Let's dispense with that and just answer the question that we left off on --

MR. WISNER: Sure.

THE COURT: -- which is let's say that Monsanto -- let's say I agree with you that if Monsanto is going to put an expert on, then it goes the way I described -- right?

MR. WISNER: Sure.

THE COURT: -- which is these papers can come in and if Monsanto wants to bring in the later -- you know, Parry's new opinion later down the road, then the evidence of Monsanto's efforts to work him come in; right?

MR. WISNER: Sure.

THE COURT: Okay. But what if Monsanto doesn't put on a genotoxicity expert?

MR. WISNER: Okay. So in that context we have a couple of issues; right? The cross-examination, we'll have to see how that goes of our expert.

THE COURT: And, of course, they may open the door depending on how they cross-examine your expert.

MR. WISNER: And where that will open the door very quickly is because this is -- I was there at the trial, I saw

the cross-examination of Dr. Portier on this issue --

THE COURT: But in the *Johnson* trial did Monsanto put on a genotox expert of its own?

MR. WISNER: No.

THE COURT: They did not? Okay.

MR. WISNER: They were going to and then at the last minute they decided not.

THE COURT: Okay.

MR. WISNER: And so Dr -- you know, what the cross-examination of Dr. Portier was putting the EPA reports in front of him and saying, "EPA said it wasn't. EPA. EPA. EPA." And it was basically going through the EPA's 2016 assessment as a cross-examination. And so the EPA doesn't agree so they were bringing in an expert into the room without there actually being an expert, and that is the EPA.

We have a *motion in limine* about this issue. We can discuss it later. But assuming that's allowed to proceed, you know, one of the main issues is Monsanto never submitted this to the EPA, never submitted Dr. Parry's assessment or opinions. And actually we have an expert that will say that was in violation of federal law. They were actually obliged to do so.

THE COURT: I'm not sure you're going to be able to have an expert testify it's a violation of federal law.

MR. WISNER: Sure. And that's fine, and we might have to have a jury instruction that says "Here's what the law is.

You decide, ladies and gentlemen, if that was a violation by not submitting that"; right?

THE COURT: Or not.

MR. KILARU: We might have some issues with that one as well, Your Honor.

MR. WISNER: Fair enough. I'm going down this rabbit hole because it really depends what Monsanto does and I think you're right, Your Honor, that's the issue.

But I would point out one other thing. This is really important.

THE COURT: And it may be, I don't know that this is the case, but it's possible that -- it's Monsanto's choice; right? If Monsanto wants to cross-examine Dr. Portier on the EPA's conclusion about the genotoxicity of glyphosate in the way that you describe, that it is opening the door to this stuff coming in.

I'm not sure, but I think that's -- you know, Monsanto obviously perceives itself as receiving a significant benefit at trial from having this -- you know, from having causation go first, but you only can, quote/unquote, enjoy that benefit if you don't unfairly take advantage of it at trial; right?

MR. WISNER: Sure.

THE COURT: And so that would be a question.

MR. WISNER: So here's the other issue. I actually just finished taking I think it was a 12-hour deposition of

Monsanto. It was the first one of the company, and it was -- one of the issues was causation and the evidence about whether or not, you know, Roundup or glyphosate can cause NHL. And when I deposed their company representative, he testified repeatedly, and I wrote this down on a chart so I'm not just misquoting him here, "There is no evidence across the board." That's what he said.

And obviously the Parry report and all the case control studies, and I kind of went through a lot of that, was an impeachment of him because that's -- I think that's too extreme, and I have other e-mails with their own scientists saying "You can't say there's no evidence. You can't say that."

And so, you know, this goes directly to the credibility of Monsanto's -- you know, Monsanto, and that is their witness and we want to present testimony from the company about their view of causation; and if he takes this extreme position, then we have a right to say, "Well, what about Parry? What about McDuffie? What about De Roos? What about" -- and do all the studies that they have access to and say --

THE COURT: But on that one I think I would tend to agree with Monsanto that that is -- that is kind of getting us a little too far from what the evidence actually shows; right? And you've got your plaintiffs' experts and they've identified what they're relying on to form their opinion that glyphosate

causes NHL and caused Mr. -- more to the point caused Mr. Hardeman's NHL, and they've got their experts saying that it didn't. And, you know, some statement by a corporate representative that there's no evidence, I mean, that may -- that seems more relevant to Phase II, more relevant to, you know, the idea that the company is, at best, sticking its head in the sand to potential problems.

You know, that's my -- again, that's just my gut reaction to what you're saying. Probably would have opened the door to all of this coming in, but it wouldn't come in automatically.

MR. KILARU: Whether this was a thorough analysis, but that is essentially --

THE COURT: I have a feeling Monsanto would have viewed it as a thorough analysis.

MR. WISNER: That seems like a reasonable -- much more reasonable position, but that's not what they did in our deposition for this case, and --

THE COURT: Well, but their deposition is not their trial testimony; right? I mean, Monsanto may believe that there's no evidence that it causes NHL or they may not, but what their lawyers are going to say at trial is different from what their corporate representatives say in their deposition potentially; right?

MR. WISNER: Sure. Yeah.

THE COURT: Because the burden is on you and you have

to meet a burden.

MR. WISNER: That's right. And if they do that, it seems to me that that would be valid grounds to say that lawyer who's saying that is not saying what his own client says. So take what this person is saying -- I don't know, you seem like a nice guy, I'm not suggesting it's you -- but, you know, take that with a grain of salt because, you know, their own client is taking this extreme position on the science. I mean, it's not on --

THE COURT: That, I think, squarely, you know, is -- we're now in the sideshow territory.

MR. WISNER: Okay. That's fine, Your Honor. And there's -- that's the problem. We're going to have to go through the deposition, and we'll -- now that you've said that, I will cut that depo in a way that I think does fit within what the Court has said today so that's helpful.

But I just want to draw your attention to Exhibit 5 --

THE COURT: Okay.

MR. WISNER: -- because there's a part of this story that is getting lost in the shuffle.

THE COURT: This is still in the Parry documents?

MR. WISNER: That's right, Your Honor.

THE COURT: Okay.

MR. WISNER: And if you turn to Exhibit 5, so page 4 of the document, it's an e-mail exchange, and if you look at

the beginning part you'll see that it starts off in April 2017. It's from Dr. Farmer.

THE COURT: Okay.

MR. WISNER: And she's summarizing a meeting that they had. And if you go to that next page, Bullet Point 4, it says "Global Experts." Do you see that?

THE COURT: Okay.

MR. WISNER: If Your Honor could just read through those paragraphs, then I can --

THE COURT: What's the date of this document again?

MR. WISNER: This is April 17th, 1999. So it's after the first Parry report but before the second one.

THE COURT: Okay. And who's writing this?

MR. WISNER: Dr. Donna Farmer. She's a Monsanto toxicologist.

THE COURT: Are you sure? It says "Donna" -- above Number 4 it says "Donna will arrange for further meetings."

MR. WISNER: Yeah.

THE COURT: So she's referring to herself --

MR. KILARU: They're meeting minutes.

THE COURT: -- in the third person.

MR. WISNER: They're meeting minutes but she authored the e-mail.

THE COURT: Okay. I see.

(Pause in proceedings.)

THE COURT: Okay.

MR. WISNER: And the part I want to bring to your attention is this part about Dr. Williams at the bottom.

THE COURT: Again, on the assumption that Monsanto doesn't bring in its own -- bring in its own genotox expert, and on the assumption that Monsanto doesn't otherwise open the door to Dr. Parry's stuff during Cross-Examination, why would -- why should Dr. Portier be able to include that as part of his affirmative presentation?

MR. WISNER: Because he reviewed it. He does conclude that there is strong evidence it is genotoxic, and he relies on many studies that he says agree with that, published studies by other experts, independent, some of them Monsanto. So this is one of the panoply of things that support his opinion, and I think that a Monsanto scientist looked at this and concluded this makes it more likely that Dr. Portier is right. It is probative of the credibility to be given to his opinion.

THE COURT: And so is that -- are these papers disclosed in Dr. Portier's reports or report as things that he relied upon?

MR. WISNER: I believe it is disclosed in the reliance material. I don't know if it is this specific one or *Johnson*. They have had it. There was actually a 403 hearing in state court where we went into this stuff. So they have actually had a chance to examine him about it as well and cross-examine him

under oath in front of a jury.

THE COURT: It is not an issue about having a chance to cross-examine him. It is an issue about whether it is part of his opinion; and if so whether even if it is -- even if it is something that he considered in forming his opinion, whether it should be excluded under 403.

MR. WISNER: I understand. I just want to clarify because I don't want to misrepresent anything, Your Honor. He doesn't discuss it in the text of his report. He does list it in his reliance material. I don't want to make it seem like he has a discussion about Parry at length.

THE COURT: What were you going to say?

MR. KILARU: That's the point I was going to raise.

THE COURT: And then on the AHS materials -- the AHS study, same concept. I mean, we know that you are, in fact -- well, I assume you are going to -- regardless of what you do on genotox, you are going to epidemiologists Who testify that Mr. Hardeman's NHL did not come from glyphosate. Perhaps part of that is inevitably going to be whether glyphosate is capable of causing NHL; and, of course, your best piece of evidence, your experts' best piece of evidence is the AHS study. S stands for study. So when I say AHS study --

MR. KILARU: Yeah, I'm trying to start omitting the word study.

THE COURT: I can't get out of the habit of saying it.

Anyway, that's their best piece of evidence. They are gong to talk about it. There is this internal Monsanto document that identifies the problems with the way the AHS study is being conducted. Since you are presumably bringing in an expert on that, how can they not be impeached?

MR. KILARU: Your Honor, on that one I think it sort of goes back to the earlier discussion. I think our topline position is very much that if experts are viewing it as relevant, it should come in. Beyond that, I think the impeachment point is fair game; and that is something that we can address as the trial goes on.

THE COURT: Okay. Anything you want to add on that?

MR. WISNER: No. I think that makes sense. We intend to obviously play the testimony where Monsanto's corporate rep says, I agree with these criticisms.

THE COURT: How could an expert not be impeached? How can you not be allowed to cross-examine one of their experts on that?

MR. WISNER: That's our position, Your Honor.

THE COURT: Okay. And then is there anything else you want to say about the tumor discovery issue?

THE COURT: But I guess the question I have for you right now is: We have this meeting to discuss six topics --

MR. WISNER: Sure.

THE COURT: -- six exhibits and, you know, you're raising a different question to me now, which is Dr. Williams' allegedly ghost-written paper that apparently some experts listed as one of the documents they relied on; right?

MR. WISNER: No. Fair enough, Your Honor. And I get that I'm far afield here, and I bring this to your attention simply because we're here and I think your opinions and where we stand actually --

THE COURT: So that should be the subject of a *motion in limine* presumably; right?

MR. WISNER: I believe it is one actually. They filed a thing to exclude all ghostwriting, and I think it falls under that.

The reason I bring it up now, Your Honor, is I'm just trying to point out, and this is something that we've been saying for a while, there's a lot of interrelatedness of this evidence.

THE COURT: And what I've been saying for a while is that sometimes it's going to be hard to decide whether something falls into Phase I or Phase II but we're going to do the work and we're going to figure it out.

MR. WISNER: Okay. That's all I had to say, Your Honor. I appreciate the time.

THE COURT: So why don't we turn to Monsanto -- go ahead.

MR. WISNER: I'm sorry. One last point. Dr. Portier has reviewed these Parry reports and he's offered testimony about them before so it's not -- this idea that our experts have nothing to do with this just is not true. At the *Johnson* trial we specifically showed it to him. He went through it. He described what it said to the jury. And then we go through all the studies that they say that he asked Monsanto to do, and we asked him --

THE COURT: This is not a peer-reviewed published paper; right?

MR. WISNER: That's correct.

THE COURT: Is it even published at all?

MR. WISNER: No.

THE COURT: Okay. So, again, on the assumption that Monsanto doesn't bring in its own genotox expert and on the assumption that Monsanto doesn't otherwise open the door to Dr. Parry's stuff during cross-examination, why should Dr. Portier be able to include that as part of his affirmative presentation?

MR. WISNER: Because he reviewed it. I mean, he does conclude that there's strong evidence that it's genotoxic and he relies on many studies that he says agree with him, published studies by other experts independent, some within Monsanto. And so this is one of the panoply of things that support his opinion, and I think that a Monsanto scientist

looked at this and concluded this makes it more likely that Dr. Portier is right; right? It's probative of the credibility to be given to his opinion.

THE COURT: And where -- and so is that -- are these papers disclosed in Dr. Portier's reports or report as things that he relied upon?

MR. WISNER: I believe it's disclosed in the reliance material. I don't know if it's this specific one or the one in *Johnson*, but they've had it. There was actually a 403 hearing in state court where we went into this stuff so they've actually had a chance to examine him about it as well and cross-examine him under oath in front of a jury.

THE COURT: You know, it's not an issue about having a chance to cross-examine him. It's an issue about whether it's part of his opinion --

MR. WISNER: Your Honor --

THE COURT: -- and if so, whether it's appropriate -- even if it is something he considered in forming his opinion, whether it should be excluded under 403.

MR. WISNER: Yeah, I understand. And I just want to clarify because I don't want to misrepresent anything, Your Honor. He doesn't discuss it in the text of his report. He does list it in his reliance material. I don't want to make it seem like he has a discussion about the Parry at length.

THE COURT: What were you going to say?

MR. KILARU: That was the point I was going to make.

THE COURT: Okay.

And then on the AHS materials or the AHS study, same concept, I mean, we know that you are, in fact -- well, I assume you are going to -- regardless of what you do on genotox, you are going to call epidemiologists who testify that Mr. Hardeman's NHL did not come from glyphosate, and perhaps part of that is inevitably going to be whether -- I think is inevitably going to be whether glyphosate is capable of causing NHL.

And, of course, your best piece of evidence, your expert's best piece of evidence, is the AHS study. I realize "S" stands for "study" so when you say "AHS study," it sounds a little stupid.

MR. KILARU: We're trying to start omitting the word "study" for that reason.

THE COURT: I can't get out of the habit of saying that.

So, anyway, that's their best piece of evidence. They're going to talk about it. There is this internal Monsanto document that identifies the problems with the way the AHS study is being conducted; and since you are presumably going to bring in an expert on that, how can they not be impeached with that?

MR. KILARU: Your Honor, on that one I think it sort

of goes back to the earlier discussion. I think our top-line position is very much that if experts aren't viewing this as relevant, it shouldn't come in. But beyond that, I think the impeachment point is sort of fair game, and that's something we think we can address as the trial goes on.

THE COURT: Okay. Anything you want to add on that?

MR. WISNER: No. I think that makes sense. I mean, we intend to obviously play the testimony where Monsanto's corporate rep says, "I agree with these criticisms." So I think that --

THE COURT: How can an expert -- how could an expert not be impeached? How could you not be allowed to cross-examine one of their experts on that?

MR. WISNER: That's our position, Your Honor.

THE COURT: Okay. Is there anything else you want to say about the tumor discovery issue?

MR. KILARU: Yes, actually, as you might have predicted.

So on this one I think there's parts of this analysis that we agree are admissible, and I think both experts have talked -- experts on both sides have discussed, and parts that are not in part based on some -- in fact some of the motions that have been filed, which I know we're not going to argue about today but I wanted to preview this.

So certainly the fact that there was an initial assessment

of the tumors in the study that revealed I think it was 0013 in terms of dose response, is that science, we think that can come in.

And we also think that the later review of that should also come in, that as a general -- that a future scientist looked at those results and found that, in fact, there was a tumor in the control group.

I think our concern, and maybe this goes to -- maybe it will be an impeachment issue, maybe it will be something else, but I think our concern is with everything that's kind of in the middle of those two things because I think the plaintiffs' position, as I understand it, the piece of evidence that they singled out for inclusion is actually correspondence --

THE COURT: Right.

MR. KILARU: -- between Monsanto and the EPA in the back and forth over this tumor. And so just as a first-order position, Your Honor, I'd note that if the position that the plaintiffs seem to be taking --

THE COURT: Hold on.

MR. KILARU: Sure.

THE COURT: I just want to make sure I have the right document.

MR. KILARU: Yes. It's Exhibit 9 to their filing.

THE COURT: It's singled out. I mean, when we asked them to identify their top three documents, you know, one for

each issue, the one that they identified for this issue was this memo, it looks like it's to T.F. Armstrong.

MR. KILARU: Yes.

THE COURT: That's it? That's the one?

MR. KILARU: I believe that's it.

THE COURT: All right. Dated -- or regarding a February 21st, 1985, meeting.

MR. KILARU: Yes.

THE COURT: Okay.

MR. KILARU: With the EPA.

THE COURT: All right.

MR. KILARU: And so I'd just note that at the very top line --

THE COURT: So this is an internal --

MR. KILARU: Internal e-mail discussing a meeting with the EPA --

THE COURT: Okay.

MR. KILARU: -- about the back and forth over this study.

THE COURT: Okay.

MR. KILARU: I think if I understand the *motions in limine* correctly, plaintiffs' position is that EPA's approvals of glyphosate should not be admitted in Phase I of trial, and so --

THE COURT: Okay.

MR. KILARU: -- if that is the case -- and our view actually is that both IARC and the EPA, as I think you may know if you looked at the motion -- I think you may not have --

THE COURT: I have not.

MR. KILARU: That's fair.

Our position is that in that motion neither IARC nor the regulators should come in in Phase I because the focus should be on science as opposed to a credibility contest about what other people think about the science.

But certainly if the position is that the EPA is inadmissible in Phase I, then our view would be it can't be the case that internal e-mails about discussions with the EPA as to the study can come in. I mean, that would certainly present an extremely complete picture to the jury of the overall story with respect to the EPA and as to what should come in or not. So that's our concern with the document that's actually been identified for inclusion here.

THE COURT: Okay.

MR. KILARU: I think our position would be that the initial study and a later review of that study are certainly fair game as a scientific standpoint. I'd note that both Dr. Portier and his analysis calls the 1013 the EPA position. So I think to some degree that's in the report. In fact, that there was one position once and one position later.

But I think everything in the middle of that -- and to be

fair we actually think the EPA story is beneficial to us in the main. As Your Honor knows, I think we've talked about regulatory approval. But I think our concern is with getting into the back and forth in between those studies, in between Monsanto and the EPA, that does put us in this sideshow and I think it particularly puts us in a misleading presentation of evidence if the bottom lines of that aren't going to come in as well.

THE COURT: Well, let's put aside the EPA issue for a second --

MR. KILARU: Sure.

THE COURT: -- and talk about the larger issue that's teed up by the tumor-or-no-tumor debate.

MR. KILARU: Right.

THE COURT: What -- I mean, is it really your position that what the jury should hear is that initially there was no tumor found in the control group and then five years later, or however long it was, a tumor was identified in the control group, which rendered the study statistically insignificant, and the jury should not learn the story about how it came about that some people concluded or people concluded that there was a tumor in the control group?

MR. KILARU: I guess it depends on how far that goes. I mean, certainly the fact that there was a tumor in the original -- there wasn't in the original and that Monsanto

commissioned a review of the studies and that upon review of that studies -- upon review of the slides, excuse me, a later tumor was found, none of that I think we'd object to. I don't think we'd take out the middleman of us being the ones that commissioned the study.

I guess my concern is sort of all the broader back and forths with the EPA and internal documents about how to make that process work. That, to me, is very much a Phase II issue and not -- at all not a Phase I issue.

THE COURT: Can I ask you about -- I understand what you're saying. Could I ask you to remind me about -- there was a discovery dispute about the slides during Phase I, and my admittedly hazy memory of it was that the plaintiffs were, like, "We need these slides to prove that there was actually no tumor," and they got the slides. I ruled in their favor on the discovery dispute, and the plaintiffs never came back and said, "Look, see, there's no tumor."

MR. KILARU: I'm looking to my colleague, Mr. Lasker.

MR. WISNER: I can fill in the background on that.

THE COURT: I want to hear from Monsanto on that first. So go ahead, Mr. Lasker.

MR. LASKER: You are recalling correctly, and I do think it's fair to let plaintiffs' counsel respond as to why they did not say anything further because I don't think they ever officially actually told us why. They just never came

back.

MR. WISNER: I'll just be frank, Your Honor. Can I respond on that issue?

We had a guy take a look at all the slides. We got all the slides for all the kidneys and all the mice, and every single slide was reviewable except for that one slide. It was corrupted so we couldn't actually look at it.

THE COURT: And that's based on do you have an expert report that says that it was corrupt?

MR. WISNER: No, we didn't present a report because we didn't have -- he couldn't see anything. It was unreviewable, but I'll just -- that's the background as to what happened and so that's why that sort of died is because we got the slide and we couldn't see anything. I mean, the slide itself was damaged and couldn't be reviewed. And that may have been because it was reviewed so many times by people back in the '80s. I don't know.

THE COURT: Okay. So what -- I understand your point about EPA and there's going to be -- my gut is that the EPA and the IARC are admissible in Phase I, and obviously I will look at it much more closely, but my sense is they're admissible but, again, we're going to have to do some line drawing to make sure that they are not too big a part --

MR. WISNER: Sure.

THE COURT: -- of the Phase I proceeding.

You know, I guess, again, sort of tentatively on a gut level I sympathize with your position that for, you know, the missing tumor issue to turn into a, you know, big fight about the degree to which the EPA was unduly influenced to reach its conclusions or whatever, I agree with you that that should not -- you know, that the tumor issue should not devolve into that.

MR. KILARU: That's why I raised it.

THE COURT: So let me ask you. I mean, what Mr. -- is it Mr. Kilaru? Is that how you pronounce it?

MR. KILARU: Yes.

THE COURT: What Mr. Kilaru said is that: Okay. There was no tumor found. Later there was a tumor found. It was Monsanto who commissioned the study to find the tumor.

MR. WISNER: Sure.

THE COURT: He didn't quite say it that way but, you know, that that comes in. That's part of Phase I.

Is there anything else that you think is important to be part of Phase I with respect to sort of the decision to commission the study and how it came about that somebody discovered the tumor in the slide?

MR. WISNER: I think that's right. And the reason why we picked the document in front of you is because the EPA classified it at that point tentatively as a Class C oncogene, that it promotes tumors. And that was a consensus statement by

I think eight or nine scientists within the EPA, and then they have this meeting and they discussed it.

And the reason why this meeting is so interesting, is if you look on page 5 -- do you have the exhibit in front of you, Your Honor?

THE COURT: Yes.

MR. WISNER: -- second-to-last page of the document there's the discussion of the various people talking.

THE COURT: Page 4 of 5?

MR. WISNER: That's right.

THE COURT: Okay.

MR. WISNER: And then there's a paragraph that says "FJ asked 'Short,'" do you see that?

THE COURT: Yes.

MR. WISNER: Okay. This is before they reviewed the slides or anything, and he asks the EPA (reading):

> "Short of a new study or finding tumors in the control groups, what can we do to get this thing off of Group C?"

THE COURT: Uh-huh.

MR. WISNER: Right? And then we have the next document where they commission a study by Dr. Marvin Kushner and we have the e-mail -- it's actually the next exhibit, Your Honor -- where they talk about, you know, hiring Dr. Kushner and they state before he's ever received the slides

that he's going to help them convince the EPA is wrong; right?

MR. KILARU: That's not entirely an accurate characterization.

MR. WISNER: I mean, fair enough.

THE COURT: But let me -- so I don't know if Mr. Kilaru would agree with this --

MR. WISNER: Sure.

THE COURT: -- but what if we said that, you know, you get in the fact that, you know, no tumor was found in the control group initially. Monsanto, you know -- Monsanto initiated a study to look for a tumor in the control group and, sure enough, Monsanto -- the study found a tumor in the control group. I mean, if that -- if the jury could learn that through a stipulation or some other document, why would this document about influencing the EPA need to come in in Phase I?

MR. WISNER: Because it goes to the credibility of Dr. Kushner's finding that the Monsanto scientist says "Short of finding a new tumor in the control group, what are we going to do?" He actually says that. Then they hire somebody, and if you look at the exhibit, I mean, it says what it says. I'm not trying to paraphrase it or spin it or anything, but they say they're going to hire him to look at it.

But it says specifically in an effort to persuade the agency that --

THE COURT: What e-mail are you looking at?

MR. WISNER: This is the next exhibit. This is Exhibit 10, Your Honor.

THE COURT: Okay. Let me grab that.

MR. WISNER: It's just the first page.

THE COURT: Okay. Sorry. Hold on one second.

MR. WISNER: Sure.

(Pause in proceedings.)

THE COURT: Exhibit 10 you said?

MR. WISNER: That's right.

(Pause in proceedings.)

MR. WISNER: And you can see it's dated April 3rd, 1985.

THE COURT: Okay.

MR. WISNER: And it's the second paragraph in the thing is basically what we're talking about, and it concludes "... in an effort to persuade the agency that the observed tumors are not related to glyphosate." Right?

And then if you look at the next page on this exhibit -- oh, I'm sorry. I guess it's not on this exhibit. Oh, it's Exhibit 12 you actually see that they sent it to him on April 3rd, Dr. Kushner.

THE COURT: Okay.

MR. WISNER: And if you look at the last page on that, you can see he signed for it on April 14th.

THE COURT: Okay.

MR. WISNER: So, you know, we have him speculating about finding a tumor, the scientist. We have them saying he's going to help persuade it and Dr. Kushner hasn't seen the slides yet, then he does and finds a tumor that no one else has seen notwithstanding the consensus by the EPA.

And that leads to whole things that have happened. There's a resectioning of all the tumor slides. The EPA pathologists review everything. The EPA's pathologists conclude there's no tumor there after looking at all the slides. Then they commission a Pathologist Working Group that does conclude there's probably a tumor but it's kind of unclear, and then they submit it to the Scientific Advisory Panel, which then kind of has a meeting about it.

And we see the e-mails in the memos of Monsanto anticipating what they're going to do, and they specifically refer to it as a sort of counting votes sort of thing.

THE COURT: Well, reading between the lines of these documents, it seems like Monsanto had a theory going into this that there was a tumor in the control group. What does the evidence say about sort of what examination Monsanto had conducted prior to this, prior to this EPA meeting for example, about whether there was possibly a tumor in the control group?

Or another way to put the question is: Was there already -- had uncertainty already developed about whether there was another tumor in the control group by this time?

MR. WISNER: No. In the submission to the EPA it said zero.

MR. KILARU: I believe the answer to that, Your Honor, is that the study was done. I think folks were surprised at the results given the in-going belief about the carcinogenicity; and then after the EPA reached its initial conclusion, the slides were sent out to another expert to take a look at them and see what he found and this is what he found.

I'd note just for purposes of the record that in Exhibit 12 where the documents are actually sent to Dr. Kushner, there's none of this sort of conspiracy theory about why he was hired to do the review. It's just the slides that are sent to him.

THE COURT: It's not a theory. I mean, he was hired to do the review in an effort to convince the EPA that there was not an issue.

MR. KILARU: I think he was hired to do the review and then there was a question of whether the review would support the effort to push back on what the EPA found.

THE COURT: But it says -- but the letter says --

MR. KILARU: The internal letter, yes. I mean, certainly I think Monsanto's thinking going into this was that he might find something that would rebut this conclusion that it wasn't scientifically sound, but I don't think they told him "Hey, go find a tumor" is the point I'm making.

THE COURT: But, again, I mean, to the extent that this study is relevant to whether glyphosate causes tumors in animals -- I mean, let's take a step back and, like, use our common sense and think about this from a juror's standpoint; right?

MR. KILARU: Yeah. Sure.

THE COURT: So I'm a juror and you tell me that there is this study where it was initially concluded that there was a link between glyphosate and tumors in lab animals. What is it? Mice? Male mice?

MR. KILARU: Mice.

THE COURT: And then Monsanto did not like that conclusion and so it commissioned another study to have another scientist look at it and that scientist concluded that there was not a link, that glyphosate does not cause tumors in male mice, and that was a product of Monsanto desperately trying to sort of turn things around with the EPA; and all you want the jury to learn is that there was one study and then there was a later study.

MR. KILARU: But just to be clear on it, that's not what I said earlier. Because that's not -- I understand the concerns that you have. I mean, what I said earlier I believe was there was a study. Monsanto commissioned a review, or whatever word you would use. They did another review.

THE COURT: They didn't like the conclusion.

MR. KILARU: I might not use those words, but then there was another review that came out of that and that's what that result came. I don't believe I was quarreling with any of that coming in.

I guess my concern is with where else that story goes in terms of all of these other documents and what's revealed in terms of the back and forth with EPA, especially if -- and maybe this won't be the case based on what you said -- but especially if the EPA's repeated reaffirmation that that tumor exists and repeated approvals of glyphosate isn't going to be a part of the first phase.

So that's where I'm coming from. It's not just the sort of one-study-second-study.

THE COURT: Well, I mean, maybe the answer -- again, this is just me thinking out loud, but maybe the answer is that it's sort of obvious why Monsanto didn't like the conclusion and sort of obvious why they commissioned another study, and it seems like it might even be appropriate to figure out a way to establish that there were regulatory consequences to the results of the first -- or to the first analysis that Monsanto needed to fight against but without getting into all of the nitty-gritty before Phase II. I think that makes the most sense.

I'm not sure exactly mechanically how to do that, but I think, again, there was a study. Monsanto didn't like it. The

reason Monsanto didn't like it is because of the potential regulatory consequences. So Monsanto commissioned another study and, sure enough, that came out good for Monsanto.

MR. WISNER: And then there's the second half of the story.

THE COURT: Let me ask you.

MR. WISNER: Sure.

THE COURT: For Phase I, what's wrong with -- as long as that can be established for the jury -- for a juror who's trying to assess the reliability of the scientific evidence, what's wrong with that, just limiting it to that?

MR. WISNER: That, so far is great.

THE COURT: Okay.

MR. WISNER: I mean, that's essentially what we want to do. We like the documents where the guy's --

THE COURT: I'm sure you do.

MR. WISNER: -- predicting a tumor. We like the documents where they say "This guy is going to help us fight it" because I think it helps lend credibility to our position that there was something fishy there. Okay?

THE COURT: Uh-huh.

MR. WISNER: But, I mean, maybe that's more Phase II than Phase I. That's fine.

THE COURT: Well, I mean, but it -- and I understand your point about that, and I think it would be important in

Phase I to figure out a way to allow you to establish kind of how significant -- you know, how significant this was for Monsanto, and I don't know quite how to do that but I think there's probably a way to do it without getting into these documents.

MR. WISNER: Okay.

THE COURT: If there's not, you know, then maybe the documents come in, but I think there's probably a practical, commonsense way that that picture can be painted for the jury without getting into the nitty-gritty of the documents.

MR. WISNER: Okay, Your Honor.

And then there's a second part of it, which I think is not the document in front of you, which is one of the reasons why we put it in the letter and I understand you said, "Hey, give me three documents," but it's what happens later; right?

So basically the EPA says, "Listen, you need an SAP," and they go, "Listen, we can't conclude that it's not oncogenic based on this study. We want you to review the mouse study." And they outline specifically how they want the study done in pretty good detail.

And Monsanto has an internal document talking about ways to respond to it, and one of those options is refuse to do the mouse study. It says "vehemently" refuse to do the mouse study and do the rat study again.

And so they ultimately, through a bunch of EPA

interactions -- and I don't want to get into too much detail on it -- they ultimately never end up doing another mouse study. Okay? That's notwithstanding the EPA asking for it.

Subsequent to Monsanto, and that was in 1991, four different registrants have redone mouse studies. Okay? So other companies who want to get their glyphosate herbicides approved, and that's part of the database that all the experts have looked at. It's not anything controversial.

In every single study after Monsanto's they found significant levels --

THE COURT: Is that the room in Brussels? Is that the --

MR. WISNER: Yes, Your Honor.

THE COURT: That's sitting in the room in Brussels or wherever it was?

MR. WISNER: Yes. It's the Magic Reading Room is what we call it on the plaintiffs' side. Obviously we won't use "magic" in front of the jury, but it's our joke inside.

And all four of those studies, those mouse studies that were done -- and Dr. Portier has clearly discussed this in his report, this is not undisclosed -- showed elevated rates of lymphoma. Lymphoma, not just kidney tumors but lymphoma.

And one of our arguments, and this may be more Phase II than Phase I, but one of the arguments that they make at the general causation phase is, "You know, they haven't

presented enough evidence to show you that it causes it. It's insufficient evidence. Insufficient evidence."

And one of our arguments is, "Well, you can't really hide behind that because you refused to study it; and when other people did, they found lymphoma. So take what this company is saying with a grain of salt when it comes to causation."

And so I just want to give you that background.

THE COURT: Yeah, but I think as you said, that sounds like it falls much more squarely in Phase II than in Phase I.

MR. WISNER: That they refused to do it and that other registrants found it, but the refusing to do it I think is a Phase II issue; but that other studies found lymphoma, obviously that's just the hard science.

THE COURT: Well, that was part of Dr. Portier's opinion.

MR. WISNER: Exactly.

THE COURT: I'm sure you wouldn't disagree with that.

MR. KILARU: No. I think he can talk about the studies.

MR. WISNER: Yeah.

So I just wanted to give you the context of it. This is why we think, you know, again we're going to have to parse it and probably retell the story in different phases; right? One more clinically and then the second time with more, you know, of our pizzazz, so to speak.

So, anyway, that's our position, Your Honor, and thank you.

THE COURT: Okay. So is there anything else anybody has a burning desire to discuss regarding -- I mean, I sort of feel like the concepts we just discussed apply to Weisenburger -- no, not Weisenburger -- the McDuffie issue that Monsanto teed up, but I just want to make sure that there's nothing more to discuss there.

MR. KILARU: I think more or less, Your Honor. I believe we actually had only teed up an e-mail and, as to that, I think there's actually consensus that it shouldn't come in; and I think beyond that, I think we can, as you said, apply the principles we've been discussing to whatever else may have been raised.

THE COURT: Anything else you want to add on the --

MR. WISNER: No, Your Honor.

THE COURT: So should I -- it sounds like on the three issues that Monsanto teed up -- or the three documents that Monsanto teed up, there is agreement that those documents are not admissible at Phase I.

MR. WISNER: With the exception of -- obviously provided unopened doors and what have you.

THE COURT: Of course.

MR. WISNER: Actually, the third document we disagree with them on --

THE COURT: Oh, you did? All right.

MR. WISNER: -- and that's an e-mail from Bill Heydens.

THE COURT: Let me go back to that e-mail.

(Pause in proceedings.)

THE COURT: What exhibit is that?

MR. KILARU: It's Exhibit 3 to our filing, Your Honor.

THE COURT: Okay.

(Pause in proceedings.)

THE COURT: Oh, yeah. Okay.

(Pause in proceedings.)

THE COURT: Now, actually Roberts is sending this e-mail asking "Do we need to give any consideration to exposures of formulants in the commercial product, at least in applicators?" When she says "we," who is she talking about? There's this Intertek panel?

MR. WISNER: That's correct.

MR. KILARU: Yes.

THE COURT: Remind me about what the Intertek panel is.

MR. WISNER: I'll be as factual as I can. Correct me if I'm wrong. It was a group of scientists that were hired, who hired them is a disputed issue, that looked at the sort of weight of evidence in the different areas of epi, animal tox, exposure, genotox, all those issues, and published a bunch of

papers in a journal that came out in 2016; and it was in direct response, and I think this is agreed, in response to the IARC monograph.

MR. KILARU: It's essentially a secondary review of the literature and the studies, Your Honor. I think that's fair.

Right?

MR. WISNER: That's correct. It involves a bunch of scientists that we are very familiar with in the history of glyphosate. For example, Dr. Williams; Dr. Kier, a former Monsanto employee. Dr. Acquavella also was involved in that process.

And we have made a bunch of allegations related to that panel that I don't want to stir up the pot here; but, in any event, this is an e-mail discussion with Bill Heydens about a specific study and that's the George study from 2009. And it was an initiation promotion study done with formulated Roundup, one of the few rodent studies actually looking at the formulated product. And Dr. Portier discusses it in his report.

And basically what they did is they applied Roundup to mice and then had a control -- a bunch of different control groups and different things. And when they give an initiator -- so something that initiates a tumor; right? -- and then applied Roundup, 40 percent of the mice had tumors in

their skin; whereas, if you just gave the mice just an initiator and did not apply Roundup to them, none of them had tumors in their skin.

And so it's called an initiation promotion study, and the authors concluded that Roundup was a promotor, a tumor promotor. So that was sort of context.

And that's relevant to Dr. Portier's analysis simply because he believes that the evidence suggests that the formulated product is significantly more carcinogenic or potent as a carcinogen than just the technical glyphosate, which is what all the other rodent studies did with the exception of Seralini.

THE COURT: Okay. Hold on one second. Let me go back to your letter.

MR. WISNER: I'm sorry. The last piece of background, the Intertek manuscripts that were published were all relied upon by Monsanto's experts and it was also submitted to the EPA as part of its recent 2016 publication or report as well as the '17 report. So that's, I think, a fairly accurate description.

MR. KILARU: Yeah, more or less.

MR. WISNER: Okay.

(Pause in proceedings.)

THE COURT: So what is your theory of admissibility in Phase I for this e-mail?

MR. WISNER: Well, so they challenge Dr. Portier and

say, "Sir, you know, this study was limited because of all these problems." And, you know, we want to be able to say, "Well, yeah, but even Monsanto's own toxicologist admits the formulated product played a role in why you're seeing tumors in mice." And that bolsters our expert and our theory that formulated Roundup is more carcinogenic than just regular glyphosate.

THE COURT: But, I don't know, I guess I wonder if that's a fair interpretation of -- is it Heydens?

MR. KILARU: Yeah, Heydens, Your Honor.

MR. WISNER: Heydens.

THE COURT: -- Heydens' response. He says, "The surfactant in the formulation will come up in the Tumor Promotion Skin Study because we think it played a role there." I mean, I don't know how to interpret that. I mean, I'm not -- I don't -- it doesn't seem to me -- it doesn't jump out from those words that what he is saying is that the formulation plays a role in causing cancer.

MR. WISNER: Fair enough. And that's not what I'm suggesting he's saying.

THE COURT: Okay. I don't understand.

MR. KILARU: That is what the brief said just for what it's worth.

THE COURT: I mean, yeah, that's what I thought the brief said.

MR. WISNER: Well, I think what we're talking about is specifically related to -- well, there's a couple ways this comes in; right? One is the Intertek manuscript. It's relied upon by all these scientists. And one of the issues, and this is going to come up very quickly in Phase I, is that the EPA doesn't actually issue an opinion about Roundup. It issues an opinion about glyphosate, and it specifies in its report "We're talking about glyphosate. We're not talking about the formulated product. That's a different question."

And the Intertek manuscript that gets published ultimately takes a similar view. It doesn't really discuss the George study.

THE COURT: Okay.

MR. WISNER: And this has relevance for two reasons. One, Monsanto has argued that the Intertek manuscript was independent, that it wasn't controlled by any Monsanto employee. So this shows that Bill Heydens was dictating how -- what they're going to look at and what they were not going to talk about, and I think that that reflects --

THE COURT: I don't know whether it shows that or not.

MR. WISNER: Well, we have about 50 other documents that get into that, and that's an issue we do not have to have a fight about, whether or not that's true or not, right now, but I think it's relevant to that.

And I think it's also relevant because it lends support to

our position that the surfactant plays a role in making a product more likely to induce tumors.

THE COURT: But, I mean, you're going to be able to attempt to establish that by bringing in the George study presumably and having your experts testify about the George study --

MR. WISNER: That's right.

THE COURT: -- and having your experts testify about how this Intertek study was only focused on glyphosate without the surfactants. It wasn't focused on Roundup, and there's a meaningful difference there, and they're going to say there's no meaningful difference.

And I don't understand where this e-mail -- I mean, they're not going to deny, I gather, that the Intertek study was only about glyphosate and not about Roundup. And so I'm not sure I understand where this e-mail gets you as it relates to Phase I.

MR. WISNER: Well, it gets you two places. One, they are going to say that studying glyphosate is fine. You don't need to look at the surfactant because it's fine. It's safe. It's a soap is what they call it. And, therefore, just looking at the glyphosate only gets you there, and that solves your answer. And we don't think that's accurate or true.

THE COURT: Okay.

MR. WISNER: The e-mail supports that when you look at

the formulated product, they believe the surfactant is playing some sort of role, and that --

THE COURT: I interpret him as saying "We think it" -- I don't know, but I interpreted it as him saying "We think it played a role in George's conclusions."

MR. WISNER: That's right, which is one of the rat studies peer reviewed that says it promotes tumors, and that's our point. And that they're ignoring -- they're basically saying, "Yeah, and that study, you know" --

THE COURT: I don't think they're saying George is right. I think they're saying it played a role in his conclusions.

MR. WISNER: Absolutely, but it refutes the argument that they make, a scientific principle, that there's no difference between studying glyphosate and Roundup, that you don't need to.

THE COURT: I don't think he's -- I don't interpret Heydens as saying "I believe that it makes a difference." I interpret this as him saying "This affected George's -- this is George's perspective."

MR. WISNER: Yeah, that it played a role in that study, which was positive.

THE COURT: Yeah.

MR. WISNER: And I think that's our point. They're saying that it makes no difference when you study it. In fact,

when I took Monsanto's deposition last week, they said repeatedly "There's no scientific basis to study Roundup. Glyphosate is fine." Repeatedly said that. And I think that this refutes that there is a difference, and he's even acknowledging that it played a role in that difference.

THE COURT: Well, I don't think he's -- I don't take it as him acknowledging as a factual matter what the truth is. I think he's acknowledging the role that it played in George's analysis or --

MR. WISNER: Sure.

THE COURT: Anyway, what's your response to this?

MR. KILARU: Largely, that Your Honor. I think what he said is not what the plaintiffs have said and represented him as saying. I think if you look at their brief, they claim that this statement is Mr. Heydens saying that the cancer-related effects of Roundup in the study are related to one of the product's components, and I don't think that's the only or even necessarily the best reading of what Dr. Heydens said. And so getting into this debate about what he meant when he said it, does seem to me to be --

THE COURT: A 403 issue.

MR. KILARU: -- 403.

The other thing I notice is if you read the e-mail chain through to the end, one of the other arguments that the plaintiffs made in the brief is that Monsanto directed Intertek

not to consider the George study.

And we didn't include this, I apologize, because it was an attachment to this e-mail, but in an attachment to this e-mail, if you look all the way at the very first page, is Donna Farmer sending a list of studies for the Animal Bioassay Group and George is on that list.

MR. WISNER: Your Honor, listen --

MR. KILARU: But --

MR. WISNER: -- whenever he starts interpreting a document, I feel like we're kind of in a dangerous area; right? I mean, that's --

THE COURT: You just made a strong argument against bringing this e-mail in, didn't you?

MR. WISNER: Well, and that's what I'm trying to say is I think isn't that the whole point of a trial, Your Honor? And, listen, they can get up there and say, "But it's crazy."

THE COURT: We're not saying it's irrelevant. We're saying it's not for Phase I, that under 403 it's a sideshow for phase run.

MR. WISNER: Sure. I mean --

THE COURT: The emphasis should be on the science.

MR. WISNER: Sure, but our view is this is a Monsanto scientist making a science -- a comment about the science that supports our view, and so that's why we want it.

And they might say, "I don't think it's a fair

interpretation." Your Honor might think it's an unfair interpretation and I think that's what advocates are for. This Wisner guy is crazy. He's trying to spin the document, lies of plaintiffs' lawyers, and all that stuff; and that's fine and we'll take that on the chin if they want to go there, but I think the document has an interpretation that supports our view, and I think that that's --

THE COURT: Yeah, but it all goes primarily to what did Monsanto know and when did it know it and how did it try to manipulate the regulators, and all of that will be stuff --

MR. WISNER: I think that second part is probably farther than we're even taking it here; but, I mean, ultimately in the grand scheme of things, you're right, in Phase II we will say they bamboozled everybody and what have you.

But I think that this is a statement about science and that's why we thought it would be appropriate for Phase I. If the Court says no, that's fine.

THE COURT: Okay.

MR. WISNER: I think we do have to see how the Intertek story comes in because if it does come in, this might have a new relevance at that point.

THE COURT: All of this is subject to, you know -- obviously subject to the door being opened at trial as with all *motion in limine* rulings.

MR. WISNER: Yeah.

THE COURT: But I think this has been a productive discussion. I'll issue a written ruling on these documents that hopefully will serve as a framework for all of us in considering, you know, the evidentiary issues going forward, and there you have it.

So I need to be -- I have about seven more minutes before I need to step off and that will be a good time for a break anyway. And then when are we scheduled to resume?

THE CLERK: 2:00.

MR. WISNER: At 2:00. I think there was a jury instruction issue if we have time.

THE COURT: So maybe we can start that discussion now at least.

I don't see any reason to have damages be part of Phase I so that we don't need to have -- I understand why Monsanto would like that, but that's not going to be a part of Phase I.

Other than that, though, I thought it seemed like Monsanto's proposed jury instruction made some sense, but I will tell you that I only glanced through it. I didn't look at the jury instructions carefully before today so I wonder if it might be better to break and come back and talk about the jury instructions later.

What if we came back at, like -- everybody take a break, you can go, you know, prepare with -- what's his name? Shustov?

MR. KILARU: Shustov.

THE COURT: -- you can connect with Dr. Shustov and prepare and stuff and come back here at, like, 1:30 and have a chat about the jury instructions right before we launch Dr. Shustov.

MR. KILARU: That's fine with us, Your Honor.

MR. WISNER: That works. And I have to jump off at 2:00 for an important meeting, but I assume we'll be done in half an hour.

THE COURT: Yeah. We're going to start Dr. Shustov right at 2:00.

MR. WISNER: Okay. Exactly.

THE COURT: And if we're not done with discussion about the causation jury instruction, we can continue it later.

MR. WISNER: Yes, Your Honor, that works.

MR. IMBROSCIO: Your Honor, Mike Imbroscio from Covington on behalf of Monsanto. I'll be handling the jury instruction issue.

One thing I did over the weekend was put together for the Court's benefit, and I've given a copy to Mr. Wisner, a short sort of memo, bench memo, on the substantial factor issue. It's a pretty complicated, unduly complicated issue, and if the Court would like to see that over the lunch or I can provide it during the hearing. Either is fine.

THE COURT: That's fine. I mean, I don't -- it

doesn't strike me as that complicated. That's fine.

The other observation I just wanted to make, on this issue, you know, the plaintiffs have been making a lot of noise about kind of this being an improper instruction, the idea that, you know, asking the jury, you know, "Was glyphosate a substantial factor in causing Mr. Hardeman's NHL," that that in itself is an improper instruction. The one comment I wanted to make, and maybe have you think about and comment on when we return is, you know, they have an instruction just like that for asbestos.

MR. IMBROSCIO: Yeah. It's 435.

THE COURT: So, you know, I don't -- I think that just blows up your whole argument about how it's not appropriate to ask a question like this but, anyway, we can talk more about that at 1:30.

MR. WISNER: Sure, Your Honor.

THE COURT: Thank you.

MR. KILARU: Thanks, Your Honor.

(Luncheon recess was taken at 10:52 a.m.)

AFTERNOON SESSION **1:36 p.m.**

THE COURT: Okay. Shall we talk about jury instructions for a little bit?

MR. WISNER: Just before that, I want to bring to the Court's attention something that has happened. It's not -- it is a terrible thing. So about seven days ago Dr. Portier was visiting his family in Australia, in Melbourne; and he was running on a treadmill and his heart stopped --

THE COURT: Oh, no.

MR. WISNER: -- for eight minutes. Thankfully the person next to him was an EMT and was able to keep his heart going, and they brought him back to life; and he is recovering right now in a hospital in Australia; and he is cognitively 100 percent okay; but his doctor has forbidden him from flying anywhere for either this case or the one that we are trying in state court. I raised this with counsel this morning to let them know before I -- didn't want to voice this in open court. One of the things we are going to explore -- I don't know if we have a point where we have agreement or disagreement on this -- but is having us go down there with defense counsel to Australia; do the direct and cross and hopefully have Your Honor participate by either video conference -- or if you have the time, we will take you down there too; but it's a long flight -- and rule on objections contemporaneously. We do two videos, right, one for first phase and one for Phase 2. That

is sort of -- he is really kind of an important witness for us.

THE COURT: Yeah.

MR. WISNER: We are at a disadvantage for having to play a video, but we rather have that than not have him at all. I just wanted to bring that to the Court's attention before we got into jury instructions.

THE COURT: Okay. Yeah. I mean, I would be happy to work with you, you know, as -- as much as possible to figure out the best solution. I wouldn't even -- I wouldn't even rule out going there, but I'm guessing it is not necessary. I can probably do it by video. It depends on the technology and how are the delays --

MR. WISNER: That's why I would like to --

THE COURT: -- and mess it up.

MR. WISNER: I would like to, if at all possible, do it live with the attorneys there; and then do it before the jury is in the room, and then we can play the video as one of our witnesses at trial. We would want your participation because, you know, rulings on objections at the time affect how the testimony comes in or doesn't, you know; and I think that would probably be the best way. If you could go there physically, that would be ideal because then, you know, we can just do it. Have the video done. It would actually be beneficial in a lot of ways, I think, for the long-term prospectus of the case considering that we sort of have

Dr. Portier's testimony on a video with your rulings; and as cases get remanded in the future, it could be helpful for that. I don't know. But at the very least for the trial, I think it would be really fantastic; and obviously we would do whatever we had to make it work for the Court and defense counsel. We understand this is a big ask.

THE COURT: Okay. We will figure something out, and we will work with you on that.

MR. STEKLOFF: Can I just comment, Your Honor? With complete sympathy with what Dr. Portier is going through, I think we have a question I think we need to look at and maybe litigate before Your Honor and then just two concerns. The first is -- the question -- the issue that we think is there are other experts that cover all of the same experts as Dr. Portier. I understand Plaintiffs' view of his significance.

THE COURT: Especially for this trial. I mean, I assume he is, you know, largely like the centerpiece of their causation presentation.

MR. STEKLOFF: I'm sure that they would agree with that, but they had Dr. Ritz who is going to testify about the epidemiological. They have Dr. Weisenburger who is going to testify about that; Dr. Jameson talks about all of the animal studies. I think they all talk -- touch on the epidemiological studies and genotoxicity studies.

THE COURT: I understand all of that but the bottom

line is I would like to figure out a way to make it work so that Dr. Portier can testify. The details of that, we may need to spend some time figuring out and working through; but certainly given the importance of Dr. Portier's testimony, I'm going to do what I can to work out a -- a system for Dr. Portier's testimony to be presented to the jury and obviously there are legal rules about that, and we will need to explore all of that; but I'm committed to making that work --

MR. WISNER: Really appreciate that.

THE COURT: - in the confines of the rules.

MR. WISNER: Yeah.

MR. STEKLOFF: Understood, Your Honor.

THE COURT: So what do you all want to say about jury instructions?

MR. WISNER: Well, Your Honor, the first thing I just want to raise what you sort of raised before we took a break, and that is -- I actually don't think that we are that far apart on the instructions with regards to the causation instruction. I think it really comes down to two issues the way I see it.

The first is this additional sentence in the CACI instruction that relates to a substantial contributing factor. They want to have that phrase in it. We don't, and I have a reason to explain why we don't. And then, of course, there is the -- the tagalong instruction, and they are kind of the same

thing. If you don't give that sentence instruction, you are supposed to, under the California rules, give the multiple causation instruction and vice versa. If you give that instruction, you are not supposed to give the multiple causation instruction. So we actually dealt with this issue in Johnson.

THE COURT: Okay.

MR. WISNER: And Monsanto argued that there wasn't any alternative causes of his thing; that the only real issue was Roundup. Therefore, the Judge agreed and didn't give us the multiple causation instruction.

The Hardeman case is very different, and I can walk you through that. The second issue --

THE COURT: I assume the Hardeman case is going to be about whether he would have gotten it anyway because he had Hep C.

MR. WISNER: Precisely. And they have offered an expert opinion, and I don't want to misquote it. I will just give you the exact sentence. Dr. Levine page 23, she writes, while a specific cause of -- while a specific cause of contributing factor for DLBCL cannot be found in the majority of affected patients, this is likely not true with Mr. Hardeman, whose DLBCL was most likely caused by his chronic infection by Hep C. So they have taken a pretty strong position. They didn't say, Listen, we don't know what his

cause is. They are saying, No, this is actually what caused it. This falls squarely into the instruction and the instructions for use in the CACI instruction. That is the first issue.

And the second issue is the verdict form, and we have two questions we want to ask; and they have one question.

THE COURT: I was curious about that. I mean, we will get to the verdict form in a second. So on the instructions -- on the causation instruction, it sounds like where we are at is simply that we want to give instruction, CACI 430 and 431; and they want to give 430 plus that final sentence in essence.

MR. WISNER: Final two sentences but, yeah. They actually added another sentence in addition to that one to their proposal, but -- so they have a modified version that they are seeking.

THE COURT: Right. Okay. So -- but the real issue is do you give the two instructions or do you give the one with the sentence.

MR. WISNER: Exactly, Your Honor.

THE COURT: And I guess -- I mean, I guess my first reaction to that is does it really matter? Why does it matter?

MR. WISNER: Well, under California law, it is pretty clear. If there is multiple causes of a disease that is being alleged; and you don't give a multiple instruction, it is just error. So it wouldn't be a defensible verdict, at least under

California law if we don't give the multiple instruction.

And the reason for that is just because -- let's say, for example, he would have gotten cancer eventually because of the Hep C. Let's speculate that as a possibility. We don't agree with that, but let's assume that's true -- if we can show that the Roundup exposure was also a substantial contributing factor, they are still liable under California law. And that is the problem with not giving the multiple instruction is it actually suggests the opposite.

Now, when there isn't evidence of multiple causation -- there is no evidence of that -- then you don't do that. This is really did Roundup substantially contribute --

THE COURT: This case isn't about whether Mr. Hardeman would have gotten NHL eventually. It is about what caused his NHL now. I guess what I don't understand is if we have this sentence -- if we have one instruction, and we have a sentence that says exposure to a product is not a substantial factor in causing harm, if the same harm would have occurred without exposure to that product, that sentence, why doesn't that capture the duty of the jury to decide the question that is also addressed by the multiple causes instruction? In other words, what is the harm of having that sentence as opposed to the separate multiple causes instruction?

MR. WISNER: Well, California Supreme Court has said you have to do that. I mean, that's --

THE COURT: Well, I don't know whether the California Supreme Court has said that or not. If the California Supreme Court has said that, there must be a reason for it.

MR. WISNER: Sure.

THE COURT: So what is the reason for it? What is missing from that last sentence that I just read that is included in the multiple causes instruction that you say needs to be given?

MR. WISNER: I actually don't think it is. I actually they almost contradict each other which is why it is a problem. Exposure to a product is not a substantial factor, which is what we have to prove, in causing harm if the same harm would have occurred without exposure to that product.

THE COURT: Okay.

MR. WISNER: So they are saying they haven't proven their case if he still would have gotten NHL, which is exactly what the multiple causation instruction says is not true. That one says may combine with another factor to cause Mr. Hardeman's non-Hodgkin's lymphoma. It doesn't have to be the only one. That's what it is saying. So that is exactly the jury confusion. If, Your Honor, I can show you the substantial factor instruction, the instructions for use. It is very clear what it says when to use it.

THE COURT: The instruction for what?

MR. WISNER: The instructions for use from the

California Supreme Court.

THE COURT: You mean the multiple causation?

MR. WISNER: No. It is actually under the substantial factor instruction. It is under 430.

THE COURT: Okay.

MR. WISNER: Do you want me to hand it to you, Your Honor?

THE COURT: I have it right here.

MR. WISNER: You have it?

THE COURT: Yeah.

MR. WISNER: So if you look at it -- if you look at it, Your Honor, there is a section -- a paragraph that says the but-for test. Do you see that?

THE COURT: You are talking about the notes, not the instruction? Oh, I'm sorry. I don't have that.

MR. WISNER: It is the directions for use.

THE COURT: I didn't understand what you were saying. I don't have that.

MR. WISNER: Can I give you a copy, Your Honor?

THE COURT: Sure.

THE CLERK: You can just give it to me. Do you have two by chance?

MR. WISNER: I only have one. I'm sorry.

THE COURT: Okay.

MR. WISNER: So under the directions for use, there is

the paragraph the but-for test -- do you see that?

THE COURT: Yeah.

MR. WISNER: -- of the last optional sentence, and that is referring to the sentence in brackets that we just talked about. Do you see that?

THE COURT: Yep.

MR. WISNER: Does not apply to concurrent independent causes which are multiple forces operating at the same time.

THE COURT: I see.

MR. WISNER: And then it has a citation. It says, Do not include the last sentence in a case involving concurrent independent causes. In cases of multiple concurrent causes use 431 as well.

THE COURT: Okay.

MR. WISNER: That's how we do it. That's how we did it in basically every products case in California. That's how we make that distinction.

THE COURT: Okay.

MR. IMBROSCIO: Thank you, Your Honor. Michael Imbroscio for Monsanto. Let me respond first initially with the broader point, which is -- we tried to lay this out in the short memo we submitted -- there is, I think, some confusion in the law between two acts of negligence which is really what the instructions are going for versus medical causation and sort of exposure to a product causing medical causation. If you look

at some of the cases that we cite, the *Hartford*, the *Nuclear* case and the *Blue* case out of the Tenth Circuit, it picks up on this issue which is when you are talking about medical causation, it does not satisfy the concurrent independent cause aspect that Mr. Wisner was just talking about, when all you are doing is saying, Our product didn't cause it. And I think the concern there -- and the cases and the commentary pick this up -- is that it effectively deflates any burden the Plaintiffs have because at least under the way the case is being litigated, in their view they have general causation. They have someone coming in to say that; and then after that, nothing else really matters. And that just really can't be the law from our perspective because then there is nothing to prove. And it is pretty clear that but for causation -- except in that very narrow, rare setting -- is an element of California law. I'm not sure what case Mr. Wisner was talking about, but all the cases say that. It is laid out in our memo; the but-for causation is an essential part of what their burden is except in the very rare circumstance.

We learned in law school the two fire example. Someone sets a fire on one end of the forest and the other end. That is not really the issue of medical causation. Here they have to prove that it was the Roundup that caused their NHL, and it shouldn't be sufficient that they can say, Well, it was part of the mix; and so we can't rule out the other things. It doesn't

really matter. We talk about this in the Daubert briefing. It can't be -- it is almost implicit in the specific causation inquiry that you have to be able to rule out the other factors in some meaningful, reliable way; otherwise, there is nothing to prove. That is really why we tried to capture that point; both the bracketed sentence from 430 and also we tried to have it be tooled to the issue in Phase 1 which is really the unique issue of medical causation. I think the Plaintiffs' proposed verdict sort of had negligence in there, and really I'm not sure that is even going to be an issue for Phase 1. The jury shouldn't really be thinking about that.

THE COURT: About what? Sorry.

MR. IMBROSCIO: About negligence. They have a two-part instruction, was Monsanto negligent. That is not really even going to be an issue. It is really has medical causation been proven, and we limit our instructions so it tries to capture that in the best way.

THE COURT: I understand your arguments. I will think about it, and I might ask you to discuss that with me further at another time. I think the main thing that this all confirms is that it's perfectly easy to phase the trial this way. And we -- you know, we have a pretty good sense of what we are going to want to instruct the jury, and that will help me -- that will help form the discussion of the various evidentiary issues that we have to deal with.

MR. IMBROSCIO: If I may in the remaining six minutes before we shift to Dr. Shustov, I do want to make a run at at least laying out for Your Honor why we think having the damages decided in the first trial is appropriate -- the first phase.

THE COURT: Okay.

MR. IMBROSCIO: I understand from your comments earlier, you may not be receptive and not simply -- you know, it's not the simple, We think we are better off than that. There is also an efficiency point of view in the sense that Mr. Hardeman, the Plaintiff's family, the treating doctors are all going to be part of Phase 1. Presumably they would all have to be recalled and played again in Phase 2, which seems to be not terribly efficient. It's hard to envision what in that testimony wouldn't naturally fit in Phase 1 such that the jury has what it needs to make to make a compensatory damages finding if one is appropriate.

MR. WISNER: Your Honor, I think I will just stand by your comments earlier. I don't think damages are part of it. That is what the Court ordered in their original granting of their request for reverse bifurcation. If you want me to give you a substantive response, I can. I think I would like to get to the jury verdict form before Mr. Shustov comes out.

THE COURT: Okay. Go ahead.

MR. WISNER: If you look at the verdict form, their question is: Did Edwin Hardeman --

THE COURT: Hold on. I apologize. Give me one second. Let me pull it up.

MR. WISNER: Yeah.

(Whereupon, a brief pause was had.)

THE COURT: You were talking about their submission.

MR. WISNER: Yeah. And then I'm going to go to mine, ours.

THE COURT: Okay.

MR. WISNER: Their question is: Did Edwin Hardeman provide proof by a preponderance of the evidence that his exposure to Roundup was the medical cause of his non-Hodgkin's lymphoma? And then if you look at our verdict form, we actually broke it up into two questions; and we did that for strategic reasons that are not to our benefit. They are actually probably more to Monsanto's benefit. The first question is: Is Monsanto's Roundup capable of causing non-Hodgkin's lymphoma? That is the general causation question. And the reason why we wanted that answered first is because it's conceivable that we would prevail on that; but then they go, you know what, but Mr. Hardeman's cancer wasn't caused by it, right; and say, Listen, generally we agree. It can cause cancer, but I don't think you have proven it for this individual Plaintiff. That would be very valuable information for all the parties in understanding the litigation particularly because we are bifurcating, right, if that is what

hung up the jury is the issue of general causation as opposed to Hep C or other things that might influence the jury's opinion about Mr. Hardeman specifically.

THE COURT: I understand what you are saying, but I guess the problem I have with it is that the jury is not actually being called upon to decide -- to the extent that the jury concludes that Roundup did not cause Mr. Hardeman's NHL, the jury is not being called upon to decide whether it is capable of causing NHL at all. So it is almost like an advisory verdict. I mean, it's not -- it may not be necessary for them to even consider that question; right?

You can imagine Monsanto making an argument to the jury. Well, let's say you believe Dr. Portier and Dr. Ritz; and you believe that these studies, you know, support their view that this thing is capable of causing cancer, it just didn't do it in Mr. Hardeman's case. And if the jury agrees with that, then they don't need to decide the broader question. And so it seems a little weird to me to ask the jury the broader question.

MR. WISNER: Well, I mean, you know, this whole idea of phasing, right, is part of the -- and the Court's reasoning was Listen, this will actually help tell us information, right. And, you know, this is a special verdict form already and people --

THE COURT: My main -- it wasn't really, this will

help give us information. It was this will be the fairest way to run the trial.

MR. WISNER: Sure. And you also mentioned that. That was the second part of your opinion. There is a paragraph about it. I'm really not making --

THE COURT: I was responding to your assertion that it is not going to give us any information.

MR. WISNER: That's right. Fair enough.

THE COURT: That's not true. It is going to give us information.

MR. WISNER: Fair enough. It is not the reason why you did it, but you rejected our arguments saying that it would help us.

THE COURT: Right.

MR. WISNER: Okay. This -- I think it is really helpful for us to know exactly what the jury decides -- I think we ask jury all the times special interrogatories. We do, right, because we want to see what the jury thought about certain issues. That's one of the few benefits of having a jury, right, is we can actually use them as an advisory group to answer questions about facts; right. This is a factual question. So, you know, if they don't get past step one, then they don't get to step two, right. It doesn't cause cancer. It doesn't cause cancer. We are done. That would be very helpful for our understanding from all the thousands of cases

around the country and breaking that apart.

THE COURT: I understand why you proposed it. That had escaped me when I was looking at this.

MR. WISNER: Otherwise, it is like an extra burden on our part. We have to prove two questions instead of one.

THE COURT: It didn't strike me as necessarily to your advantage in this trial. I guess the question I have about that is you represent Mr. Hardeman in this trial.

MR. WISNER: That's correct.

THE COURT: You don't represent anybody else in this trial --

MR. WISNER: That's correct.

THE COURT: -- other than Mr. Hardeman. So have you had a serious conversation with Mr. Hardeman about whether you should propose a verdict form along these lines?

MR. WISNER: I don't know. I haven't personally, Your Honor. I'm sure there has been conversations.

THE COURT: It is not your case. It is Mr. Hardeman's case.

MR. WISNER: No, I understand that. We object to this whole phasing altogether, right.

THE COURT: Right. But once we phased the case, I would think you want to litigate it in a way that would be most to the advantage of Mr. Hardeman without regard to the other Plaintiffs in this case or maybe to put it slightly

differently, I wouldn't want to do anything that would disadvantage Mr. Hardeman in order to gather your own information about how you would value the other thousand cases that you have brought.

MR. WISNER: Fair enough, your Honor. I actually think this does benefit Mr. Hardeman.

THE COURT: You introduced this whole topic by conceding that it was not to your advantage.

MR. WISNER: I concede it doesn't look like it is. I personally if I have a closing argument, I want these two questions.

THE COURT: Why?

MR. WISNER: Because I think that -- I don't feel comfortable disclosing my trial strategy too much. I think that --

THE COURT: Disclose it. If you want these two questions, and it would require you to disclose your trial strategy to get these two questions asked, you better disclose your trial strategy.

MR. WISNER: It is because they haven't offered any specific causation opinion. Their entire defense is general causation. That's it. They say the AHS is great. The EPA says it doesn't cause cancer. Ladies and gentlemen, that is all you have to see. That is where we beat them because the science when you look at the studies -- when you actually look

at the studies, I think it is actually overwhelming. I think you go through it and you go case control after case control study, animal study after animal study, genotox study after genotox study shows that this causes cancer. What is their best defense for why this didn't cause his specific cancer? It is because it doesn't generally cause cancer. That is their entire -- I want to rip them apart on the closing argument on the science on that point.

THE COURT: You can do all that without the two questions special verdict.

MR. WISNER: I guess we could. It would just be helpful.

THE COURT: It really raises a question for me whether you are actually thinking about Mr. Hardeman's interest in this case or whether, as you strongly suggested in your presentation, you are thinking about the lawyers' overall interests in valuing the other cases. So what I would suggest you do is go back to your team and make sure there has been a real conversation with Mr. Hardeman about offering questions that -- special verdict questions that may be to his disadvantage.

MR. WISNER: Your Honor, I just want to --

THE COURT: Then we can talk about it again at the pretrial conference. As of now we are just going to ask the one question which is: Was Monsanto's Roundup a substantial

factor in causing Mr. Hardeman's non-Hodgkin's lymphoma.

MR. WISNER: Your honor, I just want to say one thing: Throughout these years in this litigation, you have made comments to me that have been picked up in the media -- and, in fact, Monsanto has used your comments from the bench to try to prevent me from being in other cases. I just want you to know you have now just sort of accused me of violating my ethical rules to my client, and I respectfully strongly disagree with that. I don't think there is anybody in this room that works harder for Mr. Hardeman than I do.

THE COURT: I don't know if you violated the ethical rules or not, but it is a very strange argument to come up here and say, This is not really to our advantage in this trial; but we want to ask the question because it will be helpful to evaluate future cases. That's a strange thing to say --

MR. WISNER: Okay.

THE COURT: -- when you are charged with representing Mr. Hardeman's interest in this case. And then in response to my question: Did you talk to Mr. Hardeman about this? You say no and --

MR. WISNER: Well, I haven't personally.

THE COURT: -- you hope that someone from your team did. But the next time you offer something in the trial that you think is not necessarily to your strategic benefit in this particular trial, you may want to make sure you have talked to

your client about it first.

MR. WISNER: I think you are misstating what I said. I said it appears that -- I didn't explain to you how I think it actually benefits us. So I apologize if there is a miscommunication on that point. I just want to point out that these comments you made that I misrepresent evidence and spin, they then go to other courts and say, Judge Chhabria thinks Brent is a liar. They have actually done this multiple times.

THE COURT: Then don't misrepresent the evidence.

MR. WISNER: Respectfully disagree, Your Honor, but I appreciate that. Thanks.

THE COURT: Ready for the Daubert hearing?

MS. WAGSTAFF: So, your Honor, may I approach with --

THE COURT: Yeah.

MS. WAGSTAFF: This is a hard copy of Dr. Shustov's three expert reports and testimony.

THE CLERK: Has anybody test texted them to tell them to unmute?

MS. WAGSTAFF: Tell them to what, unmute? Let me text them.

THE CLERK: Okay. Good.

MR. WISNER: I have two more copies. I don't have as good of tabs; but it gives a report, transcript, whatever.

THE CLERK: Ms. Wagstaff, are you going to be introducing them as evidence later, like they should go into

the record?

MS. WAGSTAFF: Yes.

THE CLERK: I will need it.

THE COURT: Okay. Ms. Wagstaff are you ready to proceed?

MS. WAGSTAFF: Do we want to have a little meet-and-greet with them to make sure we can hear them.

THE COURT: Sure. Go ahead.

MS. WAGSTAFF: Can you guys see me? It is a wide screen. Kathryn?

MS. FORGIE: He is coming.

MS. WAGSTAFF: Can you see me?

MS. FORGIE: Yes.

MS. WAGSTAFF: So your screen is white if you can turn on your --

THE COURT: He is just not there.

MS. WAGSTAFF: That's the back screen.

(Whereupon, a brief pause was had.)

MS. WAGSTAFF: Dr. Shustov, can you hear me?

THE WITNESS: Yes I can.

MS. WAGSTAFF: I'm going to ask the Judge to say something to see if you can hear him because he will be asking you questions.

THE COURT: Hi, Dr. Shustov, can you hear me and see me?

THE WITNESS: Yes, I can. Hello, Your Honor.

THE COURT: Great. You can proceed then.

MS. WAGSTAFF: Do we need to swear him in?

THE CLERK: Yeah.

THE COURT: Dr. Shustov, why don't we begin with administering the oath. My courtroom deputy will do that right now.

ANDREI SHUSTOV,

called as a witness for the Plaintiffs, having been duly sworn, testified as follows:

THE CLERK: For the record, please state your first and last name and spell both of them.

THE WITNESS: First name A-N-D-R-E-I; last name S-H-U-S-T-O-V.

THE CLERK: Thank you.

DIRECT EXAMINATION

BY MS. WAGSTAFF

Q. Dr. Shustov, are you ready to begin?

A. Yes, I am.

Q. All right. So thank you for joining us today from Seattle. I would like to start with you telling us a little bit about yourself, your background and history and where you are from.

A. So my name is Andrei Shustov. I'm a medical oncologist at the University of Washington. I'm also part of the faculty, a

division of hematology. I'm a professor of medicine hematology. I came to U.S. with a medical degree in 1995. I came to join the research group at the University of Maryland to do research in leukocyte biology and leukocytic disease. So I did six years of advance research studying the immune system. Afterwards, I joined residency program at the New York Hospital Pennsylvania where I completed three years of medical residency training to become an internal medicine physician. And afterwards, I entered the fellowship training program in hematology and medical oncology at the University of Washington, Hutchinson Cancer Center in Seattle. I completed my hematology and oncology training in 2006, and I joined the faculty of the division of hematology at the time; and for the past 13 years -- 14 years in July -- I was a faculty member and specifically focusing on diagnosing, treating and helping patients with lymphomas and lymphatic system as well as being engaged with medical students, medical residents and fellows as part of the teaching curriculum of the University of Washington. And the last five, six years I joined numerous national and international lymphoma panels and councils where I participate in discussion of established rule of standard of care, and the directions of national and international research in lymphomas. And I also served on several [inaudible] due to prioritize and scrutinize clinical trials in lymphomas and other cancers.

On a personal level, we -- me and my wife live in Seattle. I have three sons or young men, I should say at this point. I enjoy hiking, cooking and probably share with my wife with scuba diving.

Q. Thank you very much. You are board certified in a couple of different disciplines, correct?

A. That is correct. I'm a triple boarded being certified in internal medicine, hematology and medical oncology.

Q. Okay. And you are licensed to practice medicine in the State of Washington, correct?

A. That is correct.

Q. Would it be fair to say that you have treated hundreds of patients with non-Hodgkin's lymphoma?

A. It would be more than fair. I think I would estimate over the past 13 years I have treated, consulted on or have been involved in the care of over 3 to 4,000 patients with non-Hodgkin's lymphoma.

Q. And you teach students at the University of Washington about non-Hodgkin's lymphoma, correct?

A. That is correct. The University hematology course I teach besides the basics of hematology and blood system and immune system, but the majority of my clinical teaching involves a medical residence so graduates of medical schools and also oncology fellows, those are physicians who decided to dedicate their career to cancer blood disorders.

Q. You have been involved with several clinical trials, correct?

A. Yes, that is correct. Over a 13-year career period in the University of Washington, I have chaired or served what they call principal investigator of over 50 clinical trials by new agents and new therapeutic approaches.

Q. Okay. And today are you giving an opinion on general causation?

A. No, I'm not. I was asked to opine on specific causation of lymphoma in three subjects.

Q. So how are you basing your opinion that exposure to Roundup can cause non-Hodgkin's lymphoma?

A. So the basis of my opinion on this three subjects was the -- first of all, the background education in medicine, my training in oncology, my experience in treating and caring for patients with lymphomas; but finally, an extensive review of very thorough medical records that was provided; consists of thousands of pages of their treatment history, diagnosis history, laboratory, pathology values as well as having encountered the three subjects; performing physical exam and collecting personally their history -- their medical history, social history, history of exposure. And, finally, I do a literature research and reviewing the reports of general causation experts, Dr. Weisenburger, Ritz to form my opinion which I was asked to do based upon the general assumption that

Roundup is the risk factor for lymphoma.

Q. Is it fair to say that if you testify at one of the federal trials, your opinion that exposure to Roundup can cause non-Hodgkin's lymphoma, you will be relying on Plaintiffs other experts to proffer that opinion; is that correct?

A. That is correct, experts on general causation. That's correct.

Q. Did you do an exposure analysis -- let me back up a minute. You have proffered an opinion on Mr. Hardeman, Mr. Gebeyehou and Ms. Stevick, correct?

A. That's correct.

Q. And did you do an exposure analysis on those three Plaintiffs?

A. I collected a very detailed history that I was asked to opine on -- from all three subjects on their use of Roundup which included the frequency, the duration overall through lifetime and my assessment of what -- of the property the Roundup. To give you an idea [inaudible].

Q. Hang on a second -- just one second. The court reporter was catching up.

THE COURT: We had a glitch on the video. We didn't catch something you said. If you could back up about two sentences and to the extent you can remember.

THE WITNESS: Okay. So I collected the history from patients so I could make a natural reference to published

literature on exposure so I can compare the exposure that the subjects had to the levels that were used in the general causation literature to estimate the risk.

BY MS. WAGSTAFF:

Q. So you actually met in person with each of the three Plaintiffs and conducted an exposure examination; is that correct?

A. That is correct.

Q. Okay. And then I think what you just said is that you compared the Plaintiffs' exposure to the exposure in the relevant epidemiological literature; is that correct?

A. That's correct. So I compared the exposure on all three Plaintiffs to the levels of exposure that was cited in the epidemiological literature to make sure that exposure that the Plaintiffs had was matched against epidemiologic studies to form my opinion on specification causation.

Q. Would it be fair to say that you used the epidemiological literature as a metric to determine if the Plaintiffs fall within that category identified in the literature?

A. That's correct. I used the epidemiological literature to give me some guidance on specific aspects so I can form an opinion on specific causation of patients to make sure that, as an example, the exposure that patients had as a reference for me to say that I can rely on this epidemiologic literature to say that exposure was sufficient to consider Roundup as a risk

factor in my differential diagnosis.

Q. And did you focus on the epidemiologic literature that actually does a dose response analysis?

A. I read and reviewed the epidemiologic literature to give you a reference to ask more specific questions that I had for specific causation and to be more specific question, yes, I do recall that I used specifically two references. In one of them, I believe, ten days for lifetime exposure and other one two days per year exposure as a significant level where the risk ratio was significant for -- as a causation for lymphoma, but it was as far as it went into really studying those papers where again I was looking for specific reference points.

Q. Okay. Do you remember in your deposition being asked whether you considered the exact type or product that each one of the Plaintiffs used?

A. I do remember those questions.

Q. Okay. Do you remember also being asked whether or not you knew the percentage of glyphosate in each one of the products that the Plaintiff used?

A. I think I remember those questions, yes.

Q. Do you remember being asked questions about what surfactants were in the products that the Plaintiffs used?

A. I do.

Q. And did you consider those topics from the Plaintiffs; and if not, why not?

A. I did not consider those factors. The main reason was that those are the factors that I don't recall being cited in epidemiologic literature, so I did not really consider those as part of my specific causation determination.

Q. Okay. So you were -- I just want to cite a couple specific examples that you were asked in your deposition. Can you hear me okay?

A. Yes.

Q. Okay. For example, you were asked -- in the Hardeman deposition you were asked if Roundup comes into contact with a patient's skin, does that affect your opinion about exposure or whether the size of the area of the skin in contact with Roundup matter in your exposure assessment. To both questions you answered no. Correct?

MR. STEKLOFF: Your Honor, I object to repeating the deposition. I think it is fine for Ms. Wagstaff to ask if certain things factored into his opinion or not but I don't --

MS. WAGSTAFF: We can move on.

THE COURT: Sustained.

MS. WAGSTAFF: We can move on. I will withdraw that question.

BY MS. WAGSTAFF

Q. Did it matter in your opinion whether or not the Plaintiff used a residential product or a commercial product?

A. It did not matter, no.

Q. Why not?

A. It was not something that I recall being discussed in epidemiologic literature, and so I did not focus on that.

Q. Okay. So now I would like to talk about sort of your overall general methodology with respect to all three cases, and then we will go through each case one by one. Okay?

A. Sure.

Q. So in reaching your opinions in these cases did you use the same methodology and rigor that you would apply in your academic and medical practice?

A. Yes, I did.

Q. And what methodology did you use to utilize -- did you utilize to reach your opinions?

A. So I used the fundamental and I would say core methodology we use in everyday practice diagnosing the disease or diagnosing causes of the disease, something called differential diagnosis, which on the broader scale is basically a hypothetical deductive method of coming to a conclusion about the diagnosis of cause of the condition.

Q. Okay. So what did you do -- what did you review with respect to prepare for your reports?

A. So, once again, I think relating to previous questions, I reviewed thoroughly very full and comprehensive medical records that were provided to me on all three Plaintiffs. I then examined the patients and took a history. I reviewed the

general causation reports by experts on general causation, Weisenburger's, Portier's and Ritz; and I did the literature review; and I went over and read the literature that helped me to further form my opinion on general causation -- I'm sorry -- on specific causation.

Q. Did you reference every piece of literature that you found in your searches in your report?

A. I referenced the literature that I found pertinent and that I used to form my opinion on specific causation. When you do a literature search, you obviously find [inaudible] publications that -- that is neither practical nor more reasonable to review every single piece. So I reference the literature and the courses that I used specifically in my report on specific causation.

Q. I think we mentioned earlier that you conducted in person examinations with all three Plaintiffs; is that correct?

A. That's correct.

Q. And so why don't you tell us why you did that and what the value is in that towards your opinion?

A. To me as a clinician and as a physician there is no bigger value in either caring for a patient or making a opinion about a specific patient that encounter the patient and conversation with a patient and first-hand collection of the information and an exam. That's what I'm trained to do. That's what I consider the core of a physician. It is very hard for me to

opine I think without talking to the patient myself and collecting history myself and doing the exam. Like I said, this is what I'm trained to do; and that's what I train other doctors to do. It is a core of physician's work, a physician's assessment.

Q. All right. Did you base your opinions for all three cases on your review of the medical records, your education, training, experience, and knowledge of the pertinent medical literature including epidemiology?

A. That's correct.

Q. Okay. So we talked about how you decided to -- let's talk now about sort of the general causation portion of what you relied on. How did you determine that Roundup should be included in your differential diagnosis?

A. Well, when we created differential diagnosis for either diagnose a disease or cause of a disease, we generally try to be as inclusive as possible so we don't miss anything and don't miss very important either diagnosis or causes. So I have included note causes or risk factors for lymphomas, such as exposure to radiation, family history or history of autoimmune disease or rheumatologic disease or immune deficiencies as well as factors. We always ask patients in everyday practice whether they were exposed to things like radiation, military fumes or exhaust, exfoliant -- military exfoliants or pesticides. So we try to be as inclusive as possible to create

a differential diagnosis, and then one by one try to illuminate factors that are less likely or much less likely to be a risk factor. The reason I included Roundup by in my differential, one, it is a generally accepted risk factor as part of the pesticides that are listed in majority of, I would say, medical centers to be a risk factor and are an accepted risk factor for cause of lymphomas but also for the purpose of the trial, I was asked specifically to look at glyphosate exposure. Now, in everyday practice do I ask patients if they use glyphosate? No. The general question I always ask patients whether they had exposure to pesticides and radiation and other, like I said, military compounds or industrial known carcinogens.

Q. So to be clear, prior to your involvement in this litigation, you asked your patients whether or not they had been exposed to pesticides; is that right?

A. That's correct.

Q. Okay. And in your report, which I would like to mark as exhibits, his three reports. We can mark the Hardeman report as Exhibit 1, the Gebeyehou report as Exhibit 2 and the Stevick report as Exhibit 3.

(Plaintiffs' Exhibits 1, 2, and 3 marked for identification)

BY MS. WAGSTAFF:

Q. Dr. Shustov, do you have those reports in front of you?

A. They are handing it to me. One second.

Q. So in your -- let me know when you are ready to begin.

(Whereupon, a brief pause was had.)

THE WITNESS: Ready.

BY MS. WAGSTAFF:

Q. In all three of your reports you do include a brief section on general causation; is that correct?

A. That is correct.

Q. Okay. And you were asked at length in your deposition about whether or not you copied this general causation section of your report from Dr. Nabhan in a non-MDL report. Do you remember that testimony?

A. I do.

Q. Please explain what you did and how that general causation section in your report got into your reports for all three Plaintiffs.

A. Sure. So in preparation for all three reports -- as we discussed -- I examined the patients. I reviewed all their medical records. I reviewed the reports by Weisenburger, Portier and Ritz and the literature, and I had for my opinion what is going to be my report. And at that juncture I asked the counsel that I was working with to give me some kind of guidance or template or example how this report is being constructed as I don't do these reports on regular basis.

And at that time I had Dr. Nabhan's report in my possession where I reviewed how he described causation; and

after reviewing what I just mentioned, I felt that what he described was exactly in essence what I would put in my report, and I copied his description into my report as a background information and not that it's similar -- in everyday practice we do medical records when I see patients and I have medical information from other physicians' report. That is -- did not change or that is exactly what I found for efficiency and save time. So I copied doctor -- part of Dr. Nabhan's report on general causation as a reference so I can start working and specifically focusing on specific causation part of the report.

Q. Okay. And just to be clear, the portion of your report that is the same as Dr. Nabhan's report does not relate to your specific causation opinions, correct?

A. That is correct.

Q. And your specific causation opinions for Mr. Hardeman, for Mr. Gebeyehou and for Ms. Stevick are independent of the section that is the same as Dr. Nabhan's report; is that right?

A. That is correct.

Q. And the report of Dr. Nabhan that you were given as a template for general causation, it is your understanding that that report was not for a federal MDL case; is that correct?

A. That is correct.

Q. Okay. And how did Dr. Nabhan's report that you received factor into your decisions in Mr. Hardeman, Mr. Gebeyehou and Ms. Stevick, if at all?

A. It did not factor at all into my decision. I used that, as I mentioned, as a template or a background information to focus on what I was asked to do is a specific causation. And, again, this is something that myself, my colleagues do on a daily basis to be efficient and actually focus on our specific opinions or specific reports. So I use that as a template or I copied the information into my report because that is exactly what I found by my reading the literature on specific causation -- I'm sorry -- on general causation.

Q. All right. Did the portion of Dr. Nabhan's report that you have in your reports, did any of that cover your specific causation opinions or your differential diagnosis in anyway?

A. No, it doesn't.

Q. Okay. And so the section of your report that deals with your specific causation opinions and your differential diagnosis, did you come to those opinions on your own?

A. I'm sorry. How did I come out -- come about those decisions?

Q. No. I think you misunderstood me or maybe there is a technical issue. The section of your reports for Mr. Hardeman, Mr. Gebeyehou and Ms. Stevick that relates to specific causation of those three cases and your differential diagnosis for those three cases, did you come to those opinions on your own without the help of Dr. Nabhan's report?

A. Absolutely not.

Q. Absolutely not or -- I think you misunderstood --

A. I did not copy those -- I did not copy anything relating to specific causation from Dr. Nabhan's report.

Q. Just to hammer this home, your specific causation opinions would be the exact same even if you did not receive Dr. Nabhan's report?

A. That is correct.

Q. Okay. So let's talk about the subtypes of non-Hodgkin's lymphoma. You would agree that there are several different subtypes, right?

A. There are many different subtypes. As a matter of fact, our recent classification recognizes over 50 different subtypes of non-Hodgkin's lymphoma.

Q. Is there a different causative mechanism for each NHL subtype?

A. As a general statement, many non-Hodgkin's lymphomas and probably majority of non-Hodgkin's lymphomas would have the similar risk factors or same risk factors for development, but there are very unique exceptions where we do have -- actually we found out very specific cause of very specific lymphomas, but those are exceptions of the rule.

And to give you an example, there was a lymphoma of the stomach that is caused by H. pylori. Everybody knows about H. pylori. There is H. pylori associated with stomach lymphoma. So this is a very specific example which is an exception of the

rule what causes lymphomas or there is a very specific lymphoma that grows in people's eye and caused by chlamydia infection. That is a very specific example of specific cause of that particular lymphoma; but outside those exceptions, the causes for majority of lymphomas are understood to be similar.

Q. Okay. And the Plaintiffs in this case all had diffuse DLBCL, right, Diffuse Large B-cell Lymphoma?

A. That is correct.

Q. Okay. And Ms. Stevick had a further subtype. Can you tell me what subtype Ms. Stevick had of DLBCL?

A. Ms. Stevick had lymphoma found in the brain tissue; something we refer to as the primary CNS lymphoma, Central Nervous System lymphoma. So histologically for the way this lymphoma was found in the microscope it is exactly the same found in the other two cases. What is unique about her case is the geography [inaudible]. If this lymphoma came up in any other part of the body, we would not even bother about naming this specific location. The only reason we separate those differently is for purpose of treatment.

Now, many therapeutic drugs, therapeutic agents, that we use to treat lymphomas do not penetrate into the brain. So we have to separate out this primary CNS lymphoma for the purpose of using different regimens from any other lymphoma. On a microscopic level it is Diffuse Large B-cell Lymphoma, and it would be indistinguishable from the other two cases that we are

discussing if we didn't tell pathologist that this lymphoma was in the brain.

Q. Okay. Thank you. Let's talk about how you ruled in risk factors for your differential diagnosis, okay? Let's talk about your methodology for all three Plaintiffs here. So when you were doing your differential diagnosis, how did you come up with a list of risk factors that you ruled into the differential diagnosis?

A. So --

Q. Why don't you first start with telling us what a risk factor is and why it is important.

A. I'm sorry. Can you repeat the last question?

Q. Can you start by telling us what a risk factor is and why it is important in your view.

A. Sure. So the risk factor for developing lymphoma, as any other cancer, is important because that tells us the possible substantial for actually the causative role the factor might have played in developing cancer. So the risk factor -- we understand the risk factor is something that increase the chances or probability of the person having this particular type of cancer; and if this person was not exposed to that factor, then the chances of developing lymphoma would be lower. Or if you take a population of exposed versus non-exposed to this risk factor, it would be more cases of particular cancer in exposed population giving you the basic idea that risk

factor is responsible for either substantially contributing or causing some of these somebody's lymphoma.

Q. How did you create a list of the risk factors for each of the three Plaintiffs?

A. Again, I did the same type of methodology for oncology [inaudible] as I use in everyday practice. There are known causes or known risk factors for lymphomas just like other cancers, and I screen every patient who comes through my door for those known risk factors as part of the social history. We ask them about family history of lymphoma. We ask them about history of autoimmune disease, immunodeficiencies, exposure to ionizing radiation, exposure to industrial toxics, military toxics, pesticides. Those are known risk factors I put into the differential diagnosis for these two cases, and I did include the Roundup in differential diagnosis risk factors for those two reasons that I already stated before. They are pesticides. In general we look at as a risk factor, and I was asked for purpose of this proceedings to specifically look into Roundup based on knowledge from general causation that is a risk factor of lymphoma.

Q. So you were asked to base that -- like you had testified earlier -- about the other experts that Plaintiffs will be proffering, correct? I will strike that question. So for each of your opinions did you consider that non-Hodgkin's lymphoma and its subtypes are sometime idiopathic?

A. Well, the idiopathic, it is a funny term. So idiopathic means we don't have any risk factors that we identify. So then we say, Well, we don't have any risk factors, then idiopathic means there are factors out there that they are not aware of. When you have risk factors that are identified, you cannot call something idiopathic. You cannot exclude something that doesn't include you have risk factors. By definition idiopathic is something that we call when no risk factors are identified. If you identify risk factors, idiopathic doesn't exist.

Q. So you did consider whether or not each Plaintiffs' NHL was idiopathic, it sounds like; is that correct?

MR. STEKLOFF: I object to leading.

THE COURT: Overruled.

THE WITNESS: So on a general scale, we always consider that because of this particular person or form of other cancer would be idiopathic, that we don't know the cause; but once we start really looking into the causes and we identify the risk factors, it's no longer idiopathic.

BY MS. WAGSTAFF:

Q. Okay. So you considered idiopathic and ruled that out for each of the three plaintiffs because they had other risk factors; is that correct?

A. Well, yeah. I don't think I would phrase it this way. You cannot rule out something that you don't know. Idiopathic

means we don't know any causes. I can't rule out something that doesn't exist. So if I did not identify any risk factors, I would say this lymphoma, what caused the lymphoma is idiopathic, meaning that we did not find what caused it.

But once we identify risk factors and potential problems of somebody with lymphoma, it's really to me nonsensical to say did I rule out idiopathic. It would be something that doesn't exist.

Q. Sure.

A. So maybe -- go ahead.

Q. No. Were you finished? You can finish your response.

A. No. What I was going to say, that I could not rule out that people have other unknown causes of lymphoma; but when you have something in your hand like identifiable risk factors, then you don't focus on something you don't know. And, like I said, that's looking for something idiopathic when you already found the risk factors, and to me it's nonsensical.

Q. Okay. So let's talk about Mr. Hardeman and your opinion in his case. If you could pull his report up in front of you. We've marked it as Exhibit 1. You can put the other two reports --

A. Yes, I have that.

Q. Okay. You can put the other two reports to the side for a moment.

A. I have it.

Q. Okay. So if you will turn to page 5 of your report where it says "Analysis of Patient's Risks for Developing DLBCL." Tell me when you're there.

A. (Witness examines document.) I have it.

Q. Okay. Is this your list of risk factors that you considered?

A. That's correct.

Q. Okay. So let's -- you list family history of NHL, and you stated that he didn't have any family history. Why don't you tell me the risk factors that you listed and how you ruled each one out. Let's just go through them. Number one?

A. Sure. So as I mentioned, in everyday practice when I see a new patient with newly diagnosed lymphoma, as a standard of care we -- I collect what is called social history. Even though that's not really in fact how we treat patients, it's a good practice. So we ask patients about family history of lymphoma. So we ask patients about exposure to things like ionized radiation or agricultural pesticides or military compounds or industrial chemicals.

So even though I don't have any prior information about those things, we elicit that information as patients sometimes do not volunteer the information unless we ask.

So I asked Mr. Hardeman if he had any family history or extensive family history of lymphomas, and the answer was no. And the reason I included that because that's what we do in

everyday practice to lay out any possible cause of somebody's lymphoma or known risk factor, known cause of lymphoma. So he did not have any family history.

Then I asked him if he was diagnosed and treated on a regular basis with any known significant other immune diseases or immunodeficiencies, and the answer was no. And I did not find anything in his medical records.

Then I asked him about autoimmune disease. The same thing, I did not identify anything significant in the medical records and he did not volunteer any information.

And then I asked him about when he was growing up or being a teenager or throughout his employment or military service whether he was exposed to any other known risk factors, including, as I mentioned, military compounds and fuels, any industrial toxins, any pesticides, or any other known carcinogens, and he was not.

So then I went through his medical history, and it was evident that he was treated for hepatitis C.

Q. Hang on. Hang on, Dr. Shustov. Let's pause and let's skip over number five and six and we'll come back to five and six later. Let's move to number seven.

A. Sure. So then we always collect information about smoking, drinking, and -- drinking alcohol and use of illicit drugs. And smoking in general is always discussed in our oncologic field because it is a known risk factor for certain

malignancies like lung cancer and bladder cancer and some others.

And there's no compelling evidence that smoking is closely related to or was associated with lymphomas; however, it is such a broadly discussed risk factor for many medical problems that it always is included in our history.

Q. Okay.

A. So while I identified that Mr. Hardeman had history of smoking, first of all, his duration of nonsmoking was substantial after he quit. And as I stated, that there is no strong link of what was associated in the first place with the lymphomas and smoking history.

More so, as I laid out in my report, there was very intricate findings in other cancers. Like lung cancer indicated that when patients stop smoking, their risk for developing those cancers is decreasing by not smoking.

So in this case Mr. Hardeman was diagnosed at 34 years after he quit smoking but, again, even if we consider this fact, there is no strong association with lymphomas. But I did include this in my professional diagnosis or discussion because that's what we typically do in pathologic assessment.

Q. All right. Next you had, it looks like, Mr. Hardeman has moderate obesity. Why don't you talk about why you ruled that in and how you ruled it out.

A. So additionally he was interrogated in Houston, as I

recall, and I looked at one of them as possible causation for malignancies or cancers. And Mr. Hardeman has some degree and I thought it was prudent to discuss it.

So as far as obesity goes -- that was my reason for inclusion.

As far as obesity goes, I did not -- I did not find compelling evidence linked to it, first of all, obesity as a strong risk factor for lymphomas; but, secondly, to me as a lymphoma physician and scientist, it is a very erroneous or up-target factor to interrogate because obesity is a reflection of most likely other factors that come with it that can cause heart disease and other disease, lung disease, and cancer including.

So not having a very defined mechanistic explanation how obesity can cause lymphomas, it is a wrong factor to interrogate in the first place. But I did include it in my report because it was mentioned in the literature that it was questioned.

Q. All right. And then next you have as a risk factor Roundup, which we've already discussed why you included that, but you have that his use of Roundup was both intensive, large quantities, and with no barrier to prevent absorption, inhalation, and prolonged over 24 years. Tell us what the significance of that statement was.

A. Well, I felt as a medical oncologist and lymphoma

physician and just a physician when we hear about -- before looking that a person has been using something that is identified as a risk factor for a particular disease, so particular cancer, when you ask any physician and say the patient was using any particular substance for 24 years or more on a regular basis and it's a known risk factor for in this case lymphoma or for a clinician to me it is a substantial exposure.

But the reason I collected this information, it's for the thoroughness of this report, I tried to match that to what's reported in the literature to be a significant exposure to be a risk factor. And we already touched on that in a couple of publications that I reviewed from general causation literature. What they mentioned was ten days per lifetime and two days per years is a significant risk for developing lymphomas.

So this was my benchmark to say whether plaintiffs used enough or this is not sufficient to really support a general causation literature for as a risk factor.

And in all three plaintiffs, but specifically Mr. Hardeman, the use of over 24 years with frequency that he described to me was far exceeding what I've seen in a couple of publications on epidemiology.

Q. Okay. And before we get to the hepatitis C and hepatitis B risk factors, I want to note that I don't see that age is listed as a risk factor; however, you were asked about

it in your deposition. Do you recall that testimony?

A. Yeah, I do recall that. To tell the truth, age, if I might, it's a silly factor to interrogate. And you can interrogate any factor in, say, statistical analysis, but there has to be a good reason why you're asking these questions. And to me, as a lymphoma specialist and doing research in therapy of lymphomas and being educated in this area, age is really a silly factor to even consider because age is a reflection of something else.

If you look at multitude of medical literature, what comes with age is heart disease, diabetes, and a host of other things associated with pretty much most of the diseases that are described in humans.

So to give another example, one can look, say, at incidence of gray hair and cancer. Of course, you're going to find a correlation between gray hair and cancer because gray hair is more prevalent in older people and older people get more of those diseases. It doesn't mean gray hair causes cancer.

So to me age is one of those factors, yes, you can look at it, you can find a correlation; but for lymphoma scientists or lymphoma expert, it is a nonsensical factor to interrogate. It just opens the door to: Okay. What comes with age? And they still have to look at factors what patients who are overexposed in their lifetime, why they develop lymphoma.

But, as I mentioned, the general scale age is a risk factor for anything and if you say on a whole different level is age associated with that, of course age is associated with that. More people die when they're older, less people younger, but you will find statistical correlation. So where I come from age is not a factor in interrogation.

THE REPORTER: I'm sorry. I couldn't understand the last sentence.

BY MS. WAGSTAFF:

Q. Can you just repeat your last sentence, please?

A. What I said was age is a wrong factor to interrogate statistically against any disease because majority of human diseases are more prevalent with age. So it gives you the idea that there is something that people are exposed to longer when they're older but it doesn't give you the reason why they develop the cause. So that's the reason why I did not include it in my discussion.

Q. Okay. And just for efficiency sake, you didn't include age in your risk factors of Mr. Gebeyehou or Ms. Stevick either; correct?

A. I did not.

Q. And it's for the same rationale; right?

A. That's correct. All three cases are very, very similar, almost nearly identical from the stance of diagnosis is the same and I'm opining on the same topic.

Q. Okay. So now let's talk about hepatitis C as a risk factor for Mr. Hardeman. Okay? And so --

A. Sure.

Q. -- we're going to move to number five of your differential diagnosis, and why don't you start by telling the Court why you ruled in hepatitis C as a risk factor and then why you were able to rule it out as a risk factor.

A. So I ruled hepatitis C into discussion of the differential diagnosis because hepatitis C has been relayed or shown as association with non-Hodgkin's lymphoma in general. So that's where you have to really look at the particular patient and particular clinical situation and see if the general causation really applies to this situation.

So hepatitis C has unequivocal association with one subtype of non-Hodgkin's lymphoma called splenic marginal zone lymphoma where the association is proven beyond any doubt, where treatment of the hepatitis C virus makes lymphoma go away; and in every case of this type lymphoma, you find virus in the system of the patients both in the blood and in the spleen.

Now, statistical analysis and epidemiologic studies have shown association that people with hepatitis C infection have high incidence of non-Hodgkin's lymphoma. I'm not disputing that statement and I think the statement is correct. However, when it comes to specific causation and you look at

Mr. Hardeman's case, Mr. Hardeman did not have any evidence of virus presence in his body or in his systems for I believe eight years prior to lymphoma diagnosis. He was treated for hepatitis C I believe [inaudible]. Ever since that time -- ever since that time, all of the testing, very sensitive molecular testing trying to find virus in his system did not show any evidence.

So with specific causation for this particular case for somebody as a lymphoma expert, it becomes really nonsensical, highly unlikely that hepatitis C virus had anything to do with development of his lymphoma eight years after documented elimination where it's not in his system.

Now, there is -- one can hypothesize that maybe there is virus left in his system we cannot see. It also makes the leap between the hepatitis virus and Mr. Hardeman's lymphoma is nonsensical because the way viruses cause lymphoma on a broader scale is not just being exposed to the virus. Virus has to be operational. Virus has to do something in the living cell to cause lymphoma, and it's different in a sense from chemicals like Roundup or any other chemical that cause direct DNA damage.

Viruses have to turn on their machinery. They have to replicate. They have to break the cell to become cancerous so much so that in every proven association of virus and lymphoma, every time we diagnose lymphoma, the virus is present there.

Every time we cure lymphoma, the virus disappears. And in many cases with a proven association, you treat the virus and it makes lymphoma go away or antiviral therapy is a very important part of treating a lymphoma.

When it pertains to hepatitis C literature, the strongest association, that's why it was established that it's a risk factor, is for cases and patients where there is a persistence of the viral particles and viral activity in person's bloodstream, liver, or we can find it anywhere in their system.

In Mr. Hardeman's case for eight years, very rigorous molecular level testing did not find any shred of the viral activity in his body. Based on the type of lymphoma he developed, I would give him at most one year from the development of lymphoma to his diagnosis because it's an aggressive type of lymphoma. It could not have been sitting there for 10, 15 years and all of a sudden we diagnosed it in 2014.

Aggressive lymphomas grow very rapidly so a patient asks me, "Hey, Doctor, how long I have this lymphoma?" I usually tell them most likely within six months. That's when lymphoma started growing or appeared, and possibly up to a year.

So I would say that Mr. Hardeman had no evidence of virus in his system for many years before even projected beginning of his lymphoma, when the first lymphoma cell has appeared.

So for that reason, how likely was specific general

causation for hepatitis C lymphomas for his specific case, I determined that in my opinion it is highly unlikely that hepatitis C virus that he had a decade ago and it was eliminated in an active form with the treatment had anything to do with this lymphoma.

Q. And, Dr. Shustov, you've read over 2,000 pages of Mr. Hardeman's medical records; correct?

A. That was a lot of pages, yes.

Q. Yeah. And you test the presence of hepatitis C or one tests the presence of hepatitis C by using a term called viral load; right?

A. That is correct.

Q. Okay. And from 2006 to today, has there ever been any presence of hepatitis C in Mr. Hardeman's viral load?

A. No. Not in his records. And what's also very important to note that when we treat patients for lymphoma and apply multiagent, very aggressive chemotherapy that he received against the immune-system tumor, patient immune system is basically annihilated for many months.

So in general, when people have any highly viral infections or infections like viruses or TB, you would see activation or resurgence of those viruses in the low immune status.

So even after Mr. Hardeman received six cycles of very aggressive, multidrug regimen, we're still not seeing virus in

his system. That gives me another kind of clue that it had nothing to do causing his lymphoma in the immediate past before the diagnosis, and for eight years before we did not see any evidence of it being present.

THE COURT: Can I interrupt for a second?

MS. WAGSTAFF: Sure.

THE COURT: Dr. Shustov, I'm trying to think back to approximately six months ago for me when we were studying the issue of general causation, and my memory about that is a little bit vague so I apologize if this question doesn't totally make sense.

But my question is about the issue of latency periods because when we were studying general causation, it became -- there were a lot of things that were debated but one thing that seemed to be fairly clearly established with respect to NHL is that there could be a long latency period -- 10-year, 20-year latency period -- from, you know, the time of exposure to glyphosate or whatever else might have caused the NHL to the initial development of symptoms or to diagnosis.

And I guess I'm having -- if I'm remembering that concept correctly, I'm having trouble squaring it with what you're saying about the lack of a link between hepatitis C and NHL because I don't recall when Mr. Hardeman was first diagnosed with hepatitis C, but you said that he didn't have any traces of it for eight years in testing; right?

But if there is -- if we can often expect a 10-year latency period for NHL, then why would it not be consistent with his medical records to say that hepatitis C might have caused his NHL?

THE WITNESS: So, Your Honor, that's a great question, and it really --

THE COURT: Well, you're paid a lot of money to say that but you don't have to say that. If it's a bad question, you really should tell me that it's a bad question. It's very important for the truth-seeking function to be honest with me if it's not a great question.

THE WITNESS: You're right. I'm being very honest with you and it actually requires explanation.

So the way that viruses cause transformation of normal cells, whether it's lymphoma or liver cell in case of hepatitis B, they have to be operational. So the viral DNA does not cause damage to the cell DNA like simple chemicals like glyphosate does.

So for viruses to transform the cell into cancer, they have to operate. They have to incorporate into the cell DNA and they have to function to do their job. So just sitting in the cell, viruses do not -- do not produce any results.

So the evidence of that is, as I mentioned, in the well-established models or clinical case where viruses cause transformation. The big difference between viruses and

chemicals like glyphosate and others that cause lymphomas is the chemicals transform cells into cancer by what we call genotoxicity or by causing DNA damage.

That's not how viruses operate. They have to actually function to do something to the cell to transform it into cancer. So it's a fundamental difference in mechanism how chemicals cause lymphoma and how viruses cause lymphoma.

So the testing that Mr. Hardeman has undergone is extremely sensitive to glean or detect any kind of viral activity at a molecular level that would require the virus to transform the cell.

So for chemicals like Roundup glyphosate or, say, exfoliants, they may damage -- DNA damage that was caused ten years ago, five years ago is sufficient to with time transform the cell into cancer.

So viruses have to do something and we have to see their activity at the time of lymphoma diagnosis and we have to see them in the lymphoma cells or at least present in the bloodstream to have the evidence that they're the responsible party.

Because one thing is that for the virus to do something 10 years ago and now virus disappeared, we're basically saying, "Okay. Virus attacked the cell, transformed it into cancer, and so it's jumped out without curing the cell and now cell later transformed into cancer."

So in a mechanistic way it's not the way the virus do that. They have to be present to cause that break in the cell. The molecular virus in the system at the time of lymphoma diagnosis makes it much less likely that virus was the cause of lymphoma.

So latency period means a different thing for chemical composition cell damage and for viruses infecting the cells and causing them to become cancerous.

And I can give you if you want several examples where this concept is very well demonstrated in terms of viruses -- other viruses, lymphocyte into cancer, but we don't have to go into other types.

THE COURT: Okay. Thank you.

Is now good? We've been going for about an hour and a half. Dr. Shustov hasn't been going for an hour and a half, but we have. Should we take -- how much longer do you think you have, Ms. Wagstaff?

MS. WAGSTAFF: So I have us going right now for about 55 minutes and I think we have about 20 minutes more is my hope so that I can save about 20 minutes for redirect. So I can do it now or I can do it later, either.

THE COURT: Why don't we take a break now. Why don't we resume at quarter after and then we'll hopefully finish up after that.

MS. WAGSTAFF: Great.

THE COURT: Okay. Thank you.

(Recess taken at 3:05 p.m.)

(Proceedings resumed at 3:19 p.m.)

MS. WAGSTAFF: Okay. So while we're waiting for the witness, I've marked as Exhibit 4 his CV, which was previous -- that exhibit sticker is from a previous depo. Sorry about that.

(Plaintiffs' Exhibit 4 marked for identification)

BY MS. WAGSTAFF:

Q. All right. Dr. Shustov, can you hear us?

A. Yes, I can.

Q. Okay. Are you ready to begin?

A. I'm ready.

Q. So prior to the break, the Court was asking you about the latency difference of hep C to NHL and exposure to a chemical NHL. Do you remember those questions?

A. I do remember.

Q. Okay. And do you recall when Mr. Hardeman was diagnosed with hepatitis C?

A. I don't remember exact time when he was diagnosed, and I think it's really hard to pinpoint actually when he contracted that. But I don't recall off the top of my head when the first diagnosis was -- first tested positive.

I do remember that he received a year-long treatment for the lymphoma, but --

THE COURT: We're having a problem. The sound is cutting in and out, Dr. Shustov, and so we can't decipher what you're saying. I don't know if there's anybody on your end who can do anything about it or if it's just the connection, but I'll ask you to repeat the answer you gave on whether you knew when Mr. Hardeman contracted or was diagnosed with hepatitis.

THE WITNESS: Yes. So I don't remember off the top of my head when the first time his test for hepatitis turned positive; but as far as when he contracted that, I think anybody would make a -- would be making a very wild hypothetical guess when exactly virus entered his body prior to actual diagnosis.

I do recall that when he enlisted into the U.S. military he did not have any positive tests at that time. So I cannot tell you exact date on either of those questions.

BY MS. WAGSTAFF:

Q. Okay. In your deposition, I believe you testified that he was diagnosed in 2005. Does that sound familiar?

MR. STEKLOFF: Objection, Your Honor.

THE COURT: Does it really matter at this point?

MR. STEKLOFF: Well --

THE COURT: It is what it is. Does it matter for purposes of trying to get his opinion excluded?

MR. STEKLOFF: That answer is fine if he wants to say yes, and then I can actually show something else.

THE COURT: Okay.

BY MS. WAGSTAFF:

Q. Okay. We can move on.

All right, let me...

All right. So let's talk about the hepatitis B. Going back to your expert report for Mr. Hardeman, do you still have that in front of you?

A. Yes, I do.

Q. Okay. And I believe that when we were looking at page 7 -- I'm sorry -- page 5 of your differential diagnosis, we're on paragraph six where you talk about hepatitis B as a risk factor?

A. That is correct.

Q. Okay. So why don't you tell the Court why you ruled hepatitis B in and how you ruled hepatitis B out as a substantial cause of Mr. Hardeman's NHL?

A. So hepatitis B, as a general cause, has been linked to development of lymphomas with not as strong of evidence as hepatitis C. So I felt it was important to discuss hepatitis B as a possible cause of Mr. Hardeman's lymphoma.

And the reason I stated again that hepatitis B was highly unlikely to be cause of his lymphoma, one of them is the same as the one discussed for hepatitis C. In order for any viral agent to be strongly linked to development of particular cancer or lymphoma, in this case from known cases of strong

association, we have to see the evidence of infection at the time of lymphoma diagnosis or lymphoma relapse.

Now, when it comes to hepatitis B in Mr. Hardeman's case, we did not have evidence that he had hepatitis B infection or was active infection. What we had was a test that he has developed immunity to one of the hepatitis B proteins, which means in the medical community, that he has been exposed to hepatitis B and his immune system remembers.

And I think none of the tests afterwards I have found that any of his providers identified presence of hepatitis B DNA or actual hepatitis B virus throughout the entire medical history provided to me.

So the strongest I should say association between hepatitis B and lymphomas was suggested for patients with persistent chronic hepatitis B infection when researchers identify chronic persistence of hepatitis B DNA or hepatitis B actual virus or antigen, none of which was the case with Mr. Hardeman.

Q. All right. So just to be clear, your opinion is that at one point Mr. Hardeman was exposed to the hepatitis B virus but he never -- there's no evidence that he actually had the hepatitis B infection?

A. That is correct. So clinically he never -- I've never seen evidence of hepatitis B replication in his bloodstream or in his body or any signs of actual virus presence in his blood

serum or in his body.

So all I can say by tests that indicates his exposure is that he had inactive hepatitis B virus and his immune system developed a response against hepatitis B.

Q. And can you explain the significance of inactive or dormant hepatitis B virus?

A. For the purpose of, again, risk factor for lymphoma, the strongest association has been demonstrated for cases of patients where there is a persistence of virus DNA or viral cortical in the subjects who develop lymphoma.

In patients where we determined that they have positive for immune system encounter with hepatitis B, all that means that at some point in the past that hepatitis B has entered Mr. Hardeman's body, his immune system reacted to it, and that for any practical purposes it either keeps it absolutely dormant or inactive or has eliminated virus altogether.

Q. Okay. Now, were you able to -- based on everything you just said, were you able to rule out both hepatitis B and hepatitis C as the sole cause of Mr. Hardeman's NHL?

A. Well, it is my opinion, it is my conclusion that based on the way that viruses cause transformation into cancer and what I found in medical records of Mr. Hardeman, which I stated specifically a lack of virus in their system for many years prior to the formal diagnosis, I find it highly unlikely that either of those viruses contributed to his development of

lymphoma in 2014.

Q. Okay. Now, has IARC classified hepatitis B or hepatitis C as a known carcinogen?

A. Yes. And I do not dispute the general causation of hepatitis when it comes to lymphomas. My conclusion pertains specifically to Mr. Hardeman's case based on my review of his medical history.

Q. Okay. And did IARC's classification have to do with chronic hepatitis C or just hepatitis C?

A. Their conclusion shows no association between chronic hepatitis C infection and chronic hepatitis B infection and developed lymphoma. And as I stated before, for somebody who spent over two decades studying and treating lymphomas, the viral etiology, the viral cause of the lymphomas, require the presence of the virus and the elimination of the virus at the time of diagnosis and lymphoma specifically for those proven cases.

Q. All right. So let's turn to page 9 of your report. You have two conclusions there; and in the interest of time, I'm not going to ask that you read them into the record. If you can just read them to yourself real quickly.

(Whereupon, a brief pause was had.)

BY MS. WAGSTAFF:

Q. Are those your opinions?

A. That is correct.

Q. Do you hold those opinions to a reasonable degree of medical certainty?

A. That is correct.

Q. All right. Let's turn to Mr. Gebeyehou. If you could put aside Mr. Hardeman's expert report and bring up Mr. Gebeyehou's, please, I think it is Exhibit 2?

A. I have it.

Q. Turn to page 5, please, of your report.

A. I'm here.

Q. Okay. The section that says analysis -- oh, I'm on -- I have got up the wrong report myself. Hang on one second.

(Whereupon, a brief pause was had.)

BY MS. WAGSTAFF:

Q. The section that says, analysis of Mr. Gebeyehou's risk for developing DLBCL, this is your differential diagnosis, right?

A. That is correct.

Q. All right. And so if you could just run really quickly through factors 1, 2, 3, and 4 and 5; and then stop when you get to hepatitis B.

THE COURT: Well, I don't think he needs to repeat the conclusions that he wrote down. I have read them. Why don't you get straight to -- straight to the point.

BY MS. WAGSTAFF:

Q. Okay. We will go straight to hepatitis B, and can you

explain how you -- you have already explained why you ruled it hepatitis B with respect to Mr. Hardeman. Is that the same reason why you ruled it hepatitis B with respect to Mr. Gebeyehou?

A. Pretty much. Again, the literature on hepatitis B, which is not as strong as hepatitis C, specifically finds association -- suspected association with chronic hepatitis B infection, which means that evidence of persistence or viral particles in those patients, those subjects, were persistence of hepatitis BTA. In subjects when there is absence of the virus, the association is much less reliable or not determined.

Q. Okay. So can you tell the Court why you were able to rule out hepatitis B specifically for Mr. Gebeyehou?

A. Mr. Gebeyehou's case, once again, the strongest fact that I found in his medical history as far as his exposure to hepatitis is the encounter of his immune system with hepatitis B agent and development of something called [inaudible] antibody or immune response against the virus. More so, I would again emphasize that Mr. Gebeyehou received identical treatment for his lymphoma where he was exposed to very immune depressive regimen in which case other evidence of hepatitis B infection would be resurgence of the virus, and we did not see that.

So the same principles that I used to explanation I used for Mr. Hardeman's case would apply to case of Mr. Gebeyehou.

In order for me to suspect the strong possibility of hepatitis B virus contributing to his lymphoma, I would have to see chronic persistence of the viral particles in his blood or serum or persistent hepatitis BCD and A.

Going back to the Court's question, it goes back to the mechanism of how virus transform cells to lymphoma. They have to continuously operate so that the cells that they infect become cancerous; and it is nonsensical pertaining to the mechanism that viruses infect -- transform lymphoma and exited without any trace that they were there. It is a different mechanism from basic chemicals like glyphosate or others cause DNA damage.

Q. Okay. So Meniere's disorder, did I pronounce that correctly?

A. Meniere's, yes.

Q. Meniere's disorder, can you please tell the Court and me what that is.

A. So Meniere's disease, we call it, is based off acoustic nerve that is believed to be autoimmune in nature that affects the nerve responsible for us leading to interpret acoustic signals. So when patients come and complain of ringing or herring impairment, we in general in internal medicine try to identify the causes of such impairment; and most common sort of problems would be ear plugs or [inaudible] impairment inside the ear canal and there are a few others. When we don't find

readily identifiable causes for those acoustic symptoms or symptoms of ringing in the ears, we are left -- in this case -- what we call idiopathic, as we discussed before, because we didn't identify anything. In those cases we are only left with possibility of autoimmune inflammation in acoustic nerve. That is what Meniere's disease constitutes. It is a diagnosis of exclusion of those symptoms where we did not identify any causes by tests.

Q. Okay. Did Mr. Gebeyehou have -- was he diagnosed with Meniere's disease?

A. In his medical records, he saw the, I believe, specialist and neurologist who suspected that he had Meniere's disease to explain his symptoms.

Q. So was there any evidence that he was actually diagnosed with Meniere's disease that you saw or can remember?

A. Well, there is no specific tests for Meniere's disease. As I mentioned, it is a diagnosis of exclusion.

Q. Okay.

A. So there is no blood test. There is no CT scans, there is no biopsy that can prove it; and that's what diagnosis of exclusion means. So after everything else is excluded any other explanation, he is left with possibility of Meniere's diagnosis.

Q. All right. And is Meniere's diagnosis a risk factor for NHL?

A. No, not with the current knowledge.

Q. Let's turn to your opinions on page 8 of that report -- of your report. If you can just read your opinions really quick to yourself.

A. Okay.

Q. Are those your opinions with respect to Mr. Gebeyehou?

A. Yes.

Q. Do you hold those opinions to a reasonable degree of medical certainty?

A. Yes.

Q. All right. If you could put Mr. Gebeyehou's report to the side, please, and turn to the final report, which is for Mrs. Stevick.

A. I have it.

Q. Okay. If you could turn to page 5 of your report, and similar to your --

A. I'm there.

Q. Excuse me?

A. I have it.

Q. Okay. Similar to your other reports, you have a section called analysis of Ms. Stevick's risks for developing DLBCL; and we talked about earlier how she has a DLBCL in the brain that is a certain different subtype, right?

A. That's right.

Q. Okay. And so this section that starts on 5 and ends on 6

is -- is your differential diagnosis, correct?

A. That's right.

Q. All right. And so we have -- we are not going to go through 1, 2, or 3 -- as we have discussed those -- and 4, as we have discussed those earlier. What I see not included in this report is a discussion of her radiation exposure which was discussed at your deposition. Do you remember that discussion?

A. I do.

Q. Okay. So why don't you tell me why the radiation exposure is not included in your report and what sort of consideration you gave it in your opinions?

A. So when I ask patients about exposure to prior radiation, I always clarify -- I hope my colleagues always clarify -- what we mean by that. So what it means is we ask them about substantial exposure to the doses and amounts of radiation that are considered to increase [inaudible] developing not only lymphomas but any other cancer.

So I personally always specify -- and specify for Mrs. Stevick what I mean by that -- and I give examples of somebody receiving radiation treatment for cancers in the past, whether she or other person has been deployed by nuclear power plant for any years, whether in the military person was stationed on nuclear submarine or worked somewhere in the facility both in the production of radioactive chemicals for research or for [inaudible]. Those would be considered a

substantial exposure to radiation and sufficient enough to consider it as a risk of cancer, in this case lymphoma.

THE COURT: Let me just interrupt -- I'm sorry. Let me just jump in for a second just for the benefit of the court reporter. This is very challenging for the court reporter because the sound keeps cutting in and out. What I will say is that, you know, don't worry about it. If you can't, you know, take something down, just mark it inaudible. It is not a big deal. It is just a Daubert hearing. If it is something that seems particularly important, I will make sure or Ms. Wagstaff or the other lawyers will make sure to jump in and make sure it is repeated. For the most part, it is not important enough to require the witness to repeat himself. I get the gist of it. Go ahead.

MR. WISNER: It is good because you can see her face like --

THE COURT: Go ahead.

MR. WISNER: I don't remember where we actually were.

THE COURT: I actually interrupted you. You were going to add something; but if you don't recall --

THE WITNESS: So when I asked Ms. Stevick those specific questions and examples -- and I mentioned the exposure to radiation treatment of other cancers, exposure to radiation while working in nuclear power plant or serving on nuclear submarine or involved in an industrial production of

radioactive chemicals for industry or research, those are examples of substantial exposure that she denied; that she did not have such exposure in the past, and that's why I stated she did not have exposure to radiation in either form.

Q. All right. So just to be clear, when you were doing your in-person examination of Ms. Stevick, you asked her about her radiation exposure; and she testified that she had none. Is that what you just said?

A. That is correct. And like -- I will repeat that I asked her specifically the exposure to radiation that would match those examples that I gave her.

Q. Okay. And since that time you have learned that, in fact, Ms. Stevick had minimal exposure to radiation through her 30 years as a speech pathologist where she was present for approximately 15 swallow tests over 30 years of a patient in the same room. Do you remember learning that since your deposition?

A. I remember it came up in the deposition, yes.

Q. Okay. And is that level of radiation exposure anything that would change your opinion in Ms. Stevick's case?

A. No. That exposure to radiation is an opinion of oncologist or former specialist, for that matter would be negligible. And just to give you an example that exposure to one -- she received one of those tests would be equivalent of just one plane flight from one coast to another. So the amount

of radiation we consider to cause DNA damage sufficient to develop cancer exceeds that exposure by a factor of thousands. So one would have to have thousands X-rays or CT scans for somebody to say, Well, your exposure was sufficient to consider X-rays or CT scans a risk factor for your lymphoma.

Another point to that would be we do not even keep track of how many CT scans patient had even when we treat their cancer because the chances of us exceeding a threshold or being worried about it is next to zero.

Q. Okay. So your original methodology included questions about radiation, and then you got updated information which you now are factoring in and it is your opinion today that the radiation exposure of Ms. Stevick is not a substantial contributing factor to her NHL; is that correct?

A. That is correct.

Q. And then if you look at the last paragraph in your differential diagnosis, which is paragraph 5, you talk about Ms. Stevick's Roundup exposure. You say his use, but I'm sure that is just a typo, her use; and you talk about her use of Roundup was both intensive, large quantities and with no barrier to prevent absorption, inhalation and prolonged roughly 25 years. Is that how you remember Ms. Stevick's Roundup exposure?

A. That is correct.

Q. Okay. And we skipped over that paragraph in

Mr. Gebeyehou's report, but you remember Mr. Gebeyehou having significant Roundup exposure as well?

A. Yes, I do.

Q. Okay. Okay. If you turn to your conclusions on page 8, if you could read those conclusions in Ms. Stevick's report.

(Whereupon, a brief pause was had.)

THE WITNESS: Yes, I read those.

BY MS. WAGSTAFF:

Q. Are those your conclusions with respect to Ms. Stevick?

A. Yes.

Q. All right. And do you hold those opinions to a reasonable degree of medical certainty?

A. I do.

MS. WAGSTAFF: All right. Does the Court have any questions?

THE COURT: Not right now.

MS. WAGSTAFF: I pass the witness. I will reserve time for redirect.

THE COURT: Okay. Before we get to Cross-Examination, just a couple quick things that popped into my mind that I want to say before I forget. One is with regard to the evidentiary issues that we were discussing this morning. What I would like to request of the parties, you all are filing your motions in limine on Wednesday or something; is that right?

MR. STEKLOFF: The 30th, Your Honor.

MR. WISNER: Yeah, that's --

THE COURT: What I would like to request is that you -- I'm looking ahead to trial, and I'm going to have my list of motion in limine rulings and want to keep track of those during trial. So I'm thinking about how we label the issues that have already teed -- been teed up compared to the issues that you are going to tee up on Wednesday. So maybe the best thing -- how were you planning on labeling it? Was it like Plaintiff's motion in limine No. 1, Defendant's --

MS. WAGSTAFF: We haven't talked about it. We have already exchanged responses and everything.

THE COURT: Right. What I would like you to do is either, you know, start at No. 7 because we have six issues that are already teed up or start at Plaintiff's motion in limine No. 4 and Defendant's motion in limine No. 4.

Frankly, for me it might be a little bit easier to just say No 7, No. 8, 9, 10, on down because there is often overlap between, you know, something that the Defendant does and something the Plaintiff does. I don't care that strongly about that, but I just want you to take the numbering -- take into account the fact that we have effectively already have six motions in limine on tap. Does that make sense?

MR. WISNER: Yeah, that makes sense. Also, are you going to have oral argument on those?

THE COURT: On what?

MR. WISNER: The other remaining 25 or however many motions in limine.

THE COURT: To the extent necessary, yeah, we will talk about it at the pretrial conference.

MR. WISNER: All right. That's what I was --

THE COURT: The other thing I wanted to flag for you all -- we don't have to talk about it now -- but thinking about like the best use of everybody's time, I'm wondering if it would have been better to go straight to Cross-Examination with Dr. Shustov; and I'm wondering if it will be better to go straight to Cross-Examination with two more witnesses, right?

MR. STEKLOFF: Yes, Dr. Nabhan next Monday and then Dr. Weisenburger the following --

THE COURT: Dr. Weisenburger is both general and specific? You are only cross-examining him on specific, right?

MR. STEKLOFF: Correct.

THE COURT: And the other witness is also specific causation?

MR. STEKLOFF: Yes, you excluded him on general causation, Dr. Nabhan.

THE COURT: Right. So I'm pretty strongly inclined to go straight towards Cross-Examination. I think what we did now in an hour plus could have been done in, like, ten minutes. To save everybody time I think that might be the way to go with the next two witnesses, okay?

MR. STEKLOFF: Yes, Your Honor.

THE COURT: Let's go ahead and plan on doing it that way with the next two witnesses.

CROSS-EXAMINATION

BY MR. STEKLOFF:

Q. Good afternoon, Dr. Shustov.

A. Good afternoon.

Q. I wanted to start talking about the copying of the report from Dr. Nabhan.

A. Sure.

Q. You testified that you received a report in an unrelated case from counsel that Dr. Nabhan had drafted; is that correct?

A. That's correct.

Q. And you reviewed the portion that touched on lymphoma generally and agreed with all of the opinions that he offered and so you copied them into the three reports here, correct?

A. That is correct.

Q. Now, you should have a binder of exhibits in front of you, and I will try to pull them up here on the screen; but I will tell you which tab to look at, Dr. Shustov.

A. Okay.

Q. Okay. If you can turn to tab 11 --

MR. STEKLOFF: If your Honor wants a copy, I have copies.

THE COURT: Yes, please. Two copies for us, if you

don't mind. Three copies.

(Whereupon: An off-the-record discussion was had.)

BY MR. STEKLOFF:

Q. Dr. Shustov, do you have a copy of the binder in front of you?

A. I do. You said No. 11?

Q. Sure. Yeah, I first want to show you tab No. 11. This is an e-mail dated -- I will mark this as Exhibit 5 -- this is an e-mail dated December 19th, 2018 from Plaintiff's counsel to a series of lawyers including myself. Do you see that?

A. I do.

Q. And it reads: Aaron, the report we discussed is attached. I have redacted the personal information about the client in the report. I can confirm that the client is not one of the three in the MDL. I can confirm that this e-mail was sent to Dr. Shustov on November 2nd, 2018. Do you see that?

A. I do.

Q. Then if we turn to tab 8 -- I will mark this as Exhibit 6 -- do you see that this is a redacted report from Dr. Nabhan?

MR. WISNER: Which are you marking as Exhibit 6, the report or the e-mail that you just said?

MR. STEKLOFF: Exhibit 5 is the e-mail and Exhibit 6 is the report.

(Defense Exhibits 5 and 6 marked for identification)

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BY MR. STEKLOFF:

Q. Do you see tab 8, the report, Dr. Shustov?

A. I do.

Q. This is the report that you received from Plaintiff's counsel before you prepared your three reports here; is that right?

MR. WISNER: Objection to the highlights.

THE COURT: Overruled.

THE WITNESS: Well, it's been over a month and a half or one month I received the report. It might have been this one. I can't just say this is the report especially --

THE COURT: Dr. Shustov, let me just interrupt and say if you hear an objection from counsel -- it is kind of difficult because of the time delay; but if you hear defense counsel, Monsanto's counsel, asking you a question and you hear Plaintiff's counsel objecting, try to pause before you answer and wait for a ruling from me.

THE WITNESS: Yes, Your Honor.

BY MR. STEKLOFF:

Q. Dr. Shustov, you can see toward the back of the report there is a series of paragraphs that are highlighted on the last three pages. Do you see that?

A. Yes, I do.

Q. And without reading every word, does that -- is that -- that's the material that you reviewed and then copied into your

three reports here; is that right?

A. It looks very familiar. It probably is, yes.

Q. So now let's turn to tab 7, please -- and we will mark this as Exhibit 7 -- and this is your report in Ms. Stevick's case, correct?

A. Yes, it is.

(Defense Exhibit 7 marked for identification)

BY MR. STEKLOFF:

Q. Okay. And so then if you turn to page 6 of the report, we have highlighted the language that appeared in the last exhibit we looked at that is verbatim or substantially verbatim to Dr. Nabhan's report. Does that look correct to you?

A. It looks correct.

Q. In fact, you will recall from your deposition that you made a mistake in -- and copied over something from Dr. Nabhan's report that was incorrect; is that right?

A. I do recall that, yes.

Q. So if we look at your first paragraph on page 6 under discussion of Ms. Stevick lymphoma causation, about two-thirds down you wrote: This meta-analysis found in association between glyphosate and development of B-cell lymphoma with an OR 2.0, 95 percent confidential interval, one-to-one -- 1.1 to 3.6 and there was the same odds ratio for DLBCL subtype; right?

A. I see that.

Q. And you recall having gone back and looked at this paper,

which is the paper titled Shinozi and Leon -- that there was no odds ratio for DLBCL, right?

A. Yeah, we identified that in the deposition. I recall that.

Q. So Dr. Nabhan made a mistake, and then you copied that same mistake without verifying its -- the fact that it was incorrect, right?

A. I was verifying Dr. Nabhan's report, and I missed that. I admitted that.

Q. Okay. And now you are certain that you did not receive a report from Dr. Nabhan in Mr. Hardeman's case, Mr. Gebeyehou's case or Ms. Stevick's case prior to drafting your report, right?

A. To the best of my [inaudible].

THE COURT: I'm sorry. Could you repeat that, Dr. Shustov?

THE WITNESS: To the best of my recollection, yes.

BY MR. STEKLOFF:

Q. Right. You made that very clear when Ms. Wagstaff was questioning you that for your specific causation opinions, you did that independent of any materials from any other expert, right?

A. That is correct.

Q. Okay. So I would like you to look at tab 10 -- and we will mark this as Exhibit 8.

(Defense Exhibit 8 marked for identification)

BY MR. STEKLOFF:

Q. This is Dr. Nabhan's report in Ms. Stevick's case, correct?

A. Yes, it is.

Q. You see that we have highlighted portions of that report as well, right?

A. I see that.

Q. Okay. I would like you to look at the bottom of page 1 specifically where it talks about there are three bullets that Dr. Nabhan drafted that starts: PCNSL is a rare form of NHL that represents 4 percent of brain tumors; do you see that?

A. I see that.

Q. And that discussion then goes on on the following page to talk about Ms. Stevick and her overall risk of developing that type of NHL, correct?

A. I see that.

Q. And that is specific to Ms. Stevick. You agree with that, right?

A. Um, discussion is specific to her lymphoma, yes.

Q. So now, let's look back at your report, but let's look at tab 9 -- and I will mark this as Exhibit 9.

(Defense Exhibit 9 marked for identification)

BY MR. STEKLOFF:

Q. This again is your report that you drafted in Ms.

Stevick's case, correct?

A. Yes, it is.

Q. And on page 2, you walk through part of Ms. Stevick's medical history, correct?

A. That's correct.

Q. And feel free, if you want to take your time, to look at tab 10; but everything we have highlighted is verbatim or substantially verbatim from Dr. Nabhan's report, right?

A. It looks very similar to Dr. Nabhan's report.

Q. All right. Then I would like you to turn to page 5 in your report, paragraph 6. Tell me when you are there.

A. I'm here.

Q. And that paragraph starts, PCNSL is a rare form of NHL that represents 4 percent of brain tumors, correct?

A. Yes.

Q. And that paragraph is extremely similar to the three bullets that we just looked at in Dr. Nabhan's report, correct?

A. It appears to be very similar, yes.

Q. It is also -- that paragraph, paragraph 6 on page 5 of your report, is also specific to Ms. Stevick. It is part of your specific causation discussion, right?

A. It is a discussion of primary C lymphoma, yes.

Q. In fact, Ms. Stevick's name appears halfway down the paragraph and in the third to last sentence line as well, correct?

A. That is correct.

Q. And so, in fact, it must be the case, Dr. Shustov, that you also received a Stevick specific report from Plaintiff's counsel that Dr. Nabhan drafted that you then used to draft this paragraph, right?

A. I don't recall that honestly.

Q. So you are telling the Court that it is just chance that the words match up like this?

A. In a rare form like this I think there is only so many ways you can describe it. I honestly don't recall receiving this kind of report before --

Q. To be clear, Dr. Shustov, you drafted every word of your report, right?

A. I authored all of my reports.

Q. And you think this is just a coincidence, the similarities between your Stevick report and Dr. Nabhan's Stevick report?

A. I do not remember receiving Stevick's report prior to drafting my report.

Q. Okay. I would like to switch gears, Dr. Shustov, and talk to you a little bit about DLBCL. You would agree that for most patients the cause of his or her DLBCL is unknown, correct?

A. I would agree that the causes of DLBCL is unknown because we never actually look for causes, not because they are unknown in the majority of patients. In general practice we do not spend too much time in trying to identify patients' causes

because our goal in everyday activities is try to cure and help patients with DLBCL. So they are unknown because we do not put rigorous effort to identify causes in every particular patient. It is my opinion that if we spent enough time looking at every single patient diagnosed with DLBCL, we would identify several or one or what have you risk factors just like you identify in the Plaintiffs because we are specifically focused on that.

Q. You agree that a risk factor is not necessarily a cause in an individual patient, right?

A. If it is a risk factor for every individual patient, then it is in my opinion more likely a risk factor contribute to the cause of lymphoma. Unfortunately, we do not have a specific test to prove it for most of the factors like radiation or exposure to chemicals because they are by the time we diagnose the lymphoma.

Q. You agree there is a difference between a risk factor and a cause in an individual patient, right?

A. Well, the risk factor for individual patient in my opinion is more likely to be the cause of this patient's lymphoma. It is not just because it is a risk factor, and it puts people at risk for lymphoma. Again, can I prove it by doing a biopsy in this patient? It is nearly impossible to do. We have to observe and identify risk factors and stating with a certain degree of certainty that that factor more likely than not contributed to this patient lymphoma. So if you are --

physician came to me and said I have 40 grade radiation five years ago, and now the patient has lymphoma. Can I prove the radiation proved the patient lymphoma? There is nothing that I test that could tell me that the radiation causes the lymphoma. I can state it is likely that the radiation was the cause of the factor to develop lymphoma.

Q. So it is your opinion that if a patient has a risk factor for NHL, it is automatically the most likely cause of his or her NHL, correct?

A. No, that's not what I said. It is not the most likely factor. It is one of the contributing factors of the substantial contributing factors. Is it the most likely factor? I can't say for certainty in every case.

Q. It is more likely than not if a patient has a risk factor, you would say that any individual patient regardless of the risk factor that more likely than not that risk factor is automatically a substantial contributing factor to his or her NHL?

A. I would say that, yes. That's why we identify risk factors to at least have a surrogate to the particular causing factor in every individual patient. That's the reason we look at risk factors.

Q. Okay. Now you -- when you testified on direct, you testified that what you are doing here is what you do in your clinical practice, right?

A. Well, what I said was that by -- the methods that I use and the way I exam and evaluate the patient was the same as I use in everyday practice. I obviously do not spend as much time and effort identifying causes of lymphomas in everyday practice because my job is to treat patients with lymphoma and not spend significant amount of looking at the causes.

Q. Right, I think you just told us, when I was asking you, you actually don't spend time looking at causes, right?

A. Not as much time as I spent in this case because I was asked to specifically do that. But as I stated before, in every patient that I encounter, I collect social history which is a survey of whether or not every patient that I encounter has risk factors in their previous life that could have been contributing to their cancer. That is our standard practice, and it is a good practice if you -- for caring for patients with cancer.

Q. You agree, Dr. Shustov, that in your clinical practice you have never once told a patient that his or her NHL was caused by Roundup or glyphosate, correct?

A. Specifically Roundup/glyphosate, no.

Q. Now, the -- well, first of all, the estimate -- understanding your explanation for why some cancers are idiopathic, the estimate for non-Hodgkin's lymphoma is that 80 to 90 percent are idiopathic, right?

A. Well, once again, we go back to the same statement, in my

opinion, the reason they are idiopathic -- we do not spend enough time looking at the risk factors that those patient have -- because the majority of the patients will be diagnosed in a community by practicing physician. And even academic practice most of our activities spent treating patients, and the reason we -- [inaudible] idiopathic is because we do not have either time, resources or focus on examining in depth every particular patient's history. And then we say, Well, if I screen the patient for usual question which is questions of radiation, exposure to toxic chemicals, if nothing is identified, I say, Well, this is -- the cause is unknown or it is idiopathic lymphoma.

Q. Some lymphomas have clearly identifiable causes like viral agents, right?

A. Very few exceptions, yes. We were able to identify specific link between viral agent or bacteria to a very specific type of lymphoma.

Q. So the answer was yes, right? Some lymphomas have clearly identifiable causes like viral agents, right?

A. Very, very few lymphomas, few.

Q. Okay. And some lymphomas you are also able to identify a specific mutation in the tumor itself, correct?

A. That is correct.

Q. And, in fact, you can identify the virus hepatitis C in a tumor if you run certain pathological tests, right?

A. You would be able to.

Q. And that -- we are going to talk about Mr. Hardeman; but that test was just not run at the time on his tumor, correct?

A. We did not run this test on tumor as standard medical practice.

Q. Now, to be clear, there are no specific mutations that you as a doctor can identify that indicate the cause of a patient's DLBCL was Roundup or glyphosate, right?

A. Well, none of the mutations in general would tell us what caused the lymphoma, so the mutations are consequence of the factor that contributed or caused the lymphoma and then mutation is a facilitator of the process of transformation from normal cell to the cancerous cells. So mutation themselves are a wrong way of looking for causes of lymphoma.

Q. But you can't identify any specific mutations in someone's cancer associated with Roundup or glyphosate, right?

A. There is no specific mutation to my knowledge that is link to any causative agent. So we have a list of mutations we look at in every lymphoma diagnosis, but they -- we are not looking at them as indicator of what caused the lymphoma or where the lymphoma came from.

Q. Dr. Shustov, isn't it true -- first of all, all three Plaintiffs here had Diffuse Large B-cell Lymphoma, right?

A. That's correct.

Q. Isn't it true that with Diffuse Large B-cell Lymphoma,

except for a very few cases where you can identify specific mutations, you can not identify the cause?

A. In every particular patient as specific cause of the lymphoma, it is very hard to identify. For a majority of patients we cannot run any tests or we don't have any tests to indicate where lymphoma came from; but, again, if we identify the risk factors the patient was exposed to, this is the closest we get to say that it is more or less likely that this factor contributed to the lymphoma.

Q. Dr. Shustov, I would like you to look at -- we have your prior testimony and so that should be in a binder as well --

MR. STEKLOFF: If the Court would like that, I can either pull it up on the screen or hand you a binder.

MR. WISNER: I gave you a copy of that.

MR. STEKLOFF: I'm not sure you have this testimony. It is from the *Wendell* case, so it is from a different case.

THE COURT: Why don't you pass it up. I don't like just relying on the excerpts that the lawyers have put together.

BY MR. STEKLOFF:

Q. Dr. Shustov, you were a an expert in the case called *Wendell versus GSA*; is that correct?

A. That's correct.

Q. If you turn to tab 4 of this binder, that has your testimony in this case. Do you see that?

A. Yes, give me a second.

(Whereupon, a brief pause was had.)

THE COURT: What page are you onto?

MR. STEKLOFF: Page 20.

THE WITNESS: Page 20 of the tab 4.

BY MR. STEKLOFF:

Q. Yes. Are you with me, Dr. Shustov?

A. I am. I am looking for page 20 under tab 4.

Q. I'm going to talk to you more about *Wendell* in a moment, but at line three you were asked: Okay. And can you give us a couple examples of lymphomas that are de novo or very rarely have a known cause? And your answer was: There is a majority of lymphomas, Diffuse Large B-cell Lymphomas -- then you list a couple of others -- those lymphomas we don't know the causes of except for a very few cases where we identify specific mutations. Do you see that?

A. It is on page 20. I'm sorry. I did not find it yet.

Q. Tab 4, Dr. Shustov, page 20, lines 3 through 9.

A. Okay. I'm here.

Q. So go ahead and read that question and answer, page -- lines 3 through 9, and tell me if that's what you testified to in the case where you were asked to give examples of lymphomas that are de novo or very rarely have a known cause.

A. Okay. I read it.

Q. You volunteered Diffuse Large B-cell Lymphoma, right?

A. That is correct.

Q. And then you said: Those lymphomas we don't know the causes of except for very few cases where we identify specific mutations. Do you see that?

A. I do see that.

Q. Okay. Now, let's talk a little bit about *Wendell*. In *Wendell*, did you use the same methodology or a different one than you are using here?

A. Sir, *Wendell* case was over ten years ago. I have very vague recollection of that case, but if -- if I was looking at the causes of somebody's lymphoma, I would most likely would have used the same methodology as we are discussing today.

Q. Okay. And in *Wendell* you recall that the type of cancer that the Plaintiff had was called hepatic splenic T-cell lymphoma, correct?

A. That is correct.

Q. It is a very rare lymphoma, correct?

A. That is very rare form, yes.

Q. You said that the chances of the Plaintiff in that case developing that type of non-Hodgkin's lymphoma were 1 in 6 million. Do you recall that?

A. I don't recall anything I said in this case, but the chances of any particular person developing this type of lymphoma is about -- is about correct.

Q. About 1 in 6 million?

A. Again, I would have to again look at the calculations; but it is one of the rarest types of lymphomas. I don't want to say the numbers without confirming them, but it is a very rare type of lymphoma. Probably one of the rarest.

Q. And Diffuse Large B-cell Lymphoma is one of the most common or the most common type of non-Hodgkin's lymphoma, correct?

A. That is correct.

Q. Now, at the time of your deposition in that case, which was 2013 -- so it was five years ago -- you had treated seven cases of hepatic splenic T-cell lymphoma. Do you recall that?

A. Again, I do not recall the facts of this specifically; but that would be in the right range. These are extremely rare, and all of my career I have treated either single digit number or at most a dozen patients.

Q. And that puts you -- you have probably treated more of that type of cancer than 99 percent of oncologists in the country, right?

A. I would say so, yes. [Inaudible].

MS. FORGIE: Hold on a second. I have a technical issue.

THE WITNESS: Something has dropped on my knee. Sorry.

BY MR. STEKLOFF:

Q. The allegation in that case was that the two drugs --

Mercaptopurine, an immunosuppressant, and Infliximab, a TNF antagonist -- caused Mr. Wendell's HSTCL, correct?

A. That's what the case was about, yes.

Q. And you, in fact, in your clinical practice of the seven patients that you had treated as of that case had found that two of the seven patients that their HSTCL was caused by that exact combination of drugs, right?

A. Once again, you asking me to recall on the spot something that happened five, seven years ago. It might be correct, but it might be not --

Q. Sorry. Look at page 22 of the same deposition. If you would like to refresh your recollection, page 22, line 20 through 23.3. Does that refresh your recollection that in your clinical practice that two of the seven patients that you had treated with that specific cancer, you had found that that was the cause of their cancer in your clinical practice?

A. Yeah. What I say that is what I stated in my deposition; but over 4,000 patients that I have treated over a decade, I can't just rely on my memory; but I would defer to what I said at the time which as I stated was five years ago.

Q. You certainly were trying to testify accurately under oath at the deposition, correct?

A. That's what I'm trying to do. You are asking me to recall something that happened five or more years ago and very rare cases out of 4,000 that I have seen.

Q. Okay.

A. That's [inaudible].

Q. That's what you said, and we will move on. So I want to talk about your methodology here and clarify a few things, okay?

A. Here meaning in the current case?

Q. Yes, in the current three cases, Mr. Hardeman, Ms. Stevick and Mr. Gebeyehou.

A. Okay.

Q. Now, you have portions of your report that discuss general causation. We just looked at some of them, for example, where you copied portions of Dr. Nabhan's report, right?

A. Correct.

Q. But you are not claiming to be an expert in epidemiology, right?

A. Not to the degree that I can look at or question anything that was reported by papers that I have seen.

Q. So when you made your determination to rule in Roundup or glyphosate, it is fair to say that you just -- you assumed general causation based on your review of other experts in the litigation, right?

A. I base my assumption or the notion that glyphosate Roundup is a risk factor based on expert reports, as I stated, Weisenburger and Portier and Ritz. This was the major sources where I did not have any reason to question it nor was I asked

to dispute their reports. This was not a purpose of my report.

Q. Right. You were asked to assume that Roundup can cause cancer, and then you were given the specific task of determining whether you should rule out Roundup as a cause of any of the three Plaintiffs, right?

A. That's correct.

Q. Now, you talked about how you reviewed two of the studies, and I want to talk through that, okay?

A. Sure.

Q. So the first study that you reviewed in determining exposure was the McDuffie study, correct?

A. It's one of the studies that I recall reading, yeah.

Q. Okay. Well, if you look at your report -- we can look at Ms. Stevick's report, which is Tab 9, and if you turn to page 7 of that report, that's where you describe in the first bullet, the first little bullet, the McDuffie study; correct?

A. Yes, I see that.

Q. And that's where you obtained the two days per year that you discussed during your direct; right?

A. Yeah. This was -- I recall it was between McDuffie and Eriksson where I got two days per year and ten days over lifetime. That's my recollection. That's as far as I went with the information.

Q. That's as far as you went, is that what you said?

A. Yes. So this is as far as I went reviewing general

causation literature so I can extract specific supporting facts so I can make my judgment on specific causation in the cases.

Q. Now, you also cited an odds ratio for McDuffie of 2.12. You understand that that's an unadjusted odds ratio? It's unadjusted for other pesticides; right?

A. I recall reading that I found only one paper to my memory without looking at the papers. I believe it was one of the De Roos papers where the pesticides were adjusted and in the other report they were not adjusted.

Q. So it's your recollection in the McDuffie paper and the Eriksson paper that there were no odds ratios reported when adjusted for pesticides?

A. Again, my recollection on the spot is that I recall one of the De Roos papers had adjusted for pesticides, and I did not go any further than that because I was not opining on general causation. I found at least one paper that adjusted for pesticides and for purposes of my specific causation, I felt it was sufficient.

Q. Okay. You didn't -- you certainly didn't distinguish in any of these paragraphs on this page 7 whether the numbers were adjusted for pesticides or not when discussing McDuffie, De Roos, in terms of whether -- which regression you were using, or the Eriksson paper; correct?

A. I did not discuss many specifics because this is not the purpose of my report. So I did an exploratory reading of the

general causation so I can support matching facts from that literature to specific cases of the patient. My reliance on assuming or presuming that Roundup causes lymphoma was from the general causation expert that I just mentioned.

Q. Now, we see that McDuffie is where you obtained the two days per year; right?

A. So between McDuffie, De Roos, and Eriksson, the two days per year and ten days lifetime. I can look at the papers but between those, that's where I got my measurements or my scale against which to match the exposure [inaudible].

Q. Right. I don't mean to belabor this, in your report you talk about two days per year in the McDuffie paragraph and ten days in lifetime in the Eriksson paragraph; right?

A. I would have to find it in my report.

Q. Don't worry about it, Dr. Shustov. We can read the report.

But those two metrics, two days per year or ten lifetime days, those became your floor for exposure; correct?

A. To match against the plaintiffs' usage, that's correct.

Q. So under your methodology, if someone used Roundup for at least ten days total or two days per year, you ruled in Roundup as a possible cause of their NHL; correct?

A. No. I ruled Roundup as a possible cause of NHL based on general expert reports. What I was looking in general causation papers is the actual at least some metrics so I can

compare specific exposure by plaintiffs. I did not rule Roundup as a causation based on that but, rather, my expert report said I didn't question. I was not asked to.

Q. That's a fair clarification. Let me ask it a different way.

Once the plaintiffs met that floor, so once they had exposure that was above either two days per year or ten lifetime days, then you did not rule out Roundup; right?

A. Not only did I not rule it out, it appeared to me that exposure in plaintiffs far exceeded that --

THE REPORTER: I'm sorry. I couldn't hear the end.

THE COURT: I said to the other court reporter, I or the lawyer will jump in and make them repeat if something that was inaudible is important; but other than that, I would say don't sweat it. Just mark that it's inaudible since this is just a *Daubert* hearing.

THE REPORTER: Thank you.

THE COURT: But I would like to ask a follow-up question of Dr. Shustov, if I may, just to make sure --

THE WITNESS: Yes, Your Honor.

THE COURT: -- I understand the testimony you've given on cross-examination.

So I believe that you said -- and please correct me if I'm wrong. I'm not trying to put words in your mouth. I'm just trying to make sure I understand it.

I believe that you said that once you identify glyphosate as a risk factor, that means that it's more likely than not that the glyphosate was a substantial factor in causing NHL. Do I -- am I recalling that testimony correctly?

THE WITNESS: Yes, Your Honor. And as much as a plaintiff's exposure was matched against what counsel called the floor, it was sufficient exposure, I did not question the fact that the Roundup is a risk factor.

THE COURT: Okay. I think -- so what you're saying is you're not questioning whether Roundup is a risk factor. You're relying on the general causation experts for that; right?

THE WITNESS: That's correct.

THE COURT: And then you've established this floor for exposure, and are you saying that once a particular plaintiff exceeds that floor of exposure, then automatically for any plaintiff, it means that Roundup was a substantial factor in causing their non-Hodgkin's lymphoma?

THE WITNESS: Well, this is only one of the parameters I was looking at to make -- to grade some scale how I can match the patient -- the plaintiff exposure to the floor that was established to have significant risk factor for lymphoma.

THE COURT: Sorry. Could you repeat that? Your sound went in and out so I'm not sure I followed the response.

THE WITNESS: Sure. So for me to rule the Roundup as

substantial contributing factor, besides the fact that I accepted as a general causation risk, one of the factors I would look at is whether the exposure in plaintiffs would exceed at least or match the exposure that's described in epidemiologic literature that demonstrated significant risk in terms of the odds ratio.

THE COURT: Okay.

THE WITNESS: So that's what I --

THE COURT: Oh, I'm sorry. Just to understand your methodology, but once you established that a plaintiff exceeded that floor -- okay? -- is it then automatic your conclusion that Roundup was a substantial factor in causing their NHL, or is there any other analysis that needs to be conducted before you reach that conclusion?

THE WITNESS: No, Your Honor. I would not make it a substantial contributing factor because then I have to go through my differential diagnosis or deductive method and see what else patient -- excuse me -- what else patients were exposed to or whether there are any other factors that I believe would be more significant than Roundup exposure.

It would give me the floor to rule in Roundup as one of the risk factors. I would have then to interrogate with differential diagnosis dictate and establish whether or not it was a substantial factor amongst other factors.

As an example, I would say if the patient had substantial

radiation exposure or if the patient was found to have some hereditary syndrome that causes cancer in 80 percent of the children of those parents, it might make me change my opinion whether Roundup or some other chemical was a substantial contributing factor.

But that floor that you're describing allows me -- allowed me to rule in the Roundup into my list of factors that I interrogated with my deductive method.

THE COURT: Okay. That clears it up for me. Thank you.

Go ahead.

THE WITNESS: Sure.

(Pause in proceedings.)

BY MR. STEKLOFF:

Q. But isn't it -- I mean, I just want to follow-up on that, Dr. Shustov, based on your prior testimony, because isn't it -- haven't you testified that if a patient -- or isn't it true that if a patient had the minimal exposure under Eriksson and/or McDuffie, you would say that Roundup was a possible substantial factor in that patient's diagnosis?

A. So let me give you a specific example. This is a question that kind of opens up a couple of possibilities.

In particular plaintiff's case, it is -- for me was the minimal requirement that I would include Roundup exposure into the list of substantial contributing factors and it would be

unlikely that I would exclude them at the end of my deductive -- deductive method.

Now, if -- on a general level if, say, somebody who was exposed to the Roundup at the minimum level and was diagnosed with lymphoma that is known to be 100 percent caused by a different virus, I would say that it's very likely that -- almost undeniable that the virus caused the lymphoma because of undeniable association and Roundup is less likely to cause this particular unique type of lymphoma.

But for most cases for the plaintiffs when I included Roundup into the list of factors, it became a candidate to me as a substantial contributing factor.

Q. Right. So in response to the judge I think you gave two examples. I think you mentioned lifetime exposure to radiation -- extensive lifetime exposure to radiation. That was one example you gave; right?

A. Correct.

Q. And then the second example you gave was if someone had a hereditary gene that in 80 percent of cases led to someone's -- the gene came from their parents and in 80 percent of cases it led to the child developing non-Hodgkin's lymphoma. That was the second example you gave; correct?

A. Correct.

Q. And we can agree that both of those circumstances are extremely rare; right?

A. Correct.

Q. And so absent extremely rare circumstances like those, the answer to the judge's question is yes. If someone has two -- has the minimal exposure under the two studies we've discussed, you would automatically say that Roundup was a substantial -- was more likely than not a substantial contributing factor to his or her development of NHL; right?

A. Yeah. So if we assume that or accept -- not assume -- if we accept that based on general causation the Roundup is a risk factor for lymphoma and the patient has the minimal requirement based on whatever limit of exposure we establish, it would be most likely one of the major contributing factors or the only contributing -- substantial contributing factor if I rule out other candidates on the list.

Q. So I'd like to shift a little bit and talk about some of the things that did not matter to your methodology. I think I'll go through it quickly because Ms. Wagstaff covered some of them.

It didn't matter to your methodology whether glyphosate came in contact with any of the plaintiffs' skin; correct?

A. It did not matter to my conclusion in the sense that I did not see any significance -- a significant discussion in epidemiologic literature, so I did not really include this into forming my opinion.

Q. Okay. And I'll accept that you didn't see this in the

epidemiological literature, but just to move quickly, it didn't matter whether the plaintiffs showered after using Roundup; right?

A. Again, it might or might not matter in general causation kind of discussion or in a particular discussion; but in forming my opinion about these particular patients, I did not consider this a substantial factor that allowed me to decide whether or not it was a substantial contributing factor.

Q. Same answer, that same thing is true as to whether the plaintiffs -- the area that they were spraying the Roundup in terms of land; correct?

A. The area contributed to my decision that insofar as it gave me a general idea of how much Roundup they were using on every -- every time they would treat their property, but it did not affect, again, my decision as far as specific causation.

Q. Okay. Same on the type of Roundup that plaintiffs used; right?

A. I'm sorry. Could you repeat this?

Q. The same answer with respect to the type of Roundup that the plaintiffs used; right?

A. I asked -- when I asked the patients what they used, I think all of them specified they used a super-concentrate I believe it's called. And beyond that, I did not question them on any of the specifics of the product.

Q. Right. But it also did not matter to your methodology;

right?

A. It did not enter into my decision for specific causation.

Q. Okay.

A. I am not saying it doesn't matter at all for other questions, but for making my conclusion, I did not include this as a factor.

Q. Right. But we're here to talk about your conclusions, Dr. Shustov, so that's what I'm trying to understand. Okay?

A. Okay.

Q. I'll move on past Roundup use, but one other thing that didn't matter to your conclusion was whether you had any literature to support the specific types of NHL that the three plaintiffs had; correct?

A. The type of NHL that the plaintiffs had was not -- did not play into my conclusion about their causation.

Q. Okay. So let's talk about these medical examinations that you testified about on your direct and just give some circumstances.

First of all, those interviews and examinations took place in a hotel conference room; right?

A. That is correct.

Q. By the Seattle airport; right?

A. By actually close to my medical center in the middle of Seattle.

Q. We can agree that's not where you typically examine your

patients; right?

A. No, it's not a typical place where I examine patients.

Q. And there was nothing in those physical examinations that occurred that indicated that Roundup was the cause of any of the plaintiffs' NHL; right?

A. Yeah. Physical examination would not be the test or method that would tell me what caused somebody's lymphoma.

Q. Right. That was not the purpose of these medical examinations that occurred; correct?

A. No. The purpose of the examination for me was to thoroughly evaluate the patient, including their history and physical findings. That's what I'm trained to do.

Q. Okay. And then you were -- when you took their medical history, you relied on that medical history over their medical records; correct?

A. I relied on both of those sources of information fully. Having said that, I never question a patient's answer to my questions when I ask them about medical or social history because I do know as a physician sometimes the transcribed records do have errors or typos or the information just skips transfer from one record to another without verifying it for a prolonged period of time for a patient.

So it would not be completely unheard of when I talk to patients in my clinic to verify that what I saw in the medical records was not correct, and I would make corrections to their

medical records to set the record straight.

Q. Right. So I can --

A. So I rely on --

Q. In this case when you met with the three plaintiffs, if there was a dispute between what they told you and the medical records, you relied on what they told you as opposed to the contemporaneous medical records that were written by their treating physicians?

A. It depends on the type of information that I'm considering. Say if the medical information we're talking about is a result of a C scan, I would rely on the C scan or radiologist.

If I have information of patient's [inaudible] history or alcohol use or in this case Roundup use, I would rely on what patients are telling me because information from medical records would use the same source, the patient, and sometimes providers or people who collect that information, which in many cases are not physicians but maybe physician assistant nurses, sometimes transcribe incorrectly. So for those kind of information I rely on what the patient tells me. I have no reason not to trust the patient.

Q. Okay. So before we talk about hepatitis C, I just want to clarify just following up on what Judge Chhabria asked you what your opinion is.

First of all, you agree that in any particular patient

nobody can determine what exactly caused his or her lymphoma; right?

A. In the majority of cases of lymphoma, it would be very hard to determine specific cause short of having specific tests that tells us what caused it.

Q. So, now, for all three of these plaintiffs, for all the reasons we've discussed, what your opinion is is that glyphosate substantially contributed or might have caused the lymphomas; right?

A. That's correct.

Q. You are simply saying that because Roundup or glyphosate increases one's risk of developing lymphoma, it is a possible substantial factor; correct?

A. It's one of the reasons, but there's the whole point of my report is to go through my -- not my, but methodology of looking at other possible factors and also looking at, as we discussed, limits of exposure and asking patients how they use it, how much they use it to match against those limits and taking the [inaudible].

If you gave me a hypothetical patient and said, okay, this patient was exposed to Roundup, is it a significant factor in their lymphoma, I would say I'd have to talk to the patient and do a thorough evaluation of medical records and then I can give my opinion, and that's what I did in this case.

Q. Right. And then you determined that Roundup was a

possible substantial factor in all three plaintiffs' cases; correct?

A. It is my opinion it's more likely than not a substantial contributing factor based on everything we discussed today: The level of their exposure and looking at other possible risk factors of diagnosis and ruling them out.

Q. Okay. And that would be the case for anyone who had sufficient exposure to Roundup; right?

A. For anybody with sufficient exposure, I would have to do, again, the same type of analysis or method. I would have to look at everything we discussed today in these plaintiffs' cases, their family history and autoimmune disease, other exposures, et cetera, et cetera, before I would draft a final opinion. It's not automatic. I would have to study this particular patient.

Q. Well, Dr. Shustov, look in the deposition transcript binder, look at Tab 1, which is your deposition in the Hardeman case. Okay?

THE COURT: Page?

BY MR. STEKLOFF:

Q. And I'm looking at page 217, line 18.

A. (Witness examines document.) Page 217, line 18.

Q. And you were asked (reading):

"I'm asking you, that's exactly what I'm asking you, if somebody is sufficiently exposed, is Roundup a

substantial contributing factor?"

And there was an objection, and then your answer was (reading):

"If you pose question -- if you pose the question directly in a similar situation, anybody who is substantially exposed, I would state the same. I would make the same statement that in this particular patient who had sufficient or substantial exposure based on general causation literature, that Roundup has increased the risk of lymphoma."

Do you see that?

A. I see that. You just stated that -- you just read my statement that in a similar situation, and in a similar situation where I had a chance of examining the patient and made the same list of risk factors and do my analysis, that's what similar situation means.

Q. Well, look at page 218, Dr. Shustov, line 15, because the discussion goes on. Do you see that?

A. So line 15, page 218. Okay. I'm here.

Q. And you were asked (reading):

"And that would be the case for anyone who had sufficient exposure to Roundup?"

And your answer was (reading):

"For anybody who had sufficient exposure to Roundup based on the published literature, answer is yes, it will

be a substantial contributing -- it will be substantial contributing factor."

That was your answer; right?

A. Okay. Well, we're having the same line of discussion where I stated just prior that in a similar situation. I think that is what I just said.

Q. Okay. Now, let's turn to your rule-out process. The lack of epidemiological expertise applies to other -- or your status as an epidemiologist or not applies to other risk factors as well; correct?

A. In terms of general causation, I would agree with you.

Q. And you didn't have reports from people like -- or experts like Dr. Ritz and Dr. Weisenburger and Dr. Portier about, for example, hepatitis C; correct?

A. That's correct.

Q. Okay. So if we look in your report about Mr. Hardeman, which you have from Ms. Wagstaff but also if you look in the exhibits binder, it's Exhibit Number 1, Tab Number 1 --

THE COURT: Before we go on, Mr. Stekloff, can I ask about how much time you have left?

MR. STEKLOFF: My plan is just basically to cover hepatitis C, which I'm hoping I can do in less than 30 minutes and then I think we're very close to done after that.

THE COURT: I would think it would be much less than 30 minutes.

MR. STEKLOFF: Yeah. There are some studies that I'm needing to show. I'm happy to just submit them to the Court, but I think that's one of the issues with hepatitis C.

THE COURT: Okay. Well, why don't we take a ten-minute break and we'll resume at 5:00 o'clock, and I will give you 15 more minutes.

MR. STEKLOFF: Okay.

THE COURT: And I will give 10 more minutes for the plaintiff for rebuttal, and that will be it.

MR. STEKLOFF: Okay.

THE COURT: Okay. Thank you.

THE CLERK: And for the record, real quick, that's going to be Exhibit Number 10.

(Defense Exhibit 10 marked for identification)

MR. STEKLOFF: Great. Thank you.

MS. WAGSTAFF: Did you say 5:00 o'clock, Your Honor?

THE COURT: Yes. We resume at 5:00.

THE CLERK: Court is in recess.

(Recess taken at 4:51 p.m.)

(Proceedings resumed at 5:01 p.m.)

THE COURT: Okay. We can resume.

MR. STEKLOFF: Thank you, Your Honor.

Q. Dr. Shustov, can you hear me?

A. Yes.

Q. Dr. Shustov, you just went outside the hotel where you are

and spoke with plaintiffs' counsel about your testimony; correct?

A. I just talked to the counsel about how the process is going, and I didn't talk about my testimony.

Q. Well, Dr. Shustov, isn't it true that Ms. Forgie was on a phone conversation with plaintiffs' counsel here in the courtroom while you were standing outside of the hotel?

MS. WAGSTAFF: That's not true.

THE WITNESS: I have no idea what she was -- who was she calling or what she was doing. I was eating a Snickers bar and drinking coffee outside the hotel. I have no idea.

MR. STEKLOFF: Okay. Your Honor, I'd like to pull up a photo. I guess Dr. Shustov won't be able to see it. If I can put it in the record as Exhibit 11.

(Defense Exhibit 11 marked for identification)

MR. STEKLOFF: We might not have it.

Q. But, Dr. Shustov, isn't it true that you were told on the break to say that not all potential risk factors are substantial contributing factors?

A. No, we did not have that conversation.

Q. Isn't it true, Dr. Shustov, that you were told that I was specifically going to show you five to six studies?

A. I do not recall specifically Ms. Forgie telling me that you're going to pull five or six studies. She mentioned that you might have papers that are not in my report. That's my

recollection just outside the room.

Q. So you were discussing some of your testimony with Ms. Forgie?

A. [Inaudible] Outside.

THE COURT: Oh, could you repeat your answer? I'm sorry. We had -- you were cut off.

THE WITNESS: I just specifically said what Ms. Forgie told me, that you might have literature about hepatitis that is not in my report.

BY MR. STEKLOFF:

Q. Okay. But I just want to be clear, is it your testimony under oath that on the break you did not discuss with plaintiffs' counsel the content of your testimony beyond that?

A. Beyond that, the only thing that I asked Ms. Forgie is how is my testimony and how the discussion is going.

Q. Okay. And it's your testimony she didn't say anything about clarifying things about potential risk factors or substantial contributing factors?

A. I don't recall that.

Q. And if we can just pull up the photo and admit it quickly as Exhibit 11 and then we'll go to hepatitis C.

MS. WAGSTAFF: Your Honor, I'd like to see this photo that you're pulling up.

MR. STEKLOFF: You can see it on the screen now.

And, Your Honor, I'll just put it on the record that

multiple attorneys both in Seattle and here in the courtroom heard discussions about -- between -- you know, here we heard lawyers here talking to lawyers there about things Dr. Shustov should say, and there we heard Dr. Shustov talking about the specifics of his testimony with plaintiffs' counsel.

MS. WAGSTAFF: So --

MR. STEKLOFF: I will move on.

MS. WAGSTAFF: No, no. Your Honor, you can see I'm here alone right now and I can tell you that whoever Ms. Forgie was talking to on that phone was not me. So I have no idea when this was taken or what she's done, but this is completely ridiculous.

THE COURT: Okay. Well, if it's completely ridiculous, then it doesn't matter if the photo is admitted.

MS. WAGSTAFF: Okay.

THE COURT: So it's admitted.

(Defense Exhibit 11 received in evidence)

BY MR. STEKLOFF:

Q. Okay. Dr. Shustov, let's talk about hepatitis C. First, it's your testimony that there's no evidence that Mr. Hardeman ever had chronic hepatitis; correct?

A. I haven't found any -- anything in Mr. Hardeman's record to document persistence of the virus or viral particle in his system. That would be a different issue of chronic hepatitis C.

Q. Well, chronic hepatitis C is a persistent presence of the virus in an individual; correct? Active virus; correct?

A. Chronic hepatitis C is a particular syndrome that includes persistence to the virus, persistent activity of the virus, and virus affecting the hepatic function, which is the primary target of hepatitis C virus. Hepatic is liver.

Q. So in your --

A. So Mr. Hardeman's liver tests never showed any significant abnormalities for me to suspect that he has clinically inflammation for hepatitis virus. Neither I saw any testing to suspect that there was continuous replication of hepatitis virus in his body.

Q. Right. But you only had his medical records since 2005; correct? That was the first date -- the first date that you had a medical record for Mr. Hardeman was in 2005; correct?

A. That sounds right. I would have to look at his records, but it sounds about right.

Q. Right. And he could have had -- well, let's just look at what the medical records say. Can you turn to Tab 15?

And let's not -- please do not pull this up on the screen but the Court can look. There's a *motion in limine* that's subject to this medical record.

And do you have Tab 15 in the exhibits binder in front of you?

A. (Witness examines documents.)

MS. WAGSTAFF: Is this in Volume 2?

MR. STEKLOFF: This is in Volume 1.

MS. WAGSTAFF: 1.

MR. STEKLOFF: Tab 15.

THE CLERK: This is Exhibit 12.

(Defense Exhibit 12 (provisionally under seal) marked for identification)

MR. STEKLOFF: We'll make this Exhibit 12.

Q. And it talks about, and I don't want to read the whole thing because of the *motion in limine* --

MS. WAGSTAFF: If we're going to make it an exhibit, can we put this exhibit under seal pending the *motion in limine*?

MR. STEKLOFF: If the Court is okay with that, that would be acceptable to me, Your Honor.

THE COURT: Well, it looks like it has -- I mean, at least at first glance it seems like it might be appropriate for some or all of this to be under seal so it's fine to have it provisionally under seal for now.

MS. WAGSTAFF: Yeah.

THE COURT: Okay.

MS. WAGSTAFF: And it will become clearer when we argue -- when you read your *motions in limine* what we're talking about.

THE COURT: Okay.

BY MR. STEKLOFF:

Q. But, Dr. Shustov, for our purposes here Dr. Ruffner-Statzer -- that's the doctor who treated Mr. Hardeman's hepatitis C in 2005; correct?

A. That's correct.

Q. And she notes a history of hepatitis and then says 1966; correct?

A. (Witness examines document.)

Q. I'm looking under the progress notes about five lines down, and I just want -- I'm just reading "History of hepatitis 1966." Do you see that?

A. (Witness examines document.)

THE COURT: I think the screen might be frozen.

BY MR. STEKLOFF:

Q. Dr. Shustov, can you hear us?

A. Yes, I can, very well.

Q. Sorry. We couldn't hear your answer, but do you see where it says "History of hepatitis 1966"?

A. Yes, I do. "History of hepatitis 1966-unclear what type."

Q. Okay. And then it lists a series, and I don't want you to read them out loud, but it lists a series of risk factors for hepatitis that occurred in Mr. Hardeman's life between 1966 and 1969. Do you see that?

A. I do.

Q. And those, in fact, are risk factors for hepatitis C;

correct?

A. That's correct.

Q. Okay. And then if you turn to tab 17, which we can mark, please, as Exhibit 12 --

THE CLERK: 13.

(Defense Exhibit 13 (provisionally under seal) marked for identification)

BY MR. STEKLOFF:

Q. -- 13 --

THE COURT: Tab what? Sorry.

MR. STEKLOFF: Tab 17, Your Honor.

MS. WAGSTAFF: And I would just ask for now all of his medical records are provisionally under seal.

THE COURT: That's fine. I have to say the parts I read didn't seem like they should be under seal, but -- or the part that we just looked at didn't seem like it should be under seal, but for now, I'm fine with this exhibit and the last one being provisionally under seal.

BY MR. STEKLOFF:

Q. And this, Dr. Shustov, is another record from November 2005 and it notes in the diagnoses "Hepatitis C, chronic"; correct?

A. I see that.

Q. And above that it also notes "Cirrhosis of liver"; right?

A. I see that.

Q. And you agree that hepatitis C can cause cirrhosis of liver; right?

A. In some patients it can. It's not the only factor that can cause cirrhosis but it can.

Q. Right. One factor is extensive alcohol use; correct?

A. Another possible factor, yes.

Q. And there's no evidence that Mr. Hardeman extensively used alcohol in his life; correct?

A. Based on my conversation with him and I would go back to his medical records, he did have exposure where he used alcohol significantly prior to enlisting into the military, and he continued to drink modestly afterwards. If you want me to go to my report, I think I documented that to verify.

Q. Okay. Well, we can look --

A. I believe what he -- I believe what he told me, without looking in my report, that prior to enlisting in the military, he had more substantial use of alcohol with his girlfriend and then it subsided significantly just before and obviously after he enlisted in the military.

Q. Okay. Well, you agree that when hepatitis C is a cause of cirrhosis of the liver, it takes decades for that cirrhosis to develop; correct?

A. I think decades would be the average time. In every particular person it could be faster or some people could be longer than that. In medicine we operate in things called

median time. So the median time is long but what it means is by that time half the patients develop cirrhosis but half would have developed cirrhosis much earlier than that or much later.

Q. Okay. And then quickly if you flip the page, I just want to look at the ICD-9 code that his doctors listed for chronic hepatitis C. Do you see on the top of page 82 the ICD-9 code is 070.54A? Do you see that?

A. Okay.

Q. Okay. We'll come back to that in a moment.

MR. STEKLOFF: I just want to admit, Your Honor, if it's okay for the record, Tabs 18, 19, 21, 22, 23, and 24, which all show a diagnosis of chronic hepatitis C. If we can make that a cumulative exhibit.

THE COURT: Any objection?

MS. WAGSTAFF: No objection. I would just request the provisional under seal.

THE COURT: All right. Provisionally under seal and it will be admitted as one exhibit.

(Defense Exhibit 14 (provisionally under seal) received in evidence)

BY MR. STEKLOFF:

Q. Okay. Now, Dr. Shustov, if you can turn to the scientific literature binder. Before I sit down, in my last two minutes or so I just want to go over a very few studies with you.

Can you turn to Tab 17 of that binder?

A. (Witness examines documents.) Yes, I'm here.

Q. And do you see this is a study by Dr. Giordano entitled "Risk of non-Hodgkin's lymphoma" and it goes on "in U.S. veterans with hepatitis C virus"?

A. Yeah, I see it.

Q. Okay. Now, turn to the second page. There's a section that says "Study patients infected and uninfected with HCV." Do you see that?

A. So the second page, which column? Oh, yes, I do see it.

Q. Okay. And --

A. I do see it.

Q. Do you see four lines down that the authors list the ICD-9 diagnosis codes that they used for specifying HCV infection and that one of them is 070.54, the exact code that we just saw from Mr. Hardeman?

A. Yes, I do see that. And actually it is not a reliable way of identifying such objects with chronic hepatitis, diagnostic codes or billing codes. And more than that, from treating physician records of chronic hepatitis, I have no reason to dispute it, but I don't think he had chronic hepatitis. I would have to review the source documents, why this physician made that determination.

I have absolute respect for the treating physician. In medicine, for me to opine on a disease, I would have to have the source documents just like I would expect a physician who

would see my patients would not take my word for it but would look at the source documents of the patient's records to make their opinion.

So what I saw in the medical records it is the opinion of the physician who treated Mr. Hardeman back in 2005; but if you want me to opine on his condition, I would have to see the source documents by that physician who listed that diagnosis.

And the studies -- to the second of your points, studies that list diagnostic codes are much less reliable than studies that rely on -- or take into account specific tests to support the diagnosis. And the reason I know this, I have published papers when we reviewed [inaudible]. It's not the most rigorous way of identifying somebody with a disease.

Q. Okay. So I understand you have criticisms of this paper, but you didn't even consider this paper in your report; right?

A. This was not the basis of my report.

Q. Okay. And I just want to quickly look at the conclusions on the first page. It says (reading):

"Hepatitis C virus infection confers a 20 to 30 percent increased risk of non-Hodgkin's lymphoma."

And then it goes on to say (reading):

"These results support an etiological role for HCV in causing lymphoproliferation and causing non-Hodgkin lymphoma."

That's what it says; correct?

A. (Witness examines document.)

Q. Did I read that correctly, Dr. Shustov?

A. I'm verifying that. Just one second.

(Witness examines document.) Yes, I see what you just read.

Q. Okay.

MR. STEKLOFF: And, Your Honor, just for efficiency, I'm happy to ask Dr. Shustov, or is it possible to just introduce two other studies for Your Honor? I mean, I'm happy to just sort of introduce them to you and show you --

THE COURT: You can take a couple more minutes to ask Dr. Shustov if you want to just take a couple more minutes.

MR. STEKLOFF: Okay. Thank you.

Q. Dr. Shustov, can you please turn to Tab 10 in your -- in the same binder?

A. (Witness examines document.) I'm here.

Q. Okay. And this is a study by Dr. deSanjose. Do you see that? And then others, of course.

A. Yes, I do.

Q. Okay. So let's first just look at the background and aims on page 1. It says (reading):

"Increasing evidence points towards a role of hepatitis C virus infection in causing malignant lymphomas. We pulled case control study data to provide robust estimates of the risk of non-Hodgkin's lymphoma

subtypes after HCV infection."

Do you see that?

A. I do.

Q. You also didn't consider this study in offering your opinions about Mr. Hardeman; correct?

A. What you're asking me to do is judge my opinion by pulling one sentence out of a 15-page paper. As a clinician, I cannot either agree or disagree with this. I would have to read it and if you ask me specific questions about the conclusions.

Writing papers myself, reviewing papers, I cannot just take for granted the conclusions that are made, and I would have to look at any [inaudible] or at whether what is published in this paper specifically pertains to Mr. Hardeman.

THE COURT: Dr. Shustov, if I could interrupt you on a couple of points. One, is my sense is that it's possible that the sound is going in and out when you move around a lot; that it may be possible that if you try to stay still, we will lose sound less frequently. I know that's hard because that's not how normal people talk, but do your best.

The second thing is I think that the question --

THE WITNESS: I'll try, Your Honor.

THE COURT: -- I think that the question was did you rely -- I think it's a yes or no question. Did you rely or consider this paper in connection with the conclusions you reached about Mr. Hardeman? Not whether you agree with this

paper or not, simply whether you considered it or relied on it.

THE WITNESS: I don't rely on this particular paper.

BY MR. STEKLOFF:

Q. Okay. And just quickly if you look at page 2 under "Materials and Methods," and if you go five lines down, it says "Studies" -- so they're pooling studies, and it says (reading):

"Studies were required to have used the third generation enzyme linked immunosorbent assay test for HCV."

Do you see that?

A. I do.

Q. And that, Dr. Shustov, means that patients who were part of these studies did not have -- did not -- were not required to have active HCV infection to be included in the study at the time of their cancer diagnosis; correct?

A. I would have to read this in more detail before I make any type of statements.

Q. Okay. Well, the third generation enzyme linked immunosorbent assay doesn't tell you whether someone has active viral load, it just tells you whether someone has been exposed to hepatitis C at some point; correct?

A. I cannot answer this question again without reading what specific assays they used in the study because the immunosorbent assays can be directed to detect different substances from either viruses or other chemicals that you're

searching for. I would really have to look at what exactly they were searching in the studies. Is it the viral particle, is it the viral RNA, or is it any other components?

I can tell you it sounds like it's a very sensitive technique, but in order to apply the study and see if it's relevant to the plaintiffs, I do need to look at specific what they are.

Q. Okay. So one last thing on this study. On page 5 under "Discussion," third line down, I just want to read that sentence into the -- or two sentences into the record (reading):

> "Our results show increased risks of DLBCL and other lymphomas associated with HCV infection. These risk estimates were particularly robust for DLBCL with a twofold increased risk overall and a statistically significant increased risk observed in three of the seven studies."

That was the conclusion of the authors; correct?

A. I see their conclusion and, again, to support this, as a clinician, I would have to read exactly what the results in the paper have stated, not just the conclusion, whether it has any flaws that the study contained that might or might not be relevant to the plaintiffs.

And I want to also add that I'm not questioning the general causation of hepatitis and the [inaudible]; but in my

report, I used my judgment based on all my knowledge whether in a particular case the plaintiff who had hepatitis C had or had not been a substantial contributing factor.

Q. Right. But you made clear at your deposition that you -- part of the basis for ruling out hepatitis was that there was no evidence that Mr. Hardeman had chronic hepatitis; right?

A. There's no evidence that he had persistent or viral activity in his system for eight years prior to diagnosis.

Q. Right. But he may have had it for 40 years, from 1966 until 2006; correct?

A. He might have had it but I don't have, again, any source documents to prove this to me. And when I made my opinion [inaudible] my conclusions, and that goes to the strength of whether in the test results that he had this sort of virus. I cannot dispute it. I just don't have anything to support that.

Q. Right. In other words, in ruling out hepatitis C in Mr. Hardeman's case, you because you didn't have a record ignored the possibility that he had active hepatitis C for 40 years that also led to him having cirrhosis in his liver? You didn't consider that because you didn't have a record that said it; right?

A. I did consider it. I did not ignore it. I just reviewed medical records that were available to me did not support or did not provide any proof to me that Mr. Hardeman had persistence of the viral activity whether before or after he

was treated with Interferon. I'm not disputing his physician's statement, but as another physician, I need to see the source documents based on which the treating physician made that determination.

MR. STEKLOFF: One last study and then I'll be done, Your Honor.

Q. If you can turn, please, to Tab 22, Dr. Shustov.

A. Yes, I am.

Q. And this is a study by Dr. Mahale. Do you see that?

A. Yes, I do.

Q. And do you see this -- actually, turn to page 2 where it talks about conclusions. And do you see that it says "Risks of Several EHMs." What are EHMs?

A. I don't know what EHMs are. Let me look at the abbreviations.

(Witness examines document.) Okay. I see it. Extrahepatic manifestations.

Q. Okay. HCV -- and that would include lymphomas like NHL; correct?

A. I am not so sure that it means secondary cancers as extrahepatic manifestations. To me what extrahepatic manifestations are a clinical symptom of hepatitis and other organs. Like hepatitis A leads to kidney disease. Hepatitis B leads to cryoglobulinemia. Hepatitis C leads to bone marrow disease.

At first sight, that's actually what extrahepatic manifestation means. It is not automatic to me that it means lymphoma that might have been caused by hepatitis. That's what it means to a clinician.

Q. Okay. Well, your testimony is essentially that because Mr. -- I think the judge asked you questions about this in the context of latency. I mean, your testimony was that because this hepatitis C was treated for the eight years prior to Mr. Hardeman's development of NHL, that is what led you to rule out hepatitis C; correct?

A. Well, mainly to rule out hepatitis C I'll call it unlikely is the fact that after the treatment, there was no evidence from years and years of testing that there was evidence of replication of the virus anywhere in Mr. Hardeman's system. If he had hepatitis C replicating in any of his organs, the very sensitive molecular techniques that you just mentioned, it would detect viral particles in the blood of the patient, whether it's liver or extrahepatic.

And that's what I based my conclusion on, that for eight years continuous testing by the physician you mentioned did not show any evidence of activity of the virus at the very sensitive molecular level.

Q. And just to clarify, he did not have evidence of active virus, according to you, between 2006 and 2015; correct?

A. I have not seen or I do not recall any tests that would

suggest that he has replication of the virus in that period of time.

Q. Right. And that's because he was treated between 2005 and 2006 with Interferon-based antiviral therapy; right?

A. It might have been the major factor that either eliminated the virus or made it nonactive for all those years.

Q. Right. And what -- I want to now go back to the Mahale study. What the Mahale study says, if you look back at the conclusions, is that "However, early initiation of AVT may be required to reduce the risk of," and it specifically specifies NHL; correct?

A. Okay.

Q. So if Mr. Hardeman, and I understand that you say you can't tell, but if Mr. Hardeman had HCV since the 1960s, active virus, and then he wasn't treated until 2005, what the Mahale paper tells us is that that Interferon, that antiviral therapy may not reduce his risk of developing NHL; correct?

A. No, that is not what it tells us. It tells us that the treatment of hepatitis early might reduce the risk of NHL because there is less time of persistence, there's a shorter time where the virus is persisting in somebody's body to cause the risk of lymphoma. It does not tell us that after elimination of the virus that it has anything to do with that risk.

Q. Right. And Mr. Hardeman wasn't treated with that

Interferon until 2005; correct?

A. That is correct.

Q. And we have a debate about whether he was exposed since the 1960s and had the active virus that led to his cirrhosis for 40 years; right?

A. Correct. So the debate is, what I'm trying to opine on that even if he had hepatitis C virus prior to 2005 for many years, it did not develop lymphoma at the time. Once you eliminate the virus or activity of the virus in his system in 2005, it is highly unlikely that eight years later he developed a lymphoma.

If you told me that he had persistence of hepatitis C virus for many years and while he had persistence he developed a lymphoma, my opinion most likely would be different because, as I stated before, based on how viruses cause transformation of lymphocyte due to lymphoma, it requires persistent viral activity to cause changes in the cells that make them cancer, which is different from basic cancers.

And what this conclusion tells me, that it's a persistence of the virus, how long it lasts, that puts people at the risk of developing NHL; and the sooner you treat it, then the less persistence of the virus you have, it eliminates or reduces the risk of those complications.

Q. But you -- I just real quickly want to use one analogy. So one can smoke for 15 years and then stop smoking and then

develop lung cancer 15 or 20 years later; correct?

A. That would be questionable in this day and age whether smoking had -- how much smoking had to do with this because, as I stated in my report, the various findings of lung cancer literature indicate that the way that smoking caused lung cancer, as decades go by after cessation of smoking, the risk of lung cancer from smoking actually subsides to the point where on average after two decades, the risk becomes equal to the person who never smoked.

Q. Well, you agree that the --

THE COURT: Okay. It's time to wrap up.

MR. STEKLOFF: Yeah, that's fine. One last question.

Q. You agree that the latency period for non-Hodgkin lymphoma can be decades; correct?

A. The latency, as we discussed, means different things when you talk about viral agents and chemical exposure or simple chemicals. The latency for viruses I do not dispute that, but the latency for viruses would mean that they have to have persistent viral activity for all those years to put patients at higher and higher risk of developing lymphomas. So that's viral latency.

The latency for chemical exposure is different. You don't have to have chemicals in your body because it is based on DNA damage, and then the latency persists or risk persists despite the fact that the chemical is out of the system. It's just

such a dramatic difference in how viruses and chemicals cause transformation into cancer.

MR. STEKLOFF: Your Honor, could I just move -- I'm sorry. I think that I've lost track of exhibit numbers, but can I just have Tab 10 and Tab 22 marked as exhibits.

THE CLERK: You already did it.

MR. STEKLOFF: I got a note that I didn't so, okay. Sorry. Thank you, Your Honor.

THE COURT: Thank you.

Ms. Wagstaff, before you do your very, very quick redirect, let me just explore something briefly with Dr. Shustov.

Let me just be as transparent as I can be with you about the concern that I have with your opinion, and it goes back to the issue that I was asking you about earlier where I said, you know, once you determine that somebody has exposure to glyphosate above the floor, does that automatically mean that it was a substantial factor in causing the NHL? And you said, well, no, not automatically; right? You still have to conduct your analysis.

But I think I took you to be saying that unless some overwhelming fact entered into the analysis, some significant overwhelming factor entered into the analysis, we would conclude that the glyphosate exposure was a substantial factor in causing the NHL.

Did I state that correctly?

THE WITNESS: You did, Your Honor.

THE COURT: What? I did?

THE WITNESS: You did, Your Honor.

THE COURT: Okay. And the analogy might be, all right, somebody smoked moderately for a period of time -- right? -- and they got lung cancer; and normally, you know, if we found out that somebody smoked for a moderate period of time and then they got lung cancer, unless something overwhelming came in, we would conclude that the smoking was a substantial contributing factor to their lung cancer.

Something overwhelming might happen like you might learn that they worked every day for 50 years in an asbestos mine, and then we might say, "Well, maybe then we would conclude that it wasn't the smoking but it was the asbestos." I don't know.

And that makes sense in the context of the cigarettes and the asbestos example to me because the evidence is so strong that tobacco -- that smoking causes lung cancer; right? There is no dispute about, as a matter of general causation, that smoking causes lung cancer and the evidence is overwhelming.

In contrast, with glyphosate, whatever anybody wants to say about general causation, the evidence of a link between glyphosate and cancer is much, much, much weaker than the evidence of a link between smoking and cancer. Okay?

And so the way you describe it, it sounds like you are not

taking the relative weakness of that evidence, of that general evidence -- general causation evidence into account when you are conducting your analysis. It sounds like you're treating the glyphosate -- once it's crossed the threshold into risk factor, you're treating it no differently than you would treat cigarettes in my example.

And on the surface, to me anyway, that sounds like a real problem with your analysis because it may be that we haven't identified any other factor that is overwhelmingly likely to have caused somebody's NHL; right? But the evidence of -- the evidence that glyphosate caused the NHL might still be kind of weak.

And so the conclusion might be "We simply don't know what caused this person's NHL." Right? Maybe if you put a gun to my head and you asked me to identify the factor that was most likely to have caused the NHL, I might say glyphosate based on the evidence, but I still don't have a lot of confidence that the glyphosate caused the NHL.

And it seems to me that that nuance, sort of the difference -- the relative -- the difference in the strength of the general causation evidence and the relative weakness of the general causation evidence with respect to glyphosate did not enter your analysis such that it caused you to almost automatically assume that it was caused by glyphosate if we don't have some other overwhelming factor that enters the

equation.

And that seems problematic to me, and so I wanted to sort of articulate that as best I can and ask you to respond to it.

THE WITNESS: Sure. Thanks, Your Honor.

I would say that your statements have validity, and I was not asked to opine on strength of general causation evidence.

But I would say in my defense, that in causing cancer and our understanding how cancer develops, we operate on a multihead hypothesis where in the same patient it does not have to be the single factor causing NHL. And even if I had -- let's say for the sake of argument these patients all had persistent HCV infection or HPV infection where I say I cannot rule it out. To me the HCV infection and glyphosate exposure are not mutually exclusive factors because if you told me that a person has HCV, I have to dismiss glyphosate as a factor. I would say, well, somehow it protected this patient from glyphosate toxicity.

So in my mind as a biologist and a former physician, those are noncompeting factors but actually symbiotic factors, if you wish, to further increase [inaudible] from developing lymphoma.

Again, we say for the sake of discussion, all of the plaintiffs or one of them had persistent HCV infection and at the same time also was treated with radiation therapy for, say, breast cancer, then I would say I cannot rule out radiation, I cannot rule out the hepatitis infection, but it does not mean

that it dismisses the contribution that glyphosate might have.

THE COURT: Well, I understand -- sorry to interrupt.

I understand what you're saying, but I'm not sure how responsive it is to the concern that I'm expressing. Because the concern that I'm expressing is your analysis does not seem to take into account how strong or how weak the evidence is of a link between glyphosate and NHL in the first place.

And I would think -- again, I'm not the expert, but I would think that if I were crafting a specific causation opinion or, in other words, if I were looking at a patient and trying to assess how likely it is that the disease was caused by X versus Y, I wouldn't merely want to identify certain things as a risk factor or not a risk factor. I would want to assess how strong the risk factor is.

And it kind of sounds from everything you've said here today that all you've done is asked whether glyphosate passes a certain threshold such that it can be classified generically speaking as a risk factor without assessing how strong of a risk it is.

MS. WAGSTAFF: Your Honor --

THE WITNESS: Yeah, that is correct. I was not asked to opine on strength of association. My opinion was maybe I thought about this was in the realm of general causation, whether it's 2X or 5X in the odds ratio.

My main basis for including excluding it as a factor was

the understanding of general basics of cancer where given the less, quote, "cancer-causing factor," you cannot completely eliminate it if you have the other factor. They work together and further increase the risk.

But you're exactly right, I was not -- I did not -- I was not asked to do an analysis to determine [inaudible].

THE COURT: And I understand that, and I understand the limitation on what you were called upon to provide, but I guess my further question is: How useful is a specific causation opinion in a context like this where you haven't really assigned any weight to the risk? You've merely sort of decided that it's a risk.

THE WITNESS: Well, again, the reason I assume it's a risk is based on general causation, general causation reports. I did not really try to wrestle between this risk factor and glyphosate or hepatitis C and glyphosate because in my mind, they work together to potentially increase further -- or each other for lymphoma. So I did not really assign the level of risk for each particular factor because they're not mutually exclusive.

THE COURT: When you -- in your other cases -- I don't know how often you've been called upon to provide a medical causation opinion, but in prior cases have you been asked only to provide specific causation opinions or have you been asked to provide both specific and general causation opinions?

Or to put it another -- oh, sorry. To put it another way, have you -- in prior cases, have you been asked to distinguish between the two, or have you simply been asked, you know, to provide basically an opinion on whether this particular thing caused this disease in this patient?

THE WITNESS: Your Honor, the only other litigation I was involved in my entire career was mentioned, the *Patel* case, and my recollection is I was asked to opine whether the use of certain medications have contributed substantially to his case. I actually do not recall was it under the realm of general causation or specific, but my involvement with that case was to opine on that particular patient, and those are -- that's the only case outside current litigation I was ever asked to opine on causation.

THE COURT: Okay. Thank you.

Go ahead.

MS. WAGSTAFF: I just have a few follow-up questions.

REDIRECT EXAMINATION

BY MS. WAGSTAFF:

Q. One, just following up on what the Court just asked you, there was a lot of testimony about the floor. I think that's a phrase that Monsanto's lawyer created after using the goalposts of Eriksson and McDuffie of the two days per year or ten days per lifetime. Do you remember that conversation from earlier?

A. Yeah, I do.

Q. Okay. And I think you opined on this, but I just want to make sure the record is clear, and you said this -- but, again, in case the transcription didn't come across and the judge has invited us to repeat it if it's important -- you just used those thresholds to rule in Roundup and then you actually looked at the exposure of the particular plaintiff; right?

A. That's correct.

Q. Okay. So playing off a little bit of what the Court was just asking you, you did consider the strength of the risk factor based on the type of -- or the amount of exposure, and you testified earlier that each of these three plaintiffs far exceeded the floor threshold required; right?

MR. STEKLOFF: Your Honor, I'm going object to leading here.

THE COURT: Overruled.

THE WITNESS: The answer is, yes, the exposure for plaintiffs far exceeded the threshold that I mentioned.

And let me also clarify one thing. When we do this analysis in our clinical trial assessments or assigning certain risks, statistically you have to decide where to make the cut, who do you call older patients and younger parents, understanding that the age is not -- it's not a variable, continuous variable. And we officially create these thresholds where we look at what happens before and after.

In the mind of the biologist and lymphoma physician and

lymphoma researcher, it would be a single exposure holds the risk of forming cells into cancer and precancers. It all depends on whether the DNA sequence that hit a post or lesion.

Remember that normal cells, all our cells have 80, 90 percent have blank DNA where the mutations do not cause any harm; and the amount of exposure in the mind of the biologist or in my opinion, all that matters as far as increasing the number of hits that eventually by chance would hit a critical spot in the DNA.

So creating the floor or creating the threshold in the first place is an artificial parameter that sometimes we have to create to make some sense of the statistical data. But the truth is, if you take any other type of carcinogen, a single hit might really cause a mutation in the critical DNA part that would be sufficient to create precancerous or cancerous conditions, and the majority of them don't. And that's why the creation of exposures and number of exposures increase the risk.

And this two usages per months and -- sorry -- or two uses per month and ten days per lifetime, it's an unofficial threshold that we assign to things to make statistical sense of data.

But with the lack of any other reliable method, that's the threshold I use when I measure the actual exposure of the plaintiffs of what's reported in epidemiologic literature.

BY MS. WAGSTAFF:

Q. Okay. So you used your clinical judgment then in weighing the risk factor in your differential diagnosis; right? The risk factors.

A. Well, I used clinical judgment based on --

THE COURT: I'm sorry to interrupt. We know the answer to that question.

MS. WAGSTAFF: Okay. So the answer is yes.

Q. So if you'll turn to Number 22 in Monsanto's Exhibit 3, which is the Mahale literature. I don't know if Mr. Stekloff --

THE WITNESS: Yeah, I have this.

MS. WAGSTAFF: -- put this in.

THE CLERK: It's Exhibit 14.

MS. WAGSTAFF: Okay. Exhibit 14.

Q. What is sustained virologic response, SVR?

A. So sustained virologic response is a definition where after treatment of a viral disease, in this case hepatitis, the evidence of this virus disappears but it's not just one point in time. It has to be sustained over either six months or four months or two months, and those parameters I establish specifically for every type of viral infection. So it not only has to do to make virus go away but it has to respond over a prolonged period of time.

Q. Okay. And this is important. So you said that sustained

virologic response must mean that the viral load is zero for I think you said 6, 12, 18 months. So let's just use two years; is that fair?

A. Sure.

Q. Okay. And you've testified earlier that Mr. Hardeman had a viral load of zero for eight years; right?

A. Since his treatment with Interferon, he did not have any detectable viruses in his tests.

Q. So I think you could agree that Mr. Hardeman was in a sustained virologic response from hep C; right?

A. That is correct, and I believe from medical records that's how his hepatologist also [inaudible].

Q. Okay. And this article that Mr. Stekloff was showing you, it actually stays in the abstract, the last sentence is that (reading):

"Data on the effect of sustained virologic response on the risk of EHMs are limited."

And EHMs are non-Hodgkin -- non-Hodgkin lymphoma is included in that; right?

A. Yes. I can see that.

Q. Okay. Turn to page 14 of this article, if you will. There's a blue box and it's called "Significance of this Study," and this was written by the authors. Are you there?

A. I am.

Q. Okay. And read the first bullet point under "What are the

new findings." Read it into the record, please.

A. (reading)

"Chronic hepatitis" -- "Chronic hepatitis C" --

Q. No, no. I'm sorry. Excuse me. Where it says "What are the new findings." Read the first bullet point under that one.

A. Oh, I'm sorry. (reading)

"Compared to HCV-infected individuals who did not receive treatment, SVR attainment was associated with reduced risk of mixed cryoglobulinemia, glomerulonephritis, porphyria cutanea tarda, non-Hodgkin lymphoma, diabetes," and other conditions.

Q. Okay. So the important thing for the court reporter is that this article's authors just said that compared to HCV-infected individuals who did not receive treatment, SVR attainment, which was what Mr. Hardeman had, was associated with a reduced risk of... non-Hodgkin's lymphoma; correct?

A. That exactly supports my statement that I gave other counsel, yes.

MS. WAGSTAFF: Okay. No further questions.

THE COURT: Okay.

MR. STEKLOFF: Can I just ask one question not to show the article? Can I just point to you one thing in the article?

THE COURT: You can point me to one thing in the article, and then I really have to go.

MR. STEKLOFF: Page 7 in "Discussion," third paragraph

down, halfway through the paragraph the authors explained (reading):

"We observed that AVT with SVR led to a moderate reduction in risk of B-cell NHLs when compared to untreated patients."

It goes on (reading):

"Moreover, the benefit persisted after excluding individuals who had HIV infection..."

But then it says (reading):

"However, this risk reduction was not observed when AVT was started 2 or more years after the HCV index date."

Which means there was no observation in the reduction of risk if the treatment occurred more than two years after the patient was infected with --

THE COURT: Okay. I'm looking forward to reading more about this in your briefs, and thank you very much.

Thank you, Dr. Shustov.

And we'll see you again next time.

ALL: Thank you, Your Honor.

THE CLERK: Court is adjourned.

(Proceedings adjourned at 5:54 p.m.)

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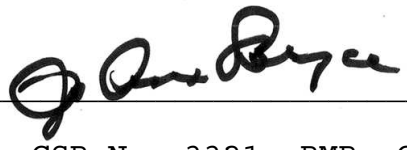
CERTIFICATE OF REPORTERS

I certify that the foregoing is a correct transcript from the record of proceedings in the above-entitled matter.

DATE: Monday, January 28, 2019



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