IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

PEGGY GRUCA, et al.,	)	
	)	
Plaintiffs,	)	NO. 86 C 7623
	)	
v.	)	Chicago, Illinois
	)	November 4, 1993
ALPHA THERAPEUTIC, CO., et al.,	)	10:05 a.m.
	)	
Defendants.	)	

VOLUME 16-A
TRANSCRIPT OF PROCEEDINGS
BEFORE THE HONORABLE JOHN F. GRADY

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(The following proceedings were had in open court out of the presence and hearing of the jury:)

THE CLERK: 86 C 7623, Gruca v. Alpha, case on trial.

THE COURT: Good morning.

MR. BELL: Good morning, your Honor.

MR. BARR: Good morning.

MS. KIMBALL: Good morning.

MR. RING: Good morning.

THE COURT: Anything we need to do before the jury comes in?

MR. BELL: Yes, your Honor, just one matter really quickly, your Honor.

MS. THOMAS: Yes. I have already talked to Mr. Bell about the exhibits we will be asking to have admitted in connection with this deposition, if I can read those into the record.

MR. BELL: Well, go ahead because I did have an objection to them.

MS. THOMAS: Okay. Well, let me read the numbers in. Exhibit 9056, Exhibit 3036, and the following pages from Exhibit 1.15: the cover page, the contents page, page 103, 105, 106, and 166. And Exhibit Number 6.17, 9.052, 9.053, 9.054, and 9.055.

MR. BERKMAN: Your Honor, counsel has not -- I don't know what those exhibits are because I have not gotten to look at them. She didn't tell us about these, and I guess if they

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are just attachments to Mr. Aronson's deposition, I would still object to their admissibility for all purposes.

What he said about them is before the jury on the deposition, but I don't think the documents themselves necessarily become admissible evidence because they are referred to in the deposition.

THE COURT: What are they?

MR. BELL: Your Honor, if I can give you a copy of the deposition, there are a couple of specific objections that we do have. The first would be to Exhibit Number 9.056. I put a tab on there. It is referenced at page 52.

MR. BERKMAN: What is it?

MR. BELL: It is a memo on Cutter letterhead.

MR. BERKMAN: It is attached to the exhibit?

MR. BELL: Yes, it is.

MS. THOMAS: Yes.

MR. BELL: I believe it is Exhibit 1, Plaintiff's Exhibit 1.

It was given to the witness to refresh his recollection. The witness testified that he had never seen that memo before and it did not refresh his recollection. He is not an employee of Cutter; he is an employee of the federal government.

MS. THOMAS: It specifically contradicts testimony the witness gave. It was used on cross-examination, your Honor.

MR. BELL: I don't know if that is true, your Honor. The witness testified, as you can see from the pages there, that no American manufacturer was licensed by the FDA to use the hepatitis B core antibody test. This does not contradict that in any way whatsoever.

THE COURT: Let me read it.

MS. THOMAS: Yes, I believe, though, this went beyond that.

(Brief interruption.)

THE COURT: Doesn't this show they are using hepatitis core antibody testing?

MR. BELL: I didn't say it doesn't show they were. The witness says that no U.S. manufacturer was licensed to use core antibody testing, and that was the area that he was offered to testify on.

MS. THOMAS: Your Honor, I believe --

MR. BELL: He said that it did not refresh his recollection when it was given to him to do so.

MS. THOMAS: I believe he stated specifically that it was his testimony that none of the manufacturers were using it without regard to whether they were licensed to use it.

THE COURT: Can you point to that testimony?

MR. BELL: If you look on page 54, line 1.

THE COURT: Well, on 53 he is asked whether they did

it, and his answer was they never had a license to do it.

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MS. THOMAS: He goes beyond that.

THE COURT: The answer really wasn't responsive to the question.

MS. THOMAS: He states at page 54, your Honor, "No U.S. licensed manufacturer has screened by the core antibody -- has been approved for screening by this core antibody test."

THE COURT: All right, I think the impression that the jury would get from the testimony would be that no one is doing it because they are not licensed.

This exhibit tends to show that, license or not, one of the defendants was doing it and contradicts the proposition that the witness' testimony is implying. So I am going to overrule the objection to Exhibit 1.

MR. BELL: Your Honor, Exhibit 4, if I may show this to you, is Plaintiff's Exhibit 6.17, and that is referenced at page 89, I believe, the other tab that I placed there.

THE COURT: Okay.

MR. BELL: This is an article which is in German. There is an American or English abstract, a very small paragraph there in the medical terminology. The witness was shown this document and asked if this was the process which he was discussing, and he said no, it is not, it is a completely

different process.

I believe that this would be confusing to the jury. It is in German. It certainly has no relevance to their

appreciation of the facts here and the testimony that is being offered by Dr. Aronson.

MS. THOMAS: Your Honor, at a later point in his testimony, we cleared up the confusion. He was referring to, I believe, the Rubenstein work, and believed that this particular exhibit related to the Rubenstein work.

Later he mentioned that it indeed was the same Behringwerke method.

THE COURT: There is an English translation of this?

MS. THOMAS: Yes. The first page, Judge, of the abstract on the --

THE COURT: Oh, I see, over on the right-hand side.

MR. BELL: It is just the abstract, your Honor. The rest is all in German.

MS. THOMAS: That simply shows it is the same process that was being discussed at this December meeting by Dr. Aronson and he confirmed it.

THE COURT: At a later point in the deposition?

MS. THOMAS: Yes.

THE COURT: Is that true, Mr. Bell?

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MR. BELL: I don't believe that he confirms that that is the same process. I believe what he speaks about is that he was talking about a Behringwerke process at that December 4, 1982 hearing, and that also they were talking about the Rubenstein patent, the Rubenstein process, which is a U.S. process.

THE COURT: Well, what does this exhibit pertain to? Does that pertain to Behringwerke?

MS. THOMAS: The Behringwerke.

MR. BELL: The Behringwerke, it is the Behringwerke process. It is a document that was published in Germany in German.

MS. THOMAS: Here --

THE COURT: I'm not really sure I get what --

MS. THOMAS: On page 91 it is clarified.

THE COURT: -- what the dispute is.

MS. THOMAS: On page 91, line 8, he is asked, "Just to finish up and clarify, the process described in Plaintiff's Exhibit No. 4 for identification, the German article by Heinburger and the Behringwerke process you were discussing on page 105 of the transcript, is that the same process? Answer: Yes."

MR. BELL: 105 of the transcript is referring back to a document that is also an exhibit in this case, Your Honor,

a

25 transcript of a proceeding of a Blood Products Advisory

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Committee hearing.

MS. THOMAS: So this was clarified and tied into the process.

THE COURT: All right. I'll overrule the objection to Plaintiff's Exhibit 4.

MR. BERKMAN: Just for the record, I renew my objection to putting in these learned treatises.

THE COURT: All right.

MR. BELL: The other item, Your Honor, is a logistical matter. The plaintiffs have identified Exhibits 9.052, 9.053, 9.054, and 9.055. These were not discussed during the course of the deposition at all, and I question how these are going to be raised with the jury.

MS. THOMAS: We did ask him if he had any written contracts with Alpha. He answered yes. I asked that they be given to us. He could not remember the specific terms. He told us in general terms. And these are those that were produced after the deposition. Since they were specifically referred to by the witness, we would like to tender them to the jury.

THE COURT: All right. That sounds proper, as long as those are the contracts that have been produced by the defendant.

MR. BELL: They are the contracts, Your Honor.

THE COURT: All right.

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MR. BERKMAN: Your Honor, could I request that Ms. Thomas give me a copy of whatever excerpts from the December 4, 1982 meeting she intends to use? And I would renew my objection that this is unauthenticated inadmissible hearsay even though he may have been asked about it. What he says is admissible, but the document itself, I do not believe, is. But I would like to see what excerpts she is putting in.

MS. THOMAS: These are pages from the December 4, 1982 Blood Products Advisory Committee meeting. The witness was specifically asked if this was an accurate transcription of what he said. He said that's what he said. Those are the only pages that I have attached to the cover page.

MR. BERKMAN: I'm sorry. What pages are they?

MS. THOMAS: I'll read them into the record again. The cover page, the contents, page 103, 105, 106, and 166.

MR. BERKMAN: And what's the exhibit number?

MS. THOMAS: The exhibit number is 1.15, which is the total transcript. We are only putting into evidence the pages I just identified on the record.

MR. BARR: Your Honor, on behalf of Cutter, the objection would be the same that it was the last time they attempted to introduce a court reporter's transcript of some kind of proceeding. And the Court, of course, sustained it last time. But it's the same transcript. Last time they just

25 tried to get it all in.

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If the witness has testified to it, then the transcript would be cumulative. If he hasn't, then the transcript is nothing more than apparently a court reporter's transcript of some proceeding that went on somewhere.

THE COURT: The witness says that the transcript is accurate as to what he said, is that correct?

MS. THOMAS: And it assisted him in his testimony.

MR. BARR: Well, he has testified to it. I guess that's the point, Your Honor. Why would we have a written transcript of what he says if he has testified to it in his deposition? It's cumulative.

THE COURT: Well, I suppose if what was said is something that everyone can remember, and nobody disagrees about it having been said, then the simple statement of the witness that this is what I said would be sufficient.

MR. BARR: There is no dispute, Your Honor. We're not contending --

THE COURT: But if there is something that adds a degree of certainty to the proposition that this is what the witness said, there is no reason that that should not be received in evidence.

MR. BARR: So that we are clear, Your Honor, we're not contending he didn't say it. There is no dispute. We're not saying Dr. Aronson didn't say it.

THE COURT: All right. Then if you are not disputing

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it, what's the objection to the exhibit?

MR. BERKMAN: I have two objections, Your Honor. One, there are additional words on the page that are unrelated to what he testified that the jury may rely upon even though they have nothing to do with what was said.

THE COURT: Let me see what this transcript says.

MR. BERKMAN: Two, I can't even read the pages on the transcript that I have, so I still don't know what pages she has, and I would appreciate a copy of it. The page numbers on my version are illegible.

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MS. THOMAS: Well, I will give you my copy since it is legible.

MR. BARR: It was my understanding on Friday, your Honor, that we were to be given a copy of whatever is to be handed to the jury in light of what occurred on Friday when a five-page document turned into an eight-page document when given to the jury.

So if you are just giving us numbers, it doesn't sometimes do us much good.

(Brief interruption.)

THE COURT: I think this document is probative. Dr. Aronson is endorsing in very strong terms better efforts to eliminate the hepatitis B virus and is also endorsing heat treatment.

MR. BERKMAN: Would you identify what page in the deposition he refers to this, your Honor?

THE COURT: Well, what I have read is pages 103, 105, 106.

MR. BERKMAN: You are reading, your Honor, a transcript of a meeting from December 198 --

THE COURT: Yes.

MR. BERKMAN: I am looking for the deposition where he refers to this.

MS. THOMAS: Well, it is referred to throughout the deposition. We went back and forth.

THE COURT: The objection is overruled.

Now, the one problem I do have is that the top of page 105 and the top of page 106 has not been sufficiently reproduced to be legible.

Can you do a better job of reproduction?

MS. THOMAS: I don't think so, Judge.

The original copy is very difficult to read at the top of each page.

THE COURT: All right. The objection is overruled.

Mr. Bell, here are your documents.

All right, let's call the jury in.

(The following proceedings were had in the presence and hearing of the jury:)

THE COURT: Good morning, ladies and gentlemen. Sorry to keep you waiting.

All right, we will resume with the video deposition.

MS. THOMAS: This is the cross-examination of Dr. Aronson.

And I would like to apologize to the Court for the snowy picture.

The volume is very good. I think we hit a bump on the way over. It was very clear at the office and now it is a

little fuzzy.

THE COURT: All right.

MS. THOMAS: At this time we are publishing the

exhibits that were previously admitted.

THE COURT: All right.

MS. THOMAS: Thank you, your Honor.

(Videotape played.)

MS. THOMAS: That concludes the cross-examination.

MS. GOURLEY: It goes on. Do you want to read the rest of it?

MS. THOMAS: Do you want to read the rest of it? That's where Alpha and I agreed to stop it.

MS. GOURLEY: Yeah, I think we probably should finish it up.

MR. BERKMAN: How many pages is it?

MS. THOMAS: You can read it.

THE COURT: Well, is it on the tape?

MS. GOURLEY: Is it on the tape?

MS. THOMAS: Yes, it's on the tape. It's just wrap-up questions about where Dr. Donohue is and so on.

MS. GOURLEY: Well, it's wrap-up questions about whether he had any contracts with Armour and Baxter.

THE COURT: Go ahead. I think he's already said he didn't.

MS. GOURLEY: He did.

THE COURT: If you want to play it, go ahead.

MS. THOMAS: Do you want to play it, Ms. Gourley?

MS. GOURLEY: No. That's fine. No. That's fine.

THE COURT: All right. What's next?

MR. BERKMAN: Your Honor, when we have an opportunity, I'd like to make an objection.

THE COURT: All right.

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MR. GREEN: We have a live witness, Your Honor. Perhaps if we can take a break?

THE COURT: All right. Let's take a short recess.

(Jury out. Recess.)

THE COURT: The jury is coming in.

MR. BERKMAN: Your Honor, can I make it at the end of the break?

THE COURT: Yes.

MR. BERKMAN: Thank you.

(Jury in.)

THE COURT: Mr. Green.

MR. GREEN: Yes, Your Honor. We'd call Dr. McAuley to the stand.

THE COURT: Up here, please, sir.

THE WITNESS: Yes, sir.

(Witness duly sworn.)

THE COURT: Please be seated.

MR. GREEN: Has the witness been sworn?

THE COURT: Yes.

CLYDE MC AULEY, DEFENDANT ALPHA'S WITNESS, SWORN

DIRECT EXAMINATION

BY MR. GREEN:

Q. Dr. McAuley, would you tell the jury your full name, please?

A. Clyde B. McAuley, MD.

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Q. Where do you live, Dr. McAuley?

A. I live in Arcadia, California, near the fires.

Q. Near the fires. You didn't have any fire problem, did you?

Dr. McAuley, how old are you?

A. I'm 70, 70 years of age.

Q. What does your family consist of?

A. I have a wife and four sons.

Q. Dr. McAuley, do you presently or are you presently connected with Alpha in some way?

A. Yes. I am medical director of Alpha Therapeutic Corporation. I'm on the board of directors of Alpha Therapeutic Corporation.

Q. Now, Dr. McAuley, I'd like to take you back through a little bit of your background so the jury will know who you are. Would you tell us what your educational background is up to your internship?

A. I was born and raised in northern California and went to Berkeley, University of California at Berkeley, and went in the service, World War II, and eventually went to medical school in 1944 to 1948. And that was Temple Medical School in Philadelphia. And after medical school, I went out to California and interned at San Francisco City and County on the University of California service from '48 to '49.

Q. Then, sir, did you have a residency?

25 A. Yes. Then I left San Francisco, went down to Los Angeles,

where I had a residency in internal medicine from 1949 till 1952 and then went in the Korean war from '52 until 1954. I came back after the war, Korean war, and was chief of medicine for the University of Southern California at L.A. County Hospital, and I stayed there for one year and then eventually went on the faculty.

Q. On the faculty of USC?

A. The faculty of USC.

Q. Are you still on the faculty of USC?

A. Yes. And for the first 10 years after I finished my residency, I was on paid faculty at that time. And I started a practice of internal medicine in 1957. I am still an associate clinical professor of medicine at University of Southern California.

Q. Now, sir, in addition to your other activities, have you practiced medicine?

A. Yes. I practiced general internal medicine from 1957 until 1990.

Q. And then you retired from that practice?

A. Retired from the practice to devote more time with Alpha.

Q. Are you board --

A. Board certified?

Q. I'm not used to having a real live witness up here. You'll have to excuse me.

Are you board certified, sir?

A. Yes. I was certified after I finished my residency in internal medicine. And then after I'd been in practice about 10 years, I was recertified. You take another exam and you become recertified. So yes, I am recertified.

Q. Dr. McAuley, in around 1957, you became involved in the blood plasma products end of medicine, is that right?

A. Yes, that is correct.

Q. What was the first, first position that you took with regard to blood products?

A. I was a consultant, medical director for Courtland Laboratories from 1957 until 1967, when Courtland was purchased by Abbott Laboratories of North Chicago, and it became then Abbott Scientific Products Division.

Q. And what did Courtland do with regard to plasma products?

A. They were a fractionator. We processed plasma and made it into albumin, protein fraction, antihemophilic factor, gamma globulin.

Q. Was that relatively early in the history of fractionating antihemophilic factor?

A. Yes, it was. I believe that we were the second to obtain the license. Hyland obtained a license sometime in, let's see, Judy Poole was '65. I think we got our license somewhere around 1967, prior to the Abbott acquisition.

Q. Now, when you went with Abbott, what position did you hold?

A. Well, I was medical director, but I was classified as a

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consultant basically. I was working as a consultant. I was never a full time -- I mean, I was never an employee, because I still had a private practice in addition to working for the company.

Q. And were you with Abbott when it was acquired by Alpha?

A. I was. I was medical director of Abbott scientific products and kept that same task and same responsibilities when we went to Alpha.

Q. And when was it that Alpha purchased Abbott?

A. No, the other way around. Abbott purchased Alpha -- I'm sorry, no. Alpha purchased Abbott.

Q. Alpha bought it.

A. 1978, I think it was August of '78.

Q. And when you went to work with Alpha, did you continue to practice part time?

A. Yes, I did.

Q. How did you divide your time, 50/50 or 60/40?

A. Well, it would depend.

Q. 80/80?

A. Yeah, probably more like -- no, probably more like 60 or 70/30, 70 with practice, 30 with Alpha.

Q. Now, sir, during the time that you've been medical director with Alpha, have you become familiar with the process that is used for fractionating antihemophilic factor?

A. Yes, I did.

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Q. And, sir, if we showed you a little chart, would it help you explain that process to the jury?
A. It's upside down.
Q. Well, that's all right. Would it help you explain that to the jury if it was right side up?
A. Yeah, I think it would.
MR. GREEN: All right. Your Honor, if we might publish this to the jury?
THE COURT: Yes.
MR. GREEN: I think counsel has seen it.
BY MR. GREEN:
Q. Could you step down here, Dr. McAuley?
MR. GREEN: If the Court please?
BY MR. GREEN:
Q. Why don't you come over here. You can stand right there. That way you won't have your back to anyone.
Now, first of all, Dr. McAuley, if you would just tell us the flow and briefly, I don't want any exquisite detail, how plasma is acquired and what you do?
A. Well, basically everything starts with the plasma donor center where an individual comes in and signs in, identifies himself, is screened by a medical receptionist, having a cursory physical examination getting certain laboratory tests such as --
Q. We'll go into that in a bit more detail later on. I just

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want to follow the flow of the collection process.

A. All right. Then after the donor is processed at the donor center, the plasma sample is then sent to our test, centralized testing laboratory in Memphis, Tennessee, and we do the testing there.

Then the reports are then faxed or sent to the plasma donor center and also sent to quarantine, which is in our manufacturing facility in Los Angeles. And once we know that the test results are negative, then they are allowed to release the plasma from the plasma donor center. And it's cross-checked with the lab reports in quarantine. At that point in time, it then goes into processing and quality control.

Q. Okay. So why is it held in this quarantine up here?

A. That's for a cross-check to make sure we don't have a unit of plasma that was inadvertently hepatitis surface antigen positive or HIV positive or anti-HBC positive.

Q. How is the blood or the plasma, rather, transported from the plasma donor centers to your plant?

A. By refrigerated truck. Transmitted -- they have a refrigerated truck at minus 20 degrees to make sure we don't lose any of the antihemophilic factor.

Q. So you keep that temperature until you get down here to processing, is that right?

25 A. Right.

Q. Now, Dr. McAuley, does the FDA exercise some regulation with regard to the processing of plasma?
A. Yes, they do. They actually do it at every step. Every donor center is FDA regulated, as are standard operating procedure for the donor centers. So that's the first step.
Q. Okay. So this is regulated by the FAA?
A. FDA.
Q. FDA. I'm sorry.
A. Yeah, right. Then our central testing laboratory in Memphis also is regulated by the FDA.
Q. How do they regulate that?
A. Well, they inspect it and make sure they follow through with quality assurance, whether our testing technique is adequate, whether our testing is proper, doing the right things.
Q. Are these visits they pay to the plasma donor centers, do you know ahead of time they're coming?
A. No. They're on the spot.
Q. How about the regulatory inspections of the central testing?
A. No. They're done without us knowing.
Q. Is the quarantine facility regulated by the FDA?
A. Yes, it is. Yes, everything has to be -- making sure that we have, that our records are proper, making sure that our temperature regulations are proper.

Q. Are those spot checks?

A. Yes.

Q. Do they have regulations that tell you what those temperatures have to be and what those cleanliness requirements have to be?

A. Yes, they do.

Q Is the processing regulated by the FDA?

A Yes. Yes, that has a manufacturing facility and it is.

Q How about the distribution, is that regulated by the FDA?

A No. We have got to make sure it is released first before it gets --

Q That is what I was getting at. In other words, until the FDA says or gives you permission, you may not release it?

A Every lot of material is processed. We have to send samples to the FDA, and the FDA gives us their approval, and then our distribution is the responsibility of the manufacturer.

Q You can take the stand there.

(Brief interruption.)

BY MR. GREEN:

Q Doctor, I would like to call your attention to the period before December of 1982 when the AIDS epidemic was becoming part of your consciousness.

Before December 1982, were you involved in the plasma donor center aspect of Alpha's business?

A Yes, I was.

Q And did you have any part, sir, in setting up the screening or the testing of donors?

A Yes, I did.

Q Now, would you tell us -- let's just -- let's take November of 1982 to make it simple.

In November of 1982 when someone presented themselves

to you as a donor, what steps did you take to make sure that they were healthy donors?

A Well, we have what we classify as first-time donors and repeat donors, but -- so do you want a first-time donor or do you want a repeat donor?

Q Let's take a first-time and then a repeat?

A All right, a first-time donor comes into the donor center and he signs in and he is then called to the reception area where a trained medical receptionist will interview him making -- asking him about 13 questions relating to his health, whether he has been recently transfused, whether he has had any recent surgery, whether he is on any medication.

And then assuming that the individual passes the history portion of it, then they will do a blood pressure check, a check for protein, total protein, and will do a blood pressure, pulse, weight, and at that point then they have an x-ray taken -- no, a picture taken of themselves, which is included in their donor records so that they will then be identified on any subsequent donation.

And at that point in time then they are referred back to the doctor, who repeats the history except in a more extensive manner than at the reception desk.

Q And the history is what, asking about his past medical

history?

A He has to -- yes, he is asked about his past medical

history, what medications he is on, whether he has had any surgeries, whether he has had any medical problems that would make you think that the donor was not healthy.

Then the doctor will have him bare his chest and his legs and will do an examination of the head, eyes, ears, nose, and throat, chest, abdomen, neurologic exam, and at that point in time, if the donor passes, then he goes back to the donor floor and is plasmapheresed.

Q Now, Doctor, I would like to address a little bit with regard to the disease hepatitis.

You are familiar, are you not, with hepatitis B?

A I am familiar with hepatitis B.

Q I would like to limit what we are going to talk about now to hepatitis B. We will talk about non A-non B or hepatitis C in a moment.

When were there first tests available to find the presence of hepatitis B antibody or antigen?

A Well, in January of 1971, Abbott was -- started doing some testing for hepatitis B using what we would classify as a first generation test. Abbott actually was very instrumental in being one of the prime movers in testing, as a matter of fact.

So we were starting to do what we call ager gel

diffusion, which means that you take a sample of the serum from the donor and you have an antibody that is in this ager gel and it creates a line of precipitation and it is a rough -- was a

rough, crude test. But that was the first test, in January of 1971.

Q Why were you doing that?

A To screen out donors for hepatitis B.

Q I would like to talk a little bit about the difference between sensitivity and specificity.

Could you, first of all, explain very slowly for the jury what sensitivity is in a test?

A Sensitivity is the ability of a test to pick up a known positive. In other words, you know it is positive and it should be able to pick up. So if you picked up every positive in a test, then it would have a hundred percent sensitivity.

Specificity has to do with the ability to pick up negatives. In other words, if you have -- you had some negatives in there, those can be as important as the positives.

So when we speak of 95 percent sensitivity and 95 percent specificity, we mean that 95 percent of the time you are going to pick up all of the positives. And if it is 95 percent specific, then you are going to pick up 95 percent of the negatives, of the known or unknown negatives.

Q Let's suppose that we are going to -- why don't you step down here, and perhaps we can do this simply.

Let's suppose that these are oranges and these are onions. Now, if we have a test that is going to test for

25 oranges and it picks up all four oranges in the batch, what

would its specificity be?
A Well, it would be sensitive.
Q Sensitivity?
A It would be a hundred percent sensitive.
Q Okay. And if it only picked up three oranges, it would be 75 percent sensitive, is that right?
A That is right.
Q Now, let's suppose that it got all four oranges but it also told us that two onions were oranges?
A Well, then your specificity would be diminished obviously because you are missing some -- you are picking up two false negatives, two negatives which would not be picked up.
Q Okay.
A So only 50 percent.
Q Now, you can take the stand, and I would like to talk about the tests you told us you were using at Abbott.

About what was the sensitivity of that test?

A Which test are we talking about, the ager gel?
Q The ager gel, yes.
A Well, it was probably no more than 60 percent sensitive, but it had a high degree of specificity. In other words, if you had -- it would not pick up some of the positives, but when it did pick up a positive, it was very significant. And so I would say

it was probably no more than 60 percent sensitive, but its specificity was probably closer to 80 percent or something in

that range.

Q In 1972, sir, was there a new generation of this test?

A Well, the problem with the ager gel diffusion test was that it took about two or three days to read, and, as I say, it didn't have a real high degree of sensitivity.

So then we developed or -- yes, we developed what we call a CEP, or a counter immuno electrophoresis, which basically was taking that ager gel and running a current through it, in which case the antibody ran or moved quicker.

And so, hence, you would be able to pick up -- it would be read in one day rather than one or two or three days.

Q Was the specificity of that -- sensitivity of that improved?

A Yes, it was improved.

Q Was that licensed for use?

A Yes, it was. That was called Aus Tec, yes.

Q Now, subsequent to that time in 1972, were new and improved tests for hepatitis B virus found?

A Yes. Then Abbott came out -- yes.

Along with that, what we call the first generation test or second generation, which would be the CEP, there were some other ones that reverse passive hemagglutination and some other things like that which we never utilized.

But then came the first generation radioimmunoassay, RIA test, and that had a better degree of sensitivity and also specificity.

Q What was the degree of sensitivity with regard to the radioimmunoassay test?
A I think we are talking about the 90 percent range now.
Q And was that test subsequently improved?
A Yes. Then there came a second generation Ausria, or radio-immunassay test, which was easier to perform, probably had a greater degree, more like 95 percent sensitivity and specificity.
Q Has there ever been a test, sir, for hepatitis B that has 100 percent sensitivity?
A I really don't believe so.
MR. GREEN: Your Honor, we are moving to another subject now.
Do you want to break?
THE COURT: Why don't we break for lunch. Let's reconvene at 1:45.
(The following proceedings were had out of the presence and hearing of the jury:)
THE COURT: Mr. Berkman.
MR. BERKMAN: Your Honor, earlier this morning counsel showed you a two-page German paper, and you asked if there was an English translation.
She said no, and she said that they were giving the jury 6.17.

When I went to my book of plaintiffs' exhibits, 6.17

LAURA M. BRENNAN, Official Reporter

was a nine-page -- ten-page English version of this two-page article, and I believe or suspect they may have given it to the jury because the jury was looking through some long article. And I would like to know if that is so.

MS. THOMAS: I looked at the documents myself that were prepared to go to the jury, and it was the two-page document, Judge.

MR. BERKMAN: Let me renew my concern. The same problem arises with their exhibit they've marked P1.15. They say they were only giving the jury two cover pages and four designated pages. When I went to my binder of plaintiff's exhibits again, I found P1.15 to be a 10-page summary of minutes, and I don't know whether that's been produced or not to them. And I'm also concerned, even in the designated pages, that they've left out Page 104 and left out Page 165, which is the half of the sentence that leads into the page that the changes --

THE COURT: These were the documents in regard to Dr. Aronson?

MR. BERKMAN: That's correct, your Honor.

THE COURT: I think the way to handle this is I will retrieve from one juror that juror's copy with these two exhibits. What are the numbers?

MR. BERKMAN: The exhibits are 6.17 and 1.15.

THE COURT: That's the German article?

MR. BERKMAN: German, maybe some English.

THE COURT: The other one is?

MR. BERKMAN: 1.15. And, again --

THE COURT: Generally that's --

MR. BERKMAN: That's the minutes that has something to do with the December 14, 1982, meeting of the Blood Products Advisory Committee.

THE COURT: Fine. I'll get them back and at the next recess -- I'll wait until we're about to have a recess and deal with it.

Now, the way to avoid any uncertainty here is for counsel to look at the actual documents that are being offered to the jury. I mean, why that hasn't been done? I don't know.

MS. THOMAS: I personally looked at what went to the jury today and --

THE COURT: I'm not talking about -- Mr. Berkman didn't personally look at them. Now, if he had, we wouldn't have this problem -- or if the problem existed, we would have dealt with it in advance of the documents going to the jury. I'm not suggesting that the jury has received anything they shouldn't have, but the way to make sure they don't is to show -- I mean counsel doesn't have to look over them if they don't want to, but each session, Miss Thomas, say, "Here,

ladies and gentlemen of the defense, are the documents I expect

to give to the jury this session. They're right here, please

look at them."

MR. BERKMAN: Can I make two requests? If I'm still

in this case after tonight, I'm going to want an opportunity to

see the documents because when she shows them to us, if they

have highlighted half a sentence ten or half a paragraph, and we think that the rest should be highlighted, there is no opportunity to do that. That's point 1.

Point 2, if the document includes things additional from what they have represented or said we don't know what the jury has. I know the jury now has a binder --

THE COURT: You don't need to persuade me that it's necessary for you to see what the jury has.

As far as highlighting, maybe the better way to do that rather than interrupting this process is for you to offer your own copies of the --

MR. BERKMAN: I didn't want to have to give them six inches of new documents.

THE COURT: There won't be that many. All right? 1:45. Now, remind me to do that at the next recess.

(The trial was adjourned at 12:35 p.m. until 1:45 of the same day.)

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IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

PEGGY GRUCA, et al.,	)	
	)	
Plaintiffs,	)	NO. 86 C 7623
	)	
v.	)	Chicago, Illinois
	)	November 4, 1993
ALPHA THERAPEUTIC, CO., et al.,	)	1:50 p.m.
	)	
Defendants.	)	

VOLUME 16-B
TRANSCRIPT OF PROCEEDINGS
BEFORE THE HONORABLE JOHN F. GRADY

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(The following proceedings were had in open court out of the presence and hearing of the jury:)

MR. BERKMAN: Your Honor, are you going to ask the jurors for those two documents?

THE COURT: If there is a problem with them, I won't be able to handle it without taking another recess immediately. That's why I want to do it at the next recess.

MR. BERKMAN: I apologize. Okay.

THE COURT: There is a time problem that has arisen that I want to discuss with you. Judge Decker, one of our retired judges, died earlier this week, and there is going to be a memorial service for him this coming Monday morning in Waukegan, some distance from here. And that means that I will not be available Monday morning. I think we're so tight on time that we'll try to start at 2:00 and at least get a half day in. Normally that may not be cost productive, but in these circumstances, I think it probably is. Then we'll go all day Tuesday.

And we talked earlier about Wednesday the 17th of

November and decided that it wouldn't make sense to bring the jury in for half a day. What I would like to do is cancel my motion call that day so that we can have a full day on Wednesday the 17th. Does that cause any problems for anybody? That's what I'll do barring some problem with the jury. I'll explain it to them. If that's okay with them, that's what

we'll do. Okay?

(The following proceedings were had in open court in the presence of the jury:)

THE COURT: Ladies and gentlemen, we already know that next week is going to be a short week, but it's going to be even shorter due to the death of one of the retired judges of this court earlier this week. There is going to be a service for him on Monday in Waukegan where he resided, and I will be in attendance at that service, which means I can't be here Monday morning. In view of the fact that we're losing time, we'll do half a day on Monday. We'll start Monday at 2:00 P.M.

Then, unless somebody has made some plans that you can't change, that is, you've made some plan on the strength of our always having Wednesday off, I would like to hold a full-day session on Wednesday November 17. I will cancel my motion call for that day so we can try to make up some of this time. So if that's all right with everybody, that's what we'll do. Half a day Monday, all day Tuesday, and then we'll resume

the following Monday and have a three-day week that day. I guess that's -- the following week is a holiday week. That's Thanksgiving. We'll do the best we can. All right.

DIRECT EXAMINATION (Resumed)

BY MR. GREEN:

Q Dr. McAuley, I would like to go back and pick something up

that we left off at before lunch, and that's what you told us you did with regard to first time donors. And we're going to get repeat donors because I forget to ask you about that.

What did you do with regard to repeat donors or people who come back?

A Well, a repeat donor, when he comes to the center, he signs in similar to what he did before except that now he has a donor record which includes his previous laboratory test. And then he will be interviewed again by the medical receptionist, and she will take a history and do the physical examination which includes blood pressure, pulse, temperature, and laboratory tests including the red cell count or hematocrit and also the total serum protein.

The difference being then that that individual not go back to the doctor for a complete physical, but the physical will be a physical done by the nurse/receptionist, as I mentioned, rather than seeing the doctor.

Q Do you keep a running tally then on your repeat donors of things like their weight?

A Yes. On the master donor card they will have each donation, and they will have the temperature, blood pressure, pulse, the fact that they have been asked the questions -- 13 questions relating to their past medical history and their weight, the location of where they had the vena puncture site, and then who did the vena puncture to do the plasmapheresis.

Q So this running information that you have on your repeat donors, does that give you any assistance in tracking their health?

A Yes, it does. We find that -- well, obviously if you have an individual who is rejected because their protein is down, then that gives you an indication that they're not eating properly and that they should be deferred and made a permanent reject or something along that line because they're not taking good enough care of themselves; or in terms of weight, we feel that people who are -- who don't eat well and that their weight tends to decline, then it's helpful.

Then when we're examining -- obviously with HIV infection weight loss is one of the things we look at. The running commentary is extremely important to the donor, sir.

Q How about people like me whose weight only ascends? Does that cause any trouble?

A No, not really.

Q Doctor, we were talking before the lunch hour about sensitivity, and I believe you told us it was regard to

hepatitis B -- and we'll get to C later, but with regard to hepatitis B, it's not possible for you to -- it's not possible for any of these tests to pick up 100 percent of the virus particles present, is that true?

A That's true.

Q In the plasma pools that you have at Alpha and, presumably

everywhere else, are there also antibodies present with regard to hepatitis B?

A Yes, there are antibodies. There are two types of antibodies; basically the anticore antibody --

Q Let me stop you for a minute because we've thrown these terms around.

Let me ask you, first of all, what is antigen?

A Antigen is a name that's given to a substance frequently or more frequently than not of protein, but it can be other things, that when given to an individual or injected into an individual will cause the body to respond by producing antibodies.

Very much like when you get tetanus immunization or you give a smallpox immunization, you're basically injecting an antigen and then the body will produce an antibody against that antigen and offer you some protection or some immunity, polio or any of those virus infections of that variety.

Q An antigen is something that comes from outside the body?

A That's true, except there are certain disease entities whereby the body produces antibodies against its

own tissues

like lupus erythematosus, rheumatoid arthritis, and some of the other disease entities. Overall, you're correct.

Q You better slow down. The reporter has to write this all down.

A As a general rule, it's something coming from the outside.

Q And the antibody is something that the immune system produces to inactivate the antigen?

A That is correct.

Q So when you have a donor who has had something like hepatitis B, he may well have antibodies present in his blood, is that correct?

A That's correct.

Q Do those antibody then protect someone who gets that blood from having hepatitis B?

A Well, I don't know that we can say that, but the antibody is what protects individuals against getting -- when they get exposed to the antigen will cause that to offer protection.

Now, some antibodies are much more -- much more likely to be neutralizing or prevent the antigen from causing a problem than others. And as we mentioned in hepatitis B, there are the core antibody, as we mentioned, and then there's the surface antibodies. Obviously those are two antibodies that probably offer -- certainly surface antibodies offers protection against hepatitis B antigen.

Q Now, were you in a position to monitor reports with regard

to hepatitis B transmission as a result of using AHF?

A Yes. Before we had the hepatitis B surface antigen test, we not infrequently would get reports of people coming down with hepatitis related to -- not albumin, but certainly to antihemophilic factor.

When we started testing for hepatitis B surface antigen, the incidence of hepatitis B infection -- at least reports coming to me -- were much less. And when we scrutinized the individuals to try to determine what the etiology or the cause of that was, it became obvious that they were not hepatitis B, but probably another entity. And that's where we came up with the term non-A, non-B hepatitis.

Q Had the incidence of hepatitis B declined after you instituted these tests?

A It certainly did decline. It did not go away completely, but certainly did decline. It used to be called transfusion-transmitted hepatitis, hepatitis B, but with the screening, then non-A, non-B became the major cause of transfusion transmitted hepatitis.

Q And when was it that hepatitis C or some people have called it non-A non-B, when did you first start to see that?

A Well, soon after we started -- soon after we started screening and excluded a lot of individuals from the pool who were hepatitis B surface antigen positive, we still got some

20 complaints of hepatitis occurring in the recipient of the

21 product.

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1 Q When was that in time?

2 A Oh, this would be about 1978, '79, '80.

3 Q All right. So between 1978 and 1980, then you saw a decline

4 in the hepatitis B among users of AHF but then you saw hepatitis

5 C start to show up?

6 A Correct.

7 Q Now, are these distinct viruses or are they cousins to each

8 other?

9 A No, they are definitely distinct viruses. One is -- yes,

10 they are definitely made up differently.

11 Q They just both happen to attack the liver, is that right?

12 A That is correct.

13 Q Now, what did you start to do about hepatitis C?

14 A Well, I believe the viral particle was ascertained about

15 1988 by Kyron in this Bay area. They got a portion of the

16 virus, and from this in 1988 they eventually came up with a test

17 to determine whether somebody has antibodies against that

18 portion of the virus which would be called an antigen.

19 And that is when they came up with an HCV, or non A-non

20 B test, and that was determined in -- it was discovered in about

21 1988 and I think it was implemented in the whole blood sector,

22 in other words, Red Cross and some of the places where you got

23 whole blood, in about 1990.

24 But we were not -- we, the plasmapheresis centers, did

25 not start testing probably until November of 1991 because --

well, for many reasons, but --
Q Why don't you tell us the reason for that?
A Well, as I think you heard from the testimony of Dr. Aronson, one of the problems is that HCV antibody is a -- we don't really know -- it was much more of a problem with the whole blood than it was with plasmapheresis, and until it was licensed by the FDA, I mean, for plasmapheresis, we couldn't use it as a screening test.
Q By the way, in the past when you were at Abbott, had you ever had experience with using tests that were not yet licensed by the FDA?
A Yes, we did. We had an experience back in, as I think I mentioned, '71, '72, when we had the agar gel diffusion test, which was not a licensed product by the FDA. We had taken it upon ourselves to start screening our donors. And the FDA took exception to this and fined Abbott $10,000 until it was a licensed test.
So needless to say, we were pretty sensitive about complying with the FDA.
Q Now, at all times, Dr. McAuley, did you warn by way of package inserts and the labeling what the antihemophilic factor -- about the possibility of there being hepatitis associated with it?

24 A Yes. Our package insert, even when we had -- when the

25 hepatitis B surface antigen was discovered, we had to put in our

package insert that even though we tested for hepatitis B surface antigen, that this product could in fact cause hepatitis, and that is true today.

Q Was that fact widely known in the medical profession among hemophilia treaters?

A Definitely.

Q Now, why did you still continue to produce the antihemophilic factor with that warning on it? Why was it still used?

A Well, we felt certainly that we had to -- we had that responsibility, I think, and from the point of view that, yes, it could transmit hepatitis even though it was much less likely, and then, of course, when we started heat treating, we knew that we could kill certainly the non A-non B or HCV and probably to some degree hepatitis B and certainly, definitely, HIV.

So we felt, and I think the FDA said, you know, you will not take that out of your package insert.

Q Why would a physician use a product like antihemophilic factor knowing that it might carry with it a risk of hepatitis?

A Well, --

MS. THOMAS: Objection, calls for speculation.

THE COURT: I am sorry. Will you read the question back?

(Question read by the reporter.)

THE COURT: Overruled.

LAURA M. BRENNAN, Official Reporter

BY THE WITNESS:
A It had a -- there is a benefit risk ratio. I think the treaters generally speaking felt that the danger of hemorrhage and deformed joints was far greater than the risk of hepatitis.
BY MR. GREEN:
Q I would like to move forward to 1992, and we have put together a time line that you have seen.
Would this time line help you to explain those events to the jury?
A I believe so.
Q First of all, Doctor, you pointed out to me there is a mistake in this time line, is that true?
A May I get up there closer to it?
Q Can you see it?
A I say may I get up closer?
THE COURT: Certainly, go ahead.
(Brief interruption.)
BY THE WITNESS:
A Yes.
MR. GREEN: Why don't you come down and stand at this side.
Can everybody see this?
THE WITNESS: The mistake is in the 1979 -- Alpha did not ever collect -- we never owned nor did we collect plasma

from prisons. We did purchase plasma to use for high titer, or

tetanus plasma for individuals who had high antibodies for tetanus immunoglobulin.

But we never owned any centers nor did we collect plasma from centers.

BY MR. GREEN:

Q For AHF?

A For AHF.

Q Okay. I will do that to remind myself.

Now, just to cover that answer a little bit more, when you use something for those purposes, you want people who have tetanus or had tetanus, right?

A Right.

Q That have the antibody to it?

A Yes. Most of those people have been previously immunized with an antigen, toxoid, and they produce antibodies against tetanus, and you take their plasma and you manufacture it into immunoglobulin for the use of against acute tetanus.

Q Now, when did you first become aware that there was something called -- let's call it AIDS even though it was called GRID?

A Well, I think it was probably in early 1982.

Q So this GRID syndrome that was being reported in the gay population really didn't -- that didn't get out to you until early '82?

25 A Well, I was aware of that in the gay situation, but I was

not -- I really didn't pay a whole lot of attention until 1982 when the first cases occurred --

THE REPORTER: I am sorry?

THE WITNESS: I did not pay attention to it in the same degree that I did in 1982, June of 1982, or July when the three cases of opportunistic infection occurred in the hemophiliac patients.

LAURA M. BRENNAN, Official Reporter

Q. You need to slow down a little bit, Doctor. Just take your time.

So that Alpha proceeded along taking plasma, making AHF, and the first time that there was any connection so far as you knew about there being in connection with AIDS and with blood products of any sort was in July 16th when the MMWR came out?

A. That's right.

Q. So tracking that, July 16, 1982, you and Alpha received information about the MMWR. What did you do at that point?

A. Well, we then in July, we obviously were aware of it. And then we heard about the case, the child in San Francisco who got AIDS from platelets. And then to us at least it seemed as if this --

Q. All right. I'm going to slow you down a bit.

That happened in December, is that right?

A. That's correct.

Q. So in December, if I can find it on here, in December of '82 for the first time -- where is it? Here, here it is -- December 10th, that's what I was looking for, December 10th we have a child who has received platelets. And at that point, you at Alpha become concerned about this?

A. Yes. I think from my point, from my mind, this was the first really good indication that this could be a blood-borne infection.

Q. Now, at that time in December 10th of 1982, did you know that AIDS was viral?

A. No, we did not know anything about what the etiology was.

Q. Did you know that AIDS was a disease that could have a latency period in an amount in excess of 10 years?

A. No. We knew nothing about it.

Q. Did you know that AIDS was blood borne?

A. No, we didn't.

Q. Now, with the concern that you had at Alpha, what did you do, just tell me the first thing that you did in response to this event December 10th of 1982?

A. Well, we established, we established an AIDS task force, and that was on the 16th, I believe, of December.

Q. And what was the task force for that you formed on December 16th?

A. The purpose of the task force was to determine what Alpha as a manufacturer could do to understand AIDS, to improve our product, possibly try to come up with ways in which we would be -- we could do a better job with our product and make it safer.

Q. Who did you have on the task force?

A. Well, the task force consisted of plasma procurement people, R&D people, sales and marketing people, myself. Those

were the primary individuals involved.

Q. And what was the first thing that you decided to do?

A. Well, due to the fact that it appeared as if 75 percent of

the patients who had AIDS were gay, and that 17 percent were IV drug abusers, and five percent were Haitians, it seemed logical to me that we should exclude them as donors from our donor centers.

So on the 16th, I believe, of December, we sent out a lettergram to all of our donor centers stating that from now on we're going to exclude all individuals who fall into these, this high risk group or individuals who have had sex with males and things of that nature.

Q. Males who had sex with males?

A. Males who had sex, well --

Q. You didn't exclude women who had sex with men?

A. Well, we had some bisexual partners, too.

But we also then sent out on the 17th a letter to our what we call contract centers. These are centers that we purchased plasma from. They're not owned by Alpha, but they follow our standard operating procedure, and they have the same requirements that we have. So we asked them to start excluding these high risk donors. And at the same time, when they shipped the plasma, they had to certified that these donors had been asked about, about the plasma -- or the questions about

high risk.

Q. Now, when you took these steps on the 16th of December, do you remember, what's your best recollection of how many hemophiliacs had at that point been reported with AIDS?

A. I believe it was seven at that point in time.
Q. That's out of a population of how many?
A. Well, out of the 20,000 hemophiliacs, probably 10,000 of them are severe enough that require therapy.
Then we also did one other thing I should mention. We established a subgroup of the AIDS task force which were primarily scientific people who were going to look into the possibility of ways of diagnosing it, ways of screening, ways of treating it, alpha interferon, other scientific errors, possibly culturing the virus, things along this line. So there was another group, an AIDS subcommittee of the AIDS task force.
Q. Were you examining already before December of 1982, were you already examining heat treating as a way to achieve viral inactivation?
A. We had started our heat treating process sometime in early 1982.
Q. Was the heat treating process connected with AIDS at that time?
A. No. It was primarily with hepatitis.
Q. B or C or everything?
A. B and non A-non B.
Q. You didn't call it C then?

A. No.

LAURA M. BRENNAN, Official Reporter

Q Now, I would like to go back. There was a meeting of the FDA with regard to opportunistic infections of hemophilia patients in 1982 in July.

Were you invited to that?

A I don't remember whether I was invited. I did not go to that meeting. I think possibly some people in our organization did but not me.

Q Now, at the time that you undertook these donor screening steps; that is, you started asking direct questions, was anyone else in the industry doing it?

A Not at that point in time.

Q Dr. McAuley, is this a copy of the letter that was sent out on the 17th to your plasma center?

A This was the one sent out to our contract center.

Q And did you receive any -- for want of a better term, did you get any flack from your contract centers?

A Yes. They didn't want to ask -- they didn't want to have to ask these questions, I think, for whatever reason; but, yes, we did have a lot of flack, but in order to sell it, obviously, we had to.

Q So you told them that if they didn't go through this procedure?

A We would not purchase their plasma.

MR. GREEN: And for record that is Exhibit Number 39.

BY MR. GREEN:

Q And, sir, did you send out at that time a letter to hemophilia treatment centers and hemophilia chapters?

A Yes, we did.

Q I would like to put up next Exhibit Number 12.

Do you have any objection? I think we showed this to you before.

(Brief interruption.)

BY MR. GREEN:

Q What famous American was this? That was you, right?

A That was me.

Q When you sent out to hemophilia treatment centers, what kind of treatment centers were those?

A Well, the hemophilia -- most hemophiliacs in this country are treated by centers, in other words, a disease that requires a degree of expertise that is over and above, you know, you going to your doctor and being treated that way.

So the treatment centers were usually treaters, in other words, hematologists, or people who are treating, but then there were also surgeons associated with this, dentists associated, physical therapists, so that you would have a so-called comprehensive health care system, and that is what we meant by the hemophiliac treatment enters.

Q You also sent it to hemophilia chapters. What is that?

A Well, those are -- the majority of hemophiliacs or people

at

25 the centers are associated with the National Hemophilia

Foundation. There are exceptions. There are some chapters that are not related to the National Hemophilia Foundation.

So what we did was to send them to the NHF chapters, the National Hemophilia Foundation chapters, as well as to those chapters which were independent. For example, California or Southern California does not belong to the National Hemophilia Foundation.

MR. GREEN: Okay. Can you read that in the far corner?

If not, I will. One of the jurors indicated he is having trouble, your Honor, if I might read it.

"On December 20th, 1982 Alpha Therapeutic Corporation with the encouragement of the National Hemophilia Foundation took a leadership position by initiating a new donor screening program to exclude plasma donors who are thought to be potential carriers in transmitting acquired immune deficiency syndrome, AIDS.

Since there is no known laboratory test currently which will identify a potential infectious individual with AIDS, Alpha is taking all possible steps to reduce the potential risk for the hemophiliac receiving Factor VIII Profilate and Factor IX Profilnine concentrate.

Alpha has always checked potential donors from

temperature, fever, weight loss and other physical signs which are now suspected of being symptomatic of AIDS.

LAURA M. BRENNAN, Official Reporter

Wherever we find a potential risk factor, we will decline to accept plasma from that donor. This action is consistent with our policy to do all we can to ensure patient safety in using our plasma products.

According to the Centers for Disease Control, there are now several specific groups within our population which are considered at high risk for transmitting AIDS, including homosexuals, drug abusers, and Haitians. We do not operate prison donor centers which have a large high risk population, nor do we purchase plasma from prisons.

Thus, we have made every effort to eliminate donors who might have AIDS through every effort to eliminate" -- I am sorry -- "through a program of education in asking a donor if they fall into any of the high risk groups.

We are applying the same donor screening criteria to all suppliers of plasma to Alpha. We will continue to take this leadership position in the industry by working with public health authorities and the CDC, FDA, and other concerned groups on this issue."

First of all, Doctor, you told us at the time that this letter went out on December 22nd, 1982, there are about seven

hemophiliacs that had contracted AIDS, is that right?

A Yes, that is correct.

Q How many -- what size was the population at large that had

contracted AIDS with hepatitis?

A I think it was somewhere around 1,100. I don't remember the exact number, but I remember by March there were 11 hemophiliacs that had opportunistic infection, and the total population of people with AIDS was around 1,120-some. So it was considered about 1 percent of the total population. That is of March of 1983.

But I think at this time there were about 7.

Q So by far the smallest number of people who were involved that had any kind of correlating factors were the hemophiliacs?

A Yes.

Q So the first thing you did is you screened donors. The next thing you did is that you made the people -- or you asked the people who supplied you plasma that they do likewise or you would not take their plasma.

You already had a heat treat process in the works?

A Yes.

Q Is that correct?

A That is correct.

Q As I understand it, you are not a heat treat doctor, is that right?

A No, I am not.

Q In addition to that, sir, did you close donor centers which were in high risk areas?

A Yes, we did.

In other words, at that point in time, the CDC or F -- the CDC, I believe, had stated that certain -- something like 47 percent of all of the AIDS cases were occurring in New York City, and Los Angeles was second, and San Francisco and Miami and Newark and Houston.

So we closed down -- so we were not collecting plasma from New York or Miami as it was; so we closed down San Francisco and Los Angeles donor centers.

Q You never did have a center in Miami?

A Never had a center in Miami.

Q Or New York?

A Or New York.

Q Or Houston?

A We had one in Houston.

Q Now, that takes us through the activities in December, is that correct?

A Yes. But one other thing on the AIDS task force that I didn't mention was at that time we started looking into other areas of product improvement. We considered lyo-cryo, we considered anti core testing, and we wanted to speed up the process of heat treatment.

Q What were you doing with regard to anti core testing?

A Well, we -- this was in December.

We asked our people to start collecting plasma and

25 testing it for anti core. We took -- we were going to collect

from three different centers. We were going to check people who had core antibody, and we were going to make it into a product that was anti core negative.

So Penny Carr, who was our regulatory affairs lady, who was also the responsible head, requested from the FDA that we be allowed to manufacture a lot of antihemophilic factor, anti core tested, and that we would not state that this was -- we would not make any claims other than the fact that it was anti core tested and that we wanted to be able to put on our labeling -- I mean, on our package insert that -- about the possibility of AIDS as being transmitted by blood products.

Q And on May 3rd you were told no dice, is that right?

A That is correct.

The letter went out in March, and we were told in May that we could not do this.

LAURA M. BRENNAN, Official Reporter

Q. Now, I would like to carry you forward to the meeting that was held January 4th a few weeks later, I guess about what, two weeks later actually. Did you attend a January 4th meeting in Bethesda?

A. Yes, I did.

Q. First of all, where did that -- why don't you take the stand for a while.

Now, Dr. McAuley, the January 4th meeting was where in Bethesda, what building?

A. No. It was in Atlanta, Georgia.

Q. I'm sorry.

A. It was at the CDC.

Q. I was close.

A. Yeah.

Q. At the CDC.

A. It was a meeting that was scheduled and was going to include a joint effort by CDC and FDA and including scientists from both organizations as well as fractionators or manufacturers, as well as treaters, as well as the National Gay Task Force, and anybody who was interested in AIDS and hemophiliacs also.

Q. Were the blood bankers' representatives invited as well?

A. Yes, yes, they were there also.

Q. How large a room was it in?

25 A. Oh, I'd say maybe three times as large as this room, two or

three times.
Q. Was the room full?
A. Pardon me?
Q. Was the room full of people?
A. Jammed full. There were people sitting on the side. Everybody was interested in what was going on.
Q. And was the meeting one that was organized and quiet, or was it vigorous and boisterous?
A. The only organization it really had in that meeting as far as I was concerned was when they announced that they were having the meeting and the head of the CDC announced that we were going to have such and such a program. And from there on in my opinion it went down hill.
Q. Down hill, would you describe how it went down hill?
A. Well, it was a meeting where it was like almost where you had a turf war between CDC and FDA, that's the first thing, and then the National Gay Task Force took over the meeting basically and decided that, you know, that they were more concerned about their civil rights and about their confidentiality and the fact there would be discrimination about gays and things of that nature.
Q. Did you announce at that meeting or state that Alpha had already since December 16th been screening donors from high

risk groups?

A. When the meeting was -- actually, the meeting had gone on

for quite, you know, almost the whole day, and no definite conclusions had come about. And as I say, the National Gay Task Force was very vehement about protecting the rights of gay individuals. And at that point, and one of the issues, of course, was that we would not -- nobody should really ask about anybody's sexual preference.

And so obviously at that point in time -- well, I was elected to be the spokesman for Alpha. At that point in time, I stood up and said that we as of December 16th had already started screening, and we were going to exclude high risk individuals and the groups that you're aware of. And so that created a lot of problems with regard to the meeting. But that was our attitude.

Q. What problems did it create?

A. Well, I mean, some of the people got up and said that we had no right to do this, and we shouldn't be discriminating against anybody. We shouldn't be encroaching on their privacy. That we should not -- look what would happen if we started excluding people on their sexual preference. It was, you know, it was a touch and go situation.

Q. Did anyone from the CDC at that time say that AIDS was caused by a virus?

A. No, I don't think so. I think that they suspected that there may be, that this may, in fact, be a blood-borne infection.

LAURA M. BRENNAN, Official Reporter

And as far of I'm concerned, the only person that really offered any major worthwhile material was Dr. Spira. And he was the first one that suggested to me anyway or to the group that we should possibly be doing anticore testing, because it looked like there was some similarity between hepatitis B and HIV infection.

Q. Did you tell him that you were investigating core testing already?

A. No, I didn't. This was -- no. He was one of the speakers, and I obviously didn't have anything to do with him.

Q. That was he said that from the podium, not in a conversation?

A. He said that from the podium.

Q. But as a practical matter, you were investigating anticore testing already, weren't you?

A. We were investigating it, yes.

Q. Doctor, I'd like to carry you forward to a couple of other events which we set forth up here. Let's see what I've forgotten.

Now, during the balance of 1982 and '83, did the task force continue to investigate AIDS and review all information that came in?

A. Yes, it did. We had our meetings which were either weekly

or biweekly. And as time went on, it got to the point where all we were doing basically was reporting on the number of

cases reported by CDC. So the real portion of the meeting that was worthwhile or the productivity was in the early portions, and we continued to do what we were doing, namely, looking into lyocryo, looking into heat treating, I mean proceeding with those sorts of things.

Q. Perhaps you'd better explain to us what lyocryo is.

A. Well, there were, there is -- there was and there is a segment of treaters and people in this country who feel that single donor cryoprecipitate is better than concentrate. And there was a push to try to get the hemophiliac patient treated with a cryoprecipitate, which obviously was not exactly the way our company was founded. I mean, it was not the way we were functioning. So it would require individual donations rather than pooling, putting them altogether in multiple donors.

And so we looked into the possibility of what it would take us in our manufacturing facility to create a lyocryo type of operation. I know the Red Cross and some of the blood banks were considering this as a possibility in order to cut down on large donor pools.

Q. Did that take the cost of the product out of the reach of

everyone?

A. Well, we figured when we investigated it, we figured that it would cost about seven, an additional seven cents a unit more to do lyocryo than it would with concentrate. And at that time I believe we were probably selling the concentrate for

something like eight or nine cents. So this would add an additional 17 cents a unit, plus the fact that we had sterility problems and other things relating to manufacturing.

Q. Now, sir, in April 23rd for the first time the NIH announced that they had, they had -- what's the word I'm looking for -- separated the AIDS virus?

A. Identified.

Q. Identified the AIDS virus.

Until that time, was there any scientific proof that you could rely on that AIDS was viral?

A. Not really. I think that everybody felt that it was a virus. I mean, at that point in time somewhere in 1983 certainly everybody thought, well, this is probably a virus.

But there were so many factors or things that we were going through then that really didn't help us.

I mean, there were people who were virologists at CDC, I mean at FDA, who felt that this was Epstein-Barr virus infection or CMV virus infection or a combination thereof whereby the immune system was altered by these other viruses.

And then there was a group that thought it was related to hepatitis B. There were people who felt that this was a new virus that we didn't understand. So that we had all types of opinions with regard to what's the cause of this. And really,

nobody -- it was a very frustrating period.

LAURA M. BRENNAN, Official Reporter

Q In your experience as a physician, has there ever been a virus before that had this very long latency period?

A No, I was -- well, no, not like this. There is a condition called slow virus, but this was different than that. So there's a lot of possibilities, but no, never.

Q By the time that you began to suspect that this could be a virus because of the long delay period, it was already in the blood supply, is that right?

A Yes.

Q You started heat treating -- we'll go through the heat treating in some length with doctor kneely, but I would like to ask you if you recall the date that you had the heat-treat process licensed by the FDA?

A I believe it was in February or March of 1984.

Q That's what my cheat sheet says.

A Yes.

Q Shortly after that you became aware through tests by the FDA that the heat-treat process was effective in deactivating the HIV virus, is that right?

A Yes.

Q But there was still no way that you could test

any product

22 for the presence of this virus until 1985, is that correct?

23 A After the virus is was identified, then you could tell that

24 you could inactivate it by heat.

25 Q But you still couldn't screen donors for the virus because

there was no test for it?

A That's correct.

Q The first time that that test happened was in 1985?

A Yes, that's the first time it was a licensed test was in March of 1985. And it was implemented in our donor centers by April of 1985.

Q Going back to your donor screening methodology Dr. Tom Drees testified here that it excluded about 4 percent of the people that presented themselves to you for donation, is that correct?

A Well, I don't know that I have that number at hand actually. I know we excluded people, but I think that's a hard figure to come by because we had -- up on the wall we had a "Dear Donor" letter explaining to them about AIDS and the risk of AIDS, and so we couldn't tell the number of donors that came in and looked at that list and saw that they fell into that group and then just left. I mean, there is no way you can equate that to saying, well, it's 4 percent or 2 percent or whatever.

Q Sir, on March 15 -- I'll put up for the jury,

Exhibit

No. 26.

On March 15 Penny Carr forwarded to the FDA --

March 15, 1983, forwarded to the FDA a request to do two

things: Number one was to put an AIDS warning on the label or

insert; and, number two, was to perform the core test which you

had been looking at up to that time?

A Yes, it wasn't -- yes, I think that's right. It was to alter our package insert so that we could put in there that this could conceivably transmit AIDS.

Q Was it your understanding, sir, that FDA approval was required before you could perform that test?

A Very definitely.

Q And that was based, first of all, on the event that had happened where you got fined $10,000 now for doing an unauthorized test. And are you also familiar with the Code of Federal Regulations with regard to biologics and licensing requirements, Section 601.12?

A I've seen that, so I do know that you can't do that.

MR. GREEN: I might put this up for the jury, your Honor.

BY MR. GREEN:

Q 601.12 was in effect at that time and says that, "Proposed change of manufacturing methods and labeling may not become effective until notification of acceptance is received from the director of the Bureau of Biologics."

And that was your understanding as of

March 15, 1983?

A Yes, it was.

Q And, sir, in your AIDS task force -- was Penny Carr a member of the task force?

A Yes, she was.

Q Did she report back to you that they had received a letter over the signature line of John C. Petricciani which did not grant you authority to proceed with the testing?

A Yes.

Q And also did not grant authority for those four corners for you to provide warnings to consumers?

A Yes.

Q I would like to show you, sir, lastly -- actually the next to last Exhibit No. 1, which has previously been admitted which says, the -- "It's emphasized that all aspects of AIDS including the cause, method of transmission, predisposing factors, and definition of the syndrome itself are incompletely understood in spite of the extensive and intensive research activity focused upon these issues and the benefit from life threatening or disabling hemorrhage far exceed the risk of acquiring AIDS."

Someone named J.P. -- do you recognize those initials? Have you ever seen those before?

A That's John Petricciani.

Q He wrote, "I agree and implicit in that position is a need

21 to evaluate and discuss each incident on a case-by-case basis,"

22 dated July 26, 1983.

23 Sir, was this the state of the information at Alpha

24 as of mid-1983?

25 A Yes, it was.

Q As far as you knew, sir, was this the position of the Food & Drug Administration at or about the time of this particular memorandum was written?

A Yes, it was.

Q I would like next, sir, to show you -- do you have a number on this one?

MR. RING: Zero.

MR. BELL: 60.

MR. GREEN: You're half right, as usual.

BY MR. GREEN:

Q This, sir, is a letter on the letterhead of the Department of Health & Human Services signed by John Petricciani. It says, "Attached are copies of the minutes of the Blood Products Advisory Committee of July 19, 1983."

I believe, sir, that the previous exhibit under subject says, "Results of the blood products advisory committee meeting related to the safety of plasma derivatives." That's the same meeting, is that right?

Counsel may read all this if they wish, but Dr. Brandt -- who is Dr. Brandt?

A He was assistant secretary of Health & Human Services.

Q Assistant to the cabinet secretary?

A Yes.

Q Dr. Brandt has concurred with the committee's conclusions being used as the current working policy of the Office of

Biologics.

Does that confirm, sir, your belief that this was the policy of the FDA in mid-1983?

A Yes, it was. That was my understanding.

MR. GREEN: I have no further questions, your Honor at this time.

CROSS-EXAMINATION

BY MS. THOMAS:

A Dr. McAuley, there seems to have been a lot of confusion during this 1983 period about what the FDA's policy or position or recommendation was on the issue of core testing -- at least it seems that's what we're hearing at this point in time, would you agree with that?

A I think it was pretty obvious what their position was that they were not in favor of doing core testing.

Q Dr. McAuley, did that depend on who answered the phone at the FDA when you called?

A Dr. Petricciani was in charge of the Bureau of Biologics at that point in time and was making decisions as to what we could do and what we could not do.

Q Are you saying that that letter we just looked at stated

22 Dr. Petricciani's position?

23 A It certainly told us his position was that we could not do

24 core testing.

25 Q Let's take a look at that letter.

MS. THOMAS: Which exhibit was that, Counsel?

THE WITNESS: Or we could not -- excuse me.

BY MS. THOMAS:

Q Just so there is no question, this is what you're telling us is the official position of the FDA?

A Yes.

Q This letter signed by Marge Crouch?

A Yes.

Q Received by Regulatory Affairs on May 10, 1983?

A Yes.

Q Which states, "In the absence of some data indicating increased safety, we would feel any labeling change to be unwarranted." Is that what you're talking about here?

A Yes.

Q Now, Penny Carr did write to the FDA, didn't she?

A Yes, she did.

Q What she wanted to do was put stickers on each and every product that left Alpha saying this is hepatitis B core antibody tested, right?

A That is correct.

Q That would have been -- at the time it was perceived to have been a marketing advantage, wasn't it?

A I'm not sure that that's exactly the reasoning behind it --

Q There were a lot of opinions flying around at this time that core testing was a good thing to do.

A That's correct.

Q You said you agreed -- the one person you agreed with was Spira of the CDC, that he had pretty sound data, correct?

A I think he was the -- that data was the most impressive of any I heard that day, that is correct.

Q That showed that a very significant percentage of people who were -- who had AIDS disease were hepatitis core positive?

A That is correct.

Q Okay. Penny Carr's request to the FDA to -- to Dr. Petricciani was the March 15, 1983, letter, right?

A That is correct.

Q She states -- and this is our Exhibit 3057, "We intend to make no promotional claims for antihepatitis B negative AHF. Very soon we will submit our proposed labeling for this product. We intend to utilize an adhesive sticker label simply indicating that the product has been derived from plasma tested and found to be negative for antihepatitis B core, correct?

A That's correct.

Q Okay. One of two jobs the FDA had in terms of regulating your industry, sir, was, first, to license the product and,

second, to make sure that there are no false claims being made about it?

A Absolutely true.

Q So this was simply a label issue, wouldn't you agree with that?

A I think that a label issue is as important as anything that goes on the -- on the whole bottle.

Q Alpha had nothing to gain by doing cost testing and not putting little stickers on its bottle, did it?

A I'm sorry. I didn't really understand your question. Would you repeat it.

Q I'll rephrase it. Now, Alpha actually did look into core testing and selected various sites for core testing isn't that correct?

A That is correct.

Q And there was a -- it took some time to decide which sites should be selected for core testing, didn't it?

A I don't really know how difficult it was. I know we selected three centers. I don't remember which ones they were or how we went about doing that.

Q Okay. Well, in February of 1983, do you recall Alpha looking at its Portland southeast donor center and determining that it had the highest antihepatitis B surface antibody rate based on the screening done in November of 1982 through January of '83, a 13 percent rate?

A I don't remember that figure, but it doesn't

surprise me

22 that we would have selected a center that probably had less

23 likelihood of having positive anticore.

24 Q And the highest hepatitis B surface antigen positive rate

25 was in Houston, and that was one of the centers under

consideration for core screening; were you aware of that?

A No, I was not aware of that.

Q I'm reading from a document, sir, that's been labeled Alpha Exhibit No. 21.

Now, you talked a little bit, Dr. McAuley, about the benefits of the antigen test because it was specific?

A You mean antigen for hepatitis B?

Q Yes.

A Yes.

Q And that the antigen test would detect, I think -- by the time we got around to the second generation RA test, it would defect about 90 percent of the antigen positive carriers, right?

MR. GREEN: Counsel, can we have the number of the exhibit?

MS. THOMAS: Sure. 8.02.

MR. BERKMAN: Objection, I think she said 90 percent, and earlier I think he said 95 percent.

BY MS. THOMAS:
Q Dr. McAuley, are you a virologist?
A I am an internist, not a virologist.
Q Are you an infectious disease expert?
A I am not an infectious disease expert.
MR. BERKMAN: Excuse me, your Honor. I don't think we have this exhibit. Could we get a copy?
MS. THOMAS: This was a demonstrative exhibit used in Dr. Weiser's testimony.
MR. BERKMAN: Which we still never got.
MS. THOMAS: It was never passed out.
THE COURT: Well, it is up there on the screen big enough for everybody to see.
BY MS. THOMAS:
Q Have you ever seen this charting before, Doctor?
A I have seen this charting before.
Q Does this tell us that persons who are suffering from chronic hepatitis infection may not have detectable antigen in their blood but may have core antibody at detectable levels in

their blood?

A The majority of people who have had hepatitis B surface antigen positive hepatitis do not have hepatitis B surface antigen in their blood.

The majority of people will have antibody but not the antigen.

Q Well, let me ask it a different way. Wouldn't you agree that people who are core positive are also people who could be infectious?

A Absolutely.

Q Now, Mr. Green asked you about the best test in the late '70s for screening out hepatitis, and I believe your answer was that no test will cover 100 percent, is that correct?

A That is correct.

Q Today Alpha uses ALT testing, doesn't it, A-L-T, liver enzyme testing?

A We use -- since 1985 we have been using the alanine amino transferase as a surrogate test for non A-non B, yes.

Q And that is a test that has been used in Germany since 1962.

Are you familiar with that?

A Well, --

Q For the same purpose?

A Well, I am not sure about that.

But we have used ALT in this country to determine all types of hepatitis. It doesn't necessarily have to be. It could be viral hepatitis, it could be a drug hepatitis. Any of those will cause elevation of ALT.

Q But it is evidence of liver disease?

A It is an indication there has been liver abnormality, correct.

25 Q Alpha did not start using that test at the same time as it

was using the antigen test until 1985?

A As a surrogate test for non A-non B, that's correct.

Q Okay. And I may have missed your testimony earlier. Did you say Alpha is now using the core antibody test?

A No.

Q What new test did they start using in 1991?

A HCV, hepatitis C.

Let me look at this picture here. I am really not -- I think this is one way of looking at it, but basically most people will -- are clear that HBSAG and fall off, but there is a period, what we call a window period, where the anti HBC will come up and the patient can be infectious.

So this, even though, you know, I see -- and I know this chart, but I just don't -- anyway, it is just different.

Q That is a window you would want to close, wouldn't you?

A That is correct.

Q And it could have been closed if you were using both the core test and the antigen test?

A As I mentioned, we could not do the core test. We were not allowed to by the FDA.

Q Because it wasn't licensed for interstate sale?

A Because it wasn't licensed.

Q Let me show you another Alpha document.

I am going to show you what has been marked as Exhibit

25 4189. This is a memo dated January 6th, 1984, from a Patricia

Nix to Dave Gury.

Who was Dave Gury, sir?

A Gave Gury was a chairman of the AIDS task force, and he was in plasma procurement.

MS. THOMAS: May we put the memo on the screen, Judge?

THE COURT: Yes.

BY MS. THOMAS:

Q Could you take a look at the memo and the attached pages and tell me if you have seen that before?

A I have seen this.

Q The topic of the memo is surrogate tests for AIDS?

A Yes, it is.

Q And the figures attached, the chart attached, are these based on Mr. Spira's data?

A No, they are based on Pat Nix's evaluation of the various types of surrogate test with regard to its sensitivity and specificity and cost and feasibility, this sort of thing.

Q She was an employee of Alpha?

A She was in charge of our Memphis testing laboratory, is in charge of our Memphis testing laboratory.

Q Could you put the next page up?

Now, cut off in the left-hand column, that is anti hepatitis B core. Can you see that, Doctor?

A Is that -- which? Second one?

25 Q Let me give you my copy.

A Yes, I see it now, the second one.

Q Okay.

MR. BERKMAN: Your Honor, may I, for the record, object to the use of this document for the truth of anything stated therein as it applies to anybody because, again, while it may be a business record of Alpha, I have no idea where this information comes from or if it is true. In fact, I have reason to believe it is not.

THE COURT: All right, that objection is noted.

BY MS. THOMAS:

Q This information which came from Patricia Nix at Alpha states that the anti hepatitis B core test is rated high in sensitivity, high in specificity, and is $1.47 per test, is that correct?

A That is what it says here.

Q Okay. At this time was Alpha contemplating using this test?

A No. We were looking into the possibility of anything that might be of value with regard to surrogate testing.

Q Now, the third to the last page of that exhibit, Doctor, has Miss Nix's comments, and here they are on the anti B core test, and she states that this test was pushed as the best of the surrogate tests by most of the Blood Product Advisory Committee

panel. And again the price is $1.47.

Do you see that?

A I do.

Q Well, at this time was Alpha considering using this test?
A No, we were considering -- we were looking at all types of surrogate tests we could possibly use for the exclusion of people who might have AIDS or be carrying the HIV virus.
Q Okay. But it is your position that Mr. Petricciani or the FDA didn't want core testing done?
A That is correct.
Also, Dr. Gerety, the virologist at the FDA, did not want that, saying there was too much of a gray zone in the anti core testing.
Q Penny Carr attended a meeting relating to core testing with the other fractionators.
I believe she may have discussed that meeting with you?
A Yes.
Q In late 1983?
A I am aware of the meeting.
Q Do you know the meeting I am referring to, Doctor?
A Yes, I do. This was a joint manufacturers' meeting.
Q Okay.
And this is Plaintiff's Exhibit 4126. It has already been admitted.
MR. BERKMAN: Again, your Honor, for the record, I want to object. This isn't even an Alpha document.

MR. GREEN: I presume you are going to lay some foundation that he has seen that before.

MS. THOMAS: It is already admitted.

MR. BERKMAN: Your Honor, even though it is admitted over objection, I don't think she can ask the witness about it if he knows nothing about it. She has got to lay the foundation.

THE COURT: Very often that is the way we learn. We ask somebody something and find out whether they know anything about it. That's not a basis for an objection.

Overruled.

BY MS. THOMAS:

Q As of December 1983, Dr. Donohue was still with the FDA, was he not?

A I don't remember the years he was there, but he was obviously very instrumental in FDA work at that time.

Q Okay. And he was Aronson's boss, wasn't he?

A I gather he was, yes, he was.

Q Now, on the third paragraph of this Cutter memo, which reports the meeting we just discussed that Penny Carr of Alpha attended, it states that Dr. Donohue recommended that anti core hepatitis B testing be incorporated to routine plasma screening in addition to current requirements since it would identify 90 percent of all potentially infectious or high risk donors.

Do you see that?

A I see the statement, yes.

Q And Dr. Donohue was an official with the FDA?

A Yes, he was.
Q Did he never answer the phone when someone called?
A I have no way of knowing that. I wasn't there.
MS. THOMAS: Could you put the second page up?
MR. BERKMAN: Your Honor, may I request that the Court look at this. This is a memo of a meeting he did not attend, written by a Cutter employee to Cutter employees, and what she is doing is using this document to introduce multiple hearsay that this witness knows nothing about.
THE COURT: Is this document in evidence?
MS. THOMAS: Yes.
MR. BERKMAN: I don't know, your Honor.
MS. THOMAS: It was put into evidence through Mr. Hink.
THE COURT: All right, the objection is overruled.
BY MS. THOMAS:
Q Now, this is the meeting that Penny Carr reported to you on, correct?
A No, this is not the meeting that I am acquainted with. I am acquainted with your last sentence there on the -- with Mike Rodell of Armour proposed a task force to deliberate and the details and recommendation regarding further information in three months.
I am acquainted with that task force, but I am not

24 acquainted at all with any of this other portion.

25 Q Did Penny Carr tell you whether she did attend a meeting the

evening before that task force meeting with the FDA, a meeting --

A I remember she attended a meeting that Mike Rodell chaired as a task force to determine whether anti core testing should be a recommendation of industry to the FDA.

Q This was a meeting attended only by industry, right?

A I can't answer that. I wasn't there. I know that Penny Carr was there.

Q Did she tell that you there was an agreement to use the core task force as a delaying tactic?

A No, I don't know anything about that. I have never heard that term ever used before.

May I make one comment? It seems to me that the meeting --

Q Well, --

THE WITNESS: May I?

THE COURT: Yes, you may.

THE WITNESS: It seems to me that the meeting that Mike Rodell chaired, or the task force, I think that he may have been commissioned by the American Blood -- or by the Blood Products Advisory Committee to look into anti core testing.

BY MS. THOMAS:

Q So was he still the industry leader or representative for

the pharmaceutical manufacturing association at that time?

A I think at that time he was still with Armour, and I don't

know that he had any official representation with the PMA.

Q That was a position he held at one time, wasn't it?

A It may very well have been.

Q Dr. McAuley, you talked about how little was known late 1982, early 1983, about AIDS?

A That is my feeling.

Q You didn't know if it was a virus, you didn't know if it was transmitted by blood, you didn't know how much, if at all, it was contaminating your plasma pools.

Is that what you told us basically?

A Yes, it is.

Q Were you involved in early 1983, Dr. McAuley, in preparing a set of questions and answers on AIDS for the public or for treating physicians?

A You mean a brochure that --

Q Yes.

A -- came out under my name?

Q Right.

A Yes, I am aware of that.

Q All right, let me show you this. This is Alpha Exhibit Number 38, if you could take a look at that, and tell me if you had a hand in preparing it?

A Yes, I did. This is -- I had a hand in preparing this.

Q Now, could you turn to the specific questions and answers

following your note?

A Yes.
Q Could you read to us, Doctor, the first yellow question?
A "Can AIDS be transmitted by Factor VIII and Factor IX concentrates?
Answer: This has not been proven and possibly will not be until we know for sure what causes AIDS."
Do you want me to go on with that?
Q No, that is fine.
Who were these questions and answers designed for?
A These were designed primarily for hemophiliacs, hemophiliac centers. It was not primarily for physicians. It was primarily geared for patients and family and hemophiliac chapters, national hemophiliac chapters.
Q May I see that for a moment?
There is a question here: "Can the suspect agent for AIDS be transmitted by cryoprecipitate?"
The answer is that, "No one knows cryoprecipitate is not processed in any way that might be expected to render it safer than concentrates."
A That is correct. That is what I would say.
Q Was that information that you elected to put in those questions and answers?
A Yes, it is, and do you want me to tell you what it is based on?

25 I was very much involved with hepatitis B, as you know,

and based on my experience from data coming from Australia, and also from Puget Sound Blood Bank, both of whom -- both of which centers had used primarily concentrate or cryoprecipitate, that the seroconversion for hepatitis B was just -- eventually, given enough material, was just as high as those people using concentrate alone.

So that was the basis for that statement.

Q It is sort of dependent on where the cryoprecipitate came from, didn't it?

A I would think that probably that is a factor, yes. Yes, I would agree with that.

Q Were you reading the New England Journal of Medicine in early 1983?

A I was reading the New England Journal of Medicine in 1983.

Q Well, did you read Dr. Ratnoff's publication in the New England Journal of Medicine?

A I read Dr. Ratnoff's article in the New England Journal of Medicine.

Q Did you read Dr. Menentoff's article in the New England Journal of Medicine?

A I read both, yes, I did.

Q They suggested that cryoprecipitate was causing far less changes in their patients than those on Factor VIII?

A Dr. Ratnoff -- yes, you are correct.

And Dr. Ratnoff, of course, has taken this posture

since I got involved with antihemophilic factor back in the 1960s, and he has taken that position from day one.

Q Was marketing involved in getting up those questions and answers?

A Yes, they were.

Q Tom Stagnaro of marketing?

A Yes. He was our director of marketing.

Q Is there a question there: "Should I postpone elective surgery?"

A Yes.

Q What is the answer?

A "Should I consider elective surgery at the time?"

And this is based on, yes, Dr. Martin Gilbert, attending orthopedist at Mount Sinai Hospital, in New York City, co-director, says that you should -- that you should not postpone it.

Shelby Dietrich in December 1982, "We suspended orthopedic surgery but we are now resuming it on a selective basis. Most patients needing orthopedic surgery have already had considerable exposure to concentrate.

And in certain cases orhopedic surgery may actually reduce the amount of concentrate used by alleviating the orthopedic problems. Elective surgery should not be withheld or deferred solely on the basis of incurring the risk of AIDS syndrome or prodrome or syndrome."

LAURA M. BRENNAN, Official Reporter

Q When did Alpha distribute this brochure to hemophilia centers?
A I believe it was in 1983.
Q In early '83?
A I don't know the date.

Q. Now, in January of 1983, did Alpha publicly announce that it was excluding high risk donors?

A. Yes, it did. Remember, I sent out the letter to the hemophilia -- well, publicly, yes, we did publicly as well.

Q. You had a press release saying that you stopped collecting from high risk donors, right?

A. That is correct.

Q. And then you sent out the letter we saw dated December 22nd, correct?

A. To the hemophilia treaters, I mean to the hemophilia centers and the National Hemophilia Foundation.

Q. Okay. Were you still collecting plasma from Irwin Memorial Blood Bank in San Francisco at that time?

A. We were not collecting -- were we purchasing blood from Irwin Memorial? Is that what you are asking?

Q. That's what I'm asking.

A. No. You asked whether we were collecting it.

Q. Well, excuse me. Were you getting plasma or blood from Irwin Memorial in San Francisco?

A. We had -- I can tell you yes, we did. And I don't know the date when we stopped getting blood from Irwin Memorial Blood Bank, but we did stop.

Q. Eventually?

A. Eventually. And I would imagine it had to be in '83.

25 Q. Okay. And you mentioned that you closed down some centers.

We've already looked at Alpha's list of plasmapheresis centers, the ones it owned. And you had some in Los Angeles, right?

A. We did up till 1982.

Q. Well, as of October '82, your documents show they were in Los Angeles and San Francisco. Would you agree with that?

A. No, no. You're looking when you look at the Los Angeles one, you're looking at our manufacturing facility license, not our donor center license.

Q. Did you manufacture in San Francisco?

A. No. I'm talking -- you're talking about -- I'm talking about Los Angeles.

Q. Okay.

A. San Francisco was closed on November of 1982.

Q. What did you do with the plasma you had from that center, Doctor?

A. I don't know what we did with the plasma.

Q. Now, you were a member of the board of directors of Alpha for how long?

A. I was -- I am a member of the board of directors of Alpha since 1978 till the present time.

Q. Well, before I get to that, let me ask you this. You indicated that you were personally involved in putting together Alpha's screening procedures back in December of '82 asking

donors to voluntarily exclude themselves?

A. That is correct.

LAURA M. BRENNAN, Official Reporter

Q. Okay. So you sent letters out to the donor centers telling them what you wanted done?
A. Mail-O-Grams to our donor centers and letters to the, and faxes to the other people, yes.
Q. Okay. And this, in essence, was a system that relied on the integrity of the donor to come forth and say, "I must exclude myself"?
A. No. We were asking them specific questions, and we relied on them to answer the questions properly and to be forthright in rejecting themselves as donors.
Q. Well, the bottom line is if they answered that yes, they're gay or yes, they're an IV drug user or former IV drug user, they're going to be disqualified, right?
A. That is correct.
Q. Okay. They knew that, right?
A. Yes, they did.
Q. So you were relying on their integrity to protect the health of the hemophilia population, correct?
A. Pardon me? Yes, we were relying on their integrity. We had nothing else to offer at that point in time.
Q. You didn't have any surrogate tests, and you kept on collecting?
A. That is correct.
Q. Okay. Now, you had some system in place, didn't you, in

25 order to comply with a federal regulation that you could only

collect from donors twice a week?
A. That is right.
Q. Okay. What did you do? Did you stain their fingers?
A. If there were donor centers that were two in a city or there was a possibility that a donor could donate at one plasmapheresis center on one day and another in another, we stained their fingers with, we put a dye on the fingers like what you get at the --
Q. Carnival?
A. -- carnival or circus or whatever so you can go in and go out.
Q. Right. So nobody cheats?
A. That's correct.
Q. And this is what you did to each and every one of your donors?
A. In centers, in cities where there was more than one donor center.
Q. To protect them from themselves?
A. To protect them from themselves and also to make sure that we complied with federal regulations.
Q. Okay. Now, you also mentioned that there was a nurse receptionist, a medical receptionist who did the initial screening. Do you recall that?
A. Yes, I do. That's a, that's a, that's a trained medical specialist or receptionist.

LAURA M. BRENNAN, Official Reporter

Q. Do you remember giving your deposition a few years ago?
A. I remember giving my deposition a few years ago.
Q. And indicating that the person had no training and was a non-medical person?
A. They had no formal medical education prior to coming to work for us, and they then subsequently were trained, because if you'll notice in my thing I mentioned that they were trained in the ability to screen and question donors and take blood pressures and take pulse and weight.
Q. Okay. Now --
A. But they were not necessarily nurses.
Q. Okay. Now, these doctors that contracted out to work at the centers of Alpha, they were paid by the hour, weren't they?
A. Most of them were paid by the hour. We had only one full-time Alpha employee.
Q. And that was the head of the donor center, right?
A. I'm sorry, your question was not completely clear.
Q. Well, let me back up. In lieu of a doctor, some states would allow you to use a nurse practitioner or a physician's assistant at the donor center?
A. That is correct.
Q. To perform the annual examinations?
A. That is correct. Under the supervision of a physician, that is correct.

25 Q. Okay. And under the supervision of a physician doesn't

mean he is standing there, right?

A. That is correct. But he is signing the reports and signing the laboratory tests and other things to show that he has supervision. It's like any nurse practitioner or physician assistant.

Q. Now, you've been on the board of Alpha's board of directors since '78?

A. That is correct.

Q. Since Alpha was, became Alpha --

A. Created.

Q. -- and was purchased from Abbott?

A. Yes.

Q. Okay. Tom Drees was on the board with you while he was an employee of Alpha?

A. Yes, he was.

Q. And who was Dr. Nishita?

A. Dr. Nishita was a Japanese PhD who was our technical liaison between Green Cross Corporation and Alpha Therapeutic Corporation.

Q. Technical liaison?

A. Correct.

Q. What was his job?

A. His job was to coordinate R&D efforts between the Green Cross and Alpha.

Q. Does that mean telling Alpha what technology the Green

LAURA M. BRENNAN, Official Reporter

Cross has?

A. What the Green Cross was working on and vice versa, telling the Green Cross what Alpha was working on.

Q. Okay. And he was Dr. Nishita, is that N-i-s-h-i-t-a?

A. Correct.

Q. Okay. And he was a board member?

A. He was a board member.

Q. And he was on the board from at least 1978 to 1982, correct?

A. Yes.

Q. As far as you know, did he ever discuss the Green Cross pasteurization patent at any of these board meetings?

A. I do not remember him ever discussing a pasteurization procedure with the board members.

Q. Okay. Well, aside from the technical liaison member of the board of directors, did anybody -- was that ever a topic of discussion among the board members at any meetings you attended?

A. It was not a topic of discussion at any of the board meetings that I attended.

Q. Well, did you personally know that the Green Cross had a pasteurization patent?

A. I did not know that they had a pasteurization patent.

Q. When did you first learn that, Doctor?

A. I can't give you the date on that. I don't really know

LAURA M. BRENNAN, Official Reporter

when I was first aware of that.

Q. And I'm referring to the Japanese patent dated October 28, 1981.

MS. THOMAS: I have no further questions.

THE COURT: Any other questions?

MR. BARR: Your Honor, I have a couple.

CROSS-EXAMINATION

BY MR. BARR:

Q. Good afternoon, Dr. McAuley.

A. Good afternoon.

Q. When you talked earlier on direct examination about setting up the donor exclusion policy by getting donors to answer a series of questions and then exclude themselves, to your own knowledge, while Alpha did that in late December of '82, you know that the other manufacturers shortly thereafter that did it also, is that correct?

A. That is correct.

Q. And, in fact, to your knowledge, the directive from the FDA to do this came out in March, and by that time, all four companies had in place the exclusion of high risk donors that you talked about?

A. That is correct. I do know that.

Q. Now, Ms. Thomas asked you some questions about your Q&A.

Do you have that there in front of you?

A. I don't. But I remember the Q&A.

Q. Well, let me read you the part that she read, and then I want to go on and talk to you about something she didn't read, okay?

A. Okay.

Q. The question says, "Cryoprecipitate is not processed in any way that might be expected to render it safer than concentrates?" That's what she read to you.

A. Yes.

Q. And here is what wasn't read, and I want to ask you a question about it. It states, "Proponents of a switch to cryoprecipitate therapy point out that each unit of concentrate contains Factor VIII from a few hundred to as many as 20,000 donors while cryoprecipitate is prepared from much smaller donor pools and, thus, might be safer. If, however, there is an AIDS carrier in a cryoprecipitate pool, far more of the infectious material may be transmitted to recipients than would be the case with concentrate where each donor provides only a tiny fraction of each pool."

And could you explain to the jury what you meant by that?

A. What this means is viral burden. In other words, if you have a given amount, one individual, you take, say, a pool of

20 individuals or cryoprecipitate from 20 individuals, and one of those individuals would have the viral particle, you have a much greater chance when you got exposed to that smaller

amount, even though because it's a more concentrated material.

In the situation with concentrate where you have 10,000 donors or say, there you have a dilution factor, and it's conceivable that you may be less likely to be infectious than you would be if you had a highly concentrated material.

Q. And when it says proponents of a switch to cryoprecipitate, you knew about Dr. Ratnoff and have known about him for a long time, correct?

A. That is correct.

Q. And it goes on, another part that wasn't read that I want to read states, "It is worth recalling that these same arguments were raised a decade ago when concentrates were found to transmit hepatitis. It was argued that cryoprecipitate is safer. But studies eventually demonstrated that the risks from the two types of product are about equal over a given period of time when similar amounts of cryoprecipitate are used."

A. When I was quoting the study from Australia, which used only cryoprecipitate, and the Puget Sound study, those were the conclusions that they came to.

Q. And so essentially what you're saying is if you compare someone who uses lots and lots, and by that a great deal of cryoprecipitate versus someone who compares a great deal --

uses a great deal of Factor VIII, the risk of getting hepatitis

was the same?

A. Yes.

LAURA M. BRENNAN, Official Reporter

Q. And have you reviewed studies, Dr. McAuley, that have been done in the last few years that indicate that that's turned out to be true with HIV?

A. Off the top of my head, I don't remember. I don't remember that happening.

Q. Okay. When the donor screening was done -- strike that.

The other question I wanted to ask, and if it's not your field, tell me, do you know if the very fractionation process itself, in other words, once you pooled the plasma and it's then made into the powder, if that fractionation process itself destroys the AIDS virus or a portion of it?

A. There is, I do know that throughout the manufacturing process, for example, there is a falling off of concentration of HIV. For example, the first step in fractionation process where you take off fibrinogen, in fact, it appears as if fibrinogen is the major component of the fractionation process that carries the viral particle. So each step would tend to minimize or lower the concentration of viral particles.

Q. Okay. Just one final thing. When you talked, when you answered questions by Mr. Green about all of the things that were in place for donor screening before AIDS ever came along,

the examining of donors, keeping IV drug abusers out, the physical examination, all of those things were also things done by the other companies as far as you know?

A. Yes, they were.

MR. BARR: Okay. Thank you. I have nothing further.

THE COURT: Anything else?

MR. GREEN: I had a couple things, Your Honor --

THE COURT: Go ahead.

MR. GREEN: -- before the Court does.

REDIRECT EXAMINATION

BY MR. GREEN:

Q. Dr. McAuley, I'd like to read a bit more of this Q&A document that also was left out. You said you had a hand in preparing this, is this right?

A. Yes, yes, I did.

Q. In terms of date, it cites on the last page, "An AIDS case reported March 3rd of '83," so we know it was at least after March of '83.

A. Yes.

Q. Does that help you at all establish the day?

A. I know it was in '83, but I don't remember exactly when. I'm sure it had to be after March.

Q. The first question is, "Can AIDS be transmitted by Factor VIII and Factor IX concentrates?" Answer, this part was read, "This has not been proved and possibly will not be until we know for sure what causes AIDS."

Then I would like to read the balance of the answer.

"All 12 hemophilia sufferers of AIDS diagnosed thus far were using concentrates. But nine out of every 10 moderately to

severely afflicted hemophiliac patients now uses concentrates predominantly rather than cryoprecipitate. So one would expect this to be the case."

Doctor, is Abbott still a viable company?

A. They better be, yes.

Q. It's still a company, okay.

A. Yeah.

Q. You mentioned Dr. Gerety. Who is Dr. Gerety?

A. Dr. Gerety is a virologist at the FDA who took the posture that AIDS may be, before we knew what the etiology was, that it may be caused by CMV or Epstein-Barr virus or possibly a combination of both or an activation of a herpesvirus. I mean, he was a virologist basically.

Q. How long did he hold those beliefs that you know about?

A. I don't know how long he held those.

MR. GREEN: That's all I have.

May the witness be -- I'm sorry, you had some questions?

THE COURT: Yes.

I started to ask this question of a witness a couple weeks ago, and I was told that somebody else would know more about it, so I backed off. Mr. Barr's question to which you answered in terms of the dilution factor makes me think that

maybe you can give us some help on this.

I'd be interested in knowing what we mean when we say

that a donor infects a pool with HIV virus. One question is how many viruses, individual viruses would a donor be likely to transmit in the transfusion? The second question is what happens to those viruses when they enter the pool? What is their life cycle? We've heard testimony about replication. How often does replication occur? And what is the activity of those viruses? Do they stay in that one section of the pool, or do they swim around, or what do they do?

THE WITNESS: Okay. I think they are good questions.

THE COURT: I don't know whether they are or not.

THE WITNESS: Yeah, they are.

THE COURT: As a layman, that is something that --

THE WITNESS: It depends on the virus. Hepatitis is one situation. HIV is another situation. In the hepatitis virus, for example, a chronic carrier or somebody who has hepatitis B surface antigen in their blood, that means that they probably can't clear the virus. It's being replicated in the liver. And during that period of time, the more replication they have and the more viral particles, the more likely they are to be infectious.

Now, HIV is a completely different ball game. There

is a period in HIV infection probably six weeks after the initial exposure where the individual comes down with a period that's like flu or like infectious mononucleosis. They get fever and chills and lymphadeno, enlargement of the nodes and

that sort of thing.

During that period of time, the individual is viremic, meaning that the virus is in the bloodstream. Those viruses are then picked up, and then that period of time is when they are the most infectious. So if you were to draw a unit of blood from somebody during that period of time, the chances are you are going to get a lot of particles of viral particles.

25

LAURA M. BRENNAN, Official Reporter

THE COURT: Now, what do you mean by "a lot"?

THE WITNESS: Well --

THE COURT: I mean, just in order of magnitude.

Are we talking about 10 or a million?

THE WITNESS: Oh, more than 10. I think you would have to talk about more than that.

THE COURT: Less than a million?

THE WITNESS: Let me just give you an example. We know that in hepatitis B that it will not pick up more than, say, 1,000 viral particles per ml of material -- I mean of testing material. So, that's one feature.

THE COURT: How many ml does a typical donor give?

THE WITNESS: Well, they give 700 ml.

THE COURT: So, that would be 700 times whatever.

THE WITNESS: They should turn up positive on that.

Now, we know, for example, on HIV that -- we know from inactivation studies of what we can get rid of, and we are talking about millions of particles. But I really don't know that I can tell you specifically. I can say that there

is periods where people are much more infectious than they

are at other times, but I don't know particle numbers.

THE COURT: All right. Thank you.

Can you tell me anything about the behavior of the

viruses once they get into the pool? Where do they go? What

do they do?

THE WITNESS: When they get into the pool they are obviously -- they are more than likely picked up or they are entrapped by the fibrinogen. That happens to be the one meshwork of material in a blood process whereby they are more in fibrinogen than anything else.

So, the idea being the more you purify it, the more likely you are to get rid of the viral particles. So, when you do and -- Dr. Mozen has done a lot of this work in terms of finding out what portion or what fractions they are. I can say that the great majority of viral particles are with the fibrinogen, but that doesn't mean that you couldn't have some particles down that will give you trouble.

THE COURT: Completely different subject. You mentioned the protests of the gay representatives who attended this meeting. What effect, if any, did the attitude of the gay population have upon any action that Alpha took or decided not to take in regard to its plasma or its concentrate?

THE WITNESS: Well, obviously I got a great deal of

flak after this happened. And when I got back to Los Angeles, I had received phone calls from physicians, gay physicians, in the community objecting to our stand.

I then tried to get to a luncheon or breakfast meeting with Henry Waxman, who's our representative out there

who represents the gay area, to try to explain what Alpha's position was on this because it was so unpopular.

THE COURT: Well, that's --

THE WITNESS: They didn't boycott us or anything like that, no.

THE COURT: I am not asking you so much what they did. I am asking you what you did in response to what they said or did.

THE WITNESS: Well, we felt our "dear donor" letter kind of illustrated or kind of gave an attitude in terms of how we felt about this. We felt that they had made a contribution to us in the past, but there was a chance that they were -- if they were gay, that they would conceivably infect our product and, therefore, they should not donate.

THE COURT: Did anything that Alpha did from 1983 on or fail to do from 1983 on have any relationship to this agitation or protest by the gay population?

THE WITNESS: I don't know that I can answer that. I don't know that it did. My personal feeling always was that HIV should be a reportable disease, and it never

was.

THE COURT: The reason I am asking the question, in case you don't know, is that there have been several references during the trial to the attitude of the gay donors, and I am wondering what the relevance of that testimony is.

LAURA M. BRENNAN, Official Reporter

THE WITNESS: Well, let me just put it -- I don't know either. Let me put it in another perspective.

Throughout our existence we had two product recalls or withdrawals, and one of them was in a whole blood donor who had donated whole blood to a donor center and then was shipped to us and then we subsequently found out. The point being that the other one was from a plasmapheresis center, not our own.

But the point I am saying is that obviously gay people donate just like anybody else, and they feel, even in spite of the chance of infectivity, there is still that area.

THE COURT: Do the jurors have any questions?

(No response.)

THE COURT: All right.

MR. GREEN: Your Honor, could I ask a couple of follow-up questions?

THE COURT: Sure.

REDIRECT EXAMINATION

BY MR. GREEN:

Q. You mentioned Dr. Mozen. Who's Dr. Mozen?

A. He is going to be a witness.

Q. The gentleman behind me. He has done some work in the

area that might be able to help the Judge out?

A. Well, he presented a paper on HIV partitioning over at a

WHO meeting in Geneva, and so he knows better than I the

various log that are altered by partitioning or by fractionation.

MR. BARR: Excuse me. Would you inquire who Dr. Mozen works for?

THE WITNESS: Dr. Mozen works for Cutter.

(Laughter.)

BY MR. GREEN:

Q. With regard to the actions of the gay population, did that have -- to your knowledge, did that have any affect on the FDA or on the administration granting monies to which to fight AIDS?

A. I don't really know that I can answer that with any degree of assurance.

MR. GREEN: That's all I have, your Honor. Thank you.

MS. THOMAS: Just a couple more questions.

THE COURT: I know a lot of people who would be very disappointed if the answer to the second part of the question is no, and very surprised, as well, I think. That's got nothing to do with this case.

Ms. Thomas.

RECROSS-EXAMINATION

BY MS. THOMAS:

Q. You mentioned that you have had two withdrawals in your history. Given that, what kind of system did Alpha have in

place to learn whether its repeat donors were getting sick, staying healthy, moving away? How did you follow up on those people to see if they were staying healthy?

A. That's a good question. I must say that I don't have a good answer to it.

The only advantage to a plasmapheresis operation as far as I can see is that we have a better handle on our patients -- I mean, our donors -- than does the whole blood sector because we see them at least once or twice a week, and we know about their medical history, et cetera, et cetera, than a whole blood operation. They donate every two months, and they may not be known to the personnel.

Q. Wait a minute. I don't want there to be any confusion on the record here.

A. I haven't gotten around to your part yet.

Q. We are talking about the American Red Cross or someone who comes to an office building and says "Help us out."

A. Right.

Q. They don't come every two months?

A. Oh, yes, they can.

Q. They can, but there is not necessarily --

A. What I am saying is the majority of our donors are repeat donors. They are donors who donate on a weekly basis or twice a week so that they are well-known to the center personnel.

LAURA M. BRENNAN, Official Reporter

In answer to your question, do we do an ongoing follow-up as to why people drop out? No, we don't.

Q. So, you don't know if they have come down with a disease or if they have moved away?

A. I am saying we have a better chance of doing that than does a whole blood operation. But, no, we have nothing in place that says when somebody doesn't show up that we should call their home and find out, no, we don't.

Q. Okay. You had no system in place in the early '80s through '85 with the local hospitals to report to you if one of your donors there is sick and may have an opportunistic infection?

A. No, there was nothing in place for that.

Q. You also mentioned a fact that's come up before in this room, that the viruses tend to migrate with the fibrinogen. Alpha's product, as all of the products did, contained fibrinogen?

A. That is correct.

Q. When we are talking about level of purity, we are talking how much fibrinogen is in the product, right?

A. Mostly fibrinogen.

Q. Mostly fibrinogen.

MS. THOMAS: I think that about covers it.

MR. BARR: Your Honor, may I ask one further question?

LAURA M. BRENNAN, Official Reporter

THE COURT: Sure.

RECROSS-EXAMINATION

BY MR. BARR:

Q. We have shown an exhibit that is the joint statement on Acquired Immunodeficiency Syndrome related to transfusion, and it's dated January 13th, Dr. McAuley. And these were recommendations?

A. Of '83?

Q. Of '83. The time frame we are talking about when the gays were very much protesting the elimination of homosexuals from the donor pools.

The American Association of Blood Banks, the Red Cross, the Council for Community Blood Centers, the Volunteer Sector at that time, the very time we are talking about, said that direct or indirect questions about a donor's sexual preference was inappropriate. Do you recall that?

A. I do.

Q. Despite the fact that these four fractionators were harshly criticized by the homosexual community for doing it, the commercial fractionators that made plasma for these -- that got plasma for these medicines went ahead and

excluded

homosexuals and asked these direct questions about sexual

preference, correct?

A. That is correct.

Q. While you attempted and the other companies, as far as

you know, attempted to do it in a way that was not insulting?

THE COURT: Mr. Barr, let's let the witness answer the question. Ask the question and let him give the answer. For instance, "How did they do it" would be the question rather than your telling him how.

BY MR. BARR:

Q. Have you described to the jury how Alpha and, as far as you know, the other companies went about excluding male homosexuals from donating that began in early '83 and continued to this day?

A. I am not sure that I have explained to them the whole sequence of events, no.

Q. Could you do that?

A. On each -- at each donor center there is a "dear donor" letter that kind of explains AIDS to the donor so that he has an idea what AIDS is. And he is -- it's so prominent that they are able to see that before they ever get to the donor -- I mean to the medical receptionist. When they get to the medical receptionist, as I mentioned before, there are 13 questions asking them very pertinent questions with regard

to --

THE COURT: Is this the same thing you've already told us, or is this more? I recall some testimony about this on --

THE WITNESS: Anyway, they're asked these questions.

THE COURT: If there is anything new, tell us about it, but don't just --

THE WITNESS: I don't know that -- I think they're asked to sign that they have not had any of these situations that are not a member of this group, et cetera.

BY MR. GREEN:

Q Male homosexuals were excluded?

A Yes, they were.

MR. BERKMAN: Your Honor, can I just ask him to identify an article?

THE COURT: Sure.

MR. BERKMAN: Dr. McAuley, did you do a study and publish it in 1979, which we've marked as Baxter Exhibit 4 that -- did you do a study called "HB Surface Antigen Testing in Commercial Plasmapheresis"?

THE WITNESS: Yes, I did.

MR. BERKMAN: Was the conclusion of this study that after the third generation of HB surface antigen testing that the safety was --

MR. RING: Excuse me just a minute. Ask him a question, don't tell him what to say "yes" too.

MR. BERKMAN: I'm reading from the article. May I do that?

MR. RING: Ask the Judge.

THE COURT: As long as you're reading, go ahead.

MR. BERKMAN: That that indicates that, one, there is no correlation between the percent of paid donor blood and the incidence of post-transfusion hepatitis; two, there is no correlation between the percent of paid donor blood and the incidence of HB surface antigen antigenemia in the donor population; and, three, there is a good correlation between the incidence of post-transfusion hepatitis and the incidence of HB surface antigenemia within the donor population, thus, HB surface antigen incidence in the donor population, rather than the type of donor population, paid versus volunteer appears to be the primary factor involved with the hazard of post-transfusion hepatitis.

Was that one of your conclusions?

THE WITNESS: Yes.

MR. GREEN: Can you ask him what that means?

MR. BERKMAN: Why don't you explain to the jury what

means.

THE WITNESS: What that means is that a given individual is what is the important thing, it's not the general overall concept of whether somebody is paid or is not paid, and that if you have a donor that you have screened and followed,

they can -- if it was paid and their surface antigen positivity is negative, they have probably no greater chance of developing -- or giving hepatitis than somebody who you don't know a lot about or has -- so it's just -- the population is not the issue, it's the individual himself.

MR. BERKMAN: Finally, if you go to the last page, the conclusion says, "A recent study compared the hepatitis risk to hemophiliacs treated with a single donor volunteer blood or plasma derivatives to that of hemophiliacs treated with commercial concentrates prepared from large pools of donors. In the study, the commercial plasma units had been individually screened for HB surface antigen by a third generation method, and the commercial donor population had an incidence of HB surface antigen antigenemia comparable to that of the volunteer donors used in the single-donor products. The study showed no significant difference in hepatitis risks between the single volunteer donor products and the commercial concentrates prepared from large pools of low hepatitis B

surface antigen rate paid donor plasma," is that correct.

THE WITNESS: Yes.

MR. BERKMAN: Thank you.

MR. GREEN: I have nothing further with this witness your Honor. May he be excused?

THE COURT: Is there anything further?

MS. THOMAS: Just one.

BY MS. THOMAS:

Q Low hepatitis surface antigen donors is what you were talking about, right?

A Yes.

Q A pool of low antigen donors?

A Yes.

MS. THOMAS: Thank you. No further questions.

THE COURT: All right. Thank you, Doctor. You may step down.

(Witness excused.)

THE COURT: We'll take a recess now.

Before we do, ladies and gentlemen, there is some possibility -- I say only possible mishap in regard to some documents that were distributed earlier this morning.

May I ask one juror, perhaps one who has his or her exhibits organized in a readily retrievable fashion, to leave us your copies just temporarily -- leave us your copies of Plaintiff's Exhibit 6.17 -- that's the German article. These were exhibits used in the examination of Dr. Aronson.

Plaintiff's 6.17 and Plaintiff's 1.15, which were the minutes of the meeting that the witness testified

about. If

somebody can find those and just leave them here for us so we

can make sure you got the right things this morning. 6.17 and

1.15. Okay? We're all set. Very good. Thanks very much.

Mr. Ring, since you're sitting very close why don't

you go and receive those, if you will, from the juror. Very good. Thank you. We'll take a recess briefly now.

THE COURT: Mr. Berkman, here are your exhibits for your perusal during the recess.

MR. BERKMAN: Thank you very much, your Honor.

(Brief recess after which the following proceedings were had out of the presence of the jury:)

THE COURT: Tell me what the fact is on these.

MR. BERKMAN: 6.17 is the two-page German article, but the document 6.17 they had previously given us with that number was a 9- or 10-page English translation --

THE COURT: The jury was given the right thing?

MR. BERKMAN: The jury was given the right thing. The document 1.15 that was given to the jury were the excerpted pages that she mentioned this morning, but the one she had given us earlier was a whole summary.

Again, the jury was given the correct documents.

MS. THOMAS: Just for the record, we gave Mr. Berkman that summary on the full transcript before the jury came in.

Mr. Ring handed it to him personally, so there is no need for all of this.

MR. BERKMAN: What are you talking about?

THE COURT: I don't want to prolong -- deliver me from this, please.

MS. THOMAS: We'll sit down and be quite.

MR. BERKMAN: I don't want her to tell me that she's done something that wasn't done, your Honor.

MS. THOMAS: It was done.

THE COURT: You're going to change the subject I hope?

MR. GREEN: Absolutely. Two things, your Honor, the first thing is our next witness is Dr. Mealy. He has a fairly serious heart condition and asked if we could break every hour, hour and hour 15 minutes. Number two, is that after Dr. Mealy comes Dr. Weidmann depending on the Court's ruling. I would hope we could have that ruling by the end of the day.

THE COURT: What ruling is that?

MR. GREEN: Counsel has made a motion to exclude him.

THE COURT: We'll take that up at 5:30.

MR. BARR: Your Honor, I've given you Dr. Levy's deposition. They told me I may need it tomorrow with the parts that are out. For the most part I'm reading the entire deposition except for the lawyer's colloquy.

THE COURT: Any objections to any of this?

MS. THOMAS: I just got his designations. I'll look

at it tonight.

THE COURT: All right.

MR. GREEN: My counsel just told me after Dr. Mealy comes Dr. Abilgaard, so --

THE COURT: Okay.

(The following proceedings were had in open court in the presence and hearing of the jury:)

THE COURT: You did get the correct exhibits, ladies and gentlemen, so there was no problem. Please be seated.

We'll now have another witness.

MR. GREEN: We call Dr. Mealy, your Honor.

(Witness sworn.)

EDWARD MEALY, DEFENDANT'S WITNESS, DULY SWORN

DIRECT EXAMINATION

BY MR. GREEN:

Q Dr. Mealy, will you tell the jury your name.

A My name is Edward H. Mealy.

Q Dr. Mealy, we're going to ask you a few questions about who you are, and then we're going to talk about you know.

THE COURT: Will you spell your last name, please.

THE WITNESS: M-e-a-l-e-y.

BY MR. GREEN:

Q You never testified before, is that right?

A One time, not here.

Q You're a little nervous?

A A member of the FDA. You always get nervous in front of these nice people.

Q Where do you live?

A I live in Fountain Valley, California.

Q Is that a suburb of Los Angeles?

A It's about 50 miles south of Los Angeles. Near Laguna Hills I might add.

Q How old are you?

A I'm 68 years old.

Q What does your family consist of?

A I'm a widower with two sons and a daughter.

Q By training, sir, what are you?

A I have a Ph.D. in biochemistry.

Q By training you're a biochemist, is that right?

A Yes.

Q First of all, I would like you to tell the jury what biochemistry is?

A Biochemistry is actually the study of the chemical reactions that take place in fluids and tissues of plants, animals, or a humans. That's the broadest definition I can give you.

Q And how did you on you -- where did you go to school or tell us about your training as a biochemist?

A Well, I went to graduate school at the University of Kansas and took a degree of Ph.D. In biochemistry --

Q Let's go back behind that. Your undergraduate degree was what?

A Tufts College in Medford. I have a B.S. in

biology in

24 chemistry.

25 Q Then you went to Kansas, is that right?

A No. After I graduated from Tufts College, I went to work for a while at Massachusetts Biologic Laboratories where I learned the fractionation procedure. This was in about 1948, and this laboratory was built in Jamaica Plain and made albumin and made gamma globulin fibrinogen for the Red Cross for the distribution in the state of Massachusetts.

It also was right next door to a department of the Harvard Physical Chemistry Department, and we acted as a pilot plant for some of the new studies that were coming out of there. These were the people that actually developed the fractionation process that you've heard about, the Cohn method 6. And they were continuing to do other things, and they used the Massachusetts pilot plant and its employees to scale up their research activities.

Q Was your education interrupted by military service?

A Yes. In my first year I went to Boston College. After that I went into the Navy and saw service in the Pacific.

When I came back, I went and returned to Tufts College in 1946 and graduated in '48 from Tufts.

Q Where in the Pacific did you see service?

A I was in the Battle of Okinawa.

Q Now, when you graduated from Tufts, what degree did you take?

A B.S. in biology and chemistry.

Q What degree was that, a doctorate?

A No, that's a bachelor's of science.

Q What was the next thing that you did in connection with your education?

A Actually, I worked at the Massachusetts State Laboratory from '48 to '53. In '53 I went with the director of that laboratory who got a professorship at the University of Kansas and went out to the University of Kansas and set up a blood processing laboratory. And we had an Army grant to study the possible uses of other plasma proteins other than just albumin.

Q Then you returned to school?

A Yes. After working two years full time in this laboratory, I entered graduate school in '55, but I continued to work part-time in the laboratory.

Q Where did you go to graduate school?

A At the University of Kansas.

Q Did you take another degree from the University of Kansas?

A The Doctorate or degree Ph.D. in biochemistry in 1960.

1 Q And in what field did you do your doctorate?

2 A Actually I did my doctorate in -- my thesis is called "Heat

3 stable fibrinogen-free low globulin plasma protein solutions."

4 Q All right. We have a lot of plasma experts, but why don't

5 you tell us what that was all about?

6 A Basically it ended up -- I was doing research on trying to

7 see with just -- in addition to albumin, which was known at that

8 time as a very stable molecule, what other of the plasma

9 proteins could be heat treated 10 hours at 60 degrees in a group

10 to better utilize -- the Army was looking for better utilization

11 of these total plasma proteins.

12 It turned out that John Hink at Cutter was working on

13 the same type of a process that people in Amsterdam were working

14 on the same type of a process, and about the same time we all

15 came up with a product that the FDA called plasma protein

fraction. It was an 85 percent albumin solution and it had 15 percent other proteins.

So at least we utilized an additional 15 percent of the other plasma proteins and we were able to heat those for 10 hours at 60 degrees.

Q What was the therapeutic use of that product?

A Basically the same fundamentally as the use for albumin; that is, the treatment of shock, to maintain the pressure, the internal pressure of the circulation system, blood circulation system.

Q Where did you next work?

A From the University of Kansas, I went to work in Bethesda at the Division of Biologic Standards.

Q Now, is that part of the Food and Drug Administration?

A It is the predecessor. The Division of Biologic Standards became the Office of Biologics, which later became the Center of Biologic Evaluation and Research, all the same building, most of the same people -- either change. But we have heard from Dr. -- of Dr. Petricciani and Dr. Donohue. If they had worked in 1962, they would have worked at the Division of Biologic Standards.

Q So the job stayed the same; they just changed the sign?

A That is exactly right. That is exactly right.

Q How long were you with the federal government?

A From '60 to 1967.

Q And during that period of time, sir, what positions did you hold?

A I first started as a section chief in the Laboratory of Blood Derivatives. This would now have been called a branch. I was a section chief for about three and a half years.

Then I moved up to assistant chief of the Laboratory in '65 and '66.

In '66 and '67 I was the acting chief of that

Laboratory.

Q So the acting chief would have been the same as whose position during 1982?

A It would be the same as Donahue's position essentially, the position Dr. Donohue had.

Q Would that be above or beneath Mr. Petricciani on an organization chart?

A He had the same. Petricciani had the same job. Donohue had the same job. Zuck had the same job. These are all laboratory -- what would have been called the Laboratory of Blood Products.

It had the five divisions. Now they have five branches as Dr. Aronson testified. They just changed the -- the divisions to branches, and then the Laboratory oversaw the five divisions, the five branches, I should say.

Q So during that period of time, sir, I take it, you became familiar with the FDA's regulatory role, is that true?

A Yes. Part of my job was inspecting blood banks, inspecting fractionation facilities, and in that I traveled to Europe and traveled throughout the United States.

Q Then, sir, after you left the federal government, where did you go to work?

A I went to work for Hyland Laboratories, Hyland Baxter in Los Angeles, California.

Q What did you do for them?

22 A I was the director of quality control for two years and then

23 made technical director in 1979, 1969, 1970.

24 Q Were you also at that time working with plasma

25 fractionation?

A Yes, yes.
Q After you left Baxter or Hyland, where did you go to work?
A I started with two other people, a small diagnostic company called ICL Scientific where we made tests for rheumatoid arthritis, lupes erythematosus, C reactive protein, a small slide test, agglutination slide test, to diagnose diseases of the blood.
Q Following that did you go to work for Alpha?
A Yes.
Q When did you join Alpha?
A I joined Alpha in August of 1981.
Q Now, when you went to work with Alpha, what position did you hold?
A Vice president of quality assurance.
Q And did you change positions after a period of time?
A In about two and a half years I was named vice president of technical operations. I actually took Dr. Nishida's position that was referred to in the last testimony, not his board position, just his position as vice president.
Q In that position, sir, what was your zone of responsibility?
A In technical operations I had the research and development department and the quality control department reporting to me.
Q And did you remain in that position until the time of your

retirement?

A Actually they increased the responsibilities about two or

three years later by giving me the medical director's laboratory and also the regulatory affairs laboratory, or section.

Q Go ahead.

A And then I retired in '91 as senior vice president of technical operations.

Q Do you still work for Alpha?

A Yes, from '91 I had intended to retire, but looking around at Clinton finances, I decided that I had better keep working, and I am a consultant four days a week with the title of assistant to the president.

Q Now, sir, I would like to ask you a few regulatory questions, first of all. Sir, you have seen the letter of March 15th from Penny Carr to --

By the way, Doctor Mealey, were you on the AIDS task force when it was organized?

A No, I was not.

Q You have seen the letter, however, have you not, of March 15th with regard to doing surrogate testing and making labeling changes?

A Yes.

Q You are familiar with that letter?

A Yes, I am.

Q Now, first of all, sir, is this kind of a letter required

before one does something like surrogate testing for hepatitis core?

A It is if you intend to use that plasma in the fractionation process for the products you are licensed for.

In other words, I can go out and do a core test on some plasma as long as I don't use that plasma to make a licensed product, but the minute I put it into a pool to make a licensed product, I must have approval because in my license I have specified what types of plasma I am using and what types of tests I am doing on that plasma.

LAURA M. BRENNAN, Official Reporter

Q. So based on your experience, sir, there is no doubt this was a requirement for Alpha to do to obtain approval from the FDA before they commenced any kind of --

A. That's why Ms. Carr sent it in, because she knew the regulations quite well, and that was the reason for that.

THE COURT: You interrupted Mr. Green before he completed the question.

THE WITNESS: I'm sorry.

THE COURT: Before Alpha commenced any kind of?

MR. GREEN: Let me start over again, because now I'm a little bit fouled up.

BY MR. GREEN:

Q. Based on your experience with the FDA, sir, it's necessary for Alpha to obtain the approval of the FDA before they undertake core testing on any product that they're going to sell to the public, is that right?

A. Yes, it is.

THE COURT: Well, that question is ambiguous, it seems to me, because it combines the two things, testing and selling.

The witness's earlier answer indicated to me, and correct me if I am wrong, that merely testing without selling does not require a license.

THE WITNESS: Merely testing without putting in a

product that you're licensed to produce does not require approval.

LAURA M. BRENNAN, Official Reporter

BY MR. GREEN:
Q. Okay. So you can test anything you want, but if you are going to test something that goes into your product, does that require approval?
A. If you're going to test something in plasma, that you are using that plasma to make a licensed product, you must get approval to do that before you, before you use that plasma.
Q. And do you know, sir, what portion of the CFRs require that?
THE COURT: CFR is?
THE WITNESS: The Code of Federal Regulations.
BY THE WITNESS:
Q. I don't know the number, but I certainly know that that requirement is there.
THE COURT: The answer is still ambiguous, because --
THE WITNESS: Do the requirement --
THE COURT: -- it is not clear -- I think your answer was clear initially, but the questioning has obscured it at least from my perspective.
If you're bound and determined that you are going to put some plasma in a pool regardless of the outcome, you have to have a license to do the testing, I assume. But if you are just going to test and wait and see what the result is before

you make any decision about selling the plasma, then what? Or is my question no better than the one I find perplexing?

LAURA M. BRENNAN, Official Reporter

THE WITNESS: I might test some, if I can --
THE COURT: This, incidentally, is a good reason for not asking leading questions. Let the witness answer the question, and then we don't get into this kind of problem.
There is nothing wrong with your answers. It's the questions that you've been asked probably by me as well that cause the problem.
Go ahead.
BY THE WITNESS:
A. If I had a license to produce albumin from plasma, and I specified --
BY MR. GREEN:
Q. Let's stick with AHF. Let's not confuse it.
A. Well, AHF, I have a license for AHF, and under that license I specify what kind of plasma I'm using and what tests I'm doing. Now, I can go out and get some plasma and test it for any test I want and bring it into a research department to see what I want to do with it. But that's never going to hit a product. I may want to generate some information myself.
But if I want to perform a test on plasma that I'm going to use to make that licensed product, I must have approval of the FDA.
THE COURT: All right.

MR. GREEN: Does that clear it up, Your Honor?

THE COURT: Now, will the defendant produce the

section of CFR that says that, because I think that should be an exhibit in the case that the jury can look at or that the Court can take judicial notice of?

MR. GREEN: All right, Your Honor. Actually, in this situation, I was going to cite him the same CFR section that Dr. McAuley testified to.

THE COURT: Well, we need to see the CFR section.

MR. GREEN: I have it.

THE COURT: Fine, good.

MR. GREEN: This is it. I think I have it. Let me ask Dr. McAuley.

BY MR. GREEN:

Q. Dr. McAuley, is Section 601.12, Changes to be Reported, is that the section to which you refer?

A. Yes, that is.

Q. And, sir, this section says "Manufacturing methods in labeling, proposed changes in manufacturing methods and the labeling may not become effective until notification of acceptance is received from the director of Bureau of Biologics."

A. That is correct.

Q. Is that the language to which you refer?

A. That is correct, yes.

MR. GREEN: Your Honor, just for the record, I am

25 referring to exhibit number --

What number is this, David? I had these all numbered I thought.

THE COURT: What is a manufacturing method within the meaning of that regulation?

THE WITNESS: Basically, it's quite broad, at least the FDA has interpreted it as broad. Even in the method in which you draw plasma from the donor is considered by them part of the method of manufacturing.

MR. BERKMAN: It's No. 37, Alpha 37.

MR. GREEN: Thank you.

Do you have any further questions, Your Honor?

THE COURT: No. Proceed.

BY MR. GREEN:

Q. Now, my next question, sir, is: Based on your experience both as an administrator --

MR. GREEN: Great hands. Thank you.

BY MR. GREEN:

Q. Doctor, we're just having a heck of a time back here.

Both from your experience as an administrator and in the industry, what meaning do you take from the letter written from John Petricciani to Marietta Carr on May 3, 1993, with regard to whether you may or may not test for -- I'll bring it up to you in a minute -- may or may not test for core,

hepatitis core? I'll bring it up so you can see it.

A. That's just a polite no. They have put no on two things:

one, you can't put any sticker labeling on and, two, you may change the safety of other products. It is the second paragraph that really kills the core testing in that one. The first paragraph stops any advertising you might be considering doing. But the second one, they're politely saying you don't have data to support doing that.

Q. So, sir, as of May of 1983, if someone with long experience in the industry from both the regulating side and from the industry side, would it be advised for Alpha or any fractionator to go ahead and perform this test on plasma in light of this letter?

A. They should not do it. They have been advised not to do it.

Q. Now, let me ask you one other thing. It says, the second paragraph that we've highlighted, "We would also raise the possibility that in screening out all core antibody one might selectively remove protective antibodies such as those to hepatitis B." Could you tell us what you understand that to mean?

A. Well, this is what their main concern was. There are other products other than AHF. The plasma that is used, AHF is probably only one of the five products made. But immune

globulins that are made from that, you might now drop down antibodies that the immune globulins that are given for other various things may not be protected any more.

LAURA M. BRENNAN, Official Reporter

There were many, several telephone conversations that went on. The clear interpretation of that second paragraph is you may hurt the safety of other products or any product in your pool by removing a lot of antibodies, many antibodies.

Q. Now, Dr. Mealey, I'd like to talk now about Alpha's heat-treat process. Let me put the time line up so that we can get a little idea as to time.

Now, when did it first become known to Alpha that there was a heat-treat process which had been patented by Behringwerke?

A. To the best of my knowledge, it was very early in -- let me think for a minute, please. I know I had started in August, and the first I heard about it was perhaps in January or February of '82 that people in the research department were aware. I was in quality control at the time, but people in the research department in January or February were aware that there was a patent from Behringwerke on the heat treatment of AHF.

LAURA M. BRENNAN, Official Reporter

Q. Prior to this time, were you, based on your knowledge of the industry, aware of any way that AHF could be heat treated?

A. Not at that time, no, I was not.

Q. Well, you had been heat treating albumin for many years?

A. Yes.

Q. What was the difference between albumin and AHF?

A. Albumin you could be just -- you could almost heat without stabilizers, but to improve the heat you just added some caprolate or some tryptophane very, very low concentration so that the solution of albumin was still in essentially water, but that was unique. That protein is very stable.

I knew that the protein AT-3; that is, Antithrombin 3, uniquely -- if you purified that and had a 99 percent pure AT-3, if you put it in five-tenths molar sodium citrate, you could heat that for 10 hours at 60 degrees, but I also know that if you took AHF that had fibrinogen and fibronectin and a little gammaglobulin and without doing something to it, you tried to heat it --

Q. I asked you to slow down because the court

reporter has

got to write this down. Slow down just a little bit.

A. If you tried to heat the AHF that was around in '75, '76

and '77, it would more than likely turn to a gel.

Q. Had you tried that? Did you try heating AHF?

A. AHF had been tried heating, yes.

Q. Now, sir, I would like to show you Exhibit 4.

MR. GREEN: If I might pass a copy to the jury, your Honor. This has been shown before.

(Document tendered to the jury.)

BY MR. GREEN:

Q. Now, let me ask you first of all, sir, you said you knew of the Behringwerke patent; is that right?

A. In about February of '82, before this memo.

Q. Was there any effort made on the part of Alpha to duplicate that process?

A. No.

Q. Why not?

A. If I can explain, there were several that I participated in, at least from my previous experience, I participated with some of the R&D people in just discussing the Behringwerke patent.

While I thought really it was a very nice piece of work, there were certain pieces of information that at least the patent lacked, and that is I didn't know at the time or we didn't know did it really inactivate virus? I saw this, but did it inactivate virus?

You heat it at 10 hours at 60 degrees. Albumin is heated 10 hours at 60 degrees in nice water solution and it works. But here now they protected the AHF with some sugars

and some amino acids so they are protecting a protein.

The question we asked ourselves is, does it also protect the virus if the virus is present because the virus has a nice protein coat around it, too.

So, we look fundamentally to see if we can find any clinical information, and at that time we were not aware of any. I am sure that there might have been some existed.

Another thing, the process they had, as I say, it looked good to me. It looked also very involved. Six, seven eight steps was quite a large involvement.

Alpha had been working on trying to purify their product and trying to minimize the steps so that they took less losses in those for a long time. It's a continuous process. That's still going on.

The one thing that's pointed out in the Behring process that even our people had been aware of, the more fibrinogen you can get rid of, the better chances you are of heating this.

The decision was made to take the process that was

almost in the finishing of development at Alpha and see how that stood up to adding sugars to it and to adding other various things that Behring pointed out because we had a whole process in place, and we felt we could probably move ahead in our research and development just as fast with our new process as trying to repeat this Behring process.

LAURA M. BRENNAN, Official Reporter

So, plans were started at that time to take a look at how our new product could withstand heat if one added some of these things to it.

Q. Now, sir, I have shown you Exhibit 4, which is a memorandum from Dr. Wang to -- I don't know if it's doctor. It's D. Wang.

A. I believe he has a masters degree. Duck Wang is his name.

Q. Duck Wang or Dock Wang?

A. Duck, D-u-c-k.

Q. Duck Wang wrote this memorandum to Dr. Charles Helderbrandt; is that right?

A. Yes.

Q. Who is Charles Helderbrandt?

A. Dr. Helderbrandt was actually his boss. Dr. Helderbrandt was director of research, and Duck Wang was a research associate.

Q. Now, this indicates -- let me ask you, does this indicate you were on your way with regard to the heat process in September of 1982?

A. It actually says we were more or less on our way two, three, four months before that. I would estimate it took

that much to gather this type of information that he is reporting on that.

Q. Does the data that's attached to that memorandum

indicate to you that several different possibilities were being attempted?

A. Yes, yes, it does.

Q. Now, when, sir, did you finally come up with a heat process that you felt was sufficient in order to commence testing?

A. As a result of this report, Dr. Helderbrandt felt that he could make successful a heat treatment process that involved our present product with just some minor modifications, and so we committed to get everything -- to try and fast track everything at about this time.

Q. What does that mean, "fast track"?

A. Well, research was to put all of their efforts onto it, and they had hoped -- their target at that time was hopefully we can finish it by November or December. I think it was not until about January that it got done.

But we also then made arrangements for outside -- an outside laboratory called NYUPC, this is New York University Primate Center. We knew we would have to test our product to prove that we could inactivate a virus. Our FDA required inactivation proof of virus. And the only

way you

can prove that -- there is no laboratory test, as had been

mentioned, for hepatitis B.

The only way at that time would be to inject it

into chimpanzees. In order to get those chimpanzees we

notified this laboratory of experimental medicine and science for primates in New York and requested of them to search out and set aside for us suitable chimpanzees.

Q. When was it that you did that?

A. Just about right around this time, around September, August or September of this memo, right in there.

Q. How long does it take to get one of these tests run and through the FDA for licensing?

A. Well, rather than add -- stay with me. It took this laboratory following our request about two months to gather five or six chimpanzees.

Q. Wait a minute. You are getting ahead of us.

You mentiond that this was a fast track process. I am asking you what a normal track process is?

A. Well, I think from the time we send in a license application until the time it's approved ran 18 to 24 months.

Q. Now let's go back to a specific thing.

In September you have got a process evidenced by this memo and you want to do some testing on primates; is that right?

A. We have the nucleus of a process that needs about three

or four months' work. But if we don't order the chimps now, they will never be ready.

By the fast track, I mean we are getting the chimpanzees ready, so our development time of another four

months by the time we get it ready in, say, October or so, they will meet and we will be ready to use the chimps.

But if we waited until we developed the process until it was complete and then we asked for chimps, I was trying to explain that it would take them two months to get the chimps because they have to screen them. The chimps have to be free of hepatitis, core hepatitis, core antibody.

Then they have to be isolated for three to six months so that they weren't -- we can prove they weren't previously infected. So, before you even start these studies, you have to have chimps that have been in your property for four to six months' period of time.

Q. Let's go back. Let's start over again with the chimps. Why do you have to isolate for three or four months?

A. To make sure that they had not become infected with hepatitis at the time that they were either purchased or put on the program.

Q. If you had at the start of this test a chimp that already had hepatitis but it hadn't shown up yet, that would

foul your test results up?

A. That's correct.

Q. Once you have taken them through this quarantine period to make sure they are hepatitis free, what's the next thing that you do?

A. The next thing is we then -- we have our process. We

take samples from our process, add live virus to it, heat it according to our process, keep some unheated. Then we inject the chimps with the heated material and inject some chimps with the unheated material, the unheated being the control. That chimp should come down with hepatitis. If the heat treatment --

Q. Where do you get the virus?

A. Pardon me?

Q. Where do you get the virus?

A. We got the virus this time from either Dr. Aronson or Dr. Gerety. It was from the FDA. They had the virus.

Q. After you inject the chimps, how long is the next segment in terms of time?

A. In this particular study it went 12 months.

Q. What do you do during that 12 months?

A. Following the early time of injection, about every two to three weeks we take a sample of blood and test it for ALT to see if the liver has responded. That's the quickest indication of some liver inflammation.

We also at about two monthly intervals take or the physician takes a liver biopsy and examines the liver

cells

22 to see if there is any sign of infection. This is done

23 periodically through the test procedure, through the --

24 Q. Why do you have to do this over a 12-month period? Why

25 do you have to do it so long?

A. Our experience has been, and I think the industry, that we know that hepatitis B has a three- to four-month incubation time normally. There have been some studies when hepatitis B was heated that it actually prolonged the clinical symptoms to six, seven and eight months.

So, to be sure that you just didn't slow down because you're just in a low level, we extended usually nine to 12. This study happened to go 12 months.

Q. Now, at the end of 12 months did you know if your material worked or not?

A. We had a very good indication at about eight months that it was working quite well.

At the end of 12 months, though, to prove the point that it's working, even though the control that received the unheated material came down with hepatitis symptoms and liver symptoms, the chimpanzee that didn't come down that received a heat treated, one could say, well, maybe for some reason they were immune to that or that it didn't work.

So, at the end of the 12-month period we challenged the chimp with nonheat treated material and waited three

months to confirm, and certainly he came down. So, we felt we had a decent process. We certainly had something that killed between 500 and 10,000 chimp infected doses. That's the classification relative to the strength. An infective dose being one dose being enough to show hepatitis symptoms

in an animal.

Q. Is that called challenging the results?

A. Well, it's called -- it's the challenge when after 12 months you actually inject the nonheat treated material to see that the animal that didn't come down was actually susceptible and it just wasn't a phony test.

Q. How long does the challenge go on?

A. We wait about three months. You would know. Well, inside of three months. As a matter of fact, in this case in about two months that challenged animal came down with hepatitis.

Q. How much of this information was in the Behringwerke patent about animal studies?

A. None. They didn't have it.

Q. How much information was there in the Behringwerke patent about inactivation of hepatitis virus?

A. They just made a comment that it activates hepatitis, but they didn't have any data. They didn't have any study data in their patent application.

Q. Did the United States Food and Drug Administration require data?

A. Well, you are really not required to put data in a patent. For Alpha to spend a few hundred thousand dollars in looking to see if their method worked, we would have liked -- I mean, we would have liked to have seen some clinical data

first.

Q. Sir, I would like to call your attention next to -- hang on.

(Brief pause.)

BY MR. GREEN:

Q. Let me show you Exhibit No. 10, Dr. Mealey, and ask you where this particular document came into the heat treat process?

A. Actually, this is a protocol for our chimp study that was sent into the FDA for their approval and sent in on December 17th. We actually got some comments by phone on making slight changes to this protocol, and we really had a final protocol in January.

Now, we actually started. We had material available to start in March. That's when we made the first inoculations of non-heat treated and heat treated material.

Q. March of what?

A. March of --

Q. '83?

A. -- '83.

Q. When was the test -- when did you receive approval from the FDA?

A. Our approval for what?

Q. I am sorry. My question is fouled up. Okay.

You went to the chimp test. At some point the FDA

said, "Okay, you can start selling this heat treated product." When did that happen?

A. The license for the product.

Q. That's right.

A. The license for the product was in February of '84, but if I may explain a little bit.

Q. Go ahead.

A. We started this chimp test in March, and the chimp test went for 12 months. What we did -- while we were doing this chimp test we did in our laboratory what we called surrogate studies. We had two or three other viruses that we would put through our heat treated process, but these viruses you could test for in a laboratory to see if you killed them or not. We did that, and we found that we killed all of the amounts of these three viruses that we added.

We also then took our product and, of course, this was product that was -- we didn't have any viruses to, but it was heat treated. We actually tested that in humans, in six humans. We tested it to find out the half life of our product and what percent recovery we had.

We tested that against -- in the same

donors six

22 weeks later we tested the product that we had on the market

23 that was not heated to see what the half life and recovery of

24 that was to see if the heating changed anything. The heating

25 did not change anything.

LAURA M. BRENNAN, Official Reporter

In January of '83 -- January of '83, with the surrogate tests and with the clinical test, we submitted our product license application.

In about November when we had eight or nine months of the chimp tests, we added some of that information to our license application. That at least was good enough for the FDA to issue a license by February 10th.

Now, that means, if I have got my numbers right, that that was a short period of time. That was not -- usually from the time you submitted your product license application until they granted a license, it could run 24 months, 18 months. And this was much shorter.

THE COURT: And this is the license for what?

THE WITNESS: For heat treated -- wet heat -- what was called wet heat.

THE COURT: Wet heat treatment.

THE WITNESS: Yes.

BY MR. GREEN:

Q You told us that the Behringwerke patent didn't disclose to you any information with regard to animal testing.

Did it show any information with regard to clinical trials?

A No, it did not.

Q Is what you just described to the jury what is called clinical trials where you gave it to the six patients --

A Yes.
Q -- to see if there was any change?
A Yes.
THE COURT: Your method was different from the method shown in the Behringwerke patent?
THE WITNESS: Not even remotely close.
THE COURT: So there was no problem of the patent.
THE WITNESS: No, we didn't use glycine, we didn't use the saccharase. We took our fibrinogen out by precipitating it with a polyethylene glycol solution. We didn't add any stabilizers. We didn't really -- we did not heat it in a liquid form. Sometimes people have called it a misnomer.
We heated our material. It was a dry powder. We suspended it in a liquid that it did not dissolve in. It was like -- well, it did not dissolve in this liquid. It is an organic solvent rather than an aqueous water solvent.
And Dr. Heldebrant's idea was this dry powder that was all like sand, sort of, in water, we stirred it around -- the transmission of heat from the liquid, we thought was far more efficient heating it that way than heating a dry powder in a container.
So this was sort of at least the nuance. People had

been heating dry powder or people had been adding stabilizers to heated and liquid. We heated without a stabilizer, but we heated in a liquid that we felt transferred the heat extremely

well. And we heated it for 20 hours at 60 degrees.

THE COURT: And the license was issued again on what basis?

THE WITNESS: February of '84, February 8th or 10th, in that neighborhood.

MR. GREEN: February 10th, your Honor, 1984.

BY MR. GREEN:

Q I think you partially answered the Judge's question and you have anticipated the next subject that I was going to get into, which was to differentiate between your process and the Behringwerke process.

What was done --

THE COURT: I didn't mean to anticipate. I was afraid it was not going to be mentioned.

MR. GREEN: I can use all the help I can get, your Honor. I am happy for the help.

THE WITNESS: Well, I go back again to my earlier --

BY MR. GREEN:

Q Wait a minute. Slow down.

First of all, I want you to tell the jury how Behringwerke did it, and I want you to tell them how we did it, and I want you to tell the differences in 25 words or less.

A Behringwerke took the cryoprecipitate solution, added glycine to it and added saccharase to it. They heated it a

25 little bit for 37 degrees. Then they heated it a little bit at

56 degrees. And this essentially gelled only the fibrinogen, and maybe some of the other proteins, which they spun down, and they had their AHF still fairly well intact, I assume, in this glycine saccharase mixture.

They then -- after they spun the fibrinogen off, then they heated the glycine saccharase mixture for 10 hours at 60 degrees.

When they did that -- after they did that, they now have almost a syrup, you know, at 40 or 50 percent saccharase, or sucrose, this is almost simple syrup. It is like Karo syrup, it is about that thick.

To get it from that Karo syrup, they added about 15 percent sodium chloride or ammonium sulfate -- I forget -- but it is called salting out. They salted out and precipitated the AHF away from the sugar and away from the glycine, spun it down, and they had their AHF precipitate, and that then was their product that they suspended in a buffer and freeze dried, or whatever they wanted to do to it, but that was their inactivation process.

Q Now, next question is what did Alpha do, just the steps?

A Alpha took its cryoprecipitate, suspended it in a salt

22 solution. Then they precipitated it with some polyethylene

23 glycol.

24 And what happened there is then the polyethylene glycol

25 at about 4 percent precipitates most of the fibrinogen, most of

the gamma globulin, and all the others, and probably used 5 or 10 percent of your AHF. But left in the supernatant fluid is the antihemophilic factor.

We then go to the next step and increase the polyethylene glycol from 4 percent to 13 or 14 percent, and this time the polyethylene glycol precipitates the AHF and keeps whatever fibrinogen or gamma globulin in solution.

That precipitate containing AHF is then washed with buffer, just to wash away any extra polyethylene glycol. Then it is suspended in a buffer, and then it is freeze dried. That freeze dried powder is then suspended in this organic solvent that it doesn't dissolve in, and then that organic solvent, that is what we heated for 20 hours at 60 degrees.

After the heating we just filtered -- the organic solvent goes through the filter. The AHF that is still in the powder form that was in the top of the filter, that is air dried because it is heated in heptane, and at room temperature, heptane, if you just give it 30 or 40 minutes, it just evaporates.

That powder, some of it may have been denatured, and one of the advantages was we take that powder, and we suspend

it, we run it through a filter to remove denatured protein or protein that won't fill.

We then fill that liquid, adjust the AHF levels, fill that liquid into vials, put it in the freeze drier and freeze

dry it. That is -- they are not even in the same state.
Q All right. Was the Alpha method easier to scale up in the manufacturing process?
A Well, two things. The Alpha method was half the steps. The Alpha method, we already had had about 70 percent of it done when we ran across the information from Behring, the patent.
Q Did you, sir, get better yield figures?
A Well, I never really knew what the yield figures of Behringwerke were, but I -- your figures were satisfactory.
It did cost us about 25 or 30 percent, sometimes on the low scale; as much as 40 percent we lost in yield on that heating. But as we got better at it, we cut the losses down to 25 or 30 percent.
Q Now, the time that you got the license for the heat treat process, February 10th of 1984, was the HIV virus yet identified?
A No, that wasn't until April. So we had our license about two to three months before even the identification of the HIV virus.
Q And the purpose of your process was primarily to disclose hepatitis, is that right?
A Hepatitis, and we used hepatitis B, and we hoped it would do

for non A-non B.

The major problem, really, when we started this in -- early on started thinking about it was hepatitis non A-non B.

We certainly hadn't got into the AIDS virus until sort of the middle of the summer in '82.

Q Now, sir, after April 23rd, when the AIDS virus was discovered, did you then test your heat treat process to see if it was effective in deactivating the AIDS virus?

A It -- some time in the summer -- I believe it is the summer of '84 -- in conjunction with Dr. McDougall at CDC, and I think with Cutter Laboratories who were in on the same study -- at least they were in one of the studies that the data appeared -- we had, or at least Alpha, obtained some of the HIV virus from Dr. McDougall.

25

LAURA M. BRENNAN, Official Reporter

Q Your product and Cutter's product were submitted to
Dr. MacDougall?
A No. I can just speak for my -- I guess I'm jumping ahead.
Mr. MacDougall sent us some material. Dr. Helderbrandt then
did the same thing. He added the HIV. He kept some nonheated
and he heated some and sent it back to Dr. MacDougall because
Dr. MacDougall was the only one that had the assay at that
time, that he could measure this. And --
Q Let's slow down a minute. You got the HIV virus from who,
the FDA?
A No, Dr. MacDougall from the CDC.
Q He sent you the AIDS virus?
A Correct.
Q Through hopefully some safe method?
A I hope so because we had a man wearing double clothes and
everything else putting it in the solution. We didn't know
much about the AIDS virus and what it would do.
Q So you took the AIDS virus and put it in some AHF and
heated part of that to see if your heat process would kill it,
and the other part you didn't heat --
A Just as a control, that's correct.

Q You sent it back to Dr. MacDougall?

A He analyzed it, that's correct, because he could grow it out. AIDS virus can grow in tissue culture. You can't grow hepatitis.

Q What did Dr. MacDougall tell you about the product and the AIDS virus?

A The long and the short of it was we were killing one log of virus. That would be ten to the one -- ten particles of virus every 34 minutes. So if we were heating 24 hours -- actually, he sent us -- now we've got a new term I guess introduced, five logs, but five is like ten to the fifth, so there's 100,000 viral particles. None were alive on his test. He couldn't pick up any.

Q Is that the soonest possible time that you could test your heat-treated product with regard to the HIV virus?

A That was the -- I think the earliest time any virus was available for manufacturers to work, the very early virus probably went to academic institutions. This was the very earliest time to my knowledge.

Now, my comment about Cutter, independently of us, Cutter probably was doing the same thing with Dr. MacDougall because when they published the results --

MR. RING: Your Honor, I object to foundation. It's obvious they're working together but, there ought

to be still

some rules to be followed. State a foundation.

THE COURT: I'll sustain the objection.

BY MR. GREEN:

Q If you would just listen to the question and answer them

simply, it would be better.

Now, sir, the first time that the HIV antibody test became available was March 2, 1985, is that correct? The HIV antibody test was licensed March 2 of 1985, is that correct?

A It was licensed March 2, 1985, yes.

Q And from the time it was licensed forward, was all of your product tested with that antibody test?

A When that test became available from the manufacturer, which was probably the end of March, we started testing the first of April all of our donors.

MR. GREEN: That's all I have, your Honor.

MR. RING: It's going to be a while.

THE COURT: Well, we'll go until 5:30. Ask him the easy ones.

BY MR. RING:

Q I'll give you an easy one for a start, okay?

A I have trouble with my name.

Q I remember your name. If you forget, I'll tell you. Now, sir, get getting back to the FDA regulation, as I understand your testimony, when we clear it up, there is no regulation against testing anything, is there? I mean, there is no regulation to stop you from testing to see if you

can improve

your product, is there?

A No, there is not.

Q Okay. So actually, when you get down to manufacturing and

you want to make a claim on your label for the safety of your

product, you have to give some data, is that right?

A Yes.

Q And isn't that what this exchange was all about. I think the letter from the FDA to Penny Carr was you can't put this on your label until you prove it; isn't that about it?

A That's correct.

Q Okay. So with that, sir, since you were interested -- and I imagine you were, and I don't question it -- in getting on the market for these poor individuals that were being killed from hepatitis a product that would be improved, you wanted to do what you could, didn't you?

A Certainly.

Q So, sir, nevertheless, even though there was no prohibition against working in research and doing what you could in the way of testing to see if you can screen out people that would be carriers of hepatitis, you didn't do it -- I don't mean you, but your company didn't do it?

A We didn't use the core test to do it.

Q But the core test would have exposed 90 percent of people with hepatitis B -- or who have had hepatitis B, isn't that right?

A If Dr. Spira's data is correct.

Q Well, he's a scientist, you're a scientist. Are you saying that you don't think he knew what he was doing?

A No, I'm not saying that.

Q All right.

A But 90 percent is a nice round number. That may be 80 percent or 70.

Q Okay. Let's take 70 percent. If it would have disclosed 70 percent of the people that would be carriers of hepatitis B -- that had had hepatitis in the past, wouldn't that justify spending a few dollars to make a safer product for these poor people?

A On the surface I'm not so sure because I don't know -- when you say "make a safer product," you have to make the product and test it to see if it's safe.

Q Well, that's what we're talking about. There was nothing to prohibit you from doing some testing to determine whether or not that would make it safe. That's the only time you have to go to the FDA, isn't it, when you want to manufacture it?

A Yes, that's correct.

Q And at that time you're only going to go, I take it, if you have discovered in your testing that you -- by this test you can make it more safe, isn't that right?

A The -- I follow your question, but what I'm a little hung

up with is, in order to make it more safe, you really have to

test it someplace in animals or humans.

Q We'll get to that. But that's part of the testing, isn't

it? You have to start somewhere. You're the scientist, you

tell us.

THE COURT: What does that mean? When you say "that's" part of the test.

MR. RING: We're talking about the -- we're talking still about the hepatitis core antibody test. They didn't do anything to determine --

THE COURT: I understand what the subject matter is, but it's just the last question I wasn't sure of. Why don't you put the question again.

MR. RING: I got as bad as everybody else but usually I'm first at it.

BY MR. RING:

Q Let's stick to that. By testing you screen with a core antibody test, right?

A Yes.

Q And by screening that test, unlike the surface antigen test, the core antibody test, taking your figure, would be 70 to 80 instead of 80 to 90 -- we'll take the 70. That test would disclose in testing the plasma of donors 70 percent -- an accuracy of 70 percent as to those donors who have hepatitis B or who have had hepatitis B, either it is present or had been

there before. Did that last part confuse you?

A No.

Q You know what I mean. I know it's not clear, but we

both --

A It would pick up more people that had had hepatitis B.

They wouldn't be necessarily infected.

Q That may be, but the surface antigen test was very limited, wasn't it?

A Well, by "very limited" it certainly missed some people that were actually carrying the antigen.

Q Like maybe 80 percent?

A No, sir.

Q The surface antigen test only disclosed those persons who at that time when they donated their blood were at that time infected, right?

A Yes.

Q Okay. But being infected at the time they donate is not the only risk, is it?

A It's the primary risk as far as I know.

Q Let's assume it is. But it also missed a good percentage, even those that had been infected at the time they donated, is that right? Some percentage. Okay?

A Some percentage.

Q Where the core antibody test picked up that percentage plus disclosed what those donors who had in the past had hepatitis B, is that right?

A I didn't follow your question.

Q Well, I'll restate it, we've got time for that.

The core antibody test picked up those persons who had been missed on the surface antigen test, that is, those who

had at the time they donated active hepatitis and it also picked up those who had had it in the past, isn't that right?

A I really don't know. I really don't.

Q Well, I never though it would come to the time where I knew more than the scientist, but let me tell you, isn't that what these papers that we've had up have said?

MR. GREEN: I'm going to object, your Honor, we've had 8 or 9 --

THE COURT: Sustained.

MR. RING: That's bad. All right.

BY MR. RING:

Q You don't know that?

A I don't know that.

MR. RING: Okay. Well, do we have time to put up that one exhibit?

THE COURT: Well, maybe this would be a point to break.

MR. RING: All right. Good time it's warm and I'm out ought of steam.

THE COURT: We'll start at 9:30 tomorrow

(The following proceedings were had in open court out of the presence of the jury:)

THE COURT: I'm not ready to rule this evening on the various motions for judgment as a matter of law because I haven't had an opportunity to do the reading I wanted to do,

but I do want to ask the plaintiffs a question that are raised by the motions, one easy one, Mr. Ring, might be is Count 3 concerned only with funeral bills, burial expenses?

MR. RING: I guess it is. We didn't put any bills in, so --

THE COURT: Well, it's such a minor --

MR. RING: I really don't care. It goes by the wayside.

THE COURT: All right. Then, well, the defendants --

MR. RING: For that funeral it wouldn't have paid very much any way, so --

THE COURT: The defendants have carried today on that one then. If Count 3 is just in regard to those bills, I'll enter judgment against the plaintiff on that count.

What about the tie-up between Mrs. Grouka's anxiety and her stomach and intestinal disorder? Should there be medical evidence of that?

MR. RING: Judge, let me start this way. I don't think she has to show any evidence of physical injury. We did it because I -- because of the prior rulings and just, as I

said, for technical reasons.

My feeling is we're dealing with a completely new tort, things that have not come to pass in the past. It is not -- it is not derivative. It is not something that she heard about and it made her anxious and sick. This is

something that affects her. It is somewhere between a direct or just an unnamed cause of action because this is something that she will suffer from, she will get, if she gets it at all. It is not something that her husband will get or has gotten. This is something that she's now been told, that he not only has AIDS, but that she has a risk of getting it. Now this is as direct as you can be when we're dealing with a new type of a condition.

I put in this evidence of the stomach ache because I did forget it earlier and only because of the question of whether or not it's a derivative cause of action and that would be required. But I think the recent cases, and I think -- the Corgan case, I think, spell out -- and I think it's a case that Judge Moran later relied on after he was ruling in this case, that the Supreme Court of Illinois in that case, in Corgan, if I'm citing it right.

THE COURT: Is that the case decided after my last ruling on it.

MR. RING: Yes, I think so.

MS. GOURLEY: No, your Honor.

MR. RING: Was it before? Corgan was before your last ruling.

THE COURT: I don't even remember the name.

MR. RING: I think it was Corgan where the Court points out that I guess it was -- there's so many exceptions

that they see that they really felt that it was not -- that's where we had already eliminated this business about you have to be in the zone of danger in other cases, the Ricky's rationale. And, I think, in Corgan they had set up all of these things that troubled the Supreme Court of Illinois as to whether or not the physical act was a necessity.

We cite it in my brief. I think it was after -- before you had ruled, but nevertheless --

1

1 THE COURT: Well, I've held and as far as I'm
2 concerned it's the law of the case that there has to be some
3 physical injury in order to support the claim for emotional
4 distress.
5 MR. RING: Well, if that is the case, Your Honor --
6 THE COURT: And that is very similar to the old impact
7 rule --
8 MR. RING: Right.
9 THE COURT: -- that applies to the situation where the
10 wrong is committed directly against the person claiming the
11 mental distress. There still has to be some kind of impact.
12 That's been in the law for 100 years or more. And it just
13 seems to me this is an extension of that or an application,
14 basically, of the same principle to a correlative situation.
15 You had the witness here who furnished the affidavit
16 that defeated summary judgment on it, Dr. Subramanian.
17 MR. RING: Yes. But I also forgot to ask him, and I
18 didn't feel that it was necessary to bring him back for that
19 frankly.
20 THE COURT: All right. Well --
21 MR. RING: I really feel that something like that,
22 she's testified how it came about and --

THE COURT: Well, that's what I'm asking you. Do you need medical testimony, or is this something that is a matter of common knowledge, that emotional upset can cause intestinal

disorders? Unless you can give me a case to that effect or produce some medical evidence to connect it up, consistent with my prior rulings, I'm going to have to grant judgment on the emotional distress claim.

I mean, whether that requirement of the law makes any sense or not is not for me to say. I'm sitting here as a state court, and that's my understanding of the present state law. Or if you can show me some case that says that's not the law, that I overlooked last time a case or that's been decided since my last ruling, that's something I'll consider, too.

MR. RING: Well, of course, there is cases. There is a case from West Virginia --

THE COURT: Well, West Virginia doesn't help me.

MR. RING: Hey, that's the capital of the world of knowledge, you know, West Virginia.

THE COURT: Well, I'm not deprecating West Virginia, but what I'm saying is we're dealing with here with what is the Illinois law.

MR. RING: There are a number of cases that say you do not need --

THE COURT: A West Virginia case and --

MR. RING: It's an AIDS case. That is --

THE COURT: -- a dollar and a half will get you a ride

on the CTA.

MR. RING: Well, I'm not so sure.

But there are cases in Illinois that hold that you do not have to have medical support for injury. Now, of course that depends on the type of injury.

THE COURT: Well, of course, if you're claiming a black eye after you were struck with something, you don't need a doctor for that. But for the causal relationship between these two things we are talking about here, I'm inclined to think you need a medical -- you have to prove it. I mean, as far as I understand Illinois law, you have to prove it. The question I'm raising is how you prove it. And normally, unless it's a no-brainer, you need a doctor. That is why these doctors make so much money.

MR. RING: Let me check if there is some law to support it.

THE COURT: All right. See if there is law that says that --

MR. RING: Do I --

THE COURT: -- on a no-brainer like that you don't need a doctor.

MR. RING: Let me check that.

THE COURT: A jury can draw its own conclusions.

If the defendants have anything to the contrary, let me see that.

MR. RING: Let me check it, Your Honor. And do I take it if it requires it, you'll permit me to bring back --

LAURA M. BRENNAN, Official Reporter

THE COURT: I'll permit you -- here is why I'll do it. I want this jury, whatever is submitted to them, to be complete so that they can make a decision, and then that decision can be reviewed or examined with both sides having put their best feet forward.

MR. RING: I understand.

THE COURT: That seems to me to be the real function of this case, aside from its obvious importance to the particular plaintiff.

Now, one more thing, what is your response to the learned intermediary defense in specific relationship to Dr. Telfer who did testify that she was aware of a lot of things? What is it that plaintiff claims she was not aware of that the defendants should have told her?

MR. RING: Well, first of all, of course, he received products other than the ones that she had prescribed at the hospital, and that was something that was gotten that she had no involvement in. She had some generic information. But in any event, I think Dr. Telfer testified that she did not know that these were contaminated pools. I forget the exact language, and I have to take a look and see.

THE COURT: Maybe what you could do, it would assist me, I think, give me the portions of the transcript that both sides think are relevant to this --

MR. RING: All right.

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THE COURT: -- question of what she knew and when she knew it. It sound like the Watergate case.

MR. RING: Just briefly what I'm getting at, most of this product except for what was given in that hospital was shipped direct from an agent, from a supplier, apparently, and not through a doctor that sat down and had the opportunity to apprise the plaintiff of what it was.

THE COURT: Well, but she was his physician and obviously had discussions with him about his medication. That doctrine would make no sense if it required that they had to have a discussion about every single vial of the medicine that he took.

MR. RING: No. But it also would make no sense if they can use that doctrine as a defense against their obligation to make a safe product and tell all of the facts.

THE COURT: Well, the second part --

MR. RING: I mean, the fact is what did she get?

THE COURT: The second part is true, you have to tell all material facts. But the defense as I understand it does indeed insulate them from their own negligence if the learned intermediary knew of the risks.

MR. RING: If they knew all the facts about it. One thing that sticks out, she did not know that it was from plasma collected in high risk areas. That's what she testified to.

THE COURT: Well, that's --

MR. RING: She didn't know that.

THE COURT: That's what I wanted. It would help me.

MR. RING: Yes.

THE COURT: And I suppose there was relatively few pages of the transcript that were addressed to that.

MR. RING: Yes, it's not much.

THE COURT: Let me see those.

Okay. Anything else you want to talk about before tomorrow?

MS. KIMBALL: Your Honor, do you want us -- you don't, I assume, want us to make any positions on the motions for directed verdict now?

THE COURT: No, no. I've read what you've written. And frankly, I thought it was pretty good stuff. But I have to go beyond the briefs themselves. I want to read the cases.

MS. KIMBALL: Okay. Thank you.

MS. THOMAS: There is one issue with Ernst Weidman which I think has to be resolved.

MS. KIMBALL: Yes, I'm ready.

THE COURT: When I say "good stuff," I mean I thought it was well presented, and you gave me a lot of material to consider.

MR. GREEN: On the ruling, Your Honor --

MR. BARR: Your Honor, on the issue --

Excuse me, Mr. Green.

LAURA M. BRENNAN, Official Reporter

On the issue of directed verdict, we filed a very short brief.

THE COURT: Yes, I understand. You are adopting the other --

MR. BARR: But with one great difference. Our whole argument is we are for purposes of the motion willing, and I will address it whenever you give me the opportunity, willing to concede any kind of negligence plaintiff has proven. It is a sole proximate cause defense. It is perhaps different than others. But our defense is solely proximate cause. And so for purposes of the argument, the Court can consume any kind of negligence it wants when we get do to.

MR. BERKMAN: One other point, Your Honor. Since tomorrow is Friday, and I at least am going to try and catch a 7:00 o'clock plane, what is your pleasure -- I mean, I can make a later plane -- for when you want to hear this argument so that I can schedule around it?

THE COURT: Well, let's not take time tomorrow to do it, because I won't even tomorrow have done what I want to do. I can't -- I read a lot of cases back at the summary judgment time, but frankly at this late date I can't remember which ones I've read and which ones I haven't.

MR. GREEN: Well, Your Honor, it makes a difference --

THE COURT: It does seem to me that I'm seeing some

cases cited here that sounds like they're new.

LAURA M. BRENNAN, Official Reporter

MR. GREEN: It makes a difference, too, Your Honor --

THE COURT: And certainly my understanding of them will be, I think, better now than it was before I had heard all the evidence I've heard so far in the trial.

But no, not tomorrow. So 7:00 o'clock plane, if we quit at --

MR. GREEN: I have a 6:45 plane, Your Honor.

THE COURT: Well, why don't we quit at, if we quit at 5:00 o'clock, would that be time?

MR. BERKMAN: Yes. We can make that.

THE COURT: By the way, a free tip I'll give you, the worst way to get there is in a cab.

MR. BERKMAN: No, no. We take the train.

THE COURT: Okay.

MR. BERKMAN: Then would you be likely to hear it Monday afternoon, because if there is any chance, again, like Mr. Barr raises a simple one, proximate cause, if there is any chance, I'd rather not keep coming back and spend another three weeks here.

THE COURT: Well, right now, let me say this. If I were to predict how I'm going to come out, I'd say we are going to have four defendants going to the jury. I mean, that's my hunch. But I don't know yet. So that's all I can tell you.

MR. RING: See you in the morning.

THE COURT: Okay.

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MS. THOMAS: Well, we have to talk about Mr. Weidman.

MR. RING: Oh, Ernst Weidman. Ms. Thomas is familiar with it. Maybe you can --

THE COURT: Okay.

MS. KIMBALL: Your Honor, on September 20th, I tendered to Ms. Thomas a list of our witnesses, which were may calls at that time. Among the witnesses were Dr. Ernst Weidman. Thereafter, she asked me what he was going to testify about. On October 19th, I advised her by letter what he was going to testify about, which is basically Behringwerke issues.

He is a German. And after we had heard Dr. Trobisch's testimony and right before plaintiff finished their case, I advised her that we are planning to call Dr. Weidman.

Now, we are having some trouble communicating with him, and I'm not sure when he can get here but --

THE COURT: Maybe we can do it by satellite.

MS. KIMBALL: No. I'm not going to take that one on. Mr. Berkman is taking that one.

MR. BERKMAN: I object.

MS. KIMBALL: I knew you would.

We received today a motion from the plaintiff to bar Dr. Weidman or in the alternative to allow his deposition.

THE COURT: All right.

MS. THOMAS: Yeah, two problems basically, Judge, first is a nondisclosure problem, and the other is a relevance

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problem. On the nondisclosure issue, September 20th was the first we heard his name. And I had to make a motion to compel after trial started. We figured out who he was and what he was going to say in a couple of lines. That gets us to the relevance problem.

He apparently works for the parent company of Behringwerke here in the United States. I'm told he is going to have some testimony about Behringwerke's license application at some time in the eighties with the FDA. And I'm not sure how that's related to this case. No defendant has said they have tried to negotiate with Behring until Armour did in late '85 or early '86. So, you know, what efforts Behring may have made in '83 or '84 to obtain a license before Armour stepped in, I just don't see how it's relevant here.

THE COURT: Well, except that I suppose you could argue that somebody should have tried to do that whether they did or not. Your point would be that they didn't.

MS. THOMAS: They didn't. They don't claim they did.

THE COURT: Right.

MS. THOMAS: And they don't claim they tried, so --

THE COURT: But if they can show that it wouldn't have made any difference if they had, because there is no way that Behringwerke itself could have been licensed before X date, then that would be a response to your argument that they should

have negotiated with Behringwerke. What other is there?

MS. KIMBALL: Well, they've made Behringwerke's patent and Behringwerke's process an issue in this case, and we'd like to have a witness who can discuss that.

THE COURT: Just in general terms, what is the relevance of the testimony?

MS. KIMBALL: The relevance of the testimony is one that Behringwerke's process was not licensed in the United States until 1986 or so and how it worked and whether it worked.

THE COURT: Whether the product worked?

MS. KIMBALL: Yes.

MR. RING: Well, that raises a question with me. They had a long deposition for three days of Dr. Trobisch. It covered over 350 pages. They knew what he was going to testify about. And they lay in the weeds until he leaves. Now, he left that day, and they heard he was running to the airport. And after he leaves, then they send us a notice that they're going to call this witness. And I think that --

MS. THOMAS: Yes, the first letter we got did not include him as a will call. The second letter did.

MS. KIMBALL: None of the witnesses in the first letter were will calls, because we were waiting for the evidence and to see who you were going to put on.

THE COURT: I told the defendants that they had to let

you know who their witnesses were going to be I think on the

last day of your case --

MS. THOMAS: That's when we got the first letter from Alpha.

THE COURT: -- or whatever it was. They didn't have to make up their minds until they had heard your case. And Dr. Trobisch was one of the last of your witnesses.

So when did you get this person's name as a possible?

MS. THOMAS: The very first time I heard his name was on September 20, 1993. I immediately asked who he was and what he's going to say. I had to make a motion, and I found out who he was and what he's going to say on October 19th.

So we're at an extreme disadvantage. We obviously would have done some discovery if he were revealed in a timely fashion on what he plans to say about Behringwerke itself making some efforts with the FDA.

THE COURT: Well, it sounds to me like it goes beyond that. He is going to say the product didn't work.

MS. THOMAS: Oh, we don't know that. That's not what I was told. He may very well say that.

MR. GREEN: I believe, Your Honor, he is going to say that the German clinical trials were not sufficient for the FDA to grant a license for it. In fact, they tried to grant --

they were submitted, and the FDA turned them down. He is also going to testify with regard to the yield. We also expect him to testify with regard to the amounts of product that were

available from Behringwerke.

THE COURT: I'll overrule the objection. It's certainly relevant and material. Obviously, Behringwerke was an issue in the case. And the witness the plaintiff chose to call was somebody who left there in, what, '73 and was really not in the position to testify from personal knowledge about a lot of the things that had gone on there.

MS. THOMAS: But he was disclosed in a timely fashion and deposed in 1989.

THE COURT: Well, I understand that.

MR. RING: I just want to know a few things.

Was he working there at the time? He is going to speak of his own knowledge, or is he going to tell us things that he heard? I mean, that's the cut to it whether I want a deposition or not.

MS. KIMBALL: I have not met Dr. Weidman. Mr. Green and Mr. Bell have.

MR. BELL: I believe he began working there in 1982 during the clinical trials on some of the products.

MS. THOMAS: In Germany or in the States?

MR. BELL: He was at Behringwerke in Germany.

MS. THOMAS: In Germany?

MR. BELL: In Germany.

MS. KIMBALL: He is in Germany now.

MS. THOMAS: All right.

MS. KIMBALL: That's why I'm having trouble reaching him.

THE COURT: That's why we were going to do it by satellite.

MS. KIMBALL: That's right.

MS. THOMAS: Oh, I though he was with the --

MR. RING: Are you going to use the satellite?

MS. KIMBALL: Yeah, we are.

MR. RING: Are you?

MS. KIMBALL: The same ground rules you established.

THE COURT: Okay.

MR. BELL: We are having some difficulties, Your Honor, in speaking with him right now.

THE COURT: Well, I will overrule the objection to his testifying. It sounds like he is somebody who was closer to the situation than the plaintiff witness was, at least from one point of view.

MS. KIMBALL: Thank you, your Honor.

MS. THOMAS: Well, given the late disclosure, your Honor, may we have the deposition?

THE COURT: He is in Germany?

MS. KIMBALL: He is in Germany as we speak.

MR. BELL: As I mentioned, we are going to have some difficulty in communicating at this point in time for him getting out here.

THE COURT: Well --

MS. THOMAS: All right. Perhaps if we think about this overnight, we can come up with some creative way to get the information we would need.

THE COURT: I did provide for the deposition of a plaintiffs' witness -- Drees, wasn't it?

MS. THOMAS: Yes.

THE COURT: -- very close to trial. Was there anybody who was still being deposed after trial had started?

MS. THOMAS: Yes, Dr. -- well, no.

MS. KIMBALL: No, that was before.

THE COURT: Well, normally I don't like to interrupt the trial with depositions, but if it's necessary to prevent a miscarriage of justice, I would do it.

MS. THOMAS: I will take a look at our file, Judge.

THE COURT: Think about it and we will talk about it again tomorrow.

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MS. KIMBALL: Thank you, your Honor.

THE COURT: The way we do it is the deposition would be -- he wouldn't have to come over here long in advance. You can do it all in one day.

MR. GREEN: There is one other brief scheduling question.

I designated two live witnesses and one deposition. I have said that if we can read the deposition of Dr. Peter Levine, which will take about an hour, I won't need to substitute Dr. Gomperts, who will have to come in twice and be available, and I would like to do that.

Now, they have told me they are going to object to that deposition, and I am not sure why, but I would like to read the deposition instead of having to call another expert.

MR. RING: Dr. Levine is the one that claimed his life was being threatened and we couldn't go ahead with the deposition, and they got another expert but didn't submit him for a deposition.

I think we can do the same thing. We can take your new expert, let him come a half day earlier. We did this

with Drees and another party here during the trial. They came on Wednesday and gave their deposition. I am not suggesting we need a Wednesday.

MR. GREEN: Well, I am trying, your Honor, to avoid --

MR. RING: I am not suggesting we need more than an hour.

MR. GREEN: I am trying to avoid pushing this over past Thanksgiving.

Basically they took a three-hour deposition of Dr. Levine and we asked no questions. All I want to do is read their questions and his answers. Then I don't have to call a new witness to re-explore that area.

THE COURT: Think about that. Anything we can do to hasten this along --

MR. RING: I thought about it. I will not take Levine, who didn't get a chance -- who Ms. Thomas didn't get a chance to follow up and get him with the real stuff and read the bad parts and go.

MR. GREEN: That's not true, your Honor.

THE COURT: Was the deposition interrupted?

MS. MS. THOMAS: I didn't get a chance to finish it. He had to leave at a certain time. I had gotten the preliminaries set, which would make a very nice narrative, but I never got to the meaty stuff at the end.

MR. GREEN: Your Honor, I would like you to

read

the deposition.

THE COURT: Well, if it was not a complete deposition from the plaintiffs' standpoint, I won't permit you to use it. I don't want to read it. How long is it?

Three hours?

MS. THOMAS: I don't think so, Judge.

THE COURT: It will take me three hours to read it.

MR. RING: There is no need for it.

MR. GREEN: Your Honor, can we supply you with the information as to what happened and provide you with the back-up so that you know that this was their deposition? They took it for three hours.

THE COURT: I already know that.

MR. GREEN: They showed up an hour late. They said, "I have one more question." He said, "Fine." He answered it, and then she said, "I may want to come back and ask you some more questions," and they never could arrange that and they never pressed to arrange that because they let it go. This was three years ago. They let it go.

And then when he said, "I can't show up for trial" -- all I want to do is read the deposition of her questions and the witness' answers and save a whole day of trial because I can get it done in an hour. I have pruned it down and she can cross-designate anything she wants.

MR. RING: I am sure that --

MR. GREEN: They didn't like his answers was the problem.

MR. RING: -- we will be able in short time to elicit the questions from this witness, and I can assure him

I will not be long with him.

MR. GREEN: Dr. Levine was a member of MASAC. He gave factual information. Even though our expert can give the same opinions, he cannot give the same factual information about what was said, what was known, what was done. I respectfully request, your Honor, that rather than spend what will amount to two extra days, a deposition day and a trial day --

THE COURT: I can't believe that. Two extra days?

MR. GREEN: Your Honor, I have got to bring a witness in from California who's now in Europe in lieu of reading Dr. Levine's deposition, and I only request that the Court allow us to present to you what's in Dr. Levine's deposition.

THE COURT: All right. Present it to me.

MR. GREEN: Thank you.

THE COURT: All right, 9:30.

(Adjournment taken at 6:00 p.m. until 9:30 a.m. of the following day, November 5, 1993.)

LAURA M. BRENNAN, Official Reporter

IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

PEGGY GRUCA, et al.,	)	
	)	
Plaintiffs,	)	NO. 86 C 7623
	)	
v.	)	Chicago, Illinois
	)	November 5, 1993
ALPHA THERAPEUTIC, CO., et al.,	)	9:40 a.m.
	)	
Defendants.	)	

VOLUME 17-A
TRANSCRIPT OF PROCEEDINGS
BEFORE THE HONORABLE JOHN F. GRADY

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(The following proceedings were had in open court out of the presence and hearing of the jury:)

THE COURT: Good morning.

MS. KIMBALL: Good morning, your Honor.

MR. BERKMAN: Good morning.

MS. GOURLEY: Good morning.

(The following proceedings were had in the presence and hearing of the jury:)

THE COURT: Good morning, ladies and gentlemen.

THE JURY: Good morning.

THE COURT: All right, Mr. Ring.

EDWARD MEALEY, DEFENDANT ALPHA'S WITNESS, PREVIOUSLY SWORN

CONTINUED CROSS EXAMINATION

BY MR. RING:

Q Now, Dr. Mealey, were you involved in the treating process that Alpha developed?

A In an ancillary manner, yes.

Q You weren't the one that conceived the plan, were you?

A Dr. Heldebrant was the one that conceived the actual method.

Q And he is the inventor?

A Yes.

Q Okay. And did you work on it as a scientist?

A No. At the time -- part of the time it was going on, that department just fell under my jurisdiction.

25 Q Okay. So what you told us yesterday about that is what you

learned from Dr. Heldebrant?

A I participated in meetings with the research department when they were discussing how they were going about things.

Q And by the way, about early '83, Alpha also developed a dry heat?

A Yes, they did.

Q And did that go to market?

A Yes, I believe it followed the wet heat treat.

Q What did you call the wet heat treatment --

A I think it --

Q -- the product?

A Profilate heat treated.

Q What did you call the dry heat?

A I believe it was heat treated Profilate.

Q You just reversed?

A Reversed the heat treat.

Q Okay. Did you ever claim the Profilate heat treated to be a pasteurized method?

A No, a heat treated method.

Q It wasn't pasteurized?

A My definition of pasteurized is that you heat for 10 hours at 60 degrees in the liquid state. This was not pasteurized.

Q All right. Then, sir, I notice you weren't given the Alpha patent.

Is this the Heldebrant patent that you talked about

yesterday?

A Yes, I believe it is.

Q Where, sir, is the patent --

Can I have that unless you want to keep it? Does it give you some comfort holding it?

A That is all right.

Q Where is the patent for the Profilate heat treated, what you call the dry heat?

A I am referring to that as heat treated Profilate. I don't believe we have one.

Q You didn't get a patent for that?

A I don't believe so.

Q Did you in your package inserts show a difference to the user?

A The descriptions would be one heat treated as a dry powder, the other one heat treated as a powder suspended in a liquid medium.

That would have been the description -- the difference.

Q Now, they were sold at the same time?

A No. I believe -- well, the dry heat treated product was licensed some time after what I will refer to as the wet heat treated product.

Q By licensed, you mean the FDA?

A Yes, I do.

25 Q Do you have any literature for the -- that tells about the

difference between the two?

A I am personally not aware of any.

But I would believe the marketing department would have some.

Q. But you don't know of any?
A. I don't know of any.
Q. All right. Yet, the technical development was under your direction?
A. Yes.
Q. Wouldn't anything, anything that went out to the public be checked with you?
A. No.
Q. Even though you are the technical person?
A. No. We have, we have a group of people that review technical information, regulatory affairs, the person that developed it in marketing. I don't necessarily read things, marketing bulletins.
Q. Well, sir, why was it necessary to have what we call a dry heat if you had a wet heat?
A. To the best of my knowledge, when we had purified the material to wet heat treat it, we found that very little, if any, was denatured, and that we thought heating it in the dry state might be just as effective and we'd have a better yield.
Q. So you found that in the wet stage very little was denatured?
A. That's correct.
Q. You lost very little of the Factor VIII?

A. Well, we lost quite a bit of the activity. But of material

that was non-filterable, there was very little.

LAURA M. BRENNAN, Official Reporter

Q. And so in the dry heat -- well, wasn't the dry heat to have less Factor VIII in the product?
A. No. In the dry heat, our yield was better with the dry heat method than the wet heat treatment.
Q. By yield, we're talking about how much you got out of the Factor VIII, right?
A. How much Factor VIII we got out of the plasma, yes.
Q. Okay. So we're talking about the same thing, aren't we? With the dry heat, you had to use less Factor VIII?
MR. GREEN: That's plasma.
BY THE WITNESS:
A. I'd put it the other way around. With the Factor VIII we used, we lost less of the activity.
BY MR. RING:
Q. So you had to use -- you needed less, less plasma?
A. To get the same amount of AHF activity, that is correct.
Q. Okay. And plasma costs money, right?
A. Yes.
Q. Now, was the dry heat product you put out different from what the other manufacturers were doing?
A. I don't know what the other manufacturers were doing.
Q. In your deposition, sir, on page 86, Ms. Thomas took it, "At the time Alpha began dry heat treating its Factor VIII concentrate in R&D" --

"The Witness: It was, if I may interject a little

science, it was a method that I think was used by others at the time, but as far as for being established, if you as I do interpret 'establish' as being a successful method of not transmitting virus, dry products had been known -- had been shown that in the case of non A-non B, to the best of my knowledge, there is not a dry heat-treated product now that has not transmitted hepatitis. So while it's a used process, it's not an established one."

Now, weren't you using the same type of method as the others?

A. Some -- first of all, Mr. Ring, the method of manufacture of AHF may differ from one manufacturer to the other rather significantly. They may have different --

Q. Did you not say at that time, sir -- well, finish your answer. Go ahead.

A. So the effect of heat on their final product depending upon the buffers that they used or other proteins that they have may be different from one manufacturer to the other manufacturer. The time of heating, some manufacturers were heating 10 hours, some manufacturers were heating 20 hours. This is back now 1982, '83, and '84.

Q. So it's a matter of how much time you heated it for and at

what temperature?

A. And what the composition is that you're heating and what

the moisture content of that powder is that you're heating all

affects the treatment process.
Q. Do you agree, sir, with your statement here that no dry heat process was effective against all virus?
MR. GREEN: Object, Your Honor, on the ground that misstates what he said in his deposition.
BY MR. RING:
Q. Do you agree with your --
THE COURT: Well, that sounds approximately like what he said. You correct it. What do you say he said?
MR. GREEN: Your Honor, the deposition says what it says.
THE COURT: You tell me what it says. You say it doesn't say what Mr. Ring says. No? Put it in your own words, if you want to.
MR. GREEN: Give me a moment. It says, "To the best of my knowledge, there was not a dry heat-treated process that has not transmitted hepatitis. There may be well be some that doesn't" --
THE COURT: Isn't that what Mr. Ring just said? Overruled.
You may answer. Do you still take that view?
BY THE WITNESS:
A. I still -- at that time under the conditions, the heat-treated products that were on the market, there had been

reports of viral transmission from products.

LAURA M. BRENNAN, Official Reporter

BY MR. RING:
Q. And that includes Alpha?
A. Yes. We received a report.
Q. Then, sir, you started this process or Dr. Heldebrant started it from scratch as far as you know, is that right?
MR. GREEN: Which process?
MR. RING: Well, the one that they got the patent on. Either process.
BY THE WITNESS:
A. Well, I'll just define scratch. Actually, Alpha just had generated from 1978 as far as I know -- I should say from '81 when I joined, they had a citrate glycine process that went to a PEG process. It then modified the PEG process to something else. But, in essence, they did it on their own.
BY MR. RING:
Q. The PEG process was something invented in 1968, wasn't it, by Dr. Johnson?
A. He used PEG in 1968.
Q. Okay.
A. Dr. Polson in Australia used PEG.
Q. Okay.
A. PEG is just the chemical method of precipitating protein.
Q. A purification method, right?
A. It's a precipitant. Like alcohol precipitates proteins,

PEG precipitates protein.

LAURA M. BRENNAN, Official Reporter

Q. So no one had to invent that at Alpha, because it had been around for 25 years?
A. That knowledge, yes.
Q. Okay. And in order to do a pasteurizing or whatever you call your process -- you don't call it pasteurizing?
A. Just heat treatment.

Q Just heat treated.

You first had to start with Dr. Johnson's discovery in 1968 to purify that product? What do you call it, step 4, or some term?

A I don't know the term. I am aware that Alan Johnson used polyethylene glycol and AHF.

Q PEG?

A That is PEG, polyethylene glycol.

Q The next step to do it, and let me have a step before that. Fibrinogen was part of the protein, right?

A Fibrinogen is part of the cryoprecipitate.

Q Yes. And fibrinogen is where viruses collected the most?

A Probably in the first step fibrinogen would entrap, I will estimate, 50 percent of the viruses.

Q Okay. So the next step was to separate the fibrinogen from the Factor VIII, wasn't it?

A For two reasons: One, because the virus was there and, two, because the fibrinogen is also a very unstable protein towards heat.

Q Now, fibrinogen wasn't -- the removal of fibrinogen or the separation of fibrinogen wasn't Dr. Heldebrant's discovery, was it?

23 A Probably the concentration of polyethylene glycol and the PH

24 and the salt that we use was determined by Dr. Heldebrant.

25 Q Well, those are things that you just mix like making chicken

soup. Some do a little of this, some do a little of that, and it was nothing new invented by Dr. Heldebrant.

MR. GREEN: I object unless his expertise in chicken soup is established.

THE WITNESS: If I may explain.

THE COURT: I sustain the objection. That is a good objection.

MR. RING: The best I have heard from him yet. I will concede, I could not make chicken soup, okay.

BY MR. RING:

Q Now, aren't all these chemicals --

A These really aren't inventions, they are developments.

Q Developments.

And wasn't the separation of the fibrinogen from the Factor VIII or Factor VIII from fibrinogen accomplished in about 1975 or '6?

A Probably 1961, '62.

Q So that was around even before the time I am pegging, '61, '62, right?

A Yes.

Q By the way, how long was it known that you can kill viruses with heat?

A The first experiments with Stokes and Murray and Gillis

were

1942, '43.

Q And, so that was known 50 years before Alpha started with

its product?
A That was known in albumin, albumin solutions, one heated would inactivate a virus.
Q Sixty degrees centigrade at 10 hours?
A That is correct.
Q So the real question after that, sir, was finding a way to heat the Factor VIII that has now been purified, which we knew about in '68, right?
A We knew ways of purifying it.
Q Okay. And removing the fibrinogen which carried off most of the virus, right, half?
A Quite a bit of the virus. That is an estimate.
Q You said half. I will accept that.
A There is quite a bit entrapped in the fibrinogen, yes.
Q And so it would either be by a stabilizer, right?
A To try and stabilize AHF, that's correct.
Q Or by doing what you say Heldebrant or what his patent says?
A Yes.
Q That you lyophilized; so you freeze dry, right?
A Yes.
Q And create a cryoprecipitate?
A You freeze dried a purified AHF.
Q And then you suspended that in an organic solvent?
A That is correct.
Q And the pasteurization method was after removal of the

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fibrinogen you suspended in an aqueous --

How do you say that?

A Well, aqueous.

Q The clear water?

A Aqueous.

Q Aqueous solution, which is like saline solution?

A Water with salts, yes.

Q With salts.

That is the difference, right?

A If I may, to clarify, when a partially purified, or I will call it purified AHF at that time, was freeze dried, was suspended in the organic solvent, was heated, then one filtered off the organic solvent, had kind of a little bit of organic solvent left which they air dried. Now, that dry powder was suspended in an aqueous solution.

Q You considered that to be a purified product?

A In those times that was relatively purified. It is not near the purity that a recombinant AHF is today by 2,000-fold matter of purity.

Q But at that time in '84, sir,?

A Yes.

Q It was what you call a purified product?

A Yes. The term was usually purified relative to cryo essentially.

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Q. But it was not pasteurized?

A. It's heat-treated.

Q. Sir, did you -- notwithstanding that, you came out with the dry heat product?

A. Yes.

Q. That you did not seek a patent on it?

A. That's correct.

Q. Because it was nothing different than what the others had?

A. Because there were people that held patents on heating dried product.

Q. Well, if you were using something novel, that's what patents are for. It would be something that one could protect, is that right?

A. If it was a novel finding, is that your question?

Q. Yes.

MR. GREEN: Your Honor, I am going to object on the ground of foundation. I'm not sure, I think the question asks for an element of patent law, which I'm not sure this witness has been qualified.

BY MR. RING:

Q. You don't know what patents are issued for?

THE COURT: Let me rule on the objection. But I'm going to have to ask you to repeat the question.

MR. RING: I think the --

THE COURT: What was the question?

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MR. RING: I think the question was -- actually, you're putting me to a hard test. I think the question was whether or not --

MR. GREEN: The question was whether or not you have a patent because it was a novel process.

MR. RING: -- you had to have -- yeah, if it's a novel process.

THE COURT: Well, he knows whether something has to be novel before it could be qualified for a patent.

MR. RING: That's all I'm asking.

THE COURT: The answer is yes.

THE WITNESS: Yes, yes.

THE COURT: That's one of the requirements of a patent, that the invention be novel, something new.

BY MR. RING:

Q. Now, sir --

THE COURT: That's one of the big fights that often is involved in a patent case, was this new or not. And the more usual the question is, even though it's new, was it obvious in light of what had gone before. If it was an obvious next step to take, then it's not patentable either. So it has to be something that's novel in that sense, non-obvious.

I don't think we need to get into that here, but that

is a complete lesson on the question of novelty and patent law.

MR. RING: Could they get it for chicken soup, Judge?

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THE COURT: And there are more reversals in patent cases by reviewing courts on this question of obviousness than any other question. It's often a difficult thing to determine, was it obvious or not.

All right.

BY MR. RING:

Q. Sir, I'm going to show you what has been marked Exhibit 529, Plaintiff's Exhibit 529.

MR. BERKMAN: I'm sorry, what number?

MR. GREEN: I'm sorry?

MR. RING: 529. It's the Green Cross patent.

MR. BERKMAN: Okay. Thank you.

BY MR. RING:

Q. Have you seen that before?

A. Only recently.

Q. By recently, was it in connection with preparation for this trial?

A. Yes.

Q. Now, look at that abstract.

A. Yes.

Q. Does that seem to be similar to the Behringwerke process?

A. There certainly is some similarity with the use of stabilizers for neutral amino acids. I don't think, I don't think the Behringwerke covered the carboxylic acids for three to ten carbons. And I do notice this was issued in the United

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States. And the patent references the Behringwerke patent. So the examiners were aware of it.

Q. For prior art, that's what you have to do when you seek a patent, you have to show prior art so that you're not infringing?

A. That's correct.

Q. Okay. So there is some change, but it's basically using --

A. It's quite similar.

Q. Quite similar. And it shows, sir, that it was for an application priority October 28, 1981, in Japan, isn't that right?

A. Yes.

Q. Well, sir, the only reason for resorting to the dry heat that was similar to what everyone else has was cost, wasn't it?

A. It was certainly to increase the yield and to maintain at least a pure product.

Q. Sir, did you put that on the same level of safety as your wet heat process?

A. Yes, we did.

Q. You did?

A. Yes.

Q. So that even knowing that viruses were being transmitted, was that also the case with your wet heat process?

A. The wet heat process was shown in one case to transmit a hepatitis B in Factor IX.

Q. I see. So as far as safety, they were the same, your two processes?

A. I think the dry heat was probably about the same, yes.

Q. About the same?

A. Yes.

Q. So and what about non A-non B transmissions, wasn't that what the purpose, one of the purposes of the invention was for?

A. The primary purpose was B, and the secondary purpose certainly was with non A-non B.

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Q Well, did your wet-heat process result in non-A, non-B viruses being transmitted?

A In one lot of product they did, yes.

Q And the real difference was in what you saved in money, isn't that true?

A The real difference is what we saved in AHF activity.

Q Well, sir, you were questioned -- are you telling us that you didn't save any money by using the dry heat without this suspension in the organic solvent?

A When you increase the yield on a given amount of plasma, you can relate that to a savings of money.

Q And where was the yield increased, with the dry heat?

A Yes.

Q So you save money?

A I say you equate that --

Q You saved about 40 percent of the cost of the AHF, didn't you?

A I think we probably dropped from a 40 percent loss in heat treating -- the wet-heat treatment to a 15 to 20 percent loss in heating the dry, so we saved about 20 percent. It's in that neighborhood. That's plus or minus 5 percent.

Q Okay.

MR. RING: I don't have any more.

THE COURT: Any other questions?

MR. BARR: I just have one.

MR. RING: Your Honor, since this is cross-examination, is he going to cross-examine him on something that he said adverse --

THE COURT: This is direct examination --

MR. RING: This is your direct?

THE COURT: -- by Mr. Barr. I do not regard this as cross-examination.

DIRECT EXAMINATION (Resumed)

BY MR. BARR:

Q Dr. Mealey, when Mr. Ring talked to you on several occasions, he used the words about viral transmission in Factor VIII, do you remember that?

A Yes.

Q The only viruses Factor VIII transmits are hepatitis and HIV, is that right?

A To the best of my knowledge, yes.

MR. BARR: Thank you, I have nothing further.

THE COURT: Any other questions, Mr. Green?

BY MR. GREEN:

Q Dr. Mealey, last evening we talked about the letter of May 3, 1983, the letter to Alpha from Petricciani which said -- and I'm paraphrasing it -- or which referred to whether or not

Alpha had approval to do core testing, do you remember that?

A Yes.

Q Did this letter tell Alpha that they couldn't -- in your

estimation tell Alpha they that they couldn't do research and development testing on AHF?

A No.

Q Did it say that the FDA required more data before they would approve or -- before they act in any way on core testing?

A That's what it says to me, yes.

Q Why was it that you, as the chief of technical operations for Alpha, did not embark on a test program to test the efficacy of core testing at that time?

A Basically we had asked to test core and they turned us down and asked for more data. When we analyzed saying what kind of tests are we going to do to show that the removal of core antibody is effective in decreasing the transmission of AIDS is almost an impossible task. We didn't have any test to test those recipients of the product.

And if our -- if by removing the core antibody was not successful, we would have had to wait for someone to come down with AIDS that had received the AHF that we made from plasma that we core antibody tested. Because there was know test, we would have to wait for clinical symptoms.

It was an

21 impossible type of study protocol to do at that time.

22 Q Sir, with regard to doing that protocol on May 3, 1983,

23 where were you in relationship to the completion of the studies

24 on your heat-treated product?

25 A We had basically completed the surrogate testing, the

in-laboratory testing, and I think we were in probably the second month of the chimpanzee testing.

Q So were you six or eight months from licensing on that?

A Well, we hoped we were within a year of licensing. As it turned out, when we submitted our product license application in June of '83, the FDA turned it around in 7 months' time and issued a license on February 4 which was astounding to us.

Q Dr. Mealey, you said this morning that when you went to dry-heat process you increased the activity, is that right?

A I increased the yield.

Q Is that the same as increasing the activity?

A They equate to the same thing, yes.

Q And that brought down the cost of producing the AHF, is that right?

A That's correct.

Q Did it bring down your price to the people who used the medicine?

A I really do not know that.

MR. GREEN: That's all I have, your Honor.

RECROSS-EXAMINATION

BY MR. RING:

Q The product that you finally developed also was known to transmit HIV in at least one case?

MR. GREEN: Object, unless you're going to pin this down to some time.

BY MR. RING:

Q Well, you developed it in '82, '83?

A It was '81, '82, '83, yes.

Q It was sold in '84?

A It was sold probably around March-April of '84, yes.

Q And the dry heat was developed about the same time?

A Probably -- the dry heat was developed. We went through additional chimp studies, but for the dry heat treated product we challenged the chimps with non-A, non-B rather than with B, and so it probably followed by a year.

Q You're familiar with this -- I'm reading from 4.291, "Special Communications." Have you seen that?

A From the title, I'm not aware of it.

Q When you look in the lower. That is a recognized publication in the field, isn't it?

A Yes, it is.

Q Something you keep up with?

A I don't routinely read the general medical association, this is what it is, but on occasions I do.

1 Q Would you read the last paragraph that is highlighted there?

2 A The asterisk?

3 Q Yes, the lower left-hand corner.

4 MR. GREEN: What page are we on, counsel?

5 BY MR. RING:

6 Q What page is that? I will find it.

7 A Page 3435.

8 Q 3435, and what I am asking you to read is from what page?

9 A It is from that page. That is the page.

10 Mr. Ring, do I have this correct? This is the

11 paragraph you want me to read?

12 Q That is the one.

13 A Okay.

14 "Small numbers of HIV seroconversions worldwide have

15 been associated with clotting factor concentrates

16 heated in the dry state at low temperatures, 60

17 degrees, for shorter periods of time, 24 to 30 hours,

18 in Table 1.

19 Low temperature heating processes of short duration are

20 no longer employed as a sole means of HIV inactivation.

And other viral depleting processes are now being used."

Q What is the date of that article?

A June 16th, 1989.

Q So what this article is alluding to is the time frame when

your product was developed, right, and used?
A It is alluding to it. It is published four or five years after our product was in use, yes.
Q Now, sir, you, I take it, are familiar with the MMWRs?
A Yes, I am.
Q Well, let me show you one from March 13, and to make things more difficult for me -- there it is, March 13, '87.
Did you, sir, as technical person at Alpha, keep up with the MMWRs from the Center of Disease Control?
MR. GREEN: Could I have the exhibit number, counsel?
BY THE WITNESS:
A This --
MR. RING: Let me give him the number.
MS. THOMAS: 4285.
MR. GREEN: What is it?
MS. THOMAS: 4285.
BY MR. RING:
Q Right.
MR. BERKMAN: Your Honor, I have an objection. This is way beyond the scope of recross. I am not sure how long it is going.
THE COURT: Overruled.
BY MR. RING:
Q Would you read that, what I have highlighted?
A "Earlier published reports disclosed no

seroconversions

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among selected hemophilia patients followed up for one year after beginning therapy with heat treated factor concentrates.

However, during the past 12 months, published and unpublished reports, personal communications, have described several hemophilia patients who have seroconverted after receipt of unscreened heat treated factor concentrates. In June 1986, one U.S." --

MS. GOURLEY: Objection, your Honor, relevance.

THE COURT: Overruled.

MS. GOURLEY: And 407.

THE COURT: This --

MR. RING: Keep reading.

THE COURT: This 1989 publication, ladies and gentlemen, again would obviously not have been notice to any of the defendants back in 1985 or '86 or '87. This is being received as proof of the fact; namely, whether or not people who received dry heat treated concentrate came down with AIDS. That is one of the issues in the case.

If dry heat treated concentrate cannot transmit AIDS, that would resolve one of the issues before you. If it can, that throws a different light on the matter. So this is being received, not because the defendants would have known about this

article back in the early '80s -- obviously it hadn't been published yet -- but it is being received on the question, the

factual question, of whether dry heat treated concentrate can transmit the HIV virus.

All right.

MR. BERKMAN: Your Honor, may I object on the grounds that this also refers to wet heat treated and it doesn't differentiate which dry heat treat? So I think that is an unfair characterization to say this goes to the truth of whether any particular defendants dry heat versus --

THE COURT: I didn't say any particular defendant.

MR. BERKMAN: Okay.

THE COURT: I said whether dry heat treated concentrate can transmit the virus.

All right, the objection is overruled. Proceed.

THE WITNESS: I will repeat.

"Personal communications from various places have described several hemophilia patients who had seroconverted after receipt of unscreened heat treated factor concentrates.

In June 1986 one U.S. manufacturer, Armour Pharmaceutical Company, offered to exchange any remaining heat treated Factor VIII concentrate produced from plasma, collected before the availability of a test for HIV antibody with the equivalent amount of antibody screening product. Similar exchanges are now

available through four other U.S. producers, Alpha

Therapeutics, American Red Cross, Cutter Laboratories, and Hyland Laboratories."

Q Now, sir, both of these processes that you described apparently took, what, seven months to a year to develop?

A No. The total time was about two and a half years.

Q By starting in 1981?

A By starting in '81, yes, getting licensed in '84.

Q Okay. Not the license; when you completed the work?

A We completed the work during the time it was being reviewed at the FDA actually.

Q But the process that you filed the application on, the Heldebrant patent application, you filed it December of '93, Mr. Heldebrant, Dr. Heldebrant did? It says filed December 2, 1983.

I guess we can accept that much.

A That is the pattern. I wasn't aware of the filing date. I know we filed the license application in June of '83.

Q Well, that is different from the patent?

A Yes, it is.

Q Okay. Now, sir, and so you started some time in '81?

MR. GREEN: Your Honor, I think at this point we are getting cumulative and going beyond the scope of redirect. This was all gone into on the direct.

THE COURT: Well, the question of heat treatment was

gone into on redirect, dry versus wet.

Are you going beyond that?

MR. RING: No. I just have one other question.
THE COURT: All right. Overruled.
THE WITNESS: Mr. Ring, I think we started screening for that possible method in March or April of '82.
BY MR. RING:
Q March or April of '82?
A Yes.
Q And in December of '83 you had completed the work to file --
that is Dr. Heldebrant?
A At least filed a patent on it, yes.
Q Tell me, sir, from 1962 when you say that it was established
you could remove or separate fibrinogen from Factor VIII, what did Alpha do for those 30 years?
MR. GREEN: I will object.
BY THE WITNESS:
A I don't know.
MR. GREEN: Wait. We are outside the scope, and now we
are going back and replowing the same ground.
THE COURT: Overruled.
BY MR. RING:
Q From '62 to '90 -- or '82 -- was that 40, 50 years now, 30?
A Thirty years, I think.
MS. GOURLEY: Twenty.
BY MR. RING:

25 Q What did you have by way -- it is 20 years. Thank you.

MR. GREEN: I object. Alpha didn't come into existence until 1978. So they could not have done anything before they existed.

MR. RING: Oh, come on.

THE COURT: That doesn't have to do with anything that they did.

BY MR. RING:

Q What did Alpha, formerly a division of Abbott, do? You had all that history there, didn't you, when you came in in '81?

A Yes.

Q What did you find by way of any work being done from '62 to '81 for developing a heat treating process?

A I think a little before '81 Hyland was developing a heat treating process.

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Q. What did Alpha do?
A. Alpha was in existence from '78. They developed it three years after their existence. Abbott before then did not develop any heat treatment.
Q. Alpha was a division of Abbott that Green Cross bought in '78, right?
A. That's correct.
Q. And just took over everything lock, stock, and barrel?
A. In essence, yes.
Q. Okay. So it's not like something that creeped up then. And I'm asking you as far as what was done from '62 to '82 when Dr. Heldebrant filed a patent application for heat treatment. Nothing was done, was it?
A. Not to my knowledge in terms of heat treatment.

MR. RING: That's all I have.

MR. GREEN: I don't have any questions, Your Honor.

MR. BARR: Your Honor, I just would like a couple.

RECROSS-EXAMINATION

BY MR. BARR:

Q. Mr. Mealey, the exhibit that Mr. Ring asked you about, 4.285, that's the MMWR from March 13th. Were you here during Dr. Trobisch's testimony?
A. I heard about 30 minutes of it, I believe.
Q. Okay. Do you recall this being a document that was

25 discussed at length with Dr. Trobisch?

A. No. I said I wasn't here for that part.
Q. And the March 13, '87 MMWR does not anywhere in it talk about concentrates heated at 68 degrees for 72 hours, is that correct?
A. I didn't see anything.
Q. Okay. And all heat treatment, whether it's dry or wet, are not generic, is that true? They are not all the same?
A. That's correct.
Q. Some of them are heated at one degree, some higher, some lower, some for longer periods of time, some for other periods of time, is that correct?
A. Yes.
Q. So when Mr. Ring says to you "the dry heat-treated product," that covers a large spectrum of medicines, is that true, a number of kinds of heat treatment?
A. Yes.
Q. Okay. Let me show you what has been marked and provided to counsel as Alpha's Exhibit 29. I just want to be certain that this is identified. This is a letter to Alpha from the FDA?
A. Yes.
Q. And is this the kind of example that you told us about where the FDA can tell any one of the manufacturers that are defendants here exactly what to do, and if they don't do it,

they can seize their license and prevent them from making Factor VIII?

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A. Oh, yes. They have that power, yes.
Q. And, for instance, I'm certainly not going to go through this, but they can tell you what size letters to put on your labeling, is that right?
A. Correct. They do as a matter of fact.
Q. And when Mr. Ring talked to you about the idea of doing, quote, testing for core antibody, the minute that goes into Factor VIII that you have a license for it, you've changed the manufacturing process, is that right?
A. That is correct.
Q. You have to have permission from the FDA to do that, is that correct?
A. That is correct.
Q. So while you could test a unit of plasma, once you put that unit of plasma into a pool, and you're going to use it as Factor VIII, you have changed the manufacturing process, is that right?
A. That is correct.
MR. BARR: I have nothing further. Thank you.
THE COURT: All right. Any other questions?
JUROR BARRY: Judge, is there anything -- can you be infected a little bit, or once you're infected, you're infected a whole lot?
THE COURT: Well, is that something you can respond

25 to, Doctor?

THE WITNESS: No. I think perhaps a medical person should respond to that.

THE COURT: All right. Save it for the next medical witness.

JUROR BARRY: All right.

THE COURT: Anything else from the jury?

MR. RING: Well, I have a few in light of Mr. Barr.

THE COURT: All right.

RECROSS-EXAMINATION

BY MR. RING:

Q. In the light of the juror's question, you mean that you're in charge of technical operations, is that right?

A. That was the title.

Q. Doesn't that include plasmapheresis, the collection and screening of --

A. No, indirectly. That was the plasma group. We have a plasma group at Alpha.

Q. And you don't know whether one contaminated lot would affect the rest of the pool?

A. I don't think that was her question.

MR. GREEN: Excuse me, excuse me.

THE COURT: I don't think that was the juror's question. I think she was talking about the effect on the individual who is infected.

MR. RING: All right.

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THE COURT: That was my understanding.

BY THE WITNESS:

A. You know, I can give a --

MR. GREEN: Just a minute, Dr. Mealey.

It's also beyond the scope of what Mr. Barr asked.

Mr. Ring has to have the last word now.

(Discussion off the record.)

BY MR. RING:

Q. Now, this document, the Alpha document that Mr. Barr of Cutter cross-examined you on, that had to do with labeling again, didn't it?

A. Yes.

Q. Now, labeling is in the general statutes of the FDA, right?

A. It is also in the specific statutes of Blood and Blood Products.

Q. Labeling is?

A. Yes.

Q. Okay. And what they're saying, telling them here they cannot use in a label, is that right?

A. Yes.

Q. No one quarrels with that. The label has to be honest and accurate, right?

A. It also has to have pertinence and prominence and position and so forth, yes.

Q. So this document really repudiated Alpha for using in their

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labels something that they had not proven to be accurate?
A. I didn't read it that thoroughly.
Q. I don't know where he was reading from, but pick it out.
A. Yes, it does. It requests us to put qualifying statements on statements we already had on the label.
Q. Okay. It does not deal with testing, anticore body testing, does it?
A. Not that one.
Q. And a matter of fact, they started off in that letter saying, "However, no method has been shown to be totally effective in removing hepatitis and other viral infectivity from antihemophilic factor (Human), is that right?
A. Yes.
Q. But it is dealing with the labeling?
A. Yes.

THE COURT: Is that all?

MR. BARR: That's all I have.

THE COURT: We're going to stop. That seems to have been directed specifically to the document that Mr. Barr questioned about. You had direct, redirect, recross, and well beyond that. What do you have?

MR. GREEN: Well, I have the offending language, which everybody has pussyfooted around and nobody has shown the witness the language in the ad to which the FDA objected, and I would like to point that out.

THE COURT: All right.

MR. GREEN: Do you have the exhibit before you, Dr. Mealey?

THE WITNESS: No, I don't.

THE COURT: You're referring to the exhibit that Mr. Barr showed him?

MR. GREEN: The exhibit that counsel just completed.

THE COURT: Is that the one Mr. Barr was just talking about?

MR. GREEN: Yes, I'm told by counsel.

REDIRECT EXAMINATION

BY MR. GREEN:

Q Dr. Mealey, I would like to show you the part of this exhibit which was referred to by counsel which is the actual promotional material. Prefatory to that I wanted to ask you if

it's true that the FDA asked you to remove certain language from this document. Is that true?

A Well, I really wasn't aware of it until in reading these things this morning.

THE COURT: Is he going to do anything beyond reading what's on the document?

MR. GREEN: He is going to identify the language, I hope, which is in the lower left-hand corner of the document, which is the offending language, which has to do with labeling with regards to AIDS.

THE COURT: Let him read it.

MR. GREEN: Perhaps, your Honor, to save time I can read it.

BY MR. GREEN:

Q In the lower right-hand --

THE COURT: Does the FDA letter quote the language?

MR. GREEN: Yes.

THE COURT: No, I'm talking about the FDA letter that he's already been examined about.

MR. GREEN: The FDA letter refers to the language in Paragraphs 1, 2, and 3.

THE COURT: Take another minute. If you

can't do it,

23 we're going to quit. This is really a side question.

24 MR. BERKMAN: Your Honor, the language speaks for

25 itself.

THE COURT: That's what I think. It has to do with a labeling question that isn't even involved in this case.

MR. GREEN: It has to do, your Honor, with an AIDS warning --

MR. BERKMAN: Mr. Green --

MR. GREEN: -- of an AIDS warning which we were asked to remove from our promotional material.

That's all right. Fine. Thank you very much, Doctor.

THE COURT: All right. Thank you. You may be excused.

(Witness excused.)

THE COURT: Call your next witness.

MR. GREEN: Your Honor, our next witness is Dr. Charles Abildgaard.

MR. BELL: May we take a moment to take this down?

THE COURT: You can be doing it while we're moving ahead.

MR. BELL: May I pass to the jury a copy of the Doctor's CV?

THE COURT: Yes.

(Witness sworn.)

CHARLES ABILDGAARD, DEFENDANTS' WITNESS, DULY SWORN

DIRECT EXAMINATION

BY MR. BELL:

Q Would you please state your name for the record.

A Charles Abildgaard.

Q Can you spell your last name.

A A-b-i-l-d-g-a-a-r-d.

Q You're a physician practicing medicine?

A Yes.

Q Is there any particular area of specialty that you devote your attention to?

A My practice has been in pediatric hematology, oncology.

Q Does that cover the treatment of hemophilia?

A Yes.

Q To what age level do you treat patients in pediatric hematology?

A Usually up to about 16, but in some chronic disorders like hemophilia, they're followed until they're young adults by pediatric hematologists.

Q Is there a difference in the treatment of hemophilia in adults as opposed to children?

A Not the specific therapy, no.

Q I've given the jury a copy of your CV. I don't want to go through it in great detail, but, Doctor, can you give us a short, brief, concise statement of your medical education

23 starting with where you went to medical school?

24 A I went to medical school at Stanford University; then I had

25 an internship at Boston City Hospital. I completed my

pediatric training back at Stanford.

And after three years that I served in the canal zone, I came for a pediatric-hematology-oncology fellowship here to Chicago and that was at Children's Memorial Hospital and at the University of Illinois.

Q What is the fellowship? Can you explain to the jury what that entails and what that is?

A That's a training period for developing skills and expertise in various subspecialties. In my case, that was in the treatment of children with blood disorders, leukemia, solid tumors of childhood.

Q Did that also include hematology as it related to hemophilia?

A Yes.

Q After your fellowship, where did you next go?

A I was at the University of Illinois until 1968 and then moved to the University of California Davis where I remained until about two months ago.

Q So from 1961 through 1968 you were at the University of Illinois?

A Yes.

Q What was your position at the University of Illinois?

A Well, I was initially an assistant professor of pediatrics,

and I was in charge of the hematology-oncology activity because

the person that I had trained with at the University of

Illinois -- at Children's Memorial had become the chairman of the department there.

Q In relation to the administrative responsibilities of caring for hemophiliacs, what position did you occupy at the University of Illinois?

A I supervised care of the residents and fellows that were in training with us and had some direct involvement in care of individuals with hemophilia.

Q When you left in 1968, were you a professor of medicine?

A Professor of pediatrics.

Q Then where did you go?

A University of California, Davis.

Q What did you do at the University of California, Davis?

A A similar position. I was professor of pediatrics, and I developed -- that was a new medical school. And I developed the hematology-oncology service there over the years and was responsible for clinical care and teaching in that area.

Q Now, when you were at the University of Illinois, in addition to your clinical responsibilities or caring for patients, did you also have any research interests?

A Yes, I did.

Q What was the area of your research interest?

A Did you say University of Illinois?

Q Right.

A Well, there were a number of areas, but one included

clinical treatment of individuals with hemophilia including clinical trials of the then new Factor VIII concentrates.

Q When were those clinical trials, Doctor?

A From -- with one very early concentrate, probably 1961 and '62 and then probably '65 -- '64, '65, '66, with the second one that we studied while I was there.

Q Would it be accurate, Doctor, to say that you were one of the first physicians in the world who was working with factor concentrates in clinical trials?

A Well, there were people around the country and in other places, but, yes, we were among the first.

Q You published papers on those clinical trials?

A Yes.

Q Doctor, can you explain to the jury what a clinical trial is as it relates to the use of a new medicine?

A Well, in order to assure that a new medicine is both safe and effective, it has to be tried in patients who are appropriate subjects for receiving that medicine; and in the case of Factor VIII concentrate, that obviously only applied to boys with hemophilia or men with hemophilia.

And using that as an example, after a

material had

22 been subjected to various exacting testing for safety and

23 purity in the laboratory by the manufacturer, then clinical

24 trials were initiated to see, one, did the Factor VIII activity

25 increase to the left that one would expect given what was in

the vial of the concentrate; and would -- did that Factor VIII activity stop bleeding? Was the material effective?

And until the FDA is satisfied about whatever the drug is, that it is both safe and effective in humans, that's all required before licensure. This varies greatly with the kinds of drugs. There are some drugs that have toxic side effects, and some of the initial studies in chemotherapy drugs are done to see what an individual can tolerate. That's a bit different than in the case of the Factor VIII concentrate.

Q Continuing with your years at the University of Illinois, up through the time that you were at the University of California, did you continue research pursuant to hemophilia?

A Yes.

Q Did you also continue doing clinical trials and various investigative research into new types of therapy for hemophiliacs?

A Yes, I did.

Q Can you tell the jury what different types of therapy have developed over the years in the treatment of hemophilia?

A Well, it came a long way from the initial concentrates which were -- although they were a big step above what I first had available when I first started treating boys with hemophilia, which was just whole plasma. Over that period of time -- over the past approximately 30 years, it progressed from a moderately purified product that had great advantages in

terms of the ease of administration to gradually more and more highly purified products and products that were treated to render them more safe.

When the HIV problem arose, that obviously made a great concern when it became known that this was transmitted by blood products. That was obviously a concern. There had already been a concern about hepatitis transmission, and I think that it is fortunate that there was something already going on and close to the point of availability for clinical use that did -- was effective in killing virus.

Although the initial heat treatment processes for concentrates weren't really as effective as they had hoped for hepatitis -- and that was what the direction of the research was initially -- it turned out to be very fortuitous that that heat treatment was effective in getting rid of HIV.

Now, that was -- at the time that was all developing, we didn't even know that there was HIV because the virus had not yet been identified by the time the heat-treated process was applied to the Factor VIII concentrates.

Moving beyond that time even more highly purified products from plasma developed where the Factor VIII was pulled out by an antibody, so-called monoclonal antibody products, and beyond that in the last several years there have been licensed two products made by recombinant techniques where the human gene for Factor VIII is put into animal cells. These are grown

animal cells produced human Factor VIII, which is then purified, and in the last several years I had the opportunity of doing clinical studies with one of those recombinant products.

So it's come over that period of nearly 30 years from -- or certainly from the time I started treating boys with hemophilia from the availability of only whole plasma or whole blood to now, at the present time, a totally pure form of Factor VIII that is not derived from blood at all.

Q This is a continuing development in medical science and technology?

A Yes.

Q What does the future hold for us, Doctor?

A Well, hopefully the future holds actual correction of the genetic defect in individuals with hemophilia by so-called gene therapy.

Now, I'm certainly not an expert in that or involved in that, but it's a very exciting area of research. There have actually been attempts in one kind of hemophilia to insert the gene to replace the defect. This was done in China. This is

not successful yet, but there's a great deal of effort going on to be able to actually correct the defect -- if not all the way to normal, then at least to convert an individual with severe hemophilia to one with mild hemophilia, which would greatly change their life. I think it's probably some years away,

although that's a big unknown.

The rapid development of the recombinant Factor VIII product from the time that the Factor VIII gene was isolated was remarkably fast, much faster than any of us had anticipated, because that took place in a very short span of years. It may be longer, but the future does hold the prospect of actually correcting this defect.

Q Doctor, the research that has given rise to these new medical developments and treatment for hemophilia, that comes from the funding by grants? How is that funding?

A Well, most of the funding for medical research in this country, for basic medical research, comes from the National Institutes of Health and other large foundations.

Some of the support for clinical evaluation of new drugs, which is required for licensure, some of that support comes from the companies that are producing those drugs.

Q And that is a very important part of the research process and the development of these new advanced procedures and treatments?

A Well, until the -- until adequate clinical studies are done, the new treatment is not available because it can't be licensed.

Q Doctor, you have published quite a bit about your research, haven't you?

A A number of papers, yes.

Q And I won't go through them, but I believe you have somewhere in the neighborhood of 90 separate journal articles and chapters you have written?

A Approximately.

Q A number of additional abstracts you have given?

A Yes.

Q In addition to your research and your clinical work with hemophilia, you were also from 1983 to 1993 the chairman of

Region Nine of the Hemophilia Comprehensive Care Program.

Can you tell the jury what that is?

A About in 1976, the Maternal Child Health Division began to support centers for comprehensive care of hemophilia. We were one of the first 25 centers funded by that resource.

After the first few years of that program, the program was expanded and so-called -- by a so-called regionalization. In California there were already five funded comprehensive care centers.

Now, a comprehensive care center was developed to provide care by all of the kinds of specialists that were needed for the treatment of an individual with hemophilia. And that might be a hematologist, an orthopedist, a physical therapist. Obviously since the involvement of HIV, it has also included an infectious disease specialist.

Region Nine that you mention actually is a federally designated region in California, Nevada, Hawaii, and some of the territories in the Pacific. And so Region Nine was to coordinate comprehensive care in that area.

There were about 10 actual comprehensive care centers within California. There has been one developed in Hawaii. In

Nevada, although they have a hemophilia chapter that has identified many patients, they have yet to develop a comprehensive center.

But my role was to help -- I was on the chair of the

coordinating committee which involved representatives from each of those centers. We had annual meetings, and it greatly improved communication between the people, not only the physicians, but the social workers, the nurses, all of those involved in caring for individuals with hemophilia throughout that region.

Q How many hemophiliacs came under the care of physicians within your region that you were the chair of?

A Well, I think there was an estimate of approximately 2,000 individuals with hemophilia. I may be off a bit on that. And I can't tell you exactly how many of them received care at comprehensive centers. Some of them were followed by organizations like Kaiser. Some were followed in the military.

But we made an attempt to make the services of at least periodic visits to comprehensive care centers available to all individuals with hemophilia in the area.

Q Was the comprehensive care program an advancement in the care of hemophilia?

A I think it was a great advancement because hemophilia is a rare disorder. The average physician doesn't see an individual with hemophilia, and it certainly is not a practical effort to try to teach every doctor everything there is to know about

hemophilia when he may never see such a patient.

The referral of individuals with hemophilia to so-called comprehensive care centers where there are physicians

and other medical personnel who are familiar with the problems of hemophilia, both from the standpoint of diagnosis and appropriate treatment and appropriate education of the individual in the family -- that has been a big part of the effort of comprehensive care centers is to teach the individuals as much as possible about their own disease.

And I think it has been a great advance. It has been looked on as really a sort of a model, and it is unique in that it is really the only kind of categorical program within the federal government that provides support to a specific disease.

Q As a result of these programs, the learning and education programs as well as the comprehensive care facilities themselves, did you find hemophiliacs to be knowledgeable about their disease?

A Well, there is a great spectrum of that like there is among people, but I think yes.

MR. RING: Judge, I think this is just hearsay.

THE WITNESS: Individuals with hemophilia become very well informed.

MR. RING: There is no foundation for this.

THE COURT: Overruled.

BY MR. BELL:

Q Doctor, during that same time frame as well, you were also the liaison representative to the Bureau of Maternal Child Health. Can you explain what that was and what your functions

were in that capacity?
A Well, the Bureau of Maternal Child Health was the funding agency for the comprehensive care programs, and I was asked in about -- I don't remember the date -- 1987 or so to function as liaison to help maintain good communications between the Maternal Child Health Bureau and the hemophilia program and all of the treatment center directors.

And in that role, I helped organize a number of meetings, national meetings, for treatment center personnel.
Q Was that responsibility for the rendition of hemophilia treatment throughout the entire United States?
A Well, the meetings were national meetings in maintaining communication with all the treatment center personnel, yes.
Q Your responsibility of liaison, was that liaison on behalf of the entire comprehensive care program in the United States?
A Yes, it was.
Q Doctor, also from 1971 through 1985 with a couple of small breaks in there, you were on the Medical and Scientific Advisory Council of the National Hemophilia Foundation, right?
A Yes.
Q Can you explain to the jury what that was, and I think the jury has heard it referred to before as MASAC?
A Well, MASAC was an advisory committee made up of physicians

that were representations from social service and nursing and I believe mental health in the form of a psychiatrist.

This was a representation from physicians around the country who were involved with hemophilia care, who were supposedly experts in hemophilia care.

The purpose of that council was to provide medical and scientific advice to the National Hemophilia Foundation, which is a lay organization started by family members, parents and individuals with hemophilia to promote education and develop support for the care of hemophilia.

Q As part of your responsibility on MASAC --

First of all, were you paid to be on MASAC?

A No, that is a voluntary position.

Q So all of the physicians, scientists, psychiatrists, social workers, that served for MASAC were unpaid volunteers?

A That is correct.

Q And the purpose --

What was the purpose of you actually being on MASAC?

A The purpose was to review -- to respond to questions actually that the board of the National Hemophilia Foundation had, to review educational activities, to maintain communication with all of the people treating hemophilia throughout the country.

Basically it was to promote better care for hemophilia.

Q In promoting that better care and in communicating with all

the treaters, did MASAC also advise as to appropriate treatment or recommended treatment for hemophilia?

A They did from time to time, yes.

Q And as part of the educational programs of the National Hemophilia Foundation, did they also send out not only to doctors, physicians, treating hemophilia, but also to chapters and persons with hemophilia, various pieces of information about the disease and developments?

A Yes, they did.

Q Now, Doctor, I want to take you to the middle of 1982, July of 1982, when the CDC first released information about three hemophiliacs coming down with what then were called opportunistic infections.

Do you know if the National Hemophilia Foundation was aware of that event?

A Yes, they were.

Q And did the National Hemophilia Foundation at some time thereabouts send out a bulletin to all patients or chapters advising about these three individuals who were hemophiliacs who had come down with opportunistic infections?

A Yes, they sent a brief communication which went to the chapters. They didn't mail directly to all of the patients in the country, but it was up to the chapters to get this information disseminated to their membership.

Q And, Doctor, do you have that in front of you? I believe it

is Alpha Exhibit Number 2.

A Yes, I do.

LAURA M. BRENNAN, Official Reporter

Q Have you seen this document before?

A Yes.

Q And is this the type of document that the National Hemophilia Foundation was sending out to patients in or about that time?

A Yes. This is actually the first one of this particular type.

Q What was it that this first bulletin did?

A Well, the first bulletin was to make everyone aware of these -- of the report in the MMWR of three individuals with hemophilia who appeared to have developed what was being -- I am not even sure if it was being referred to as AIDS at that time, but they had developed the same type of opportunistic infections and had died, that had -- that were being reported in much larger numbers in other segments of the population.

Q Now, this document, Alpha Exhibit 2, is dated July 14th of 1982, isn't it?

A Yes.

Q And the MMWR was actually published on July 16th.

Was there a relationship or liaison between the CDC and NHF as far as communicating information back and forth about hemophilia?

A Yes.

Q And who was it that was involved in that communication?

A Well, the NHF medical directors and other administrative

leaders I think were in direct communication with people from the CDC.

The one that I knew over the years who had the major responsibility for that communication from the CDC was Dr. Bruce Evatt.

Q So the National Hemophilia Foundation was disseminating information rather quickly?

A Yes.

Q Now, did you thereafter receive a letter in context with your affiliation, of your involvement as a treater of hemophilia from the National Hemophilia Foundation, with regard to what was then just known as opportunistic infections in these three hemophiliacs?

A Yes, I did.

Q Who did you receive that letter from?

A That was a letter from Dr. Aledort.

Q What did that letter say?

A It -- I have a copy here. Do you want me to read that or just --

Q That is exhibit -- Alpha Exhibit Number 43. Just generally, Doctor, what was it that that letter said?

A Well, this was to alert physicians at treatment centers of the occurrence and the report in the MMWR of three cases of

pneumocystis pneumonia in individuals with hemophilia, just to make that awareness, and also with the request to distribute

this information to other physicians and providers of care to people with hemophilia.

Q So, Doctor, is this all part of the information exchange that was going on between the National Hemophilia Foundation, the Medical and Scientific Advisory Council, the physicians who were treating hemophiliacs and hemophiliacs themselves, the chapters and the various governmental agencies, such as the CDC?

A Yes. There had been an information exchange established prior to the -- this particular problem, which was to communicate and exchange new information about hemophilia treatment to those involved in that.

Q Now, those various bulletins and alerts continued for quite some time, and I believe they have all been previously marked by Mr. Barr as -- I don't recall the exact exhibit number.

Later on, toward the end of the year, some more information began to be developed, and in January was there a meeting of MASAC?

A Yes, there was.

Q January 14th of 1983?

A Yes.

Q And I believe you have up there the recommendations of MASAC from that?

A Yes.

Q Identified as Alpha Exhibit Number 17?

A Yes.

Q Is that a copy of the actual recommendations from the Medical and Scientific Advisory Council that you were a member of?

A Yes, it is.

Q What were the recommendations at that point in time to prevent AIDS in persons with hemophilia?

Let me do it this way, Doctor. Was there any change or any recommendation that established patients who were severe hemophilia A patients, deficient in Factor VIII, to change their use of clotting factor concentrates?

A No. There was not a recommendation for individuals who had been treated extensively to do anything different at that time.

Q Stephen Poole would come under the heading of that type of patient, wouldn't he?

A Yes.

Q There were some recommendations for changes to newborn infants, newborns and infants under the age of four?

A Yes.

Q And there was also a recommendation with regard to the use of DDAVP. What is that, Doctor?

A DDAVP is a drug that has a number of uses. It is called a synthetic vasopressin, and what that means -- it is something

that -- it was used in relation to hemophilia because it stimulated release of Factor VIII.

It also benefited individuals with another bleeding

disorder, von Willebrand's disease. But it stimulated release of Factor VIII in a patient with mild hemophilia, and if they had at least 5 percent or more, it might increase the level to 10, 15 percent and might allow them to be treated with that rather than needing replacement therapy with a blood product or cryoprecipitate.

Q At the time that this recommendation was made in January of 1983, was DDAVP licensed for use in the United States?

A No, it wasn't.

Q Do you know when it became licensed?

A I believe it was about April of that year.

Q So you could not use it until April of that year?

A No, and that had been sort of a frustration for me.

Q Had DDAVP been around for quite some time?

A DDAVP, I don't know the exact year, but it had been available and studied extensively and used extensively in Europe for several years.

Q Do you know why it was not licensed in the United States at the time this recommendation was made?

A Well, there are many examples like this of drugs that are developed in other countries, but the FDA requires specific clinical studies and sometimes even more extensive studies to be

repeated or done in the U.S. before they agree to license a product like that.

LAURA M. BRENNAN, Official Reporter

Q. Can you give the jury an example of why that's true?
A. Well, probably the best known example that justifies some of the sometimes what seem to be frustrating delays would be the case of Thalidomide, which was a drug that was developed in Germany for women to combat nausea in pregnancy and led to a terrible disaster with many, many children being born without limbs with serious congenital abnormalities.

That drug, that kind of disaster was diverted and avoided in this country as a result of the FDA's very stringent requirement for further study. I think that's probably the best example that justifies all of the extra repeating of studies.

Q. Now, Doctor, at that January 14th meeting, there were also some recommendations to the industry, the fractionators of plasma, weren't there?
A. Yes.
Q. And, Doctor, during the time that you were involved in MASAC, did you form an opinion as to the response that the industry had to the recommendations made by the medical and scientific advisory committee?
A. Well, my recollection from attending that meeting was that the industry representatives were very responsive, willing to

follow any recommendation that was an appropriate recommendation that could help the situation.

The problem was it was still a very big mystery, and

recommendations that were made were made with just the limited information that was available at that time. But in regard to responsiveness, yes, I believe they were quite responsive.

Q. Now, Doctor, all of those recommendations were sent out in another patient alert, chapter advisory, and medical bulletin on January 17th. Do you have that in front of you there?

A. Yes.

Q. That's Alpha Exhibit No. 48?

A. Yes.

Q. I believe attached to this were copies of the recommendations that we have just spoken about.

By January 17th now of 1983, how many medical bulletins had gone out on the subject of AIDS and hemophilia?

A. Well, this was labeled as the fifth medical bulletin and the sixth chapter advisory.

Q. And included in this was a press release with regard to hemophilia and AIDS?

A. Yes.

Q. And it talked about what had happened at the January 14th meeting?

A. Yes.

Q. Now, Doctor, in the very bottom, it's rather small print, but it talks about the Hemophilia Information Exchange?

A. Yes.

Q. And I take it that what that is is the actual providing of

information to these news bulletins and patient alerts and chapter advisories and the medical bulletins?
A. Yes.
Q. Can you read what that says down at the bottom for the jury?
A. It says, "The Hemophilia Information Exchange is made possible with funding from the Office of Maternal And child Health of the United States Department of Health and Human Services.
Q. So this was again part of the cooperative program between the United States government, the Centers for Disease Control, the FDA, and the National Hemophilia Foundation to disseminate all of the developing information about AIDS and hemophilia to not only the physicians treating hemophilia but also the chapters and the patients themselves?
A. Yes.
Q. Now, Doctor, continuing on with this program of education and information, did the National Hemophilia Foundation send out a pamphlet of questions and answers about AIDS and hemophilia for the benefit of hemophiliacs themselves?
A. Yes.
Q. And I believe that's Exhibit No. 50, Alpha's 50. It's dated August 23rd of 1983?
A. Right.

25 Q. How did this document come into being, Doctor?

A. Well, I wasn't involved in the development, but I believe that this was a result of interaction between people at NHF and the CDC to try to make available as much as was known. There were obviously not all the answers at that point.

Q. If you look on the last page, Doctor, page 6.

A. Yes.

Q. At the bottom there, can you read that acknowledgment?

A. "This brochure was compiled and published through a cooperative effort between the Centers for Disease Control and the National Hemophilia Foundation. Special appreciation is extended to NHF's medical and scientific advisory counsel and NHF's medical co-directors for their expert" -- this is blurred here -- "advice in the preparation of this material. In addition, we appreciate the ongoing advice and support from treatment centers across the United States and other medical experts in the field of hemophilia."

Q. And this document as well, Doctor, was also funded by the United States government?

A. That's correct.

Q. Now, as far as this cooperative effort with the CDC, is that your understanding of what Bruce Evatt and others at CDC were doing with NHF as far as providing what to them was the

best available information?

A. Yes.

Q. Doctor, what is this document?

A. It's a series of questions and answers related to AIDS.

Q. We'll be getting a copy of this to the jury afterwards, but perhaps we'll just pull out a couple of very short ones.

Doctor, on page 3, under a heading "What To Do," can you read that question and answer?

A. "Question: Should the hemophiliac change or stop treatment with Factor VIII or Factor IX?

"Answer: Hemophiliacs are urged not to withhold treatment if it is medically indicated. At the present time, there is no specific evidence to warrant changing the use of Factor VIII or Factor IX. By all means, do not modify treatment on your own. If further treatment is withheld, complications will result that can lead to a crippling and life threatening hemorrhage. These complications will require an increased use of factor. Any questions and/or concerns you may have over this issue should be directed, be discussed with your physician or treatment center."

Q. Doctor, from your own understanding and experience, was that, in fact, the best available information on that subject at that time?

A. I believe it was.

Q. Doctor, can you read the next question and answer?

A. "Question: Do heat-treated products offer protection from AIDS?

"Answer: It is not known if the heat treatment of

concentrates has any effect on their potential to transmit AIDS. It is becoming apparent that while some viruses are heat sensitive, others are not. Further studies are needed before it will be possible to determine which viruses are inactivated by the heat-treated coagulation products now being offered.

"Moreover, at the present time it has not yet been proven that AIDS is caused by a virus. NHF's medical and scientific advisory counsel will continue to review new data concerning heat treatment."

Q. And, Doctor, is that also based on your experience and understanding of what was available at that point in time the best knowledge that was forthcoming for the Centers for Disease Control?

A. Yes.

Q. Doctor, there came a time that NHF and the medical and scientific advisory counsel finally did recommend the use of heat-treated products for the treatment of hemophilia. Do you recall that?

A. Yes.

Q. What was the first time they did that in writing?

A. Well, they made reference to -- I don't have the exact date they made reference to considering using heat-treated products

for some patients, some, not all. And it was, I think, in October of 1984 that they recommended seriously considering the use of heat treatment, heat-treated products for all patients.

LAURA M. BRENNAN, Official Reporter

Q. When you say that previously NHF had recommended the use of heat-treated products in some, but not all, what category of patients was it recommended for? Was that the infants?

A. It was recommended to be considered for young infants, infants, young children, individuals who had never been treated, or those that were treated very rarely.

Q. So for individuals like Stephen Poole, who were established severe Factor VIII deficient hemophiliacs, until the October 1984 recommendation, was it always recommended by the NHF and MASAC that their use continue with the then not heat-treated products?

A. Well, it was -- I would put it another way. They did not make a recommendation for use across the board for all patients until October of 1984. Some individuals were treating all patients prior to that. Some were treating just those in the category I mentioned earlier.

There were concerns about heat-treated product, because it was a new thing. It was an unknown as well. And one of the concerns was that this might have altered the Factor VIII protein so that it would create more antibodies or inhibitors. And that would not be something that would

necessarily be recognized immediately.

When an inhibitor occurs, and it occurs already in a significant number of people with hemophilia, it makes their treatment much more difficult. So there was concern that this

product might in itself create more problems.

And, again, it was an unknown. It was also unknown as to whether the heat treatment was going to benefit or prevent HIV or AIDS infection, because the HIV, the human inmmunodeficiency virus, had yet to be identified. And until that was possible, and it could be tested, there was no way to know for certain whether this was going to solve the problem.

Q. The actual recommendation is under C. Can you read the first paragraph of that, Doctor?

A. This is from Exhibit 56?

Q. Exhibit 56.

A. "We do not yet have sufficient data of scientific nature to know with certainty that viral attenuated, quote, heat-treated coagulation factor concentrates should now be universally adopted. However, very preliminary data do suggest that the HTLV-III is heat sensitive. Further, we do not know whether hemophiliacs who are positive for antibody to HTLV-III have been exposed to a living virus capable of causing AIDS or have developed effective immunity against AIDS.

"Because heat-treated products appear to have no increase in untoward effects attributable to the heat treatment, we now recommend that centers -- that treaters using

coagulation factor concentrates should strongly consider changing to heat-treated products with the understanding that the protection against AIDS is yet to be proven. We again urge

a prospective national study of the use of these and other materials in patients not previously exposed to pooled blood products."

Q. That's all right, Doctor.

What number bulletin is this now?

A. This is medical bulletin 15, chapter advisory 20.

Q. And those are all bulletins and advisories relating to AIDS and hemophilia that the National Hemophilia Foundation and the medical and scientific advisory counsel had been sending out over it's now a year and a half, two-year period?

A. Yes, yes.

Q. And that was consistent with the efforts made by the National Hemophilia Foundation to educate and fully apprise people with hemophilia of the problems of AIDS?

A. That's correct.

Q. And also physicians who were treating --

A. Yes.

Q. -- patients with hemophilia?

MR. BELL: Your Honor, if you wanted to take a break, this may be -- I'm going to another area now.

THE COURT: All right. We'll take a 10 minute recess.

(Recess.)

25

LAURA M. BRENNAN, Official Reporter

(The following proceedings were had in open court in the presence and hearing of the jury:)

THE COURT: Please be seated.

DIRECT EXAMINATION (Resumed)

BY MR. BELL:

Q Doctor, let's now talk about Stephen Poole. When was he born?

A In 1985 -- I'm sorry. 1955.

Q Thank you. Shortly after he was born he was diagnosed with hemophilia?

A Yes, within about a year.

Q Do you know what brought on the diagnosis of hemophilia, what event?

A I believe he had an injury to his tongue and was bleeding, and that led to the diagnosis.

Q Was there something significant about that bleeding that gave rise to some concern?

A Well, because it went on for a prolonged time.

Q How long?

A Several hours.

Q Is that a concern if you bite your tongue and it goes on bleeding for a number of hours like that?

A Lots of children bite their tongues, and

although --

depending on how deep they bite them and they bleed for a while. Normally it stops within actually minutes.

Q This went on for a number of hours?

A Yes.

Q What type of hemophilia was Stephen Poole diagnosed with?

A With Factor VIII deficiency, classical hemophilia. Severe classical hemophilia.

Q What do you mean by "severe hemophilia"? What does that term mean?

A It's usually defined by the level of the clotting factor. Individuals with severe hemophilia ordinarily have less then 1 percent of the normal amount measurably.

Q What happens to people who have less than 1 percent of the clotting factor? How does that mechanism work in the body such that they are disabled?

A Because with severe lack of this particular clotting factor, minor kinds of injuries -- sometimes not even those that would be noticed by the individual -- can lead to bleeding later, particularly bleeding in joints.

With more severe injuries the bleeding starts much more rapidly, and obviously with injuries that -- major lacerations, or the kind of trauma that occurs with surgery,

lead to prolonged bleeding.

Q So trauma in a young child as he's learning to walk and hits himself, he can have a bleed that continuous?

A Yes. And with young children it's pretty hard to avoid all of their trauma.

Q What about spontaneous bleeds?

A Well, spontaneous bleeds probably always resulted from some kind of motion or injury, but it would have been so minimal that either the parent or later on the boy wouldn't necessarily have known what he did to later result in a bleed.

Q When we refer to a spontaneous bleed, what is that, Doctor?

A My definition would be a bleed that occurred without specific recognition of an injury.

Q You've reviewed all of Stephen Poole's medical records?

A Yes.

Q That's that large box over there, those are his medical records?

A Yes.

Q Can you tell the jury what Stephen Poole's early years were like as a hemophiliac; what types of problems did he have?

A Well, he had a variety of kinds of bleeding, mostly into joints; bleeding in the soft tissue; bleeding after injuries to the head; developing lumps of blood under the scalp; and, I believe, some lacerations.

Because he lived away from medical care in terms of

where he was treated, at the University of Illinois -- usually he went there if something wasn't working locally, which means that also his treatment was usually delayed. And in those early years the treatment was primarily with plasma in which there was a great limitation as to how far one could correct

the clotting defect. With the safe dose of plasma, you could only get somebody up to about 20 percent of normal level.

Q What does that mean in terms of a hemophiliac's life, life-style?

A Well, it meant for him that he very early in life developed significant changes in his joints. He had contractures which meant that he couldn't fully extend his elbows or his knee particularly. It meant that he spent a considerable amount of time in the hospital either for treatment of individual bleeding episodes or for attempts to straighten out joints that had been contracted and deformed because of the bleeding into the joints.

Q I think we've heard that Mr. Poole was in the hospital approximately 90 times for his hemophilia early on there. Is that what you would expect from someone who is suffering from severe hemophilia?

A Well, that's what was unfortunately the case in that time frame when he was growing up, yes.

Q Why did you see that many hospitalizations?

A Well, partly because -- primarily because of

the

limitations of the treatment that was available.

When one could only treat with plasma and plasma had to be given to the hospital, first of all, that lead to most patients not coming until they had something pretty severe, which meant that the treatment was being given much later than

what has developed in later years. So I think the limitations of the available therapy and the fact that most patients were treated after their bleed had really progressed much further than we would like to have had to deal with is what created the problem.

Q Did that also occur when cryoprecipitate was being used?

A Cryoprecipitate allowed one to achieve much higher levels because you could give more cryoprecipitate and get a higher concentration of Factor VIII in the patient. It still primarily was given at hospitals or emergency rooms because it had to be maintained frozen. It was somewhat cumbersome to use, but it was a big advance because it allowed achieving a higher level in the individual.

Q Was there still a delay in treatment that was seen in hemophiliacs?

A Well, the delay in treatment still occurred until really the development of concentrates that could be given more rapidly and primarily the development of home treatment which allowed the patients to be treated almost as soon as they could

recognize a bleed.

Q Doctor to put it in the context of Stephen Poole, in reviewing his records of his early treatment with plasma or cryoprecipitate, did you find that he would come to the hospital where the bleeds had already been in progress for considerable amounts of time?

A Most of the ones that I reviewed certainly sounded like the bleed was well-established before it even was treated including several hospitalizations where he received cryoprecipitate.

Q What does that mean in the context of damage to the joints or the various organs?

A Well, the aim as the possibility of early therapy developed both the treating physicians and the patients sort of had to learn that if you could treat promptly, get the level up high, that could be done first as an outpatient; and then it evolved into the patients being able to be treated in their own homes.

And it was a learning process on both sides, both for those of us treating patients that we could accomplish much more, and the patient learned that by getting there early one dose might stop something and they could avoid being hospitalized for several days.

Q Doctor, you testified that you were one of the instrumental researchers in the area of clinical trials for Factor VIII concentrates. You did that at the University of Illinois?

A Yes.

Q At some point in time was Stephen Poole placed on factor concentrate therapy?

A He was not at the University of Illinois as far as I know. He did receive Factor VIII concentrates later on in his course.

Q Do you know approximately when that began?

A I think it began in the mid 19 -- probably mid-to

early-1970s. There are some gaps in the records, so I don't think every single treatment was represented in the medical records that I reviewed, but somewhere during the mid-1970s, he was receiving concentrate.

Q Was concentrate a significant advance in the treatment of hemophiliacs like Stephen Poole?

A Well, I believe that it was. And I think as one example just in his medical records, from the point -- up to the point where he went on home treatment, which was done with concentrate and really made possible by concentrate, he had been hospitalized very, very frequently, sometimes several times a year.

For a period of nearly ten years, there was no evidence of any hospitalizations, and I would think that that would suggest certainly the benefit of early treatment had kept him out of the hospital.

Q That's early treatment with factor concentrate?

A Yes.

Q What was it about factor concentrate that allowed this early treatment?

A Well, it was because it was in a bottle that could be kept at home. Some products could be kept on the shelf, some in the refrigerator. This could be reconstituted by adding fluid -- water back to the dry Factor VIII material, and within minutes that could be put into a syringe, injected intravenously.

And it meant that children who, for example, would wake up in the morning with one of these so-called "spontaneous bleeds" could be treated and sent to school the same day or older individuals could go to work. So that was possible because such a convenient form of treatment was then available for use at home.

Q Now, these bleeds that hemophiliacs were getting even with Stephen Poole, were they life-threatening?

A Certainly some were life-threatening.

Q What types of bleeds would be life-threatening?

A The most serious concern and probably the most life-threatening bleed is one that's intracranial, within the skull affecting the brain; but other types of bleeding can be equally life-threatening.

Very large bleeds into the abdominal cavity and into the back part of it which might be hard to recognize or detect early. Those certainly are life-threatening, and uncontrolled bleeding externally obviously is life-threatening just from blood loss.

Q We heard before that one of the benefits of home care or of

factor concentrates in early treatment was that hemophiliacs could sense that they were going to have a bleed and then treat themselves. Can you explain to the jury what that is, what that means?

A When it became possible to treat earlier and try to treat

in advance of a big, swollen, hot tender joint where the patient couldn't even stand up or move their extremity, as I mentioned, the physicians had to learn that you could do better than that, and the patients learned. And they had to learn to recognize at the first sign of something that they knew if they didn't do something, it was going to develop into -- and this usually involved joint bleeds.

And, in fact, it became -- one of the descriptions was that the patient could recognize sort of an aura. Usually they described it as "tingling" or "numbness" or something, but if you looked at that joint, examined it, you wouldn't necessarily find tenderness; you wouldn't find swelling or heat, but the patient learned that if they didn't do something, then it would develop into that. And that became sort of a goal, to have patients treat at that time with the hope that it would avoid the long-term effects of more significant bleeding into the joints repeatedly.

Q. And that could only be accomplished with factor concentrates?
A. Well, it certainly could be best accomplished with factor concentrates.
Q. Now, Doctor, you've spoken about home care. How did home care develop?
A. Well, I'll try to give you my vision of how home care developed. I only really found out about it sort of after the fact. But it really started by the families and one or two mothers that I was personally aware of, not the physicians.
And very briefly, there was a woman who lived here in Chicago who had three boys with hemophilia who, actually, when she moved here from Texas brought her own, she was a nurse, she brought her supply of frozen plasma from a blood bank there.

She treated her boys at home. And she told several physicians about this, and they wanted nothing to do with it.

We followed those boys at the University of Illinois. We didn't know what she -- she never told us that. She taught another mother who had two boys with hemophilia to be able to do the same thing. And they had agreed they were going to go in and tell their physicians about this. Well, the one woman went to, her boys were then older and followed at Michael Reese Hospital, she went and told Dr. Rabner, who calmly accepted what she was doing and developed it into really a study of is this safe, is this applicable, can this be done. And he was

one of the first people who started allowing his patients to treat themselves at home having been pushed in that direction by this one mother.

I didn't learn until years later when I met the mother of the three boys that we had followed what she was doing. I met her at a National Hemophilia meeting in Los Angeles. And she knew she was going to move from Chicago and when she had agreed to come and tell this to me and when her friend was going to go tell Dr. Rabner, she decided since she was moving she wasn't going to face up to this.

But she told me many years later, because she knew that we had been sort of frustrated at times when one of her boys would come in, and we were giving him -- he was one of part of the initial studies of concentrate, and we would measure his base line level, he would have three, four percent Factor VIII, and we thought, well, something has gone wrong in the laboratory. And she had made her boys swear that they would never tell us that she was treating them at home. So this was an unknown unresolved mystery until many years later when she told me what she was doing.

That's sort of a diversion here, but that's really how

home treatment got initiated, by something that the families had learned they could do and the physicians then expanded and developed it as a program, and this rapidly spread around the country.

LAURA M. BRENNAN, Official Reporter

Q. The first programs or development of those programs with factor concentrates, those were by Dr. Rabner?
A. For the home treatment program that he wrote one of the first reports about, yes, that was done by Dr. Rabner. We started doing home treatment on various selective numbers of patients before the time I left the University of Illinois.
Q. Dr. Rabner is here in Chicago at Michael Reese Hospital?
A. He was at that time.
Q. And is that where Dr. Telfer worked with Dr. Rabner?
A. I believe she started her fellowship with him in about 1969. So she was involved in that early development, too.
Q. And when patients go on home care, is there a continuing monitoring of those patients by the physician?
A. Yes. Patients on home care in most centers are requested, they don't always comply, but they are requested usually to provide a month-to-month account of what bleeds they treated, what they used, how much they used, what the result was so that there -- because when they're on home treatment, they're really in control. They decide when they treat, how often they treat.
If there is a question, usually they call their physician, but they may not be seen at a center for periods of six to 12 months. And our goal in most comprehensive care

23 centers is to maintain some overview of what's happening by

24 getting monthly reports.

25 Q. The physician still decides what to treat with, doesn't he?

A. Yes.
Q. And Dr. Telfer in this case decided what to treat Stephen Poole with?
A. Yes.
Q. Stephen Poole had somewhat of a remarkable -- well, strike that.
What was the effect that home treatment had on Stephen Poole's clinical course of hemophilia?
A. Well, there is a fair gap in information, but from the time he went on to home treatment, about 1975, as I mentioned before, he was not in the hospital. Prior to that he'd been in the hospital very frequently. So I think that's an indication that it certainly at least kept him out of the hospital. It kept him up and around. And although he continued to have problems with joints that had been seriously damaged earlier in life, there was that 10 year period there where he didn't require hospitalization. More that than that I can't really speak to.
Q. He finally did require hospitalization in 1985?
A. Yes.
Q. What was that hospitalization for?
A. I believe that that was when he went in for elective joint

replacement.

Q. Now, the joint replacement, that was a problem with his knee?

A. Yes.
Q. Was that a problem which began when Stephen Poole was very young?
A. Yes. He had had contractures of that knee in the 1960s.
Q. Is that a result of continuous bleeding into the joint?
A. Well, recurrent bleeding into the joint.
Q. And was part of that a result of not having early enough treatment?
A. Well, I'm sure that the many episodes of very severe bleeding into the joint, which happened because of what I said earlier, we didn't have as good a treatment, people didn't come until the joints were already seriously affected, that's how that joint got damaged. And then every subsequent bleed into that joint just made things worse.
Q. By the way, Doctor, in your review of the records, did you ever see whether or not Stephen Poole had hepatitis?
A. He was said to have -- he had hepatitis in the early 1960s probably as a consequence of plasma or whole blood.
Q. He wasn't taking factor concentrates at that time, was he?
A. There weren't any.
Q. They weren't even developed or licensed?
A. Right.

Q. Dr. Telfer has testified that as she began to develop knowledge of AIDS and hemophilia, the question of cryoprecipitate came up, and she's testified that Stephen Poole

was not a candidate in her mind for cryoprecipitate. Do you agree with that?

A. If he were to have maintained the level of treatment of 100,000 units or so of Factor VIII every year, I don't believe he was a candidate.

THE COURT: Excuse me, Doctor.

MR. RING: I think he better give us the time, because I remember specifically asking Dr. Telfer whether he was a candidate, and she said that he was. Was there a different -- what time frame were you referring to?

MR. BELL: Well, I'm talking about in terms of as the information about AIDS and hemophilia came out.

THE COURT: Well, you can go into this on cross-examination.

MR. RING: Yes. Give me the part for cross, give me the part --

BY MR. BELL:

Q. Well, Doctor, let me ask it this way first. Do you have an opinion as to as information became available about AIDS, hemophilia, and blood products, on whether or not Stephen Poole was a candidate for switching over to cryoprecipitate?

A. You mean switching over in, say, 19 --

Q. 1982 or '83.

A. '82 or '83.

Q. 1982, 1983, 1984, 1985.

LAURA M. BRENNAN, Official Reporter

A. I don't think it would have been possible to maintain his level of treatment using cryoprecipitate. And I don't think it would have made any difference even if that had been done. But I don't think he was a candidate for cryoprecipitate.

Q. Why wouldn't it have made a difference?

A. Well, in regards to HIV, I think it's much more likely that he was exposed to that years earlier.

Q. We'll get to that in a little bit.

Is there anything in the records that you were able to find that supports an opinion or your opinion that Stephen Poole could not properly have been treated with cryoprecipitate?

A. Well, his use, his average use was about 100,000 units of Factor VIII a year. To use cryoprecipitate, there is only about 100 units in every bag. Bags of cryoprecipitate had to be kept frozen. They had to be thawed individually, pooled together. It was a much more cumbersome kind of thing. And although a few places in the country had attempted home therapy using cryoprecipitate, they were very few, and it was not very satisfactory, because it required a special freezer that had a recorded temperature, because if it ever thawed, it was then no

longer active. And in an adult who might require 10 or 20 bags of cryoprecipitate for a given treatment, it was just a very difficult thing to do logistically.

Beyond that in regard to any potential benefits from

theoretically being exposed to HIV, the number of donor exposures and the risk for seroconversion or exposure to HIV from receiving 100,000 units of Factor VIII from cryo was probably no different than from that amount of concentrate, because there were many, many donors involved if you get that much treatment.

There was one hospitalization for a dental extraction in 1974 when he was treated with cryoprecipitate. But it was over 200 bags in a one-week period. So that would mean that there was exposure from 200 individual's plasma. Now, at that point, that HIV was unknown. That wasn't an issue. But it's just an example that -- now, that could be done in the hospital much more readily than early treatment at home.

Q. So when Mr. Poole was on cryoprecipitate or on occasion, in one week's time he needed 200 separate bags of cryoprecipitate?

A. That's what I counted up on that one hospitalization.

Q. Now, Doctor, you indicated that when we were talking about 1982, 1983, 1984 as to whether Stephen Poole was a candidate for cryoprecipitate, you said it wouldn't have made a difference anyway. Can you tell the jury what you mean by that?

A. Well, what I mean by that is with an individual who was receiving 100,000 units of Factor VIII a year for many years in advance of that time, I think he most likely had been exposed to HIV before this whole condition was even known to anyone.

Q. Do you have an opinion as to when Stephen Poole was most probably or more probably than not exposed to HIV?

A. Well, without having a serum sample to identify when antibody first was developed in an individual, you can't say specifically. But based on the larger experience in the country on surveys where they were able to look back at serum samples and based on his Factor VIII utilization, I would say he had been exposed by early, by 1980. It could even have been earlier.

I don't think one can pin that down, because the latent period for development of full-blown AIDS can be many, many years, up to -- well, the longer this experience goes, the longer that latent period has been recognized in many individuals who remain well throughout that period and don't come down with what could be recognized clinically as AIDS for maybe nine, ten years, even more.

Q. Doctor, have you followed patients that were exposed to HIV in, say, 1980 or '81 and still today do not have AIDS?

A. Well, we can only make an assumption as to when they were exposed. But if we take it from the time we were first able to identify HIV antibody, and we had some individuals where that

was done before this was a licensed test as part of a research study, and that would have been in 1984, and there are a number of those individuals who are well and active and have no, have no evidence of AIDS by any definition to this time. And we

have to assume that a number of our patients like others throughout the country had been exposed long before we could test for an antibody.

So there's a big spread there. But the latent period where -- and by "latent period," I mean that the individual who was infected by the virus remains entirely well until they develop an opportunistic infection or have a marked effect on their immune system that can be measured in a laboratory, that time frame can go for eight, nine, ten years.

THE COURT: You've been using the word "exposed," and now you've just used the word "infected." Is there a difference between the two terms?

THE WITNESS: Probably there is. And let me retract the "exposed" and say "infected," that they had virus into their system.

THE COURT: Well, is having -- that's, I guess, what I am wondering. Well, maybe there are three situations. Is it possible to be exposed without having the virus enter your system, that is, for instance --

THE WITNESS: Well, I think --

THE COURT: -- would it be possible for someone to have some sort of relationship with a carrier but not take the

virus into one's system?

THE WITNESS: Well, I think that would be possible. But if the virus enters through whatever mechanism, if it's

within somebody's body, I think it's getting into semantics, but if the virus enters the circulation through a blood product, they are exposed. They may or may not develop an infection. I mean, we know that there are individuals who were treated with the same materials that others who have to this day still never become HIV positive and never developed antibody, never become sick.

We don't understand that. There may be things about individual immune systems that prevent infection. So I think probably there is a raw fine point between "exposure" and "infection." But once there is infection, which means that the virus is established in the body, then it can be many, many years of latency before so-called AIDS develops with all of its manifestations.

THE COURT: And then another related question is: Once infection occurs, which you define as the virus becoming established, as far as we know now, does the disease always follow?

THE WITNESS: Well, once infection -- and I would probably have to define "infection" as having resulted in antibody to the virus. I mean, that's the only way we can document that somebody has been infected. Once they develop

antibody to the virus, we are still learning what the polar natural course of this disease is and is going to be, because there are still many people who have been HIV positive who are

still well many, many years later.

So I don't think that most people look on this as absolutely 100 percent progressive fatal disease ultimately in all infected individuals. We're still finding that out. This whole era is only probably less than 15 years of experience from beginning to where we are now.

LAURA M. BRENNAN, Official Reporter

THE COURT: Thank you.

MR. BELL: Your Honor, if I may approach, perhaps we can illustrate this.

THE COURT: All right.

MR. BELL: All right, Doctor, why don't you come down here. It will be a little easier for everybody. You can come up.

(Brief interruption.)

BY MR. BELL:

Q If we put this as a time line, and what you are saying is some time in 1980 or before you had infection, is that correct?

A Yes.

Q So what you are saying is after that infection, you can go on for a long, long period of time with no symptoms at all?

A Yes.

Q Blood tests, lymphocyte counts, white blood cell counts, would those all be normal?

A Yes.

Q And then does there come a time when there is a precipitous drop in one's health?

A Well, there may be a precipitous drop or a gradual drop. It is highly variable, but there can be a very rapid change with

the onset of an opportunistic infection.

Q In Stephen Poole, when was it that you first saw the onset of an opportunistic infection, this precipitous drop in health?

A It was in 1986.

Q And that would be when he was diagnosed with pneumocystis Carinii pneumonia?

A Yes.

Q Did he also have some blood counts, some T-cell counts at that point in time?

A Yes, his -- the T-4 cells, the immune system cells, that are followed most closely and seem to be most important, the ones that are affected by the virus, were 90, and normal is over 500. 90 is considered a very low level.

About a year or so ago or within the past year, a new definition of AIDS was developed by the CDC; so that even in the absence of an opportunistic infection, if somebody had a T-4 or a CD-4 count of less than 200, they are defined as having AIDS, even if they have not been sick yet.

Now, a T-4 count of 90, from my experience, would suggest strongly that his -- this process had been in place for a long time.

Q And there is nothing unusual about 14 months earlier in January of 1985 when he had his knee replacement that he appeared to be normal as far as his white blood cell counts?

A That's not uncommon.

MR. BELL: Thank you, Doctor. I have nothing further at this time, your Honor.

THE COURT: Well, cross will be a while?

MR. RING: I think it will.

THE COURT: Well, let's take a lunch break then. We will start again at 1:45.

(The trial was adjourned at 12:25 to resume at 1:45 p.m.)

IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

PEGGY GRUCA, et al.,	)	
	)	
Plaintiffs,	)	NO. 86 C 7623
	)	
v.	)	Chicago, Illinois
	)	November 5, 1993
ALPHA THERAPEUTIC, CO., et al.,	)	1:50 p.m.
	)	
Defendants.	)	

VOLUME 17-B
TRANSCRIPT OF PROCEEDINGS
BEFORE THE HONORABLE JOHN F. GRADY

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(The following proceedings were had in open court out of the presence and hearing of the jury:)

MR. BELL: Your Honor, just a couple of very quick things. First, I would like to reopen for just a couple of questions.

THE COURT: All right.

MR. BELL: The other thing is we are going to end up with Dr. Abildgaard today, and we don't have another witness this afternoon.

THE COURT: Then somebody else is going to go.

MR. BELL: I understand Cutter is all ready to go.

THE COURT: That is no problem.

MR. BELL: Thank you.

(The following proceedings were had in the presence and hearing of the jury:)

DR. CHARLES ABILDGAARD, DEFENDANT ALPHA'S WITNESS,

PREVIOUSLY SWORN

CONTINUED DIRECT EXAMINATION

BY MR. BELL:

Q Doctor, I just have a couple more questions for you.

When I was asking you questions about the date of infection and other questions on your opinion, you understood that that was your opinion to a reasonable degree or probability, more probable than not to a reasonable degree of medical certainty?

A Yes.
Q Now, one of the jurors asked Dr. Mealey when he was on the stand, and I think you were in the courtroom when that question was asked, and perhaps you can answer it, and, that is; can you get a little bit infected with HIV?
A No. I don't believe that is the case. If you are infected, you are infected. A little bit infected would be like a little bit pregnant. It is an all or none situation.
Q Once you are exposed and are infected with HIV, you are going to go on and get AIDS?
A The experience to date has been yes, that once there is infection, there is progression.

Now, that encompasses a broad range of time, and as I think I mentioned earlier this morning, since this is a relatively new disease, we don't really understand the full picture.

But basically what we know now, is yes, once you are infected, though it may be years before something results that one is aware of, that is all it takes to do it.

MR. BELL: Thank you, Doctor.

THE COURT: Does that answer the question?

A JUROR: Yes, thank you.

MR. RING: Thanks, Judge.

CROSS EXAMINATION

25 BY MR. RING:

Q Good afternoon, Doctor.

I suggested you get a good lunch. Did you do it?

A Yes.

Q Okay.

THE COURT: This friendly beginning may not last.

MR. RING: Now, you see, you went ahead and warned them and look what that does to me.

BY MR. RING:

Q Doctor, you didn't intend to convey to this jury that you have the date when Steve Poole seroconverted?

MR. BERKMAN: Louder, Mr. Ring, please.

BY MR. RING:

Q You are not trying to tell this jury that you know the date, that you can tell the date that Steve Poole seroconverted?

A No, not the date.

Q As a matter of fact, that is impossible, isn't it?

A It is impossible to know the exact date.

Q So you are basing your opinion based on some vials of serum that had been kept in some cases and later analyzed, is that right?

A Well, when I mentioned that, that would be in reference to -- that would be the only way to document a date if one had a series of serum samples and you could go back and look.

Q Sure. So that the only way that one could tell is if you had a serum sample, is that right?

LAURA M. BRENNAN, Official Reporter

A That would give you a better idea as to how early it occurred.
Q Well, Doctor, when you say better idea, the only thing you can testify to is statistically, is that right?
A Well, it is, I think, more than statistically.
Q Well, you have got a certain amount of people whose serum had been held and years later diagnosed.

Now, is that right?

A That is true.
Q And that is the base of your opinion?
A Not in regard to this individual, no.
Q Well, we will get to that.

And, Doctor, that serum that had been kept was a small number of vials relatively speaking?

A You mean in regard to the total number of individuals with hemophilia?
Q Yes.
A Yes, it was a relatively small sample.
Q Okay. Now, Doctor, you also told us on your direct examination that two people can get a serum from the -- or Factor VIII -- let's limit it to Factor VIII -- from the same batch, and one could be infected and the other not, is that right?
A That would appear to be a possibility.
Q In fact, there were cases of siblings getting the same lot,

one infected and the other not?
A Yes.
Q Okay. So that in the final analysis, it really gets down to
the individual, doesn't it?
A Yes.
Q And like hemophiliacs, like all of us, some have an
endurance or built-in immunity against certain things and some
do not?
A Yes.
Q And the physiology of the person is very important, isn't
it?
A Yes.
Q Some are strong and can ward off infections, some are weak
and quickly succumb, is that right?
A In some circumstances, yes.
Q Well, Doctor, is the treater, if competent, in the best
position to know?
A I don't understand your question.
Q Well, Doctor, I will try to rephrase it.
You knew Dr. Telfer?
A Yes.
Q And she was at Michael Reese?
A Yes.
Q And who did she study under?
A She had her fellowship training with Dr. Rabner.

Q The one you have been talking about this morning.
A Yes.
Q You considered him a great treater?
A He was.
Q And did you look upon her any differently when she took over at his early demise?
A I didn't really know her then, but I met her some years later.
Q And when you got to meet her, Doctor, she was in the same specialty as you, hematology and oncology, is that right?
A Yes, but in medicine rather than pediatrics.
Q Okay. So you took care of the youngsters and she took them when they got older?
A Yes.
Q Okay. But it is the same specialty although I recognize there is a difference between pediatrics and us older folks.
But, in any event, you considered her a very able and competent treater?
A Yes.
Q And, Doctor, she took care of Stephen Poole at least for some years, a score of years or more until he died, is that right?
A Yes.
Q And she was the physician that he went to with this problem with the knee, right?

LAURA M. BRENNAN, Official Reporter

A Yes.

Q By the way, Doctor, that kind of a problem is not unusual in a person with his type of hemophilia, was it?

A Not for someone who grew up during the time frame that he did, no.

Q Okay. And that takes me -- to digress for another little bit. You testified that there were records that didn't show any treatment, is that right?

I mean, there are some missing records, which you explained and I think fairly so, that just show that he wasn't in for treatment?

A Right.

Q Wasn't missing records?

A Well, there was a period of time that there weren't any medical records that I reviewed when he was on home treatment.

Q On Factor VIII?

A Yes.

Q That would be consistent, wouldn't it? Once you went on Factor VIII, you could do it at home, and it would have some great advantage, as you explained?

A Yes.

Q And that explains to you, doesn't it, that he just didn't need any treatment; he was able to take care of himself at home?

A Yes, that is what I indicated. He didn't require hospitalization.

LAURA M. BRENNAN, Official Reporter

Q Yes, I know you did, and I am just reiterating.

And that, too, was one of the benefits of Factor VIII,

right?

A Yes.

Q Now, when Dr. Telfer examined him for his surgery on January

5th -- I think it was somewhere in that period -- I think he

came in on the 5th, he may have been operated on the 10th, but

that is about the area, is that right?

A Yes.

Q And she knew that he was a severe hemophiliac, right?

A Yes.

Q And she knew that he had been on Factor VIII for about 10 or

more years?

A Yes.

Q And she examined him, right?

A Yes.

Q And physically he was fine?

A Except for his joint problems.

Q Yes, well, that is what he was there for was to do something

about that.

But other than that, there is nothing that she found in

her examination, is that right?

A Right.

Q And, Doctor, she did what you, too, would have done, taken

25 complete blood culture; she did the CBCs?

A Yes.
Q And they were normal?
A Yes.
Q And then she even went and --
Lymphocytes, she checked his lymphocytes?
A That was part of the differential count of the white blood count, yes.
Q But that was an important thing, was it not?
A That is a routine thing to do.

Q. But it is important when you have a hemophiliac on Factor VIII during that period of time, wasn't it?
A. Well, it wasn't any more important during that period of time than any other time if someone was coming in for an elective operation.
Q. But if there was a decrease in the lymphocytes, it would indicate some type of infection, wouldn't it?
A. That's one possibility, yes.
Q. And if there was any indication in all the tests that were done that we talked about, Dr. Telfer as a very able treater in this field, in your field, would have checked T-cell count, right?
A. You mean based on her physical examination?
Q. And the blood count.
A. Those don't necessarily correlate with what you are going to find in a T-cell count. You do a T-cell count to do a T-cell count, because it doesn't correlate with the physical exam or regular blood count necessarily.
Q. But knowing the history of the patient and knowing what's been going around about HIV and viruses, this is '85 now.
A. Right.
Q. Wouldn't that suggest to someone that suspected any infection of HIV to have done a T-cell count?

A. If they wanted to do a specific test looking for HIV, then T-cell count would have been appropriate. And at that point,

Stephen Poole was certainly at risk for what we knew at that point in time.
Q. Well, when you do some surgery, Doctor, if you've got a patient that may have HIV, aren't the personnel, the health personnel, at risk of getting infected if there is a risk of it?
A. Yes.
Q. All right. And don't you think that Dr. Poole was concerned about the health professionals and the people working with her?
THE COURT: Dr. Telfer.
MR. RING: Telfer, I'm sorry. I knew you'd do more than just warn him. Thanks, Judge.
BY THE WITNESS:
A. Well, I would assume that she was.
BY MR. RING:
Q. Okay. So doesn't it follow, sir, that there was nothing about Stephen Poole to his treater that suggested that there was any risk of him having HIV?
A. Well, I don't know what was going through her mind. But without looking, and I don't remember the exact month that the HIV antibody test became available, but it was pretty routine policy once that was available to test all patients like this

one who had been heavily treated, test them for the HIV antibody.

LAURA M. BRENNAN, Official Reporter

Q. Okay.
A. Which would have been much more specific than doing T-cells.
Q. But in any event, as of that point in time, based on the record of her treatment, it does not appear to be something that was in her mind?
A. Right.
Q. Okay. And then, Doctor, so again, when you really get down to it, there were so many things that come into this picture other than statistics, the health of the individual, his ability to absorb infections, his ability to ward off infections, just so many things as you said earlier, no one really knows?
A. No one knows the exact date. But based on the level of T-cells when he did develop the opportunistic infection, which were as low as they were, it's very unlikely that that happened within a year or two. That most likely had been going on for many years.
Q. But there is nothing that you can really tell us with any reasonable certainty, is there?
A. Well, based on my experience following many patients who have unfortunately developed this same problem and based on having followed many of them for many years after we knew that

they were HIV positive by antibody testing and seeing them remain in good health even with normal T-cell levels for many

years before an opportunistic infection developed, and I think this has been more and more the experience, this latent period is very lengthy, and all of those are what go into my opinion.

Q. And there also have been reports of people developing full-blown AIDS within a year of infection, hasn't there?

A. I think that that is very, very rare in individuals with hemophilia.

Q. But it has been reported?

A. Well, I can't speak for that.

Q. You mean you don't know?

A. I don't know if that's been reported specifically in hemophilia, documented from the time of infection to well full-blown AIDS occurred.

Q. Then, Doctor, you have testified to doing some clinical tests?

A. Yes.

Q. On what product?

A. On several different products. The first one was the initial Factor VIII made by Hyland called Hemofil. I did clinical --

Q. You did that for Baxter?

A. Well, it wasn't Baxter then. It was Hyland.

Q. But it's Hyland, now Baxter?

A. Right.

Q. What else?

LAURA M. BRENNAN, Official Reporter

A. I did studies when the first Koate, which is a Cutter product, came out. I did studies on both Autoplex and Feiba. These are Factor IX concentrates made for the treatment of patients with Factor VIII deficiency who develop inhibitors where Factor VIII no longer works. And I also --

Q. What company was that for?

A. Well, the Autoplex was for Hyland, Baxter. Feiba is made by an Austrian company called Immuno.

And more recently, for the last four years, I was involved in clinical trials of recombinant Factor VIII made by Cutter.

Q. Okay. And this is work that Cutter paid you for, I hope?

A. Cutter paid for the expenses of doing the work. They didn't pay me. They paid for the handling of the specimens, for doing tests by my laboratory research associate. I was not paid by Cutter.

Q. So they paid your laboratory research associate and paid your expenses?

A. No, not my expenses. They paid for --

Q. The laboratory expenses?

A. They paid for the cost of doing the clinical trial.

Q. And is the same true with Baxter, Hyland when you did the clinical tests?

A. No. The initial, for the initial study with Factor VIII

in

25 the 1960s, they only provided the product. There was no

physical support. The laboratory that I worked in with Dr. Shulman at the University of Illinois was funded adequately from the NIH as a research laboratory. And so that study, also the study of Koate, there was no compensation.

Q. All right. But nevertheless, you have in the past done work for them as you've described?

A. I participated in clinical trials, yes.

Q. Now, Doctor, you told us about your participation, you told us about a lot of things, but you were talking about -- well, let's first get to some of the, some of the programs that you're involved in. One of them is you mentioned, well, it's a government funded project. You help me, okay?

A. You mean the comprehensive care center?

Q. Yes. You mentioned the region, and then there was the overall, and you were the -- what do we call it?

A. Liaison.

Q. Liaison, yeah. Would you give me that again, what it was?

A. I was asked for several years to function as the liaison between the Office of Maternal and Child Health that supervised the Comprehensive Hemophilia Treatment Center Programs throughout the country and to sort of be an interface between them and the treatment directors throughout the country. And

in that role, I helped to organize several national meetings for personnel who worked in those centers.

LAURA M. BRENNAN, Official Reporter

Q All right.

You are also a member of the AMA, are you?

A No.

Q You are not?

A No.

Q Good. Any local medical society?

A No.

Q So the only ones you belong --

Do you belong to a hemophilia society?

A I belong --

Q A medical one?

A I belong to various pediatric research societies. I have belonged to the World Hemophilia Federation, and I don't know what you are asking.

Q Well, I just wanted to know. You told me.

Now, Doctor, as liaison between -- was there a national association and then these different groups?

A No. That was not an organization. There were many -- there were over a hundred funded comprehensive care centers.

Q And these are funded by the government?

A With some -- they are funded at various levels from the office of Maternal Child Health.

Q All right. But it is a federally funded project?

A To support comprehensive care.

Q And in your role of liaison, you set up meetings with all

LAURA M. BRENNAN, Official Reporter

the states for conference?
A That was one of the things that I did.
Q That was an annual meeting?
A No, it was -- there were three or four different meetings that I was involved in. It wasn't an annual meeting.
Q But three or four meetings, are you talking about annually or --
A No, there were two or three years in between some of those meetings.
Q So these are meetings that you were instrumental in getting everyone together two, three years apart maybe, is that right?
A And we also got together usually at the time of the annual National Hemophilia Foundation meeting because those same individuals went to that meeting.

So often there was a shorter opportunity for the director of that program from the Maternal Child Health to meet with the treatment center directors, and I helped facilitate those meetings.

Q Okay. But at any rate, you had these meetings every couple of years or so.

I take it you helped set up a program for those meetings?
A Yes.

Q Okay. And on that program you determined what might be of interest to the group and had speakers?

A Well, it wasn't up to me. It was a committee that helped put together that meeting, but I --

Q Well, I was trying to give you more credit than you are taking and that is nice of you, but, anyway, this is what goes on at these type of meetings, right?

You put them together. There is a program presented?

A Right.

Q And, Doctor, you were also a member of the MASAC board?

A Yes.

Q Now, by the way, let me get back again to the time you were doing clinical tests.

Did you do any work with the FDA in connection with those clinical tests?

A Well, the clinical trials were of products that were not yet licensed.

As we talked this morning, you don't get something licensed until it has been shown to be effective and safe.

Q Yes, we have heard that. I am just trying to find --

A The FDA monitors those clinical studies.

Q We know that.

A So indirectly, yes, I was involved, but not directly with the FDA.

Q That is what I was getting at.

You never went to the FDA to present your clinical

25 trials and do anything that at the FDA for --

A On the occasion of Autoplex I did go to the FDA when information was presented.
Q Okay. With someone that asked you to accompany them?
A Yes.
Q Doctor, in connection with the Factor VIII test that you did for Baxter and Cutter, you did not deal with the FDA, did you?
A No.
Q And so when you talked about what the FDA does and these things that you discussed this morning and were just alluding to now, it was nothing of your own personal knowledge; it was just giving us an overview of what happens?
A Well, it was with my personal knowledge because I know what the FDA requires in regard to clinical trials and to recordkeeping.

We have to maintain records when they are done for clinical investigational purposes for several years because the FDA can come and review those records for up to five years or so.
Q Okay.
A So I am knowledgeable about some of the requirements in relation to clinical investigation.
Q From what you have heard from people at the hospital, you didn't go to the FDA and research this?

A No, but the FDA sends information to investigators that you have to comply with as part of a clinical trial.

Q So that is what you base this testimony about the FDA on?
A Well, --
Q I am not being critical; I just want to know what you know?
A I didn't realize that I had testified about the FDA.
Q Oh, well, you did, but, in any event, you didn't intend to hold yourself out as an expert on the FDA?
A No.
Q And then --
THE COURT: Before you leave the clinical trial subject, what does a clinical trial consist of? What kind of investigation?
THE WITNESS: Well, it depends entirely on what kind of material a drug is being investigated relevant to the Factor VIII concentrates would amount -- because there that trial has to be limited just to individuals with hemophilia.
It is not like you would give this to normal individuals who didn't have a clotting factor deficiency. So the clinical trial was to administer the material, measure, --
THE COURT: To people?
THE WITNESS: To people with hemophilia.
THE COURT: Yes.
THE WITNESS: And obtain blood samples at various periods of time to see that the recovery in the circulation and

how long it lasted was what one expected and also to treat episodes of bleeding to show that this material was effective

compared to other materials. When we first started, it had to be compared to plasma.

THE COURT: What relationship do the clinical trials have to licensing time wise?

THE WITNESS: Well, time wise?

THE COURT: Yes.

THE WITNESS: It is highly variable. Some clinical trials go for several years.

THE COURT: But they always precede the licensing?

THE WITNESS: Yes, they always precede the licensure.

THE COURT: So you can do tests on people without a license for the product?

THE WITNESS: With informed consent.

The patients are participating in the study. With the recombinant Factor VIII that I was involved with most recently, clinical trials went on for nearly four years prior to licensure.

THE COURT: Thank you.

BY MR. RING:

Q Before I get on to the next subject, you are not a virologist?

A No.

Q Nor an infectious disease specialist?

A No.

Q Doctor, your testimony this morning, I believe you said

that

LAURA M. BRENNAN, Official Reporter

people vary as to date of exposure and date of infection, is that right?

A I don't remember quite how I phrased it, but there is variation as to when individuals are exposed and how long it takes for them to show evidence of the infection.

Q And I thought you said this morning also that that is why it is -- you cannot tell exactly when one became infected?

A Well, you can't tell exactly when someone became infected without knowing the time that they first developed antibody, and even that is indirect. That doesn't tell you when they became infected.

We do know from --

The only examples of where it is known when someone becomes infected is when an individual got a paid blood transfusion or a patient with mild hemophilia got one treatment, and then in many of those instances it was many, many years before they showed any kind of indication of HIV infection or specifically AIDS.

Q So you have to know when the exposure was, when the date of infection was, and also, Doctor, to make a difference of the type of pool that the Factor VIII was drawn from, wouldn't it, or can you --

Is that an area you can talk on?

24 A Well, only to say that infection is infection, whether what

25 kind of pool it came from, whether it was from one bag of

cryoprecipitate or within a pool of concentrate. Infection is infection.

Q That is more of an area for a virologist, is that right?

A Well, I think my experience with following the development of information regarding this epidemic, particularly within the hemophilia population, gives me some insight into what has happened.

I am not a virologist and I can't answer very sophisticated questions about virology.

Q All right. I won't put you to it.

But let's get to MASAC. You were on the board?

A Yes.

Q And MASAC was a voluntary board, is that right?

A There was -- they called it a council, yes.

Q Council. And it was a council that gave advice to NHF, the National Hemophilia Foundation?

A Yes.

Q That you described is a lay board; that is, the board of that organization?

A They have a board, yes.

Q They weren't composed of specialists?

A Right.

Q And MASAC gave advice to this lay board, and the lay board sent out information, is that right?

25 A Yes.

Q Now, Doctor, you didn't mean to imply here this morning that there was some formal association between MASAC and the CDC, did you?

A I don't know what you mean by formal. There was certainly a lot of collaboration and exchange of information.

Q And that exchange of information is information the CDC gave out to people that they felt should have it, is that right?

A Right, and there was information that went both ways because the NHF sponsored surveys of what was going on in treatment centers and helped feed that back to the CDC.

Q Well, Doctor, MASAC did not sit with the CDC and discuss what was going on in person?

A At the meeting that was mentioned this morning, there was an individual from the CDC that met with MASAC to provide an update, and that was usually the case at all MASAC meetings in that period of time.

Q Okay. So NHF or MASAC would invite someone from the CDC to give him an update?

A Correct.

Q Yes. That is certainly responsible, isn't it?

And then from that update, you advised, as an advisory council, NHF, is that right?

A Yes.

Q Did you check what NHF sent out to its member chapters?

A The recommendations that were developed at MASAC meetings

basically -- as the way I understood that it worked -- were reviewed by the NHF board and then disseminated.

I don't recall that there were changes. So MASAC had agreed on a set of recommendations that ultimately got disseminated to treatment centers and chapters.

Q Well, Doctor, from '82 through late '83, there was no unanimity as to what was the cause and what to do about HIV, was there?

A That's correct because nobody knew for sure what the cause was.

Q So, Doctor, did you then submit to the NHF both sides and let them choose? There were two different views, weren't there, more than that?

A Well, there were many views as to what the cause of AIDS was, and I don't think that on MASAC we were in a position to answer that question. That was a mystery. It was unknown.

Our job was to try to do the best we could with what information we did have.

LAURA M. BRENNAN, Official Reporter

Q. And you didn't know if your information was accurate or not?
A. Well, we knew that there at that point -- I don't know exactly which point in time you are referring to, but --
Q. '82, July of '82 to December of '83, Doctor.
A. We knew that this was a very large problem in other segments of the population, in the gay community, in individuals with drug abuse. But we also knew that there had only been probably less than 20 individuals with hemophilia.

Now, that obviously raised a lot of concern as to if they indeed had the same thing, how did they get it and what did that mean for the rest of the population? But we had to work with what information there was. And it was a gradually changing picture.

Q. Yeah, that's okay. But there was no real knowledge that you could base any opinion that you had given, would give to the NHF, is that right?
A. There was no documentation that this was a virus.
Q. Well, let's talk about that. You don't have to be a virologist to know that viruses exist, right?
A. Right.
Q. And you don't have to be a virologist to know that viruses

could be, were heat sensitive?

A. Well, some are, some aren't. That's not a uniform --

Q. Okay. But you knew that they had been killing viruses for

40 or more years by heat?
A. Some viruses.
Q. Okay. And, Doctor --
THE COURT: Just for our information, what are some examples of viruses that are not sensitive to heat?
THE WITNESS: I don't think I'm the one to answer that question. I think there is -- they may all be. I'm sure they are all sensitive to enough heat.
THE COURT: Well, that's --
THE WITNESS: There's a range in spectrum. I think that hepatitis B is relatively insensitive to heat compared to HIV. That's the best example I could give you from my perspective.
BY MR. RING:
Q. Well, Doctor, hepatitis B is a virus, isn't it?
A. Yes.
Q. Did you know that in the eighties? You didn't know it was a virus?
A. Yes.
Q. Did you know that in the seventies, that hepatitis B was a virus?
A. I don't know when the actual hepatitis B virus was isolated and discovered. But you said in the eighties or in the

seventies?

Q. Well, first I said the eighties, and then I dropped it to

the seventies. Take it any way you want.
A. I cannot specifically recall the date of identification. In fact, the first test that was ultimately used for measuring antibody to hepatitis B was actually called Australia antigen test.
Q. Yeah, you told us that this morning. I just want to get on with hepatitis then.
In your treating hemophiliacs, the biggest danger to them prior to HIV was hepatitis B, wasn't it?
A. No. The biggest danger was bleeding.
Q. All right. If they survived the bleed, they did it what, with cryoprecipitate? You had to stop the bleeding somehow?
A. Yes.
Q. Plasma, cryoprecipitate?
A. Yes.
Q. And then Factor VIII when it came along?
A. Right.
Q. All right. Well, let's assume they didn't die from the bleeding. Doctor, what was the risk from the treatment?
A. There was almost an assumption because of how they had to be treated that most individuals with hemophilia would eventually be exposed to hepatitis, just as in this case there was exposure to hepatitis from plasma.

Q. And this just became commonly accepted by the medical profession and the industry, is that right?

A. Well, I wouldn't say it was -- it was known to be something that was probably inevitable, not something that we found desirable. It was, I think the best analogy I can make is with the presently some of the very toxic side effects of chemotherapy. But in order to treat the cancer, one has to put up with some of these side effects. I think that's how many people viewed hepatitis. Not that we accepted that and liked it, but it was a fact of life.

Q. Well, at this point in time, in July of 1982, there were people at the CDC including Dr. Evatt, right, that were arguing that it could be a virus, isn't that right?

A. That AIDS could be caused by a virus?

Q. Yes.

A. Yes.

Q. And that certainly would have to be something that a treater of hemophiliacs would have to think about knowing what has been happening with hepatitis B to your patients, wouldn't it?

A. Yes.

Q. And you thought about it?

A. Yes.

Q. And, Doctor, the Hemophilia Newsnotes that you talked about

and you introduced as Exhibit 2 through Cutter, you emphasized "CDC is not advising a change in treatment regiment at this time." And then "Important: Remember, CDC is not advising a

change in treatment regiment at this time. If there are any questions, contact your physician or hemophilia treatment center."

That's all you told them?

A. I didn't tell anybody that.

Q. Well, but the Hemophilia Newsnotes did, didn't they?

A. Right. But I wasn't responsible for the Hemophilia Newsnotes.

Q. And you didn't agree with this?

A. I didn't say I didn't agree with it. I said I wasn't party to disseminating that information. That came from NHF.

Q. But isn't this something that would suggest to lay people that it's all right to continue on with the Factor VIII?

A. At that point, my understanding as to what led to that communication from NHF was that they wanted to avoid people not treating serious bleeding for fear, because it was unknown. Nobody knew.

Q. So you thought people would just lay there and bleed to death, and they wanted to stop that?

A. Well, there was a great deal of anxiety as AIDS developed, and --

Q. Well, when you treated hemophilia --

THE COURT: Mr. Ring, I don't think he was done with his answer.

MR. RING: I'm sorry.

THE COURT: Go ahead.

THE WITNESS: No. I'm finished.

THE COURT: Were you finished?

BY MR. RING:

Q. Well, when you treated hemophiliacs before the manufactured product that is Factor VIII, you used cryoprecipitate, didn't you?

A. I actually used relatively little cryoprecipitate. I used plasma. But because I was involved in the very early development of Factor VIII concentrate, I pretty much moved into that.

LAURA M. BRENNAN, Official Reporter

Q So you had little experience with cryoprecipitate?

A I had experience with cryoprecipitate for mild patients, for individuals with Von Willibrant's disease.

Q And the cryoprecipitate at the hospital came from donors, volunteers?

A It depended on where it was collected and which blood bank was making it, but most voluntary blood banks, yes, that would be the case.

Q And, Doctor, for the kind of people you were treating, as you put it, they could have gone back to cryoprecipitate, couldn't they?

A What are you talking about, at what point in time?

Q In 1982 or '83?

A It would have been very difficult if we had -- if there had been a move to switch everybody back to cryoprecipitate because blood banks were no longer set up to make that much cryoprecipitate.

And the other concern about that is that although individual bags of cryoprecipitate come from individuals, patients who use many, many banks still get exposed to many,

many donors. And in those days there was no way to screen out the donors, which meant that if someone got a bag of cryoprecipitate from an HIV positive donor, they most certainly would be overwhelmingly infected.

Q So, Doctor, the size of the pool, I take it, is very

important?

A Well, that works both ways. The size of the pool may totally dilute out one infected donor; whereas, one infected donor given this cryoprecipitate would be a very potent dose.

Q Doctor, not being a virologist can you really sit here and tell us under oath that one pool -- one donation from somebody that had become infected and was at the height of his or her infection could not affect the whole pool?

A I don't know that.

Q Okay. So let's take the things you do know.

MR. BELL: Objection, your Honor.

THE COURT: Well, we'll strike the --

MR. RING: Remark --

THE COURT: We'll strike the introduction to the next question.

MR. RING: Okay.

BY MR. RING:

Q Doctor, as things went on, the CDC came up with more information, is that right?

A Yes.

Q And there became more of a -- I don't know what to call it, but more of a trend in thinking that this was a virus, is that

right?

A Yes.

Q Would that have been true in 1983, a year after the CDC's

announcement of the three hemophiliacs?

A Well, by January -- I don't know when you mean in 1983. By January 1983 there was still a very small number of patients with hemophilia infected with AIDS.

Q Well, you say "a small number." Based on the population of the country and the small number of hemophiliacs, it was no longer a small number was it?

A I think it was only about 15 out of 10 or 15,000.

Q And the country was at about 230 million, 235, or whatever?

A Is that a question?

Q Yes.

A Roughly.

Q And at that time, aside from hemophiliacs, the report among the population in general was about 1100, is that right?

A I don't recall that number, no.

Q Well, I think it may have been Dr. McAuley that testified to that. I keep getting lost as to who says what.

But in any event, if you take 1100 to 230 million and 15 of 20,000 -- is that what you said?

A I said 10 to 15, in that range.

Q 10 to 15,000 percentage-wise the hemophiliacs had a pretty

22 big number, didn't they?

23 A Yes.

24 Q Doctor, didn't you as a treater start being concerned about

25 maybe it's a virus and we ought to do something?

A Well, many of us had concern. No one had an answer as to what to do.

Q Okay. On October 13, 1984, was there more increasing evidence that this could be a virus?

A Yes.

Q By that time it was pretty much certain, wasn't it?

A In many people's minds, yes.

Q Yours, too?

A I was very concerned that it was a virus.

Q But you hadn't made up your mind yet, I take it, from your answer?

A Making up one's mind doesn't solve the problem. Until the virus was isolated and proven, you just didn't know.

Q So you as a treater of hemophiliacs, and particularly a pediatric treater, children, you felt that the country should just go along and wait until it's proven and sealed before steps be taken?

A I don't know what you mean by "steps be taken."

Q Doctor, you agreed earlier that you knew that viruses -- some viruses, if not all, were sensitive to heat, and that had been used to kill viruses for 40 years?

A I also knew that Factor VIII was what we had considered -- working with it in the laboratory -- extremely labile. And, in fact, when it came about that heat treatment could be applied to Factor VIII concentrate, it was a big surprise, and, I

think, a very fortunate circumstance.

Q That was in 1983, wasn't it?

A Right.

Q But, Doctor, these children were getting infected long before that, weren't they?

A Some were.

Q And, yet, as late as October 13, 1984, the hemophilia foundation, this group of laypeople that you advised on information that had been coming from the CDC, in the exhibit -- it's 255.

MR. BERKMAN: Alpha's Exhibit 56.

MR. RING: Well, the reason I'm not using theirs is, true to form, it's too difficult to read. So we're using the bigger one, the same one. Yes, it's 56.

BY MR. RING:

Q Doctor, as late as October of '84, when it was clear that it was a virus, the recommendation is -- it's recommended that "cryoprecipitate be used to treat patients in the following group with the recognition that there are some circumstances where viral attenuated (heat-treated) Factor VIII concentrate may be appropriate therapy."

So it was October of '84 when the hemophilia

foundation, this group of laypeople that you advised, report to

their chapters -- you don't know who the chapters were, do you?

A I know some of them.

Q We didn't have chapters all over, did we?

A Not in every community.

Q So whoever had a chapter was getting some information from this laygroup, and this is what they were told. Also in that same article -- or this same update. You call them updates.

This is the "Hemophilia," it's not MASAC, right?

A Right.

Q "Should consider changing to heat-treated products with the understanding that the protection against AIDS is yet to be proven," is that right?

A That's what that says, yes.

Q So on the one hand you suggest they use it; and on the other hand you tell them well, we're not so sure that that's any good, is that it?

A Well, that's what was our dilemma. That's what we were faced with. Actually, there had been an earlier recommendation that heat-treated products be considered for young patients. I believe by October 1984 the recommendation was to strongly consider using it for all patients.

Q And that's because you figured that you had already

21 infected everybody before that, is that it?

22 A Well, when heat treatment first came -- heat-treated

23 product first became available, you could not have put

24 everybody on it if you wanted to because there was a limited

25 amount available.

In our own clinic, we started young children on heat-treated material when it became licensed. When a bigger supply became available, we put every one on it; and, again, we were doing that trying to give the patient the benefit of the doubt that this heat treatment would do something to whatever virus was in there. We didn't know that.

Q You didn't know that, but you sure suspected it, didn't you, that it was a virus?

A We suspected that it was a virus, but there was no way to know if it was a virus that it would be sensitive to heat.

Q You knew about non-A, non-B viruses, right?

A We knew that there were such viruses.

Q You knew it hadn't been identified yet?

A Correct.

Q But you were -- the industry was heat treating against that virus not knowing what its identity was, is that right?

A They didn't have the identity, but they could monitor it by its affect on experimental animals or ultimately in people.

Q So they would inoculate people with the virus, and that's the way they found out?

A No, they --

Q I hope not.

A No.

Q In any event, the only point I'm trying to make, Doctor,

prudent care doesn't permit waiting till the house burned

down.

When you have something of this magnitude, Doctor, as a treater, you want to do what you can for your patients, don't you?

A That's why I put children on heat-treated product when it was available hoping that it was going to be safer.

Q But you didn't warn the general community of hemophiliacs that it appears to you to be a virus and that if they can find something other than Factor VIII they should consider it?

A We discussed what was known at the time with our patients when we saw them in a continual progressive fashion. We tried to keep our patients informed with as much as we knew.

Q Doctor, not to beat it into the ground, but to late '84 there were still some people that wouldn't agree it was a virus, is that right?

A There probably were.

Q And some people that did, such as you?

A Right.

Q Right?

A Correct.

Q The bulletin -- the word that came from NHF that you

advised continued to urge people to continue with Factor VIII,

is that right?

A I believe that's the one that recommended using heat

treated Factor VIII.

Q But even before that the NHF bulletins to their chapters was telling them that no one yet knew what was the agent causing AIDS and, therefore, they could continue on that factor, is that right?

A Roughly that's what their communication said.

Q Okay. Doctor, you also -- you were a member of NHF. You got their bulletins?

A Yes.

Q Did you get that because you were with MASAC?

A I got it because I was with MASAC. I believe I was a member, too. I don't remember exactly.

Q You got their bulletins?

A Yes.

Q Did you urge your opposition to what they were writing?

A I don't know what you mean by "opposition."

Q Well, they were telling people to continue with this great product of these four defendants, and you're telling us you thought it was a virus and, therefore, it could be transmitted through the blood.

A You're telling me --

MR. BARR: Your Honor, I'm going to object. That misstates the witness' testimony.

THE COURT: It's cross-examination. I would agree it's argumentative, but I think the witness can deal with it.

Overruled.

THE WITNESS: You're talking about October of 1984. The recommendation was to use heat-treated material, and I didn't disagree with that.

BY MR. RING:

Q All right. So you agreed with that one, but you told us earlier there were others you didn't agree with that went out from NHF --

MR. BARR: Your Honor, I'm going to object. Again, that misstates the witness' testimony.

THE WITNESS: I didn't say I didn't agree, I said I said that I wasn't the one that dispensed that communication.

BY MR. RING:

Q I see. At any rate, that communication went to the chapters of NHF, is that right?

A Yes.

Q And you don't know what treaters got it?

A I know that it was distributed to treatment center directors. I don't know how far it got beyond that.

Q Not everybody worked at a treatment center -- not every physician treated hemophiliacs worked at a treatment center?

A Correct.

22 Q And whatever information was given, it was information that

23 as far as the CDC and the other members of your profession or

24 MASAC had differing views on?

25 A Well, there were different opinions as to what the cause of

AIDS was which could not be entirely resolved until the virus was isolated. And there was a gradual greater and greater indication that it was a virus if you start from day one until the virus was isolated.

Q But the information that the NHF, National Hemophilia Association, and MASAC were sending did not report all of these details, and the report did not report the difference of opinion about the agent, did they?

A Well, I think they reported right from the very first evidence of what appeared to be AIDS in three individuals with hemophilia. They alerted the population, the hemophilia population, both treaters and patients to what was happening.

Now, nobody knew --

Q That one no one disagreed with?

A Right.

Q Everything from there on was a maze of disagreement in the medical community at the CDC, and at the NHF?

A It was a maze of uncertainty and unknown.

Q You didn't report those different views to the NHF?

A Oh, I think all of those views were discussed, and I don't

think that their communication suggests that anybody knew the answer.

Q And so you went on and let your children go.

Did you ever think that maybe they ought to do something about finding a method of eradicating the virus like

everyone else did?

MR. GREEN: Excuse me, your Honor. The question is argumentative.

THE COURT: Overruled.

THE WITNESS: To my way of thinking, that was in process in the form of the attempts to heat treat. And I look back on that as being very -- although it was fortuitous that that was going on to get rid of a different virus, hepatitis virus, it just was very fortunate that HIV was sensitive because if that had not been going on and they had to start from scratch when HIV was discovered, it might have been many more years before safe products were developed.

BY MR. RING:

Q If it had gone on 20 years sooner, since there was no new discovery in chemicals or anything else to heat treat, then that would have been better still, wouldn't it?

MR. BERKMAN: Objection.

THE COURT: Overruled.

THE WITNESS: If the AIDS epidemic had started 20 years earlier, it would have been a much bigger disaster than --

BY MR. RING:

Q Doctor --

A -- it was starting in the 1980s.

Q -- just go back to the question.

MR. BARR: Your Honor, may the witness be allowed to finish his answer?

THE COURT: I think he did.

Was there something you wanted to add?

THE WITNESS: Well, I would just -- I mean, in response -- you asked if this happened 20 years earlier it would have been better. I think it would have been disastrous because the technology --

BY MR. RING:

Q You misunderstand my question. I see now the problem.

Doctor, I didn't ask you whether or not that AIDS had come about 20 years sooner. You were talking about what had happened with the development of heat treatment, and I'm talking about that. If they had started in heat treatment 20 years sooner, that would have been better for your children, wouldn't it?

A It might have been if such methods could have been developed.

MR. RING: I don't think I have any other questions.

BY MR. BARR:

Q Dr. Abildgaard, good afternoon.

Just a couple of questions.

Mr. Ring, when he was asking you questions, talked about the house burning down. Were you just standing around doing nothing, watching your patients die, and saying to yourself, "Oh, so what"?

A Well, first of all, my patients weren't dying. My patients were all well when this -- the first indication of AIDS in hemophilia was developing as indicated by those first three patients.

We happened to have been treating young children with cryoprecipitate or plasma at that time rather than concentrate for a totally different reason, and that was to try to defer or postpone their exposure to hepatitis until they were older.

So that just fortuitously was in place for some of our

young patients. It wasn't like we were sitting there not trying to do something, but the individual treater really had to work with what was available.

And as I indicated earlier, it was, I think, very fortunate that the heat treatment process that applied to HIV was coming along at that time.

Q And did you know back in the time --

And, incidentally, to perhaps state the obvious, did

you have to deal with all the problems that were going on with information that was available at the time as opposed to getting to look back 10 years on what has been learned since then?

A Well, I think that is something that is hard to keep into perspective in 1993 because in 1983 this was a total mystery.

We suspected and were concerned about the possibility of a viral agent, but the picture was unfolding, and every year there was a different piece of it. And that was a very different situation than all of the facts that are known at this time.

Q All right. And I have written on a piece of paper that the jury can see, and perhaps you can't, of an earlier witness, that you have a time when the HIV virus goes into the body, and we didn't know it was a virus until '84, correct?

A Yes.

Q And then there is a period of seroconversion, of several weeks or a couple of months after the virus infects the body. Then you have an antibody, correct?

A Right, I think up to about six months.

Q Then it can be years and years and years until you actually have symptoms of the disease AIDS, is that true?

A Yes.

Q Did you know any of that back in 1983?

A No.

Q And when Mr. Ring talked to you about putting out these

bulletins from the NHF and not telling hemophiliacs about it potentially being a virus -- let me show you what is part of Cutter's Exhibit N, which are all of the news notes.

If I might, I will stand by you, and would you read to the jury what the very first patient alert dated January -- July 14th, 1982, says concerning viruses?

A It says, "One hypothesis that is being investigated by CDC is that the agent may be a virus transmitted similar to the hepatitis virus by blood or blood products."

Q Was that to your view the prevailing scientific thought that it might be a virus, it might be something else, but maybe it is a virus?

A Yes.

Q All right. And then another one that you didn't get asked about by Mr. Ring, I want to go over to May 9th, 1984.

Now, this is number 16, and did the Hemophilia Association promptly report in an AIDS update the fact that, quote:

"The purpose of this report is to explain and comment on the recent dramatic announcement concerning LAV and HTLV-III and their probable causative role in AIDS"?

A Yes.

Q Now, going back to Mr. Poole in particular, it would be

impossible for you to sit here and tell the jury -- let me turn this just a bit --

We have heard testimony that he got 100,000 units each year up until January of '85. You could not possibly say that when he was injecting himself twice a week with Factor VIII concentrate in '80, '79, '78, that on February 12th he got infected, is that right?

A That is right.

Q You would have to have serum samples to get that particular, is that correct?

A Well, even that wouldn't allow you to know when he was actually infected.

Q All that would tell you was the date when he had antibodies?

A That is right.

Q But do you in medicine always and constantly have to use your medical judgment, your experience, the data that is in the literature, in order to reach medical opinions and conclusions?

A Yes.

Q And have you done that in this case when you tell us that, in your opinion, based on your review of all of his medical records, based on your review of all the medicine that he took, that he was infected before 1980?

A Yes.

Q Now, Mr. Ring talked to you about this just being a statistic. Dr. Abildgaard, did you find any evidence in Mr.

Poole's records of him having a built-in immune to HIV?

A No.

Q Any evidence that he could head off, in Mr. Ring's words, head off HIV infection?
A No.
Q And he asked you some questions about Dr. Telfer not doing T-cell testing right before his surgery in 1985.
Do you remember that?
A Right.
Q Was it the standard of practice to do T-cell testing before surgery in early 1985?
A I don't believe that it was, no.
Q Now, Mr. Ring followed up with a question about, well, gee, you would want to know if he was infected because the people in the operating room -- there is going to be blood, there is going to be an operation -- those people would want to be protected.
So you wanted to know if the patient was infected.
Do you remember that question?
A Yes.
Q In January of 1985 when an orthopedic surgeon was going to do a complete knee replacement on a hemophiliac, who prior to that time had taken 900,000 units at least, at a minimum, of Factor VIII concentrate, as of that time, what would be the assumption of everybody in that operating room?

A Well, you would have to assume that he was infected for their own safety.

Q Would that be standard, as far as you know, throughout

operating rooms in the United States when you are operating on a hemophiliac who was at very high risk for being infected?

A Yes.

Q Mr. Ring asked you some questions about clinical trials that you may have done with Factor VIII.

When you got an informed consent from the patient and you were using the patient to determine the clinical efficacy of the Factor VIII, and this was years before any of this, for instance, with the Baxter product, the medicine that you would inject in the patient had to have already been approved as to its methodology by the FDA, is that right?

A Yes.

Q In other words, there was no license to let all hemophiliacs do it, but the FDA had approved an IND, is that right?

A That is correct.

Q And that is an investigational new drug document where it is all laid out how it is going to be done, and then you are doing it to see how it works clinically, is that right?

A Okay.

Q Finally, I want you to assume that after taking all of these units up to 1985, if, as you have told us, Mr. Poole was already

infected, did the Cutter or the Baxter or this one vial that he may have gotten of Armour do him any harm whatsoever?

A I don't believe so.

Q And in your opinion, he was already infected before he ever

took product made by Baxter, Armour, or Cutter, is that correct, if all that he got, as the evidence in this case has been, was those products in 1985?

A Yes, that would be my opinion.

MR. BARR: I have nothing further.

MS. GOURLEY: I don't have anything.

MR. BELL: Your Honor, I have nothing further.

However, may I pass out and publish to the jury the exhibits that were shown to the doctor during his direct?

THE COURT: Yes.

MR. RING: Can I redirect on just a couple?

THE COURT: Sure.

RECROSS EXAMINATION

BY MR. RING:

Q Doctor, there is no question in this case and no one disputes that Stephen Poole was infected by Factor VIII concentrate. You know that?

A Yes.

Q So certainly it had to come from one or all of these parties, is that right?

A Yes, or it could have come from cryoprecipitate.

Q Well, he wasn't on cryoprecipitate for what, 8 years, 10 years?

A I don't know when the last time he received cryoprecipitate would have been.

LAURA M. BRENNAN, Official Reporter

Q Well, I think it was in May of '75.
A Then it is probably unlikely.
Q What?
A Then it is probably unlikely if that was the last that he received.
Q And, Doctor, with respect to cryoprecipitate, let me show you Alpha's -- it is an exhibit of the plaintiff -- 41 -- is this 88?
MS. THOMAS: 4188.
MR. RING: 4188.
BY MR. RING:
Q Doctor, the page is --
Well, let me give it to you, if I can find it. It is the last page of this exhibit.
MS. THOMAS: May we pass this out?
MR. RING: Has this been admitted yet?
MS. THOMAS: No.
MR. RING: Well, I think --
THE COURT: What is it you want to pass out?
MR. RING: It is an Alpha document.
MR. BELL: Well, your Honor, we have a question first. I think this is probably beyond the scope.
MR. RING: Well, I think we are just talking about cryoprecipitate. That I think is what -- if I am not wrong, that is what Mr. Barr was hanging up on.

LAURA M. BRENNAN, Official Reporter

MR. BARR: Your Honor, I didn't mention cryoprecipitate.

MR. RING: Well, then I did.

THE COURT: Well, the witness did in response to your question.

MR. RING: Yes.

THE COURT: So I will allow you to pass it out.

BY MR. RING:

Q Doctor, looking at this exhibit, it is dated May 9th, 1983, and the last page -- it?

A Doris Menache, M-e-n-a-c-h-e, American Red Cross Blood Services.

Q Would you read what has been highlighted?

A Only that?

Q Well, maybe I can look at it first. Those two.

A "A decrease in the use of AHF concentrate in Factor IX complex concentrates by substituting cryoprecipitate and AHF and fresh frozen plasma respectively has been recommended. This change is feasible and, in fact, if all frozen plasma currently used to prepare AHF concentrate or to be diverted to cryoprecipitate production in amount of available Factor VIII would double."

Q Would you read --

MR. BELL: What are you reading from?

LAURA M. BRENNAN, Official Reporter

MR. RING: What?

MR. BELL: What are you reading?

MR. RING: It is the last page of this exhibit. The first two paragraphs is what he was reading from.

Do you see it?

BY MR. RING:

Q. Now, Doctor, can I direct you to something on that same page, the last paragraph. It's not highlighted, but would you read that one?

A. "In addition, for the past few years, AHF concentrate production has been considered the driving force in the fractionation industry. If production were to be substantially reduced, the price of other plasma derivatives might be substantially increased."

Q. Thank you. And as late as November 2, 1983, Doctor, the hemophilia exchange or the Hemophilia Information Exchange still reported to its chapters, "The NHF reaffirms its recommendation that patients maintained the use of concentrate or cryoprecipitate as prescribed by their physician"?

A. What was the date of that?

Q. November 2, 1983. Do you want to see it?

A. All right.

MR. RING: I have no other questions, Your Honor.

MS. THOMAS: May we publish the Alpha document?

MR. RING: May we publish that one document that I used?

THE COURT: Yes.

MR. RING: The Alpha document.

MR. BERKMAN: Your Honor, again, I'd object. It's a

six page document. He read one paragraph. It's Alpha's

document to Alpha's people. And it's totally inadmissible.

THE COURT: Well, if there is just one page that is important, let's --

MR. RING: There is two pages that I had him read from. And it's all right with me if we take out the other pages.

THE COURT: All right. Take the rest of it out.

THE WITNESS: I only read from one page. You read from the other.

MR. RING: I'm sorry?

THE WITNESS: I said I only one from one page. You read from the other one.

MR. RING: I read from the other?

THE WITNESS: Yes.

MR. RING: Well, let's just give them the last page.

THE COURT: I'll let the two pages go in. The only reason I'm not sending the whole thing in, if the rest of it doesn't pertain, there is no point in burdening the jury with it.

MR. BERKMAN: I renew my objection on the same grounds.

MR. RING: All right. Thank you, Your Honor.

THE COURT: Okay.

MR. BARR: Your Honor, I have a couple of follow-up on

Mr. Ring's.

LAURA M. BRENNAN, Official Reporter

THE COURT: Don't ask leading questions, please.

MR. BARR: No, no. Was I? I apologize if I was.

MR. RING: I'm going to get you to take my course next year.

RECROSS-EXAMINATION

BY MR. BARR:

Q. Mr. Ring asked you a question about how Mr. Poole was infected. And you indicated, and I guess because of no other high risk factors, he was infected by Factor VIII concentrates.

Do you remember that?

A. Yes.

Q. Mr. Ring then asked if you believe he was infected by one of the four defendants in this case. Do you recall that?

MR. RING: I think I said "one or all."

BY MR. BARR:

Q. One or all.

A. All right.

Q. All right. First of all, do you know if he took any American Red Cross Factor VIII?

A. I don't know what all he took, because much of the medical record, there was no identification of the source. It was just referred to as Factor VIII or concentrate or AHF. So there was no way of telling much of the time what he had received.

Q. All right. And in telling us -- well, for instance, you don't know if he took any New York Blood Center Factor VIII,

correct?

A. Correct.

MR. RING: Your Honor, I think this is all misleading, because the evidence is irrebuttable or hasn't been refuted that he only took the Factor VIII of these four defendants.

MR. BERKMAN: Objection.

MS. GOURLEY: That's not true.

MR. BELL: Objection, Your Honor. That's not true.

THE COURT: I'm not going to comment on that. But it's obvious that this witness doesn't know what Factor VIII he took. So asking him questions can only be rhetorical. I'm going to sustain the objection.

BY MR. BARR:

Q. Okay. Let me ask you this --

THE COURT: It's a waste of time.

MR. BARR: I don't mean to waste your time, Your Honor. May I proceed?

THE COURT: All right. Go ahead.

MR. BARR: Thank you.

BY MR. BARR:

Q. Dr. Abildgaard, in indicating that it could have been one of the manufacturers of Factor VIII, do you have an opinion as to whether or not Mr. Poole could have been infected by Cutter's, I'm just referring now to Cutter's dry heat-treated Factor VIII at 68 degrees for 72 hours?

LAURA M. BRENNAN, Official Reporter

A. That he took at what time?
Q. In 1985.
A. No.
Q. He could not have been in your opinion?
A. I don't believe so.
Q. All right. Thank you.
MR. BARR: I have nothing further.
MR. RING: I don't.
MS. GOURLEY: I have just one question.

RECROSS-EXAMINATION

BY MS. GOURLEY:
Q. Dr. Abildgaard, likewise, if he took Armour concentrate in January 1985, it would still be your opinion, it would be your opinion that that did not infect him here, is that correct?
A. Yes, that would be my opinion.
MS. GOURLEY: Thank you.
MR. BERKMAN: I would be forced from my end here.

RECROSS-EXAMINATION

BY MR. BERKMAN:
Q. Dr. Abildgaard, just two questions.
Now, Ring said --
MR. RING: You promise now?
MR. BERKMAN: I do.
BY MR. BERKMAN:
Q. Now, Mr. Ring said that on January 8, 1985, when he came

LAURA M. BRENNAN, Official Reporter

into the hospital, he had a white blood cell count of 5.1. That's 5100, correct?

A. That's correct.

Q. Did you also see in his medical records on December 31, 1984, that's just one week earlier, his white blood cell count was 3.7?

A. Yes.

Q. That's below normal, isn't it?

A. Yes.

Q. And then the day he was diagnosed with PCP and AIDS, on March 24, 1986, his white blood cell count was 5.1 again, wasn't it?

A. Yes.

Q. So that doesn't tell you anything about whether he had AIDS or not, does it?

A. That's right.

Q. Okay. Finally, I promised the jury, everybody else asked, did you testify earlier and do you still agree that the Baxter heat-treated product that he got in January of 1985 in the hospital, which was the only Baxter product he got, had no effect on him, is that correct?

A. That is correct.

MR. BERKMAN: Thank you.

THE COURT: All right. Thank you.

We'll take a brief recess.

LAURA M. BRENNAN, Official Reporter

MR. BELL: Your Honor, may the witness be excused?

THE COURT: Yes.

MR. BELL: Thank you.

THE COURT: That completed your testimony.

(Witness excused. Recess.)

(The following proceedings were had in open court in the presence and hearing of the jury:)

MR. BARR: Your Honor, we're going to be reading Dr. Levy's deposition.

MR. RING: There is a problem.

MS. THOMAS: We have no --

MR. RING: Do you want to do it --

THE COURT: What's the problem?

MS. THOMAS: With regard to the cross-examination, we would like it read in total.

THE COURT: How long is the direct?

MR. BARR: I have -- I gave it to you yesterday, your Honor. I'm designating the whole thing. What I've done is take out --

THE COURT: Sit down folks, please. I thought we were all set to go. I didn't realize there was a problem.

MR. BARR: I've taken out colloquy of counsel. I guess there are one, two, three -- you want the -- let me see which ones you want in.

MS. THOMAS: I have no problem with the direct. On the cross I don't mind if we take out --

MR. BARR: Your Honor, if we're going to have some objections in, I want them all in.

MS. THOMAS: Fine.

MR. BARR: I have just taken them all out. It's

things like, "Would you a say it again." I don't know why they have to be read. It just takes up time.

MS. THOMAS: I differ with what he said.

THE COURT: If they illumination with the question or the answer --

MS. THOMAS: Our position is they do.

THE COURT: -- they're useful. If they don't then they're just a waste of time. Rather than spending time on it, read it all.

MR. BARR: I'm going to be Dr. Levy, my lifelong ambition.

MS. GELLEN: I'm going to be Mr. Barr, and it's not my lifelong ambition.

MR. BARR: May I give the jury a copy of the CV?

MS. GELLEN: The deposition of Jay Levy, M.D., was taken on Thursday, September 13, 1990.

(Whereupon, the deposition of Jay Levy was read into the record.)

THE COURT: All right. We'll recess, ladies and gentlemen, until 2:00 P.M. on Monday.

(The following proceedings were had in open court out

of the presence and hearing of the jury:)

MS. GOURLEY: I just wanted to let you know we did file a supplemental memorandum in support of our Rule 50 motion that includes some additional transcripts cites and also the

Dr. Telfer testimony that you asked for.

THE COURT: Yes.

MS. GOURLEY: I have it --

THE COURT: I think I --

THE COURT: No, I have Alpha's.

MS. GOURLEY: We gave it to your clerk. I do have another copy, but it doesn't have the transcript pages attached.

THE COURT: I have it here.

MR. BARR: Your Honor, I'm a bit concerned about our motion. I'm going to file something in writing. I'll file it with you Monday, but are we going to be able to argue these motions? Because I haven't filed much of anything because mine is so fact driven --

THE COURT: Well, yes, I'll hear you. Frankly, I hope the jury understood more about what Dr. Levy was saying than I did. That was pretty heavy stuff.

MR. BARR: I agree. We will talk about it on Monday when Dr. Mozen is here to discuss it.

THE COURT: Maybe the best thing it do is wait until he testifies.

So nobody is caught short, don't anybody

count on

23 being awarded a judgment as a matter of law. The more I read,

24 the less I'm inclined to grant any of those motions, but I

25 think that Cutter maybe is in a little different situation than

the other defendants, but this last witness did nothing to clarify that situation. I'll put it this way, that's not necessarily his fault, it's just that it's a very complicated matter. All right. Good night.

(The trial was adjourned until 2:00 p.m. on November 8, 1993.)

IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

PEGGY GRUCA, et al., Plaintiffs,	)	NO. 86 C 7623
v.	)	Chicago, Illinois
ALPHA THERAPEUTIC, CO., et al., Defendants.	)	November 8, 1993 2:00 p.m.

VOLUME 18-A
TRANSCRIPT OF PROCEEDINGS
BEFORE THE HONORABLE JOHN F. GRADY

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(The following proceedings were had in open court out of the presence and hearing of the jury:)

MR. BARR: Good afternoon, your Honor.

MR. BERKMAN: Good afternoon, your Honor.

THE COURT: Good afternoon.

MS. KIMBALL: Good afternoon, your Honor.

THE COURT: Everybody here?

THE CLERK: No, Mr. Ring and Miss Thomas.

THE COURT: Anybody know where they are?

MR. JERBICH: They are on their way.

MR. GREEN: There was an accident or a fire up the street that has got everything blocked up, your Honor.

THE COURT: Okay.

(Brief interruption.)

MR. BARR: Your Honor, if I might, I am going to give the Court our written document concerning the motion for directed verdict.

THE COURT: Okay, thank you.

All right, let's see. What were we doing when we --

MR. BARR: We had finished reading the deposition of Dr. Levy, and I believe that Alpha now has a witness to present.

THE COURT: Okay.

MR. RING: Good afternoon.

THE COURT: Good afternoon.

Now, Peter Levine is the one about whom there is a

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dispute?

MR. ALBERT: Yes, your Honor. Baxter wants to read the deposition.

THE COURT: You want to read the deposition.

MR. BERKMAN: Portions of it.

THE COURT: The portions that are marked here, is that it?

MR. ALBERT: Yes, your Honor.

THE COURT: All right.

MR. RING: That is one, your Honor, that could not be finished and then he said that he was threatened, his life was threatened, and he withdrew, and they were given time to get someone else.

THE COURT: Yes.

(The following proceedings were had in the presence and hearing of the jury:)

THE COURT: Good afternoon, ladies and gentlemen.

THE JURY: Good afternoon.

THE COURT: Please be seated.

THE COURT: All right, Alpha has another witness?

MR. GREEN: Yes, your Honor.

At this time I would like to call Dr. Weidmann.

Would you step up and be sworn.

ERNST WEIDMANN, DEFENDANT ALPHA'S WITNESS, DULY SWORN

DIRECT EXAMINATION

LAURA M. BRENNAN, Official Reporter

BY MR. GREEN:

Q Dr. Weidmann, would you state your full name for the jury, please?

A My name is Ernst Weidmann.

Q Where do you live, sir?

A I am living in Germany in a little village call Weimar.

Q By whom are you employed?

A I am employed by Hoechst AG.

Q Does Hoechst AG have any ownership interest in Behringwerke?

A Hoechst AG is the hundred percent owner of its affiliate Behringwerke.

THE COURT: We didn't get the name of the parent company. Would you spell that for the reporter?

THE WITNESS: Yes. H-o-e-c-h-s-t.

BY MR. GREEN:

Q We Americans have trouble with this because we can't find the R in Ernst.

Doctor, you are a licensed physician, is that correct?

A Yes, I am a licensed physician in Germany.

Q I wonder if you would tell the jury a little bit about your training and studies to become a physician?

A I started my university career studying chemistry at the University of Heidelberg in 1967.

At the end of my education in organic chemistry, I started studying medicine, and I finished my studies in 1979,

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and I was one year something like an intern probably, in your terms, doing practical work at the university hospital of Heidelberg. And I finished my education and got a license for practicing medicine in Germany in 1980.

Q Sir, do you also have a PhD?

A Yes. I also have a PhD in organic chemistry.

Q When did you complete your studies?

A I finished my studies including the internship in November 1980.

Q And did you then go to work?

A Yes. I started my work at Behringwerke in the clinical research department at that time.

Q Now, when you first came to work -- I am sorry. I thought I heard you.

When you first went to work at Behringwerke, what position did you hold?

A I had the position of a project manager in clinical research. That means my responsibility was the planning and the performance of clinical trials at that time in the field of oncology. That means cancer therapy.

Q And for how long a period of time did you continue to work at Behringwerke?

A I worked in Behringwerke until end of 1988, and then I transferred to Hoechst AG, and there I had the position of a director of drug surveillance.

Q Was that a promotion for you?

A Yes.

Q During the period of time that you worked at Behringwerke, you said you started as project manager in clinical research.

Did you hold other positions?

A Yes. I had the responsibility as head of the department of clinical research hemostasiology -- that means blood clotting --

from 1985, 1986 on.

Q Were you ever involved, sir, working with a heat treated product of clotting factor manufactured by Behringwerke?

A Yes. I started to get involved in the work with clotting factor concentrates from 1983 on when I took the responsibility for viral safety studies of these products before being promoted to head of the clinical research department in 1986.

Q First of all, we are going to be talking about three products that are manufactured by your company.

The first one is Haemate-HS, is that right?

A Yes.

Q The second is Humate, H-u-m-a-t-e?

A Not really. I think, if I may say so, let's sort the three products a bit different and take Haemate-P as the second one and then Humate-P as a third one, which would then also be the right chronology of the products.

Q Now, sir, when you took over the reliability for viral

25 safety studies with Behringwerke, what was your task?

A The task was within a task force of people from production, from virology, from preclinical and clinical, to validate the results we had on viral safety in 1983 on this product and to investigate whether further studies and evaluations both preclinically and clinically were necessary.

Q Why was it necessary that you undertake that task?

A Well, you see, the product was licensed in Germany in 1981, and at that time it was a first product which had heat treatments -- for the future discussion I should rather say pasteurization and heat treatment -- and we were on a learning curve on these products.

There was a lot of important findings in clinical medicine about hepatitis. There are different types of hepatitis, and we learned especially about hepatitis non A-non B, more information; and we had to assess our data, whether we met all the criteria set for these disease or whether we could do better studies or, let's say, improve our knowledge on these data.

Q All right. The original viral studies that were done by Behringwerke were for hepatitis what?

A B.

Q And there was no data for hepatitis C, is that correct?

A Well, you are using a new name now.

Q Non A-non B?

A Non A-non B. It was called non A-non B at that time, and

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only about three years ago hepatitis C -- non A-non B was renamed hepatitis C because an analytical test was developed which could demonstrate the presence of the infectious agent for hepatitis non A-non B, and it is now called hepatitis C.

Q So your job was to check, for want of a better word, check the viral safety with regard to non A-non B hepatitis?

A Mostly non A-non B.

Q Now, when the Haemate-HS was initially put on the market, what did the HS stand for?

A The HS when it was put on the market, the HS stood for heat sterilized.

The development code, if I may say so, actually was standing for hepatitis safe. But this was not accepted by the regulatory agency, the Bundes Gesundheit, which equals the FDA and has to license a product before it can be sold in Germany.

Q So in Germany the BGA is similar to what the FDA is in the United States?

A What the FDA is, correct.

Q And they would not allow you to call this hepatitis safe. So you went to what term?

A Heat sterilized.

Q Do you know, sir, when the licensing for the sale of this product was first approved by the FDA in the United States?

A The license was approved in the middle of 1986 in U.S.

Q Was the clinical work requirements of Germany different than

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the clinical work requirements of the FDA to your knowledge?
A We are talking about the time frame from '83 to '86, and at that time there were quite different standards and forms in clinical trial requirements between -- I would not only say Germany but, let's say, Europe and the U.S. at that time.
Q Was there something that finally made a uniform international requirement?
A Well, this has been brought forward step by step. It was in '87 the FDA accomplished an IND rewrite where the FDA gave some standards how to perform international clinical trials which can be used for licensing in the U.S.

And right now, actually in the last two weeks ago, there was an international conference on harmonization in Orlando which is going on and discussing this issue of recognition of clinical and legal data internationally and worldwide. So this is still an open problem more or less.
Q Sir, was there a -- let me go back a step.

In 1981 Behringwerke produced both a heat treated or pasteurized product and a non-heat treat product, is that correct?
A Yes.
Q Was there -- strike that.

Do you know if there was a reason why the non-heat treated product was not discontinued or stopped when a heat treated product started?

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A The understanding at that time of the medical profession was that patients exposed and being infected by hepatitis already could go on with unheated products while only patients which have not yet experienced any hepatitis infection might be on the new and pasteurized product.

Q So then, sir, if I were to tell you that Stephen Poole in 1981 had been taking factor concentrates almost since their inception, their start on the market, and that he was taking between a hundred and 150,000 units of concentrate per year, under the indications in the Behringwerke product, would he have been a candidate for that product?

A I don't think so because to the best of our knowledge in medical science, we must assume that he has been infected with hepatitis due to the long treatment with concentrates before.

So actually according to the understanding which was developed in 1981 by the German hemophilia treatment centers, he most probably would not have received the heat treated product.

Q Was there a reluctance to the heat treated product by German physicians?

A Yes. I think there was a reluctance in a twofold way. The first was that some of the doctors did not really trust in the power of the inactivation procedure at that time when the product was new on the market.

The main issue was that to avoid the destruction of

the

biologic activity of Factor VIII, you had to add a stabilizer

while heating the product. And many physicians believed at that time that this stabilizer would also stabilize the virus. So most probably no full and valid inactivation could be reached.

MR. RING: Your Honor, I don't want to cut him off. Could we have some foundation for this because we just took his deposition and this is sort of new.

THE COURT: Well, why don't you ask him what his basis is.

BY MR. GREEN:

Q How do you know that, Doctor?

A This was discussed in meetings of the hemophilia treatment centers which met yearly, and, in addition, we have worked on data over the time where you can see that stabilization of the protein, of the Factor VIII, does at the same time also stabilize the virus, and it is very important to find an optimum for stabilization of the product so that you don't have enormous losses of the yield and at the same time be able to kill the virus to have a safe product.

Q Dr. Weidmann, was there a difference in the yield on the heat treated process from the non-heat treated process?

A Yes. It is a bit difficult to explain, but let me try to do it that way. If you would produce in a process 100 units out of a given plasma sample unheated product and you would at the same

time run the process to the heated product, you would only have 70 -- 50 to 70 units. So there is a loss of roughly 30 to 50

percent.

But I am sorry. May I come back? You asked for the reasons why the product was not exacted and --

Q I am sorry.

A I could not answer the second question because I think it is important to know about that.

And there was another concern which I think is even more important than the question of virus inactivation, and this is if you heat a protein, there is a risk that you change the structure of the protein, and the protein can react differently in the human body and can give rise to antibodies.

And these antibodies again would neutralize any Factor VIII which is given to the patient, so that you might have no effective treatment for this patient while he has the antibody. And this is, of course, a very dangerous situation.

And I might stress this point because the Dutch Red Cross tried to develop a pasteurized product in recent years, and they had to stop this development because they have seen the rather high number of patients with these antibodies which are called inhibitors.

I am sorry. I thought that was important information.

Q And that converts a treatable patient to one that is non-treatable it, is that right?

A Non-treatable would be too far reaching, but he is then

only

25 treatable with certain other products and he has a high risk of

bleeding complications.

Q Dr. Weidmann, during the period, the early '80s, was the heat treated Behringwerke product in large supply?

A No, it was rather short supply because -- due to the loss in activity to produce the same amount of product, you needed larger plasma volumes.

And, again, this was not possible to do from the very beginning to make these amounts available.

Q When were you first able to -- from your work, when were you first able to present to the BGA data that the Behringwerke treated process was effective with regard to -- let's call it what you call it -- non A-non B hepatitis?

A We started to look into the non A-non B problem after the international committee on thrombosis hemostasis had published in 1984, I would say, master protocol for the investigation of non A-non B hepatitis safety of blood products.

And it was only until 1985 when we could start the clinical trial. It was finished in '86 or '87, and it was published in 1987 under the authorship from Professor Minucchi.

I would say that from this point on we had proved, if you can prove that it was a small number of patients at all, that non A-non B hepatitis was not a problem for this product.

Q In 1984, sir, was it possible for you to demonstrate clinically or any other way that the Behringwerke heat process succeeded in viral inactivation with regard to the AIDS virus?

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A Not in '84 because the problem of the HIV virus was, first of all, to recognize and define it and, secondly, to have it available for experimentation.

And this was only possible at the end of 1984, and we started in early 1985 the corporation with Dr. Brens from the New York Blood Center investigating the inactivation of the HIV virus in vitro -- that means in an experimental setting -- in a glass, reagent glass, to demonstrate inactivation of the virus.

And this work was finished in summer 1985.

Q I would like to go back because I interrupted you and then you interrupted me, and I am trying to get to how much of this product you were making. By looking at my notes, I missed that.

Let's go back.

In 1981, sir, how much product was there available for Behringwerke to treat type A hemophiliacs?

A What those type A hemophiliac requires is depending on the severity of this disease. But let's assume that we would have a patient with an average yearly consumption of Factor VIII of 100,000 units, and then probably in 1981 we could have treated some 40 to 50 patients, and we slowly could increase this number, that in 1982 it would be some 80 to a hundred patients and so on.

Q That is all there was?

A That is all it was.

25 Q When did you at Behringwerke first believe that AIDS was

viral in nature?

A That was quite difficult. In contrast, what it looks like now retrospectively, in 1984, Montagnier published a study that he had identified retrovirus in nature in AIDS patients.

And nearly at the same time there were still publications in the literature on AIDS and hemophilia which claim that probably the disease we see in hemophilia has nothing to do with the AIDS which is known from homosexuals or drug abusers, and the reason was that some of these investigators had the understanding that the problem in hemophiliacs was due to a disturbance of the immune status by application of foreign proteins; namely, of the Factor VIII concentrate. They need to substitute their own Factor VIII.

So I would say that evidence came up during the year of 1984 that HIV could be identified or that HIV could be identified as the infectious agent in hemophiliacs.

25

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Q. All right. Two last questions. First of all, Doctor, your former company, Behringwerke, started trying to develop a heat process when?

A. The first experiments date back to 1977.

Q. And it was first licensed by the BGA when?

A. In 1981, May 1981.

Q. And it was not licensed by the FTA -- FDA until when?

A. Until 1986.

Q. And how long, sir, did it take from the time that you first initiated the licensing process with the FDA until that process was finished?

A. It's about three years. We submitted the file in 1983, and the licensing was given in 1986.

Q. Lastly, sir, your product which is now sold in the United States licensed by Armour is called Haemate?

A. No. It's called Humate.

Q. Humate.

A. Humate P.

Q. And is that used in the treatment of Factor VIII deficiency in hemophiliacs?

A. No. The product is licensed for the treatment of von Willebrand's disease. This is bleeding disorders, disorder which is different from hemophilia, and it is caused by a

platelet disorder.

MR. GREEN: Thank you, sir.

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You may examine, counsel.

CROSS-EXAMINATION

BY MR. RING:

Q. Dr. Weidmann, we met for the first time at about 12:00 o'clock, is that right?

A. Yes.

Q. And that was at Ms. Kimball's office, is that right?

A. Yes.

Q. Now, Doctor, is this your first time in a US courtroom?

A. I'm sorry; could you speak up a bit?

Q. Is this your first time in a United States courtroom?

A. No.

Q. When did you testify before?

A. I testified in 1989 in Portland, Oregon.

Q. And was that for one of the defendants in this case?

A. Yes, it was for the Defendant Cutter.

Q. Cutter?

A. Yes.

Q. And Cutter is also the one that got you to testify in this case, is that right?

A. Not really. I was asked both by Mr. Barr and by Mr. Bell to testify in this case.

Q. Okay. So both Mr. Barr and Mr. Bell asked you to testify in this case?

A. Yes.

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Q. Mr. Barr is from Cutter, and Mr. Bell is sitting there, right, for Alpha, is that right?
A. Yes. But I do not know whether it is my task, but I think Mr. Barr isn't from Cutter. He is not working for Cutter.
MR. BARR: I made a tremendous impression.
MR. RING: Well, you better tell him, because you wouldn't know it in this courtroom.
MR. GREEN: He sure ain't working for me.
MR. RING: Huh?
MR. GREEN: He sure ain't working for me.
MR. RING: I don't know.
BY MR. RING:
Q. At any rate, who is going to pay you? Is it going to be split between Cutter and Alpha?
A. What do you mean by "paying"?
Q. Well, your travel. You are going to get expenses for your time, aren't you?
A. No, not for my time. I think it's self-understood that the travel is paid. But I don't have any expenses for being, any payments for being here for my time spent.
Q. All right. That's because you're all in the same industry? You're with a pharmaceutical company that owns Behringwerke, right?
MR. GREEN: Object, Your Honor. I think it's

argumentative.

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THE COURT: Overruled.
BY MR. RING:
Q. Is that right? I don't know how to pronounce it, so don't hold me. It's Hoechst --
A. No. That's not a problem. But I feel a bit concerned about your statement that I'm talking here on behalf of the pharmaceutical industry.
Q. I'm trying to find out, sir.
A. What --
Q. I'll withdraw the question.
A. Thank you.
Q. We don't have to belabor it.
Let me ask you, sir, is Behringwerke still in business?
A. Yes.
Q. It's a very viable company?
A. Yes.
Q. And its products are good products?
A. I think so.
Q. All right. And the company you now work for since '89 is the parent of that company?
A. Yes.
Q. And again, forgive me, would you say it once more?
A. Hoechst.
Q. Hoechst, is that it?

A. Yes.
Q. Okay. And Hoechst operates in the United States and in Germany?
A. Yes.
Q. And it's a big pharmaceutical company, right?
A. Yes.
Q. Now, sir, if I recall what you said this couple hours ago, you had nothing to do with the development of the Behringwerke pasteurization process, right?
A. No, because for two reasons, I was in clinical research, and we have a strict separation.
Q. Whatever the reason, I don't question it. I just want to be sure that nothing has changed since 1:00 o'clock.
You had nothing to do with the development of the process, right?
A. No.
Q. And the first time you got anywhere near it was in the middle of 1983?
A. Yes.
Q. Okay. Now, you're not a physician with a private clientele of patients, are you?
A. No.
Q. All your work is in connection with clinical studies at Behringwerke?
A. Yes.

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Q. That has to do with that product?
A. It was; sorry.
Q. I'm sorry?
A. It was. It's not anymore.
Q. Yeah, you're right. Okay. You left in '89?
A. Yes.
Q. Did you have anything to do with the sale of that product?
A. No.
Q. So that as far as marketing, you had nothing to do with it, right?
A. Not in the sense of marketing. Of course, I was sometimes asked by the marketing colleagues to give explanations and help them with argumentations.
Q. Of course.
A. But it was not a marketing thing.

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Q And you would do that if someone --

A Yes.

Q -- stopped you and said, "Ernst, can I ask you this or that"?

A Well, sometimes I gave talks.

Q Okay.

A But not really what you mean by selling or marketing.

Q But you, also, if I remember what you said a couple hours ago, did not know anything about the manufacturing process, right? I mean, nothing scientific? You got to learn a little about it, but you didn't develop the process for making any of the Factor VIII, did you?

A No, but I think maybe I was not clear some hours ago.

Q You are clearer walking over here from --

A No, let me please explain because, you know, I am not -- this is not my mother language. That is why.

Q I will give you all the time. Believe me, you are doing real good. I wish I could do as well in German.

A What I -- I am not familiar, of course, with the scientific details of the process, but we had a task force, as I explained, where we all met and of course there we exchanged a lot of data. So I learned quite -- let's say the basic understanding of the process.

Also, I do not have the details how much of solvent or water or so I need. So I would like to make that point.

Q Sure, okay. But I think -- well, you know more than I do, so let me just try that.

For pasteurization, you need enough heat to kill the virus, right?

A Yes.

Q And you need a -- what did you call it?

A Stabilizer.

Q Stabilizer, to protect the protein --

A Yes.

Q -- from that heat --

A Yes.

Q -- so you don't kill the protein or no more than is possible?

A Yes.

Q Is that right?

A One could explain that, yes.

Q Is that simple enough?

A Yes.

Q Okay. And in heating the Factor VIII, there would be some denaturing from what you learned --

A Yes.

Q -- of the protein of the Factor VIII when you are killing the virus?

A Yes.

Q Okay. And that is what you were saying you would have a

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loss in yield, is that right?

A Yes.

Q These are things, of course, when they were initiating from '78 to '83; it is nothing you were involved in, but you learned that by being around the plant?

A Yes.

Q Right?

Now, to make up for that yield loss, you needed more plasma?

A Yes.

Q So it was a trade-off of a virus free and cost, right?

A Yes.

Q Okay. And so if you wanted to make it virus-free, you would have to keep on using enough plasma to compensate for the denaturing in the process?

A Correct.

Q Okay. Now, did you learn that Behringwerke was getting its plasma from the United States?

A Yes, about 80 percent of the plasma was originating from the United States.

Q From this country?

A Yes.

Q Okay. And then when Dr. Heimberger -- and he is a very famous man, isn't he?

25 A He is, yes.

Q Are you happy you worked under him?

A I didn't really work under him. It was great to have him as a colleague.

Q Bad question. They could say if I asked them how happy they worked for me, you would hear all kind of things, but at any rate --

A No, he is a very special person, you are right.

Q Okay. And Doctor Schwinn is a very special person?

A Dr. Schwinn left Behringwerke shortly after I joined the task force. So I cannot tell you too much.

Q And Dr. Schemp?

A Dr. Schemp isn't with Behringwerke. Maybe you mean Professor Schwick.

Q Schwick, well, all right.

A I mean, --

Q I get my Germans mixed up.

But he was a fine person and a good biochemist, right?

A Yes. Then you mean Professor Schwick.

Q All right. Now, at any rate, the company is still in business, is that right?

A Yes.

Q And it is still selling the same three brands of Factor VIII, is that right?

A If you talk about the pasteurized products.

Q Yes?

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A Yes.
Q Okay. And you said that there was also a non-pasteurized product?
A Yes.
Q That Behringwerke sold?
A Yes.
Q Doctor, wasn't one of the reasons that the insurance -- whoever pays for insurance there -- is it a nationalized insurance system in Germany? Assurance?
A Which insurance?
Q Well, whatever you have that pays for medical expenses?
A You are talking about house care insurance?
Q Yes.
A Okay, this is about 98 percent of all Germans are covered by social security house care plan.
Q Did you find out -- I know that this is not during your time because this is '78, or '81 to '83 -- did you find out that one of the problems or one of the reasons for continuing with the non-pasteurized product was that the health insurers would not pay for the added cost?
A That is difficult because the -- as I told you in the beginning, it was also a medical understanding that brought me --

Q I understand that.

A -- don't need this, but --

Q Wasn't that one of the reasons --

MR. GREEN: Your Honor, may the witness complete his answer?

THE COURT: Yes, I think he was not finished with his answer. Go ahead.

BY MR. RING:

Q Go ahead, finish.

A So there is some -- there is a discussion I have to say because I have not ever seen personally in writing that they have turned down the payment for HS if the doctor has argumented that he needed the product for this patient for special reasons.

But I know that hemophilia treatment is very expensive and that there were discussions whether or not other products with a lower price could be used, but personally I am not aware of any documentable things.

Q As far as -- I am sorry. Did you finish?

A Yes.

Q You are not aware of anything in writing but you are aware that it was a problem to get a heated product that cost more, pasteurized that cost more, unless you could establish by the doctor that it was necessary?

A Yes, this was fine.

Q Okay. Have you ever tried to get a claim paid in this country from an insurance company?

A Fortunately I haven't to do that.

Q Well, in any event, so these were considerations.

When you talked about the doctor's attitude, you don't know what every doctor thought, do you?

A No, of course I don't know what every doctor thought, but there is a yearly meeting in Germany, or at least used to be until I left this field of interest, where all the hemophilia treatment centers meet, and there is some kind of consensus discussed on treatment schedules and so on.

And in this meeting there was this discussion ongoing and furthermore, Professor Heimberger, when he published for the first time about this product, also made the suggestion in writing that this probably should be used -- the product should be used due to its limited supply in first order for patients who have not experienced hepatitis yet.

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Q. Okay. So that was based on a supply, not based on the quality of his product, was it?
A. Both.
Q. Oh?
A. The doctors were a bit concerned about the changes which might be made due to the heat, to the protein. I mean, I don't know whether you can really imagine what it means. Factor VIII is one of the most heat labile proteins.
Q. We know all about that.
A. Okay.
Q. And you've testified to that. I just want to get a few things from you.
I think you misunderstood me. I asked you did Dr. Heimburger go around and tell them not to use it, because it might have some change in the Factor VIII?
A. No, he did not go around.
Q. Okay. Now, and, Doctor, you being the representative of the company didn't knock the product in front of the other physicians at this annual meeting, did you?
A. I had a chance to be at the meeting. I did not give any papers there.
Q. So you didn't talk at the meeting?
A. No.
Q. And I think I've asked you, you yourself do not treat

hemophiliacs except in clinical trials for Behringwerke?

LAURA M. BRENNAN, Official Reporter

A. Well, I don't want to be hypocrite, but no company does treat patients. So we always are theoretically --
Q. Okay.
A. -- working with protocols and with definitions and so on. We don't have patients, yes.
Q. All right. And, Doctor, one other thing. You talked about -- now, by the way, you mentioned Haemate. Am I saying it right?
A. Yes.
Q. HS?
A. Yes.
Q. And that was the registered name in Germany?
A. Yes.
Q. And that followed, that was processed under the Heimburger patent?
A. Yes.
Q. In Germany?
A. Yes.
Q. And that was in 1979 when he filed it?
A. Yes.
Q. And in Germany, that becomes open or public so anyone can attack it if they want to object to it?
A. Yes.
Q. Okay. And Haemate PS, that's the international name?
A. Haemate P.

LAURA M. BRENNAN, Official Reporter

Q. P?
A. P only.
Q. I thought you added an S.
Q. No.
Q. I know you said that during your deposition a couple hours ago.
A. I'm sorry.
Q. I thought you added an S.
A. If I did so, that's wrong.
Q. Okay.
A. It's P for pasteurized.
Q. Okay. And that is the international?
A. Yes.
Q. Okay. Is that the same process as HS, as Haemate HS?
A. Yes.
Q. Made the same way, same process as is disclosed in the German patent?
A. Yes.
Q. And then the one that's being sold in this country, Humate-P?
A. P.
Q. That's 1986?
A. Yes.
Q. And that's the same process?
A. Yes.

Q. Now, the Humate-P was not licensed -- and by the way, so we're clear, Haemate, H-a-e-m-a-t-e, HS, that was sold in Germany?
A. Yes.
Q. And Haemate, same spelling, P, that was international? Does that mean it was sold in countries outside of Germany?
A. In countries outside of Germany, but in a rather limited number, for example, in Austria and Spain, not in France.
Q. All right.
A. At that time, not in Italy, for example.
Q. But the difference between HS and P is merely to identify where it's going?
A. Well, you see, I told you that HS means heat sterilized --
Q. Yes.
A. -- in German. And the marketing people saw that pasteurized would be more catchy to the user outside of Germany. That's why they had different names.
Q. But the patent is for a pasteurized product, isn't it?
A. Yes.
Q. Okay. So you were doing nothing wrong by using P for pasteurized in countries outside of Germany, is that right?
A. I think so.
Q. And I take it that nothing was done by Behringwerke to change the registration from HS to pasteurized in Germany?
A. No.

LAURA M. BRENNAN, Official Reporter

Q. You just left it that way?
A. We just left it.
Q. Okay. And then when you got to this country, you were having some trouble in trying to get it licensed by the FDA, right?
A. I tried to explain that this was nothing actually with the product. It was a different understanding of the clinical trial methodology in Germany and Europe versus the FDA understanding here. And there had to be certain formal things be arranged and discussed.
Q. Did you hire some patent lawyers or -- strike that.
Did you hire some lawyers to try to get the FDA to license the product?
A. No. This was all handled by our DRA, the drug regulatory affairs --
Q. From where?
A. -- department.
Q. From?
A. From both Germany and our American affiliate.
Q. Okay. And they filed applications for the Federal Drug Administration for a license?
A. Yes.
Q. Okay. And they filed it in what year?
A. In '83.
Q. '83. And by the way, the patent that Dr. Heimburger, that

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is, the process that he invented, that was for, it was a pasteurization process for hepatitis B, wasn't it?

A. It started with hepatitis B, yes.

Q. Yeah. So that was the object, was to kill the hepatitis B virus?

A. Yes.

Q. Which is a very tough virus, isn't it?

A. Yes.

Q. And when you started to test and see what effect it had on non A-non B, that hadn't been identified yet, had it?

A. No. But there's a special problem. You do not need to have the virus identified for inactivation experiments. But what you need, you need to have an identifiable infectious agent in a given strains let me say. And these experiments we could do when we received Hutchinson pool from the NIH, which was in 1984, 1985.

Q. But when you were using it or testing it for non A-non B -- which we now call C?

A. Yes.

Q. And that's just a few years ago, isn't it?

A. Yes.

Q. But everybody knew about non A-non B. They couldn't identify it or hadn't identified it, so they just gave it that name, non A-non B, is that right?

25 A. That's right. One of the problems with non A-non B, and it

also holds true for C as well, there might be other viruses. We have identified one out of the viruses which cause the disease pattern of non A-non B. Whether C is the only agent responsible for that remains open at this time.

Q. Okay. And that is because there are always new viruses being discovered, right?

A. Yes. But I don't really know whether we could say that for non A-non B, because we already know the disease and that it's caused by very high probability by a virus. So I wouldn't say that non A-non B is not an unknown virus. Also, we haven't identified it yet.

Q. Okay. But there are viruses that come up or are discovered all the time, isn't there?

A. Yes.

Q. Okay. And we're not at the end of the world, the virus world yet. There is more going to be coming, right?

A. Maybe.

Q. Do you think we've killed them all?

A. No. But I think it's difficult to say that more is coming. There might be more coming. But it also could be that we are at the end.

Q. All right.

A. But it's better, it's better to assume that more is coming.

Q. All right. Well, as a scientist, you have to look at it that way, don't you?

A. Yes.
Q. And you have to be prepared for things like that, don't you?
A. Yes.
Q. Okay. Now, over the last 50 years, there have been more viruses that have come up?
A. Yes.
Q. And as far as viruses, even before you came to work for Behringwerke, you knew that viruses were sensitive to heat?
A. Yes.
Q. All right. For example, albumin, 50 years ago they discovered 60 degrees Centigrade for 10 hours would kill that virus?
A. Yes.
Q. Would kill the virus in albumin?
A. Yes.
Q. And, Doctor, with respect to the FDA, you had the people in this country, and I don't know what, you know, what their type of work was, but you had people trying to get the Behringwerke process licensed in this country, is that right?
A. The product licensed?
Q. Yes. Well, you'd have to get FDA license in order to sell it here?
A. Yes.

25 Q. And you wanted to sell it here, certainly in '83?

A. Yes.
Q. Or you wouldn't have filed for a license if you didn't want to sell it?
A. Yes.
Q. Okay. Now, you had trouble getting a license, I take it, from the length of time it took you?
A. Is that a question? I'm sorry.
Q. Yeah, that's a question.
A. I don't know what --
Q. You've learned a lot in two cases.
A. I'm sorry?
Q. I'm just saying you've learned a lot about our system in two cases. You know how to ask, you know, to clarify a question. You've only testified in the two cases you told us about?
A. Yes.
Q. This one and the one up in Oregon?
A. That's right.
Q. All right. Then, Doctor, finally, you did get a license, didn't you? Behringwerke got a license to sell --
A. Yes.
Q. -- their Humate, which is the same product under --
A. Yes.
Q. -- a different name.
By the way, who named it Humate?

LAURA M. BRENNAN, Official Reporter

A. I guess this was an idea from the licensing, from Armour.
Q. Armour?
A. Yes.
Q. When did you get involved with Armour?
A. Personally?
Q. Well, I don't mean -- well, okay. That may be a good thing. Personally, did you know Armour before you -- before they became involved in the sale of Humate?
A. No.
Q. All right. So at any rate, did you talk to anybody from Armour when they first came into the picture?
A. Yes. Actually, I remember quite well we had a meeting where we, I think it was in '85 or so, where we did some training with the Armour people on our product.
Q. And your people explained to them what the product does, that it was a pasteurized product?
A. Yes, yes.
Q. And from what you told them and what they saw in the process that was patented, they wanted to sell the product or they wanted to make the product? Which was it first?
A. They wanted to sell the product.
Q. Sell the product, okay. So they needed a license from Behringwerke?
A. Yes.
Q. Did you then tell them that there is a little bit of a

LAURA M. BRENNAN, Official Reporter

problem, that the FDA somehow doesn't seem to be moving along?

A. This was not my business, because I'm clinical. And this was legal or licensing department.

Q. Okay.

A. So I didn't have this insight.

Q. So yours is clinical, which as I understand means the testing?

A. Yes.

Q. Okay. Now, at any rate, you met with Armour or your -- were you there at the first meeting with Armour?

A. I don't know. I was in a meeting in '85. Whether the legal department or whoever had discussions or the board members, I was not higher management.

Q. At any rate, sir, Armour got a license, right?

A. Yes.

Q. And, now, before Armour got the license, did Behringwerke have to change anything in the application or format that it had filed with the FDA?

A. I think there were some changes. But since this was handled by DRA, I'm not aware of the details.

Q. I think you told us between 12:00 and 1:00 that there were none. Is that about as much as you know? And I know you don't know all about the licensing.

MR. BERKMAN: Objection. I don't think that's -- I

think he said he didn't know at his deposition.

LAURA M. BRENNAN, Official Reporter

MR. RING: That's good enough.

BY MR. RING:

Q. That's what I'm saying, that you didn't know. So you don't know what was there, right?

A. Yeah. But it was handled by DRA. I don't know -- what I said is that I guess there was no change. No, in fact, there couldn't be a change in the technical process. But whether there have been changes in the papers or so on --

Q. In the paper work, you don't even know?

A. That was done by the DRA.

Q. But certainly not in the process?

A. No.

Q. All right. Let me ask you then another thing. How long after Armour came into the picture was there a license?

A. Could you explain? I don't understand what you're asking.

Q. Yeah. I want to know the time between Armour asking Behringwerke, you know, for a license, and the FDA approving it.

MS. GOURLEY: I'm going to object, Your Honor. I think he is confusing license here. I'm not sure what kind of license he is referring to at this point.

BY MR. RING:

Q. The license from the FDA to sell it.

A. I'm sorry, I cannot answer your question, because I don't

know when the discussions on licensing of the product with

Armour started, so I cannot give you the time. I told you that I'm not aware of this.

Q. And I don't want you -- yeah, you did. And I don't want to get you into something you don't know.

But as I understand it, just to sum up, the meeting that you attended with Armour was in '85. Do you know when in '85? Do you know what month? Was it cold like in Germany, or was it like Miami?

A. It was in California, and, therefore, it's difficult to say when it was.

Q. Okay.

A. But as far as I remember to the best of my knowledge, it was in February.

25

LAURA M. BRENNAN, Official Reporter

Q Okay. All right. You got that one right. In California you can't tell. All right.

But, at any rate, in 1986 it was licensed?

A Yes.

Q And just a couple of things -- by the way, from what you -- and I know this is what you've looked at. You weren't involved in it, but did Behringwerke do any animal studies? Did they do any chimpanzee studies?

A I was very, very involved in these issues because as I told you, we had this task force where virologists, technical, and production people all had to be together to discuss these things.

Yes, I know about animal experiments. I think I mentioned that we had done the last chimp trial in '84, '85 with non-A, non-B Hutchinson pool plasma.

Q All right. And those tests were sent on to the FDA?

A I guess so. I don't know.

Q Well, were any trials -- other than what was done that you described -- done after Armour came into the picture?

A Well, we described this non-A, non-B -- I

described this

21 non-A, non-B clinical study in previously untreated patients.

22 This was closed only after the end of '86.

23 Q Okay. But other than that, there was no more chimp studies

24 required, nothing more required of chimpanzee studies?

25 A Not to my knowledge.

Q So other than submitting the clinical trials on non-A, non-B, there is nothing you know of that was sent to the FDA?

A Well, that I can't tell because this was done by American colleagues, so I don't know what they did at what time.

Q Well, that's fair enough.

MR. RING: I don't think I have any other questions, your Honor. Wait. I'm told there is one. I've got to listen.

BY MR. RING:

Q By the way, we are talking about Factor VIII, aren't we?

A Yes.

Q Not Factor IX?

A We're talking about Factor VIII.

Q Yes. And Factor VIII is for persons with hemophilia A?

A And Von Willibrant's disease.

Q And Von Willibrant's disease. I always mix that up.

A It's an extra special feature of the Humate HS or P product, that it can be used in Von Willibrant's disease.

Q It can be used for that?

A Yes.

Q But the patent and the process was for hepatitis B, wasn't

it?

A Yes.

MR. RING: I don't think I have anything else.

CROSS-EXAMINATION

BY MR. BARR:

Q Good afternoon, Dr. Weidmann.

A Good afternoon.

Q When did the BGA in Germany -- when they allowed Behringwerke to say to the public that the Behringwerke product did not transmit hepatitis B, a claim? What year was that?

A Well, actually that's a very difficult issue because while we were doing all these studies, the HIV problem came to its full extent, and the BGA was going for glass labeling of the Factor VIII products. And the glass labeling was -- regardless of the activation procedure you had, you had to say that Factor VIII products could transmit viral disease, especially of unknown viruses, so that there was no claim possible at that time any more that transmission of hepatitis B or non-A, non-B virus was not observed.

What we could do and we have done, that is, we have called the animal experiments and clinical studies. In these studies, hepatitis B was not seen -- hepatitis non-A, non-B.

And this was following the trials we had done with Professor

Manucci in '85 -- in '86, I guess.

Q 1985 or 1986?

A Yes.

Q And when were you able to make the claim that it would not

transmit, based upon the trials non-A, non-B?

A It was roughly the same time because this was all together

in one trial.

Q When were you able to make a claim that it would not transmit HIV based upon these trials or any trial or any experiment?

A I think about the same time because that was when we had the data from Dr. Prince.

Q Am I correct that it was in 1985 that you did experiments with Dr. Prince from the New York Blood Center to ascertain that the process Behring was using to heat its medicine would kill the new viruses that they had found that caused AIDS?

A Yes.

Q Is that when this occurred?

A That was in the beginning of 1985.

Q Are you or were you aware that Cutter had done its work to determine that its product, that its medicine did not transmit HIV in 1984?

A As far as I can remember, the application of Professor Levy, but he was experimenting with miscellaneous virus, so I cannot remember when -- to see if application when the first trial of HIV virus itself was done.

Q Finally, are you here testifying on behalf of

the

22 pharmaceutical industry? Remember Mr. Ring asked you some

23 questions about that.

24 A No, I'm testifying here to make clear what the state of the

25 art in Behringwerke was at what time. This is what I would

like to testify on.

Q Your expenses are being paid, but unlike some witnesses that we've heard who are receiving 3- or 4- or $500 an hour to testify here, you are receiving nothing, is that correct?

MR. RING: We don't need a lecture.

MR. BARR: Your Honor, I didn't bring this up.

THE COURT: The "unlike" part, that's rhetorical, that's true.

BY MR. BARR:

Q You're not being paid anything to testify, is that correct?

A Except my expenses.

MR. BARR: Thank you. I have nothing further.

MR. GREEN: I have one thing, your Honor, just let me look at my notes

(Brief pause.)

MR. GREEN: I don't have anything, your Honor.

THE COURT: Do I understand that Behringwerke never obtained a license in the United States for a product that would treat hemophilia?

THE WITNESS: No. Behringwerke got a license in 1986 for the Humate-P, but as far as I can remember,

since the

licensee had a product which was used for treatment of

hemophilia and the amount of product was limited, the decision

was to use this product for its unique indication to Von

Willibrant disease, because no other heat-treated products were

available at that time to be used in that indication.

THE COURT: Was it also suitable, however, for use in hemophilia.

THE WITNESS: Yes. It's used in Germany. It's used in both indications.

THE COURT: Did Behringwerke apply for a license to sell it for hemophilia in the United States?

THE WITNESS: I'm sorry. Since this was done by our colleagues in the DRA in U.S., I'm not aware what the submission -- how the submission was formulated.

THE COURT: Any questions from the jury? All right.

MR. RING: I --

MR. GREEN: Your Honor, there is no redirect, so I presume there is no recross.

THE COURT: I asked a question and Mr. Barr asked questions.

MR. RING: Do you want to ask a question?

MR. GREEN: Go ahead. I'll go last.

MR. RING: No, you go last.

THE COURT: Cross is last, so if you have anything, Mr. Green, you ask it and then Mr. Ring will conclude it.

MR. GREEN: I have nothing.

THE COURT: Unless I have something I want to ask.

That's different.

REDIRECT EXAMINATION

BY MR. RING:

Q In light of the questions Judge Grady put to you, sir, the product being sold, Humate, that's the same pasteurized product. What does it say it's for on your label?

A "Intravenous route in the treatment of patients with classic hemophilia A."

Q That's Factor VIII?

A Yes.

Q All right.

A But the understanding we have is that it's only --

Q I don't care about your understanding, this is what the label is. The understanding is what, between you and Armour? Is that what you want to get into?

MR. GREEN: Your Honor, I can't hear counsel so I think I'm going to object. It sounds like he's arguing with him from where I am.

MR. RING: I'll withdraw that question.

BY MR. RING:

Q It's a Factor VIII product for hemophilia A patients?

A Yes, but as I tried to explain to his Honor, that due to the availability to the later product, it was emphasized to use

it only in that indication. This is just what I want to say.

Q You have an availability problem now?

A No. When it was in '86.

Q In '86. There is no problem now, is there, with

availability?

A You see, I left the company in '89, so I'm sorry I can't answer these questions.

Q In '89 was there a shortage of plasma to make this product?

A There was a shortage compared to the market demand, yes.

Q So the market demand was greater than what you could supply?

A Yes.

Q That's a good thing, isn't it?

A For a company, yes.

MR. RING: Thank you. I have no other questions.

THE COURT: There was one more thing I'm not sure I understood going way back to your original examination.

You said that one of the risks -- one of the two problems with the product in Germany was the possibility that the patient would develop antibodies to the protein.

THE WITNESS: Yes.

THE COURT: And thereby become more difficult to treat.

THE WITNESS: Yes.

THE COURT: Was that not taken care of before the

product was licensed; in other words, did the German government

license a product that had that problem?

THE WITNESS: Well, the problem is, you see, it's a

human protein, and the only experiments you could do is in

animals. And then for an animal, it's a foreign protein. By definition, if you give it to an animal repeatedly, this animal will have to develop antibodies against it, so there's a limited chance, but you do not know how to evaluate these -- this chance. There's a limited chance that you probably could -- if there would be a risk that you probably could see that the antibodies would arise earlier in an animal with a product which is prone to this inhibitor formation than with the other product which is not prone to that.

THE COURT: Was the heat-treated product more likely to give rise to an inhibitor than all of the varieties of none-heat-treated products on the market?

THE WITNESS: It was a suspicion or an assumption on the basis of the heat treatment and the possible changes in the protein. It was an assumption, but this assumption was not totally wrong. I think what we have seen, which is an unfortunate event in the Netherlands, where the Red Cross developed such a product and had to stop the development because there was an increase in inhibitors in

these patients.

THE COURT: All right. Thank you. Okay. Thank you, Doctor. You may be excused

(Witness excused.)

MR. GREEN: We have no further witnesses for the day, your Honor.

MR. BARR: Your Honor, I guess I'm going to be

calling the next witness, but I have to set up the projector.

THE COURT: How long will that take?

MR. BARR: One minute. I think.

MS. GOURLEY: Your Honor, do you know how long we're going to be going today?

THE COURT: Well, 5:30. Since we have got such a short day -- I don't like to keep the jury after 5:30. If you would like to stay until 6:00 -- what do you think? 5:30?

MR. BARR: Thank you, your Honor.

THE COURT: Yes.

MR. BARR: I'll call Dr. Milton Mozen.

Your Honor, may I provide Dr. Mozen's CV to the jurors?

THE COURT: Yes.

MILTON MOZEN, DEFENDANTS' WITNESS, DULY SWORN

DIRECT EXAMINATION

BY MR. BARR:

Q Dr. Mozen, you are a Ph.D., is that correct?

A Yes.

Q And you received that in 1955 from the University of Wisconsin, is that right?

A That's correct.

THE COURT: Will you state your name for

the record

because the reporter doesn't have that.

THE WITNESS: My name is Milton Mozen, M-o-z-e-n.

Laura M. Brennan, Official Reporter

BY MR. BARR:

Q Will you tell us, if you will, where you were employed after receiving your Ph.D.?

A After I received my Ph.D., I worked for two years on a post-doctoral appointment at what was then called Western Reserve University. It's now Case Western Reserve. I spent two years there and then took a job with Abbott Laboratories in North Chicago, Illinois where I was employed for ten years.

And following that I moved to Berkeley, California where I was employed and am employed by what was then called Cutter Laboratories, now referred to as Miles-Cutter.

Q Dr. Mozen, tell us, if you will, have you since 1967 been involved in research and development activities in any particular area?

A Yes. Since joining Cutter-Miles in 1967, my research activities have been almost primarily and solely involved with the development of products from human plasma -- human plasma derivatives and the improvement of existing products, developing new processes.

Q Have you been involved in some way with a plasma derivative that we've heard about in this courtroom on occasion called albumin?

A Yes, to a limited extent that product was already licensed at the time I joined the company, but like all of our products there is an ongoing program of the product improvement, and we

had some projects to improve albumin, also.

Q Dr. Mozen, have you known, since you did your work at --

first of all, at Toledo and later at Purdue University and

later at the University of Wisconsin, that viruses and albumin

could be killed by heat?

A Well, it's certainly well-known since World War II that

hepatitis can be transmitted in serum. And it's what I really

learned after joining Cutter that hepatitis, which was a

problem when albumin was developed in the '40s, was eradicated

by a pasteurization process that was developed wherein certain

unique stabilizers, unique to albumin, were included in the

solution and then the albumin could be heated at 60 degrees

centigrade, which is approximately 154, I think, Fahrenheit for

about ten hours. And this rendered the product empirical.

There were no studies that could be done at the time,

but empirically, that is, through extended and years of use,

they found that it did not transmit hepatitis.

Q Hearing it in this courtroom is not something new for you,

is that correct?

A I'm sorry. I missed that.

Q Hearing that viruses can be killed by heat in albumin is not something new for you to have heard in this courtroom?

A No, we've been through that, yes.

Q Dr. Mozen, at some point in time did you begin to hear reports that a new disease might possibly be transmitted, other

than hepatitis, in plasma derivatives?

A Yes.

Q And can you tell us the events surrounding that information coming to your attention and about approximately when it was?

A Well, I think as the jury has heard a few times, beginning in '82 and into '83 the disease, which was named AIDS, the acquired immune deficiency syndrome to have been first described in 1981 in gay men, particularly, and drug users.

This disease, which became more prevalent in the population, was begun to be seen in hemophiliacs starting -- well, in retrospect, we know in '82. We didn't know that then, but say '82, '83. And the possibility of that being a blood-borne disease or a plasma-derivative-borne disease was one of the propositions which people were looking at.

Q Did it cause you concern because of the work that you were doing or had done at Cutter about the possibility that plasma derivatives might transmit this new disease or be associated with it?

A Yes, it did.

Q Were there meetings held at Cutter where various groups got

together to discuss this potential problem?

A Well, the problem had to be discussed in the light of what

information was coming to us, which, of course, was very sparse

in those days; but as information filtered out from the CDC or

the FDA, and also the National Hemophilia Foundation, these

memos or communications were, of course, discussed early. And we attempted to see whether there was any relevance to what we were doing, whether there was anything we could do, and we attempted very stringently to stay on top of what was happening.

Q While you were in research and development of plasma derivatives, were there other departments, if you recall, at Cutter that dealt with other aspects of plasma derivatives that were not research and development?

A Yes. Really plasma derivatives constituted essentially the main industry of our company, that is, all of our efforts were directed in those -- involving those derivatives, so we had a clinical research department that was constantly involved. There was a microbiology department, a physiology and experimental therapy department that conducted the necessary animal tests.

There was a microbiology department that worked on the microbiological and viral studies, of course, regulatory affairs, which was involved with all of our interaction with

the FDA or other regulatory agencies. In general, all of these departments interacted together to achieve the objectives that we had set.

Q And while you were not in any of these particular numerous other departments that you've named, from your position at research and development, did you regularly meet with either

the heads or other people in these departments in order to ascertain what they were doing and finding out about this new disease?

A Yes.

Q Did you keep yourselves apprised of what was going on in other departments?

A Yes, always.

Q And, Dr. Mozen, I'm not going to go through it all, but you were here when Dr. McAuley testified from Alpha, were you not?

A Yes, I was.

Q Dr. McAuley testified about a time at the end of 1982, early 1983, when high-risk donors were excluded from plasma at Alpha, do you recall that?

A Yes, I do.

Q Did Cutter enter into generally such a program to attempt to eliminate high-risk donors at or about the beginning of 1983?

A Yes, we did.

Q Let me hand you documents that I will mark as Exhibit BB and Exhibit CC and ask you if BB is an example of signs that were placed in the plasma collection centers at the beginning

of 1983 where plasma was collected for use in Cutter coagulation product?

A Yes. It's my understanding that this is the information that was presented at our plasmapheresis centers.

Q I'm handing you what has been marked as Exhibit CC.

Is this a document that was given to a plasma donor at or about the beginning of 1983 each and every time they came in to donate and that they were required to sign their signature to before they were allowed to donate?

A Yes.

Q And it indicates at the bottom "I certify that I am not a member of any at-risk group described above."

And would you tell the ladies and gentlemen who the at-risk groups were that the donor had to certify he was not a member of before he could donate?

A This particular document that had to be signed by the donors had to certify that they were not a member of four groups, namely, male homosexuals, intravenous drug users, residents or visitors to Haiti within the last five years.

MR. BARR: Your Honor, may I pass these to the jury? Please. Thank you.

BY MR. BARR:

Q Dr. Mozen, since 1983, when these donors -- or when people were asked to self-exclude and not donate, have there been

papers published in the medical literature that discussed whether or not the exclusion of these donors by entities that collected blood or plasma, whether those measures were effective in eliminating those donors that might be at high risk?

A There have been several papers published by organizations that have used the self-exclusion program. And the conclusion from these publications was that the self-exclusion program was extremely effective in removing somewhere up to 90 percent of donors who were at risk.

Q And referring now -- and I won't dwell on it also, but referring to prison plasma, when did Cutter stop accepting prison plasma for use in coagulation products, Factor VIII or Factor IX?

A It seems it was -- I can't recall the exact date. It was back in 1983 as I recall.

Q Were you present during Mr. Hink's testimony when he testified it was the first quarter of 1983?

A Yes, I was here.

Q Who was Mr. Hink?

A Mr. Hink at that time was what's called director of plasma procurement. His responsibility was to oversee all of the plasmapheresis centers that Cutter owned and those that we contracted with to obtain plasma.

Q Dr. Mozen, as head of the research and development from the

first quarter of 1983 would any prison plasma, any plasma that came from prisoners, have been excluded from the manufacture of Factor VIII or Factor IX?

A It's my understanding it would be, yes.

Q Now, tell the jury, if you will, what is a hyperimmunized

donor.

A You've heard mostly about the product Factor VIII that we manufacture from plasma, but another very important group of products are called the immune globulins. Some of you know them as the gamma globulins. These represent the fraction of human plasma that contain a great number of antibodies, really an uncountable number. We know there's a large assortment of these antibodies.

Sometimes one wants to focus in on a specific antibody, for example, tetanus antibody or rabies antibody or mumps antibody or pertussis antibody, that's whooping cough.

What is done to obtain these -- what we call -- high-titer antibodies is we have to find a donor who has a high level of these antibodies. They are immunized so that if say a donor receives a rabies vaccine, he's immunized against rabies and then develops an antibody against rabies.

Now, if we prepare from a pool of these immunized rabies donors -- if we make our immunoglobulin or gamma globulin product from that pool, then we have an immunoglobulin

product with a high titer of rabies antibody. So that if somebody is at risk, they have been bitten by an animal or in some way have been in contact where rabies is suspected, then they could get an injection of this -- what's called hyperimmune gamma globulin in order to serve as a prophylaxis to ward off against rabies.

The same thing is true with tetanus and with other viral diseases.

Q Is a hyperimmunized donor the same as a high titer donor? We have heard that expression also.

A Yes, by and large. Sometimes a donor may have a high titer from some natural exposure, and if the titer as it's measured in our laboratory is high, they have a lot of the antibody, then they can be included in that particular pool or they will have been immunized in order to generate the high titer.

Q Would there be a purpose in using a hyperimmunized donor in prison to make high titer plasma products that have nothing to do with Factor VIII or IX?

A Yes, because once the donor has received this series of injections, the vaccine, for example, many of you know that rabies takes a whole series of shots in order to raise the antibody level, well, that's a valuable antibody for making the medicine to -- as I described.

And, you know, in prison we have a captive population. Once they have been immunized, we know that they

can donate over a period of time and continue to yield the high titer rabies, for example, or high titer tetanus; whereas, in the normal population, donors often disappear and they're not as stable a cohort of donors.

Q Now, you've been present throughout this trial, is that correct?

A Yes.
Q Heard the testimony of all the witnesses?
A Yes, I have.
Q Dr. Mozen you've heard testimony about there being "viruses" in plasma derivatives, is that right?
A Yes, I did.
Q Do plasma derivatives transmit viruses?
A Well, there's been a lot of misunderstanding, and I would like to speak to this point.

When we talk about viruses in blood and blood components, that is red cells, white cells, platelets, these same viruses do not occur in plasma derivatives.

In fact, for example, when I joined the company in 1967, there was only one disease that was known to be transmitted by Factor VIII, and that was hepatitis. In fact, that was rare because there are so many viruses that might be present in blood that are not transmitted in derivatives, for example, EBV, the Epstein-Barr virus. There's cytomegalic virus, which has been CMV, something like syphilis, something like malaria.

All of these can be found in blood, but they are

never found in the plasma derivatives. So what we were talking

about until AIDS was only hepatitis.

Q And when you say plasma derivatives, is that identical to

saying Factor VIII for purposes --

A Yes, of course.

Q Does Factor VIII transmit CMV or chicken pox or mumps or polio or any number of other viruses that might be transmitted by whole blood products?

A No. Of course, that's what makes hepatitis so unique because it's unique to be transmitted in a product like Factor VIII, whereas all of the other viruses that one finds in the blood could be transmitted through blood are not found in the Factor VIII concentrates.

Q Why is it -- based upon your experience, Dr. Mozen, your training, and your review of some 25 years of working in this field, why is it that the hepatitis virus, up until AIDS, was unique in being transmitted in Factor VIII?

A There's really three reasons why one does not see these viruses in products like Factor VIII. Number one -- and, again, I don't know if it was clear to everyone here, but viruses cannot replicate or do not reproduce by themselves.

The only way a virus can reproduce is when it's in a cell. So when a virus invades the body, it must first place

itself within a cell, become integrated into a cell, and then it takes over the mechanism of the cell so that the cell makes the new virus. If you had a solution of plasma, for example, which is cell-free, remove all the cells, the virus can no longer promulgate. So although there may be virus there, it has no ability to replicate and very often dies. This is true

for CMV, this is true for PBV. That's one reason.

Another reason that in the process of making these plasma derivatives -- I'm going to discuss this more later -- we go through a number of chemical additions and treatments and precipitations, we go through acid, we go through alcohol. And many viruses -- most viruses do not survive the rigors of this kind of treatment, and, therefore, they don't end up in the final product.

And thirdly, when you make a pool of plasma that comes from thousands of donors, you have an assortment of antibodies in there that is so complete -- completely relative to the population, that if there was a donor that had a virus infection that got into the pool, it would probably -- and we know this to be, there would be antibodies from another donor in this pool that would neutralize that virus.

So you really have the three reasons.

Q Dr. Mozen, at my request, have you brought to court some slides that demonstrate how Factor VIII is made from the time the plasma is collected throughout the entire process until

it's available for use by the hemophiliac?

A Yes, I did.

MR. BARR: Your Honor, I would like to show those and ask him to describe it to the jury.

THE COURT: Is this the Cutter process?

THE WITNESS: Yes. Yes.

And I thought that the visuals would -- as they say, a picture is worth a thousand words. A lot of the things we've been talking about, I think, by the jury seeing them would be very useful.

MR. BARR: Okay.

THE WITNESS: Do you want me to do that?

MR. BARR: Sure. If you would like me to come down here, maybe you could explain that.

(Brief interruption.)

THE WITNESS: This is basically how things were done in the time period relevant to this trial. Things have changed. This is simply a picture of a plasmapheresis center with the donors in the kind of reclining couches that they sit in when they are donating plasma.

Now, the plasma is drawn in a -- the blood is -- a whole unit of blood is drawn in a bag, and I am sure many of you who have donated blood have seen these before. And this simply shows the bag of blood on a scale which measures how much can be taken in the donation.

Then it is placed -- the bag is placed in this -- it is called a centrifuge, which rotates very rapidly, you might compare it to your spin dryer on your washer that shoots the water out, and this causes the cells to sediment to the bottom of the bag so you get something that looks like this.

The bottom are the red cells and the white cells and some platelets. And what you see above it is the straw yellow

clear plasma. Remember, I mentioned earlier that this plasma is now cell free. There are no cells in that plasma. It is a solution of protein.

Now, what happens is that bag is placed in this press which squeezes the bag and expresses the plasma out through one of those tubes into the bottle you see on the right of each press. And then the cells are reinfused into the patient --

excuse me -- into the donor. So what is happening is what you are seeing there is the bottom layer, the red cell layer, and to the right of that is some saline because these cells are now kind of thick. So the saline and the cells come together in a Y and they go back into the same needle that the cells were drawn out of in the first place so you don't have to make a separate venapuncture into the donor.

Meanwhile the plasma is collected, as you see here, in these -- this is now the pooling bags. They in turn are placed in this blast freezer where they are frozen very, very quickly to a temperature approximately minus 20, minus 30 centigrade, which is below zero Fahrenheit. And it is important that they be frozen quickly and very cold to preserve the Factor VIII because Factor VIII is so easily lost, its activity.

Now, those bags are transported to our factory in a freezer truck. And what you see there are those frozen bags. And what they have to do to get the plasma out of the bag is they actually make it even colder. They dip those bags into liquid nitrogen, which is approximately 300 degrees below zero. And that makes the plastic so brittle that it just shatters

away

and then you have a block of frozen plasma.

Blocks of frozen plasma are transferred to a large tank, perhaps something like this tank, which they are allowed to thaw. And they thaw at a temperature only slightly above freezing. So freezing, say, is 32 degrees or 30 degrees when it

has salt in it. They are thawed at perhaps 34, 35 degrees. So that takes a long time. And while that happens, there is a residue that does not go back into solution, and that is what we call cryoprecipitate.

So you now have this liquid on top and the cryoprecipitate on the bottom. And the cryoprecipitate is now removed by a centrifuge. But unlike the one I showed you, this is a continuous centrifuge so that the solution can be run in the bottom and out the top. And you're looking there at four centrifuges, and this is run in a room that is below zero in temperature.

And the suspension of cryoprecipitate in plasma is run through the bowl spinning at high speed. The solid material packs inside the bowl and the liquid comes out and is used for further processing to other plasma derivatives.

BY MR. BARR:

Q Dr. Mozen, so we get some idea, how tall are those centrifuges?

A They are about four and a half feet.

Q Okay, thank you.

A I have another picture here of the bowl after -- this is the bowl that -- and you can see the solid material being removed

from the bowl. And the brownish color you see there is a teflon

wrap, which is a liner in the bowl to allow the cryoprecipitate

to be removed easily.

Now what happens is that cryoprecipitate, which is now in this plastic bag, is emptied into another tank in which it is dissolved, and it goes through a process for removing fibrinogen, and other none Factor VIII components. And then it is ultimately precipitated; that is, we add something to it to cause the Factor VIII to come down.

And then it is centrifuged again, and I have gotten a little ahead of myself here, but it is centrifuged again. It is put into solution. It goes through a sterile filtration. Sterile filtration is to remove any bacterial type microorganism. And then filled into these little vials. So what you are seeing here is a filling machine. The vials are going through and they will be filled with the Factor VIII liquid, the sterile Factor VIII liquid.

This is just another view of a filling machine with, in this case, plasma protein being filled in those bottles. And then these bottles, Factor VIII containing solution, are frozen and placed in this freeze-dryer. And the bottles are in that tray, they are placed in the freeze-dryer and they are subjected to very, very high vacuum. And under those conditions the

moisture is removed and dry powder remains behind.

Now, when we made -- we went from our Koate to our Koate HT that was a dry-heated product, we had to reformulate.

And when the bottles came out of this freeze-dryer, they were then transferred to an oven where they were heated at 68 degrees

centigrade for 72 hours, three days.

I think that is the end of the dog and pony show.

Q Okay.

Dr. Mozen, from Exhibit F, we know that the Cutter heat-treated Koate that was used by -- taken by Mr. Poole had lot numbers 50N043 and lot number -- the second number was 50N037. And did you ascertain when, such as here, the plasma for those two lots were drawn?

A Yes. I reviewed some documents which indicated that all that plasma was drawn in 1984.

Q In 1984.

And all of the donor screening you have talked about would have been in place for at least a year, is that correct?

A That is correct.

Q And the expiration date on one of the lots is November 1986.

And what is the life of Koate HT once it is pooled and put into the bottle?

A It has what we call a two-year expiration date.

Q So does that indicate if the expiration date is 11-86 that one of those lots was pooled in November of '84; in other words, two years from that date, working back?

A Approximately, yes.

Q Okay. And if the other expiration date, according to

Exhibit F, is January of '87, and you work back two years, it would have been pooled in January of '85 approximately?

A Right.

Q Okay. If the plasma for Mr. Poole was drawn in 1984 and pooled in that year, available for use by hemophiliacs, would it have contained any prison plasma?

A No, it would not.

Q Now, Dr. Mozen, I am going to ask you to discuss with us the experiments that you did with Dr. Jay Levy on the Cutter product. And the first thing I am going to ask you to do is limit yourself to Koate, the non-heated Koate. This is not the product Stephen Poole got, all right.

Can you tell us what experiments you conducted with Dr. Levy concerning the AIDS virus and why you did them on the non-heated Koate?

A Yes, I will back up a little bit. Sometime in 1983, Dr. Levy called our laboratory. Dr. Levy is a world-noted retrovirologist who had been working in the field and was very interested in AIDS and the etiology or the cause of AIDS. I think you heard this in his deposition which was read yesterday.

And Dr. Levy called and we spoke on the telephone and he spoke to me of a dilemma he was having which was the following: He was beginning -- this was in '83 -- beginning to think that perhaps AIDS was, in fact, a viral-transmitted

23 disease. In fact he was working on trying to isolate virus from

24 homosexual men in San Francisco who were already diagnosed with

25 AIDS. But the dilemma he was having was why hemophiliacs, who

were apparently not at risk, that also there were reports of AIDS in this population.

And the thing that bothered him was that he thought that if AIDS were caused by a virus, it very well may be a retrovirus, which up until that time there had only been one retrovirus previously described in humans. And Dr. Levy, from his experience, felt that a retrovirus would not survive the process which leads to Factor VIII, the process which I showed you there; that is, if there are retrovirus in the plasma and it went through the cryoprecipitate removal, the fibrinogen removal, the absorption with aluminum hydroxide which is another step, the precipitation of the Factor VIII, the freeze-drying, all of these steps are deleterious to virus, and Dr. Levy felt that a retrovirus shouldn't survive. So he could not understand why the hemophiliacs were getting AIDS.

So he -- and of course, there was no AIDS virus at this point. This is in 1983. He said but I have in my lab a retrovirus that we grow in mice. It is called a mouse C retrovirus. And he said it would be interesting to me to see if that mouse C retrovirus, if we add it to plasma, will it in fact survive those fractionation steps? And I said, yes, I think

that would be very interesting and it would also be interesting to me to see if it did survive, whether we could then put it through our heat process and wipe it out.

So we put together an experimental protocol wherein we

used plasma, regular production type plasma, and Dr. Levy added to it his mouse C retrovirus. And he could add to it a known amount that he could count; for example, I think in this case something like 10 million particles per milliliter. A milliliter is like a thirtieth of an ounce. So he could dump a lot of retrovirus in there.

Then what we did, we added the retrovirus to the plasma, and then we prepared cryoprecipitate and we determined how much of this virus went into the cryoprecipitate, how much was in the part, what we call the supernate, the liquid part above it. We took that cryoprecipitate and we went through the next step of fractionation and we determined how much virus went in this step and how much virus went into the other track. We carried it all the way through to the final freeze-dried product that I told you about.

And at that point we determined that of all the virus we put in, somewhere between 90 and 99 percent did not survive the fractionation.

LAURA M. BRENNAN, Official Reporter

Q. All right. Now, that's the mouse retrovirus, correct?
A. So in this non-heated, even though it had not been heated, we already determined that 90 to 99 percent could not survive the fractionation process.
Q. Now, why or -- strike that.
Had you ever conducted this same kind of experiment before 1983 with the hepatitis virus, in other words, taking hepatitis B virus and doing the exact same thing to see how much hepatitis B virus you could kill?
A. That's an impossible experiment. I was telling you before that hepatitis is a unique virus, and it's also very unique in the fact that nobody to this day has devised a way that you can grow hepatitis virus in a cell culture to do the kind of experiments like we're doing.
With HIV or the mouse C and subsequently HIV and every other virus that I know of, you can grow cells in culture like in a flask or on a petri dish, you grow the cell. You can infect them with the virus, and then you count the virus. So if the virus are dead, they won't grow. If they're alive, they'll grow, and you count them by their effect on the cell.
Hepatitis does not -- nobody as I say even to this

day

22 has succeeded in culturing hepatitis virus. So there is no way

23 to do it. I might add though that when the hepatitis surface

24 antigen was discovered in 1968 and 1969, we were the first

25 laboratory to run exactly that kind of study where we

determined where that hepatitis antigen went during a fractionation. But we could not equate that with infectivity.

Q. So back in the late sixties, such an experiment was tried and found to be impossible?

A. It was impossible insofar as infectivity, correct.

Q. Now, did you at some point in time with Dr. Levy ever do the same experiment with non-heated Koate and instead of using the mouse retrovirus use the AIDS virus?

A. Yes. As soon as the AIDS virus was isolated in 1984, we immediately got together with Dr. Levy, again, because he had now, it was pointed out he was one of the three people in the world that independently isolated an AIDS virus, which he called then ARV standing for AIDS-related virus. So it really had three names which ultimately all became known as HIV.

So as soon as Dr. Levy had this virus available, then we wanted to do exactly the same experiment, because even though he felt the mouse C was a good, a good surrogate, if you will, for HIV, the proof of the pudding obviously was in doing the HIV itself.

THE COURT: Let's take a 10 minute break at this point.

MR. BARR: Yes, Your Honor.

(Recess. Jury in.)

MR. BARR: May I proceed, Your Honor?

THE COURT: Yes.

LAURA M. BRENNAN, Official Reporter

BY MR. BARR:

Q. Dr. Mozen, the question that I had asked you when we broke was: Did you do this same experiment with the non-heat-treated Factor VIII from Cutter, Koate, with the AIDS virus?

A. Yes.

Q. And would you tell us what you did and what the result was?

A. Well, basically we did the same thing. We took some pooled plasma, and now instead of adding this mouse C retrovirus, Dr. Levy provided us some HIV. And it was a known amount that he had counted the number of virus particles in there, the number of infectious virus particles. We added that to the plasma. We carried it through the fractionation, the number of steps that I described, and at each step we determined where the virus went and how much and carried it through to the final freeze-dried product.

Q. And what survived just the fractionation process?

A. Well, the results were very similar. We did the experiment several times, and it was in the order of 90 to 99 percent of the virus was destroyed. So let's say about 10 percent to 1 percent survived the fractionation part.

Q. Now, assume for a moment that you have in the unheated

Factor VIII -- now, this is not the one Stephen Poole got -- but in the unheated Factor VIII, if you had one or two viral particles that survived the process, could they ever grow or replicate to make more virus in the pool or in the final

product?
A. No, not at all. As I explained earlier, there has to be cell material, something that the cell can infect in order to grow. And these products are completely cell free.
Q. Now I'd like to ask you about Koate.
THE COURT: Before you leave that, so I understand, is there a difference between infecting and replicating?
THE WITNESS: Well, when a virus infects a cell, is introduced into a cell, that's called infection. And then that single virion that's in the cell can be replicated by the cell, the cell will reproduce it, so that that one particle within the cell can become hundreds of particles.
THE COURT: What I'm wondering is there are no cells in the concentrates, you say?
THE WITNESS: No cells at all.
THE COURT: But there might be cells in the recipient of the concentrate.
THE WITNESS: Correct.
THE COURT: Now, what about the virus that's in the concentrate? Could that infect the recipient of the concentrate?
THE WITNESS: If there is virus --

THE COURT: Maybe that's going to be down the road.

THE WITNESS: Yeah. But if there is virus, if there is viable infectious virus capable of infection in the

concentrate, and it is injected into a person, it can infect that individual, yes.

THE COURT: All right.

BY MR. BARR:

Q. Let's go back to a question then. If someone got non-heat-treated Factor VIII, and if there was HIV virus in the pool, and it then went into a person's body, would it just infect one cell in that person's body?

A. No. It would infect multiple cells and would also be replicated, reproduced by those cells.

Q. And because I'm going to get to in a moment the Cutter product and Mr. Poole, if someone like Mr. Poole were infected with the AIDS virus --

A. Yes.

Q. -- five or six years before he ever got any Cutter product, even if, even if the Cutter product had AIDS virus in it, could it harm Mr. Poole?

A. Not in my opinion.

Q. And why is that?

A. Because the virus that he already, the viral burden that Mr. Poole would already have in his body, that in the plasma, that in the cells. But particularly we know now just in the last year or two that most of the virus are sequestered in the

cells of the lymph, the lymph nodes, there are an enormous number of virus in the cells of the lymph nodes, hundreds of

millions. So the small additional viral, viral burden that might be added from a product would be like a cup of water in the ocean really. The viral burden that they already have would be so overwhelming compared to anything they could get from concentrate.

Q. Well, let's assume, for instance, there's been testimony that Mr. Poole may have gotten one vial, one single vial of Armour product in 1985. If he was already infected, scientifically, do you know of anything that would indicate that that one vial of Armour product could harm him?

A. No. In my opinion, once he is infected, he cannot be reinfected.

Q. Okay. Now, I want to go back to your experiments with Dr. Levy and Koate heat-treated.

A. Yeah.

Q. We're now talking about the heat-treated. And this is in the dry state?

A. Yes.

Q. Would you tell the jury what experiment you did with Dr. Levy with the heat-treated dry Factor VIII?

A. Well, as I mentioned, once we got through the fractionation, we had already eliminated 90 to 99 percent of the virus. So now we wanted to determine what would be the

effect of heat on the residual. But rather than just use the residual, we added more virus. In other words, we went through

the fractionation to the point where we're going to heat it, and now there's so little virus left that it's difficult to measure. So we added more virus, as much as we could.

And then we subjected the material, we first had to freeze-dry it, and then subject those vials to heat, in this case, 68 degrees Centigrade, and we did that for periods of time. So we would sample after like 12 hours, 24 hours, 36 hours, 48 hours, 72 hours, which is three days. And we then or Dr. Levy in this case counted how many virus remained at those various time points.

25

LAURA M. BRENNAN, Official Reporter

Q. Did there get to be a certain point when you were heating the Factor VIII at 68 degrees centigrade when all AIDS virus disappeared or was killed?

A. Yes.

Q. What hours -- how many hours at 68 degrees centigrade did you find that?

A. Well, sometime after 36 -- somewhere I think it was between 36 and 48 hours because we didn't have a -- those were the two sample points.

Q. Why did you continue on to make a final medicine that ultimately Mr. Poole received that was 62 degrees centigrade at 72 hours if all the AIDS virus was killed at 48 or 40 hours?

A. Well, it was an empirical decision. We had arrived at those conditions of 68 degrees, 72 hours before we had any AIDS virus to test. So, we basically were using conditions that we could deal with on an empirical basis. We had no real viral data to support it, certainly not any relevant. By "relevant" I mean HIV.

Q. Now, Dr. Mozen, what did you and Dr. Levy do to

21 determine that the amount of virus you were dealing with was

22 either less than or equal to or more than you would find in

23 the actual plasma pool that you would be using when this was

24 given to people?

25 A. Well, at the time we did that experiment in late '84 the

number of infectious virus in an infected individual was not known. Nobody had developed the know-how to count the virus in an infected individual.

So, we really didn't know at that time how many virus particles, infectious viral particles, would be present in one of our donors or donors that might be infected. Subsequent to that, this information has become available to us in a publication. I don't recall. In '68 or '69 scientists were able to study the plasma --

Q. Excuse me. You said '68.

A. Excuse me. '88 or '89 they were able to study the plasma of people with AIDS or pre-AIDS, which we called ARC -- that means AIDS-related complex -- or even people that were asymptomatic, which could be determined once the HIV antibody test became available.

Q. I am still unclear. How were you able to make certain? For instance, let me ask it this way. How many donors would you assume were in this pool when you were doing this test, not in the experiment, but actually the assumption for the pool?

A. You will have to run that by me again.

Q. Sure. Sure.

If you have got 10,000 people in a pool, when you are doing the test how do you know that there is not going to be so many infected people that there will be so much virus

that your test is not valid? How were you able to do that?

A. Of course we didn't know that then. We know now that the amount of virus we added is actually much in excess of anything that could have been in the pool.

Q. Is that because of data that was published after 1984?

A. Yes.

THE COURT: What did the data turn out to be?

THE WITNESS: Well, I have those data if we want to go over them.

BY MR. BARR:

Q. Is that Dr. Hoe's paper?

A. That's Dr. Hoe.

Q. I prepared a chart from Dr. Hoe's paper just by chance. Is this the chart from Dr. Hoe's paper that you were referring to?

A. Yes.

MR. BARR: May I stand by the witness, your Honor?

THE COURT: Sure.

BY MR. BARR:

Q. Using this chart and maybe this blue marker, can you explain how you went about ascertaining that you were with this experiment able to kill all of the virus that

would be

in the pool?

A. What this is -- we are just focusing on this. What this

is is a count of the HIV infectious particles in a number of

AIDS people, AIDS infected people. As you can see, there is a tremendous spread. But let's just take them one at a time.

This group here, which is all -- this is the control group uninfected, so basically there is nothing there. So, you see they are all tightly bunched in one place.

Now, these are HIV positive people who are asymptomatic. They were found to be HIV positive by virtue of the antibody test.

What he found was that the range was from five infectious particles to 100 per milliliter. The average was 30. So, you are seeing numbers here from five up to 30.

This is the spread. Each dot represents another patient.

You get out here to people who have ARC. "ARC" means AIDS-related complex. They are further into the disease. There the range was from 25 to 50,000 with an average of 3200, 3200 virus particles per milliliter.

By the time you get out here to a person with frank AIDS, who has diagnosed with AIDS, you see a range of

from

five to 50,000 with an average of 3500.

Now, what this says is the maximum seen in any one

individual was 50,000 virus particles per milliliter of

plasma.

Now, that 50,000 is the maximum that these people

found in any of their patients. We found that the experiments we did would inactivate all the viruses if there was not more than a million particles per milliliter. So, 50,000 is the maximum that was found, and we found in our experiments that as long as there was not more than a million, it was all inactive. The only reason we had to stop at a million is because that was all we could put in.

Q. Is that a million per milliliter?

A. Per milliliter.

Q. Let me ask you this question. Let's assume -- and I realize this is a silly assumption -- but assume that you had 10,000 donors in a pool and assume that all 10,000 of them were infected with HIV and assume further that, as Dr. Hoe pointed out, the absolute maximum found in any human being would be 50,000 parts per milliliter, all right. Do you have that in mind?

A. Yes.

Q. Did your experiment indicate that the heat treated process by Cutter at 68 degrees for 72 hours would kill all that virus?

A. Yes, because this is a concentration. So that if you had 10,000 donors and every one of them was infected and every one of them was infected to 50,000 virus particles per milliliter, the concentration in that pool is still 50,000 per milliliter. Our experiment indicated that the amount

actually destroyed or inactivated far exceeded that number.

Q. Up to a million per milliliter?

A. At least a million, yes.

Q. In your opinion, Dr. Mozen, based upon everything that you read up to the present time -- and by that I mean up to 1993 -- is there any difference in the ability of a pasteurized or wet heated process to kill the AIDS virus when compared to the Cutter process at 68 degrees for 72 hours?

A. There is no evidence that there is any difference.

Q. The dry Cutter process works as well as, for instance, the Behringwerke process?

A. Yes, it does with respect to HIV.

Q. Now, as to the Behringwerke process when did you become aware of it?

A. Oh, I would estimate about 1980.

Q. Can you tell the jury why you did not immediately ask your management to go to Behringwerke and ask for their license so that you could make that product here in the United States?

A. Well, basically it was because we were already well into our own program which we began about 1978. We were

sufficiently far along in our program that I was convinced that there is no way we could start from square one with a new process and not be more delayed than carrying on with our own process.

LAURA M. BRENNAN, Official Reporter

Q. Did you ever obtain a license from the Food and Drug Administration to make the wet pasteurized process?

A. Yes, we did.

Q. Was it marketed, sold before or after the dry process?

A. The one that was marketed and sold, it was after the dry process, yes.

Q. Why was the dry process marketed first?

A. Well, we were working on what you have heard described here as a wet process, which to me means heating the Factor VIII in solution; that is, finding the appropriate protective agents or stabilizing agents to allow the Factor VIII to be heated without destroying all the activity. We had been working on that since the end of 1978.

When we got into the '80s we began to look at -- the most difficult thing of all these experiments is trying to prove that what you are doing is doing what you want it to; namely, killing hepatitis.

So, as I mentioned earlier, the only way you can really tell whether you have inactivated hepatitis is to test it in chimpanzees. These are long experiments. I don't want

to go into it because you have heard this before.

But we were well into that program in the beginning of 1983 or the first quarter of '83 when there was more suspicion that AIDS may be a transmissible problem. Simply on a hope and a prayer we thought that if AIDS in fact were

transmissible and if this transmissible agent might be susceptible to heat and if the kind of heat that goes in dry heat would be -- would do that job, we could move faster into getting a product licensed.

We knew that because conferences, discussions with the FDA indicated they also now were quite concerned, and they were not requiring as much validation of the hepatitis as they had earlier with respect to a heated process.

Q. Because of the hope and prayer that this heat treated process might kill the AIDS virus, were several years of prelicensing work waived by the FDA so that this product could be used by hemophiliacs?

A. Yes. By "waived" I think what we are talking about is mainly the chimpanzee studies to validate an inactivation of hepatitis.

Because since there was no AIDS virus known in 1983, the only rationale for heating was hepatitis. And if you go to heat and claim you inactivated hepatitis, then you have to be able to prove that. Those kinds of experiments

take a good couple years to do.

In discussions with the FDA they indicated to us that if we showed some effect on what they call model viruses, nonrelevant viruses, that at least show that you were inactivating something, that they would waive the requirement to demonstrate hepatitis inactivation.

Q. Dr. Mozen, six or seven years ago did you receive a report that a physician in Italy thought that perhaps one of his patients might have been infected with AIDS from the Cutter heat treated 68 degree for 72 hour product?

A. Yes, we did.

Q. Would you tell me and the jury what you did when you received that information?

MR. RING: Judge, this is the area that you ruled on a number of times.

THE COURT: You make me feel like I haven't got a good memory because I don't remember.

MR. RING: Well, I am talking about the affidavit.

THE COURT: Oh, yes.

MR. BARR: Your Honor, I am not discussing an affidavit. I am asking what this witness did before this lawsuit was ever filed when the report was --

THE COURT: All right. As long as you don't get into something I have already excluded.

BY MR. BARR:

Q. What did you do?

A. We had received a report at our laboratory that there

was a possibility that this Koate HT, or actually it might have been the Factor IX product, but a product that was heated at 68 degrees for 72 hours may have caused a seroconversion in a hemophiliac.

LAURA M. BRENNAN, Official Reporter

We were so astonished by this report since our data seemed so clear that this couldn't happen that one of our clinical investigators and myself, we immediately got on an airplane and flew to Italy and interviewed the physicians who had made that report, and basically concluded that this --

MR. RING: Judge, I object.

THE COURT: Sustained.

MR. RING: Can the jury just be asked to disregard?

THE COURT: Yes. Disregard the interview with the physician.

MR. BARR: May I proceed, your Honor?

THE COURT: Yes.

BY MR. BARR:

Q. Dr. Mozen, don't tell us about any conversations you had with anyone. Don't tell us about any interview. Did you go to Italy and investigate whether or not there was any other source of infection for this single person than this product heated for this temperature at this period of time?

A. Yes.

Q. Did you reach a conclusion having made your investigation that the source of infection was other

than the

Cutter Factor VIII or not?

MR. RING: There, again, Judge by inference --

THE COURT: Yes, it has to be hearsay from what I

have heard, and the objection is sustained. Move on to something else.

BY MR. BARR:

Q. Dr. Mozen --

MR. BARR: If your Honor will allow me to make an offer of proof.

THE COURT: Later.

BY MR. BARR:

Q. Dr. Mozen, when you received this one report from Italy did you remove this product from the market?

A. No, we did not.

Q. Were you satisfied in your own mind it should not be taken off the market because it did not pose any danger to any hemophiliac?

A. Yes.

Q. Dr. Mozen, as you sit here today, do you believe that scientifically it would have been impossible for the Cutter heat treated Factor VIII that Mr. Poole took in 1985 to have infected him with AIDS?

A. That's my opinion.

Q. Do you have an opinion to a degree of medical certainty that if he was uninfected when he took it --

MR. BARR: Strike that.

BY MR. BARR:

Q. That if he was infected when he took the Factor VIII

that it could have caused him no harm whatsoever?

A. I believe it could have caused him no harm.

MR. BARR: I have nothing further.

CROSS-EXAMINATION

BY MS. THOMAS:

Q. Dr. Mozen, are you a virologist?

A. No.

Q. Are you a medical doctor?

A. No.

Q. I take it you don't have any special non-medical expertise in infectious disease?

A. I am not sure what you mean by "non-medical expertise."

Q. Do you have any expertise in infectious disease?

A. Well, I gained a lot of expertise in the transmission of AIDS in plasma products, yes.

Q. By analyzing Cutter's product?

A. By working in this field over the last number of years.

Q. In working with Factor VIII concentrate specifically you have developed some of the steps that were used in the manufacturing of the product; is that correct?

A. Yes.

Q. There is a -- there are a number of filtering steps that the cryoprecipitate is put through; is that right?

A. Well, no, that's not really correct. As I

showed on the

25 slide, the cryoprecipitate is removed by centrifugation and

then undergoes further processing. One step to -- there is an absorption and there is another step of fibrinogen removal, another step of precipitation, sterile filtration.

I am not sure I get your question.

Q. Okay. Are there any filtering steps in the manufacturing process of Factor VIII concentrate?

A. Oh, yes.

Q. Okay. That's all I want to know.

Those filters are made so they trap bacteria so you don't have bacteria in the final product; is that right?

A. That's one of the filtering steps, yes.

Q. Okay. Now, is there anything that could escape the filtering that Cutter was using in 1981, '82, '83?

A. Well, obviously the Factor VIII will pass through the filter.

Q. Obviously. And some fibrinogen will pass through the filter, right?

A. Could, yes.

Q. Also some albumin would pass through the filter?

A. Oh, yes.

Q. What about viruses?

A. Viruses are filterable.

Q. Okay. Because they are very small?

A. I am not sure what viruses would be there, but viruses are considered filterable.

LAURA M. BRENNAN, Official Reporter

THE COURT: What does "filterable" mean? They are caught or they go through?

THE WITNESS: They can pass. A filter that will remove a bacteria.

BY MS. THOMAS:

Q. So, during 1981, 1982, 1983, clear up until '84, '85, I presume, viruses could pass through the filtering process?

A. Yes, if they are viruses. As I mentioned, by definition a virus is defined as a filterable substance.

Q. Okay. You knew that based on your experience in working with Factor VIII over the years. You knew that in 1979, didn't you?

A. The viruses were filterable?

Q. Yes.

A. I knew hepatitis was filterable by presumption, yes.

Q. Okay. In 1982 nothing had changed, had it? I mean viruses can still pass through the filter, correct?

A. And in 1993 they can pass through the filters, yes.

Q. Okay. Given that, it seemed pretty clear to you in 1982 that the causative agent of AIDS would most likely be a virus, wouldn't it?

A. No, it was not at all.

LAURA M. BRENNAN, Official Reporter

Q You talked a little bit about the product that Stephen Poole took. I believe Mr. Barr asked you when the product -- the plasma for his blood products would have been collected; do you recall that testimony?

A Yes, I do.

Q You said that for one of the lots you actually went through all of the records and determined where that plasma came from and when it was collected. Did I understand your testimony correctly?

A No, you didn't. I said I reviewed certain documents which indicated to me that -- the time when it was collected and basically where the plasma came from, yes.

Q Did you look at the donor sheets?

A No.

Q Did you look at the labels telling you from where the plasma was shipped to Cutter?

A No, I looked at a summary sheet that indicated where all of the plasma originated.

Q For -- now, how many lots go into a batch of Factor VIII?

A Well, you'll have to tell me what you mean by a "lot."

Q Generally at Cutter you have two or three -- maybe I've got it backwards. Do you have two or three batches that go into a final lot, or is it the other way around?

A Well, I have to start back at the pool.

Q Okay.

A I showed you we have a pool of plasma.

Q Yes.

A And from a pool of plasma we obtain cryoprecipitate.

Q Right.

A And that cryoprecipitate goes to Factor VIII. Now, there may be cryoprecipitate or steps along the way from three pools that goes into a lot of Factor VIII.

Q How many donors would be represented in each of those three pools on the average?

A Well, the pool size is about 3,000 meters.

Q You might have a donor who is in there more than once.

A That's correct.

Q Okay. Those pools represented collections from Cutter's privately owned plasma center?

A Yes. Again, the time frame, as I recall, Cutter has centers -- had centers that they own, as you put it, privately owned, and we also had contract centers.

Q You had contract centers?

A Right.

Q You were obligated to buy so much plasma from these contract centers, correct?

A I don't know that we were obligated. We did purchase from

them, yes. They had to adhere to the same rigorous standards and follow our so-called SOP, standard operating procedures, as our own centers.

Q During 1983 and '84 Cutter was collecting what's been called recovered plasma, is that correct?

A Yes.

Q And that's from blood banks such as Irwin Memorial and other places?

A As I understand "recovered plasma," it's -- to answer your question, yes, but let me say how I understand recovered plasma it is a -- when a unit of blood is collected and put into the refrigerator, it outdates. The outdating has changed over the years. It used to be 21 days, 28 days, and 35 days.

Once it outdates, that means it can't be transfused as whole blood and then the plasma is drawn off and it can go into fractionation, but not for coagulation products. The reason for that is the coagulation factors, Factor VIII or IX, does not survive that 21 or 28 or 35 day hold of the whole blood.

Q Well, we have already seen documents in this courtroom. I'm not sure if -- I know you've been here for most of the trial.

Mr. Hink testified and told us about some

documents

21 that were shown to the jury that Cutter had collected recovered

22 plasma throughout 1983, I believe, and that this was, in fact,

23 included in the Factor VIII pools.

24 MR. GREEN: I'm going to object, your Honor,

25 misstates the evidence.

THE COURT: What's your recollection of it?

MR. BARR: That is not what he said. It was not used in Factor VIII, just what this witness said.

THE COURT: Well, I certainly can't decide. I don't remember.

Is that your recollection, Miss Thomas?

MS. THOMAS: Yes, it is.

THE COURT: Well, the jury has to rely on its own recollection.

MS. THOMAS: We can always refer back to the documents.

BY MS. THOMAS:

Q The shelf life of Factor VIII is two years, is that right?

A That's right.

Q Getting the product -- the raw produce from the various locations around the country to the manufacturing facility, through the manufacturing runs, into a final product can take up to 16 months I believe we've heard, is that correct?

A That's not my recollection.

Q Were you involved in plasma manufacturing, sir?

A No.

Q Okay. I believe others who have been here have

testified,

23 so we would defer to their testimony in that regard, would you

24 agree?

25 A Yes.

Q Okay. And if the product Stephen Poole had taken were shipped to him in 1985, it could very easily have been made from plasma collected in 1981, 1982, or 1983, couldn't it have?

A Not in my opinion.

Q Well, that's your opinion.

A Yes, from what I know of the operation, although I wasn't directly involved, I certainly spent some time in manufacturing when I was introducing new processing there.

Q Were you involved at all, sir, in Cutter's decision -- I believe it was made in late 1983 -- to start testing incoming plasma with the hepatitis B core antibody test?

A No, I was not involved in that decision.

Q Were you aware that Cutter was doing that -- had implemented that?

A Yes.

Q Do you know, Dr. Mozen, what happened to the plasma after Cutter stopped segregating it as hepatitis B core antibody plasma?

A Could you give me a time frame?

Q About the time that Cutter came out with its dry heat-treatment process and started marketing product under the

dry heat treatment?

A I really don't get your question. Can you --

Q Okay. Cutter had been collecting plasma as usual, but

screening it using the hepatitis B core antibody test for a

number of months?

A That's right.

Q At some point they stopped screening the plasma using the hepatitis B core antibody test, didn't they?

A Yes.

Q They haven't thrown that plasma away, have they?

A No, not to my knowledge.

Q It was simply segregated, wasn't it?

A I'm not real sure.

Q Well, maybe I have something there.

I'm going to show you what's been marked Exhibit No. 4241. This is a memo to Mr. Hink and Mr. Turner.

Who is Mr. Turner, do you know?

A In that time frame Mr. Turner was the top man in manufacturing.

Q Okay. Who is J. Ryan?

A Jack Ryan, I think, at that time was president of this division.

Q Could you read to us the second paragraph of that memo?

A Yes. This is the first time I've seen this memo.

Q Could you read us the second paragraph.

A Would you like me to read this?

Q Yes, please.

24 A It says, "Effective immediately you should discontinue all

25 hepatitis B core screening and all segregation of plasma based

on this test."

Did you have a question?

Q Can we take that means the plasma was returned to the pools, Dr. Mozen, in October of 1984?

A Well, again, it's an assumption. I really don't know. I wasn't involved in that aspect.

Q You talked a little bit about HIV infection and the level of HIV virus found in persons who are infected.

I believe Mr. Barr asked you what the highest levels of virus are we might expect to find in a person who is infected?

A Yes.

Q Okay. When a person is initially infected, he will have the virus throughout his blood supply, is that correct, when one is initially exposed to the HIV virus and becomes infected?

A I think I indicated earlier that when one becomes infected the infection is in the cells, probably the first one, the so-called CF4 cells, which are lymphocytes, part of the white cells, and the virus, HIV, will infect those cells.

Q Okay. I'm talking about the initial exposure. If you were to take -- if you were to take a culture of a

person's blood

22 who has recently been exposed to HIV, you would find the virus

23 free flowing in the blood, wouldn't you?

24 A No, I don't think so.

25 Q Okay. At the end of the infection you would find the virus

free employing in the blood once the person has progressed to full-blown AIDS, correct?

A I think the data I showed in that blowup is exactly the answer to your question. At these various points after infection, that's the counts that one would see, so initially it would be very low -- well, initially and after seroconversion when antibody forms, it becomes even lower. And eventually, 8 or 9 or 10 years, as the individual progresses to full-blown AIDS, then the concentration increases in the circulation, but there is a high concentration in the lymph nodes as indicated.

Q In other words, the virus hides out, and it's sequestered away in the lymph nodes. It's hiding in cells, and it's very slowly replicating, is that correct?

A It could be replicating rapidly actually. It's replicating in the CD4 cells, a certain lymphocyte, and then these become sequestered in the lymph nodes. Lymph nodes are the sort of like the body's garbage disposal. They grab up these cells and hang on to them.

Q When someone progresses to full-blown AIDS, the

virus is

21 going to break free from the lymph nodes and circulate through

22 the body, correct?

23 A Yes, yes. Correct.

24 Q And at no other time is a person as highly infectious as at

25 that time, isn't that correct?

A With full-blown AIDS.

Q Exactly.

A Yes. We had data on that in our chart as you noticed.

Q And the article that you were relying on with regard to the amount of virus we might find in a person infected with HIV was written by Hoe in 1989, was it?

A It was late '80s. I don't recall the exact -- it's relatively new information, yes.

Q Would you agree that our ability to quantify the HIV virus has vastly improved in the last couple of years?

A By last couple of years you mean like '92, '93?

Q Yes, sir.

A Oh, yes, yes.

Q And back when you and Jay Levy were running these experiments to quantify the amount of virus in Factor VIII, the quantifying of the virus was pretty primitive, wasn't it?

A No, it was quite good.

Q It was a very hard virus to quantify wasn't it?

A Yes, but Dr. Levy had the tools and the ability to do it. And I think he did a very good job with it.

Q Doctor, wouldn't you agree that most scientists working in this field as of 1984, 1985 found one of the

biggest problems

23 in studying the AIDS virus was that it was difficult to

24 measure, to quantify, and to grow?

25 A I think you're confusing that with isolating it from a

human being and quantifying as opposed to having a culture which you can grow in tissue culture like Dr. Levy was doing and quantifying that. There was no difficulty in doing that.

He had a very, very sensitive radioimmunoassay that allowed him to measure an enzyme with great precision which measures replication of the virus. This was in a tissue culture.

What you're referring to, I believe, is the problem in quantifying it in an infected individual, very different situation.

Q I believe Dr. Levy's 1984 article told us -- and he may have told us in his deposition that the -- for example, the Mouse-C retrovirus was much easier to quantify than the AIDS virus, which is one reason that he chose to work with the mouse C retrovirus instead.

A The mouse-C retrovirus, of course, was available to us prior to the AIDS virus. What Dr. Levy was referring to was, first of all, that the mouse-C virus could be grown to a much higher concentration.

The other thing he was referring to was the fact that to quantify the HIV virus required a longer period of incubation in the cells to be certain that you had grown out all of the viruses. I think he was referring to the length of time rather than the precision.

Q Well, let's talk a little bit about that experiment. There

were two, one with the mouse-C retrovirus and one with HIV at a later date?

A Two series of experiments.

Q Okay. Time-wise how far apart were they done from one another?

A I would say the mouse-C experiments were done probably in the fall of '83, I would say, and the HIV experiments were done mid-'84, perhaps, August September '84.

Q Now, you did not use a full-scale manufacturing run to conduct these experiments, did you?

A Miss Thomas, you cannot dump HIV into 3,000 liters of plasma.

Q You were working to --

A You would contaminate the entire planet. It's totally undoable situation.

Q Could you have done that with the mouse-C retrovirus?

A No.

Q Okay.

A You would need to grow virus for the next five years to get enough to contaminate 3,000 liters of plasma. And then you -- I mean, the answer is, no.

Q Your equipment is very, very big?

A In production, yes.

Q And you were returning these experiments on the dry heat-treated process, correct?

A Yes.
Q And I assume the ovens are very, very big?
A Which ovens?
Q How do you heat your Factor VIII concentrates?
A You mean in production?
Q In production.
A Yes. We have ovens comparable to the size of that freeze dryer that I showed you, and the bottles are put into there. These ovens go through a process that's called validation.

Validation means --

Q Could you first tell us how large these ovens are, please.
A You'll just have to go by that picture. I don't think I can give you the dimensions. They're big.
Q How many vials --
A Maybe we put 3,000 vials in there, 4,000.
Q 3,000? Okay. And you had, what, three or four or five vials based on your experiment that you ran with Jay Levy?
A You mean in our experimentals?
Q Yes.
A I would say 20 or 30.
Q Did you put these 20 or 30 vials into the 3,000 vial oven?
A No. I don't know why we would want to do that.
Q What did you put them into?

24 A We also had a validated oven. A validated oven means one

25 in which the -- you put thermocouples in it. A thermocouple is

a device that allows you to record the temperature on an external recorder.

These thermocouples were placed in certain bottles to validate that the temperature was, in fact, what we said it was, which is the same thing we do in the large ovens. As far as we were concerned there was no certainly no difference. 68 degrees is 68 degrees, as long as you know that it's being measured properly.

Q. Just like our ovens in our kitchens, 300 degrees is always 300 degrees?

A. No, no, not at all. I don't know any ovens in your kitchen that you validate with a recording thermocouple.

Q. How large was the oven you used for your experiment?

A. Well, I would say it was maybe two feet by one and a half feet, something like that.

Q. About the size of a little microwave?

A. Approximately, yeah.

Q. Okay. Now, other than the Cutter people involved in that process and Jay Levy, who measured the virus, was there any outside agency or outside team that validated what you and Jay Levy had done?

A. Well, essentially, yes. We repeated that experiment not in the --

Q. Well, no, no, no, not the one, not a repeat, but the one we're actually talking about.

A. I guess I didn't understand that.

Q. When you added the HIV to your tenth of a liter of plasma,

and you baked these 4 or 5 or 15 or 20 vials in a microwave-sized oven, that particular experiment.

A. And your question was?

Q. Was there any outside agency or group of persons that validated this other than Cutter employees?

A. What do you mean by "validated"? Do you mean somebody come

in and look over my shoulder?

Q. Sure. Participated in some sense.

A. No.

Q. So it was just you, some Cutter employees, and Jay Levy involved in this?

A. Yes.

Q. Okay. And Jay Levy was not involved in the actual processing of the material. His job was solely limited to adding the virus and quantifying it after the process, is that right?

A. Yes. He was an expert in growing virus, quantifying viruses. We, in turn, were expert in fractionating plasma. So we had a nice division of labor. He did what he was expert in, and we did what we were expert in.

Q. Okay. And you relied on his calculations, and he relied on you to operate the oven?

A. Right.

Q. Okay. And then you scaled up this dry-heat process into the ovens that accommodate 3,000 bottles, is that correct?

A. Yes.

Q. And your assumption was that if X number of virus particles were killed in the little experiment, then X number of particles would be killed if you took that to the large scale production, is that correct?

25 A. No, I wouldn't call it an assumption at all. I would call

it something that we were able to scientifically validate.
Q. Based on how much virus you killed in the little experiment?
A. Well, I think I've tried to explain earlier that when you have a concentration per milliliter that that concentration per milliliter is the same whether you're dealing with 10 milliliters or 1,000 milliliters or 10,000 milliliters, the concentration remains the same. So that it's really not a function of size in this respect. As long as we knew, which we obviously did, that the parameters, the characteristics of these ovens were comparable, that the temperature within the bottle is what we measured was comparable, there were really no assumptions to be made that I'm aware of.
Q. And one of the most important or, rather, the several most important things in determining whether a dry heat-treat process is coming close to doing what it should do is the time, the temperature, correct?
A. Well, I think any viral or microbiological kill is a function of time and temperature.
Q. Okay.
A. Whether we're talking about bacteria, we're talking about virus, we're talking about fungus, that's a known fact.
Q. Well, whether or not you're using stabilizers, correct?

A. Stabilizers are very important, yes.

Q. Okay. And did Cutter use stabilizers?

A. Yes.
Q. And these stabilizers were to preserve the Factor VIII, correct?
A. Yes.
Q. And the process of lyophilization alone is a stabilizer, isn't it? I mean, that's why you get a better yield when you dry heat, isn't that true?
A. Well, not exactly. When you lyophilize or freeze-dry, you have a Factor VIII which is more stable than it is in solution, that's correct. And certain microorganisms can survive freeze-drying. We learned that the HIV loses what we call two logs, 100 particles per milliliter, just through the process of freeze-drying.
Q. But it can survive for years freeze-dried, can't it, can't it, Doctor?
A. When you say "it," we're talking about proportions. If you have a certain amount, say you had 10,000 viral particles prior to freeze-drying, and 90 percent of them or 99 percent of them would not survive the freeze-drying, those, that one percent that survived, may remain viable for years. At least that's true for hepatitis. I don't know about HIV.

Q. Jay Levy has written about that, hasn't he?

A. He has written about what?

Q. Do you keep up with Jay Levy's articles?

A. Yeah, sure.

LAURA M. BRENNAN, Official Reporter

Q. Okay. He's written, hasn't he, Dr. Mozen, that HIV virus can live for years in lyophilized Factor VIII?
A. I thought I explained it. Do you want me to go over this again?
Q. Well, I'm just asking you if that's what Dr. Levy has, if he's come to the same conclusion?
A. What we're saying is during lyophilization, 90 or 99 percent of it doesn't survive. So you can't really say that this is a stabilizing process. However, what we're saying is that 1 percent or 10 percent that does survive may, depending on what virus we're talking about, may survive for many years in the freeze-dried state. However, I don't believe those data are available specifically for HIV, and for hepatitis, it's solely by inference. Nobody has measured it.
Q. Okay. So in Cutter's dry heat-treat process, we have two stabilizing factors at work: one, the lyophilization and, two, whatever additional stabilizer Cutter has added to the product, correct?
A. You mean stabilizing Factor VIII activity?
Q. Yes.
A. Yes, uh-huh.
Q. Okay. And these stabilizer also, and this is I think well

known in the literature, stabilize viruses, don't they?

A. They can, yes.

Q. Okay.

LAURA M. BRENNAN, Official Reporter

A. That has made our -- that's why our problem of developing heat treat was so difficult.

Q. And I presume that you added your stabilizers in your experiment that you did with Jay Levy?

A. Oh, exactly the same.

Q. Now, you talked a bit about superinfection. I believe Mr. Barr had a few questions for you about whether Cutter's product could have infected Stephen Poole. And I assume, Dr. Mozen, you're basing your answer on the fact that Cutter had a dried heat-treat process you believed would have killed any level of HIV, is that correct?

A. That's one consideration, yes.

Q. Okay. It's also well reported in the literature that there are different strains of HIV virus, isn't that true?

A. Yes, again, depending how one defines strains. There are virus that show a difference in genetic composition but nonetheless are still referred to as HIV-I. But yes, essentially, you're correct.

Q. Okay. In fact, the same virus that infects person A can change and mutate over time and become more virulent, more fierce?

A. You mean within person A?

Q. Yes.

A. That's been reported.

Q. Okay. In fact, you could cultivate virus from person A at

a point in time, find a virus, HIV, six months later, take another cultivation, and you might find a different strain of virus, isn't that correct?

A. There could be some differences. Again, as I said, this definition of "strain" sometimes gets a little confused when you talk about real differences. There is a definition for it in terms of genetic divergence.

Q. Okay. It may all be the same virus, but it changes. It can disguise itself. It becomes more virulent. Wouldn't you agree with that?

A. That's correct.

Q. Okay. And a person can, if a person is infected, let's assume Stephen Poole received a lot, and 40 donors were carrying HIV, and they were at different stages of infection, some of those donors might have a more virulent virus than others, wouldn't they, based on what we know?

A. I couldn't speculate on it. That's too highly speculative.

I wouldn't even offer an opinion.

Q. But in principle, you agree that depending on the time of infection, the virus that is transmitted from one person to another will not always be identical?

A. Yes.

Q. It could be a more virulent virus?

A. Well, when they say more virulent, I think the kind of experiments you are referring to really are within that same

individual. I don't know of any experiments that say that this is more virulent in some other individual. In other words, you referred to a person who is infected, and the virus is cultured, and then some years down the line that virus is cultured again and deemed to be more virulent. They only know that it's more virulent in that individual, which takes into account that individual's entire immune response to that virus.

I don't believe anybody can say that that virus is more virulent in someone else, because nobody can do that experiment. Nobody is going to take that virus and inject it into somebody else. So I couldn't accept that as being even in principle something I would buy into.

Q. Now, just to go back one moment into your experiment with Jay Levy, if you're culturing the same, if you have an HIV virus, and you're culturing it, let's assume that it's a fairly passive virus, if you will.

A. Pardon?

Q. Let's say it's not one of the virulent viruses.

A. Well, okay. Let's say that.

Q. Okay. And if you're stimulating it to grow and cultivating it, it's going to replicate itself, isn't it?

A. No. I think I explained earlier virus don't replicate

itself. They replicate by virtue of taking over the cellular machinery, the cellular synthetic capability of the cell that they infect. So they basically infect the cell and say to the

cell: Stop what you're doing and start making more of me. This is what a virus does.

Q. Okay. Me, the cell that it is, the cell that you have sitting there in the dish?

A. Make more of me being the virus.

Q. Right.

A. The virus tells the cell: Stop doing what you're doing and make more of me, me being the virus. The virus cannot replicate by itself.

Q. It needs a human cell?

A. Yes.

Q. A cell?

A. A cell.

Q. Okay. Now, back to the superinfection theory that we were discussing, you would agree that Stephen Poole could have been exposed to several contaminated lots of Factor VIII concentrate, wouldn't you?

MR. BARR: Excuse me, Your Honor, may we know what year?

BY THE WITNESS:

A. When?

BY MS. THOMAS:

Q. Let's say in 1984.

A. Not if he was receiving heated product. I wouldn't acknowledge that, no. But I wasn't here when all of the

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history of his product usage was shown. So I really don't know what he received in '84.

If you asked me if he received a Cutter heat-treated product, I would not acknowledge that he could be exposed.

Q. Okay. Well, we know your opinion about the Cutter heat-treated product.

A. Right.

Q. My question to you is: Assuming he, Stephen Poole, had been exposed to several contaminated lots of Factor VIII concentrate, okay?

A. You mean non-heated?

Q. Okay. Non-heated.

A. Okay.

Q. He could well have been exposed to different strains of HIV, isn't that true?

A. Are you saying when he got these three lots or whatever, that he was already infected with HIV or not infected?

Q. Well, let's assume he was not infected, and over a course of a few weeks he had three different lots.

A. You're saying I should assume he was not infected.

Q. Uh-huh.

A. And he received three contaminated batches of Factor VIII?

Q. Uh-huh.

A. Okay. And what is the question now?

Q. Okay. It's quite likely if those batches were

contaminated

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he could have been exposed to different strains of HIV?
A. You asked me to assume that they were contaminated.
Q. Uh-huh.
A. And with that assumption, he could have been exposed to different strains, yes.
Q. Okay. And six months down the road, he could receive another contaminated lot and be exposed to yet another strain of HIV, isn't that correct?
A. Is he, six months down the line, is he now infected?
Q. Well, let's assume he was infected by one of those three, but he hasn't yet seroconverted.
A. He could be, he could be exposed, but he wouldn't be infected.
Q. Okay. I think we've already established that some persons are exposed to contaminated lots of Factor VIII and for whatever reason do not become infected, correct?
A. I believe that occurred, yes.
Q. Okay. Now, would you agree that it's possible that one exposed and infected to a strain of HIV can have a superimposed infection?
A. I don't agree with that.
MR. BARR: I'm sorry, I couldn't hear, Your Honor.
BY THE WITNESS:
A. I would not agree with that.
MR. BARR: Thank you.

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BY MS. THOMAS:

Q. And that's your opinion?

A. Well, it's my opinion based on a lot of experimental literature.

(Discussion off the record.)

BY MS. THOMAS:

Q. Okay. Now, Cutter had been working on a pasteurized product for some time, hadn't they --

A. Yes.

Q. -- in 1982?

A. I think I said we actually began that work in 1978.

Q. '78?

A. Yes.

Q. And in, is it March or April of 1983, you suddenly switched your R&D to the dry heat treatment, is that correct?

A. Well, I wouldn't say that "suddenly" is fair. As I explained to Mr. Barr and to the jury I hope, we had been well under way with this pasteurized process when the accumulating data that suggested a possible association of concentrates and the transmission of AIDS came about that we began to look at the dry heat. So for several months we were actually developing both simultaneously, perhaps even longer than that.

25

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Q. Were you working on the dry heat at all in 1982 in your Cutter labs?
A. No, we were not.
Q. Did your picking up on the dry heat process have anything to do with Baxter getting a license in January of 1983?
A. No, it didn't.
Q. Just coincidence?
A. No, not at all. I can tell you exactly what happened. When I had heard either late '82 or late '83 that -- I mean early '83 -- about Baxter in a dry heated process and we were working on hepatitis, my personal opinion was dry heat wouldn't do anything for hepatitis B.
Q. You put that in writing, didn't you?
A. Yes, I did.
So, my interest was to continue with the pasteurized product.
Q. But you were persuaded to take a second look at the dry heat treat process, weren't you?
A. Because of what I will now call it a potential AIDS crisis. When I was working solely on hepatitis that was not the case.

But as I mentioned in earlier testimony, that with our hope without a heck of a lot of data, that we were dealing with a virus. And if the possible virus were

susceptible to heat and the dry state, we could move that much faster into a product onto the market than we could the pasteurized product that we were having a lot of technical problems with.

Q. You moved amazingly fast into the market with a dry heat treated product, didn't you?

A. With all of the assistance that I referred to earlier; namely, the FDA giving us rapid review and not requiring certain preclinical studies that we had formerly been required to do for a hepatitis-free product or a product that was alleged to be hepatitis-free.

Q. Is it your opinion that Cutter's dry heat treat process doesn't transmit any form of hepatitis?

A. No, it's not my opinion.

Q. So, it does transmit hepatitis?

A. It transmits hepatitis. My opinion is that it's equally affected to pasteurization for HIV, which I understand is the subject of this lawsuit.

Q. Right. If HIV is not present in the pools at a rate of or in a quantity of 1 million virus particles per milliliter, correct?

A. Run that by me again. I missed what you said.

Q. That's the most you can tell us, isn't it, that based on your experiment with Jay Levy where you heated the 15 or 20 vials in the microwave-sized oven -- well, why don't you tell

me?
A. In 1985.
Q. Yes, yes.
A. That was our conclusion. That was the basis for our conclusion that this process successfully and totally removes HIV.
Q. How much HIV?
MR. BARR: Excuse me, your Honor. May the witness be allowed to finish?
MS. THOMAS: I am sorry.
BY THE WITNESS:
A. All of it, but --
BY MS. THOMAS:
Q. But what is all of it? Please, I would like to --
A. Well, as I recall, we concluded that if the concentration is no greater than 10 to the sixth, which is one million HIV infectious particles per milliliter, then we had assurance that it was all inactivated. But since that --
Q. All that you added to it?
A. Which was approximately a million, right.
Q. Uh-huh.
A. If we had a billion, I would have added a billion. We didn't have that much. Now we found out that that

million

was still maybe 20 times more than has ever been recorded in

the most infectious individual.

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Q. You are sure about that, Dr. Mozen?
A. Well, I can only be -- I didn't do that experiment myself. I have -- I am quoting literature.
Q. Dr. Hoe?
A. Dr. Hoe is a noted virologist and researcher in AIDS research.
Q. Dr. Hoe in 1989?
A. He is still a noted researcher.
Q. I am sure he is, but that's the article that you are quoting to us, right?
A. Yes, because, as I mentioned earlier, there was nothing else available initially. This question has come up in this trial a number of times. How many particles of infectious viruses is in an infected donor's plasma? That question was asked many times. The answer wasn't there until Dr. Hoe's article in 1989.
Q. Okay. Since then other people have been able to quantify how much virus a person has circulating in this plasma once he has come down with frank AIDS and the virus has left the lymph system and spread throughout his body. A lot of people are doing that now.

A. I think there have been other articles since then.

Q. The number is getting higher, isn't it?

A. No, I don't think so. They are substantially different.

Q. Now I understand your view on infections with different

strings of HIV. Now, you are not a virologist, right?

A. That's correct.

Q. I presume you don't have an opinion on the impact of a hepatitis virus on a person already infected with HIV?

A. Well, I don't know that I don't have an opinion.

Q. But that's just not your area?

A. I am not a virologist, right.

Q. Okay. Now, did you invite some of the other defendants to participate in this experiment with Jay Levy?

A. Invite in what form?

Q. Oh, say, "Come on, bring your dry heated product and we will see how all of ours do together, how they measure up"?

A. No, we didn't do that.

Q. Did Jay Levy, do you know, offer to test the other defendants' products? I believe he is on record as having said he did.

A. I believe he testified that he had contacted others, but I don't know anything of the detail other than what was read here.

Q. So, you weren't involved in that at all?

A. Not with other manufacturers, no.

Q. But, according to this experiment that you

performed, at

23 times less than 36 hours at a temperature of 68 degrees there

24 would still be detectable levels of HIV in the concentrate;

25 is that correct?

A. Detectable of the enormous amount that we added. But I don't want you to confuse that into thinking that that's the level that might be there from an infected donor. I have to emphasize that we had added an enormous amount of virus. So, there was some detectable. Had we put in less, there probably would have been less.

THE COURT: What would account for the heat not killing all of the virus? Presumably the temperature is the same for each virus.

THE WITNESS: Right. But it's a matter of quantity. In other words, if you have 10 million virus, they just don't all go at the same time.

It's a good question. I don't know exactly the answer other than that's the way it is. For example, the same thing with bacteria when you sterilize something. You put it in the what we call pressure cooker, autoclave, and if the load is big enough, it takes longer time.

THE COURT: That would indicate that there is differential heat reaching the various individuals.

THE WITNESS: Well, that could be too.

THE COURT: So, the more virus, the more

variation

in the amount of heat reaching --

THE WITNESS: The longer it takes until it's all

inactivated, yes.

BY MS. THOMAS:

Q. Is this dry heat we are talking about?
A. Well, the principle I was just mentioning holds for dry or wet.
Q. You don't use a steam bath? Cutter did not use a steam bath in its dry heat treat method, did it?
A. I am not sure I know what you mean.
Q. Did you use steam?
A. Steam?
Q. Vapor.
A. On the product? The product is in a bottle and it's sealed.
Q. So, it was totally dry. No moisture involved in this heat at all?
A. Well, even a freeze-dried product has .4 percent moisture or half percent moisture, so it's not totally dry, but essentially dry for sake of this discussion.
THE COURT: It's 5:30. Do you want to continue this tomorrow?
MS. THOMAS: Yes.
THE COURT: All right. You can stand down.
Let me -- before we leave, is it Mrs. Hellman who has a problem starting around the 22nd?
JUROR HELLMAN: Not the 22nd. The 1st of December.

THE COURT: The 1st of December, okay. So, we are in the clear until then. Well, I am very hopeful. You

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notice I don't say certain, but I am certainly very hopeful we will be finished before that time.

All right. Now, not before 10:00 o'clock tomorrow. 10:00 o'clock.

MS. GOURLEY: Your Honor, I have two witnesses that will only be here tomorrow morning. Is there any way we can start at 9:30?

THE COURT: At what time?

MS. GOURLEY: At 9:30.

THE COURT: Oh, no. I have got -- I am going to have a courtroom full of people here from 9:00 to 10:00.

MS. GOURLEY: Thank you, your Honor.

THE COURT: Okay.

(An adjournment was taken at 5:00 p.m. until 10:00 a.m. of the following day, November 9, 1993.)

25

LAURA M. BRENNAN, Official Reporter

IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

PEGGY GRUCA, et al.,	)	
	)	
Plaintiffs,	)	NO. 86 C 7623
	)	
v.	)	Chicago, Illinois
	)	November 9, 1993
ALPHA THERAPEUTIC, CO., et al.,	)	10:30 a.m.
	)	
Defendants.	)	

VOLUME 19-A
TRANSCRIPT OF PROCEEDINGS
BEFORE THE HONORABLE JOHN F. GRADY

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(Proceedings in open court. Jury out.)

THE CLERK: Case 86 C 7623, Gruca versus Alpha; case on trial.

THE COURT: Okay.

MS. GOURLEY: A few of us are here.

THE COURT: Has anybody seen anybody else out there?

MS. GOURLEY: I think they are.

MR. BERKMAN: Your Honor, can I suggest at the afternoon break we get five minutes so we can talk scheduling before the jury goes home?

THE COURT: Right.

MR. BERKMAN: Because I have some ideas that may be helpful.

THE COURT: Okay. Let's take just a couple minutes here, and then we'll get going.

MS. GOURLEY: Your Honor, I want to remind you that we have a couple of witnesses we're calling out of turn this morning because of availability problems.

THE COURT: That's fine.

(Recess.)

MR. GREEN: Your Honor, my colleagues told me I forgot to rest yesterday. So we would rest subject to any --

THE COURT: Oh, good news.

MR. GREEN: -- subject to the admission of some documents.

THE COURT: We're one-quarter of the way through the defense now.

You know, I said to the jury yesterday I thought we might not make it by the 1st of December. There is no way we're going to make it by the 1st of December.

MR. BERKMAN: Your Honor, I think we're going to end on Monday the defense case.

THE COURT: Really?

MR. BERKMAN: Yes, sir. That's why I wanted to discuss that.

THE COURT: Oh, that's wonderful news.

MR. BARR: We'd like to talk scheduling with you if we'd have a minute sometime.

THE COURT: Okay.

MR. BARR: Maybe a couple minutes on the record if we could, too.

THE COURT: Sure.

(Jury in.)

THE COURT: Good morning, ladies and gentlemen.

I think we're going to have some witnesses from Armour now.

MS. GOURLEY: Armour calls William Magruder.

MR. RING: We're still on the cross. We're still on the cross of --

THE COURT: Yes, but we were going to call these

witnesses out of order, because they're leaving town or something like that.

MS. GOURLEY: Their availability, yes.

THE COURT: So we're interrupting the cross-examination of the last witness.

MR. RING: Yes, sure.

(Witness duly sworn.)

WILLIAM R. MAGRUDER, DEFENDANT ARMOUR'S WITNESS, SWORN

DIRECT EXAMINATION

BY MS. GOURLEY:

Q. Would you please state your name for the record and spell it for the court reporter?

A. William R. Magruder, M-a-g-r-u-d-e-r.

Q. Where do you work, Mr. Magruder?

A. I work for Premier Health Alliance in Westchester, Illinois.

Q. And before you were employed by Premier Health Alliance, where did you work?

A. I worked for Michael Reese Hospital in Chicago.

Q. What was your position with Michael Reese?

A. When I left, I was director of pharmacy.

Q. And how long have you been director of pharmacy?

A. Since May of 1986.

Q. And what was your position before you were director of the pharmacy?

A. I was associate director of pharmacy.
Q. And is that the position that you held in January 1985?
A. Yes, it is.
Q. As director of the pharmacy at Michael Reese and before that as the associate director of the pharmacy, were you familiar with Michael Reese's practices regarding Factor VIII?
A. Yes, I was.
Q. Are you familiar, were you familiar with Michael Reese's practices with respect to the purchase of Factor VIII?
A. Yes, ma'am.

Q And also with respect to the dispensing of Factor VIII when a patient was in the hospital and required that medicine?

A Yes, I was.

Q Before we talk about that, I would like to find out a little bit about your background.

Could you describe for the jury, please, what your education is beginning with college?

A I have a bachelor's degree in pharmacy from the University of Illinois, which I received in 1970, and a master's degree in business administration from Rosary College, which I received in 1980.

Q Are you a licensed pharmacist?

A Yes, I am.

Q In what state?

A In the State of Illinois.

Q And when did you receive your pharmacist's license?

A September of 1970.

Q Now, I served you with a subpoena to appear here today, didn't I?

A Yes, you did.

Q We talked on the phone a couple of times and arranged a schedule because of some conflicts you had in your appearing here today pursuant to that subpoena, is that right?

A That is correct.

25 Q I tendered you a check for your witness fee and mileage, is

that right?

A Yes, you did.

Q Now, did Michael Reese maintain records of its purchases of Factor VIII concentrates?

A Yes, we did.

Q What kind of records were kept?

A We kept copies of the purchase orders for that product.

Q Would you take a look, please, and I believe I gave you before Court this morning, so you could have a chance to look through it, a copy of Armour Exhibit Number 47.

Do you have that with you?

A Yes, I do.

Q And is that a copy of Michael Reese's purchase orders from directed to Armour Pharmaceutical, Cutter Laboratories, Baxter Travenol, Hyland, and Alpha Therapeutic from 1983 up until the time the subpoena was complied with?

A Yes, it is.

Q Did you have a chance to look through that this morning?

A Yes, I did.

Q Now, could you tell us what kind of information is disclosed on the purchase orders that Michael Reese keeps?

A The name of the manufacturer from which we purchased the product, the amount of product that we purchased both in vials

and in unit value per vial and, in some cases, an indication of the amount actually received.

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Q Okay.

MS. GOURLEY: Your Honor, I would move admission of Armour Exhibit 47, which is the purchase orders.

THE COURT: It is received.

BY MS. GOURLEY:

Q Now, by --

You said it discloses the name of the vendor, is that what you said?

A Yes, the name of the manufacturer of the product.

Q What do you mean by unit value?

A Factor VIII is a biological product that when it is manufactured, it is impossible to tell until it is assayed what the activity units will be. So it is a measure of the biological activity of the product.

Q Okay. And when you purchased Factor VIII concentrate while you were the associate director of the pharmacy at Michael Reese, did you request a certain unit level from the seller?

A We would discuss with the seller at the time we were placing the purchase order what unit value they had in stock at the time.

It depended based on the production of the product and the assay as to what value they would have. We would discuss with them what they had that would meet our needs and then agree

on a number of vials and a unit value to be shipped.

THE COURT: What do you mean by an assay and who does

it?

THE WITNESS: It is done by the pharmaceutical company at the time of production, and it is a scientific test to determine the activity of the Factor VIII in causing blood clotting.

BY MS. GOURLEY:

Q That is assay, a-s-s-a-y, right?

A Yes.

Q And that means essentially test?

A Yes, it is a test that they are required to do by the Food and Drug Aministration in order to label the product appropriately.

Q So if I understand you correctly, you call and you find out what unit values the seller has available, and then you order based on your needs a particular unit value?

A Yes. We also need to know what the unit value is in order to determine what the total cost of the purchase order will be.

Q And that is all reflected on the purchase orders which are Exhibit 47?

A Yes, it is.

Q Okay. Now, is there any other purpose for which the purchase orders are prepared at Michael Reese?

A For internal records to determine where we spend our money.

Q Lit me show you a couple of pages out of Exhibit 47, first some pages I have marked as Armour Trial Exhibit Number 47 A.

Could you tell the jury what those pages are?

A These are purchase orders from Hyland Therapeutics for Hemofil T.

Q And could you tell us, please, what unit value is reflected as having been purchased by Michael Reese Hospital?

A 800 -- or 989 unit vials on December the 18th of '84; 1,380 unit vials on December the 26th; 1,080 unit vials on January the 7th; and 1,080 unit vials on January the 14th, '85.

MS. GOURLEY: Your Honor, may I distribute these to the jury?

THE COURT: Yes.

(Brief interruption.)

BY MS. GOURLEY:

Q Now, in connection with your review of Exhibit 47, did you also have an opportunity to look at the purchase orders directed to Armour Pharmaceutical from Michael Reese?

A Yes, I did.

Q And did you determine when the last purchase of Armour concentrate was made by Michael Reese from 1984 through the end of January 1985?

A Yes, I did.

Q When was that?

A On July the 19th of 1984.

Q Let me show you what I have marked as Armour Exhibit 47 B and ask you if that is a copy of the purchase order reflecting

Michael Reese's last purchase of Armour concentrate during that time period?

A That is correct.

Q And could you tell the jury, please, how many vials were purchased and what the unit value was?

A 50 vials of 965 units per vial.

MS. GOURLEY: Your Honor, may I distribute to the jury?

THE COURT: Yes.

(Brief interruption.)

BY MS. GOURLEY:

Q Now, I would like to talk a little bit about Michael Reese's inventory and use of Factor VIII concentrates.

How, if at all, did you monitor the use of Factor VIII concentrates while you were in the pharmacy of Michael Reese?

A During the time I was in the pharmacy, we had a computer program that would produce a list on a daily basis of patients in the hospital that were on Factor VIII.

That report was reviewed by myself and two other individuals within the pharmacy to determine who we had inhouse on Factor VIII and what, if any, supplies of Factor VIII we would need to meet the needs of those patients for the next few days.

Q How much Factor VIII did you try to maintain in inventory at

any given time?

A Somewhere between a hundred and 150 vials.

Q. On average, if you can tell us, how long would a hundred vials of Factor VIII last?

A. It's very difficult to say. It depends on the number of patients in house and the amount of Factor VIII that's being prescribed for them. It could last anywhere from a couple days to a month, probably no more than two.

Q. Is there also a hemophilia treatment center at Michael Reese Hospital?

A. Yes.

Q. And in January 1985 and during 1984, did the patients at the hemophilia treatment center also receive their Factor VIII concentrates from the Michael Reese pharmacy?

A. Yes, they did.

Q. Where was the supply of Factor VIII stored in the pharmacy at Michael Reese?

A. It was stored in a walk-in refrigerator in the pharmacy.

Q. Did you have one refrigerator or more than one?

A. Just one.

Q. And all of the Factor VIII was in that single refrigerator, is that right?

A. Yes, it was.

Q. And that was true in January 1985?

A. Yes.

Q. Okay. Now, let's turn for a moment to when Factor VIII is needed for a patient on a ward in the hospital. How did the

pharmacy learn that a hospital patient needed Factor VIII?

A. The patient's physician would write an order in the medical record. A copy of that order would be forwarded to the pharmacy. We would then dispense a 24-hour supply of Factor VIII based on the physician's order and then check everyday to see if that order was continued and provide another amount to last another 24 hours.

Q. So you sent product, Factor VIII, to be used for a hospital patient one day at a time, is that right?

A. Yes, ma'am.

Q. Okay. And that same procedure was in place in January 1985, is that right?

A. Yes, it was.

Q. Okay. Now, you said the hospital supply of Factor VIII was kept in a refrigerator in the pharmacy. Was Factor VIII ever stored on the wards of the hospital?

A. Only when it was ordered for a particular patient and only in 24-hour supply.

Q. Okay. So if I have this correctly, on a day when a patient needs Factor VIII, an order comes down, and the Factor VIII is shipped from the pharmacy for that day for that patient, is that right?

A. That is correct.

Q. And if he needs a second day supply, you go through the same thing all over again, right?

A. Yes, ma'am.
Q. Okay. Now, let's talk about the procedures within the pharmacy for controlling your inventory of Factor VIII. Did you have any special procedures in place with respect to what Factor VIII you used first or last?
A. Yes. We would rotate our stock on a regular basis. When new stock would come in, the old stock would be pulled to the front of the shelf. The new stock would be put in the back. And we would continually use the oldest stock first leaving the new stock to be used later.
Q. First in, first out?
A. Yes, ma'am.
Q. Okay. Did there come a time when the Michael Reese pharmacy switched to the exclusive use of heat-treated Factor VIII concentrates?
A. Yes.
Q. When was that?
A. That would have been in June of 1984.
Q. Okay. How did that come about?
A. Through a discussion with our hematology, oncology department within the hospital.
Q. Now, I believe you said that, you told us earlier that your last purchase of Armour was in July of 1984?

24 A. Yes.

25 Q. Can you tell from this whether that was heat-treated or not

heat-treated?

A. At this point I would have to say based on the price of the product it was a non-heat-treated product.

Q. So if we looked at all of the purchase orders which are contained in Armour Trial Exhibit No. 47 and determined when there were no longer any more purchase orders for non-heat-treated Factor VIII, that would tell us for sure when Michael Reese switched to the exclusive use of heat-treated Factor VIII, is that right?

A. Yes.

Q. Now, is it possible that Factor VIII could be left at a nurses station and kept there?

A. We normally checked stock on the nursing station everyday based on the report we got from the computer system, and any product left on a nursing unit for a patient who had the order discontinued would be removed and brought back to the pharmacy.

Q. Okay. Now, in connection with -- I believe you told us that the most, in your estimation, the longest period of time you would have a particular stock of Factor VIII would be about two months, is that right?

A. That's correct.

Q. So in connection with Stephen Poole's hospitalization in

January 1985, is it your belief that if we looked at the purchase orders in December 1984 and January 1985, that would tell us what Factor VIII product he received?

A Yes.
Q Have you reviewed Michael Reese's purchase orders for December 1984 and January 1985?
A Yes, I have.
Q And after this case was filed, in fact, did you receive a subpoena from the plaintiffs in this case asking you to identify the manufacturer of the Factor VIII product received by Stephen Poole?
A Yes, I did.
Q Did you make a review of your records at that time?
A Yes, I did.
Q And based on your review of the records, what did you find?
A I found that the product purchased during that period of time was the Hyland product.
Q And did you -- let me show you what has been marked as Armour Exhibit Number 40.
Let me ask you first is that your signature that appears on that document?
A Yes, it is.
Q Did you write this letter in February 1987?
A Yes, I did.
Q And could you please read for the jury the first full sentence of the second paragraph?
A "During the period of January 8th, 1995, to January 26th"
--

25 Q I am sorry, '85?

A That is what it says.

Q I am sorry. I thought you said '95?

A "'85 to January 26th, 1985, Michael Reese Pharmacy supplied Mr. Poole with Factor VIII manufactured by Hyland Therapeutics."

MS. GOURLEY: Your Honor, I would move admission of Exhibit 40.

THE COURT: What is 40?

MS. GOURLEY: It is a letter he wrote identifying the manufacturer of the product received by Stephen Poole.

THE COURT: Is there any objection?

(No response.)

THE COURT: All right, it is received.

MS. GOURLEY: May I distribute it to the jury?

THE COURT: Yes.

(Brief interruption.)

MS. GOURLEY: In fact, I have a large version.

BY MS. GOURLEY:

Q And did you send this letter?

A Yes, I did.

Q Is it your belief today, knowing what you know about the practices of the Michael Reese Pharmacy at the time you were associate director of that pharmacy, that Mr. Poole received heat treated Factor VIII concentrate manufactured by Hyland/ Baxter during his hospitalization in January 1985?

A Yes, it is.

LAURA M. BRENNAN, Official Reporter

Q Now, does Michael Reese purchase medicine from Armour other than Factor VIII concentrate?
A Yes, we do.
Q And, for example, Albuminar?
A Yes.
Q MVI?
A Yes.
Q Do those products arrive at Michael Reese in boxes?
A Yes, they do.
Q And do those boxes identify Armour on them? Do they say Armour on them anywhere?
A The actual package that the medicine is in, yes.
Q Are those packages the kinds of things that also may be sent to a nurse's station?
A Yes.
Q Let me show you what has been marked as Armour Exhibit 50--53.

Do you recognize that box to be a box of Armour Factor VIII concentrate?
A Yes, I do.
Q Do you recognize this box to be a box of Armour normal serum albumin?
A Yes.
Q And those are both the kinds of things that if they were

ordered by a physician would be sent to a nurse's station, is

that right?
A That is correct.
Q And does Armour's name appear on those boxes anywhere?
A Yes.
Q Can you point out to the jury where it appears?
A It is on the bottom of the box.
Q And also on that one.
Thank you.
One last question. Do you believe based on your knowledge of the pharmacy and its practices that as set forth in your letter in 1987, is it still your belief today that Mr. Poole received Factor VIII concentrates manufactured by Hyland during his hospitalization?
A Yes, it is.
Q And none from Armour?
A No.
MS. GOURLEY: Thank you. I have no further questions.

CROSS EXAMINATION

BY MS. THOMAS:
Q Mr. Magruder, who is Charles Lev?
A Charles Lev is or was the Director of Pharmacy at Michael Reese Hospital prior to my taking that position.
Q Was Charles Lev the Director of Pharmacy in January of 1985?
A Yes, he was.

25 Q Okay. So he had the job that you eventually took over?

A Yes.
Q Now, the purchase orders that you reviewed, you said, I believe, that they contained the name of the vendor such as Armour or Baxter, the amount of the units, and in some cases it would show the amount that Michael Reese actually received from the vendor, correct?
A Yes, on some of the documents in this pile there was some indication of the number received.
Q Okay, but the purchase orders that you received don't tell you what the hospital actually got for the most part?
A Not these copies, no.
Q Okay. And that's not what you reviewed? You didn't review any records showing what the hospital actually received from anybody, only what they ordered?
A If there was any discrepancy in what was ordered and what was received, it would be noted on all copies of the purchase order.
Q Well, I want to know what you reviewed.
A I reviewed copies of the purchase orders.
Q Okay. And those go back to 1984?
A They go back, I think, prior to 1984.
Q 1983?
A This first one from Armour is 3/6 of '84.

24 Q Okay. And back then you were Assistant Director of Pharmacy

25 in '83?

A Associate Director.
Q Associate.
Now, Charles Lev, when he was director, had primary responsibility for making the purchases of Factor VIII at Michael Reese Hospital, right?
A He had total responsibility for the operation of the pharmacy as Director of the pharmacy.
Q And on occasion Michael Reese Hospital made spot purchases of Factor VIII concentrate, didn't it?
A From time to time.
Q In fact, there was a bidding system, wasn't there?
A We participated in a group purchasing organization that would bid product, yes.
Q That would be a bid setting the -- determining what price Michael Reese would pay for the concentrate over a certain period of time from a certain manufacturer, is that essentially correct?
A Yes.
Q But Michael Reese was not prevented from buying product outside of the bid, was it?
A No.
Q And Charlie Lev in 1983 and 1984 did that if he could get a better price for Michael Reese Hospital for Factor VIII, didn't he?

25 A He may have.

Q He may have from time to time made spot purchases at a significantly lower price, correct?
A Yes.
Q And those would not be reflected in these purchase orders that you reviewed?
A Yes, they would.
Q I believe, sir, you testified that they would not have been.
MS. GOURLEY: Objection, your Honor. That's not his testimony.
THE COURT: Today?
THE WITNESS: If Michael Reese purchased the product, there would be a purchase order or the bill would never get paid. Charlie didn't steal a product. He purchased it.

LAURA M. BRENNAN, Official Reporter

Q Of course not, but the purchase orders that you reviewed --

A Were the records of all purchases made by Michael Reese Hospital.

Q I beg to differ with you, sir.

When we talked about Charlie Lev, who was the director of pharmacy, he made spot purchases very quickly. These were done --

A Ask Mr. Lev.

Q These were done by telephone outside of the contract that you had -- that you had negotiated in this bidding system, isn't that correct? He could pick up the phone, he could call Armour, he could make a spot purchase like that?

A All of these purchase orders were done over the phone.

Q But they were reflected by the documents you reviewed, correct?

A I don't understand your question. These are the documents I reviewed. All of these purchases were made over the phone. A purchase order was typed pursuant to the phone conversation, as I earlier just testified, and they were documentation so that we could provide it to our accounting

department so the

bill could get paid and so the receiving department could

receive merchandise.

It was impossible for us to type up a purchase order

prior to calling the manufacturer because we didn't know what

the unit value was that they had in stock.

Q What would account for a drop in price of Factor VIII that would make Michael Reese go outside of the bid?

A It could be a number of things. The manufacturer could have product that was short dated that they wanted to move.

Any number of things.

Q And in 1984 there was no policy at Michael Reese that only heat-treated Factor VIII would be purchased, is that correct?

A At this point I don't know if there was a particular policy. I do know that we began purchasing heat-treated Factor VIII in July of 1984.

Q Do you know when the policy went into effect that Michael Reese Hospital would no longer purchase unheated Factor VIII concentrate?

A I don't know that there was a particular policy by the hematology department to that effect.

Q There was a difference in price between unheated Factor VIII and heated Factor VIII?

A Yes.

Q A significant difference in price at least in 1984?

A Yes.

Q Now, you mentioned that the program the

pharmacy had with

22 the various wards throughout Michael Reese Hospital was that at

23 least with regard to Factor VIII a patient would come in, a

24 doctor's order would be written indicating how many units that

25 patient would receive on a daily basis, and then the pharmacy

would be so notified directly?

A That's correct.

Q Now, is it your testimony that each and every day the pharmacy then sent up a day's worth of Factor VIII until that order was withdrawn?

A Yes.

Q And if the system were working absolutely perfectly, the nurse or somebody on the ward where the hemophilia patient is would then return the Factor VIII that night that had not been used if there were any, is that correct?

A No. The pharmacy would check the following morning to see if there were any product not used, determine why it wasn't used, if there was more needed, and provide the difference.

Q How many patients on the average did Michael Reese Hospital have in 1984?

A On a daily basis probably somewhere in the neighborhood of 520.

Q So in order for this daily exchange of Factor VIII concentrate this system you just told us about would have to be working perfectly?

A I don't quite understand the term "perfectly."

It worked.

22 We provided Factor VIII to patients on a daily basis.

23 Q I don't think there is any dispute about that. What I'm

24 asking you is if the system worked perfectly, you would be

25 receiving whatever wasn't used on the ward, it would be

returned to the pharmacy?

A That's correct. We would bring it back to the pharmacy.

MS. THOMAS: May I approach the witness, your Honor?

THE COURT: Yes.

BY MS. THOMAS:

Q Do you know what albumin is used for?

A Yes.

Q What, sir?

A Protein replacement or fluid replacement, depending on the situation that the patient is in.

Q Is it usually used for treatment of shock?

A It can be.

Q Is that its normal use generally?

A In some cases, yes. It may be used to treat shock. In other cases, it may be used to treat edema.

Q This is the albumin box?

A Yes.

Q This is the Factor VIII box, correct?

A Correct.

MS. THOMAS: I have no further questions.

BY MS. GROULEY:

Q Just so it's clear, with respect to any possible spot purchases that Miss Thomas was referring to, am I correct, that all of those purchases would be reflected in

purchase orders

25 cut by Michael Reese and included in Exhibit 47, is that right?

A That's correct.

Q Okay. That's true regardless of what the price of the product was?

A Correct.

MS. GOURLEY: That's all I have.

MS. THOMAS: One last question.

BY MS. THOMAS:

Q You don't know, Mr. McGruder, for a fact what Charlie Lev ordered outside of the bid, do you?

A I only know what is in this list of purchase orders that was ordered by Michael Reese. Whether it was ordered by myself or Mr. Lev, I can't remember, but this is what Michael Reese ordered.

Q You can't say for a fact that Mr. Lev never ordered outside of the bid unheated Factor VIII from Armour in 1984 after July?

MS. GOURLEY: Object to the form.

THE WITNESS: Based on what's in this document, there is no record of Michael Reese every purchasing unheated treatment Factor VIII after July, I believe, of 1984.

BY MS. THOMAS:

Q Based on the records that Michael Reese Hospital produced?

A Yes.

MS. THOMAS: No further questions.

THE COURT: Any questions from the jury? All right.

Thank you.

(Witness excused.)

MS. GOURLEY: Armour calls Dr. Harold Kessler.

MS. GOURLEY: I distribute Dr. Kessler's CV to the jury, your Honor?

THE COURT: Yes

(Witness sworn.)

HAROLD A. KESSLER, DEFENDANTS' WITNESS, DULY SWORN

DIRECT EXAMINATION

BY MS. GOURLEY:

Q Would you please state your name and spell your last name.

A Harold A. Kessler, K-e-s-s-l-e-r.

Q You are a medical doctor, correct?

A Yes, I am.

Q Where do you practice medicine?

A Rush Presbyterian-St. Luke's Medical Center.

Q What is your position at rush?

A I'm the associate director of the section of infectious diseases.

Q Do you have staff privileges at other hospitals other than Rush?

A Cook County Hospital.

Q Would you review briefly please for the jury your professional educational background including medical school?

A I attended medical school at Rush Medical College in Chicago between 1971 and 1974. I then did my training in

internal medicine at Presbyterian-St. Luke's Hospital in Chicago between 1974, 1977.

Following that I was the chief medical resident in 1977 and '78 at Presbyterian-St. Luke's Hospital, and in addition I did a fellowship in infectious diseases at Presbyterian-St. Luke's Hospital between 1977 and 1979.

Following that, I went to the London School of Hygiene and Tropical Medicine to do a research fellowship in virology for 18 months and subsequently returned to join the staff at Rush Presbyterian-St. Luke's Medical Center in January of 1981.

Q. Are you certified in any specialty practice areas, Dr. Kessler?
A. I'm certified by the American Board of Internal Medicine and Internal Medicine and by the American Board of Medical Subspecialists in Infectious Diseases.
Q. Would you just --
MR. GREEN: Doctor, could you speak up or use the microphone? I'm having a little trouble hearing you.
THE WITNESS: Sorry.
BY MS. GOURLEY:
Q. Would you describe for the jury, please, what is required for you to become board certified in those two areas?
A. To become board certified in internal medicine, you must successfully complete a residency program, which is a minimum of three years, following which you have to sit for a two-day written examination.
To be eligible for certification in infectious diseases, you must complete a two-year fellowship following

your internal medicine training in infectious diseases and sit for a one-day examination.

Q. And are you a fellow in the American College of Physicians?

A. Yes, I am.

Q. Would you describe that for the jury, please?

A. The American College of Physicians is an organization of internists in the United States. To become a fellow, you have

to achieve certain academic requirements, predominantly in the area of having published literature in the general medical literature and having been out of your training for a certain number of years. I believe the requirement is five publications, at least five publications to be nominated for fellowship in the college.

Q. Are you also a fellow in the Infectious Disease Society of America?

A. Yes.

Q. Could you describe that for the jury, please?

A. Again, a similar society, Infectious Disease Specialists in the United States, and in order to attain fellowship status, you must be out of your training for a defined period of time, be nominated to become a fellow by an existing fellow, and have demonstrated achievement in the area of academic infectious diseases or in the area of research in infectious diseases, again, through predominantly your publications.

Q. Are you currently involved in any activities at Rush with respect to AIDS or HIV infection?

A. Although I practice general infectious diseases, my activities predominantly outside of routine hospital responsibilities revolve around the treatment of people with

HIV infection and AIDS.

In terms of my out-patient responsibilities, approximately 95 percent of my time is spent in the care and

treatment of people with HIV infection.

In addition, I am the principal investigator for the National Institutes of Health AIDS Clinical Trials Unit at Rush-Presbyterian-St. Luke's Medical Center. The AIDS Clinical Trials Group is an organization of the National Institutes of Health which is designed to evaluate and develop new therapies for people with HIV infection. So at Rush we conduct a great deal of research on potential new treatments for both HIV and the opportunistic complications of infection with HIV.

Q. And you personally treat patients with HIV infection --

A. Yes.

Q. -- on both an in-patient and out-patients basis, is that right?

A. Yes, I do.

Q. And have you published any articles relating to HIV and AIDS?

A. Yes, I have.

Q. Do you know how many?

A. It's in excess of 40 or 50.

Q. And they're reflected on your curriculum vitae, which we've passed out to the jury?

A. Yes.

Q. Are there any additional articles?

A. There is an article that was just accepted for publication this week in the, last week actually, the Journal of the

American Medical Association. And this article has to do with immune responses of health care workers who have had accidental needle stick exposures to patients with HIV infection.

In this paper we demonstrated that following a single needle stick exposure by a health care worker who was otherwise not infected with HIV, their immune systems are stimulated to respond to HIV in the absence of the health care worker becoming infected.

Q. In connection with your professional activities, have you participated as a reviewer of articles which have been submitted for publication by other physicians?

A. Yes, I have.

Q. Would you please identify a few of the professional journals for which you served as a reviewer?

A. I just have to find the page.

Q. Are you looking at your CV?

A. On my CV. Do you have a page number for me? Here it is, page 11. Archives of Dermatology, Journal of Medical Virology, Journal of the American Medical Association, Archives of Internal Medicine, Journal of Infectious Diseases, Hepatology, Annals of Internal Medicine, New England Journal of Medicine, the American Journal of Medicine.

Q. And you are a virologist with expertise in viruses including HIV, is that right?

A. Yes.

Q. And just so we're clear on all of this, you're not here as an expert in plasma collection or blood banking, are you?
A. Correct.
Q. And you are not an expert in the processing of Factor VIII concentrates, is that right?
A. Correct.
Q. And you don't intend to offer any opinions in those areas. You're here as a virologist who treats AIDS patients, is that right?
A. Correct.
Q. Okay. Now, you are appearing here today as an expert witness on behalf of Armour, and as such, you will be compensated for your time testifying, is that right?
A. Yes.
Q. Would you tell the jury what you charge in that regard?
A. $350 per hour for courtroom testimony.
Q. Now, in connection with this litigation, my office provided you with some medical records concerning Stephen Poole. Do you recall that?
A. Yes, I do.
Q. Did you review those records?
A. Yes, I did.
Q. Did you also review the deposition of Dr. Telfer, who was

Mr. Poole's treating physician?

A. Yes.

LAURA M. BRENNAN, Official Reporter

Q. And how about excerpts from the deposition of Mr. Poole's widow?

A. Yes.

Q. And excerpts from the depositions of some of the plaintiff's experts, is that right?

A. Yes.

Q. And based upon your experience and expertise with HIV infection and with AIDS and upon your review of Stephen Poole's records in this case, do you have an opinion based on a reasonable degree of medical certainty as to when Stephen Poole was infected with HIV?

A. Yes.

Q. And what is that opinion?

A. My opinion is it is most likely that he became infected sometime between 1978 and 1982.

Q. Would you explain to the jury, please, in general terms what the bases for that opinion are?

A. This is based upon the clinical course of Mr. Poole's infection with HIV specifically relating to his development of an AIDS defining illness in 1986. It's related to his T-helper lymphocyte counts in 1986. It's also related to my knowledge and understanding of the natural history of HIV infection leading ultimately to the development of AIDS. And it's also

24 based upon my knowledge of the epidemiology of the HIV epidemic

25 in the United States specifically as it affected the

hemophiliac population.

Q. Let's start first with the T-cell count. To explain further to the jury the basis for your opinion, could you briefly explain the significance of Mr. Poole's T-cell count in March of 1986, first, what it was and how that affects your opinion?

A. First I'd like to explain what a T-cell is. I think that's important. T-cells refer to a group of lymphocytes. Lymphocytes are a type of white blood cell in all humans, and they are a very important white blood cell, particularly in relationship to our immune system. We know further that there are different types of lymphocytes. There are T-lymphocytes, and there are B-lymphocytes. For the purposes of discussing HIV infection, it's the T-lymphocytes which are critical to our understanding of this infection and the disease that it subsequently, subsequently causes.

One important type of a lymphocyte is called a T-helper lymphocyte. This is a very critical cell in our immune system as judged by its name. It essentially helps the function of other components of our immune system to function normally and to respond to challenges by infectious agents, infectious agents or other types of stimulation.

The normal T-helper lymphocyte count is generally in the range of 800 to 1200 cells per cubic millimeter of blood. In patients with AIDS, generally those counts are below 200

because of the progressive destruction of these T-helper lymphocytes by the virus we call HIV or the human immunodeficiency virus.

We know that this process of destruction of the T-helper lymphocytes does not occur rapidly. This is a very slow process which essentially takes years to develop. So there is a progressive gradual decline in the numbers of T-helper lymphocytes in a person who is infected with HIV, and this progressive decline can take place over 10 or more years.

When an individual drops down below 200 to 250 T-helper lymphocytes, they have fairly severe suppression of their immune system, and they begin to become susceptible to these unusual infections that define a person as having AIDS.

In general, based upon many studies following thousands of patients infected with HIV, both hemophiliacs and non-hemophiliacs, we know that the decline in the T-helper lymphocyte cell population in an individual infected with HIV occurs at a rate somewhere between 50 and 100 T-helper cells per year. So based upon our knowledge of the natural history of how the virus destroys the T-helper cells over time, we can develop an idea as to how long an individual has been infected

by HIV.

LAURA M. BRENNAN, Official Reporter

Q Dr. Kessler, by March of 1986, the jury has heard that Mr. Poole had an AIDS related opportunistic infection.

Would that opportunistic infection itself have caused his T-cells to drop?

A No. The opportunistic infection was a result of the low T-cell count which made him susceptible to this unusual infection.

The reason we call them opportunistic infections is that normally these types of bacteria or protozoa or microorganisms can't infect people. They don't cause disease. They would only cause disease in a setting of immune suppression.

So hence they need the opportunity, the opportunity being a patient who doesn't have a normal immune system. Hence we refer to them as opportunistic infections.

Q Doctor, there has also been some testimony in this case that Stephen Poole's laboratory results for a blood count, a complete blood count, done in January 1985 were normal.

Can you explain to the jury what relationship, if any, there is between those normal lab results and the kind of T-cell counts that you have been talking about?

A There is really no specific relationship between a routine

23 complete blood count and a T-helper lymphocyte count. They are

24 done --

25 They, first of all, designate entirely different pieces

of information. They are done entirely different -- in entirely different ways.

So there is no specific relationship between a normal complete blood count and an abnormal T-helper lymphocyte count.

Q So a normal complete blood count in January 1985 doesn't say that he was not infected, is that right?

A Correct.

Q Now, turning for a moment to one of the other bases for your opinion, the epidemiology of AIDS in severe hemophiliacs, could you first tell the jury what epidemiology is?

A Epidemiology is basically the study of the history of a disease, and what we do is -- in order to understand the disease, particularly in diseases where we may not know exactly what is causing it, we begin to study who it is affecting. We try to determine how it is affecting these individuals. We try to determine how it is being spread from one individual to another, so that we are sure we have as good an understanding as possible of the disease process.

So then we can start to try to make some assumptions or try to understand what is causing it. And that, in fact, was done with AIDS. And we actually understood the epidemiology of

the disease before we knew what caused the disease; and essentially then the discovery of the virus fit in with our understanding of who was getting the disease and how we thought it was being spread.

LAURA M. BRENNAN, Official Reporter

Q Would you explain to the jury how the epidemiology of AIDS in severe hemophiliacs supports your opinion?

A Well, first of all, we know that AIDS can be spread by contaminated blood or blood products, and we knew that before we knew what caused disease.

In addition -- repeat the question because I just lost my train of thought.

Q How the epidemiology of AIDS supports -- with respect to hemophiliacs -- supports your opinion as to when Mr. Poole was infected?

A Once the virus was finally discovered in 1983 and subsequently confirmed to be the cause of AIDS in 1984, a blood test was subsequently developed to detect antibodies to this particular virus, and that remains the major way in which we diagnose infection with this virus.

Once the blood test was available, we then had the ability to go back and test blood samples from different groups of patients which had been stored for other reasons over periods of time.

And that is how -- you might have seen in the newspapers over time where they say, well, the earliest recorded case of AIDS was 1959 and documented in England or that there

was a case of AIDS documented in the United States in 1969. That is because there were people who died of unusual illnesses which were unrecognized at that time, and physicians or places

like the Centers for Disease Control would save serum samples so that at a future time as our knowledge increased we could go back and try to figure out what was happening with this unknown disease at that time.

And that has been done with groups of patients who have been susceptible to HIV infection. And one group has been hemophiliacs.

So stored serum samples from hemophiliacs were tested for the presence of antibodies to HIV, and it was found that the earliest infection in hemophiliacs at least in the United States was documented back somewhere in 1978. And then you could then follow over time the percentage of hemophiliacs who became infected by year, by looking at the stored samples in 1978, '79, '80, and by looking at groups of patients, you could determine the percentage of hemophiliacs by year who developed antibodies to HIV. And by doing that, you get an idea as to when the hemophiliacs were becoming infected with HIV.

So by developing that type of data over time, as has been done in a number of studies, you can see that the majority of people with severe hemophilia became infected with HIV in the

range between 1981 and 1983.

Q Dr. Kessler, I have here what I have marked as Armour Exhibit 1-A, which is a figure out of an article by Geddart.

Are you familiar with that article?

A Yes, I am.

Q And with the publication?
A Yes.
Q That was an article that was published in the New England Journal, is that right?
A Correct.
Q Would this assist you in explaining --
A I think so.
Q -- to the jury?
Let me put it up over here.
Could you describe for the jury, please, what that figure shows?
A This is a graph with the years along the horizontal axis here, and on the vertical axis here, this is essentially the percentage, the proportion of individuals who were testing positive for HIV.
And what these lines represent, this was a study that this Geddart group had done looking at over a thousand hemophiliacs in whom they had stored serum samples. What they wanted to determine was the year in which the hemophiliacs were becoming infected by HIV.
Now, the first thing to note here is that people with severe hemophilia A, that by 1988, the beginning of 1989, about 78 to 80 percent of these individuals had become infected by HIV.

When you look at this graph -- there's two graphs

here. The important graph is this graph on the top for this N equals 328. These were individuals who had had serum samples stored over time and who their initial serum samples were negative for HIV but that over time they were able to document in what period of time those individuals acquired their HIV infection.

So it is a very accurate reflection as to when the HIV infection actually was contracted by these individuals with hemophilia.

And if you look at the figure, you see that the majority of individuals had already been infected again by the end of 1983. If you draw a line up to here, you would have about 70 percent of the hemophiliacs have already been infected by the end of 1983. And if you look at the end of 1982, which is this line right here, and go up, you see that over 50 percent by the end of 1982 already appear to have been infected by HIV.

So, again, by looking at these types of data with these stored serum samples, looking for evidence of infection in the stored serum samples that have gone back to 1978, we were able to develop a picture as to what -- how the epidemic of HIV was

spreading and when it was spreading most intensely in patients with hemophilia.

Q Doctor, can you tell us based on that chart, as of January 1st, 1985, what proportion of the severe hemophilia A patients had already been infected?

A January 1st of 1985, it would be this line here; and if you draw a vertical line straight up, it would be near the maximal, somewhere around 75 percent.

Q And that is where the line goes horizontal?

A Correct.

Q What does that mean?

A Well, it means that as of this time there was a plateau in this particular patient population, so that it doesn't appear that there were more people becoming infected after this period of time, at least in this sample of patients and with these stored serum samples.

Q Right, thank you.

You also mentioned that the natural history of AIDS was a basis for your opinion as to when Mr. Poole was infected. Would you explain that to the jury, please?

A The natural history refers to the time course between when an individual becomes infected with the virus and when they develop AIDS. And essentially we are talking here about the incubation period of AIDS.

I already talked about the natural history a little bit in terms of how HIV destroys the T-cells very slowly over time. We know that based upon not only the T-cells but also

looking at other parameters, particularly the virus in the body,

we know that once an individual is infected or exposed to the

virus and infected that we can find the virus in that individual

in a very short period of time, usually within two to four weeks. The virus is replicating, duplicating itself in the infected individual.

But we also know that the median incubation period, meaning that the time it takes for 50 percent of people who are infected with this virus to develop AIDS -- so if we started out with a hundred people and they all got infected with HIV at the same time, 50 percent of them would have gone on to develop AIDS after 11 years. So this is a very long, slow process. This virus does not rapidly destroy the immune system, but it occurs over a protracted period of time with the median incubation period being about 11 years.

So, again, based upon the natural history of the disease, we know that things tend not to happen quickly. So somebody is not going to get infected with HIV on one day and then two months later or three months later generally develop AIDS. It is generally a long slow process.

Q Now, I believe you said you reviewed the deposition of Mrs. Gruca, formerly Mrs. Poole, that Stephen Poole began to be fatigued and lose weight in September and October 1985. Do you recall that?

A Yes, I do.

Q Is that consistent with the date of infection, 1982 or before, based on the things you have been telling the jury about T-cells and the natural history of the disease?

A Yes, it is.

Q Dr. Kessler, are you aware of any reported cases in which a severe hemophiliac progressed from initial HIV infection to full-blown AIDS in 14 months?

A No, I am not.

Q In your review of the medical records from Stephen Poole's hospitalization in January 1985, did you see any note of any symptoms suggestive of HIV infection at that time?

A No, I didn't.

Q Doctor, would you explain to the jury, please, what is happening inside the body of a person who has been infected with HIV?

A I think that that is important in our understanding of what a virus is even. Viruses are different from bacteria. They are very simple, very simple structures, and they are so simple that they don't have the ability to duplicate themselves outside of a living cell, which is different from bacteria. Bacteria will just grow on some plain culture medium or just in a plate which is just providing it with some nutrients.

A virus has to actually infect a cell and has to get into a cell. So we refer to them as obligate intracellular parasites. They literally are parasites of a living cell.

Now, our understanding of -- in the case of this particular virus, unfortunately for us as humans, the major cell that they infect is this T-helper lymphocyte which, of course,

is the critical cell in our immune system, and that is how it ends up destroying our immune system.

Now, once the virus gains access to the body, it sets up infection in these T-helper lymphocytes, and there is a lot of new information which has changed our understanding of the natural history of this disease which has just become available in the last six to eight months, and a lot of this information has been provided by Dr. Anthony Fauci, who is the director of the AIDS program at the National Institutes of Health.

In our older understanding of how the virus produced disease, when we would look in the blood of patients who were infected with HIV -- remember, I said that they get infected and then there is this long period of time where patients remain asymptomatic, meaning they are perfectly -- they feel perfectly fine, they appear to be perfectly healthy.

When we look in the blood of patients during that asymptomatic stage of the illness, we would not find very much virus. And it is a little bit confusing to all of us working in the area because how could the virus be destroying the immune system in such a massive way if we couldn't find very much

virus

21 in the blood. And this led to a number of alternative

22 explanations and theories as to how HIV was destroying the

23 immune system, and some very respected people -- some of you
may

24 be familiar with Dr. Peter Duisburg who even suggested that HIV

25 was not the cause of AIDS because we found so little of the

virus in the blood.

So there was a number of alternative explanations that people speculated on as to how the virus was destroying the immune system.

Well, Dr. Fauci's major -- and people suggested also that the virus became latent, meaning that it kind of was just hanging out, wasn't really duplicating itself, and really wasn't actively destroying the immune system.

Dr. Fauci's major contribution in the last six to eight months has been in looking in a different part of the body. He looked in the lymph nodes, and, of course, most of these lymphocytes in our body -- in fact, 98 percent of the lymphocytes in our body are not in the blood; they are in our lymph nodes and in our lymph tissue in our body.

And what he was able to demonstrate was that during this asymptomatic phase of the illness when we find very little virus in the blood, in fact, most of the virus is being contained in the lymph nodes. The lymph nodes are chock full of virus. And the virus was actively replicating even in those individuals who were totally asymptomatic, and in essence what is happening is the lymph nodes are doing their job.

The lymph nodes are responding to this viral infection

just like they will to any infection, and they are trying desperately to contain that viral infection. It can't be cured. We can't cure this virus once we are infected with it, but the

immune system of the body tries to keep the virus infection contained, and it does so in the lymph nodes.

So we now know, in fact, that there is no latent period in the virus. The virus is actively replicating, duplicating itself in the lymph nodes and, through this process in the lymph nodes, is slowly destroying the immune system until ultimately the lymph nodes literally collapse and no longer are able to contain the virus infection, at which time then we find much more virus back out in the blood again.

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Q Doctor, do you have an opinion to a reasonable degree of medical certainty as to whether a single infusion of Armour concentrate in January 1985, assuming that to be the case, caused Stephen Poole to become infected with HIV?

A I have an opinion.

Q What is your opinion?

A It had no impact on his infection because he was already infected at that time.

Q And the basis for that opinion is all the things you've told us before?

A Correct.

Q Now, I would like to turn to another subject that the jury has heard quite a bit about, and that is something called antigenic stimulation.

Would you explain to the jury what that is, please?

A Antigenic stimulation is a process whereby a generally a foreign protein or a protein -- it could even be a protein that's part of our own bodies -- stimulates the immune system. The immune system recognizes this protein, which are important constituents of our body -- or it could be sugars for that

matter. It could be any different type of molecule. It recognizes that as foreign, as not being part of the body, and develops an immune response, becomes stimulated in response to it coming across or being presented with these foreign proteins.

And that's what happens with basically all types of infections. We're infected, and then our immune system recognizes these infections as being foreign to the body and then the immune system is stimulated to try to eliminate the body of these microorganisms.

Q Does HIV infection cause -- all by itself cause that stimulation?

A Yes, HIV infection is a virus. We always have to remember it's a virus, just like many other viruses.

In fact, this virus in and of itself stimulates the immune system. We know that even pieces of this virus will stimulate the immune system. Some of the vaccines that are being developed are just pieces of the virus which very effectively stimulate the immune system.

This paper I referred to earlier that we just had accepted for publication in the Journal of the American Medical Association also shows that health care workers who are exposed to the virus through accidental needle stick, even though they haven't become infected, in fact, their immune systems will be

stimulated and respond to -- transiently respond to the virus.

Q Is some additional external stimulation, another virus or

anything like that, required for HIV to replicate in the cells

of an infected person?

A No.

Q HIV itself causes its own replication and its own

stimulation, is that right?

A Correct.

Q Is this a relatively new discovery with respect to the HIV virus?

A No.

Q Now, with respect to the replication of HIV -- perhaps you could answer a question that I believe the Court asked the other day of someone who is not a virologist. And I believe the question was: If the plasma of an HIV infected donor is pooled with other plasma, does the HIV replicate in the plasma pool?

A Plasma is basically the liquid compartment in which our blood cells circulate. So the blood has several compartments, one is the liquid. It doesn't have cells, so plasma has no cells. This being a virus -- as I said, a virus must infect cells in order to duplicate themselves. So in absence of a cellular milieu, if there's no cells available, it can't increase its numbers.

Q Now, in this case, the plaintiffs have raised several questions regarding the effects of exposure to HIV, hepatitis,

and to proteins found in Factor VIII on the progression of disease in a hemophiliac already infected with HIV.

Do you have an opinion as to whether or not subsequent exposure to HIV hepatitis or foreign proteins in a person already infected with HIV affects their progression to

disease?

A There is no evidence in humans that these other exposures are important in disease progression.

Q Would you explain to the jury the bases for your opinion.

A Well, the basis of that opinion would be to compare the progression of HIV in patients, say, with hemophilia to patients who have HIV infection through, say, sexual contact. This has been done actually, and a paper was published in the Journal of the American Medical Association comparing a group of hemophiliacs from Pennsylvania with a group of gay men from San Francisco. And both of these groups had been followed, again, over a number of years. All of them were known to be infected with HIV. And the dates in which they were infected were also known; again, a similar type of data was available that we showed on that figure there.

And when you compare the incubation period, the amount of time from infection, until the time that somebody develops AIDS, with homosexual men as compared to hemophiliacs, there is absolutely no difference in the disease progression.

So I think that's the strongest data that we have, that type of data. When you look at patients, what's happening to patients over time who have either acquired their infection in different ways or who may be progressively being exposed to "foreign antigens" that that has an effect, and it doesn't appear to.

Q Are you familiar with a paper published by Jay Levy in the

American Journal of Medicine in July 1993 on this subject?

A Yes, I am.

Q I have had blown up a quote from that article. Let me just read it. It says, "Thus far there is no evidence that repeated exposure to HIV through multiple HIV positive partners, intravenous drug use, contaminated blood or blood products effects the progression of disease or causes infection by more than one HIV strain."

Is that your understanding of the current state of medical knowledge regarding that subject?

A Yes.

Q Now, do you have an opinion to a reasonable degree of medical certainty as to whether a single infusion of Armour concentrate in January 1985 could have contributed to or aggravated Mr. Poole's progression to AIDS?

A I don't believe that it did.

Q And the basis for that opinion is as --

A My prior testimony.

Q Now, yesterday, there were also some questions asked of another witness about "super infection" and multiple strains of HIV.

Is there any medical or scientific literature which supports the notion that a person can be reinfected with a different strain of HIV?

A No. This has been looked at quite carefully by a number of

investigators, and there is no evidence that you could be infected with a second strain of HIV type.

Q Is there any evidence from Mr. Poole's medical records from January 1985 which you reviewed which suggested that he was infected or reinfected with any kind of virus?

A No.

Q Now, finally, turning to another subject, and that is, the risk of HIV infection to Mrs. Poole, Doctor, if Mrs. Poole's last potential exposure to HIV was in July of 1987, which is when Mr. Poole died, and she has since tested HIV negative on several occasions, do you have an opinion to a reasonable degree of medical certainty as to whether or not she is presently at risk for AIDS from that exposure?

A She is not at risk from that exposure.

Q Do you have an opinion as to for how long after her last possible exposure she was at risk for contracting HIV?

A It would be 6 to 12 months. The best way to answer that is talk about what we do with our health care workers in our hospital who have accidental exposure to HIV. We follow our employees for a period of six months. If they have

not

developed evidence of HIV infection by six months, then we

consider them to be not infected, and we don't follow them

additionally for evidence of HIV infection.

MS. GOURLEY: Thank you. I have no further

questions.

CROSS-EXAMINATION

BY MR. RING:

Q Doctor, this isn't your first time in court, is it?

A Correct.

Q I just want to compliment you. It looks like you have done this before.

Have you done it for a plaintiff in an HIV case?

A In an HIV case? This is the first -- second appearance in court on an HIV case, and both have been for defense.

Q Same defendant?

A Yes.

Q Armour?

A Yes.

Q When is the last time that you gave this speech -- or this testimony?

A This testimony? My testimony is specific for each --

Q Tailored to each case?

A It changes based upon changing knowledge.

Q Well, Doctor, you talked about the Goedert study, is that right?

A Yes.

Q And that -- how many people were involved in that study?

23 A There were two groups of -- total number overall or -- it

24 was over 1000 patients involved.

25 And then they had a separate -- of those 1000 or 1200

they had I believe 319 patients in whom they could identify the specific time of infection.

Q So of the 319 -- that was the core -- if we can call it that -- of the study, 319 patients?

A Correct.

Q Which you had some serum on, is that right?

A I didn't have it, they had it.

Q I know, but I'm talking about the Gedare study?

A Correct.

Q 50 percent, according to that study, had seroconverted or developed AIDS by 1982 -- the end of '82, is that right?

A I believe that's what the figure shows.

Q So that 50 percent of them did not?

A Correct.

Q Now, Doctor, that means, does it not, that not everyone that's exposed to the virus is infected, is that right?

A Correct.

Q And not everyone that's infected progresses at the same rate, does it not?

A Correct.

Q There's a lot of variables involved, isn't there?

A Certainly.

Q And one is they're not being exposed to the

infectious

24 agents, is the right?

25 A Correct.

Q The other is the amount of virus they are becoming exposed to, is that right?

A Correct.

Q Let's take that one. The amount of virus they're exposed to makes a difference, right?

A Correct.

Q And in addition -- or the way they're being exposed, right?

A Correct.

Q Now, exposure to a transfusion is different than exposure to Factor VIII, isn't it?

A Different type of blood products, certainly.

Q Okay. So, Doctor, when one is exposed to the virus in Factor VIII, would the amount of the virus be important?

A I don't quite understand your question.

Q The amount of the virus in the Factor VIII?

A In determining whether or not they're going to be infected?

Q Yes.

A Generally, a principal of infectious disease is that when an individual is exposed to a higher inoculum, a higher amount of infectious agent, the risk of them becoming infected is greater; and if there is a lower amount, the risk of them

becoming infected is lower.

Q So that in each case you would have to know whether there was a high amount of virus or a low amount --

A I don't understand the relevance of the question.

Q -- to determine whether there would be infection?

A No. I don't quite understand the relevance of that.

Q If you're exposed to a low amount of virus, some people will ward it off, right?

A Some people may not become infected, correct.

Q That's the point I'm trying toe make. And if it is a high load of virus, some people still may be able to ward it off, isn't that right?

A It's possible, sure.

Q Okay. So that the fact that one statistically might have been exposed doesn't establish that he got it, right?

A I don't understand that question.

Q Well, I'll try to make it simple enough where we the people can understand it.

A I just want to be accurate.

Q I know you do. That's why I want to restate the question.

Doctor, HIV is more virulent at different stages, is that right, in a donor?

A I don't believe you have that correct.

Q Tell me what I'm trying to say.

A I think it might be impossible.

Q You're not getting paid for that. All right.

Well, Doctor, at a certain point is a patient or donor -- we're looking at the article "The Natural History of Transfusion." Do you have that one?

A New England Journal of Medicine?
Q Yes.
A Which one, there's a couple of them.
MS. THOMAS: Plaintiff's Exhibit 9.061.
THE WITNESS: Who is the author's name, first author?
MS. THOMAS: Ward.
MR. RING: John Ward.
BY MR. RING:
Q John Ward.
A If you give me a minute, I'll find it.
Q Sure.
MS. GOURLEY: Is that a new exhibit? We don't seem to have it.
MS. THOMAS: This is cross-examination.
MS. GOURLEY: I understand. I just want a copy of it.
THE WITNESS: I left that one in my office. That is an article that is in my personal file, but I don't have a copy with me.
BY MR. RING:
Q Here you go, Doctor.
A Thank you.

(Discussion off the record.)

MR. GREEN: I feel kind of left out.

MR. RING: You've already rested. You can go home.

BY MR. RING:

Q. Have you read it?

A. I read the abstract.

Q. Doctor, is one factor the time at which the donor developed AIDS, in other words, will that make a difference in the infection of the person receiving it?

A. I think I understand where you're coming from.

Q. Good. Tell me.

A. All right. Now I will. I think if you're referring to this article that you've given me, this article was from late 1980s. It was part of the program by the Centers for Disease Control to evaluate blood recipients who had received blood transfusions from individuals who subsequently went on to develop AIDS.

And what this paper showed was that most of the individuals who received the contaminated blood, in fact, became infected by HIV and that the individuals who had received blood transfusions from donors who developed AIDS more

22 quickly seemed to develop AIDS more quickly. So the suggestion

23 was is that they received a higher inoculum of virus or maybe

24 there was more virus present in the blood from the patient from

25 the donors who developed AIDS in a relatively short period of

time than from those donors who had developed AIDS over a longer period of time.

Q. All right. So now that we understand what I'm trying to get at, it makes a difference then in the nature of the disease or in the donor, right? Maybe "nature" is not the right word, but when the donor has come down with it?

A. The inoculum, as I pointed out, this is a well known fact with infectious diseases, that the higher the inoculum, presumably in this case we're talking about HIV, although they didn't measure it, they were using an indirect measure at the time, they couldn't measure it when they did the study, but presumably a higher inoculum we know will give a higher risk of somebody becoming infected and may also give you a more intense infection.

Q. So are we on the same wave length, that that may cause a shorter time in the AIDS developing in the recipients?

A. In this paper when they looked at it in that way, the individuals who received blood from, recipients who received blood from donors who developed AIDS more rapidly appeared to developed AIDS more rapidly.

Q. Okay. So that the incubation period isn't the same with

everyone, that's another factor that makes a difference?

A. That's an absolute fact.

Q. Okay. Then, Doctor, the health of the recipient has to be a factor, isn't it?

A. You have to define "health" for me.
Q. Well, if one is physically strong, no signs of any type of disease or infection, wouldn't that make a difference than one who is weak and sick?
A. It hadn't seemed to in the studies that had been done looking at disease progression in all different types of individuals. It appears that the most important factor is age in terms of the disease progression. So older individuals have, tend to have a shorter incubation period from the time of infection until the time that they develop AIDS as compared to younger individuals.
I think probably the best example that I can think of to answer your question would be people who had transplants. Say somebody has a kidney transplant or liver translate --
Q. Doctor --
A. I would like to answer your question if I could.
THE COURT: Go ahead.
BY THE WITNESS:
A. This has to do with health an immune system.
People who receive transplants, some of those individuals have become infected through either the organ being infected or through blood transfusions. And obviously somebody who receives a blood transfusion -- who receives a transplant

is put on medicines to suppress their immune system. And in those situations, the transplant patients who become HIV

infected do not appear to progress more rapidly than other patients who have HIV infection.

So, again, the idea of age seems to be the most important factor in determining how fast an individual's disease is going to progress.

BY MR. RING:

Q. Have you finished your answer?

A. Yes. Thank you.

Q. Then let me go back. Doctor, reading from your deposition of page 74 dealing with the one becoming infected with AIDS, you said, "It may have to do with the innate abilities of some individual's immune systems to prevent infection when exposed to very small quantities of the virus." Is that a true statement?

A. Yes.

Q. That's true now as it was then?

A. Right.

Q. All right. So the innate abilities of the immune system is a factor together with the amount of virus, right?

A. It may be a contributing factor.

Q. Okay. So that if one has a strong immune system, you are able to delay or offset infection even though you've had exposure?

A. I have a problem with the word "innate" and then equating

25 that with greater. When we --

Q. Well, I --
A. Let me explain, please. Let me explain.
Q. Well, this is the word --
A. When you are saying "innate," it may be specific, there may be some specific factor. It doesn't mean that their immune system overall is weaker or stronger, but you may have specific components of the immune system.
So I agree with the principle. It's just it doesn't necessarily mean one person's system is stronger than another. There may be an inherent ability of certain people's immune systems to more effectively prevent infection.
Q. So when you said "It may have to do with the innate abilities of some individuals' immune system to prevent infection" --
MS. GOURLEY: Could we have the whole answer read if we're going to do this?
MR. RING: Of course, Sara.
MS. GOURLEY: Thank you.
BY THE WITNESS:
A. Would you like me to read it?
BY MR. RING:
Q. I'll read it.
A. Sure.
Q. "When exposed to very small quantities of the virus."
A. Well, I don't think that was the whole answer she was

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referring to.
Q. "So there is no single factor that might be in play. It might be several or it might be, it might be one, and it might just be luck." Is that it? That's what you wanted read?
A. No. I believe that my answer begins on page 74 under "The speculation would."
Q. Read that.
A. Thank you. "The speculation would, speculation would be the same speculation I would give for homosexual men who continued to engage in high risk behaviors and didn't become infected or heterosexual partners of infected individuals who continued to engage in unprotected sex and didn't become infected or hemophiliacs who continued to receive factor concentrates.
"Speculatively there are several reasons why someone may not become infected. Number one, they are not being exposed to the infectious agent. Number two, the amount of virus they are becoming exposed to or the way in which they are becoming exposed to it does not put them at risk of infection, so there is either a very small amount of virus that is not enough for them to become infected by or the factors associated with sexual practices, for example, may not put them at risk;

or it may have to do with the innate abilities of some individuals' immune systems to prevent infection when exposed to very small quantities of the virus.

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"So there is no one single factor that might be in play. It might be several, or it might be, it might be one, and it just might be luck."

Q. So reading the first paragraph changes the rest of your testimony on that page?

MS. GOURLEY: Objection.

THE COURT: Overruled. Go ahead.

BY THE WITNESS:

A. I think I just wanted to make the point that this was speculation and not fact.

BY MR. RING:

Q. I see. So when you gave your deposition, you were speculating and not giving any facts, is that right?

MS. GOURLEY: Objection. If we're going to do this, why don't we read the question where it was asked for?

MR. RING: You'll have a chance, Ms. Gourley.

THE COURT: What question do you want read?

MS. GOURLEY: The witness said, "I don't have an opinion. I have speculation." And then Ms. Thomas insisted on an answer. "Assuming that what factors?" and that's what the answer was based on. So I think his question was unfair.

BY MR. RING:

Q. Is that the way you feel about it?

A. I kind of got lost, and I need to have another question to answer.

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Q. I think you're right. I think we better go to another question. We've beaten that one into the ground.

Now, Doctor, now, I think if I recall your testimony that more than one infection has happened in animal studies?

A. I'm not quite sure exactly what you are referring to.

Q. Well, I'm not a doctor. See, I'm just trying to find out facts.

In this same, in this same article, Doctor, or "The Transmission of HIV" -- no, it isn't the same. Exhibit 6, Defendants' Exhibit 6 that you were looking at, "Transmission of HIV and Factors Influencing Progression to AIDS," is that right?

A. Do you want to give me -- is that the Jay Levy article?

Q. Yeah, that's the Jay Levy article.

A. Would you like to give me a page so we could be on the same page?

Q. Yeah. Go to page 93 at the paragraph at the top of the page on the left-hand side.

A. Okay. I'm on 93, left-hand side, first paragraph?

Q. Yes. It says, "In addition," do you see that, the first full sentence?

A. "In addition," right.

Q. "In the past, several different unheated Factor VIII and

Factor IX preparations might have been used at the same time by one individual and, thus, increased the chance of infection by

more than one HIV strain. Within a few days, this initial infection might result in replication of different HIV viruses."

Do you agree with Dr. Levy and what he has written there?

A. I agree with Dr. Levy in terms of the next paragraph.

Q. Yeah. I want to go on with that. So far you agree with him, right?

A. He's speculating there, yes.

Q. Does he say, "I'm speculating"?

A. Yeah, I think he says "Thus, increased chance of more than" -- okay, not specifically.

Q. "Over time, however" --

A. Right, he says does say "might result." So that's why I thought he was speculating.

Q. I see. So the word "might" to you means that the whole thing is speculation?

A. "Might" means possible.

Q. Could it also mean that in some cases it might not, and in some cases it might?

A. When you speculate, it may be both, either way, it can be or may not be.

Q. All right. Then "Over time, however, as evidenced from the inability to isolate or identify more than one distinct virus

25 strain in an individual, a predominant strain emerges." I just

skipped the paren, unless you -- well, I'll read it.
A. I think it's important.
Q. Oh, okay. "And its variance."
"A predominant strain (and its variance) emerges. The other viruses are eliminated (or suppressed) through the death of the virus, infected cells, dominance of one strain in the lymphocytes, or through the anti-HIV activity of the cellular immune system. Moreover, after the primary infection has been established, superinfection with the persistent presence of a new HTV strain would appear to be a rare event."
A. Correct.

25

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Q But --
A It says "see below."
Q "See below."
Do you want to do a little reading?
A Well, the "see below" I thought was referring to his later review comments where there has not been documentation of infection by more than one strain.
Q But he says that this has happened?
A Pardon me? What did he say has happened?
Q That there is a super infection with a persistent presence of a new HIV strain, would appear to be a rare event. He says it is a rare event but he says it has happened, isn't that right?
A No, I don't think he said that it had happened. He said it would appear to be a rare event and then offers no data. In fact, the only data he offers later on talks about it not happening.
Q Now, this did happen in chimpanzee studies, did it not?
A Would you like to show me where he is referring to that?
Q Turn to the next page.
A Yes.
Q And in the second full paragraph, about the center, it says,
"Whereas super infection" --
A Excuse me. This is page 94 now?

25 Q Unless you have got a different book.

A I found it.
Q Have you got it?
"Whereas super infection of some non-human primate species by more than one strain has been reported, these results reflect a relatively limited spread of the initially inoculated virus in these animals."
A Okay.
Q Well, Doctor, --
A You can go on farther.
Q -- you wouldn't infect a human with HIV to do the test, would you?
A No, absolutely not.
Q So he is reporting at what was done with animal studies, with chimpanzees, is that right?
A If you wanted to read on, I think he explains it a little bit more.
Q Yes, I will read on, or you can. Do you want to read on what you want to read?
A "Furthermore, high doses of HIV, approximately a million infectious particles, a thousand times more virus than usually encountered naturally as well as virus infected cells were used intravenously as the experimental challenge.
Finally, as observed in most viruses, the antiviral vaccine, super infection could lead to a transient

reinfection, but then the new virus would be markedly controlled by the already prepared immune system."

Q And then it goes on, does it not:

"It is noteworthy, nevertheless, that both HIV I and HIV II have been detected in the same individual"?

A Yes, and that is an entirely different virus.

Q "These cases are uncommon and probably indicate dual infection by these two viral subtypes before a strong anti HIV immune response in the host had been established"?

A Right. HIV II is an entirely different virus from HIV I, and that has been well known for a long time.

Q Are they both HIV? Are they both --

A They both are human immunodeficiency viruses, but they are distinct, different human immunodeficiency viruses.

Q In any event, let's take what you say. You can have two different strains to infect the same person?

A No, I didn't say that. I said that --

Q It is not true?

A I said that based upon the information that is published in the literature, there are no data that says that an individual is infected by more than one strain of HIV I. That means that you would have to detect more than one strain of HIV I in an individual.

25 Q When you say individual, you are talking about a human?

A Individual human.
Q Okay, and so one doesn't know. It has been done with animal studies with chimpanzees, but there has been no such test for obvious reasons on humans?
A No, that is not true. People have looked for more than one viral strain in an individual, and there has not been evidence of infection by more than one distinct strain.
Q Antigenic stimulation, Doctor.
A Which page are you referring to?
Q Your work, your deposition, okay?
A I understand.
Q 69.
A Thank you.
Q In 69, Doctor, and forgetting the page -- I am using it for reference for me, --
A Okay.
Q -- viruses will grow more rapidly in cells which are metabolically stimulated, right?
A Correct.
Q And we know that the cell -- the virus will only grow in a human cell, right?
A It grows in cells -- it can grow in chimpanzee cells but in human cells -- we are talking human cells.

Q We are done with the chimpanzees.

A Good.

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Q Okay.

So if you stimulate the cell in which that virus is resting, it will stimulate the multiplication of the virus, right, replication?

A Are we talking about now in the test tube or in the human host.

Q In the host.

A The experiments have all been done in the test tube, but we presume that the infection by HIV stimulates the immune system and stimulates the cells in which they are replicating, and that stimulation process by the virus can actually act as kind of a positive feedback and increase the replication of the virus itself.

Q And that will speed up --

A Well, as the virus --

Q -- the process to -- from infection, stimulation, to full, frank AIDS, right?

A No, I thought we were talking about one cell.

The process of the progression of the disease is defined as I have defined it. It is a long, slow process. There's billions of lymphocytes in an individual, and it takes a long time for those lymphocytes to be destroyed.

Q Doctor, if you stimulate the blood in a person, is it going

to stop at one cell?

A No. When you stimulate -- when a virus is replicating, it

is producing more virus. That is its job. The virus then can get out of the cell and infect other cells or the virus can spread directly from one cell through contact with another uninfected cell.

Q So it stimulates the replication of the virus in the system?

A The virus replicates, and the replication of the virus can stimulate the immune system, and that stimulation process can lead to more virus replication, sure.

MR. RING: Thank you.

That is all I have, Judge.

THE COURT: Did I understand you to say, Doctor, that the HIV virus replication process cannot be stimulated by anything other than the HIV virus itself?

THE WITNESS: No. Any -- theoretically any stimulation of a T-lymphocyte could increase the amount of virus being produced by that particular lymphocyte.

THE COURT: Let me ask another question on a different subject.

What was the reason that serum was being stored from persons -- from hemophiliacs who had no symptoms of anything?

THE WITNESS: Most of those serum samples were stored for studies on hepatitis, as I remember, because of a very high

risk of hepatitis in hemophiliacs with an inordinate amount of liver disease that they get as a result of that hepatitis. Cohorts of hemophiliacs have been studied longitudinally over

time for years, and one of the things that is routinely done is for, you know, patients who are involved in those particular cohorts, for their serum samples to be stored over time, so that when questions arise later and new information, you can go back and try to put the whole picture together.

THE COURT: Another subject. What kind of a blood test does a person have to have in order for the T-helper cells to be tested?

THE WITNESS: This is a test which uses certain kinds of antibodies that identify a particular kind of unique molecule in the membrane, the outer membrane of a T-helper lymphocyte, and this is called a CD-4 molecule. CD stands for cluster domain.

And so this antibody which is unique and specific for this CD-4 molecule attaches to the molecule in the membrane of that lymphocyte, and then by using a fluorescence tag and putting it under essentially an ultraviolet light, you get fluorescence and you can then quantitate the number of lymphocytes that have that CD-4 present by literally counting. There is a machine that actually counts of the number of cells that fluoresce.

THE COURT: So that is a fairly elaborate test as compared to the full blood count?

THE WITNESS: Yes. It is a much more elaborate test, right.

THE COURT: Then, finally, you were talking about the discovery process of the antibody and the virus, and I don't know that any witness has yet explained what they were looking for when they were looking for the cause of AIDS. Did they first find antibodies that seemed to be strange and then they looked for a virus to which they might have been responding or what?

THE WITNESS: Based upon how the disease was spreading, and it was very similar to hepatitis B, which we knew was a blood disease, that it was speculated very early on that this infection was some type of a blood-borne virus.

So people --

THE COURT: How early was that?

THE WITNESS: Oh, back probably in '81, '82. Montagnier's group in Paris was the first to discover the virus and publish those findings in April of '83, April, May of 1983.

So what was found first was actually the virus, and then once the virus was found -- you really have to have the virus first in order to identify the antibodies because the antibodies are directed against the virus, and without the virus, we can't measure the antibodies.

So the virus was discovered first and then the antibody

test was developed.

THE COURT: When you find a virus, how do you know that it is the -- how do you determine that it is the cause of the

disease?

THE WITNESS: Right. What you do is you have to set up studies that look at different groups of people.

So you go out and you just take people who are at no risk of HIV infection presumably. They are heterosexual, no blood transfusions, no intravenous drug use, monogamous relationship, and perfectly healthy. You then look for evidence of virus infection in them.

You then look for evidence of virus infection in people who you know have AIDS.

You then look for evidence of virus infection in people who are at risk of AIDS but didn't have any signs or symptoms of AIDS.

So by looking in these different populations, you can then determine that you don't find the virus in the people who are perfectly healthy; you almost always find the virus in -- you always find the virus in people who have AIDS; and then you find the virus in people at risk -- in some people at risk for AIDS and other people who don't have AIDS.

Then you develop an antibody test, and then you can start to determine if, in fact, this virus is unique in that

there is a host immune response and developing antibody.

So it is a process which takes a period of time in looking at different populations of patients to determine the validity as to whether or not this new virus, in fact, causes a

specific disease.

THE COURT: And then how do you tell that an antibody is responsive to a virus?

THE WITNESS: The tests are designed so that the antibody -- there are probably millions of antibodies we all have. But what you do is once you have the virus, an antibody will only attach to that virus if it is generally specific for that virus. So you can design your tests to prove that that antibody is directed solely at that particular virus.

Then there is another test called the Western blot test, which is a much more sophisticated antibody test, where you can actually break the virus up into its constituent protein building blocks, and you can look in an infected person for antibodies directed at each one of the individual constituent building blocks of the virus.

That is really very visual and very highly specific for those antibodies.

THE COURT: That is in the laboratory?

THE WITNESS: Yes. In fact it is routinely done in terms of diagnosing HIV infection. Everybody gets a screening test first. There can be false positive screening tests. So then there is a confirmatory test. The confirmatory test is

this Western blot test, which is more expensive, more time intensive. That is why it is not done as the first test.

THE COURT: But you would put the virus in a dish and

then infuse some antibody into the dish?

THE WITNESS: Essentially, right. The virus is attached to either a plastic bead or to the sides of a plastic test tube. You then put the patient's serum that you want to test in the presence of that plastic which has the virus coated on it. The antibodies will then attach to the virus.

You can't see any of this, of course, because they are so small. They attach. You then wash away the serum that you put in, leaving behind only antibodies that have specifically attached to the virus.

THE COURT: How can you tell that they are attached to the virus when you can't see the virus?

THE WITNESS: Then you come in with an antibody to a human antibody. So you take an antibody that you make in, say, a goat or a rabbit that will attach to human antibodies. And to that animal antibody, which is now going to attach to a human antibody, you attach a molecule; in this case they attach an enzyme.

And so if there are human antibodies -- it is kind of like a sandwich. The first part of the sandwich is the plastic

to which the virus is attached.

The second part of the sandwich is the meat of the sandwich basically, which is the antibody directed against HIV in the serum of the patient that you are testing.

Then the third part of the sandwich is an animal

antibody, say, a rabbit antibody, that is made against human antibodies. It is non-specific. It will attach to any human antibody. That is the third part of the sandwich, and that attaches then to the human antibodies.

Then on top of that, they have an enzyme, and that enzyme then you can add a chemical and it will turn colors. So if a color reaction occurs, then you know that there were specific human antibodies attaching to the virus which you know that you had attached to the plastic.

THE COURT: Thank you.

Any questions from the jury?

Any other questions from counsel?

MR. BARR: Yes, your Honor.

LAURA M. BRENNAN, Official Reporter

CROSS-EXAMINATION

Q Good afternoon, Dr. Kessler. When you talked earlier about the chart that was shown, that chart came from the article that is in the New England Journal of Medicine where the lead author is Dr. Goedert and the third author is Dr. Louis Aledort who has testified in this trial, is that correct?

A Correct.

Q So that chart, which I'm referring to, the blowup, is a part of this New England Journal article, is that right?

A Correct.

Q Have you read Dr. Aledort's testimony from this trial?

A No, I haven't.

Q And would it strengthen your opinion concerning when Mr. Poole was infected to know that Dr. Aledort told us here --

MR. RING: Your Honor, I object to putting into this question to this witness what Dr. Aledort said. Either he knows on his own -- I don't think he should be relying on Dr. Aledort's testimony in this courtroom.

THE COURT: Overruled.

BY MR. BARR:

Q My question is would it strengthen your opinion as to when

Mr. Poole was infected to know that Dr. Aledort stated here in

court, "I think from the literature that we have published and

continue to tease out and have submitted to publication that

more than 50 percent of patients receiving this quantity" --

referring to Mr. Poole -- "of factor seroconverted in January of 1982 and that 90 percent were seroconverted or infected by January of 1983"?

A Sure. Additional information will always strengthen my opinion.

Q Were you aware that when the Geodert/Aledort group published in the New England Journal in October of 1989 that that continued to be an ongoing study with patients added to it when they could find additional serum samples to attempt to answer this question as on when hemophiliacs were infected?

A I was aware it was an ongoing study.

Q Mr. Ring asked you some questions about Mr. Poole, and -- is there anything that you have seen in his medical records, in his chart, that would indicate in Mr. Ring's words that Mr. Poole had a "strong immune system"?

A He had -- no, he had no specific immune testing done until, I believe, it was April of '86 when they did his T-cells.

Q I'll get to that in a moment, but if the patients in the Geodert/Aledort study were severe hemophiliacs as reported

here, if they were using the same blood products as Mr. Poole received, is there any reason that you've seen in his medical records or reviewed in this case, that would lead you to believe Mr. Poole would not fall into the 90 percent of hemophiliacs infected by January of 1983?

A No.

Q You were asked a couple of questions about the Ward paper, and you had read that before, is that correct?

A Yes, I have.

Q And that was published in 1989, true?

A Yes.

Q It dealt with a number of blood centers, Irwin Center in San Francisco, Red Cross, the Sacramento Blood Centers and others, and the conclusion they reached was one on -- one of them was "one possibility that donations from persons in whom AIDS is about to develop contain a larger inoculum of HIV."

That was one of the possibilities they talked about in that study, is that correct?

A Yes.

Q There have been subsequent studies to this where this work has been refined and certain possibilities have been eliminated to your knowledge, is that correct?

A You would have to make me aware of exactly what it is you're saying.

Q Referring, again, specifically to Mr. Poole, what was his T cell count in 1986?

A I believe it was 90 when it was first measured.

Q Assume for a moment that a patient came to you and gave you a history of having taken approximately a million units of unheated Factor VIII concentrate over a ten-year period, and assume that you did T-cell testing and found that hemophiliac

to have T-cells of 90, would you even have to test him for the AIDS antibody to determine to a degree of medical certainty that he was infected with HIV?

A I would test him. I would assume he was going to be infected with HIV, but low T-cell counts are, you know, so unique to HIV infection that it would be unlikely that there was anything else causing that low T-cell count.

Q Is there a certain point where if your T cells reach a certain low level by definition that means you're infected or you have the disease AIDS?

A Well, there's two questions you asked me, so I'll answer the second one first.

The Centers for Disease Control changed the definition of AIDS in January of 1993 to now reflect levels of T-cells. So people who have less than 200 T helper lymphocytes are now considered to have AIDS to make the definition a little bit more biologically relevant.

Q Stephen Poole, even if he had no opportunistic infection in 1986, by the fact that he had 90 T-cells only would be defined as having AIDS, is that correct?

A Correct.

Q And is there a certain point in time when someone such as

Mr. Poole -- in other words, when they reach a certain level

when -- regardless of whether they have symptoms of disease,

but if their T-cells drop to a certain level, you as a treater

would begin prescribing those few medicines that are available for individuals who are infected with HIV?

A Correct.

Q And what point is that?

A Well, I would initiate therapy for the virus when their T-cells drop below 500, so at a relatively higher level. And then I would initiate prophylaxis against pneumocystis pneumonia, which has been the most common opportunistic infection at that time. I would have initiated prophylaxis with a drug to prevent that particular type of pneumonia.

Q At what T-cell level would you do that?

A We do that now when their T-cells drop below the 200, 250 range.

Q So when Mr. Poole presented himself in 1986, he would, by definition because of his T-cell count have had AIDS without any opportunistic infection and just with that T-cell count he would have been a candidate for it's AZT or DDI or some other protocol?

A We have to be careful because we have to put this in the frame of the time that this was happening. AZT wasn't

available generally until the spring of 1987, and we didn't start to routinely prophylact patients against pneumonia until 1989. So, again, we -- you know, based upon my practice today, yes; but based upon accepted practices then, it would be different.

Q As to my client, Cutter, if Mr. Poole was infected as of the time he first got Cutter product, which in this case is not disputed, it was heat-treated Factor VIII in 1985. And if he was already infected by that date, did that heat-treated Cutter medicine harm him in any way in your opinion?

A Not that I'm aware of.

MR. BARR: I have nothing further.

MR. BERKMAN: I have one question, your Honor.

CROSS-EXAMINATION

MR. BERKMAN:

Q Similarly -- I'm Richard Berkman on behalf of Baxter.

It's undisputed that Mr. Poole received three lots of heat treated Baxter product in his January 1985 hospitalization.

Do you have any evidence that any of that was infectious with HIV or caused him any harm?

A No, I don't.

MR. BERKMAN: Thank you.

THE COURT: Any questions from the jury?

Any further cross-examination?

MR. RING: None.

THE COURT: Thank you.

(Witness excused.)

THE COURT: Let's recess for lunch. Come back at about 1:45.

(The following proceedings were had in open court out of the presence and hearing of the jury:)

THE COURT: I have read the designated portions of Dr. Peter Levine's testimony, and I see no reason that should not be received in evidence. It seems to me largely similar to the testimony of other witnesses. I'm going to receive it over the plaintiff's objection.

MR. RING: Even though we didn't have a chance to complete the deposition, your Honor?

THE COURT: I don't see anything here that -- I guess I don't have the portion of the transcript where there was a reference to not completing it. My copy ends at Page 131.

MR. ALBERT: Your Honor, I only provided the Court with the part we're going to read from. I can provide the Court with the entire transcript if you would like.

THE COURT: I don't really see that any -- the likelihood of any points being scored with further examination. I mean, I've been listening to this testimony now for three weeks. It's --

MR. RING: I haven't read it. I grant you it's

probably party line.

THE COURT: You don't have to. It's pretty much a rehash of what you've been hearing for three weeks from the defendants' point of view. You've got a different point of view.

MR. RING: Maybe they'll just agree that he'll say the same thing that the others have said?

Do you want to stipulate to that.

MR. ALBERT: I believe not.

THE COURT: I'll receive it. Thank you.

Do you want to take about scheduling at the end of the day?

MR. BERKMAN: We can talk now for a few minutes, your Honor.

It's my hope -- I believe all that's left for today is to complete Dr. Mozen, and then I believe Miss Gourley has one more witness, Mr. Rodell which we may complete today.

MS. GOURLEY: I would like to say now I hope we can complete today. If we complete him today, he's going to Europe tomorrow.

MR. BERKMAN: I have Dr. Levine's deposition which will take less than an hour and one witness, Mr. Young. I think we'll be completed by the morning of Monday, and I would hope that Mr. Ring will have any rebuttal or anything that he's going to have for Monday afternoon.

I have two suggestions, your Honor, one

that we all

22 give you our jury charges at the end of Monday instead of

23 waiting for Tuesday so that you have an opportunity to look at

24 them; two, if Tuesday there is need for surrebuttal we put it

25 on and we have a jury charge.

Then here is the question. If we close on Wednesday, will you allow the jury to deliberate while you're out of town and let some other judge just be available if they have a question?

THE COURT: What do you think.

MR. BERKMAN: I think it would be advantageous only because it will prevent people from getting into the Thanksgiving holiday, and it would give them a chance to go home before Thanksgiving; otherwise I'm neutral on it.

THE COURT: Some juries don't ask any questions during deliberations. Other juries pepper you with questions from the beginning. And if that should be the case, it will be very awkward if I were out of town.

MR. BERKMAN: The alternative I was going to suggest was we let the jury go home on this coming Wednesday and do our closings on Monday the 22nd and let them deliberate as long as it takes them until we all go home.

MR. RING: Obviously if all the testimony is in, then that would be all right, but --

THE COURT: Well --

MR. BARR: I have a different question that I would like to address if I have a moment when we get through with this with this before we break.

THE COURT: Well, it sounds to me like we probably better think in terms of finishing up on the 22nd.

MR. BERKMAN: Closings.

THE COURT: Closing arguments and instructions on the week of the 22nd.

MR. BERKMAN: Maybe we could use Wednesday to argue directed verdicts or something, jury charge --

THE COURT: I just don't see how we could get jury instructions done and the jury instructed next week.

MR. BERKMAN: Okay. I'm not pressing it. I was really just trying to -- my view then is that if we can use Tuesday for jury charges, directed verdict, whatever, let the jury go home and come back on Monday the 22nd to make closing arguments.

THE COURT: Well, if we finish up all the evidence --

MR. BERKMAN: On Monday or Tuesday --

THE COURT: -- on Monday or Tuesday. Yes, that would make sense.

Mr. Barr?

MR. BARR: My concern is on the issue of "rebuttal" testimony.

The position of Cutter is that there has been nothing new introduced in the defense portion of this case.

We have

22 met what has been presented by plaintiffs and have attempted to

23 rebut it.

24 As you know, the Circuit Courts have almost

25 universally held that this idea of "having the last word" is

not favored, and my concern is that we're going to see a complete retrial of this case in plaintiff's rebuttal witness if there are any. We haven't brought anything new.

THE COURT: I doubt that, but there have been very specific items of evidence talked about by the defense which seems to me invites rebuttal. Maybe there won't be any, but maybe there is a lot of room for rebuttal. So, we'll just deal with that when we reach it.

MR. RING: Your Honor, on a more important note, in light of the hour would 2:00 being.

THE COURT: All right. 2:00 o'clock.

MS. GELLEN: Your Honor, one thing I forget to raise yesterday. On the class action suit, when the order came out Cutter was not included as having leave to -- until December; 15. Everyone else was named --

THE COURT: That was an oversight.

(The trial was adjourned until 2:00 p.m. On November 9, 1993.)

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IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

PEGGY GRUCA, et al., Plaintiffs,	)	NO. 86 C 7623
v.	)	Chicago, Illinois
ALPHA THERAPEUTIC, CO., et al., Defendants.	)	November 9, 1993 2:05 p.m.

VOLUME 19-B
TRANSCRIPT OF PROCEEDINGS
BEFORE THE HONORABLE JOHN F. GRADY

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(Proceedings in open court. Jury out.)

THE COURT: Let me give you that back, Mr. Albert.

(Jury in.)

MILTON MOZEN, DEFENDANT CUTTER'S WITNESS, PREVIOUSLY SWORN

CROSS-EXAMINATION (Resumed)

BY MS. THOMAS:

Q. Dr. Mozen, I see someone has flipped this over to the Cutter Koate heat-treat product. And that's your time and temperature for the dry heat, 68 degrees at 72 hours, right?

MR. BERKMAN: Louder, please.

MR. BELL: Can you speak up, Debra?

MR. RING: Speak up.

MS. THOMAS: Sure.

BY MS. THOMAS:

Q. 68 degrees Centigrade at 72 hours, that was Cutter's time and temperature for dry heat treatment, right?

A. Yes.

Q. Okay. There were some seroconversions reported in Canada associated with products treated at 68 degrees for 72 hours, weren't there?

A. Not associated with that product solely.

Q. Okay. I presume you've seen --

A. Individuals had received lots of other products.

Q. Do you recall which other products?

A. No. I would have to see the paper to refresh my memory.

LAURA M. BRENNAN, Official Reporter

Q. Okay. I'm showing you Plaintiff's Exhibit 4.290, Leads From The MMWR. And the portion I have highlighted, Dr. Mozen, refers to the seroconversions in Canada of some hemophiliacs who had used Cutter's product. Do you see that?

MR. BARR: May we have a copy of it, counsel? I've found it. Thank you.

BY THE WITNESS:

A. Yes, I see that.

BY MS. THOMAS:

Q. Okay. You mentioned that the hemophiliacs who seroconverted to HIV used another product in addition to Cutter?

A. If we read beyond where you had it highlighted, if I may?

Q. Well, which other product had those hemophiliacs in Canada used?

A. Well, perhaps I could read it here, and we could deduce what they are referring to.

MR. RING: I can't hear you, Doctor. Can you speak up?

BY MS. THOMAS:

Q. Can you lean forward toward the microphone? That may help.

A. "However, an epidemiologic study, investigation showed a strong statistical association between seroconversion and receipt of one or more of three lots of heat-treated 60

degrees

25 Centigrade, 30 hours Factor VIII concentrate made by another

company from one plasma pool." And then it references a study by Dr. Reamis.

Q. Okay. So the hemophiliacs who seroconverted on dry heat-treated product in Canada used both Cutter's product heat-treated at 68 degrees for 72 hours, and can we presume this is Armour's product treated at 60 degrees for 30 hours?

MS. GOURLEY: Objection, relevance.

THE COURT: Overruled.

BY MS. THOMAS:

Q. Do you know for a fact if that's --

A. Yes.

Q. Okay. May I have that back?

A. Yes.

Q. Oh, by any chance did you investigate these seroconversions on behalf of your employer, Cutter?

A. Well, I attended the CDC meeting in Atlanta, I've forgotten the exact date, when the investigation of the Canadian seroconversion was thoroughly aired and discussed, and all of the data prior to publication was presented at that meeting.

So I think to that extent, yes, we investigated.

Q. Now, yesterday we were talking about levels of HIV in persons who have been infected. Do you recall that?

A. Yes.

Q. And I believe your testimony, Doctor, was that you were assuming a maximum titer of one million infectious particles

LAURA M. BRENNAN, Official Reporter

per milliliter in a person at the peak of his infection with AIDS?

MR. BARR: Object, Your Honor, that misstates the evidence.

BY MS. THOMAS:

Q. Okay. Could you clarify it for us?

A. Yes. What I said was that, first of all, based on data published by Dr. Hoe, and we had a blowup of that, the maximum titer of infectious particles that he had measured in any individual was 50,000. This was an individual who was at that stage in the progression of the disease, he was with frank AIDS.

What I said is based on the amount of virus that we added to the plasma and followed its fractionation and subsequent heat treatment, that there would have had to have been more than a million particles, infectious particles per mil of plasma to -- well, we were certain that we inactivated that much. It could have been a million or more. But we had only been able to put in that many infectious particles, because that's all the material we had available.

LAURA M. BRENNAN, Official Reporter

MR. BARR: Excuse me, Doctor. I am unable to hear you.

Can you speak into the microphone, please?

THE COURT: He is, I think. I don't know what is the matter.

THE WITNESS: I thought I was in the microphone.

THE COURT: Can the jurors hear him all right?

A JUROR: Yes.

THE WITNESS: Yes.

BY MS. THOMAS:

Q So you were assuming one million infectious particles per milliliter that your dry heat treat process was capable of inactivating, is that correct?

A Yes, one million or more, yes; ten to the sixth power is what is expressed in the publication.

Q So that is substantially more than Ho reported ever finding in a milliliter of a person with frank AIDS?

A That's correct.

Q All right. And when you used the term, infectious particles, what are you talking about?

A Well, I was speaking about the ability to infect cells growing in vitro or, as Dr. Kessler mentioned, grown in a test tube where you can take human cells in a test tube and infect them with virus particles; and based on doing a series of

24 dilution, one can calculate how many infectious particles or how

25 many infectious virus are present in the solution because these

particles can replicate or reproduce when they enter these cells which are contained in a test tube or a flask or some other suitable container.

Q Okay. I presume you were here for the testimony earlier this morning, were you not?

A Yes.

Q You have been here for most of the trial sitting in the front bench?

A Yes, that is correct.

Q Okay. So you recall we were talking about Jay Levy's, Dr. Levy's, 1993 article --

A Yes.

Q -- relating to AIDS.

Did you review that article?

A Yes, I have seen that article.

Q Did Dr. Levy suggest that we might find a much higher level of infectious particles per milliliter in someone presenting with frank AIDS?

A Not that I am aware of.

Q First of all, do you recall Dr. Levy publishing in 1993 that a person who has his initial infection or acute infection with HIV can have as many as 5,000 infectious particles per milliliter circulating in his blood?

A I am not sure I remember that precisely, but that sounds

like it is in the ball park we are talking about.

LAURA M. BRENNAN, Official Reporter

Q Okay. Yesterday I believe you stated that there was no significant presence of free-floating virus in the blood of a person who is newly infected.

MR. BARR: Your Honor, I am going to object. That misstates the testimony of the witness.

THE WITNESS: I don't believe I said that.

BY MS. THOMAS:

Q Well --

A I think I used the same term that Dr. Kessler used today, which was very low concentration.

Q Now, Dr. Levy reported being able to quantify as much as 11 million virions per milliliter in the plasma of persons with AIDS.

Do you recall reading that?

A No, I would have to refresh my memory on that.

Q Okay. I am directing you to the 1993 Dr. Levy article in the American Journal of Medicine, which is Armour's Exhibit Number 6, page 88.

(Brief interruption.)

BY MS. THOMAS:

Q Have you read that before, Dr. Mozen?

A Well, it has been a while. I realize this just came out, but I don't remember all the numerical detail. That is why I have to look at it rather --

(Brief interruption.)

THE WITNESS: Yes, I see this. I see where some of the problem is.

Well, you can ask a question if you would like.

BY MS. THOMAS:

Q Well, here Dr. Levy is discussing a new method of quantifying HIV 1, is that correct?

A Yes. He is talking about a method that quantifies what they call the gnome or the nucleic acid of HIV 1. This does not necessarily correspond to infectious particles.

Q We are talking here about infectious virus and high titers, are we not, Doctor?

A Yes, we are, but what he has detected by the so-called PCR method is an indication of the nucleic acid that he was able to quantify, and one can make a calculation as to what that might be in terms of what he calls virions, but these are not shown to be infectious.

Q Is a virion a part of the virus particle?

A Yes.

Q Okay. So you are saying that these might not all be infectious parts of virus, HIV virus particles, is that your testimony?

A In fact, if you look at the table on the other side where he speaks of infectious particles, he is looking at numbers like

to 500, in that table.

Could I see that a moment?

Q Now, he talks about the particles, virions, that can be found.

MR. RING: Excuse me. Rather than strain, here is a copy for you so you can follow.

THE WITNESS: Thank you very much.

You finished your question?

MS. THOMAS: Okay.

BY MS. THOMAS:

Q Now, if we have titers of 11 million infectious particles free-floating in the plasma of a person with AIDS, the Cutter's dry heat treatment method, according to your proof, would not inactivate that level of virus, would it?

LAURA M. BRENNAN, Official Reporter

MR. BARR: Excuse me, Your Honor. That misstates the evidence both of the witness and of the paper. It's a hypothetical without foundation.

THE COURT: Well, whether it does or not, it doesn't seem to be quoting a particular answer. She's simply asking a question. Overruled.

BY THE WITNESS:

A. May I have it again, please?

BY MS. THOMAS:

Q. If a person infected with 11 million infectious particles of HIV per milliliter who had frank AIDS disease contributed to one of Cutter's plasma pools, there is no proof that Cutter's dry heat-treat method would inactivate that level of virus, is that correct?

A. No, that's not correct.

Q. Based on the experiments you did with Dr. Levy in 1984 and 1985?

A. Well, even based on that, and even if, which as I say, I can't acknowledge it could be 11 million particles per mill, but if that donor --

Q. Okay. Well that aside, that aside?

A. -- if that donor, plasma was added to a pool that was

diluted by 10,000 liters, so that donor was now diluted 10,000 fold, then we have to move that decimal point over four places, so instead of 11 million, you're looking at 1100, which still

puts it well within the information that we developed with our experiment.

Q. Well, Dr. Mozen, the Factor VIII proteins or the units are concentrated, are they not? I mean, that's the whole purpose of making this product.

A. Yes.

Q. And I think it's well acknowledged in the literature that the virus including HIV also becomes concentrated. You have to make that assumption, don't you?

A. Well, our data doesn't support that assumption.

Q. Well, isn't that well reported in the literature?

A. Well, you just yourself called it an assumption. What I'm saying is our experimental data does not support the assumption. In other words, when we actually fractionated it for Factor VIII with HIV added, we did not find a concentration in the Factor VIII.

Q. Were you able to measure the amount of virus in the Factor VIII?

A. No. Well, we did when we spiked it, yes, as I described yesterday.

Q. No. At the end, were you able to take that Factor VIII concentrate and measure how much virus was in it?

A. In the experiment I described yesterday?

Q. Yes.

A. Until it was all gone, yes.

LAURA M. BRENNAN, Official Reporter

Q. What do you mean "until it was all gone"?
A. Well, if we go through the experiment again, you'll recall that we had a portion of the experiment where we added virus to the plasma, and then we put it through the purification procedure up to the point where it was freeze-dried, and at that point, virus could be measured in the freeze-dried product. Then we added more virus back.
Q. Where did you add the second amount of virus?
A. We added it to a filtrate prior to freeze-drying.
Q. So you had, you already had some of the product freeze-dried in their containers?
A. Correct.
Q. And then you took more HIV, and you put that there?
A. No. It was a new experiment.
Q. Oh, okay.
A. New experiment. So we already determined how much virus is inactivated in going from plasma to a freeze-dried product. And as I indicated yesterday, we found that approximately 90 to 99 percent of the virus that was added to the plasma was lost or destroyed by the time we reached the freeze-dried product. In other words, by the time we reached this product, before it was heated, 90 to 99 percent of the virus was destroyed. Now, we took --

Q. Well, let me interrupt you right there.

MR. BARR: Excuse me, Your Honor. May the witness be

allowed to finish?

THE COURT: No.

MS. THOMAS: Judge, it is so complicated, I think it is helpful if we break it down.

THE COURT: Go ahead, go ahead.

BY MS. THOMAS:

Q. Please feel free to correct me if I am wrong, but did you not report, Dr. Mozen, that no matter what the level of virus is that you start with, you always have about 100 fold reduction after fractionation?

A. That's where I was saying 90 to 99 percent, which is what we call two log reduction is 90 percent, three logs is 99 percent, and it was in that range. And you recall, I discussed what a log is. A log is 10 to the power so that 10 squared is 100, and 10 cubed is 1,000, and we reduce it by somewhere between 10 squared and 10 cubed, which means 90 to 99 percent reduction.

Q. So the bottom line is you're saying no matter how much virus is in there, 100 fold always equates to 90 to 99 percent?

A. I'm saying, yeah, two log -- one log reduction is always 90 percent. Two log reduction is always 99 percent.

Q. Okay. So no matter how much virus, how much HIV is in your

starting pool of plasma, after the fractionating, you're going to have one to ten percent of that virus left in there, is that what you're saying?

A. That's what I'm saying, yes.

THE COURT: Let me ask a question about that. What does that mean, one to ten percent or 90 to 99 percent reduction? Were these the ranges over a series of tests?

THE WITNESS: Yes.

THE COURT: In other words, it's either 90 or it's 99 or it's something in between for a particular test, is that right?

THE WITNESS: The precision of measurement in the series of tests indicated that the reduction was either what we call two logs, 10 square, or three logs. If it were three logs, it would be 99 percent. If it were two logs, it was 90 percent. And it was somewhere in between, and sometimes two and occasionally three in different experiments.

LAURA M. BRENNAN, Official Reporter

THE COURT: All right. So this was the range of the different experiments?

THE WITNESS: Yes.

THE COURT: What accounted for the differences in the different experiments?

THE WITNESS: Well, mostly it is the -- when one deals with counting live virus, there is a certain precision problem or a lack of precision within perhaps a half a log, as they say.

THE COURT: How do you determine the presence of a particular number of viruses as distinguished from some other particular number?

THE WITNESS: Well, what is done is that the -- one has to obtain the cells in which the virus are going to grow and you have these cells plated out in many, many plates, and then you make a series of dilutions, usually tenfold dilutions of the virus.

And then you determine how far have you diluted before there is no viable virus. So nothing is growing.

So if it is growing in the undiluted, then you have a certain concentration, and then diluted one to ten, diluted one

to a hundred, diluted one to a thousand, and the last dilution in which no virus grow becomes the virus titer.

THE COURT: What does dilution have to do with the fractionating?

THE WITNESS: This is just for determining the count of

the virus. It has nothing to do with fractionating.

THE COURT: I see.

THE WITNESS: It is part of the assay, part of the determination of how many viruses there are.

You are ultimately trying to dilute it out so far that there are no virus left. When you reach that point, that tells you how many there were in the original dilution.

You dilute it a thousand fold and there was no left, then you can say there were a thousand particles in the first dilution.

THE COURT: Do you assume one virus per cell when you get growth in a cell?

THE WITNESS: Yes, essentially.

THE COURT: How do you know how many viruses?

THE WITNESS: Well, the way it is done in actuality is they measure a certain enzyme which is specific to a retrovirus, and as long as that enzyme is being generated, you know the virus is growing.

But basically you would assume, if you were doing a -- there is another kind of test where you look at the actual destruction of the cell. Then you can assume one virus will destroy one cell. But this is done more with this enzyme that

is generated.

BY MS. THOMAS:

Q Well, Dr. Mozen, do you recall in your deposition answering

that there is no reliable way --

MR. BARR: Excuse me. May we have the page, please?

MS. THOMAS: Sure, page 206.

THE WITNESS: Which one? I was deposed three times for this case. Are we on the --

BY MS. THOMAS:

Q August 4, 1989.

A And what page did you say?

Q 206.

A 206?

Q Yes.

A Okay.

Q Do you recall my asking you:

"In other words, there is no way to test the finished product to determine if it contains the virus?"

Your answer was:

"That is correct. There is no reliable way to test the final product."

Do you see that?

A Yes.

Q And we are talking about the presence of HIV virus in the final product there, aren't we?

A Yes, we are. Of course, we are talking about a final product to which we have not added deliberately high concentrations of HIV.

LAURA M. BRENNAN, Official Reporter

Q Well, even in that instance where you had deliberately added HIV to your product, you were not able to detect every virus particle and make the statement that they were all gone, were you?

A Essentially we were, yes.

Q Essentially, okay. Let's see what you mean by essentially.

Now, I am looking here at your letter to the Lancet you wrote with Jay Levy --

A Yes.

Q -- dated June 22nd, 1985.

Are you familiar with that one, Dr. Mozen?

A Yes, I am.

Q And here you were reporting your experiment where you added the HIV to Cutter's product, correct?

A Correct.

Q And reporting your virus kill, correct?

A Correct.

Q And you reported in the Lancet:

"Our results indicate that lipid envelope retroviruses, both mouse and human, if present in sufficient amount in plasma can be found in infectious form in Factor VIII lyophilized products. Their sensitivity to Factor VIII purification procedures appears to be independent

of virus input titer."

Then you stated: "Because ARV," and by that you are

referring to the AIDS virus, correct?

A Yes.

Q "Because ARV is not as easy to measure in tissue culture as the mouse -- trophic virus, not every infectious ARV particle may have been detected."

And that is what you published in the Lancet in 1985, correct?

A Yes.

Is there a question you have about that?

Q I want to make sure that I was reading this right, Doctor?

A You may have been reading it right.

I am not sure you are interpreting it right.

Q Well, that is for your counsel to explain, I am sure.

A Okay.

Q And, again, you reported in a rampant publication, the Journal of Clinical Investigation, August 1985.

Are you familiar with that? Do you recall being published in that?

A Is that the McDougall article?

Q Yes.

A Yes, I am.

Q You and Mr. Heldebrant of Alpha published your test results, is that correct?

A That is correct.

Q And, again, this is the same test where you claim the dry

LAURA M. BRENNAN, Official Reporter

heat treat process can kill up to one hundred -- one million infectious particles per milliliter, same test we have been talking about?

MR. BARR: Can we have the exhibit number, please?

MS. THOMAS: While we're checking for a number --

MR. BARR: I want the record to reflect what number it is.

MS. THOMAS: I'm sorry. My copy doesn't have a number.

BY MS. THOMAS:

Q You published in "The thermal Inactivation of AIDS Virus: It is likely that our assay does not measure the critical infectious dose of virus. No assay can discriminate one from zero infectious virus particles, and we are forced to rely on observed log reduction in the measurable range and extrapolation of thermal decay data to make inferences about efficacy of decontamination."

Did you publish that?

A That's exactly correct, yes.

Q What we're talking about are a lot of inferences that you're making down the road at each and every stop?

A We're talking about extrapolating scientific data. And extrapolation is a very legitimate course that scientists do when they have appropriate data to extrapolate.

Q You're also making extrapolations about the

thermal decay

22 of the HIV virus present in your material, aren't you?

23 A We have shown those data in this publication, correct.

24 Q These are extrapolations, aren't they?

25 A Well, no --

Q What is an extrapolation?

A That data that's shown are actual measurements that Dr. MacDougall at the CDC made. If you look on Page 875, you'll see a series of straight lines, all of which are actual data points.

The extrapolation is what goes beyond the data point, but the straight line decay phenomenon, which we are describing here, is based on actual data points, not extrapolation.

Q Extrapolation would be when you put 20 vials into a little oven and then you assume that 3,000 vials in a big oven -- that whatever virus is in those vials is going to be killed off at a certain rate consistently. That's basically extrapolation.

A No, I would not call that extrapolation.

Q What is extrapolation, Doctor?

A Again, if you would like to refer to Page --

Q No, just what does it mean? What does the word mean to you?

A It means when you have a series of events occurring -- for example, suppose you were a jogger and you were jogging at 8-minute miles, and you actually measured your 8 minutes per

mile for 2 miles and then you told somebody that you ran for 40 minutes. An extrapolation would be determining how far you went. That's what I would call extrapolation.

Q Okay. How far you went?

A Right.

Q I think we're talking about the same word then.

Let me take you back to your -- Dr. Levy's 50,000 infectious particles for a moment.

Dr. Levy reported 50,000 infected cells in a person who had symptoms of AIDS in 1993 as being rather high?

A I'm not sure what the relevance of that is.

Q Well, I think you explained to us that HIV can either be free floating particles in the plasma or it could be sequestered inside a human cell, correct?

A I explained yesterday -- and I believe Dr. Kessler reiterated today -- that there are no cells in plasma, therefore, the number of HIV that would be in a cell is really not relevant to the concentration of HIV in plasma. The data of Dr. Hoe are data regarding HIV in plasma.

Q How many infectious particles -- you have more than one infectious particle or more than one virus in a cell, don't you?

A Yes. Usually one particle will infect a cell. And as we discussed yesterday, the cell then replicates this virus, and depending on the virus it can make many, many virus within that

cell until the virus actually break the cell open.

Q Dr. Levy, in his 1993 article eight years after he did these experiments with you, talked about the effect of dry heat treatment on clotting factors and the HIV virus that is present. Do you recall reading about that --

A Yes, I believe so.

Q -- in this article.

And he talked about how the virus can remain stable in a powder form for several years in the lyophilized state, correct?

A Yes.

Q And the activity of the virus can be reestablished just by taking that product and reconstituting it with water the way every hemophiliac who uses the product does, is that correct?

A No, that's not correct.

Q So you're disagreeing with Dr. Levy's --

A I think we have to carry it a step further. What Dr. Levy is saying is that you can reconstitute this powder and inject it into one's blood stream where it will see cells to infect, and then it could be infectious. But there are no -- it doesn't do anything in the powder as, I think, we've described because there are no cells in there.

Q No, but once you add the water you're waking up those virus particles that have gone to sleep as a result of lyophilization, aren't you?

A No, I think they're still sleeping. The only thing that

wakes them up is when you see a cell.

Q Okay. So once you put the water in and then the person with hemophilia shoots it into his arm --

A That's another issue.

Q -- they wake up and they see a cell and they go to work,

don't they?

A Yes.

Q So if your system of putting 3,000 vials into a big oven,

if your extrapolations aren't exactly on point, there may be

some cells in these vials that are sleeping as opposed to dead,

isn't that true?

A No.

THE COURT: You said cell. Did you mean cell?

MS. THOMAS: No, I meant virus particles. Thank you.

THE WITNESS: Again, I can only go back to what our

data show. Our data demonstrate very, very clearly to me that

there are no viable or infectious particles remaining in these

bottles after they have gone through the heat treatment, so I

don't know how I can talk about waking up a sleeper.

BY MS. THOMAS:

Q Based on your extrapolations?

A No, I said based on our experiments.

Q Right. Let's assume that you killed off a good number of

these HIV infectious particles so they may be inactive, but

they're still there, aren't they? They don't disappear from the powder, do they?

A No. No.

Q So what you have are dead HIV cells in the product --

A You might say that.

Q Well, that's true, isn't it?
A Yes, yes.
Q According to Dr. Levy these dead HIV cells can serve as antigen, can they not?
A They cannot.
Q So you disagree with Dr. Levy there, too?
A Absolutely.
MR. BARR: Your Honor, may the witness be allowed to see what counsel is reading from?
THE COURT: Sure.
MS. THOMAS: I wasn't reading. I was posing questions.
MR. BARR: Your Honor, I would object because it misstates the evidence.
THE COURT: I don't know whether it does or not. Show it to the witness and see whether he agrees that's what it says.
BY MS. THOMAS:
Q Dr. Mozen, I'm referring to Page 90 of the Levy article, the top paragraph here.
A Is that the one that you just gave me?
Q Yes.
A Okay. Page 90.

24 Q Page 90, the first full paragraph on the right-hand side of

25 the page.

A Now I forgot your question.

Q My question was these inactivated or dead HIV viruses that are in the clotting factor that the hemophiliac uses, wouldn't that be antigenic stimulation to the hemophiliac?

A No, I don't think so.

Q Well, Dr. Levy says these viral proteins even though inactive would be antigens, does he not?

A He does say that, but I think --

Q You think he means something else?

A Yes. I don't think he's realized the quantitative amount of dead antigen there relative to the total -- it is so infinitesimally small that in that case I would have to say I would disagree that that would be an antigen.

Q So you disagree with Dr. Levy?

A I didn't say that, Miss Thomas. I said that on this particular issue of whether the amount of dead antigen in here could serve as a viral antigen, I would disagree, yes.

Q You disagree with his saying that there are -- he has found as high as 11 million virus particles per milliliter?

A No, I didn't disagree with that. I said he did not talk about infectious particles in that instance.

Q He called this virions?

A These are not -- as I explained at the very beginning of this cross-examination, you asked me what I meant by an infectious particle. An infectious particle is something that

has been shown to be capable of causing infection. That you do in a cell culture.

These numbers that you have quoted by Dr. Levy, these have not been shown to be infectious particles. They have not been shown to be capable of infecting a cell.

Q They have just been taken from the blood of AIDS patients, correct? Correct?

A I think that's where he measured, it, yes.

Q Exactly.

A They're parts of a virus. They're not necessarily infectious.

MS. THOMAS: No further questions.

CROSS-EXAMINATION

BY MR. GREEN:

Q Dr. Mozen, I just have three areas that hopefully will be very short.

First of all, just a few moments ago you spoke about Dr. MacDougall's paper is that right?

A Yes, I did.

Q I wonder if you could tell the jury who Dr. MacDougall is?

A Dr. MacDougall is a member of the scientific staff at the Centers for Disease Control, the CDC you've heard so much

23 about. And he was one of the leading -- and still is --

24 laboratory persons in the whole research area of AIDS.

25 Q And you and Dr. Helderbrandt of Alpha participated in a

study by Dr. MacDougall, is that right?

A Yes, that's correct.

Q What was the purpose of that study?

A The purpose of that study was to validate that the heat-treat processes that were being used by our organization, Cutter and the Alpha process, that these two procedures could be validated and demonstrated that the virus were inactivated under those conditions.

Q Rather than go through how the test was run -- because I'm one of those people who these that virions may be a rock group -- would you tell us what the result of those tests were?

A The results were that basically Dr. MacDougall as in the way I described Dr. Levy's experiment, he gave us as much virus as we could get into our product, and the same was done at Alpha.

Then these were put through the respective heat processes and the appropriate samples returned to Atlanta to Dr. MacDougall's laboratory where they are titered or, that is, the virus were counted. And he reported in this paper that we referred to that no detectable virus could be found

after the

heat treatments.

Q Dr. MacDougall was doing this to the account of -- or on

behalf of the CDC, is that right?

A Yes, he was.

Q Dr. Mozen, to clear up one other point from yesterday,

prior to 1982 -- prior to, let's say, July 1982, how many viruses were transferred through the fractionation process to recipients of clotting factor?

A Well, in 1982, we really only knew about the disease entity hepatitis, but by that time it had been determined that there was a hepatitis B that was transmissible and also what was then called non-A, non-A B. So basically -- so basically the disease entity was hepatitis, and there seemed to be at least two forms of hepatitis.

Q So as of that time there were a myriad of viruses out there that could cause infectious processes in human beings, but they did not survive the fractionation process?

A That is correct.

Q Doctor, is it your understanding that Cutter attempted core antibody testing and was asked by the -- told by the FDA to stop doing so?

A That is my understanding.

MR. GREEN: Thank you. I have no further questions.

1 REDIRECT EXAMINATION
2 BY MR. BARR:
3 Q. Dr. Mozen, you were asked questions by Ms. Thomas about you
4 not being a virologist. Have the last 25 years, have you been
5 involved with working with various attempts to eliminate
6 viruses from these coagulation products?
7 A. Yes, yes, I have.
8 Q. And did you receive from the National Hemophilia Foundation
9 the Murray Thalen Award?
10 A. Yes.
11 Q. And what was that award for?
12 A. That was for, it was an award from the National Hemophilia
13 Foundation for demonstrating the effectiveness of heat
14 treatment in eliminating HIV from clotting factors.
15 Q. Ms. Thomas asked you yesterday, she said to you, "If the
16 products Stephen Poole had taken were shipped to him in 1985,

it could very easily have been made from plasma collected in 1981, 1982, or 1983?" and your answer was, "Not in my opinion."

You have determined based upon going through the normal course of records at Cutter that the plasma for Stephen Poole's two lots was collected in 1984, is that correct?

MS. THOMAS: Objection, leading.

THE COURT: Sustained.

BY MR. BARR:

Q. When was the plasma for Mr. Poole's two lots collected?

A. Well, the records that I reviewed indicated that they were collected, all that plasma was collected in 1984.

Q. Now, Ms. Thomas asked you some questions about someone donating plasma who had full-blown AIDS and how many virions or virus particles, which ever word, they might have in their body. Do you recall that?

A. I do.

Q. Can you tell us whether or not in your opinion someone with full-blown AIDS could ever be accepted as a donor of whole blood or plasma?

A. In my opinion, that really wouldn't be possible. One of the specifications in terms of the medical exam is that they must be in good health. And I think anyone with full-blown AIDS would certainly be seen by the physician as not being in good health.

Q. Dr. Mozen, you were asked by Ms. Thomas about whether or not the experiments you conducted with Dr. Levy were validated.

First of all, did you hear Dr. Levy's testimony in this case?

A. Yes, I did.

Q. Has Dr. Levy ever suggested to you that the experiments done in '84 and '85 were in some way invalid?

A. No, he did not.

Q. Number two, how have those experiments been validated and

proven to be correct?

A. Well, I think they have been in at least two ways. One was

the experiment we conducted with Dr. McDougal at the Centers for Disease Control that I just discussed with Mr. Green, and that was really with another strain of HIV, one that Dr. McDougal had obtained from the Paris group that you've heard much about.

And more importantly now, we have a number of years of clinical experience. And since that product has been introduced, and we know it's been used by virtually hundreds and hundreds of hemophiliacs, we have never received a report of a seroconversion resulting from the use of that product.

Q. Now, Dr. Mozen, when you refer to the McDougal paper, let me hand you a document, and I've marked it as Exhibit FF. Is that the paper you are referring to?

A. Yes, that's the one.

Q. And I have marked as Exhibit GG the article from you and Dr. Levy, is that correct?

A. Yes.

Q. Now, Ms. Thomas read to you a bit ago some information from your Lancet article in 1985 concerning the AIDS virus, and she read the following, quote, "The sensitivity of infectious form and Factor VIII lyophilized products" -- sorry.

Quote, "The sensitivity to Factor VIII purification procedures appears to be independent of virus input, see Table 1, because ARV is not as easy to measure in tissue cultures as a mouse xenotropic virus, not every infectious ARV particle may

have been detected," close quote. Do you recall that?
A. Yes.
Q. She did not read to you the following statement, is that correct, "Nevertheless, the results confirm the ability of infectious retroviruses to withstand the procedure used to purify Factor VIII from plasma," and you go on to state, "Heating lyophilized Factor VIII for 72 hours at 68 degrees Centigrade eliminates infectious ARV if it is not present in the plasma at more than ten-six infectious particles," is that correct?
A. Yes.
Q. Now, what does that mean?
A. Well, that means, as I was explaining earlier, that based on the maximum amount of virus we were able to put in, we were saying that our data demonstrated that if that plasma pool contained no more than 10 to the sixth, which is one million particles, infectious particles per mil, that we were demonstrating the total elimination of that amount of virus.
Q. And is the 11 million virions as reported by Dr. Levy in 1993, is that 11 million infectious virus particles?
A. Not to my understanding.
Q. You were asked questions about the Canadian seroconversions, people who got heat-treated product in Canada.

Do you recall that?

A. Yes, I do.

Q. Did you investigate to determine that all of the patients that became infected in Canada as stated in Exhibit 4.290, Plaintiff's Exhibit, got a heated product not of the Cutter type but, rather, of 60 degrees at 30 hours?
A. That was the conclusion of a very extensive investigation.
Q. And was that investigation done in house at Cutter?
A. No, not our -- that was an investigation done by the Canadian authorities and the Centers for Disease Control.
Q. Now, I want to talk to you again about extrapolation. And if you would, would you use the McDougal paper to explain, if you will, how as a scientist one uses extrapolation to reach valid scientific conclusions?
A. Well, I'm not sure that the jury can see this.
Q. Well, would it help if you'd draw? I just want an example of it. Let me give you a pen.
A. Basically what was being done in this experiment is along this vertical axis, the so-called Y axis, was the number of infectious, we'll call them IP, infectious particles, the virus, this being high, this being something like 10 to the, to the fifth, and then this being time and going in this direction.
And basically, the amount of virus at given points of

time were determined, if you went here, determination here, determination here, determination here. And these were actual experimental data. And then they would draw this line. And

supposing this were something like two hours, then the extrapolation becomes here how long is it until the virus disappeared. But you have a number of actually experimentally determined points.

And this was done, well, in liquid solution it was done at five different temperatures, so you had lines that go like this, like this, and like this, and this, this being the hotter, I guess it was 60 degrees. So the extrapolation is this part of the line which then tells you what will be the time point where all of the virus would be gone.

Q. Is extrapolation such as you've described something that is used on a regular basis by scientists and physicians in order to arrive at medical or scientific conclusions?

A. Well, it's the only process that can be used here, because as we said several times, you cannot measure the virus in a product that you didn't spike with the HIV or mouse C. So that you have to make your determinations at a concentration that is doable and then with enough points with the analogy I gave about running and time, you can make that extrapolation with a high degree of certainty.

Q. The analogy with running being if you run eight-minute miles, and you know that, and you run for 40 minutes, then you

know you've run five miles?

A. That's right.

Q. Okay. Now, in talking about the sleeping virus, do you

remember that?
A. Yes.
Q. In Cutter's heat-treated product, did you establish to a scientific certainty that there are no sleeping virus after it is heat-treated?
A. Well, that's part of the experiment. If there were a sleeping virus, when these virus determinations were made, and they were placed on the cells as I was explaining to the Judge, they'd wake up. And that was not the case. So we determined that the virus were no longer capable of infecting cells.
Q. Dr. Levy's paper in 1983, a portion of it that was not read to you, you were read three sentences by Ms. Thomas, states as follows, quote, "All seropositive hemophiliacs appear to have been infected by HIV," close quote. Do you recall Dr. Levy stating that?
A. Yes, yes.
Q. Were they infected by sleeping virus?
A. No, I don't believe so.
Q. Okay. Now, finally, yesterday Ms. Thomas stated when she asked you a question, quote, "Mr. Hink testified and told us about some documents that were shown to the jury that Cutter

had collected recovered plasma throughout 1983, I believe, and that this was, in fact, included in the Factor VIII pools." Do you recall that?

A. Yes, I do.

Q. Would it refresh your recollection that Mr. Hink said as follows in this courtroom:

"Question: As of the date of this memo, December 13, 1982, was Cutter using recovered plasma in the manufacture of Koate?

"Answer: No."

And at a second time in the courtroom, he was asked the question by Ms. Thomas, quote, "As of December 1982, was Cutter using recovered plasma in the manufacture of coagulation products?

"Answer: No."

And would that be consistent with what not only you recall Mr. Hink saying but with what Cutter was doing?

A. Yes, it would.

MR. BARR: I have nothing further, Your Honor. Thank you.

RECROSS-EXAMINATION

BY MS. THOMAS:

Q. Okay. Dr. Mozen, you just told us that it was your understanding Cutter stopped using their hepatitis B core antibody test in 1984, because the FDA told them to stop?

A. That was my understanding.

Q. Do you recall seeing this October 19, 1984 letter before?

A. Yes, I've seen that.

Q. Could you read that to us? It's very short.

A. Yes. This is a memo written by Jack Ryan to some people, not myself. And it says, "We are announcing to our U.S. Koate customers that we have switched all future production to only HT Koate. This letter to customers is going out sometime next week."

Do you want me to read more?

LAURA M. BRENNAN, Official Reporter

Q Yes, please.
A "Effective immediately you should discontinue all hepatitis B core screening and all segregation of plasma based on this test. Please work with the BCC," and I am not sure what that stands for, "in deciding how to handle current inventories of plasma, et cetera."
Q And that was in October of '84, right?
A Yes.
Q That was about the same time that he started dry heat treating the Factor VIII concentrate?
A What was that?
Q Was that about the same time that Cutter started selling its dry heat treated factor?
A Oh, no, quite a bit after. We were licensed in the end of February 1984.
Q Okay. So by February you started making this new product available, right?
A Correct.
Q And all through '84 you were selling non-heat treated factor concentrate, too, weren't you?
A Yes.
Q When did Cutter stop selling non-heat treated?
A I don't think I remember.
Q Okay. In any case, you testified that the pools from which

25 the product Stephen Poole took in 1985 would have been collected

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from donors in 1984, is that correct?

A Yes.

Q And in 1984 you stopped segregating all of the plasma that was screened for core antibody?

A You mean according to that note? Yes, that was the end of '84, yes.

Q According to this memo from the president?

A Yes, yes.

Q Okay, and everybody has heard what the anti core test means. There is, and I think you will agree, an overlap. Ninety percent of people with AIDS are core positive, correct?

MR. BARR: Objection.

BY MS. THOMAS:

Q Do you recall seeing those statistics?

MR. BARR: Your Honor, excuse me. I would just object. It goes far beyond any of the recross examination or redirect by anyone.

THE COURT: Overruled.

BY MS. THOMAS:

Q You recall the CDC suggesting that there is a 90 percent overlap, correct?

A It depends on what you mean by overlap.

What I recall seeing was that when people with frank AIDS at the time of -- it was 1984, 1983 -- if those

individuals

25 were tested for core antibody, 90 percent or something around

that were positive.
Q So the very reason that Cutter started using the anti core test was to screen out persons at high risk for AIDS, right?
A That was the intention, yes.
Q Okay. And as soon as Cutter got a dry heat treat process on the market, not the pasteurization process that you had been working on for a number of years, but the dry heat treat process, you took all that core positive blood and put it back into your pools in '84, didn't you?
A Yes.
Q And with regard to these persons in Canada who seroconverted, I believe you said it was established or there was evidence that it was the other guy's product?
A I think I said it was established.
Q Established?
A Yes.
MR. GREEN: I will object to the, quote, other guy's, your Honor, because I don't know who the other guys are.
THE COURT: Sustained.
BY MS. THOMAS:
Q The other product being one that was heat treated at 30 degrees centigrade, correct, 24 hours?
A Sixty centigrade.
Q Sixty centigrade for 24 hours?

25 A Thirty hours.

Q That was Armour's product, correct?
A Thirty hours.
Q Thirty hours, thank you.
That was Armour's product, correct?
A Yes.
Q So your position was it wasn't Cutter; it was Armour, right?
A No, no, no. I said there was a very extensive investigation done by the CDC and the Canadian authorities, and this information was presented at an open meeting in Atlanta at the CDC.
It was subsequently published in a Canadian journal, and the conclusion of that study was what you just put into my lips, but that is what it was, yes.
Q I don't want to put anything into your lips, Dr. Mozen.
Why don't you tell us what the conclusion of the study was?
A The conclusion was that by going back and looking at different lot numbers and investigating who got what and when that the 68 degrees, 72 hour product was most likely not implicated in the seroconversion.
Q And it was Armour's product that was?
A That was the conclusion, yes.
Q Most likely?

A Almost certain, yes.

MS. THOMAS: No further questions.

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THE COURT: Any questions from the jurors?

(No response.)

THE COURT: All right, thank you, sir. You may stand down.

(Witness excused.)

THE COURT: Who is next?

MS. GOURLEY: Armour calls Dr. Rodell.

MR. BARR: Excuse me, your Honor.

I am going to be able to rest in about three minutes with the exception of some bookkeeping matters, but I would like to read to the jury at this point some admissions made by the plaintiffs in this case.

THE COURT: All right.

MR. BARR: Could the Court perhaps explain to the jury what --

THE COURT: What are they in?

MR. BARR: They are -- Cutter's second request for admissions to plaintiff that are dated.

THE COURT: Okay, requests for admissions.

MR. BARR: Yes.

THE COURT: One of the pretrial procedures available to the parties, ladies and gentlemen, is a -- something we call requests for admissions, and one party can ask the other to admit that certain things are true, a certain proposition is

25 true. And being served with such a written request, a party

either admits the proposition or denies it.

And if it is denied, then the person who asserts it has to prove it. If it is admitted, then that stands admitted in the case.

So Mr. Barr is going to read some requests for admissions and the plaintiffs' response to those requests.

MR. BARR: There is no response.

THE COURT: There is no response.

MR. BARR: Correct.

THE COURT: Well, the law also provides that if a certain period of time goes by and no response is filed, then the request stands admitted.

So these requests have been admitted by operation of the plaintiffs not answering, not responding. Okay.

MR. BARR: Thank you, your Honor.

Plaintiff possesses no information, documentary or otherwise, that shows any shipment of any Cutter Factor VIII to or for use by Stephen Poole prior to January 30th, 1985.

Plaintiff possesses no information, documentary or otherwise, that indicates that prior to January 30th, 1985, Stephen Poole used or received by infusion any Cutter product for the purpose of controlling bleeding.

Plaintiff possesses no information, documentary or otherwise, that indicates that Stephen Poole was ever infused

25 with Cutter Factor VIII product at Memorial Reese -- at Michael

Reese Hospital.

Plaintiff possesses no information, documentary or otherwise, that indicates that Stephen Poole was ever infused with Cutter Factor VIII Koate as opposed to Koate heat treated.

Plaintiff possesses no information, documentary or otherwise, that indicates that Stephen Poole used Factor VIII products manufactured by Cutter other than Koate heat treated.

Plaintiff possesses no information, documentary or otherwise, which indicates that Koate heat treated transmits HIV.

Thank you, your Honor. And with that -- with the exception of some bookkeeping matters with relation to exhibits, the defendant Cutter rests.

THE COURT: All right.

MS. GOURLEY: Armour calls Dr. Michael Rodell.

(Witness sworn.)

MICHAEL B. RODELL, DEFENDANT ARMOUR'S WITNESS, DULY SWORN

DIRECT EXAMINATION

BY MS. GOURLEY:

Q Would you state your name, please, for the record, and spell it for the court reporter?

A Michael B. Rodell, R-o-d-e-l-l.

Q What is your employment, Dr. Rodell?

A I am semiretired and a part-time consultant to the

pharmaceutical industry.

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Q What is the nature of your self-employment?
A I provide regulatory and technical advice to several clients, mostly involved in the biologics area.
Q Does your work relate to the interaction between your clients and the FDA?
A In part, yes.
Q Okay. Let me show you what has been marked as Armour Exhibit Number 43 and ask you if that is a reasonably current copy of your CV?
A Yes, it is.
MS. GOURLEY: May I distribute it to the jury, your Honor?
THE COURT: Yes.
BY MS. GOURLEY:
Q Would you describe briefly for the jury, Dr. Rodell, your education?
A Yes, I have a bachelor's degree in pharmacy from the University of Maryland and a master's and PhD in physical pharmacy from the University of Texas.
Q You are not a medical doctor, is that correct?
A That is correct.
Q Would you describe for me, please, your work experience after the receipt of your PhD?
A For six years I was a research associate and then a manager of pharmaceutical and analytical research for Dorsey

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Laboratories, a manufacturer of pharmaceutical products from '66 to '72.

From '72 until 1983 I was manager of regulatory affairs and ultimately vice president of regulatory affairs and quality control for the Hyland Division of Travenol Laboratories.

Q Is that also known as Baxter?

A It now is, yes. It is now called Baxter International or Baxter Health Care Corporation.

Then from 1983 until the summer of 1990, initially vice president regulatory and technical affairs and finally vice president scientific affairs for Armour Pharmaceutical Company.

Q And you left Armour in approximately 1990 and began your consulting work that you do now, is that right?

A Yes, that is correct.

Q Now, in connection with your employment with Baxter, did you have any interaction with the FDA during that period of time?

A Yes, I did, from 1972 until 1983 in one capacity or another.

Q So as of the time you left Baxter, you had been dealing with the FDA with respect to blood products for approximately eight years, is that right?

A From '74 until '83, a little over eight years, yes, blood

products.

Q And in March of 1983 you went to Armour, is that right?

A I went to a division of Revlon Health Care that included

Armour Pharmaceutical Company as well as another entity, yes.
Q I would like to show you what has been marked as Armour's Exhibit 46 and, your Honor, I believe this was previously marked and admitted as Defendants' Exhibit H, but I put an Armour number on it now and punched holes in it. So I would like to give it to the jury, if I could.
Let me give you a copy, too.
(Brief interruption.)
BY MS. GOURLEY:
Q Now, turning to the -- ignoring the first two pages of Exhibit Number 46 and looking at the last pages, and I have put a couple of enlarged versions of two of those pages up so that the jury can see them, do you recognize the lot numbers which are shown on those exhibits as being from any particular manufacturer?
A Yes, the configuration of the lot numbers would indicate that these were Factor VIII concentrates produced by Hyland.
Q Okay. And you were familiar with their configuration during the time you were employed by Hyland, is that right?
A Yes, that's correct.
Q Now, on one of these blood components charts, and I put -- let me put it up.
Rather than being in the configuration of the 2792 at

the beginning as all of the rest of them are, there is a number that reads NDC0944059102.

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Do you see that on page T 51?
A Yes, I do.
Q Do you know what that number is?
A Yes. NDC stands for National Drug Code, and it is a unique identification of a product under an FDA mandated coding system which identifies the manufacturer of a product, what the product is, and its package size.
Q Do you know from your experience working at Baxter and at Armour to which company the FDA assigned the code 0944?
A Yes, I do. It had been assigned to Hyland.
Q Baxter?
A Yes.
Q Okay. Thank you.
A Right.
Q Now, when you came to Armour, could you describe briefly for the jury what your responsibilities were?
A When I came to Armour?
Q Yes.
A Yes.
Q In 1983?
A My responsibilities included being the responsible head for Armour Pharmaceutical Company and its plasma collection affiliate, Plasma Alliance; responsible head being the individual who was to represent the company in any and all

25 negotiations and dealings with the Center for Biologics --

Center of Biologics Evaluation and Research, the Center of the Food and Drug Aministration.

I also had responsibility for the quality control organization and also had responsibility for the human plasma development organization.

Q The CBER that you just referred to, that used to be known as the Office of Biologics, is that right?

A It had a number of names going back over the years, but from one point of time to the other, it was Bureau of Biologics, Office of Biologics, Center for Drugs and Biologics, and finally the Center for Biologics Evaluation and Research, which is its current designation.

But from '72 on it has been part of the Food and Drug Aministration.

Q They are the ones, however, in the FDA who are responsible for biological products such as Factor VIII, is that right?

A That is correct, yes.

Q Did Armour principally obtain its plasma for use in making Factor VIII concentrates from Plasma Alliance?

A Yes, it did.

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Q Where is Plasma Alliance headquartered?

A It's headquartered Knoxville, Tennessee.

Q Armour also has a processing plant where it makes its Factor VIII, is that right?

A Yes.

Q Where is that located?

A Located in Kankakee, Illinois.

Q Now, where does Plasma Alliance get the plasma which it then sends on to Armour to make into Factor VIII among other things?

A Plasma Alliance has a number of centers, depending upon the various points of time, something between 15 and 20 some odd centers in the southeast and midwest portion of the United States that it operates and attains plasma from from donors.

Q Now, in connection with this case, did I ask you to review Armour's sale records to determine what lots of Factor VIII concentrate were sold to Michael Reese during the year 1984?

A Yes, you did.

Q And do you recall how many lots there were that were sold in 1984?

A I recall there being six.

Q Let me show you what I have marked as Armour Exhibit 49,

and ask you if that reflects the lots and the date of the

invoice for each of those lots sold to Michael Reese in 1984?

A That's correct, yes.

MS. GOURLEY: May I distribute to the jury, your Honor?

THE COURT: Yes.

BY MS. GROULEY:

Q And also on Exhibit 49 it reflects the number of units per vial, does it not?

A That's correct.

Q And what is -- can you describe briefly what is a unit?

A A unit of antihemophilic factor is defined as being equivalent to that amount of antihemophilic factor that would be present in a pool of at least ten normal individuals. It's an arbitrary value where the assumption is made that ten normal individuals per milliliter of plasma will yield one activity unit per milliliter.

Q And the number of units per vial is stamped on every box when it's sold, is that right?

A It's put on the label of each container and of each carton, yes.

Q In connection with this case did I also ask you to review the plasma packing lists for each of the lots reflected on Armour's sales records as being sold to Michael

Reese in 1984?

A Yes, you did.

MS. GOURLEY: Your Honor, these are Exhibit No. 62.

It's a large exhibit here. Let me give you one example.

BY MS. GOURLEY:

Q And that's a plasma packing list, that is correct?

A Yes.

Q Can you tell the jury what the plasma packing lists are and what information you can learn from them?

A Yes, a plasma packing list and the summary sheets would indicate which center the plasma was attained at, the identification of each individual unit number and donor number that appears in the shipment, and the volume on a per donation basis of plasma that would be in each of the individual containers.

Q And those are records which Armour keeps in connection with the processing of each and every lot of Factor VIII concentrate, is that right?

A Yes, it provides forward traceability and backward traceability so you can relate final container material from the plasma from which it was produced.

Q Let me show you, Dr. Rodell, what I have marked as Armour Exhibit No. 48. Now, in connection with this case, I asked you to go through all these plasma packing lists to determine where the plasma was collected for each and every lot which Armour

sold to Michael Reese in 1984, is that right?

A Yes.

Q Is Exhibit No. 48 a list of where the lots -- where the plasma for each of those lots was collected and the dates of collection as reflected on plasma packing lists?

A Yes, that's correct.

MS. GOURLEY: Your Honor, may I distribute to the jury.

THE COURT: Yes.

BY MS. GOURLEY:

Q Where was the plasma collected for those lots?

A Three centers in Ohio that I can see right from the top; Dayton, Columbus, and Akron; Oklahoma City; West Lafayette, Indiana; Lexington, Kentucky; Minneapolis and St. Paul Minnesota; Omaha, Nebraska; Knoxville, Tennessee; Indianapolis, Chattanooga, Louisville; Nashville. I'm not sure if I said Lexington, Kentucky; Cleveland, Ohio.

I think that about sums it up.

Q Where we've put the dots on the map, right?

A Basically, yes.

Q Was any of the plasma for any of the lots which were sold to Michael Reese in 1984 collected in New York, Miami, Los Angeles, or San Francisco?

A No.

Q Did any of the plasma for any of the lots come from prisons?

A No.

23 Q Did Armour ever collect plasma in prisons?

24 A Not to my knowledge, no.

25 Q Now, the plasma packing list and this summary which is

Exhibit 48 also tells us when this plasma was collected, is that right?

A That's correct.

Q Can you tell the jury what the earliest date of any plasma collection was for the lots which were sold to Michael Reese in 1984?

A The earliest date that I see is September 7, 1983.

Q Okay. Then the plasma was collected for varius of these lots up until sometime in April 1984, is that correct?

A That's correct, yes.

Q Now, we've heard some suggestion in this trial about plasma being collected, one, one and a half, two years before Factor VIII is shipped. Was that true in this case?

A No, it's not.

Q Now, going back to the pre-AIDS era -- I should say I'm jumping around a little bit because your deposition was read to the jury in the plaintiff's case in chief, so I'm trying to not to cover those same areas. If it confuses you, let me know, okay?

But going back to the pre-AIDS area, what, if any,

tests were done with respect to donors of plasma at Plasma Alliance centers?

A They would have been tested on every appearance for certain qualifying parameters such as determination of their total protein and determination of what is called micro hematocrit or

hemoglobin equivalent, and that is a function of the quantity of red blood cells that are circulating. They would also have been tested on a periodic basis for syphilis antibody.

They would have been tested on a periodic basis approximately every four months for circulating certain serum proteins that are circulating in the human body. The plasma would have been tested for the absence of hepatitis B surface antigen. I think that basically sums it up.

Q At some point were tests added to look for the antibody to HIV?

A Yes. In the spring of 1985, the Food & Drug Administration licensed -- granted product licenses to at least two manufacturers of test reagents that enabled blood and plasma centers to initiate testing for what was then called anti-HTLV III now known as anti-HIV.

Q I want to talk a little bit now about 1982 and 1983 when people were talking about what might be done with donors to improve the possible safety levels of plasma collection.

I want to show you first what's been marked as Armour

Exhibit No. 23, which is a Plasma Alliance memo to the plasma collection centers dated December 8, 1982?

A Yes. All right.

Q When you joined Armour in early 1983, did you familiarize yourself with what Plasma Alliance had been doing with respect to donor screening?

A Yes. Within, I think, my first two weeks of being on board, I made visit to some of Plasma Alliance centers to see specifically what they were doing.

Q Does that memo reflect some of the early steps which were taken?

A It reflects some of the steps that were taken and then subsequently added to by the time I had come on board, yes.

Q What were the first steps that were taken by Plasma Alliance?

A There was the start of an educational system to explain to individuals what certain high-risk categories were for a potential transmission of AIDS if it were shown that AIDS was transmissible by a blood-borne agent and to identify these risk groups and to request individuals, if they were members of these risk groups, to voluntarily defer themselves from donation.

This was then augmented with actual questions posed by processors and by increasing the contact that the attending physicians would have in donor qualification to start looking

for some of the signs and symptoms of AIDS.

Q By direct questioning you meant asking people face to face

"Are you a homosexual, a male homosexual?"

A Not in so many words. They would be asked, "Are you a

member of any of the risk groups that have been delineated?"

Q With respect to the risk groups, in addition there were

prominent signs placed in the Plasma Alliance collection centers, is that right?

A That's correct.

Q Asking people to defer?

A That's correct.

Q Would you take a look at -- I believe it's the last page of Exhibit 23, which I have marked separately as Exhibit 23A.

A Yes, I see it.

Q Is that one of the signs that was posted early in December?

A That's correct, yes.

MS. GOURLEY: May I distribute it to the jury, your Honor?

THE COURT: Yes.

BY MS. GROULEY:

Q Now, I want to show you, Dr. Rodell, a document which has been marked as Armour Exhibit No. 331 and ask you if you can tell the jury what that document is.

A Yes. What you've given me is entitled, "Summary Statement on Acquired Immune Deficiency Syndrome (AIDS)." And it was a document that I prepared that I wrote myself to summarize at this point in time, which was the mid-part of 1983, what was

known about AIDS and what was known about its potential involvement -- possible involvement with the treatment of hemophilia.

Q Does this document on the second page describe the various

steps which have been taken by that time by Plasma Alliance under the heading "Plasma collection and utilization by Armour Pharmaceutical Company"?

A On the second page of text, yes.

Q On the second page of text.

A Yes, that's correct.

Q For who was this document prepared?

A It was prepared for use by the field sales force and marketing organization so that they could use it as a discussion piece when they called on physicians and nurse coordinators and their various accounts involved in hemophilic treatment.

MS. GOURLEY: May I distribute it to the jury, your Honor?

MR. RING: Do you have dates on these two.

MS. GOURLEY: He testified that the sign was on December 8, 1982, and I believe he testified --

BY MS. GOURLEY:

Q Dr. Rodell, when was this Exhibit 31 prepared?

A Mid-part of 1983 because I think it refers in there to information available as of May of '83.

Q Now, Exhibit 31 refers to AIDS high incidence

areas in the country.

Did Plasma Alliance collect any plasma in those areas?

A No, it did not.

Q Now, there's also been mention made in this trial of the number of times a donor may donate plasma.

Are you familiar with the federal regulations in that regard?

A Yes, I certainly am.

Q With respect with -- with respect to repeat donors, did you have an opinion whether you know more or less about the health of those donors?

A Well, the more times a donor appears, the greater opportunity you have to perform certain tests and measurements on that individual. The more time that individual appears, you have a longer track record with regard to that individual's state of health.

Q Turning now to the Federal Food & Drug Administration and the licensure of biological products, can you briefly describe the regulatory framework within which these medicines are produced?

A Yes. All biological products -- and they're defined in the Public Health Service Act in a rather lengthy paragraph, but

suffice it to say that antihemophilic factor is a licensable biological product. They are regulated by the Food & Drug Administration.

In order for a manufacturer to be able to distribute a biological product in interstate commercial, the manufacturer

must apply to the Food and Drug Administration for an establishment license in which the product is going to be manufacturer.

The manufacturer must also apply for a product license which describes the conditions under which the product will be manufactured, the tests that are going to be applied to that product, and the clinical data that will demonstrate its efficacy.

It's very analogous to what is used for the nonbiological portion of the pharmaceutical area -- very analogous to a new drug application. We provide to the agency evidence that the product is safe and effective and that it meets its criteria with regard to the treatment of a specific disease condition.

1 Q. So the FDA licenses not just the product but also the
2 facilities, the facility in which it is produced?
3 A. That's correct. And you cannot produce that product in a
4 non-licensed facility, yes.
5 Q. And it also licenses the plasma collection facilities, is
6 that right?
7 A. Yes. Source plasma, which is the source material for
8 plasma derivative products, is a licensable biological product.
9 The plasma collector must apply for a product license and
10 establishment license listing all the facilities where plasma
11 would be collected. All the facilities, of course, are subject
12 to annual FDA inspection.
13 Q. I was just going to ask you, does the FDA conduct
14 inspections every year?
15 A. They conduct inspections on an annual basis, and they will
16 conduct a pre-licensing inspection to determine whether or not

the facility is operating in an acceptable fashion so that product and establishment licenses can be granted.

Q. Does the FDA give you any advance notice of their inspections?

A. Only the pre-licensing inspection. But for the annual licensing, the annual inspections post-licensing, they are unannounced.

Q. All right. Now, once Factor VIII is produced, does the FDA have any continuing role before you are allowed to sell it?

A. Yes. As with most biological products, the regulations require that you submit samples of each lot of antihemophilic factor to the agency for its evaluation, testing, and so forth. And you cannot distribute any of the material from that lot until you get a written notification of release approval from the agency.

Q. Is it necessary to obtain approval from the FDA to change the labeling?

A. Yes. The regulations require that manufacturing changes, labeling changes, changes in facility all be submitted to the agency for approval, and you cannot make those changes without getting approval from the agency.

Q. Did Armour ever request the FDA to approve an amendment to its labeling to add a warning about the possibility of AIDS transmission?

A. Yes, we did.

Q. When was that done?

A. It was submitted in September of 1983.

Q. And when was it approved?

A. January or February of '84.

Q. And thereafter, Armour began using, including a warning about AIDS, is that right?

A. Yes, that's correct.

Q. Okay.

A. The modified labeling was utilized.

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Q. Just briefly now, with respect to the heat treatment of Factor VIII concentrate, that's also something that has to be licensed, is that right?
A. Yes. It would be a change in the manufacturing process.
Q. Do you recall when the first heat-treated Factor VIII concentrate product was available in the United States?
A. Early part of 1983.
Q. And whose product was that?
A. It was Hyland's product, yes.
Q. And at that point in time then, any physician who wanted to prescribe heat-treated concentrate had one available, is that right?
A. Yes, that's correct.
Q. At the time you arrived at Armour in March of 1983, did Armour then have pending an application with the FDA to add a heat treatment step?
A. Yes.
Q. Do you know, do you know when that was approved?
A. It was approved in January or February of 1984.
Q. Do you know when Armour had submitted that application?
A. I think it was in December of '85 -- December of '83.
Q. Could it have been in 1982?
A. No; I'm sorry. Excuse me. Yes, thank you. December of '82.

25 Q. Now, before the FDA licenses a change in processing such as

heat treatment or some other change, do they require any demonstration that the process is safe and effective?

A. Yes. It is considered to be a major manufacturing change, and it is necessary to submit to the agency adequate evidence that you have not done something to the Factor VIII molecule that will make it less safe for administration in humans or that would decrease its potential efficacy in resolving a bleeding episode.

So you have to go through a variety of preclinical tests, including evaluation on several species of animal and on into human clinical evaluations to determine that its what is called the biological half life, biological recovery of this heat-treated material is consistent with what you would expect from the material that already had been in the marketplace.

Q. Could you describe briefly what an IND is in connection with the FDA?

A. Yes. An IND is the abbreviation parlance for an investigational new drug application. And in an investigational new drug application, you are requesting permission from the Food and Drug Administration to make your initial -- I'm looking for the right word -- to make your initial clinical trial in humans with either a new product or a

product whose manufacturing process has been revised. So it is the request by the manufacturer to the agency to start to evaluate this material to ascertain that it behaves in the

human body as one would, one would expect.
Q. And did Armour file an investigational new drug application
for its heat treatment process?
A. Yes, it did.
Q. And was that filed before it filed its product license
amendment in December 1982?
A. Well, it would have to be, because the product license
amendment would have to include the results of these clinical
evaluations, and so the IND precedes the product license
application filing.
Q. Okay. Now, I believe you told us that Armour's heat
treatment step was approved in January or February 1984, is
that right?
A. That's correct, yes.
Q. And thereafter, it was available for prescription if a
physician decided to prescribe it, is that right?
A. That's right.
Q. I want to turn now to an area that the jury, I think, has
heard some about in your deposition, so I'll try not to cover
old ground. But can you describe briefly the concept of
surrogate testing as that term was used in connection with the
discussions of AIDS?
A. Well, a surrogate test is a test that does not analyze
directly for the substance or anilite in which you have

25 interest. It's a substitute. You would hope that a surrogate

test is analyzing for something that with a reasonable degree of specificity and sensitivity would be present in a particular disease state for which you don't have an adequate method of testing. I hope I haven't confused it.

Q. A surrogate test must be sensitive and specific, is that right?

A. As close to specific for the disease entity that you would be looking for, and it should be able to detect a low level of the particular agent. That's called sensitivity.

Q. What is the Blood Products Advisory Committee, Dr. Rodell?

A. The Blood Products Advisory Committee is a committee that advises the center, what is now known as the Center for Biologics Evaluation and Research on an ongoing basis. It's an advisory committee that provides guidance, advice, and a means of outside review to the center on ongoing issues.

Q. Were you given any role with respect to the issue of whether or not hepatitis B core antibody would be a valuable surrogate test for AIDS?

A. Yes. I was in 1983, the latter part of 1983 asked by the chairman of the Blood Products Advisory Committee to serve as

the chair for an ad hoc committee specifically designed to look at this question.

Q. And who was on that committee?

A. It included representatives of the American National Red Cross, Community Council -- do you want it by organization or

names of people?

Q. That's fine.

A. American National Red Cross, Community Council of Blood Centers, American Association of Blood Banks, Food and Drug Administration, and the fractionators who had product licenses for antihemophilic factor.

Q. And what did that committee do?

A. The committee met for a full day and had the opportunity to discuss among itself pros and cons of the use of the anticore test, the antihepatitis B core test as a potential surrogate in deterring individuals who might be at risk for AIDS. And as I say, it was a full day's discussion where anyone who had data was requested to present it openly.

And at the end of the meeting, we did kind of a show of hands as to who felt that it would be a benefit and who felt that it would not be a benefit. And the position was divided.

Q. Did the committee ultimately issue a report?

A. Yes. The committee issued a summary report, which I prepared. And because there were majority and minority opinions as to the value of such a test, there were majority report -- there was a majority report as well as a minority report.

Q. Let me show you what was previously marked as Plaintiff's Exhibit 4.232 and ask you if that's a copy of the report? And describe the letter, please, on top as well.

A. And describe what? I'm sorry.
Q. The letter that's attached to the report.
A. Well, the letter that's attached to the report is a cover letter to Dr. John Petricciani, who at that time was the director of the FDA's division of blood and blood products, covering the transmission of my summary report of the meeting and discussions, as well as a majority report opposing the implementation of anticore testing, and a minority report endorsing or in favor of, advocating the implementation of anticore testing.
Q. So after your discussion, you transmitted to the FDA basically both sides, right?
A. Yes.
Q. Okay. Now, there has been some discussion in this case, Dr. Rodell, and I'm going to ask you straight out. Was this report in any way, shape, or form intended to be a delaying tactic?
A. Absolutely not.
Q. Now, we've also heard a great deal in this trial about a company called Behringwerke. Are you familiar with Behringwerke?
A. Yes, I am.

25

LAURA M. BRENNAN, Official Reporter

Q Did -- when did you first hear about Behringwerke?

A When I was still with Hyland we knew that Behringwerke was manufacturing and distributing antihemophilic factor in Europe back into the '70s.

Q Now, jumping up in time, did there come a time when Behringwerke contacted you to assist them in attempting to obtain a license from the FDA to distribute their Factor VIII concentrate in the United States?

A Yes, that is correct.

Q When did they contact you?

A It was part of the discussions between Armour and Behringwerke as to Armour acting as a sales and marketing agent for Behringwerke when and if they got a license for their antihemophilic factor in this country.

Their license had been filed, I believe, in 1983, and by the time of these discussions, which was 1985, the license had not yet been approved.

So Behringwerke asked if I would act as their representative to the FDA, being more local on this side of the water, to see whether or not the license could be obtained for them. And Behringwerke then wrote a letter to FDA nominating me as their representative.

Q And what did you do to assist Behringwerke in obtaining a license?

A I visited staff at Food and Drug Aministration to ascertain

what the status of the license request was, and what, if anything, the FDA needed in order to further the review and eventually grant the license request.

Q Do you recall whether there were any open issues that had prevented licensure up until that point in time?

A There were at least two that I can recall. One issue, the FDA was not terribly comfortable at that point with the way in which the Behringwerke material dissolved when water for injection was added to it. It took an inordinately long time to dissolve and it didn't appear to completely dissolve until the agency had requested that additional samples of material be submitted by Behringwerke to support their license and that those samples reflect whatever was necessary in the manufacturing process to be able to put the material back into solution, so that it could be use efficaciously.

The other issue, of course, was the ongoing issue as to exactly what could be said with regard to the material's capability to prevent the transmission of hepatitis.

Q So there were some labeling issues that had to be resolved?

A Yes, that is correct.

Q Now, was Behringwerke ultimately licensed in the United States?

A Yes, in the spring of 1986, I believe.

Q Let me show you what has previously been marked as Plaintiffs' Exhibit 6.62 and ask you if that is the final FDA

approval?
A Yes. It is dated May 1st and it is a letter to the responsible head of Behringwerke indicating that the license -- the product license has been granted.
MS. GOURLEY: May I distribute to the jury, your Honor?
THE COURT: Yes.
(Brief interruption.)
BY MS. GOURLEY:
Q Now, after May of 1986 when Behringwerke was finally licensed in the United States, Armour began distributing the Behringwerke product, is that right?
A That is correct.
Q And so after that date the Behringwerke Haemate-P was available from Armour as another option for hemophilia treaters to use for their patients in the United States, is that right?
A That is correct, yes.
MS. GOURLEY: I have no further questions.
MR. RING: Your Honor, --
THE COURT: Why don't we take a short recess.
THE WITNESS: Thank you, sir.
(Brief recess.)

LAURA M. BRENNAN, Official Reporter

THE COURT: Go ahead, Mr. Ring.

MR. RING:

BY MR. RING:

Q Dr. Rodell, a special note was made about the delay tactics, do you remember that?

A Yes, I remember the question.

Q Is that something you're sensitive to?

A It's not something that I'm sensitive to, it's something that I'm aware of that appears to be an issue with certain individuals based on what someone has written.

Q Well, you did have a meeting on September 15 and 16, did you not, of '83 of the -- was it the Blood Advisory Committee?

A Blood Products Advisory Committee.

Q Do you remember that meeting?

A Yes, I do.

Q At that time you were appointed as the head of a task force, is that right?

A Task force, ad hoc study group, whatever.

Q Yes.

A Yes. Yes, sir.

Q To study the use of the hepatitis B antibody test -- core antibody test?

A Core antibody at this test, yes, sir.

Q And you were the chair of that study committee?

A Yes, I was.

Q Have you had any legislative experience?

A Have I had any legislative experience?

Q Just a matter of curiosity, have you ever been a lobbyist walked around -- worked around government?

A Other than my dealing with the Food & Drug Administration as a responsible head for some pharmaceutical companies, no.

Q Now, the hepatitis B core antibody test, was something that Mr. Donahue who was head of -- was he head of biologics at that time?

A It was Dr. Donahue, and at that time he was the director of division of blood and blood products.

Q Which was?

A One of the divisions of the Office of Biologics.

Q And he was very much in favor of the use of that test, was he not, by the fractionators?

A He was a proponent of it, yes.

Q And that would have shown a correlation between people with HIV who tested for HIV, right, and hepatitis B?

A I don't know that Dr. Donahue said that. I believe that Dr. Donahue said it could be a potential correlation between life-style and individuals who might be in high-risk groups

perceived to be at risk for AIDS.

Q To a point of 80 or 90 percent?

A There was variable figure between 60 and 90 percent, yes, sir.

Q And some people were against that?

A For a number of reasons, yes. There were some people who were opposed to that particular test on a surrogate basis, yes.

Q Including you?

A I personally, yes.

Q And Miss Carr from Alpha?

A Was not a proponent of it, that's correct.

Q And the representatives -- they're talking about the regulatory rep. You were a regulatory person, right?

A Yes, but I do have scientific training.

Q I'm not questioning that. I just wanted to know job you held.

A I was vice president of regulatory and technical affairs.

Q And were the other two manufacturers here opposed to the test?

A No.

Q Mr. Hink was not?

A No, he was not.

Q And then what about Baxter?

A Mr. Srigley who represented Baxter was not opposed to the test.

Q But in any event a committee was appointed?

A That's correct. Of course, the committee had

24 representation in addition to the people you just named.

25 Q And the night before that meeting, the open meeting, you

had a private meeting, did you not?

A You're getting some times --

Q I'm getting into --

A You're getting some times interchanged. The meeting that we had of the committee was in, I believe, in March of 1984, and I don't think we had a meeting the night before that.

Q Well, you had in any event -- in any event you were appointed to report back in 90 days, right?

A I'm sorry, sir?

Q Your committee was to report back in 90 days?

A That was a time frame that we had hoped we could provide a report, yes. The committee did not meet until March of 1984, the ad hoc committee.

Q So you were appointed --

A In December of 1983.

Q December 16?

A Yes, sir.

Q For 90 days, and then you were to report back in March, is that right?

A No. No, sir. We were to form a committee and hopefully be able to report back in a 90-day period. Unfortunately, we could not get the committee together for a satisfactory meeting

date until sometime in March of 1984.

Q Now, you've seen this document I'm sure Mrs. Gourley has shown to you.

MR. BERKMAN: What exhibit number, Mr. Ring?

MR. RING: 4126 again.

MR. BERKMAN: I would like to renew my objection on hearsay, irrelevant, inappropriate admissibility of this document.

THE COURT: Overruled.

THE WITNESS: Yes, I have seen this before.

BY MR. RING:

Q Will you flip over to the top of that page and read the first paragraph.

A "The proposal was one that had been agreed upon by all the fractionators the previous evening. The general thrust of the task force" --

Q Read it so they can get it.

A I think I'm reading it so that people can hear me.

THE COURT: Go ahead.

THE WITNESS: "This proposal was one that had been agreed upon by all the fractionators the previous evening. The general thrust of the task force is to provide a delaying tactic for the implementation of further testing."

BY MR. RING:

Q You were at that meeting?

A I was at that meeting, but I will not agree with any statement that says that our discussion was designed to provide any sort of delaying tactic.

Q That's what it says, doesn't it?

A I can't help what it says, sir, but I can only tell you as having been there that was not the intent, nor the purpose.

Q Well, the reason I ask you about any experience in legislation or anywhere near some legislative body is a study committee is a way to kill something, isn't it?

A I'm sorry. I don't think I'm qualified to comment. I have no legislative --

Q I've done it for years.

A You're asking me a question, and I cannot answer your question, sir.

Q A study commitee studies and studies and studies. You were to report back in March, and by March you hadn't gotten the committee even put together, is that right?

MS. GOURLEY: Object to form. He's arguing with the witness.

THE COURT: Overruled.

THE WITNESS: The intent was not is to study and study and study. The intent was to look at an issue. And unfortunately because of the individuals who were the participants in this committee, it was not possible

to attain

their time commitment until March of 1984.

The FDA itself was indecisive as to whom it wanted as its representatives until sometime in late February of 1984.

BY MR. RING:

Q Whatever the position of the people of the FDA, the fact is it that in the 90 days it was again put over, and it was in July of '84 that you came back with a report, right?

A Yes, that's correct, but I had sent an interim report to Dr. Petricciani, I believe, before that.

Q And the report that you came back with was opposed to the testing?

A No, sir, it was --

Q A majority of the report was?

A The majority of the report was opposed to testing; a minority of the report was for testing. And I presented it as it occurred.

Q Now, the arguments against testing was not that it would make the product safer, was it?

A The argument against testing?

Q Yes.

A The argument against testing -- one of the arguments was that it would make product less safe and it would make the product less efficacious.

Q Well, sir, the real problem was that it would eliminate a lot of donors, wouldn't it?

A It would eliminate a lot of what?

Q Donors?

A That was one of the fallouts of it, yes. It would eliminate donors. It would eliminate some plasma, but it would

make some products -- it would adversely affect two products that came out of the plasma pool.

Q But one of them -- and I want to dwell on this first. The report that you filed on Page 2 says "various estimates indicate that 60 to 80 percent of the male homosexual population is positive for anti-HBC?

A That's correct.

Q That's what we talked about earlier, right?

A That's correct.

Q And then Item C below is cost factors involved. "Based upon the performance of 150,000 tests per year, with a frequency rate of 4-month intervals for each donor, the cost of testing including reagents and personnel is anticipated to be $350,000 dollars annually"?

A That was one of the points of consideration, yes.

Laura M. Brennan, Official Reporter

Q. That was a point of consideration in something as serious as AIDS?

A. There are other factors that you are not -- that you are not reviewing?

Q. We will get to that.

A. That was one of the points of consideration. There are pros and there are cons.

Q. "A conservative estimate of plasma volume loss of at least 15 percent is likely, thereby dramatically affecting collection center operations, overhead, absorption and recruiting efforts. The impact of a 15 percent throughput loss approaches $2 million a year." That would be for the entire industry, right?

A. That's a projected figure, yes. That was one of the considerations.

Q. The argument you are trying to tell us is that taking the antihepatitis B antibodies out would affect the pool, the plasma pool?

A. Yes, because when you remove units of plasma that are positive for core, you remove a large proportion of units

that coincidentally are positive for surface antibody, as well.

Q. Has that ever been proven?

A. I think it has.

Q. Do you know if it has?

A. Well, I have been told that it has, yes.
Q. Well, this is ten years later. By now wouldn't we know?
A. It's not been done for plasma pools on a wide scale basis. It has been done on a trial basis by one company, and it was shown that the units of plasma that were excluded led to certain consequences.
Q. The one that did it was Cutter, right?
A. That's my understanding, yes.
Q. It did it because it went into a heat treatment process?
A. No, sir.
Q. Isn't that the fact?
A. No, that's not the fact as I have been told by responsible people at Cutter.
Q. Well, all right.
Then you were the head of the task force. You reported to Mr. or Dr. Petricciani; is that right?
A. Yes, sir, that's correct.
Q. People of the caliber of Donahue, Dr. Donahue, was against that position?
A. Against which position, sir?
Q. Against not doing the core antibody test.
A. But his colleague was not in favor of the core test.
His colleague was Dr. Robert Gerety who's a pretty

well

renowned hepatitis researcher and hepatologist.

Q. He was for the test?

A. No, sir, he was not.
Q. I didn't think so. Neither was Dr. Donahue, although he went along with the report. Isn't that what the report said?
A. No, no. When we polled the group Dr. Donahue was in favor of the test.
Q. Now, sir, you yourself didn't think that this small amount of money was a deciding factor, did you?
A. I didn't think that the money was a decisive factor. I thought that there were other issues that were more decisive than that.
Q. What about taking the hepatitis B antibodies out of the --
A. The surface antibody, yes, sir.
Q. Yet as you sit here today, you came to testify knowing that this was going to be an issue because Ms. Gourley brought it right out on the table. You didn't check to see what evidence there is to support that position?
A. There is evidence to support that position. There is evidence that has been told to me by responsible people at Cutter who manufactured several lots of product --
Q. Just tell me, sir --

A. -- from pools of plasma who had been screened, and the anticore units were excluded. Of those lots that were produced from that pool, at least one --

Q. Sir, tell me --

MR. BERKMAN: Let him finish, please.

MR. RING: It's just hearsay. I don't have to have him keep on talking about conversation with Cutter.

THE COURT: You didn't testify to literature.

MR. RING: Well, I am now.

THE COURT: All right.

BY MR. RING:

Q. Is there any literature, anything written, that's affixed that supports that position?

A. Not that I know of, sir. There may well be.

Q. You were -- as the regulator for your company you have frequent meetings with the people at the FDA in the biologics that you were involved with?

A. It depends on how you define "frequent." But there were periodic repetitive meetings with a number of products that my company would manufacture. There would be reasons to visit with FDA people, yes.

Q. Sometime in 1986 you took on the Hemate, I guess it is, the product of Behringwerke?

A. Yes, there was an agreement whereby Armour would act as the distributor of that product when it was licensed in the

22 United States.

23 Q. You then took on the burden of getting it licensed; is

24 that right?

25 A. I don't know that I would call it a burden of getting it

licensed. I became their agent to talk to the FDA on behalf of Behringwerke to see what needed to be done to move the license review along and to get approval.

Q. When you started to talk to Behringwerke was that one of the quid pro quos, you would get that product licensed and then be their agent?

A. I don't know that I follow you.

Q. Okay.

A. The agreement to -- as far as I can recall, the agreement for Armour to act as the distributor when the product was licensed preceded my becoming involved as the agent for Behringwerke. I am not sure if I have answered your question because I don't know whether I understood it.

Q. Maybe you don't know. You didn't handle the negotiations of the transaction?

A. No, I did not.

Q. All right. So, you were then told, Dr. Rodell, "See what you can do about getting Behringwerke licensed," right?

A. You are implying that I have some influence with FDA.

Q. I think you are being a little bit too ahead of me. Am I reaching you somewhere that you are worried about

--

A. I have answered what capacity I served Behringwerke in.

I have answered that, I think, three times.

Q. Well, sir, since you are anticipating my thought process

--

A. Oh, okay.
Q. -- and you are right, okay, Behringwerke filed for a license when?
A. 1983.
Q. 1983. They were dealing with the same people like Dr. Aronson?
A. Yes.
Q. And that's who you dealt with?
A. I dealt with Dr. Aronson and one or two members of his laboratory group, yes.
Q. There wasn't anything done in Germany with the Behringwerke product from the time Behringwerke filed for license and the time you got it, right?
A. I don't know that.
Q. Well, you said there was a couple of problems. One was not comfortably -- the FDA was not comfortable with the product and additional samples had to be seen?
MS. GOURLEY: Objection. Misstates his testimony.
MR. RING: If it isn't, he will tell us.
BY MR. RING:
Q. Did it need some additional samples?
A. It needed additional samples because the samples that had initially been submitted did not dissolve -- as

I recall,

24 did not dissolve in the fashion that the people in the FDA

25 laboratory liked.

LAURA M. BRENNAN, Official Reporter

Q. So, addition samples came?
A. Yes.
Q. Now, of course it was there, what, three years? Do you know if that would make a change in the sample?
A. I am sorry.
Q. Do you know whether sitting there for three years could make some impact on the sample?
A. I am not at all sure that the samples sat there for three years.
Q. There was some labeling issues, right?
A. That's correct.
Q. You took care of that, too?
A. We revised the labeling in conformance with what FDA was requesting, yes.
Q. Now, Behringwerke is owned by, is it Hurst? Is that it?
A. Hurst. I believe it's called Hurst, yes.
Q. A giant pharmaceutical company?
A. They are rather large, yes.
Q. Right here in this country?
A. It's German.
Q. Well, of course it's German. They operate in this country?
A. They do have a facility in the United States, yes.

Q. They have sales reps for that company?

A. They have sales reps for that company, but their sales

representatives do not sell biological products. They are more in the traditional pharmaceutical area.

Q. But at any rate, you got it licensed in '86, right?

A. I don't know that I got it licensed. The requirements of the agent --

Q. Don't be too modest. After all --

A. You said "you." You are referring to me.

Q. Weren't you the one for Armour that was the person dealing with the FDA to get it through?

A. Behringwerke agreed to the labeling changes. Behringwerke supplied new samples as requested by FDA and everything met FDA requirements.

Q. That's all there is to it?

A. That's correct.

Q. Now, sir, with respect to your own product you said that you had a heat treated product, Armour?

A. Yes, that's correct, sir.

Q. Before that I take it you had a concentrate that was nonheat treated?

A. That's right.

Q. Dr. Rodell, the application to the FDA for the nonheat treated Factor VIII was filed when?

A. For the nonheat treated it would have been

sometime in

24 the early '70s would be my guess. I honestly don't know the

25 date.

LAURA M. BRENNAN, Official Reporter

Q. What about the heat treated?
A. Late part of 1982.
Q. Late '82?
A. Yes.
Q. Well, when did you start working on it?
A. I didn't join Armour until 1983, and by that time the application had been filed.
Q. Well, certainly being in the regulatory end of it you had to learn about your product.
A. Well, you asked me when did I start working on it. Are you referring to the company or are you referring to me?
Q. I know. I just haven't been clear enough.
A. Yes.
Q. So, when I say "you" you think I mean you?
A. Yes, sir.
Q. Not Armour.
A. Yes, please.
Q. If I mean you, I will say "Dr. Rodell."
A. Thank you.
Q. And if I say "you" otherwise, it's Armour, okay?
A. Okay.
Q. Now we got it straight?
A. Yes, sir.
Q. Now, tell me, sir, Armour then started working on this

before '82, didn't it?

LAURA M. BRENNAN, Official Reporter

A. Yes, as far as I know, I believe looking at some of the original lab reports and so forth, sometime in about perhaps 1979.

Q. That was before the HIV or AIDS virus, wasn't it?

A. Yes, sir.

Q. So, then it was heat treating to kill hepatitis B?

A. Hepatitis viruses, that was the intent, yes, hepatitis B or non-A, non-B.

Q. Or non-A, non-B?

A. Yes, sir.

Q. So, in '79 it knew that heat treatment should kill hepatitis B virus and the non-A, non-B virus?

A. I would disagree that it knew in '79.

Q. Okay. So, they didn't know that it could do it; is that right?

A. There was -- it was the intent to be able to demonstrate that it would be possible to do it, yes.

Q. Even though you didn't know it could do it?

A. That's right.

Q. That's because you knew that viruses could be killed by heat, right?

A. Well, we knew from other products that underwent a heat

treatment, such as albumin or plasma protein fraction that underwent a specified heat treatment and were not involved in the transmission of hepatitis, that heat had an affect on

hepatitis viruses.

Q. And so, even though you didn't know whether these viruses would be killed by heat --

A. For this product.

Q. -- for this product, you undertook to do it?

A. Armour undertook to do it, yes.

Q. I thought we have agreed if it's you, it's going to be Rodell; and if it's you otherwise, it's Armour?

A. Yes, sir, okay.

Q. All right.

So, this was not anything that was outside of the knowledge of a great company like Armour, right?

A. As far as I know, it was not outside the knowledge.

MR. RING: I just want to identify one document with him, your Honor.

BY MR. RING:

Q. From the time that you were with Baxter, do you recognize that as something that is a Baxter document?

MR. BERKMAN: Can you tell me what number it is, Mr. Ring?

MR. RING: 3264.

MR. BERKMAN: Can you wait until I get my document, please?

MR. RING: Come up and I will give it to you.

MR. BERKMAN: Your Honor, this is the memo that you

ruled was inadmissible. It's after this gentleman left the company, and I think they are trying to introduce what you have already told them --

MR. RING: See, you listen but you don't hear.

Your Honor, I said I was just identifying it. I am not going to introduce it with this gentleman.

THE COURT: All right.

BY THE WITNESS:

A. It has the Highland Therapeutics Division logo, yes.

BY MR. RING:

Q. Does that, then, to you indicate that it is a Highland document?

A. It would to me if it were as it's written here, yes.

LAURA M. BRENNAN, Official Reporter

MR. RING: That's all for right now, Your Honor.
THE COURT: Anything else?
MS. GOURLEY: I have nothing.
MR. BARR: Your Honor, may I just ask?

CROSS-EXAMINATION

BY MR. BARR:

Q. Dr. Rodell, when you testified earlier, and I'm not going to go through it all, on the issues of the FDA inspecting the plasma centers, looking at the samples of each --

THE COURT: Well, let's just confine yourself then to what you are going to do. We don't need a review of his testimony.

MR. BARR: I understand. I just want to find out if they applied to my client. I am going to go through the five things and ask him do they apply to my client.

THE COURT: Well, all right.

MR. RING: Well --

THE COURT: You were starting to tell him what you weren't going to ask him. That's what I understood you to be saying.

MR. BARR: No, I'm not going to go through all of it.

THE COURT: All right. Just go through what you are going to go through is my point.

MR. BARR: I am going to go through what I am going to go through, Your Honor.

LAURA M. BRENNAN, Official Reporter

THE COURT: All right.

MR. BARR: Thank you.

BY MR. BARR:

Q. The testimony concerning the testing of -- the inspection of plasma centers, the testing of samples, the labeling, the examination of facilities, the FDA's review of manufacturing processes to your knowledge as the head of regulatory affairs would apply to all of the companies making these Factor VIII products, is that correct?

A. It applies to all licensed biological manufacturers.

MR. BARR: Thank you. I have nothing further.

MR. BERKMAN: Your Honor, I just have a few questions.

CROSS-EXAMINATION

BY MR. BERKMAN:

Q. Dr. Rodell, I think Mr. Ring interrupted you when you were saying that the company that used anticore had a higher titer of hepatitis as a result of that?

A. Well, not quite. I was told by representatives of that company that the several lots of material that were prepared from pools from which anticore positive units were excluded, that of those lots of antihemophilic factor, one turned out to

be positive for hepatitis B surface antigen, an extremely unusual event. And there are lots of immune globulin that came out of those plasma pools were markedly lower in titer for hepatitis B surface antibody.

LAURA M. BRENNAN, Official Reporter

Q. Okay. Now, Mr. Ring asked you if you had read anywhere that there is a correlation between hepatitis core antibody and hepatitis surface antigen -- I mean surface antibody. And are you familiar with the FDA recommendations concerning anticore published in September of 1991?

A. Yes, I am.

Q. Okay. And you're familiar with the statement that says, "Source plasma. The FDA does not currently recommend that source plasma donors be tested for antihepatitis B core. If antihepatitis B core reactive units were excluded from pools used for the manufacture of plasma derivatives, titers of antihepatitis surface antibody in those pools would be expected to diminish as both these antibodies usually occur together in plasma. The presence of antihepatitis B surface antibodies is believed to contribute to the safety of certain plasma products such as immunoglobulins." Is that consistent?

A. Yes, that's consistent, and that's what I tried to answer before.

Q. Now, finally, in the report that you sent to Dr. Petricciani, Mr. Ring read to you some sections, but he didn't read all of them, did he?

A. No, he did not.

Q. Do you remember one of the arguments against testing to be,

quote, "Removal of donors found positive for antihepatitis B

core from plasma programs will decrease the amount of

antihepatitis B surface antibody in plasma pools thereby increasing risk for transmission of hepatitis B to even higher levels"?

A. That's correct.

Q. And that's the risk you were concerned about?

A. That's absolutely correct.

Q. Finally, when you submitted this report, you added an addendum, do you recall that?

A. Yes, I do.

Q. Did you write that addendum?

A. Yes, I did.

Q. It says, quote, "Subsequent to the preparation of this report, announcements were made by the Secretary of the Department of Health and Human Services regarding the findings of investigators at the National Cancer Institute, National Institutes of Health.

"Information developed by these researchers links the incidence of AIDS to the presence of HTLV-III virus in a significant number of instances and indicates that in vitro tests for the determination of the presence of antibody to this agent will become available within the near future.

"Based upon this information, some proponents of the anti-HB core testing who contributed to the preparation of the minority position paper no longer believe that it is

25 appropriate for organizations not currently testing donor blood

LAURA M. BRENNAN, Official Reporter

or plasma for this antibody to implement such testing. Rather, they should initiate appropriate steps to utilize tests for the presence of antibody to HTLV-III as soon as they are available."

Is that consistent with what people -- what you reported to the Blood Product Advisory Committee?

A. I reported that to Dr. Petricciani of the FDA, yes.

Q. And shortly thereafter, did a test get licensed for HIV?

A. In the spring of 1985, yes.

Q. And it implemented the FDA suggestion as soon as possible?

A. Within weeks.

MR. BERKMAN: Thank you very much.

RECROSS-EXAMINATION

BY MR. RING:

Q. Doctor, that's a 1985 document that he just read from, is that right?

A. No, sir.

MR. RING: When was that?

MR. BERKMAN: It was your exhibit. It's P-4.234. It is dated July 16, 1984.

MR. RING: '84.

BY MR. RING:

Q. Doctor, there was no test for HIV at that time, was there?

A. That's correct.

25 Q. And, also, you shouldn't have been making immunoglobulin.

Isn't that what you were using the high titers for?
A. Should not have been making immunoglobulin?
Q. From the Factor VIII.
A. You don't make immunoglobulin from Factor VIII.
Q. Well, you use it, you separate the fibrinogen, and you get all the high titers together and use that for immunoglobulin, do you not?
A. No, sir. That's not correct at all. That is nowhere even near the manufacturing process.
Q. At any rate, that was the recommendation. Give me, give me the regulation that says you cannot do the core antibody test or surface --
MR. BERKMAN: I just read it, Mr. Ring.
MR. RING: He said it was a recommendation.
BY THE WITNESS:
A. Sir, there is no ruling that said, there is no regulation that says you cannot do it. There is a regulation that says if you have a change in a manufacturing process, that you will report it to the agency and must get its approval.
BY MR. RING:
Q. But there is no specific regulation that prohibits any testing of the plasma?
A. There is a regulation that says that if you implement the

test, you will report it to the agency in your standard operational procedures manual, and you will not implement it

until you get approval.
Q. But that's what you're relying on, is the general wording of manufacturing?
A. When you test a product, testing is defined as part of manufacturing, yes. It is defined as such in the regulations and the law.
Q. Defined in the regulations?
A. Yes, it is.
Q. Have you got it?
A. Sir, I don't, I don't carry the regulations with me. But manufacture by definition includes testing.
Q. That's your definition?
A. No, sir, it is not my definition. It is the definition of the --
Q. The testimony here has been that there is no such specific regulation.
A. You asked me if there were specific regulation requiring core testing. I am telling you that there is a specific regulation that defines manufacturing to include product testing. I am also telling you that there is a specific regulation in the Code of Federal Regulation, Title 21, Part 600, et al., which says that all changes in manufacturing processes will be described to the FDA prior to their implementation.

25 Q. Well, if there was such a regulation, what was your study

committee for?
A. The study committee was to determine whether or not core antibody testing was an appropriate measure to take as a surrogate test. If it were, then people would implement it. They would file appropriate documentation and notification to the agency that it was going to be implemented, just as we implemented anti-HIV testing before the FDA even mandated it.
Q. And Cutter did it without any test -- any prior FDA approval?
A. That's my understanding. And it's my understanding talking to their responsible heads that they were --
Q. No, I don't -- look, I don't want to hear all the hearsay.
A. This is not hearsay, sir.
Q. But you do know that they did start the test?
A. They started the test without reporting to the agency and were told to cease and desist.
MR. RING: May the last part be stricken?
THE COURT: Be stricken.
MR. RING: Thank you. That's all I have.
MS. GOURLEY: No questions.
THE COURT: All right, sir. Thank you.
THE WITNESS: Thank you.
(Witness excused.)
THE COURT: What's next?

25 MS. GOURLEY: Your Honor, I would like to read at this

point some admissions made by the plaintiffs. It is Armour's Rule 12(m) statement and the plaintiff's Rule 12(n) response with respect to some of the issues in this case.

THE COURT: Well, let Ms. Thomas look at what you are going to read so if there is any question about it I can rule on it.

MS. GOURLEY: Okay, sure.

THE COURT: Or Mr. Ring or somebody.

MR. RING: That's her department.

MS. THOMAS: Is it in the binders?

MS. GOURLEY: Well, I put the whole thing in there, but I'm not reading -- it's 130 paragraphs long.

MS. THOMAS: Okay.

MS. GOURLEY: But it is, the whole thing is in there.

MS. THOMAS: Okay.

MR. RING: Why don't you leave that inside? I thought you read it. 130 pages?

MS. GOURLEY: No, no. 130 paragraphs, Mr. Ring. And I'm giving her the few paragraphs I do want to read.

MR. RING: Oh, okay.

MS. GOURLEY: Not the whole thing, I promise.

MR. RING: I thought you were going to read 130 pages.

MS. GOURLEY: I didn't read anything in this trial.

THE COURT: Okay?

(Pause.)

10

1 MS. THOMAS: Okay.

2 MS. GOURLEY: Thanks. Your Honor, did Your Honor want

3 to explain what these are, 12(m) and 12(n), or should I just

4 read them?

5 THE COURT: Well, let me just see what they look like

6 so I can explain it.

7 MS. GOURLEY: The actual document was fairly long, and

8 I took out the paragraphs and have had them retyped verbatim.

9 MS. THOMAS: Your Honor, our only concern is when

10 something is taken out of context, the entire material is not

11 presented.

12 THE COURT: Well, no. The whole idea of these

13 statements is that they are independent, and they stand alone.

14 Now, these were statements that were not denied, is

15 that it?

16 MS. GOURLEY: The plaintiff's responses is quoted

17 verbatim at the bottom, and I intend to read the whole thing,

18 Your Honor.

19 THE COURT: Okay, all right.

20 Well, these are statements exchanged by the parties in

21 a little different kind of procedure than the one I described

22 earlier, ladies and gentlemen. But what Ms. Gourley is going

to read to you are statements of fact asserted by Armour and then she will read you the plaintiff's response to those statements.

LAURA M. BRENNAN, Official Reporter

11

1 MS. GOURLEY: Okay.

2 THE COURT: And these were submitted to the Court at

3 an earlier stage of this case.

4 MS. GOURLEY: (Reading):

5 "Michael Reese did not purchase any Armour concentrate

6 after July 19, 1984, through January 1985.

7 "Armour did not sell any Armour concentrate to Michael

8 Reese after July 19, 1984, until August 1985.

9 "From July 19, 1984, through the period of Stephen

10 Poole's January 1985 hospitalization, Michael Reese purchased

11 only Alpha and Baxter (Hyland) Factor VIII concentrates.

12 Michael Reese purchased a total of 4,256 vials of Alpha and

13 Baxter (Hyland) concentrates during that six-month period from

14 July 19, 1984, to January 18, 1985."

15 The plaintiff's response was, "Plaintiffs agree with

16 the assertions made by Defendant Armour in paragraph 68 to 72."

17 I have 72 here since I forgot to put that one up.

18 Thanks.

19 "From November 12, 1984, through at least January

20 1985, Michael Reese purchased only heat-treated Factor VIII

21 concentrates totaling 1,627 vials."

22 Plaintiff's response was "Plaintiff's agree with the

23 assertions made by Defendant Armour in paragraph 68 to 72."

LAURA M. BRENNAN, Official Reporter

MS. GOURLEY: Paragraph 74: All of Michael Reese's purchases in December 1984 and January 1985 were of heat-treated Factor VIII concentrate from Baxter (Hyland).

Plaintiff's response: Plaintiffs agree with the assertions of defendant Armour in Paragraphs 74 to 77.

And lastly, Michael Reese's supply of Factor VIII concentrate was kept in a refrigerator in the pharmacy. New stock was placed behind the old stock so that the older material was used for first. The inventory of Factor VIII concentrate was checked daily both on a computerized report and in the refrigerator.

Factor VIII concentrate for a particular patient was sent to the floor on a daily basis to comply with physicians' orders; only one day's supply was sent at a time.

Plaintiff's response was plaintiffs agree with the assertion of defendant Armour in Paragraphs 74 to 77.

MS. GOURLEY: Your Honor, may I distribute copies to the jury?

THE COURT: All right.

MS. GOURLEY: Your Honor, subject only to receipt of Dr. Levine's deposition in Baxter's case, Armour rests.

THE COURT: All right.

MS. GOURLEY: Your Honor, I'm sorry. One thing is I do believe that I did not formally move for the admission of several of the exhibits to which --

THE COURT: They're all received. We'll take care of that later.

MS. GOURLEY: Thank you, your Honor.

MR. BERKMAN: Your Honor, if you would like, we'll try to get this deposition read.

THE COURT: Fine. Okay.

MR. BERKMAN: Mr. Albert will be Dr. Levine.

THE COURT: All right.

MR. BERKMAN: I'm reading excerpts of questions and answers from Dr. Levine's deposition that was taken on October 12, 1990, at 9:00 A.M.

(Reading:)

"Q Dr. Levine, would you state your name for the record.

A Peter H. Levine.

Q You are an M.D.?

A Yes.

Q Doctor, when did you obtain your license?

A 1967.

Q And you recently provided a copy of your CV to Mr. Fuson?

A Yes.

Q Is that correct. Is that CV current?

A Yes.

Q No additions to make?

24 A I've not upgraded it. I have probably written two or three

25 papers since the last time I published the bibliography section

of it."

MR. BERKMAN: Your Honor, if I may, we will be bringing in his CV Monday. We don't have it here I apologize.

Page 14, Line 6.

(Reading:)

"Q I would like to first discuss a little bit of your background. Did you first begin treating hemophiliacs in 1965, 1966?

A At that time I would have been a fellow in hematology and did begin treating people -- also treated them through the time of my military experience. The principal treatment of hemophilia for me as director of the center would have begun in about 1971 at the Tufts New England Medical Center.

Q Did you actually treat hemophiliacs in the military?

A Yes.

Q Were there hemophilia patients who were soldiers?

A No. They were mostly the dependents of active duty this members.

Q They tended to be children?

A Some were children and some were teenagers or young adults.

Q Was there in the mid-'60s?

22 A Late '60s.

23 Q Did you describe treatment for these young hemophiliacs?

24 A Yes.

25 Q In the late 60s?

A Yes.

Q What therapy did you prescribe for the hemophiliacs to control their bleeding?

A In those days it would have been principally cryoprecipitate.

Q And cryoprecipitate is a fraction of human plasma?

A Correct.

Q Were the patients you treated suffering from hemophilia A?

A Yes.

Q That's a person who has a deficiency in a protein called Factor VIII, which assists in clotting the blood, right?

A Yes."

MR. BERKMAN: Your Honor, I apologize. I forgot to mention Miss Thomas is the person asking these questions and this is Dr. Levine answering them at the deposition.

Page 16, question,

(Reading:)

"Q That may been an oversimplification, but that's basically what it is?

A Yes.

Q And cryoprecipitate is that faction of the plasma where Factor VIII protein is, correct?

23 A Much of it is, yes.

24 Q Is that a relatively new form of treatment for hemophilia

25 A? At the time the doctor was prescribing cryoprecipitate to

treat young hemophiliacs when he was in the military?

A No. In fact, I had also used both cryoprecipitate and concentrate during my hemophilia -- my hematology fellowship. I believe that was 1967 through 1969. So, you know, cryoprecipitate had been in use through that decade of the '60s.

Q And prior to cryoprecipitate were hemophilia A patients treated with fresh frozen plasma?

A Yes.

Q Cryoprecipitate was basically a quantum leap in the treatment of hemophilia, wasn't it?

A No. It was certainly an advance over the use of flesh frozen plasma in that you had a small degree of concentration compared to fresh, frozen plasma and didn't run into as many volume problems, but because the dose contained in cryoprecipitate was completely unreliable, although it represented an advance, I would certainly not characterize it as a quantum advance.

Q When you say "unreliable," do you mean you couldn't predict what the dose was?

A That's correct.

Q Now, when you use the term "concentrates," I believe you said concentrates was a therapy that you were using in the mid-'60s. Are you referring to commercially manufactured Factor VIII concentrate?

A Yes.

Q Is that basically a concentration of cryoprecipitate?

A That's an oversimplification, but I suppose you could say so.

Q Did you prescribe commercially-manufactured Factor VIII concentrate for patients when you were in the military?

A Yes.

Q Along with cryoprecipitate?

A Yes.

Q What did it depend on, Doctor, which form of therapy you decide to use?

A Generally depended on the severity of the patient's illness, the age of the patient, the severity of the bleeding episode.

Q Why was the age of the patient relative?

A Very young patients with hemophilia, infancy to several years of age, bleed infrequently and require very small amounts of Factor VIII since you give Factor VIII on amounts per weight basis.

Q And Factor VIII is measured in units?

A Yes.

Q That's units of activity, right?

A Yes.

Q So in that sense you could predict how much Factor VIII you're giving the patient with concentrate?

A Yes.

Q Now, Doctor, when was the first time that you actually took charge of a hemophilia treatment center?

A I believe that was 1971 at the Tufts New England Medical Center.

Q What was your position there?

A I was director of the blood coagulation regular laboratory and director of what came to be known as the New England Area Comprehensive Hemophilia Center.

Q Was there any particular reason you decided to go in the direction of treating hemophilia patients?

A Yes. When I was a fellow in hematology, one of my teachers was an expert in the field of hemophilia, and that plus the facts that I found that people with hemophilia needed a very comprehensive approach of personal services and emotional support.

In other words, a mix of the art and science of medicine attracted me to the field.

Q And have you been in the field of treating hemophiliacs since?

A Yes, I have.

Q Now, in 1971 what therapy did you describe for treatment of

hemophilia A?

A A variety of them.

Q What do those include?

A That included concentrate and cryoprecipitate. You're talking about hemophilia A?

Q Yes. In what instance would you prescribe cryoprecipitate?

A For very young children with mild to moderate bleeding episodes.

Q Was there any reason known you that you would --

A Can I also add to that question, for people with mild hemophilia.

Q Okay. Any other classes of patients?

A Individuals with Von Willibrant's disease.

Q You would not prescribe concentrate for those patients as a rule --

A That's correct.

Q -- at that time. Yes.

What was the reason, Doctor, at that time for not prescribing concentrates for very young children, mild hemophiliacs and persons with Von Willibrant's factor?

A Concentrates are relatively new, had been only around for several years, and cryoprecipitate had been around for a longer period of time. Although we knew that the dose was much more reliable, when using concentrates in a mild

patient, you could

22 essentially give them a moderate excessive dose of cryo and

23 compensate for the fact that you weren't always 100 percent

24 sure of what dose you were giving.

25 Q Any other reasons that come to mind, Doctor? Are you

including Von Willibrant's in the question? Yes.

A Concentrates don't contain, in most cases, sufficient quantities of the Von Willibrant's factor where cryoprecipitate does.

Q Any other reasons why you didn't prescribe concentrates for young children in the mild to moderate hemophiliacs?

A We were concerned in the early years of concentrate therapy about the risk of hepatitis for these products. Almost all the adult patients had already contracted both forms of hepatitis, so that was not a major concern; but for young children who hadn't yet gotten hepatitis, at that time we felt that cryoprecipitate would be less likely to give it early to a patients than concentrate would.

Q Why was that, Doctor?

A Why was what?

Q Well, did you feel that cryoprecipitate was less likely to pass on hepatitis to those patients?

You want the belief he had back in 1971? Yes.

A In 1971 it was simply based on the fact that concentrate was made from multiple donors, and for a very young child

requiring cryoprecipitate you usually only needed several donors.

For an adult, we did studies in the early 1970 showing that it made no difference because you used so many hundreds and hundreds of different donors that they were just

as likely to get hepatitis.

Q When you say "hundreds and hundreds of donors," when you use cryo to treat an adult, over what time span are you speaking?

A A year or so. In fact usually considerably less than a year.

Q You might have to give a hemophilia A patient 8 to 10 bags of cryoprecipitate to control the bleed on one occasion?

A No. If we're talking about an adult, it wouldn't be unusual to give that patient 10 to 20 different donors or different bags on a single bleeding episode; and if they're bleeding six times a month, you're well over 100 by the end of the month.

Q And that depends on the severity of the bleeding?

A It depends on the severity of the patient more than the severity of the bleed in that case.

Q It would depend, of course, on the amount of clotting factor that you have in the cryoprecipitate you're administering?

A Correct.

Q That's luck of the draw, right?

A Only in part.

Q You mean there's some ways in with you can determine the Factor VIII level of the cryoprecipitate that you're --

A No.

Q What do you mean by "only in part"?

A That it has a lot to do with the care with which the cryoprecipitate is made.

Q And how the factor is preserved in the cryo?

A Yes.

Q The Factor VIII protein?

A Yes.

Q Okay. At that time, Doctor, do you have information as to the size of the pools from which the commercially prepared concentrates were made?

A Yes.

Q What was your understanding back in the early '70s of what the size of that donor pools was?

A Anywhere between a few thousand and 10,000 donors.

Q Today to you have an understanding that the size has increased?

A Yes.

Q What is your understanding today, Doctor, on the size of those pools.

You mean generally with respect to any particular manufacturer.

I'll get into that generally. The size of the pools?

A That the pool sizes range anywhere between a few thousand

to as many as 25,000 donors.

Q Was that your understanding in the early '80s, Doctor?

A Yes."

MR. BERKMAN: Page 32.

(Reading:)

"Q Okay. Doctor, you indicated when you first took charge of the hemophilia center back in the early 70s that you were prescribing both cryoprecipitate and Factor VIII concentrate. Did you ever stop prescribing cryo for any of your hemophilia patients?

A I'm sure I did."

MR. BERKMAN: Mr. Fuson objects,

(Reading:)

"Did you mean a patient who had been on cryo, did he stop prescribing cryo for that particular patient?

MS. THOMAS: Yes, and switch that patient to concentrate.

THE WITNESS: Yes."

MS. THOMAS: Your Honor, may I interrupt. There was a page skipped.

MR. RING: I'll use this little pause to check another oversight. I'm sure he didn't mean it, but I think the jury should know that this is the expert that all the defendants had submitted as their experts. So it's

not our

witness.

THE COURT: Yes.

MS. THOMAS: May we read Page 26 beginning with

Line 9.

MR. BERKMAN: Where does it end, Ms. Thomas?

MS. THOMAS: I believe you stopped at Page 26. "Was that your understanding in the early" --

MR. BERKMAN: Right. I stopped at Line 8. Where do you want me to go to?

MS. THOMAS: The last line you read was Line 8?

MR. BERKMAN: Yes.

MS. THOMAS: Line 9.

MR. BERKMAN: Line 9 is a question on Page 26.

MS. THOMAS: Yes, would you read that.

MR. BERKMAN: Okay.

MS. THOMAS: Thank you.

MR. BERKMAN: (Reading:)

"Q And taking up on Mr. Bell's suggestion, do you have any knowledge as to the size of the pools for the various manufacturers, whether there's a difference between the size of Alpha's pool and Armour's pool, for example?

A No."

MS. THOMAS: Line 15, please.

MR. BERKMAN: Where would you like me to end?

MS. THOMAS: I would like you to read what you left

out.

MR. BERKMAN: (Reading:)

"Q When we talk about the size of a pool in terms of 10,000

donors or 25,000 donors, we're talking about the size of one pool to make one lot of Factor VIII concentrate, correct?

A Yes.

Q And from that one lot we get many bottles or bottles of product, correct?

A Yes."

MR. BERKMAN: May I stop there? I don't have the whole transcript. I have the designated portions. I go from 26 to Page 32, okay? That was the reason I was asking where you wanted me to stop. We gave you designated portions.

MS. THOMAS: Last night.

MR. BERKMAN: No, I think he gave you the designations a week ago.

THE COURT: Well, all right. Read what you've designated. If there is anything there that --

MR. BERKMAN: She wants to read in addition --

THE COURT: -- She wants to read, we can read that too, but if we don't have the pages, we can't --

MR. BERKMAN: Okay. On Page 32, Line 14.

(Reading:)

"Q Let me ask this: Was that a policy that went into effect

22 at the treatment center?

23 A No.

24 Q Could you explain under what circumstances you switched

25 hemophilia patients from cryo to concentrate?

A Sure. I can recall many instances of patients who were treated with cryoprecipitate who had major bleeding episodes that failed to respond to the cryo because of what, in retrospect, turned out to be an insufficient quantity of Factor VIII in the cryoprecipitate.

When this had happened to a patient multiple times, either as the patient got older and, therefore, weighed more and needed more units or had more severe bleeding episodes, it became increasingly impractical to treat those patients with cryoprecipitate. And so to prevent all the major problems of life-threatening hemorrhage, we would switch those patients from cryoprecipitate to concentrate.

We also switched patients from cryoprecipitate to concentrate at the time when they got old enough to go on a home therapy program.

Q Why was that?

A Because it's doubly unsafe to use an unreliable material with a patient who is away from a treatment center, often many miles away.

Q You're referring to the patient

self-administering

cryoprecipitate in his home?

A Correct.

Q And not being certain if he's getting enough units?

A That's correct.

Q To treat the bleed?

A We also had a group of patients who had very severe reactions to cryoprecipitate which were quite common whereas reactions to concentrate are extremely unusual.

Q By "reactions" what do you mean, Doctor?

A When cryo was frequently used in the '60s, large numbers of patients would develop severe allergic reactions probably to the cellular contents of the cryoprecipitate, so there would be high fevers, hives, etching, a variety of other rashes, often severe headache and sometimes wheezing, and rarely a patient would go into shock."

MR. BERKMAN: Page 37, Line 20.

(Reading:)

"Q Now, Doctor, You've also served on a certain committee of the National Hemophilia Foundation for a good many years, right?

Object to the form.

BY MS. THOMAS:

Q The Scientific and Medical Advisory Board?

A Yes.

Q When did you first join that committee or board?

A I believe sometime in the late '70."

MR. BERKMAN: Line 18,

(Reading:)

"Q Doctor, what were the circumstances that is gave rise to your joining the board, what happened?

A The Medical and Scientific Advisory Council?

Q That's correct.

A I had served as the first -- first a member and then the chairman of the publications committee of the National Hemophilia Foundation somewhere, I think, in the period of around 1974, 1975 on for several years and was increasingly writing about hemophilia and its treatment and was invited by the National Hemophilia Foundation to join that group because of the research I was doing in the field.

Q Your position as chair of the publications committee was that your first involvement with National Hemophilia Foundation?

A Probably not. I had -- between 1971 and 1975, I had been the medical director of the local chapter of the New England Hemophilia Association, which is the local chapter of the National Hemophilia Foundation. I'm sure I had various intersections with NHF through that time period.

Q What is your understanding of the function of the National Hemophilia Foundation?

A It's the major lay organization for people with hemophilia,

much in the same way the heart association or the cancer association or multiple sclerosis society or any of those organizations is an organization that seeks to bring in to people with hemophilia and seeks to foster research in the disease and close the gap between technology and its

application to the patient.

Q By "close the gap between technology and application," do you mean the National Hemophilia Foundation actually does research?

A No. It expedites research taking place, and it seeks to find federal and other sources of funding for such research, and it indeed it raises the funds for the research itself.

It also raises funds to train hematologists to become subspecialists in hemophilia. It does do some clinical data collection which could be considered research.

Laura M. Brennan, Official Reporter

Q. What kind of clinical data collection?

A. At the present time, for example, there are a variety of studies that are being carried out collaboratively between the Centers for Disease Control, the Office of Maternal and Child Health of the United States Public Health Services, and the National Hemophilia Foundation on the demographics of the AIDS epidemic and hemophilia, that sort of thing.

Q. I see. So, it's not a governmental agency, is it?

A. No, although it receives considerable government support.

Q. It receives some funds from the government?

A. Yes.

Q. What are the other sources of its funding?

A. The other two major sources would be from patients themselves and from the chapters that submit annual portions of everything they raise to the national organization. Then the third source would be from contributions from pharmaceuticals, plasma manufacturers, people who make medical equipment and from the medical -- from the physicians themselves.

Q. Have the defendants in this case supported with monetary

contributions the National Hemophilia Foundation?

A. Yes.

Q. You were a medical director of the National Hemophilia Foundation from 1985 through 1987, correct?

A. Yes, and comedical director for two years prior to that.

Q. Did you ever break in 1986 when you were not a medical director or codirector?

A. No.

Q. So, from 1983 through 1985 you were a codirector, and then from 1985 through 1987 you were director?

A. That's correct.

Q. Doctor, you said also that the patients, the hemophilia patients themselves --"

MS. THOMAS: Your Honor, may we have the rest of Page 43 read in?

MR. BERKMAN: It was designated to Line 3, but I will read the rest of that page if you like.

BY MR. BERKMAN:

"Q. During that time, Dr. Levine, approximately how much money was contributed by Armour Pharmaceutical to the National Hemophilia Foundation?

A. Gee, I have no idea. That's not something I would have been involved in or aware of at that time. I really can't answer.

Q. Could you estimate how much money had been given by that company to the Foundation?

A. It would be a very vague guess, and it would have to do with how much money it would cost to run a symposium or something of that sort. I don't know. I wasn't involved in

that aspect of the organization.

Q. Okay. You say it would be related to running a symposium or whatever. When the contributions were made by the manufacturers were they made for a specific purpose, put on an exhibit or a symposium?"

MR. ALBERT: I wouldn't be able to complete this answer.

MR. BERKMAN: Why don't you read the first part.

BY THE WITNESS:

"A. They often were. I don't know if they --"

MR. BERKMAN: Why don't we continue on Page 45.

BY MR. BERKMAN:

"Q. Doctor, you also said that the patients -- the hemophilia patients themselves also supported the Foundation. Do you mean they made monetary contributions to the Foundation?

A. They generally made their contributions to a local chapter, and the local chapters would then give to the NHF some sizable portion of what they brought in in the course of a year.

Q. I see.

A. I am sure there were some people who made direct

contributions to the NHF, as well.

Q. By what methods or what publications did the National Hemophilia Foundation communicate with hemophilia patients?

A. Quite a few varieties of methods. They communicated through the chapters who regularly sent them a variety of bulletins, publications, pamphlets, manuals, videotapes, et cetera, for use in patient education.

They also disseminated periodic sets of similar materials to the medical profession. They also had a link, several links, with the federal government to be sure that arms of the government were sending out materials to everyone who needed to receive them in the medical profession.

Q. Could you give me an example of what you mean by the Hemophilia Foundation was making sure the government was sending out materials?

A. The Hemophilia Foundation met fairly regularly with individuals at the Office of Maternal and Child Health and suggested a series of symposia or consensus conferences that should be held. They did the same thing with the Bureau of Biologics of the Food and Drud Administration and subsequently the Centers for Disease Control.

Q. Who attends these symposiums or consensus meetings?

A. Usually experts in the field, although the

medical

public at large is invited. There are usually results from such a meeting -- a paper or a pamphlet or a strategy to disseminate the information.

Q. So, there you are talking more about communicating with treaters, not with patients?

A. No. In many cases it involved communicating with patients because there was a joint effort by the Office of Maternal and Child Health and the National Hemophilia Foundation called the Hemophilia Information Exchange to be sure that bulletins were sent regularly both to treaters and patients. There were two parallel series of documents produced, one for treaters and one for patients.

Q. So, in other words, if strategies or papers were developed from these meetings of experts, this information would then flow down to the hemophilia patients through the Hemophilia Information Exchange?

A. That was one route, yes.

Q. What other routes were there?

A. Well, I have already described a bunch of them.

Q. Through chapters, chapter advisories?

A. Yes.

Q. Were there also something called a patient alert?

A. Yes.

Q. What type of publication was that?

A. That was part of the Hemophilia Information Exchange. That was a subsection or subset of the Hemophilia Information Exchange written in clearly understandable lay

language and

intended for patients.

Q. Were the chapter advisories intended for the patients

who read or were they intended for the chapter?

A. Some of each. In each document it would specify who it was intended for and in many cases would encourage the chapter to disseminate it widely to its membership.

Q. What was the purpose of a patient alerted to that publication?

A. There were many purposes. It depends on which one you are talking about.

Q. Was that the one document that went directly to the hemophilia patient?

A. No. Patient alerts direct -- generally did not go directly to a hemophilia patient. They usually went to the chapter or to the treatment center or in most cases both of which or physicians in general. In many cases all three of which were asked to disseminate to the patients to be sure that patients would see these materials.

Q. Did you have any mailing list of all the hemophilia patients in this country?

A. In the strictest sense no one has a mailing list of all the patients with any illness in any country. So, the answer would have to be no. The chapters maintained extensive

mailing lists of people with hemophilia in their regions.

Q. Well, would it be fair to say, then, that the National Hemophilia Foundation did not send out mass mailings to hemophilia patients throughout the country?

A. No, it would not.

LAURA M. BRENNAN, Official Reporter

Q. You did not do that?
A. No. I said it would not be fair to say that.
Q. Under what circumstances was that done?
A. Well, it was done through the route that I mentioned,
using the --
Q. The chapter?
A. -- the chapter network.
Q. I understand that. You would send things to the chapters and say, 'Disseminate this to the hemophilia patients.' My question, is that fair?
A. That's part of the dissemination network, yes.
Q. Were there any mailings directly from the Foundation --
is that in New York?
A. Yes.
Q. -- out of New York from the headquarters to the patients
all over the country? Was that ever done --
A. I am sure --
Q. -- that you know of?
A. I am sure that some numbers of patients from around the
country do appear on the lists of NHF usually by vent of some
special reason.
For example, these may be patients who played major
leadership roles in the chapters or they may be people who

have some other direct ties with the national office. In some cases the NHF maintained lists of patients in the few

areas in the country not covered by local chapter, and so they in effect would become a local chapter for those areas.

There probably were other circumstances as well that would cause them to mail directly, but the majority of the mail that would have been received by the patient would have been received by them indirectly through one of the various variety of sources I have talked about. Now, of course, there are other methods of communication than mail.

Q. Were there any other methods that the National Hemophilia Foundation relied on or used to communicate with hemophilia patients throughout the country?

A. Yes.

Q. What other methods?

A. The media.

Q. How?

A. We regularly held news conferences with national media services to be sure that up-to-date information appeared in the press or that when something appeared in the press that was not complete information or accurate, that we would correct it.

Q. While you were comedical director or medical director

who was responsible for it?

A. Multiple people. The principal person would have been

the executive director of the Foundation and the president of

the organization, as well.

Q. And the president?
A. Yes.
Q. Who was the president in 1983?
A. We were in transition between the presidency of Charles Carmen, currently president of the World Federation of Hemophilia, and Nathan Smith, I believe.
Q. Did you have a director of publicity of the Foundation, if not by that title, someone who held that basic job function?
A. Yes."

MR. BERKMAN: Your Honor, we are coming to a slightly new part and I thought it might be a good time.

THE COURT: That will be a good spot.

Well, we now have a break of a few days. However, counsel tell me that it looks like we are going to finish the evidence in the case next week; that is, Monday, Tuesday and Wednesday of next week, which means that we can come back and apparently finish up the case before Thanksgiving. In other words, we will have the following Monday, Tuesday and Wednesday for final arguments and instructions and your deliberations. That's the way it looks now. We are moving

along fairly well.

Have a good about a five-day break. So, I will see you at 9:30 on Monday the 15th; 9:30, Monday the 15th.

(Jury out.)

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THE COURT: What do we have left now?

MR. BERKMAN: Only to finish this, which I figure is another 45 minutes at most, and call Mr. Young from Baxter, who may only take 45 minutes or an hour for cross-examination.

THE COURT: Then that's the defense evidence?

MR. BERKMAN: That's it.

MR. BARR: Your Honor, I have some offers of proof and matters like that to make sometime. Can I have an opportunity to do that?

THE COURT: Yes, not now.

MR. BARR: Sometime.

THE COURT: Without binding you in any way, Mr. Ring, what would be your hunch as to what rebuttal might take, not what it's going to be necessarily but how long might it take?

MR. RING: At worst, Tuesday afternoon based on what he says, at worst. Maybe we can finish Monday.

THE COURT: Okay. Then I would think we would spend Wednesday on instructions, clean up maybe the balance of Tuesday for any offers or motions or anything of that

kind, and then Wednesday for instructions. And you will have -- well, let's see.

MR. BARR: Your Honor, we have no idea what rebuttal will be, but the Court will allow surrebuttal, I

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take it.

THE COURT: Yes, sure.

I was just thinking. Mr. Berkman suggested you get the jury instructions to me on Monday. To the extent that that would be doable, let's do that. Maybe we can even get that settled before the 18th.

MR. BERKMAN: Right, exactly.

THE COURT: At least before I leave.

MR. BERKMAN: Yes.

THE COURT: All right.

MR. BERKMAN: That would be helpful in preparing our closings.

THE COURT: Right.

I have decided pretty much, by the way, on this question of the standard of care, and I tell you this because it may be helpful in drafting instructions. You can submit whatever you want, but in terms of what I am going to give, you might want to give some thought to what I am about to say.

I have felt right along that the standard we are talking about is reasonable care under the circumstances.

Whether particular members of the industry or the industry as a whole were doing certain things will be something for the jury to consider on the question of what reasonable care was, but it won't be the standard. It won't be controlling.

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I see this case as one where the plaintiff argues that the whole industry was delinquent, and, therefore, to the extent that there is a basis for that argument, it wouldn't do to say that the industry can lift itself by its boot straps and say, "This is what we did. Therefore, we didn't have to do anything more." And there is case authority for that proposition, as you know.

So I haven't drafted it yet, and I just simply tell you this so that maybe you can try your hand at it to get something that you like better than what I might come up with, but what I am going to tell the jury is something along the lines of the IPI instruction on negligence, except instead of using "ordinary care," I'm going to use "reasonable care," the word "reasonable care." And then I'll have a supplemental instruction that will tell them all the things they can or at least give them illustrations of things they can consider in determining whether any of the defendants was negligent. And that will include what people were doing, what people were recommending, what the state of knowledge was and so on, recommendations by governmental agencies, any knowledgeable people.

What I haven't worked out yet, and I think it's going to be the most difficult part of the instructions, is the alternative liability instructions. What I don't know is

whether I should have the jury do a two or three-step analysis

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or not. And I've been turning that over in my mind.

MR. BERKMAN: Your Honor --

THE COURT: You may be able to come up with something useful in that regard.

MR. BERKMAN: May I point out that I believe, and you may consider this and you think about it, I believe the alternative liability is indeed an alternative to negligence when a plaintiff has stipulated there is no way to prove a basic causation issue. Now, it's not when the plaintiff is unable to prove the causation issue tries to prove that it then becomes an alternative liability case.

So I think the Court is going to have to resolve whether it's instructing the jury on negligence or on alternative liability. And I'd also like to know what burden of proof, if any, the Court is expecting the defendants to bear as we put on our case since I really don't know what burden of proof you are holding as the standard of law.

MR. RING: If I may just say they are not alternatives. We have the burden of showing negligence. They have the burden of proving that that negligence and causation, they have to link negligence and causation. That's their burden, is the causation. So it's not that difficult.

MS. GOURLEY: Well, Your Honor, except under Illinois

law, aggravation of injury is a separate and distinct tort.

THE COURT: That, by the way, is something I meant to

mention. I'm glad you raised that. I haven't read the cases that Armour cites in favor of that proposition, but if they indeed hold that the aggravator can only be held for the quantum of aggravation, what in the world would the jury do with that in this case? I mean, what evidence is there that some reinfection or some aggravation at some particular point in time accelerated the process by some identifiable or quantifiable amount? And I'm not asking you for an answer on that.

MR. RING: Okay.

THE COURT: But we've got to tell the jury something. I can't just say, "Tell me who contributed." I think the defendants are entitled to know whether -- well, as a matter of fact, if more than one defendant is found guilty, we'll pretty much know that the jury has decided with the plaintiffs on the aggravation factor, although that does raise an additional question that I've been wondering about, and that is, that if the jury reaches the point where it's now the defendants' burden, each of them, to prove that it was not the proximate cause, and let's say two of them carry that burden and two don't, then the jury could simply find that the defendants have failed to carry the burden, not that one was the initial infector and the other one was the aggravator, but that neither of them carried the necessary burden.

And what has dawned on me without any help from

anybody in the case is that that may be what the Wysocki Court was talking about when they said the holding was limited to the two defendant case, but maybe not, because conceivably even in a two defendant case the jury could come back and say, "Sorry, Defendant A and Defendant B, neither of you has carried the burden, and, therefore, you're both guilty."

So I invite you to think about these things. They are not easy. And I'm sure I will not be the final, the final word on this, nor will you.

MR. BERKMAN: Again, may I be rude and try to catch an airplane?

THE COURT: Sure, by all means, by all means. Court is in recess.

MS. KIMBALL: Thank you, Your Honor.

(Adjournment 5:40 p.m. until 9:30, November 15, 1993.)

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