

# Exhibit 589

IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF NORTH CAROLINA  
SOUTHERN DISTRICT

-----x

IN RE: )  
CAMP LEJEUNE WATER LITIGATION )

This Document Relates to: ) Case Nos.:

ALL CASES ) 7:23-CV-897

DAVID DOWNS ) 7:23-CV-01145-BO

DAVID WILLIAM FANCHER ) 7:23-CV-00275-BO-BM

ALLAN WAYNE HOWARD ) 7:23-CV-00490-BO

FRANK W. MOUSSER ) 7:23-CV-00667-BO-RN

JACQUELINE JORDAN TUKES ) 7:23-CV-01553-BO-BM

-----x

VIDEOTAPED DEPOSITION of JOSEPH DEL PIZZO,  
M.D. taken by the Defendant, pursuant to Notice, held at  
Veritext Office Times Square Tower, 155 W 41st Street  
New York, NY 10018, on July 30, 2025, at 9:48 a.m.,  
before a Notary Public of the State of New York.

\*\*\*\*\*

A P P E A R A N C E S:

MANDELL, BOISCLAIR & MANDELL LTD.  
Attorneys for Plaintiff  
One Park Row, 2nd Floor  
Providence, Rhode Island 02903

BY: ZACHARY MANDELL, ESQ.  
zmandell@mbmjustice.com  
MARK MANDELL, ESQ via Zoom

U.S. DEPARTMENT OF JUSTICE  
Attorneys for Defendant  
1100 L Street NW  
Washington, D.C. 20005

BY: ERICK MARQUINA, ESQ.  
erick.marquina@usdoj.gov  
JESSICA ANS, ESQ.  
Jessica.L.Ans@usdoj.gov

ALSO PRESENT:

INGRID RODRIGUEZ- Videographer

|    |                  |                                  |      |
|----|------------------|----------------------------------|------|
| 1  |                  | INDEX                            |      |
| 2  | WITNESS          | EXAMINATION BY                   | PAGE |
|    | Joseph Del Pizzo | Erick Marquina                   | 6    |
| 3  | Joseph Del Pizzo | Zachary Mandell                  | 133  |
| 4  |                  | EXHIBITS                         |      |
|    | DEL PIZZO        | DESCRIPTION                      | PAGE |
| 5  | 1                | Plaintiffs' Designation and      | 14   |
|    |                  | Disclosure of Phase Iii Expert   |      |
| 6  |                  | Witnesses With Respect to Kidney |      |
|    |                  | Cancer Materials Considered List |      |
| 7  |                  | For Joseph Del Pizzo's Report on |      |
|    |                  | Plaintiff Allan W. Howard        |      |
| 8  | 2                | Plaintiffs' Designation and      | 14   |
|    |                  | Disclosure of Phase Iii Expert   |      |
| 9  |                  | Witnesses With Respect to Kidney |      |
|    |                  | Cancer Materials Considered For  |      |
| 10 |                  | Joseph Del Pizzo's Report on     |      |
|    |                  | Plaintiff Frank W. Mousser       |      |
| 11 | 3                | Plaintiffs' Designation and      | 14   |
|    |                  | Disclosure of Phase Iii Expert   |      |
| 12 |                  | Witnesses With Respect to Kidney |      |
|    |                  | Cancer Materials Considered For  |      |
| 13 |                  | Joseph Del Pizzo's Report on     |      |
|    |                  | Plaintiff David W. Fancher       |      |
| 14 | 4                | Dr. Joseph Del Pizzo -           | 14   |
|    |                  | Supplemental Materials           |      |
| 15 |                  | Considered List                  |      |
|    | 5                | Dr. Joseph Del Pizzo - Second    | 15   |
| 16 |                  | Supplemental Materials           |      |
|    |                  | Considered List                  |      |
| 17 | 6                | Dr. Joseph Del Pizzo - Third     | 15   |
|    |                  | Supplemental Materials           |      |
| 18 |                  | Considered List                  |      |
|    | 7                | Joseph Del Pizzo's Statement of  | 17   |
| 19 |                  | Compensation                     |      |
|    | 8                | Expert_DELPIZZO_0000000001-008   | 18   |
| 20 | 9                | Joseph Del Pizzo's Curriculum    | 22   |
|    |                  | Vitae                            |      |
| 21 | 10               | Specific Causation Expert        | 31   |
|    |                  | Report: Allan Wayne Howard       |      |
| 22 | 11               | Specific Causation Expert        | 31   |
|    |                  | Report: Frank W. Mousser         |      |
| 23 | 12               | Specific Causation Expert        | 31   |
|    |                  | Report: David Fancher            |      |
| 24 | 13               | Specific Causation Expert        | 32   |
|    |                  | Supplemental Report: Frank W.    |      |
| 25 |                  | Mousser                          |      |

|   |    |  |     |
|---|----|--|-----|
| 1 | 14 | Specific Causation Expert<br>Supplemental Report   | 32  |
| 2 | 15 | Errata - Expert Reports of<br>Joseph J. Del Pizzo, M.D.  | 32  |
| 3 | 16 | Cumulative Exposure Expert<br>Report Kelly a Reynolds, MSPH,<br>4 PhD  | 62  |
| 5 | 17 | Article Entitled Validation of<br>Risk Factors For Recurrence of<br>Renal Cell Carcinoma: Results<br>6 From a Large Single-Institution<br>Series | 86  |
| 7 | 18 | Deposition Transcript in the<br>Matter of Gary Silberman V.<br>8 Joseph Del Pizzo, Et Al.  | 131 |
| 9 |    |  |     |

(Exhibits retained by Reporter.)

10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

1 THE VIDEOGRAPHER: Stand by, please.  
2 We are now on the record. My name is Ingrid  
3 Rodriguez. I'm a videographer from Golkow  
4 Litigation Services. Today's date is July 30,  
5 2025. The time is 9:48 a.m. This video  
6 deposition is being held at the offices of  
7 Veritext Legal Solutions, New York, New York,  
8 in the matter of In Re: Camp Lejeune Water  
9 Litigation, in the United States District Court  
10 for the Eastern District of North Carolina.  
11 The deponent is Dr. Joseph Del Pizzo.

12 Would counsel please state your  
13 appearances for the record.

14 MR. MARQUINA: Erick Marquina for the  
15 United States.

16 MS. ANS: Jessica Ans for the United  
17 States.

18 MR. MANDELL: Zachary Mandell for  
19 Plaintiff's leadership group.

20 THE VIDEOGRAPHER: The court reporter  
21 is Brooke Perry and will now swear in the  
22 witness.

23 J O S E P H D E L P I Z Z O, the witness herein,  
24 having been first duly sworn by a Notary Public of the  
25 State of New York, was examined and testified as

1 follows:

2 THE REPORTER: Please state your name  
3 for the record.

4 THE WITNESS: Joseph Del Pizzo.

5 THE REPORTER: Please state your  
6 address for the record.

7 THE WITNESS: 525 East 68th Street,  
8 Starr Pavilion, Room 946, New York, NY 10065.

9 EXAMINATION BY

10 MR. MARQUINA:

11 Q. Good morning, Doctor.

12 A. Good morning.

13 Q. My name is Erick Marquina. I'm an attorney  
14 with the United States Department of Justice. I  
15 represent the United States in the Camp Lejeune Water  
16 Litigation, which is pending in the Eastern District of  
17 North Carolina. Do you understand that?

18 A. Yes.

19 Q. I'm going to go through a few ground rules. I  
20 understand that you've been deposed before, correct?

21 A. Yes.

22 Q. So a lot of this is probably going to sound  
23 familiar to you, but bear with me as I go through.

24 A. Yes.

25 Q. The purpose of our time today for this

1 deposition is to understand the opinions you are  
2 offering in this case and how you came to those  
3 opinions. Do you understand?

4 A. Yes.

5 Q. To do that, I'm going to ask you some  
6 questions. All I ask of you is that you answer them to  
7 the best of your ability. Is that fair?

8 A. Yes, it's fair.

9 Q. During this deposition, the court reporter will  
10 transcribe everything we say while we're on the record.  
11 To make sure that everything gets transcribed properly,  
12 I'll ask that you always answer my questions clearly and  
13 verbally. For example, if I ask a yes or no question, I  
14 ask that you respond with a "yes" or a "no," rather than  
15 shaking your head or responding with something  
16 nonverbal, like nah-uh, or something more vague like  
17 that. Is that fair?

18 A. I understand.

19 Q. I ask that -- I ask that you talk at a  
20 reasonable pace, and I will endeavor to do the same, and  
21 if you didn't hear or understand one of my questions,  
22 please ask and I'll go ahead and clarify.

23 If you answer a question, I will assume you  
24 understood it. Is that fair?

25 A. Yes.



1 Q. I will ask that you let me finish asking my  
2 question before you begin answering, and I will in turn  
3 endeavor to let you finish answering a question before I  
4 ask another one. Is that fair?

5 A. That is fair.

6 Q. If you want to take a break, please just let me  
7 know. All I ask is that if there's a question pending  
8 while you want to take a break, just please finish  
9 answering the question before we take that break. Is  
10 that fair?

11 A. Yes.

12 Q. Do you understand that you just took an oath to  
13 tell the truth?

14 A. Yes.

15 Q. Do you understand that this is the same oath  
16 you would take in a court subject to the same penalties  
17 for perjury?

18 A. Yes.

19 Q. Is there any reason why you would be unable to  
20 give your most truthful, accurate and complete testimony  
21 today?

22 A. No.

23 Q. If you need to correct an answer during this  
24 deposition, you will do so, fair?

25 A. Yes.

1 Q. You understand that you have the opportunity to  
2 review the transcript and correct any of your responses?

3 A. Yes.

4 Q. Do you understand that if you correct your  
5 responses, the United States may reopen this deposition  
6 and question you at trial about those corrections?

7 MR. MANDELL: I'm going to object, but  
8 you can answer.

9 A. I understand.

10 Q. What, if anything, did you do to prepare for  
11 today's deposition?

12 A. I reviewed my specific causation reports that  
13 had previously been issued. I looked at the deposition  
14 of Dr. Stadler, the deposition of Dr. Josephson, and the  
15 deposition of Dr. Goodman.

16 Other than that, nothing new from what I used  
17 to generate my reports.

18 Q. Did you meet with anyone in preparation for  
19 your deposition today?

20 A. Yes.

21 Q. Who did you meet with?

22 A. Mr. Mandell.

23 Q. Anyone else?

24 A. Mr. Mandell's father was on one of the calls  
25 that we took, but only for a few minutes.

1 Q. Sure. Now, you say one of the calls.

2 How many times did you meet with Mr. Mandell  
3 and his father?

4 A. When I say call, I mean a Zoom call, not an  
5 audio call.

6 Q. Sure.

7 A. Three times in the past week or so.

8 Q. How long -- approximately how long were those  
9 calls?

10 A. 60 to 90 minutes, each one.

11 Q. Were those the only meetings you had in  
12 preparation for your deposition today?

13 A. Yes.

14 Q. Did you ever meet in person to prepare -- with  
15 your attorneys to prepare for today's deposition?

16 A. Nope. Today's the first time I have met  
17 Mr. Mandell in person.

18 Q. Did you review any documents during those  
19 meetings?

20 MR. MANDELL: I'm going to object and  
21 just instruct you not to answer as to any  
22 communications between anybody with the  
23 plaintiff's leadership group and yourself.

24 A. I'm not sure I understand the question.

25 Q. Without telling me what you discussed with your

1 attorneys, did you review any documents during that  
2 meeting -- those meetings -- those three meetings you  
3 mentioned?

4 MR. MANDELL: And I'm going to object  
5 and just say, to the extent that it requires  
6 you to divulge what was talked about during  
7 those meetings, then don't answer that. But if  
8 you reviewed documents in preparation for your  
9 deposition, then you can answer that.

10 A. Which I think I already answered and said what  
11 documents I reviewed.

12 Q. Namely, Dr. Stadler's deposition, the report of  
13 Dr. Goodman, Dr. Josephson's deposition and your  
14 specific causation reports --

15 A. Yes.

16 Q. -- is that right?

17 A. Yes, that's correct.

18 Q. Okay. Have you had any communications with  
19 anyone other than an attorney to prepare for today's  
20 deposition?

21 A. No.

22 Q. How did you first become aware of the Camp  
23 Lejeune Water Litigation?

24 A. I was contacted by an attorney in the fall of  
25 2023. That's how I first heard about it.

1 Q. Do you remember who?

2 A. His name is Patrick Telan, T-E-L-A-N.

3 Q. Is there anyone else you spoke with at that  
4 time when Mr. Telan contacted you?

5 A. Not to my recollection, no.

6 Q. What, if any, information were you provided  
7 during that initial contact?

8 MR. MANDELL: And I'm going to object  
9 and instruct you not to answer any questions  
10 that require you to divulge conversations  
11 between any lawyer, including Mr. Telan, who is  
12 with plaintiff's leadership group, and  
13 yourself, in terms of the case.

14 A. Then, I'm sorry. Repeat the question again.

15 Q. Let me step back.

16 When were you first retained by plaintiff's  
17 leadership group?

18 A. Well, my understanding is that I was retained  
19 when I had my initial conversation with Mr. Telan.

20 Q. How many -- did you have any meetings before  
21 that initial contact with plaintiff's leadership group  
22 before you were retained --

23 A. No.

24 Q. -- or was that the only one?

25 A. That was the only one.

1 Q. Is it fair to say then that you had -- you did  
2 not perform any work regarding this matter before you  
3 were retained?

4 A. That's correct.

5 Q. Did you execute a retainer agreement in this  
6 matter?

7 A. No.

8 Q. And what was the scope of your responsibility  
9 as an expert witness in this case?

10 A. To investigate --

11 MR. MANDELL: Objection --

12 THE WITNESS: Oh, I'm sorry.

13 MR. MANDELL: Just let me get one  
14 second to object.

15 THE WITNESS: Sorry.

16 MR. MANDELL: That's all right.  
17 You can go ahead.

18 THE WITNESS: You objected?

19 MR. MANDELL: Yes.

20 A. To investigate specific causation.

21 Q. And is that regarding Mr. Howard, Mr. Mousser,  
22 and Mr. Fancher?

23 A. Yes.

24 MR. MARQUINA: Can we get tabs 1  
25 through 6.

1 Doctor, I'm going to show you various  
2 documents regarding the materials you  
3 considered in this matter.

4 THE WITNESS: Yes.

5 (Whereupon, Plaintiffs' Designation and  
6 Disclosure of Phase III Expert Witnesses with  
7 Respect to Kidney Cancer Materials Considered  
8 List for Joseph Del Pizzo's Report on Plaintiff  
9 Allan W. Howard was marked as Del Pizzo Exhibit  
10 1, for identification, as of this date.)

11 (Whereupon, Plaintiffs' Designation and  
12 Disclosure of Phase III Expert Witnesses with  
13 Respect to Kidney Cancer Materials Considered  
14 for Joseph Del Pizzo's Report on Plaintiff  
15 Frank W. Mousser was marked as Del Pizzo  
16 Exhibit 2, for identification, as of this  
17 date.)

18 (Whereupon, Plaintiffs' Designation and  
19 Disclosure of Phase III Expert Witnesses with  
20 Respect to Kidney Cancer Materials Considered  
21 for Joseph Del Pizzo's Report on Plaintiff  
22 David W. Fancher was marked as Del Pizzo  
23 Exhibit 3, for identification, as of this  
24 date.)

25 (Whereupon, Dr. Joseph Del Pizzo -

1 Supplemental Materials Considered List was  
2 marked as Del Pizzo Exhibit 4, for  
3 identification, as of this date.)

4 (Whereupon, Dr. Joseph Del Pizzo -  
5 Second Supplemental Materials Considered List  
6 was marked as Del Pizzo Exhibit 5, for  
7 identification, as of this date.)

8 (Whereupon, Dr. Joseph Del Pizzo -  
9 Third Supplemental Materials Considered List  
10 was marked as Del Pizzo Exhibit 6, for  
11 identification, as of this date.)

12 BY MR. MARQUINA:

13 Q. Doctor, Exhibits 1 through 6, which have just  
14 been handed to you, I will represent to you, reflect  
15 your list of materials considered in this case for  
16 Mr. Mousser, Mr. Howard and Mr. Fancher.

17 Is that a fair characterization of the  
18 documents you have before you?

19 A. This is the first time I'm seeing the  
20 documents, but if you tell me that's what they are, then  
21 I understand.

22 Q. Sure. I mean, take some time to review them.

23 A. I guess you would have to ask me a specific  
24 question about it and we'll go from there.

25 Q. Sure. Do these six exhibits reflect a complete



1 and accurate copy of the collective lists of materials  
2 considered -- or materials that you considered in  
3 preparing your reports for this litigation?

4 A. I don't know if I looked at every document  
5 that's on this list. I know what I did consider, and I  
6 don't know if everything on this list is -- I don't know  
7 if there's anything not on this list that I considered,  
8 but I don't think I considered everything on this list.

9 Q. Is it fair to say that if a particular piece of  
10 literature isn't reflected in those six exhibits, that  
11 you did not consider them in preparing your reports?

12 A. I would say that if they're not on my list of  
13 references in my report, then I didn't consider them in  
14 my analysis.

15 Q. Okay. To the best of your knowledge, did you  
16 review any other materials aside from what might be  
17 contained in those six exhibits?

18 MR. MANDELL: Objection.

19 But you can answer.

20 A. Well, again, I don't think I've reviewed  
21 everything that's on these exhibits, but I don't think I  
22 reviewed anything that's not on these exhibits.

23 Q. When did you begin -- let me step back.

24 Have you received any compensation in  
25 connection with your work in this case?

1 A. Yes.

2 Q. And how much do you charge for your services as  
3 an expert witness in this case?

4 A. Same as in any other case, but, do you want me  
5 to go through the list? \$750 an hour for record review.  
6 \$1,000 an hour for deposition. And I believe 6,000 for  
7 half a day and 10,000 for a full day of testimony in  
8 court.

9 MR. MARQUINA: One moment. Can we get  
10 tab 7.

11 (Whereupon, Joseph Del Pizzo's  
12 Statement of Compensation was marked as Del  
13 Pizzo Exhibit 7, for identification, as of this  
14 date.)

15 BY MR. MARQUINA:

16 Q. Doctor, can you take a moment to review the  
17 exhibit you've just been handed.

18 And when you're done, can you let me know what  
19 this document is?

20 A. It's a statement of compensation.

21 Q. And this lists your compensation as \$750 per  
22 hour for work in this matter, correct?

23 A. That's what it says.

24 Q. Does that figure, the \$750, capture all your  
25 rates in this case, or are there rates that aren't

1 captured in this document?

2 MR. MANDELL: Objection.

3 But you can answer.

4 A. Well, like I just said, it doesn't appear to  
5 account for deposition testimony or trial appearance.

6 Q. Is it fair to say then that you have an updated  
7 fee schedule that would more accurately reflects the fee  
8 schedule you're charging in this case?

9 A. Knowing that my fee schedule hasn't updated for  
10 quite some time, so it would include when I was first  
11 retained in this case.

12 MR. MARQUINA: Can we get tab 8.

13 (Whereupon,

14 EXPERT\_DELPIZZO\_0000000001-008 was marked as  
15 Del Pizzo Exhibit 8, for identification, as of  
16 this date.)

17 BY MR. MARQUINA:

18 Q. Doctor, take some time.

19 Do you recognize this document?

20 A. Yes.

21 Q. What is this document?

22 A. These appear to be the invoices that I've sent  
23 to date for my work that I've done to date.

24 Q. Is it accurate to say that these collection of  
25 invoices include seven total invoices?

1 A. Yes, seven.

2 Q. And is it fair to say that these invoices  
3 reflect the work that you performed in this case from  
4 October 18th, 2023 through May 14, 2025?

5 A. Yes.

6 Q. And taking these seven invoices together, is it  
7 fair to say that you've billed approximately \$60,000 for  
8 about 80 hours of work?

9 A. I haven't done the math, but if that's what you  
10 say it adds up to, then I would believe you.

11 Q. Would you have any reason to question that  
12 total?

13 MR. MANDELL: Objection.

14 A. No.

15 Q. Have you done any additional work in this  
16 matter after May 14, 2025?

17 A. The deposition preparation.

18 Q. So is it fair to say that there's still  
19 additional invoices that -- for work -- let me step  
20 back.

21 You've performed additional work that you have  
22 yet to bill for?

23 A. That's correct.

24 Q. Okay. And do you recall approximately how many  
25 additional hours you performed after -- of work you

1 performed after May 14, 2025?

2 A. I don't recall.

3 Q. Does your payment depend on the outcome of this  
4 case?

5 A. No.

6 Q. What percentage of your annual income is earned  
7 from serving as an expert witness?

8 A. I think it varies per year, but I would say  
9 somewhere between 5 and 8 percent.

10 Q. And I think you mentioned before that the fee  
11 schedule you are using in this case is the same as the  
12 fee schedule you are using in other cases?

13 A. Yes.

14 Q. Have you ever served as an expert witness for a  
15 defendant?

16 A. Yes.

17 Q. Do you recall approximately in how many cases,  
18 maybe by percentage?

19 A. I can give you percentage, not number of cases.

20 Q. Please.

21 A. I would say it averages 75 percent defense and  
22 25 percent plaintiff.

23 Q. Prior to this case, have you ever worked as an  
24 expert witness for the law firm Bell Legal Group?

25 A. No.

1 Q. To the best of your knowledge, have you ever  
2 worked as an expert witness for any of the other  
3 plaintiffs' firms involved in Camp Lejeune Water  
4 Litigation?

5 A. I don't know the other firms by name, but to  
6 the best of my knowledge, no.

7 Q. Have you ever worked as an expert witness in a  
8 case involving the United States?

9 A. No.

10 Q. You'd agree that it's important for a physician  
11 testifying as an expert witness to testify only in areas  
12 in which they have appropriate training and recent,  
13 substantive experience and knowledge, right?

14 A. Yes.

15 Q. And you agree that physicians who testify as  
16 expert witnesses should evaluate cases objectively and  
17 provide an independent opinion, right?

18 A. Of course.

19 Q. And physicians who testify as expert witnesses  
20 should ensure that their testimony reflects current  
21 scientific thought and standards of care that have  
22 gained acceptance among peers in the relevant field?

23 A. Yes.

24 Q. You'd agree that it's important for a physician  
25 testifying as an expert witness not to exclude any

1 relevant information from consideration?

2 A. Well, I think there's a limit of how much  
3 information you can sometimes look at, but I think that  
4 all the information that you're looking at and forming  
5 your opinions on should be relevant.

6 Q. And just to clarify, when you say there's a  
7 limit of how much you can look at, what do you mean by  
8 that?

9 MR. MANDELL: Objection.

10 A. I don't mean anything by it as meaning -- I  
11 don't really mean anything by it per se. I mean that  
12 I'm giving an example, and you asked me if I looked at  
13 every single thing on this list. There's obviously a  
14 lot of records here in all these kind of cases, so I  
15 really couldn't look at everything, nor did I think I  
16 had to in order to form my opinions in this case.

17 MR. MARQUINA: Can we pull tab 9?

18 (Whereupon, Joseph Del Pizzo's  
19 Curriculum Vitae was marked as Del Pizzo  
20 Exhibit 9, for identification, as of this  
21 date.)

22 BY MR. MARQUINA:

23 Q. Doctor, do you recognize this document?

24 A. Yes.

25 Q. What is this document?

1 A. It's my curriculum vitae.

2 Q. And who drafted this document?

3 A. Myself.

4 Q. Do you recall when you drafted this document?

5 A. Depends what you mean by "draft." Do you mean  
6 the current draft?

7 Q. Let me step back. I will represent to you that  
8 this is the draft of your CV that the United States  
9 received at the same time of your specific -- your  
10 initial specific causation reports.

11 A. Okay.

12 Q. Do you recall when you drafted that version of  
13 your CV?

14 MR. MANDELL: Objection.

15 But you can answer.

16 A. I would answer that by saying, I don't know the  
17 exact date, but I update my CV occasionally when  
18 something may change or something that I want to add to  
19 it.

20 Q. Is this your most recent draft of your CV?

21 A. It is.

22 Q. Does this document reflect a complete and  
23 accurate representation of your educational and  
24 employment background?

25 A. Yes.



1 Q. Is it fair to say that this document contains  
2 all of your publications from the last 10 years?

3 A. Yes.

4 Q. Is there any information you didn't include in  
5 your CV?

6 A. No.

7 MR. MARQUINA: You can set that aside.

8 Q. Doctor, you're not a lawyer, correct?

9 A. No.

10 Q. You're not an economist?

11 A. No.

12 Q. And you're not an accountant, correct?

13 A. No.

14 Q. You don't hold yourself out as an  
15 epidemiologist, correct?

16 A. No.

17 Q. You don't have a certification in epidemiology,  
18 right?

19 A. No.

20 Q. You have never been a principal investigator  
21 for an epidemiological study, right?

22 A. No.

23 Q. You've never published peer-reviewed literature  
24 on epidemiology, right?

25 A. Well, I think epidemiology is included in some

1           publications that I've been involved with but on a  
2           primary topic of epidemiology, I would agree with what  
3           you're saying.

4           Q.           And you don't hold yourself out as an expert in  
5           risk assessment, correct?

6           A.           No.

7           Q.           Is it fair to say that you have never published  
8           peer-reviewed literature on risk assessment?

9           A.           Yes.

10          Q.          And, Doctor, you don't hold yourself out as an  
11          expert in psychology, correct?

12          A.          No.

13          Q.          You don't have any certifications in  
14          psychology, correct?

15          A.          Correct, I do not.

16          Q.          And so it's fair to say you've never published  
17          peer-reviewed literature on psychology, right?

18          A.          That's fair to say.

19          Q.          Doctor, you are not a toxicologist, correct?

20          A.          No.

21          Q.          You don't have any certifications in  
22          toxicology, right?

23          A.          I do not.

24          Q.          And you've never been a principal investigator  
25          in a toxicologic study, correct?

1 A. That's correct.

2 Q. And is it also fair to say you've never  
3 published peer-reviewed literature on toxicology?

4 A. That's correct.

5 Q. Is it fair to say that have you no degrees in  
6 biochemistry?

7 A. Biochemistry, no, I do not.

8 Q. Is it fair to say you have no degrees in  
9 pharmacology?

10 A. That's fair to say.

11 Q. Is it fair to say you have no degrees in  
12 environmental health?

13 A. I have no degrees in environmental health,  
14 that's true.

15 Q. You have no degrees in occupational medicine,  
16 correct?

17 A. No.

18 Q. Have you ever published peer-reviewed  
19 literature regarding the affects of TCE on cancer?

20 A. No.

21 Q. And just so it's clear on the record, when  
22 we're referring to TCE, is it your understanding that  
23 that refers to trichloroethylene?

24 A. That is my understanding.

25 Q. Have you ever published peer-reviewed

1 literature regarding the affects of PCE on cancer?

2 A. No.

3 Q. And again, for the record, when we talk about  
4 PCE, is it your understanding that that refers to  
5 perchloroethylene?

6 A. Yes.

7 Q. Have you ever published peer-reviewed  
8 literature regarding the effects of vinyl chloride on  
9 cancer?

10 A. No.

11 Q. Have you ever published peer-reviewed  
12 literature regarding the effects of benzene on cancer?

13 A. No.

14 Q. In your practice, as far as you're aware, have  
15 you ever treated individuals with kidney cancer that  
16 were exposed to water at Camp Lejeune?

17 A. Yes.

18 Q. When did you treat these patients?

19 A. I can only give you an estimate of when that  
20 was. But my recollection was one was -- actually, they  
21 were both around the same time, around 2010.

22 Q. Are you aware whether those individuals are  
23 plaintiffs in this litigation?

24 A. As far as I know, they are not.

25 Q. And when you say those two patients had kidney

1 cancer, are we referring to renal cell carcinoma or some  
2 other form of kidney cancer?

3 A. Renal cell carcinoma.

4 Q. Both?

5 A. Yes.

6 Q. Since that time, have you treated any other  
7 individuals who have allegedly been exposed to water at  
8 Camp Lejeune?

9 A. Not to my knowledge.

10 Q. Have you had any communications with  
11 Mr. Howard?

12 A. No.

13 Q. Have you had any communications with  
14 Mr. Howard's treating physicians?

15 A. No.

16 Q. Have you had any communications with  
17 Mr. Mousser?

18 A. No.

19 Q. Have you had any communications with  
20 Mr. Mousser's treating physicians?

21 A. No.

22 Q. Have you had any communications with  
23 Mr. Fancher?

24 A. No.

25 Q. Have you had any communications with any of

1 Mr. -- or Mr. Fancher's treating physicians?

2 A. No.

3 Q. And as far as you're aware, have you had any  
4 communications with any of the plaintiffs in the Camp  
5 Lejeune Water Litigation?

6 A. I have not.

7 Q. Have you ever been asked to write a letter to  
8 the Department of Veterans Affairs related to the  
9 benefits for Camp Lejeune water exposures?

10 A. No.

11 Q. Does your practice require training on the  
12 potential health risks associated with TCE exposure?

13 MR. MANDELL: Objection.

14 You can answer.

15 A. I'm not sure I understand the question.

16 Q. In your training as a doctor, have you had any  
17 training regarding TCE exposure and its effects on  
18 cancer?

19 MR. MANDELL: Objection.

20 You can answer.

21 A. Well, I think when you're training, you learn  
22 about risk factors for cancer, but I don't know if I've  
23 had specific training on that compound for -- as a risk  
24 factor for cancer.

25 Q. Sure. And same question regarding PCE. Have

1           you had any training as a physician regarding PCE  
2           exposure and its effects on cancer?

3                       MR. MANDELL:  Objection.

4           A.           Same answer.

5                       Sorry.

6                       Same answer as the previous answer.

7           Q.           Same question regarding vinyl chloride.  Have  
8           you had any training as a doctor regarding the effects  
9           of vinyl chloride exposure and cancer?

10                      MR. MANDELL:  Objection.

11          A.           Other than -- other than factoring risk factors  
12          into differential diagnoses and giving those  
13          differential diagnoses -- you know, weighing the  
14          factors, not specifically.

15          Q.           And is it fair to say the answer is the same  
16          for treating regarding benzene exposure?

17                      MR. MANDELL:  Objection.

18          A.           It is.

19          Q.           Other than in this case, have you offered an  
20          expert opinion in a case involving toxic exposures?

21          A.           I have not.

22          Q.           Other than in this case, have you offered an  
23          expert opinion on the etiology of kidney cancer?

24          A.           On the etiology of kidney cancer?

25          Q.           Yes.

1 A. No, not to my recollection.

2 Q. And when we refer to kidney cancer, is it fair  
3 to say that that includes a universe that includes renal  
4 cell carcinoma and UTUC?

5 A. Yes.

6 Q. Have you ever been subject to any disciplinary  
7 action or censored by any licensing body?

8 A. No.

9 Q. Have you ever been subject to any disciplinary  
10 action by any court or tribunal?

11 A. No.

12 MR. MARQUINA: Let's get tabs 10  
13 through 15. This will be another slew of  
14 exhibits.

15 (Whereupon, the Specific Causation  
16 Expert Report: Allan Wayne Howard was marked  
17 as Del Pizzo Exhibit 10, for identification, as  
18 of this date.)

19 (Whereupon, the Specific Causation  
20 Expert Report: Frank W. Mousser was marked as  
21 Del Pizzo Exhibit 11, for identification, as of  
22 this date.)

23 (Whereupon, the Specific Causation  
24 Expert Report: David Fancher was marked as Del  
25 Pizzo Exhibit 12, for identification, as of



1                   this date.)

2                   (Whereupon, Specific Causation Expert  
3                   Supplemental Report: Frank W. Mousser was  
4                   marked as Del Pizzo Exhibit 13, for  
5                   identification, as of this date.)

6                   (Whereupon, the Specific Causation  
7                   expert Supplemental Report was marked as Del  
8                   Pizzo Exhibit 14, for identification, as of  
9                   this date.)

10                  (Whereupon, the Errata - Expert Reports  
11                  of Joseph J. Del Pizzo, M.D. was marked as Del  
12                  Pizzo Exhibit 15, for identification, as of  
13                  this date.)

14                  BY MR. MARQUINA:

15                  Q.       Thank you for your patience, Doctor.

16                         Starting with Exhibit 10, what is this  
17                  document?

18                  A.       This is my draft a -- or this is my specific  
19                  causation expert report on Mr. Allan Wayne Howard.

20                  Q.       And going to Exhibit 11, what is that document?

21                  A.       This is my specific causation expert report on  
22                  Mr. Frank Mousser.

23                  Q.       Going to Exhibit 12, what is that document?

24                  A.       It's my specific causation expert report on  
25                  Mr. David Fancher.

1 Q. And going to Exhibit 14, what is that document?

2 A. That is a supplemental report on the patient  
3 Frank Mousser. We had updated his -- recently updated  
4 his medical history.

5 MR. MANDELL: I think you had said  
6 Exhibit 14.

7 MR. MARQUINA: Yeah, that's my mistake.

8 MR. MANDELL: That's okay.

9 MR. MARQUINA: I meant Exhibit 13.

10 BY MR. MARQUINA:

11 Q. And now to the real Exhibit 14?

12 A. This is a supplemental report that I drafted  
13 after reading Dr. Stadler's specific causation expert  
14 report.

15 Q. Is Exhibit 14 fairly characterized as your  
16 rebuttal report?

17 A. Yes.

18 Q. And Exhibit 15, do you recognize this document?

19 A. I do. This is the -- this is an errata sheet  
20 regarding my expert reports.

21 Q. Okay. So those documents you have, Exhibits 10  
22 through 15, do these reflect all the opinions that you  
23 have formed in this case regarding the three plaintiffs,  
24 Mr. Mousser, Mr. Howard, and Mr. Fancher?

25 A. Yes.

1 Q. Do you intend on offering any additional  
2 opinions in this case --

3 MR. MANDELL: Objection.

4 Q. -- that are not contained in those reports?

5 MR. MANDELL: Objection.

6 You can answer.

7 A. No.

8 MR. MARQUINA: You can set all those  
9 aside and -- but please hang onto Mr. Howard's  
10 report, Exhibit 10.

11 BY MR. MARQUINA:

12 Q. If you'll turn to page one on your report  
13 regarding Mr. Howard.

14 A. Yes.

15 Q. Where it says "Causation Standard," it states:

16 "The statute at issue in this case  
17 states that there are two ways to meet the  
18 causation burden."

19 Is that an accurate reading?

20 A. Yes.

21 Q. And is the statute you're referring to the Camp  
22 Lejeune Justice Act?

23 A. Yes.

24 Q. So is it therefore fair to say that you  
25 reviewed the Camp Lejeune Justice Act in preparing your

1 reports?

2 A. I looked at the statute in order to identify  
3 what the causation burden was in this case.

4 Q. If we continue to look at page 1, your report  
5 quotes language from the Camp Lejeune Justice Act,  
6 right?

7 A. Yes.

8 Q. And specifically, your report states that the  
9 Camp Lejeune Justice Act includes two burdens of proof,  
10 including sufficient to conclude that a causal  
11 relationship exists or sufficient to conclude a causal  
12 relationship is as least as likely as not.

13 Is that a fair reading?

14 A. Yes.

15 Q. And if we turn to page 2 on your report  
16 regarding Mr. Howard, at the top it states -- it states  
17 that:

18 "These standards for causation are  
19 defined in science and medicine as either  
20 sufficient evidence or equipoise and above  
21 evidence."

22 Right?

23 A. That's correct.

24 Q. You then cite the ATSDR's 2017 assessment of  
25 the evidence in that same paragraph. Is that fair?

1 A. Yes.

2 Q. And if we go down on page 2 of your report for  
3 Mr. Howard, your report goes onto include quoted  
4 language from that ATSDR 2017 assessment regarding what  
5 is sufficient evidence for causation and equipoise and  
6 above evidence for causation. Is that fair?

7 A. Yes.

8 Q. Is it your understanding that the definition of  
9 sufficient evidence under the CLJA, that is the Camp  
10 Lejeune Justice Act, is based on the definition for  
11 sufficient evidence in the ATSDR's 2017 assessment?

12 MR. MANDELL: Objection.

13 A. Ask the question again, sorry.

14 Q. Sure. So we just went over two different  
15 burdens of proof, that is sufficient and -- sufficient  
16 to conclude that a causal relationship exists and  
17 sufficient to conclude a causal relationship is as least  
18 as likely as not.

19 So starting with sufficient evidence, is it  
20 your understanding that the phrase sufficient evidence  
21 corresponds with the same definition of sufficient  
22 evidence in the ATSDR 2017 assessment?

23 MR. MANDELL: Objection.

24 A. I think it's coming from, again, that Camp  
25 Lejeune Justice Act of what the burden of proof is for

1 causation. And then the ATSDR used those parameters.

2 Q. Is it -- are you using the ATSDR's parameters  
3 to guide your understanding of the Camp Lejeune Justice  
4 Act's burden of proof?

5 MR. MANDELL: Objection.

6 A. Yes.

7 Q. So, for example, where it says equipoise and  
8 above evidence for causation, is it your understanding  
9 that the ATSDR's definition for equipoise and above  
10 evidence is the same as the Camp Lejeune Justice Act's  
11 definition for as likely as not?

12 MR. MANDELL: Objection.

13 A. That's my understanding, yes.

14 Q. Okay. Are there any other documents aside from  
15 the ATSDR's 2017 assessment that you reviewed to inform  
16 your understanding of the Camp Lejeune Justice Act?

17 A. Nothing else specific, no.

18 Q. And is it fair to say you included this same  
19 language in your report -- let me step back.

20 The language that we've been covering regarding  
21 the section Causation Standard, it's fair to say that  
22 you included that same language in your initial reports  
23 on Mr. Mousser and Mr. Fancher as well, right?

24 A. Yes.

25 Q. And is it fair to say that the parameters from

1 the ATSDR's 2017 assessment were applied the same way in  
2 your reports from Mr. Howard, Mr. Mousser and  
3 Mr. Fancher?

4 MR. MANDELL: Objection. But you can  
5 answer.

6 A. In that the -- what the evidence and what was  
7 necessary for causation in this case, yes.

8 Q. Did you do any independent research on the Camp  
9 Lejeune Justice Act in preparing your reports?

10 A. No.

11 Q. Did you independently research how the phrase  
12 "as likely as not" is used in other medical contexts?

13 A. No.

14 Q. Have you peer-reviewed -- excuse me.

15 Have you peer-reviewed literature that applies  
16 in as-likely-as-not standard?

17 A. I would say yes.

18 Q. What is that literature?

19 A. I can give you general topics, not the specific  
20 peer-reviewed -- in the bibliography. But, you know, in  
21 my practice, something that, I think, fits the same  
22 methodology as as likely as not would be when I started  
23 my practice, I started kind of at the infancy of  
24 minimally invasive surgery for kidney oncology, kidney  
25 cancer cases.

1           So we had an operation of open surgery that had  
2           specific results in terms of oncologic efficacy. And  
3           then we started to introduce minimally invasive surgery  
4           for that same effect of oncologic efficacy.

5           And obviously we wouldn't be able do that if we  
6           didn't have equivalent efficacy in terms of oncology  
7           control. So they're equivalent outcomes. So that's an  
8           example in clinical practice how we use that minimally  
9           invasive surgery would be as likely as not to be as  
10          efficacious as open surgery. Because we wouldn't  
11          transition to that new surgery unless we knew that.

12          And that goes through all the random -- the  
13          random trials that we've done looking at those two  
14          techniques where we did perspective randomized trials on  
15          our patients.

16          Q.       And does that experience inform your  
17          understanding of how you're applying the causation  
18          standard from -- of the Camp Lejeune Justice Act in  
19          these cases?

20          A.       Well, I would just say that it's a way that  
21          I've had experience with as likely as not in my  
22          practice.

23          Q.       Does it at all give you -- do those experiences  
24          at all guide how you're forming your opinions in these  
25          cases?



1           A.           Well, I think one is a legal standard, a legal  
2           definition, and one is a clinical event that we're  
3           talking about. So I don't think you can compare it  
4           directly that way, but I would say that my clinical  
5           practice, my education, my training, my experience, you  
6           know, gives me the tools to be able to apply this  
7           standard in this case.

8           Q.           Have you ever published literature that uses an  
9           as-likely-as-not standard?

10          A.           I think what I just answered.

11          Q.           I initially asked if you had a hand in  
12          peer-reviewing literature. This is now the flip side.

13                   Have you yourself published such literature?

14          A.           Oh, I misunderstood your first question. What  
15          I just talked about was things in my bibliography or  
16          things that I've published about those two techniques of  
17          different types of kidney oncology surgery.

18          Q.           Okay. So just so the record is clear, your  
19          initial answer to the question I asked before my last  
20          one was in reference to literature that you yourself  
21          have published?

22          A.           Yes. My last answer answered your current  
23          question.

24          Q.           So going back to the initial question I asked  
25          then, have you yourself ever peer-reviewed literature

1           that uses that standard, the as-likely-as-not standard?

2           A.           I would say yes in the same scenario.   Where  
3           other people would write literature about kidney  
4           oncology and minimally invasive surgery and new  
5           techniques and things like that, and I think it's the  
6           same methodology as the as-likely-as-not standard.

7                       And I've been a reviewer for The Journal of  
8           Urology and the Journal of Endourology throughout my  
9           career where I've peer-reviewed the same type of  
10          publications that I've done, so I would say the answer  
11          to your question is yes.

12          Q.           Do you recall whether those publications used  
13          the same phrase "as likely as not"?

14                       MR. MANDELL:   Objection.

15          A.           I don't recall specifically, but like I said,  
16          as likely as not is, in a way, a legal term that we're  
17          talking about here, and we're talking about a clinical  
18          situation.

19          Q.           You hold your opinions to a reasonable degree  
20          of medical and scientific certainty, right?

21          A.           I do.

22          Q.           How do you define a "reasonable degree of  
23          medical and scientific certainty"?

24          A.           Well, first, like you said, all my opinions are  
25          to -- in this case are to a reasonable degree of

1 scientific certainty, and I think that, to me, that  
2 means that the sufficiency of the evidence is  
3 legitimate, so my opinions are grounded in legitimate  
4 and appropriate amount of evidence.

5 You can have an opinion within a reasonable  
6 degree of medical certainty that is as likely as not,  
7 and you can have the same opinion that is more likely  
8 than not. So what I'm trying to say is I don't think it  
9 affects -- the standard here, in this case, doesn't  
10 affect my ability to give an opinion that is within a  
11 reasonable degree of medical and scientific certainty.

12 Q. Have you ever used the phrase "reasonable  
13 degree of medical probability" in your academic  
14 publications?

15 A. I don't know if I've used that exact phrase.

16 Q. Have you ever used that phrase outside the  
17 context of litigation?

18 A. Maybe not that exact phrase, but when you --  
19 you know, when I speak to patients and give them  
20 opinions about their healthcare and their oncology and  
21 what treatment we're going to -- options we have for  
22 them, I think I use it indirectly. But I don't know if  
23 I use it in my everyday vernacular when I'm speaking to  
24 patients.

25 Q. How, if at all, does the as-likely-as-not

1 standard from the Camp Lejeune Justice Act affect your  
2 application of the phrase "reasonable degree of medical  
3 and scientific certainty"?

4 MR. MANDELL: Objection. Asked and  
5 answered.

6 But you can --

7 A. Yeah, I think I just said it. It doesn't  
8 affect it.

9 Q. So, Doctor, I'd like to pivot a little bit.  
10 You reviewed the general causation report of  
11 Dr. Benjamin Hatten, correct?

12 A. I did.

13 Q. And you also reviewed the general causation  
14 report of Dr. Steven Bird, correct?

15 A. Yes.

16 Q. And based on your understanding, Dr. Hatten is  
17 both a toxicologist and an epidemiologist, right?

18 A. That's my recollection, yes.

19 Q. And Dr. Bird is a toxicologist, correct?

20 A. Yes.

21 Q. And in reaching your conclusions about the  
22 three plaintiffs in this case, you relied on the general  
23 causation reports of Dr. -- of Drs. Hatten and Dr. Bird,  
24 right?

25 A. I did.

1 Q. And specifically, you relied on reports of  
2 Dr. Hatten and Dr. Bird in your discussions about kidney  
3 cancer risks associated with exposure to TCE, PCE,  
4 benzene, and vinyl chloride, right?

5 A. Dr. Hatten discussed the four chemicals.  
6 Dr. Bird had more information, I think, on TCE and PCE,  
7 specifically. But the general answer to your question  
8 is yes.

9 Q. And is it fair to say that the sections in your  
10 report, just using your table of contents in  
11 Mr. Howard's report by way of example, the sections in  
12 your report discussing the epidemiology and the  
13 toxicology from Drs. Hatten and Bird can be found under  
14 the sections:

15 "Kidney cancer risk associated with  
16 TCE, kidney cancer risk associated with PCE,  
17 VC, and benzene, and impact of TCE, PCE, VC,  
18 and benzene exposure from Camp Lejeune."

19 Is that fair?

20 MR. MANDELL: Objection.

21 A. I don't think it's just limited in those -- the  
22 three sections, but yes, definitely in those three  
23 sections.

24 Q. Sure. But those sections incorporate  
25 discussions that you rely on Drs. Hatten and Bird for,

1 right?

2 A. Yes.

3 Q. You also rely on Dr. Hatten's report for your  
4 opinion that it is at least as likely as not that  
5 urethral -- or urothelial cancers, excuse me, share a  
6 carcinogenic mechanism with kidney cancers, right?

7 A. I don't think I rely on him to tell me that.  
8 It was more about the epidemiology surrounding it in the  
9 literature.

10 Q. Sure. So just to clarify my question, you rely  
11 on Dr. Hatten regarding the epidemiology underlying --  
12 regarding urothelial cancers and -- I'll -- strike that.

13 If we go to page -- or Exhibit 11, your report  
14 on Mr. Mousser. Your discussion regarding the  
15 epidemiology related to UTUC is found on page 9, right?

16 A. Yes, page 9.

17 Q. And is it fair to say that regarding the levels  
18 of the toxins in the water at Camp Lejeune, you relied  
19 on Dr. Hatten's report for the proposition that the body  
20 of literature that directly examines the Camp Lejeune  
21 population exposed to the contaminated water system best  
22 answers the question of what levels of exposures are  
23 associated with kidney cancers?

24 And you can find that quoted language on  
25 page 10 of Mr. Mousser's report.

1 A. No, I know.

2 I agree with that in that I relied on the  
3 reports, I relied on the general causation expert  
4 witnesses to identify relevant literature and what  
5 levels are associated with an increased hazard ratio  
6 with both renal cell carcinoma and urothelial cell  
7 carcinoma, and that in some renal pelvis cancer, or  
8 UTUC, has similar risk profiles when considering the  
9 category of kidney cancer or when analyzed separately.

10 That all being said, I reviewed the literature  
11 myself in order to be able to give weight to it in terms  
12 of my differential of what I thought was the most  
13 relevant literature to apply to the specific plaintiffs,  
14 and also ultimately in making my differential, what  
15 weight to give the Camp Lejeune water exposure relative  
16 to other risk factors that the patients may have.

17 Q. Do you have any opinions that are independent  
18 from either Dr. Hatten or Dr. Bird regarding the  
19 epidemiology underlying the association between kidney  
20 cancer and the toxic chemicals at issue in this case?

21 MR. MANDELL: Objection.

22 You can answer.

23 A. I don't have independent opinions about whether  
24 these compounds caused kidney cancer, no. I relied on  
25 their reports.

1 Q. Do you recall disagreeing with anything in  
2 Dr. Hatten's report?

3 A. I don't.

4 Q. Do you recall disagreeing with anything in  
5 Dr. Bird's report?

6 A. I don't. I would answer that by saying, I  
7 generally agree with their reports. I couldn't tell you  
8 I remember every specific line that they wrote, but in  
9 general, I certainly have no objections and no  
10 independent opinions.

11 MR. MARQUINA: Can we go off the record  
12 for about five minutes?

13 MR. MANDELL: Sure.

14 THE VIDEOGRAPHER: The time right now  
15 is 10:40 a.m. We're off the record.

16 (Whereupon, a short break was taken.)

17 THE VIDEOGRAPHER: The time right now  
18 is 10:45 a.m. We're back on the record.

19 BY MR. MARQUINA:

20 Q. Welcome back, Doctor.

21 A. Thank you.

22 Q. Now that we're back from a break, is there any  
23 testimony you would like to correct?

24 A. No.

25 Q. I'd like to turn back, and earlier you



1 mentioned that you had previously treated patients who  
2 were allegedly exposed to Camp Lejeune water, right?

3 A. Yes.

4 Q. And I wanted to ask, how did you conclude they  
5 were exposed?

6 A. Well, they told me they were at the -- one  
7 patient told me he was at Camp Lejeune.

8 Now, I didn't look into the dates. This was  
9 before my involvement in the case, so I don't know what  
10 dates he was there, and where he lived, and I don't know  
11 any of that information.

12 He just mentioned, like any other patient, when  
13 I go over risk factors, relevant history, he brought it  
14 up. I didn't ask him if he was at Camp Lejeune.

15 And then -- you want to know about each  
16 patient?

17 Q. Please.

18 A. The second patient actually was young, so he  
19 was a child there that was living with someone in his  
20 family, I suppose.

21 Q. Do you recall how young the patient was at the  
22 time you spoke to the patient?

23 A. Each patient or which patient are you referring  
24 to?

25 Q. The second patient specifically, but both.

1 A. Okay. The first --

2 MR. MANDELL: Objection.

3 A. Sorry.

4 The first patient, this was in 2010, and I  
5 believe he was about 50 years old.

6 The second patient was 38 or 40 when he was  
7 diagnosed. Actually, I take that back, he was 35 to 38.  
8 He was in his mid-30s.

9 Q. And at that time, did you conclude that, for  
10 each of these patients at that time, did you conclude  
11 that it was their exposures that caused their kidney  
12 cancers?

13 MR. MANDELL: Objection.

14 A. I don't recall that.

15 Q. Do you recall whether those patients had any  
16 other risk factors associated with kidney cancer?

17 MR. MANDELL: Objection.

18 A. To the best of my recollection, they did not.

19 Q. So in this case, Mr. Howard was diagnosed with  
20 clear cell renal cell carcinoma, right?

21 A. Yes.

22 Q. And your opinion is that Mr. Howard's exposure  
23 to contaminated water at Camp Lejeune caused him to  
24 develop renal cell carcinoma, right?

25 A. My conclusion was that his exposure to the

1 contaminated water was more likely than not to be the  
2 cause.

3 Q. And regarding Mr. Fancher, he was diagnosed  
4 with clear cell renal cell carcinoma, correct?

5 A. Yes.

6 Q. And same with Mr. Fancher, your opinion is that  
7 his exposure to contaminated water at Camp Lejeune, to  
8 use your term, "more likely than not" was -- or excuse  
9 me -- your opinion is that Mr. Fancher's exposure to  
10 contaminated water, more likely than not, caused him to  
11 develop kidney cancer, right?

12 A. More likely than not was the cause of his  
13 kidney cancer specifically.

14 Q. And Mr. Mousser was diagnosed with upper tract  
15 urothelial carcinoma, otherwise known as UTUC, right?

16 A. He was.

17 Q. And your opinion is that Mr. Mousser's exposure  
18 to contaminated water at Camp Lejeune caused him to  
19 develop UTUC, right?

20 A. More likely than not was the cause of his  
21 urothelial cell carcinoma.

22 Q. And just for the record, UTUC has various  
23 names, right? So that includes transitional cell  
24 carcinoma and renal pelvis cancer, right?

25 A. Transitional cell carcinoma means it's a cancer

1 of the transitional cells which line the kidneys, the  
2 ureter and the bladder. So it's a cancer of that cell  
3 type.

4 So it can occur in the renal pelvis, which is  
5 what you just referred to, it can occur in the ureter or  
6 it can occur in the bladder.

7 Q. And when we say UTUC, what's your understanding  
8 of that?

9 A. That specifically means the upper tract  
10 urothelial cell carcinoma, which is the kidney, or renal  
11 pelvis to use your correct term, on the ureter.

12 Q. And Mr. Mousser was later diagnosed with  
13 urothelial cell carcinoma, right?

14 A. Please be more specific with what you mean.

15 Q. So I think it was in -- so he was initially  
16 diagnosed with UTUC. And as reflected in your  
17 supplemental report regarding Mr. Mousser, he was  
18 diagnosed with a later malignant -- a recurrence,  
19 correct?

20 A. Yes.

21 Q. And would that recurrence be another instance  
22 of urothelial cell carcinoma?

23 A. Yes.

24 Q. Would you agree that patients with UTUC should  
25 be assessed prior to surgery for risk of postsurgery

1 chronic kidney disease?

2 MR. MANDELL: Objection.

3 A. I'm not really giving opinions about kidney  
4 disease in this case, but I can answer a general  
5 question, if you want to ask it again.

6 Q. Sure. Well, let me step back.

7 So you're not offering any opinions regarding  
8 Mr. Mousser's chronic kidney disease in this case?

9 A. I am not.

10 Q. Okay. Would you agree with me that UTUC is  
11 histologically similar to bladder tumors?

12 A. Yes, for the reason that we just discussed.

13 Q. And in your report on Mousser, you rely on  
14 Dr. Hatten's conclusion that epidemiologic literature  
15 regarding renal cancers applies to UTUC, right?

16 A. I do agree with that.

17 Q. Is it fair to say then that you did not review  
18 or consider epidemiology specific to bladder cancer in  
19 your causation analysis for Mr. Mousser?

20 A. I did not, because he wasn't diagnosed with  
21 bladder cancer.

22 Q. Do you have independent opinions from  
23 Dr. Hatten regarding the application of epidemiologic  
24 literature concerning renal cell carcinoma to UTUC?

25 MR. MANDELL: Objection.

1           A.           I don't have any independent opinions in that I  
2           relied on his reports for the studies and the legitimacy  
3           of the studies and that conclusion.

4                       That being said, I reviewed the literature to  
5           try to understand it and to give it weight in my overall  
6           differential diagnoses.

7           Q.           And I think the literature concerning UTUC you  
8           cited includes -- I think it's five articles in your  
9           report on Mr. Mousser.

10                      Does that include Zhao, et al., 2005; Pesch, et  
11           al., 2000; Raaschou-Nielsen, et al., 2003; Lynge, et  
12           al., 1997; and Press, et al., 2016?

13           A.           Let me look at my bibliography.

14                       The first four, yes.

15                       What was the last one that you said?

16           Q.           Press, et al.?

17           A.           Oh, yeah, I do reference the Press article,  
18           yes.

19           Q.           Is your analysis of those five articles  
20           independent of the general causation reports you  
21           reviewed in this case?

22                               MR. MANDELL:  Objection.

23           A.           No.

24           Q.           In analyzing epidemiologic literature on an  
25           association, a literature search is a key step, right?

1 A. I agree with that.

2 Q. Would you agree that a search should be crafted  
3 to produce both positive and negative results?

4 A. Yes.

5 Q. And is it fair to say that failing to do so  
6 risks the researcher forming an unbalanced opinion?

7 A. I mean, there's always inherent bias in  
8 everything that all of us do, but I agree with your  
9 general question, yes.

10 Q. And did you perform a literature review in  
11 preparing your reports for this litigation?

12 A. I did not.

13 Q. How did you decide on the literature you  
14 reference -- let me step back.

15 What methodology did you use to determine what  
16 literature to cite in your reports in this case?

17 A. I, again, reviewed and relied upon the general  
18 causation expert reports in order to outline what  
19 literature was relevant and levels in the literature and  
20 things that we've already discussed.

21 And I just listed a few that Dr. Hatten thought  
22 were relevant in my report.

23 Q. So is it therefore fair to say that the -- you  
24 used the general causation reports as guides for the  
25 literature that you reviewed?

1 MR. MANDELL: Objection. But you can  
2 answer.

3 A. I don't know if I'd use the word "guide," but I  
4 would say the same answer I just gave, which I relied  
5 upon them as to the outline of the relevant literature.

6 Q. If you'll go to Exhibit 1 on page 3.

7 A. Referring to my CV again?

8 Q. No. Exhibit 1, should be your list of  
9 materials considered for Mr. Howard.

10 A. Yep, sorry. I have it.

11 Q. Perfect. If you'll go to page 3, and if we go  
12 to paragraphs 14 and 15.

13 And for the record, paragraph 14 reflects Nix  
14 versus Chemours Company FC, and paragraph 15 reflects  
15 Yates versus Ford Motor Company.

16 And is it fair to say that these are judicial  
17 opinions?

18 A. I didn't look at these or use them in my  
19 analysis, so I don't know what they are.

20 Q. Is it your -- do you recall ever reviewing  
21 judicial opinions in this case?

22 A. No.

23 Q. Do you recall whether you have used -- strike  
24 that.

25 Do you recall ever reviewing judicial opinions



1 in your work as an expert witness prior to this case.

2 A. I do not recall that.

3 Q. Do you know why these judicial opinions might  
4 be in your materials considered list?

5 MR. MANDELL: Objection.

6 A. I don't.

7 Q. You can set that aside.

8 Are you aware that -- or excuse me.

9 Are you aware of the National Research Council  
10 of the National Academies of Sciences 2009 report on  
11 drinking water at Camp Lejeune?

12 A. I didn't review that.

13 Q. But were you aware that it existed?

14 A. I know what you're talking about. I don't know  
15 when or how I know it exists.

16 Q. Are you aware that the EPA published a risk  
17 evaluation for trichloroethylene in 2020?

18 A. I'm aware, but didn't use it in my analysis.

19 Q. Are you aware that the EPA published a risk  
20 evaluation for perchloroethylene in 2020?

21 A. Same answer.

22 Q. Are you aware that the EPA published a  
23 toxicology review of trichloroethylene in 2011?

24 A. Again, I think I'm aware of it, but I didn't  
25 use it in my analysis.

1 Q. Are you aware that the EPA published a  
2 toxicology -- excuse me -- published a toxicology review  
3 of tetrachloroethylene in 2012?

4 A. Same answer.

5 Q. And when we're talking about materials you used  
6 in your analysis, is it fair to say we're talking about  
7 all of the reports you've published -- or you've  
8 submitted in this case?

9 A. You mean my specific causation reports?

10 Q. Yes.

11 A. Yes.

12 Q. If we go back to your report on Mr. Howard,  
13 Exhibit 10.

14 A. Yes.

15 Q. If we go to page 3, I believe, you mentioned  
16 that Mr. Howard was exposed to a substantial amount of  
17 the toxins at issue in this case, right?

18 A. What page are you on?

19 Q. Sure. This is page 3 just above the heading  
20 Medical History. The last -- the second to last and the  
21 last sentence.

22 A. I see it now, yes.

23 Q. Yeah.

24 And you also mentioned that Mr. Howard was  
25 exposed for a substantial duration of time, right?

1 A. Yes.

2 Q. You also mentioned that Mr. Howard was exposed  
3 to a substantial intensity of the toxins, right?

4 A. Duration, intensity and frequency, yes.

5 Q. Okay. And that was my next question, that he  
6 was exposed to a substantial frequency.

7 Your reports do not define the term  
8 "substantial," do they?

9 A. Not, directly, no.

10 MR. MANDELL: Just note my objection.

11 Sorry.

12 Q. You do not identify a threshold for when  
13 exposures to the toxins at issue in this case become  
14 substantial, correct?

15 MR. MANDELL: Objection.

16 A. Well, I indirectly do by relying on the Camp  
17 Lejeune water studies and then seeing where the  
18 patient's exposure metrics were and comparing that to  
19 the exposure metrics in the Camp Lejeune water study,  
20 but I don't use the word -- I don't definitively define  
21 threshold in my report.

22 Q. And is it fair to say you do not identify a  
23 threshold amount of exposure to the contaminants at  
24 issue in this case whereby an individual will develop  
25 kidney cancer, right?

1 MR. MANDELL: I'm going to object, but  
2 you can answer.

3 A. Well, again, I'm not giving a general causation  
4 opinion. My opinion is whether these specific  
5 plaintiffs developed kidney cancer based on their  
6 exposure and then put into the Bove 2014 study to see  
7 what their exposure was.

8 That does list thresholds and exposure  
9 categories. I'm not sure if we're talking about the  
10 same thing.

11 Q. Sure. But I guess my question is, in these  
12 reports, you yourself, independent of anything, do not  
13 identify a threshold?

14 A. Oh, sorry, I didn't understand your question.

15 Q. Sure.

16 A. No, I do not.

17 Q. And regarding Bove, you relied on Bove, et al.,  
18 the 2014 A study, to establish classifications for low,  
19 medium and high exposures for those exposed to  
20 contaminated water at Camp Lejeune, right?

21 MR. MANDELL: Objection.

22 A. After relying on the general causation experts  
23 and them opining that it was the most relevant  
24 literature, because we're looking at the population at  
25 risk at the time that they were at risk, I agreed with

1           that assessment, and that's why I subsequently used that  
2           study.

3           Q.           So is it fair to say that the Bove study I just  
4           mentioned is used as a framework in your reports?

5                       MR. MANDELL:  Objection.

6           A.           I don't think I'd use the word framework.  I  
7           mean, I did an independent analysis of each plaintiff in  
8           terms of their specific risk and then used that for the  
9           exposure categories.

10          Q.           And is it fair to say you don't use a  
11          classification system or exposure categories other than  
12          the one referenced in the Bove study?

13                      MR. MANDELL:  Objection.

14          A.           Ask the question more specifically.

15          Q.           Sure.  So we just went through and mentioned  
16          that you looked at the Bove study and used the low,  
17          medium and high exposure categories, all classifications  
18          in that study, in your report, right?

19          A.           Yes.

20          Q.           Is it fair to say that you don't use any other  
21          framework regarding low, medium or high exposures or  
22          thresholds in your studies -- or in your reports?

23                      MR. MANDELL:  Objection.

24          A.           Well, I am looking at duration of exposure and  
25          things like that, but I don't have any independent --

1 other independent ideas of defining the thresholds.  
2 Right, yeah.

3 Q. And you relied on Dr. Reynolds' exposure  
4 calculations in your reports, correct?

5 A. Yes.

6 Q. Is it fair to say that you don't rely on  
7 exposure calculations other than those of Dr. Kelly  
8 Reynolds?

9 A. Yes, that's true.

10 Q. So it's fair to say you did not independently  
11 calculate the amount of toxins to which any of the  
12 plaintiffs were exposed during their time at Camp  
13 Lejeune?

14 A. Correct. I used Kelly Reynolds' calculations.

15 Q. And is it fair to say that you used  
16 Dr. Reynolds' calculations to determine whether an  
17 individual plaintiff that you reviewed fell within one  
18 of the classifications in the Bove study?

19 MR. MANDELL: Objection.

20 A. Can you ask the question again?

21 Q. Sure. So just circling back to the Bove study  
22 and Dr. Reynolds.

23 You took the calculations, let's say from  
24 Mr. Howard, and used those calculations to determine  
25 which classification within the Bove study Mr. Howard

1 fell within, right?

2 A. I used his exposure calculations to plot him  
3 into the exposure metrics in the Bove study.

4 Q. And is it fair to say you did that for  
5 Mr. Mousser and Mr. Fancher?

6 A. Yes.

7 Q. Dr. Reynolds' exposure assessment was based on  
8 the cumulative monthly total contamination exposure for  
9 each of the volatile organic compounds the Marines or  
10 civilian was exposed to based upon the monthly average  
11 micrograms per liter month and the number of days the  
12 Marine was on Camp Lejeune, right?

13 MR. MANDELL: Objection.

14 But you can answer.

15 A. You said a lot in that question.

16 Q. Sure.

17 A. Can you break it down for me.

18 Q. Sure.

19 MR. MARQUINA: Let me do it this way.  
20 Can we get tab 33.

21 (Whereupon, Cumulative Exposure Expert  
22 Report Kelly A Reynolds, MSPH, PhD was marked  
23 as Del Pizzo Exhibit 16, for identification, as  
24 of this date.)

25 MR. MANDELL: What number are we on?

1 THE REPORTER: 16.

2 MR. MANDELL: 16, thanks.

3 BY MR. MARQUINA:

4 Q. So, Doctor, do you recognize this document?

5 A. Yes. This is Kelly Reynolds' cumulative  
6 exposure expert report.

7 Q. And this is the report you relied on, correct?

8 A. Yes.

9 Q. And I'll represent to you that the document  
10 that was just handed to you does not include the various  
11 exposure charts that was included in the report that the  
12 United States received, but is it your understanding  
13 that this is, like, the base report?

14 A. That's my understanding, yes.

15 Q. And take some time to review it, but my  
16 question to you is, Dr. Reynolds' exposure assessment  
17 was based on a cumulative monthly total of exposure,  
18 right, for each of the volatile organic compounds?

19 A. Well, she has a cumulative concentration of the  
20 total concentrations of the compounds that were in the  
21 water -- a total of the average concentrations that were  
22 in the water, each month that the plaintiff -- one of  
23 the plaintiffs was on base. She also has a cumulative  
24 consumption chart which has to do with total number of  
25 micrograms, which is obviously not a concentration but a



1 mass number.

2 Q. And just on the total mass unit, would you  
3 agree that Dr. Reynolds' exposure assessment does not  
4 account for weight?

5 MR. MANDELL: Objection.

6 A. I don't think it accounts for weight, correct.

7 Q. Would you agree that cumulative exposure to a  
8 chemical by itself does not provide full insight into  
9 the risk associated with that exposure?

10 MR. MANDELL: Objection.

11 A. Well, I would say in that it's not taking into  
12 account dermal exposure and inhalation, which are the  
13 methods and modes of exposure that we know these marines  
14 had. So in a way, they are conservative estimates.

15 Does that answer your question?

16 Q. Not quite. But I'll just lock in the answer  
17 for that. You would say that it's fair that  
18 Dr. Reynolds didn't calculate dermal exposure, correct?

19 A. Did not.

20 Q. Did not.

21 A. Correct.

22 Q. And she didn't calculate exposure by  
23 inhalation, correct?

24 A. Correct.

25 Q. But my question was more cumulative exposure to

1 a chemical by itself doesn't give you the full picture  
2 into the risk associated with that exposure, right?

3 MR. MANDELL: Objection.

4 A. In that it's not the only mode of being exposed  
5 to it? I mean, I think you have to take this data and  
6 then again plot it into studies like the -- with the  
7 cumulative concentration, the Bove studies, so you know  
8 what hazard ratio is associated with that cumulative  
9 concentration or cumulative consumption, depending on  
10 what you're comparing it to.

11 Q. Would you agree that the intensity of an  
12 exposure to a chemical is important in determining the  
13 risk associated with that exposure?

14 A. Yes.

15 Q. Would you agree that the duration of exposure  
16 to a chemical is important in determining the risk  
17 associated with that exposure?

18 A. Yes.

19 Q. Would you agree that the frequency of exposure  
20 to a chemical is important in determining the risk  
21 associated with that exposure?

22 A. I do agree.

23 Q. And I think we previously mentioned that  
24 Dr. Reynolds' use of -- Dr. Reynolds' report uses total  
25 mass ingested chemicals in micrograms, right?

1 MR. MANDELL: Objection.

2 A. It includes that and it includes also  
3 cumulative microgram per liter months, so it could be  
4 compared to the Bove studies.

5 Q. Right. Are you aware of whether total mass  
6 ingested is generally accepted in the field of  
7 toxicology?

8 MR. MANDELL: Objection.

9 A. I would say I relied on Dr. Reynolds and the  
10 general causation experts for that.

11 Q. So is it fair to say you have no opinions about  
12 whether Dr. Reynolds' use of total mass as a unit is  
13 accepted in toxicology?

14 MR. MANDELL: Objection.

15 You can answer.

16 A. Well, I'm not a toxicologist, so I wouldn't be  
17 able to quote literature on whether it's accepted or  
18 not, but it was very relevant data for me to form my  
19 opinions.

20 Q. Are you aware of whether any epidemiological  
21 studies apply the same exposure metrics of total mass  
22 that Dr. Reynolds did in her report for this case?

23 A. Yes.

24 Q. And to the best of your knowledge, what are --  
25 what are those studies?

1 A. The Aschengrau study.

2 Q. Are there any others?

3 A. Well, that's the main one I relied on because  
4 it's a water contamination study and it's more analogous  
5 to the Camp Lejeune situation.

6 Q. To the best of your recollection, are there any  
7 other studies other than as the Aschengrau study?

8 A. Well, I'm sure there are, but like I said, I  
9 believe the Aschengrau study was a relevant study that I  
10 used.

11 Q. Are you aware that the EPA's risk assessment  
12 guidelines require that exposures be estimated in oral  
13 doses of milligrams per kilogram day?

14 MR. MANDELL: Objection.

15 Q. Or inhalation doses of microgram per meter  
16 cubed?

17 MR. MANDELL: Objection.

18 A. I'm not aware of it but I didn't use any risk  
19 assessment, things like that, to form my opinions.

20 Q. And using Dr. Reynolds' exposure calculations  
21 for Mr. Howard, you concluded that he fell within the  
22 medium exposure group for each of the individual  
23 chemicals and also the TVOC exposure category in the  
24 Bove 2014 A study, right?

25 A. That's correct.

1 Q. And in using Dr. Reynolds' calculations for  
2 Mr. Fancher, you concluded that he fell within the  
3 medium exposure group for each of the individual  
4 chemicals and the TVOC exposure category in the Bove  
5 2014 A study, right?

6 A. That's correct.

7 Q. You used Dr. Reynolds' calculations to place  
8 Mr. Mousser in the high exposure category for each  
9 individual chemical and the medium exposure category for  
10 the TVOC exposure, right?

11 A. Very high limited medium for the TVOC exposure,  
12 but yes.

13 Q. Do you know whether Dr. Reynolds' used the same  
14 methodology as Dr. Bove to calculate micrograms per  
15 liter months for Marines at Camp Lejeune?

16 A. I would say I'm aware of each of their  
17 methodologies and there are some similarities and some  
18 divergence.

19 Q. Could you describe the similarities?

20 A. Well, they both used an equation where if a  
21 Marine was on base for just a single day, then they  
22 counted down the exposure in terms of the average  
23 concentration of the chemical in the water for that  
24 month. The difference is -- so they both did that.

25 The difference is that, unlike Dr. Bove who

1 basically went from start date to end date, Dr. Reynolds  
2 accounted for time that the Marine was not at the base.

3 Q. And I think you mentioned that both Dr. Bove  
4 and Dr. Reynolds used monthly averages, right?

5 A. Yeah, they took the average concentration of  
6 the toxin for that month.

7 Q. Is it fair -- oh, I'm sorry.

8 A. No, I'm done.

9 Q. Is it fair to say, then, that Dr. Reynolds did  
10 not account for individual fluctuations on any given day  
11 in the chemicals at Camp Lejeune?

12 A. Well, I guess, again, the information she had,  
13 that I know that we worked with, were averages of the  
14 concentration for that day. I don't know if she had  
15 that information to use or not.

16 Q. To the best of your knowledge, is it fair to  
17 say, then, that she did not account for those  
18 fluctuations because she calculated averages?

19 MR. MANDELL: Objection.

20 But you can answer.

21 A. Yes, she used the average concentration in the  
22 water for that month.

23 Q. Are you aware of whether the EPA uses maximum  
24 contaminate levels to evaluate potential risks to human  
25 health?

1 A. Yes, I know what the maximum contaminate level  
2 is, sure.

3 Q. Sure, but are you aware of whether the EPA uses  
4 MCLs to evaluate potential risks to human health?

5 A. Well, I think they have values that they use as  
6 an MCL that is considered to be hazardous, but I didn't  
7 use that in any way really to formulate my opinions in  
8 this case.

9 Q. And just for the record, when you say you  
10 didn't use "that," are you saying you didn't use MCLs in  
11 your opinion?

12 A. I didn't in that that's not what I use in my  
13 opinion. What that did, though, for me, personally, was  
14 it gave me context in terms of the magnitude of the  
15 exposure that these Marines had for those similar  
16 compounds.

17 Q. Are you aware of how the EPA establishes  
18 maximum contaminate levels?

19 A. Not specifically, no.

20 Q. Were you aware that MCLs are designed to be  
21 acceptable daily drinking water concentrations over a  
22 lifetime of exposure?

23 A. That sounds correct to me.

24 Q. Are you aware of the health protective  
25 assumptions that go into determining an MCL?

1 A. No, not specifically.

2 Q. Were you aware that the EPA uses cumulative  
3 dose averaged over a lifetime to evaluate cancer risk?

4 A. Ask the question again, please.

5 Q. Were you aware that the EPA uses cumulative  
6 dose averaged over a lifetime to evaluate cancer risk?

7 A. Again, that sounds like a risk assessment tool  
8 that I didn't use for my analysis.

9 Q. Would you agree that an exposure to drinking  
10 water in concentrations in excess of the MCL does not  
11 necessarily constitute a health risk?

12 A. Well, I would answer it this way: In my  
13 analysis, just because the values that these Marines  
14 were exposed to were above the MCL, that doesn't mean  
15 that I used it for causation, right. It gave me context  
16 to the level that they were exposed to, but that didn't  
17 have anything to do with my independent analysis of  
18 looking at their exposures, seeing where they plot into  
19 the exposure categories in the Bove studies, and then  
20 doing a completely separate differential diagnosis  
21 considering other risk factors for that specific  
22 patient.

23 Q. I want to pivot a little bit. In each of your  
24 initial reports, you evaluated the Bradford Hill  
25 criteria, right?



1           A.           I use -- I'm generally aware of the Bradford  
2           Hill criteria, and I use them in the analysis.

3           Q.           Sure. And by way of example, like in your  
4           report on Mr. Howard on page 3, you state that you  
5           analyzed each of the factors as support for your  
6           conclusion that the plaintiff's kidney cancer was to a  
7           reasonable degree of medical certainty caused by his  
8           exposures to the toxins at Camp Lejeune -- in the water  
9           at Camp Lejeune, right?

10          A.           Yes.

11          Q.           You later state -- and if we go to page 16, go  
12          to page 16, you state:

13                       "The Bradford Hill considerations are  
14                       employed here for a structured analysis to  
15                       determine whether this particular association  
16                       with the plaintiff is causal and specifically  
17                       whether it is as likely as not that this  
18                       exposure was the cause of the plaintiff's  
19                       kidney cancer."

20                       Is that a fair reading?

21          A.           Yes.

22          Q.           Is it fair to say that you're using the  
23          Bradford Hill considerations to establish specific  
24          causation in this case?

25                       MR. MANDELL: Objection.

1           A.           Well, I would say that I did not -- I could  
2           have done the analysis without the Bradford Hill  
3           considerations, but again, like everything else, it  
4           gives me a little bit of context when I'm forming my  
5           opinions.

6           Q.           Have you ever applied the Bradford Hill  
7           analysis in your previous work as an expert witness?

8           A.           I knew what they were before I was retained in  
9           this case, but I can't think of a specific time where I  
10          used them specifically.

11          Q.           Did you rely on Dr. Hatten and Dr. Bird in  
12          your -- in evaluating the Bradford Hill criteria in your  
13          reports?

14          A.           I don't know if I specifically relied on them,  
15          but I know that I relied on their reports very heavily.  
16          And they use -- Dr. Hatten uses the Bradford Hill  
17          analysis for each risk factor, each contaminate and the  
18          water at Camp Lejeune, so I would say I relied on it  
19          that way.

20          Q.           Is any part of your Bradford Hill analysis in  
21          your reports independent from Dr. Hatten's or Dr. Bird's  
22          own analyses?

23                       MR. MANDELL:   Objection.

24                       But you can answer.

25          A.           Not general causation analyses, no.

1 Q. You performed a differential diagnosis to  
2 determine the cause of Mr. Howard's kidney cancer,  
3 right?

4 A. Of course.

5 Q. And you did the same for Mr. Mousser and  
6 Mr. Fancher?

7 A. Yes.

8 Q. Would you agree that differential diagnosis  
9 is -- as we're using the term here, is a process doctors  
10 use to determine or identify the cause of a particular  
11 injury or health condition?

12 A. A differential diagnosis is usually something  
13 that you come to after an extensive evaluation of risk  
14 factors to try to determine what a cause may be.

15 Q. Would you agree that a differential diagnosis  
16 requires ruling in all reasonable potential causes of  
17 injury or health condition?

18 A. I think a differential diagnosis involves  
19 considering all of those things. Sometimes we can't  
20 rule in or rule out things, but you have to consider  
21 them.

22 Q. What do you mean by sometimes you can't rule in  
23 or rule out certain risk factors?

24 A. I mean, I can give you a lot of different  
25 examples, but I mean, you know, some patients have no

1 knowledge of whether they have an exposure to a chemical  
2 over the course of their life, it's not in their  
3 history, so we can't rule that in or rule that out.

4 Q. And I think we touched on this before, but in a  
5 differential diagnosis, after ruling in reasonable  
6 potential causes, would you agree that a differential  
7 diagnosis requires ruling out potential causes until  
8 reaching a cause or causes that cannot be ruled out?

9 Basically --

10 A. I'm sorry. Ask that again.

11 Q. Let me ask it another way.

12 Once you rule in a potential -- reasonable  
13 causes of an injury, the next step is to, by process of  
14 elimination, rule out those potential causes until you  
15 have one that --

16 A. Are you referring to risk or to cause?

17 Q. Cause.

18 A. Okay. Well, it's not the same thing,  
19 obviously. So I think in order to try to determine a  
20 cause, again, that is -- it's not always definitive.  
21 Sometimes it's, like we talked about, more likely than  
22 not or as likely as not.

23 I think that you have to try to rule out to the  
24 best of your ability. But what you really want to do is  
25 give the potential causes weight, how likely or how

1 significant is this as a potential cause.

2 And then you compare them to try to come up  
3 with a definitive answer, or, again, a more likely than  
4 not answer or as likely as not answer. It depends on  
5 what you're trying to do.

6 I think that answers your question.

7 Q. Doctor, just going broadly, what is cancer?

8 A. Cancer is a process where there's a mutation of  
9 cells that causes aquagenesis, which is kind of an  
10 unmitigated, unregulated proliferation of cells.

11 Q. And in your practice, do you offer any  
12 guaranteed outcomes to your patients?

13 A. No.

14 Q. Would you agree with the proposition that  
15 medicine is not an exact science?

16 A. Of course.

17 Q. Would you agree that there are multiple types  
18 of renal cell cancer?

19 A. There are various cell types of renal cell  
20 carcinoma.

21 Q. Would you agree that clear cell is the most  
22 common type of renal cell carcinoma?

23 A. Yes.

24 Q. And papillary is less common?

25 A. Yes.

1 Q. Would you agree that different subtypes of  
2 renal cell carcinoma have distinct clinical  
3 characteristics?

4 A. Different cell types, is what you're asking,  
5 have different clinical characteristics?

6 Q. Subtypes, cell types.

7 A. Well, it's different two things.

8 Q. Sure.

9 A. Because you're going to have subtypes in every  
10 cell type.

11 But I think what you're asking is can clear  
12 cell versus papillary versus chromophobe, which is one  
13 of the other cell types you didn't mention, can those  
14 act differently; yes.

15 Q. Would you agree that different types of renal  
16 cell carcinoma have distinct prognostic significance?

17 A. Yes.

18 Q. In your reports you considered risk factors for  
19 what causes kidney cancer in UTUC, right?

20 A. Yes.

21 Q. And you consider unmodifiable and modifiable  
22 risk factors, correct?

23 A. Yes.

24 Q. How do you define an unmodifiable risk factor?

25 A. Something that the patient can't control, like

1           their age.

2           Q.           And how do you define a modifiable risk factor?

3           A.           Something that can be modified.

4           Q.           And in your reports on Howard and Fancher, you  
5           considered age, race, family history or genetic  
6           syndromes as unmodifiable risk factors for the  
7           development of kidney cancer, right?

8           A.           I think that's correct, but do you mind if I  
9           look at it real quick?

10          Q.           Sure. For Mr. Howard, it would be page 12  
11          through 13, I believe.

12          A.           Yeah, yeah. Thank you.

13                   Age, race, family history and genetic syndrome  
14          are the unmodifiable risk factors.

15          Q.           And in your reports on Howard and Fancher, you  
16          considered tobacco use, obesity, poorly controlled  
17          hypertension, occupational or environmental exposures as  
18          modifiable risk factors, right?

19          A.           Yes, that's correct.

20          Q.           And in your report on Mousser at page 15 -- I  
21          think this is Exhibit 11.

22          A.           I have it.

23          Q.           Yep -- you considered family history or genetic  
24          syndrome as unmodifiable risk factors for the  
25          development of UTUC, right?

1 A. That's correct.

2 Q. And in your report on Mousser, you considered  
3 tobacco use, occupational or environmental exposure,  
4 history of transitional cell carcinoma to bladder,  
5 Balkan Endemic Nephropathy, cancer treating drugs of --  
6 I'm going to butcher this -- cyclophosphamide and  
7 isophosphamide, and excess use of Fenaisitin as  
8 modifiable risk factors for the development of UTUC?

9 A. That was actually a decent job, actually.

10 Q. I appreciate that.

11 A. Cyclophosphamide or isophosphamide are the  
12 cancer chemotherapy drugs and Fenaisitin is a pain  
13 medication that hasn't been sold in the United States in  
14 40 years.

15 Q. Got you. I appreciate you clarifying that. I  
16 tried my best.

17 A. That was pretty good actually.

18 Q. Thank you.

19 And just so the record is clear, why did you  
20 consider different risk factors for renal cell  
21 carcinoma, and UTUC?

22 A. Well, even they're both considered kidney  
23 cancer, there are two different cell types that they  
24 arise from. So there have been risk factors reported  
25 for each, a lot of them are the same, but some of them



1 are different. So I was just trying to be complete.

2 Q. You don't include any opinions about what  
3 percentage of kidney cancers are attributable to any  
4 particular risk, right?

5 MR. MANDELL: Objection.

6 A. Correct.

7 Q. You don't offer any opinions about how much  
8 these risk factors increase the likelihood of developing  
9 kidney cancer, right?

10 MR. MANDELL: Objection.

11 A. Well, I don't give numbers because they're more  
12 general and not specific to certain patients, but I do  
13 not put numbers in there, no.

14 Q. And starting with renal cell carcinoma, how did  
15 you develop the list of risk factors for renal cell  
16 carcinoma?

17 A. Well, I've been treating it for 25 years, so  
18 these are the risk factors that I know about that I  
19 often employ when I'm seeing a patient for the first  
20 time and getting history from them.

21 Q. Were there any guidelines or articles you  
22 consulted in developing this -- the list of risk factors  
23 you used in Howard and Fancher?

24 A. No, no specific guidelines.

25 Q. And is it your understanding that the risk

1 factors you listed for the development of renal cell  
2 carcinoma are best supported by the literature?

3 A. I think they're all supported by the  
4 literature, sure.

5 Q. And same question regarding the list of risk  
6 factors for UTUC. How did you develop that list of risk  
7 factors?

8 A. Same answer.

9 Q. And same question: Were there any guidelines  
10 or articles you consulted in developing your list for  
11 risk factors regarding UTUC?

12 A. No.

13 Q. And same thing: Is it your understanding that  
14 the risk factors you listed for the development of UTUC  
15 are best supported by the literature?

16 A. Yes.

17 If I can just go back a second to the guideline  
18 question --

19 Q. Sure.

20 A. -- just to make it more specific.

21 I'm aware of the guidelines, the American  
22 Neurological Association guidelines, for both of these  
23 disease processes, and I know the risk factors that they  
24 mention in those, I just didn't have to reference it in  
25 making my report because I know it, from, you know,

1 treating the patients for so long.

2 Q. Would you agree that many, if not most,  
3 patients with the risk factors you listed do not develop  
4 kidney cancer?

5 MR. MANDELL: Objection.

6 But you can answer.

7 A. Yes and no. I would say that patients that  
8 have genetic syndromes, they all develop the kidney  
9 cancer. That's what the genetic syndrome is.

10 But the other risk facts that you're referring  
11 to, yeah, not everybody who smokes gets renal cell  
12 carcinoma, not everyone who is obese gets renal cell  
13 carcinoma. Very thin people get renal cell carcinoma.

14 I think that's what you're asking me.

15 Q. Would you agree that many, if not most patients  
16 with kidney cancer have no identifiable risk factors?

17 MR. MANDELL: Objection.

18 A. I would say that the majority of kidney cancer  
19 diagnoses are such where no identifiable risk factor is  
20 found. That being said, some patients don't know their  
21 family history, some patients don't know chemical  
22 exposures, they just have no knowledge of it, so we  
23 don't really know.

24 So I would say yes, but with that caveat.

25 Q. And would you agree that a risk factor does not

1 necessarily mean that a patient will develop kidney  
2 cancer?

3 A. Of course.

4 Q. Would you agree that risk factors may have a  
5 dose-response relationship?

6 A. Yes.

7 Q. Would you agree that the same risk factors for  
8 the development of kidney cancer, which includes UTUC,  
9 affects different individuals differently?

10 A. I don't know if anyone knows the answer to that  
11 question, but I think where -- what percentage, if this  
12 is what you're asking -- what percentage of certain risk  
13 factors may contribute to the actual aquagenesis for  
14 renal cell or transitional cell carcinoma, I don't think  
15 -- people may not know the percentages of that, if  
16 that's what you're asking.

17 Q. And so, for example, a five-pack-a-year smoking  
18 history may increase lung patient's risk of developing  
19 kidney cancer more than it might for a separate patient?

20 A. That's a better way of asking the question,  
21 yeah. Right, I mean, there are lots of people who have  
22 that smoking history and some do develop the cancer and  
23 some don't. So whether there's something else in their  
24 immune system that protects them from that, we don't --  
25 I don't think anyone knows the answer to that question.

1 Q. Would you agree that cancer is the result of  
2 genetic mutations?

3 A. Yes.

4 Q. Would you agree that these mutations can occur  
5 randomly?

6 A. In -- yeah, in some -- in patients it can occur  
7 randomly, yes.

8 Q. And in those patients, would you agree that  
9 these mutations do occur randomly?

10 MR. MANDELL: Objection.

11 A. Well, same answer to the previous question.  
12 Some patients -- and maybe I'm not answering your  
13 question correctly, but -- some patients don't know  
14 their risk factors where they have a family history of  
15 something or an exposure to something, so that wouldn't  
16 have been random, but we don't know what the risk  
17 factors are so it gets categorized as random.

18 Q. Sure. Would you agree that our body frequently  
19 repairs genetic mutations?

20 A. Yes.

21 Q. Would you agree that mutated cells die before  
22 they can proliferate?

23 MR. MANDELL: Objection.

24 A. Mutated cells can die before they proliferate,  
25 but the process of aquagenesis, which begins with the

1 mutation, can happen if the cells are starting to  
2 replicate without any regulation. So it's -- it's not a  
3 clearcut answer. There's a gray area there.

4 Q. So I guess the better -- the better way for me  
5 to phrase it is mutated cells can die before they  
6 proliferate. Is that a better way of asking it?

7 A. Yeah, because you just said is it possible that  
8 some people have a mutation then the body kind of gets  
9 rid of it and you never develop a tumor, yes.

10 Q. Would you agree that some risk factors are more  
11 prevalent and therefore explain more cancers?

12 MR. MANDELL: Objection.

13 A. More common, you mean?

14 Q. Yes.

15 A. Yes.

16 Q. Would you agree that some risk factors are more  
17 potent and therefore explain more cancers?

18 A. I would say yes, in that -- in kind of a  
19 dose/response type of situation, I would say yes.

20 Q. Would you agree that metabolic risk factors are  
21 dominant risk factors for the development of kidney  
22 cancer?

23 A. I don't understand what you're trying to ask  
24 me.

25 Q. When I say "metabolic risk factor," what --

1           what is your understanding of that phrase?

2           A.           I don't understand that phrase. That's why I  
3           asked you to repeat the question.

4                       MR. MARQUINA: Can we get tab 23?

5                       (Whereupon, an Article entitled  
6                       Validation of Risk Factors for Recurrence of  
7                       Renal Cell Carcinoma: Results from a Large  
8                       Single-Institution Series was marked as Del  
9                       Pizzo Exhibit 17, for identification, as of  
10                      this date.)

11           BY MR. MARQUINA:

12           Q.           Take some time, Doctor, and the question I'll  
13           ask you is, do you recognize this document?

14           A.           I do.

15           Q.           What is this document?

16           A.           This is a document published by Dr. Douglas  
17           Scherr about the elevation of risk factors for  
18           occurrence of renal cell carcinoma, results from a large  
19           single-institution study.

20           Q.           Were you a listed author in this study?

21           A.           I was.

22           Q.           If you'll turn to page 5, at the very bottom of  
23           page 5, the last sentence which bleeds into page 6:

24                       "Our analysis focused particularly on  
25                       metabolic risk factors since those have been

1 identified as dominant risk factors for the  
2 development of kidney cancer in general."

3 Did I -- is that a fair reading?

4 A. Yes.

5 Q. Does this document refresh your recollection  
6 about the meaning of "metabolic risk factors"?

7 A. Well, it does and it doesn't in that I'm on  
8 this paper because a lot of my patients were included in  
9 the study; it doesn't have anything to do with writing  
10 it or anything like that.

11 This is what I thought you meant, which is  
12 metabolic risk factors, like diabetes, hypertension,  
13 kidney disease, obesity. So yeah, I haven't used the  
14 word "metabolic" to explain those in quite some time,  
15 but that's what I thought you were referring to.

16 Q. Sure. Just so the record is clear, let's  
17 assume, as I'm asking these questions, the phrase  
18 "metabolic risk factors" refers to those collection of  
19 risk factors you just listed: obesity, diabetes, et  
20 cetera.

21 Would you agree that those metabolic risk  
22 factors are dominant risk factors for the development of  
23 kidney cancer?

24 MR. MANDELL: Objection.

25 A. Well, that was the conclusion of the study.



1 Again -- which, again, I only had a hand in because it  
2 was my patients.

3 I'm not sure what the word "dominant" means  
4 there because I think it's -- a dominant risk factor is  
5 very individualistic after you've looked at all of them  
6 and assigned weight to all of them.

7 Q. Sure, but as a general proposition?

8 A. Well, as a general proposition, I think that  
9 obesity, smoking, poorly controlled hypertension, and  
10 renal insufficiency are known risk factors for renal  
11 cell carcinoma. Is one more dominant over the other, I  
12 don't think I can comment on that.

13 And this is just one study. But I understand  
14 the question.

15 Q. Is it fair to say that some cancers have an  
16 unknown cause?

17 A. Yes.

18 Q. And do physicians in your field refer to these  
19 cancers as "idiopathic"?

20 A. They use that term, yes.

21 Q. Would you agree that no known cause is not the  
22 same thing as no cause?

23 A. Yes.

24 Q. So is it fair to say that idiopathic cancer is  
25 still caused by something, right?

1 A. Well, something had to have caused the mutation  
2 to start the whole process. So there must be an  
3 underlying cause, but when you can't identify it, which  
4 is not uncommon as you just said, yeah, we use the term  
5 "idiopathic."

6 Q. And I think you may have mentioned this before,  
7 and I may have missed it, but would you agree that the  
8 majority of kidney cancer cases have no known cause; in  
9 other words, they're idiopathic?

10 MR. MANDELL: Objection.

11 A. We did discuss that already, and I think that  
12 while I understand the term "idiopathic," and I don't  
13 disagree with it, a lot of patients, again, are not  
14 aware of family history and are not aware -- and would  
15 have no way of knowing chemical exposure. So again, I  
16 don't disagree with your statement, but I think it's a  
17 little bit out of context.

18 Q. Would you agree it's fair to say that the  
19 universe of all potential causes of kidney cancer is not  
20 fully understood?

21 A. I think you could say that for any cancer, not  
22 just kidney cancer.

23 Q. And is it fair to say that's because science is  
24 continuing to identify new potential causes for kidney  
25 cancer?

1           A.           I don't know if I would say that. I would say  
2           that it's more about science is finding more about the  
3           human immune system and how some people's immune system,  
4           like you said, keep things in check and others do not.  
5           And a perfect example of that is that a therapy now, in  
6           the last decade, that really has become prominent in the  
7           treatment of renal cell carcinoma, that has recurred or  
8           is metastatic, not what we're talking about with these  
9           plaintiffs.

10                   Immunotherapy is a very big therapy now for  
11           that and it's relatively new in the life of medicine,  
12           and that's because it's targeted on the immune system.  
13           So that's where new things are more being discovered and  
14           not something like, you know, a different type of  
15           modifiable risk factor, you know, playing tennis too  
16           many days a week, like something like that is not going  
17           to be developed. It's more about the immune system.

18           Q.           So is it fair say that -- so is it your opinion  
19           that the universe of modifiable risk factors associated  
20           with kidney cancer is fairly understood?

21           A.           I would say it's been fairly consistent for a  
22           long period of time.

23           Q.           Okay. In your experience treating kidney  
24           cancer patients, are unexplained causes common?

25           A.           I don't know what you mean by "common," but

1 yes, there are many patients where, after an extensive  
2 investigation of their medical history or as extensive  
3 as we can do, we don't come up with a risk factor that  
4 we can weigh into the differential and they are kind of  
5 labeled as unknown cause, idiopathic.

6 Q. In your practice, regarding those patients we  
7 just discussed, could you give a percentage or an  
8 approximation of how many of those patients we're  
9 talking about?

10 MR. MANDELL: Objection.

11 A. You know, it's hard to give a number and the  
12 reason is because some patients have hypertension but  
13 it's very well controlled. Some patients have poorly  
14 controlled hypertension for years and now it's more  
15 controlled. Other people just developed diabetes a year  
16 ago. I mean, there are so many factors that could go  
17 into it that it's hard to account for all of that.

18 So I think it's easy to say, oh, your diabetes  
19 is controlled, your hypertension is now controlled,  
20 you're not obese, it's idiopathic, right? So that  
21 occurs very frequently, but I think the term has to be  
22 looked at more carefully and I think it really only  
23 should be given after you've done as an extensive  
24 investigation as you can as into what risk factors they  
25 do have, what risk factors they don't have, what's the

1 intensity of their risk factor, what's the duration of  
2 their risk factor. There's so many factors that go into  
3 play.

4 And the thing about kidney cancer is that when  
5 someone comes in with that tumor, after you've done all  
6 this and try to assess the cause, what the patient is  
7 focused on is having the treatment of it, which is the  
8 surgery.

9 Q. Is it fair to say, then, individual instance of  
10 cancer might have occurred regardless of the presence of  
11 a risk factor?

12 A. I agree with that. You mean not everyone with  
13 the risk factor develops the cancer?

14 Q. For -- right. Like, for example, some smokers  
15 may develop kidney cancer, but not everyone who smokes  
16 develops kidney cancer?

17 A. That's correct.

18 Q. Is it fair so say that Mr. Howard's kidney  
19 cancer may have occurred regardless of his exposure to  
20 Camp Lejeune water?

21 A. Yes.

22 MR. MANDELL: Objection.

23 THE WITNESS: Sorry.

24 MR. MANDELL: That's okay.

25 A. Yes.

1 Q. And the same question, for Mr. Fancher. Is it  
2 fair to say that Mr. Fancher's kidney cancer would have  
3 occurred regardless of his exposure to Camp Lajeune  
4 water?

5 MR. MANDELL: Objection.

6 A. Yes.

7 Q. And is it fair to say that Mr. Mousser's UTUC  
8 and subsequent recurrence might have occurred regardless  
9 of his exposure to Camp Lejeune water?

10 MR. MANDELL: Objection.

11 A. I would say yes to all three, with the caveat  
12 that just because -- certainly, each of these three  
13 plaintiffs that I looked at could have gotten the cancer  
14 if they were never at Camp Lejeune for a single day, of  
15 course, but that doesn't mitigate the evidence of their  
16 exposure and the role that that played in the  
17 differential.

18 So I think what you're saying is, of course,  
19 true, but it's very specific to each person, and you  
20 have to do a detailed analysis to come to that  
21 conclusion.

22 Q. If we can pull up your rebuttal report,  
23 Exhibit 14.

24 A. I have it.

25 Q. On that first page, you state the term

1 idiopathic:

2 "Generally refers to a clinical  
3 situation where, despite extensive  
4 investigation, no identifiable risk factors or  
5 causes can be determined."

6 Correct?

7 A. I'm sorry, where are you on the page?

8 Q. Sure, so -- let me see.

9 MR. MANDELL: It's the third paragraph.  
10 I'm sorry. Do you want me to --

11 A. Okay. Thank you.

12 "The term generally refers to a  
13 clinical situation where, despite an extensive  
14 investigation, no identified risk factors or  
15 causes can be determined."

16 I think that's what I just was saying  
17 in my previous answer.

18 MR. MARQUINA: And thank you, Zach.

19 MR. MANDELL: Sure.

20 Q. Is that a fair reading?

21 A. Yes.

22 Q. And you state that: "Given Mr. Fancher's  
23 exposure to Camp Lejeune water, it would not be accurate  
24 to classify his renal cancer as idiopathic." Is that  
25 fair?

1           A.           That is fair, but that's -- I only said that  
2           after I did an analysis of his exposure to a large  
3           amount of compounds --

4           Q.           Sure.

5           A.           -- both TVOC and the individual compounds.

6           Q.           Is it a fair characterization to say your  
7           opinion is that a kidney cancer cannot be idiopathic if  
8           an individual has an identifiable risk factor to the  
9           development of kidney cancer?

10          A.           I think I -- I think we just talked about that.

11                       I think just because you have a risk factor,  
12          that doesn't mean it's the cause. If we deem that to be  
13          the only risk factor, right, the last risk factor  
14          standing after doing the analysis, that doesn't mean  
15          it's the cause either.

16                       What does mean it's more likely than not or as  
17          like than not, in this case more likely than not to be  
18          the cause, is just looking at the exposure in  
19          Mr. Fancher, and giving it weight in terms of the  
20          data -- all of the compelling data from the Camp Lejeune  
21          studies are compelling in my opinion.

22                       So I think that's how you have to look at it.  
23          It's not just he didn't have any other risk factors so  
24          it has to be idiopathic or he was exposed to the water  
25          in Camp Lejeune so that has to be the cause, I think you



1 have to look at it and analyze it deeply and then give  
2 it weight in terms of everything else.

3 Q. Did you account for idiopathic etiology in your  
4 differential for Mr. Howard and Mr. Fancher?

5 A. Yes.

6 Q. And what methodology did you use to account for  
7 idiopathic etiology?

8 A. I think what I just said, but you have -- look  
9 at risk factors. And then if you can identify a risk  
10 factor or more than one risk factor, you have to look at  
11 the scientific and epidemiological data for both risk  
12 factors and rely on your clinical expertise and your  
13 education and your training and whatnot, and then come  
14 to an analysis of how much weight to give each risk  
15 factor.

16 So if one risk factor has no weight at all,  
17 then you can say that maybe it's idiopathic. If there's  
18 no risk factors at all, that's where patients typically  
19 get labeled as idiopathic. No risk factors at all.

20 But it's always considered in the differential  
21 for renal cell carcinoma.

22 Q. But is it fair to say that idiopathic etiology,  
23 that phrase, applies in situations where, for example,  
24 like you mentioned, a patient has a risk factor, but,  
25 for example, it's well managed, or a separate example,

1 the exposure is particularly low?

2 MR. MANDELL: Objection.

3 A. I'm not sure how to answer that other than how  
4 I already have answered it, but if you ask it again, I'm  
5 happy to give you another answer.

6 Q. I'll circle back later.

7 Your rebuttal report that we were just looking  
8 at only mentions Mr. Mousser and Mr. Fancher; is that  
9 right?

10 A. Correct.

11 Q. Is it fair to say that your rebuttal report  
12 does not apply to Mr. Howard?

13 A. It does not.

14 Q. And just regarding Mr. Howard, he was diagnosed  
15 with non-Hodgkin's lymphoma in, I think, 2023, correct?

16 A. That's correct.

17 Q. You are not offering any opinions about the  
18 cause of Mr. Howard's NHL in this case, correct?

19 A. Correct.

20 Q. How did you overcome the possibility that the  
21 cause of Mr. Howard's kidney cancer was unknown?

22 A. Well, again, I -- this is after reviewing his  
23 exposures with the Kelly Reynolds' charts and plotting  
24 it into the Bove studies, everything we've talked about  
25 already, and he's in the, like we said, medium exposure

1 category for TVOC and then also each individual  
2 compound.

3 So to me, that was a risk factor that he  
4 obviously had and I gave it a lot of weight. He also  
5 had a brief history of cigarette smoking, which I  
6 certainly considered in the differential.

7 But most of the data on -- the general data on  
8 cigarette smoking says there's a lot of -- you have to  
9 pay attention to duration and intensity. So he had a  
10 two-pack-a-year history of tobacco use, which is not  
11 high at all, and it was 30-something years after he --  
12 30 years before his diagnosis.

13 So that tells me that that's not a significant  
14 risk factor, that that didn't carry much weight, is what  
15 I should say.

16 He also worked for the Dayton police after he  
17 left the military. He worked there for 26 years.

18 And early on, I think it was 1986, he responded  
19 to a train derailment and there was a question in some  
20 of the depositions or his chart, I think it was the  
21 deposition, where they thought that maybe there was some  
22 type of exposure at that site, but there was no data or  
23 anything to support that there was any type of exposure,  
24 or if there was, what type.

25 So to me, that was little weight as well. So

1       that's why I thought, I think, that his kidney cancer  
2       was more likely than not due to his exposure.

3               If you're asking me where did idiopathic come  
4       into that, I think when you have a risk factor that's  
5       significant, in my eyes, you can't ignore that and just  
6       say, oh, it's idiopathic. To me, that's -- doesn't make  
7       sense.

8       Q.       And just curious: How does a risk factor  
9       become significant when evaluating, for example,  
10      Mr. Howard's case?

11      A.       Well, I think it's part and parcel to what --  
12      when you asked me before what I -- do I consider to be a  
13      substantial amount of exposure. I think it's a risk  
14      factor or amount of exposure, or both in this situation,  
15      that was enough based on the legitimacy of the evidence  
16      and the sufficiency of the evidence for me to be  
17      comfortable saying that this is -- it's enough exposure  
18      that's substantial to be causally related to kidney  
19      cancer.

20             And that takes a look at all the hazard risk  
21      hazard ratios and everything that's in the data that is  
22      used when you look at the exposure metrics and plug them  
23      into the studies.

24      Q.       Would you -- and just circling back -- or  
25      circling to hazard ratios, would you agree that the

1 hazard ratios for kidney cancer and epidemiologic  
2 studies are not consistently over 1?

3 MR. MANDELL: Objection.

4 A. It depends on what studies you're referring to.

5 Q. The studies you're aware of.

6 MR. MANDELL: Objection.

7 A. The Camp Lejeune studies or non Camp Lejeune  
8 data?

9 Q. The studies you recall considering in this  
10 case.

11 A. Okay. And what's the question again?

12 Q. Would you agree that the hazard ratios for  
13 kidney cancer in the epidemiologic studies you  
14 considered are not consistently over 1?

15 MR. MANDELL: Objection.

16 A. Well, again, in this case, in considering, and  
17 again, relying on the general causation experts and  
18 their review of the literature, there were a lot of  
19 instances where the hazard ratio was over 1, including  
20 the Bove study where for every single substance, toxin  
21 it was over 1 and for the total volatile organic  
22 compounds it was over 1 as well.

23 Q. Are you aware of any evidence that exposure to  
24 the toxins at issues in this case can double background  
25 risk associated with the development of kidney cancer?

1 A. Again, I'm not sure where you got the doubling  
2 from.

3 I'm aware of the background risk, but that's  
4 not to say that if somebody has an exposure or risk  
5 factor that is considered to be high based on everything  
6 we just said, that doesn't mean that that background  
7 risk doesn't get elevated.

8 Q. Sure. But are you aware of any evidence that  
9 exposure to those toxins can double the background risk  
10 associated with kidney cancer?

11 MR. MANDELL: Objection.

12 A. I don't know about any specific literature that  
13 says it doubles it. Again, other than in the Camp  
14 Lejeune studies where there are hazard ratios that are  
15 high.

16 Q. Are you aware whether people are exposed to  
17 background levels of TCE in their everyday life?

18 A. I don't know. I would assume yes, but I don't  
19 know the -- how to quantify that.

20 Q. Are you aware of whether TCE is widely detected  
21 in ambient air?

22 A. Well, I know of inhalation studies where TCE  
23 has been studied and there's an increased risk of it. I  
24 don't know how it's measured though.

25 Q. Are you -- would you have any reason to

1 disagree with that statement, that is, whether TCE is  
2 widely detected in ambient air?

3 A. I don't think I'd be able to agree or disagree  
4 with it.

5 Q. Are you aware of whether TCE occurs frequently  
6 at low concentrations in water supplies and in ground  
7 water?

8 A. I don't know specifically, no.

9 Q. Would you have any reason to disagree with that  
10 statement?

11 MR. MANDELL: Objection.

12 A. Well, are you referring to -- you're not  
13 referring to studies in this literature that have shown  
14 that there's been ground water contamination with TCE.  
15 You mean like on an everyday basis?

16 Q. Just in general, like the proposition that TCE  
17 occurs frequently in low concentrations in water  
18 supplies?

19 A. I don't know how to answer that question, but I  
20 know that the EPA has recently banned TCE and they cite  
21 kidney cancer as a reason. But I don't know about  
22 the -- and I know that there's an MCL for TCE.

23 I don't know what that means by banning it or  
24 what numbers are generally in our water.

25 MR. MARQUINA: I think we're at noon.

1                   Let's go off the record.

2                   THE WITNESS:   Sure.

3                   THE VIDEOGRAPHER:   The time right now  
4                   is 11:59 a.m.   We're off the record.

5                   (Whereupon, a short break was taken.)

6                   THE VIDEOGRAPHER:   The time right now  
7                   is 12:12 p.m.   We're back on the record.

8           BY MR. MARQUINA:

9           Q.       All right.   Doctor, is there anything in your  
10           testimony that you have given today that you would like  
11           to change?

12          A.       No.

13          Q.       Would you agree that there's some background  
14           risk for developing kidney cancer?

15          A.       I would.

16          Q.       Would you agree that compared to other cancers,  
17           kidney and renal pelvis cancer is fairly common?

18                   MR. MANDELL:   Objection.

19          A.       I wouldn't agree with that blanket statement.  
20           I think it depends on what cancers you're talking about,  
21           right.   I mean, I can give you an example if you want,  
22           or not.   But you know, the background risk is 2.3  
23           percent for men and 1.4 percent for women, so it's low,  
24           but not as low as, let's say, brain cancer, which is  
25           like under 1 percent.



1                   So it's all relative, right? And then prostate  
2                   cancer and lung cancer and breast cancer, which are far  
3                   more common. So it's all relative.

4           Q.           Is kidney cancer about 4 percent of all new  
5                   cancer cases in the United States?

6                               MR. MANDELL: Objection.

7           A.           It is, but you have to take that into context,  
8                   right? The reason why that is the case and the reason  
9                   why the numbers are going up as time goes on is  
10                  basically because of the imaging, right?

11                       And people get CT scans now for various  
12                  reasons, some that are reasonable and some that are not,  
13                  and we wind up finding a lot of these small incidental  
14                  renal masses that we might never have found.

15                       So because of that, the incidence is higher.

16          Q.           So is it fair to say that -- so just to break  
17                  that down, is fair to say that the rate of new kidney  
18                  cancer cases in the last several years has increased?

19          A.           Yes.

20          Q.           And is it fair to say that that's because of  
21                  new imaging techniques that have discovered kidney  
22                  cancer cases?

23          A.           Most -- yes, mostly it's because of that.

24          Q.           Did you address the background risk associated  
25                  with the development of kidney cancer in your

1 differential for these plaintiffs?

2 A. I considered it, sure; of course.

3 Q. Is it fair to say that you did not specifically  
4 address the background risk in the language of your  
5 reports?

6 MR. MANDELL: Objection.

7 A. No, but I think I did it indirectly. I think  
8 that in a lot of the studies I relied upon, the Camp  
9 Lejeune water studies, you have a study with basically  
10 two extremely similar, I don't want to use the word  
11 identical, but extremely similar populations, right, the  
12 East Coast Marines and the West Coast Marines.

13 So in a way, the background risk is kind of  
14 already incorporated into that analysis.

15 Q. Are you --

16 A. But I don't use those words in my report.

17 Q. And just so we're clear on the two -- on the  
18 studies comparing the two different cohorts of Marines,  
19 I'm referring to the Bove studies comparing the Marines  
20 stationed at Camp Pendleton and those stationed at Camp  
21 Lejeune?

22 A. Yes.

23 Q. Would you agree that a reliable methodology for  
24 determining the etiology of disease should take into  
25 account the background risk for developing that cancer?

1 MR. MANDELL: Objection.

2 A. I do, and like I said, I considered it in my  
3 analysis.

4 Q. You ruled out tobacco use as a cause for  
5 Mr. Mousser's UTUC in your differential, correct?

6 A. I don't know if I would use the word "ruled  
7 out," but I would say that I gave it weight with the  
8 risk factors I was considering. I certainly considered  
9 it in his differential, but at the end of my analysis, I  
10 thought that the two risk factors -- Camp Lejeune water  
11 exposure, cigarette smoking -- was not comparable.

12 Q. And why was that?

13 A. Well, for several reasons. I mean, one is that  
14 Mr. Mousser, the intensity of his tobacco use, based on  
15 records and deposition testimony, was low. He smoked  
16 one pack every 10 days or so while he was in the Marine  
17 Corps, then he stopped for many, many years. He  
18 developed his UTUC 30-plus years after that time at Camp  
19 Lejeune.

20 There was a question of some tobacco use in  
21 2012. It's not concrete evidence. Mr. Mercer said that  
22 he smoked, started smoking daily for that year when he  
23 was at the car dealership but had no recollection or no  
24 evidence about how many -- how many he smoked per  
25 week -- per day and things like that. Mr. Mousser

1 refused the testimony and said he only smoked a couple  
2 of cigarettes a week.

3 So to me, that exposure has low weight, because  
4 he had a low amount for a relatively short period of  
5 time with a significant amount of nonsmoking time after  
6 that.

7 On the other hand, he was in the highest  
8 exposure category for all four toxins in the water. He  
9 was in the very high of the medium exposure category for  
10 total volatile organic compounds. He was on base for  
11 891 days, almost 10 quarters, which put him at increased  
12 risk as well.

13 So weighing the two, I thought one risk weighed  
14 much, much more heavily than the other risk.

15 Q. And just to walk back, when we talk about  
16 Mr. Mercer's testimony about Mr. Mousser's smoking  
17 history, in your differential, did you account or credit  
18 that testimony that Mr. Mousser smoked in 2012?

19 A. I credited -- yes, the fact that he smoked in  
20 2012, because even Mr. Mousser agreed he smoked a  
21 cigarette or two a week. Just the intensity was where  
22 the difference of opinion was.

23 Q. And you mentioned before that you wouldn't  
24 characterize ruling out -- or you wouldn't use the  
25 phrase "ruling out" when describing how you accounted

1           for tobacco use in your differential for Mr. Mousser; is  
2           that fair?

3           A.           Ask again --

4                       MR. MANDELL: I'm sorry, I missed it,  
5                       too, actually.

6                       MR. MARQUINA: I'm sorry about that.

7           Q.           When I asked you initially whether you ruled  
8           out tobacco use as a cause for Mr. Mousser's UTUC, you  
9           mentioned in your response that you wouldn't use the  
10          phrase "ruled out" and I wanted to follow up on that and  
11          just clarify, what phrase would you use?

12          A.           That the exposure to the Camp Lejeune water,  
13          when weighed against the tobacco exposure, it's more  
14          likely than not that the exposure to the water was the  
15          most likely cause of his kidney cancer.

16          Q.           Is it your opinion that Mr. Mousser's smoking  
17          could have been a cause of his kidney cancer?

18                       MR. MANDELL: Objection.

19          A.           Well, that's what I considered in the  
20          differential diagnosis, so I guess the answer to that  
21          question is yes. But I think it's not just the fact  
22          that he smoked, it's the duration, it's the intensity,  
23          it's things we know from the general smoking literature,  
24          right, that there's a duration response relationship;  
25          the more you smoke, the more likely are you to develop

1 cancer. And there's also a lot of data that says the  
2 risk goes down significantly for long-term former  
3 smokers.

4 Q. Would you agree that generally former smokers  
5 have an elevated risk for developing kidney cancer,  
6 including UTUC, when compared to people who have never  
7 smoked at all?

8 MR. MANDELL: Objection.

9 A. I think -- yeah, I think -- I mean, I answered  
10 that already. I think, obviously, smoking is a risk  
11 factor for UTUC, but again, it's all about the analysis  
12 of the duration and the intensity, the time lag, all of  
13 those things that we kind of talked about.

14 But if you're asking if somebody who -- if they  
15 smoked at one time is more likely to smoke -- is more  
16 likely to get a cancer than someone who's never smoked,  
17 I think it -- you know, it's easy to say yes, but I  
18 think the real answer is depends on what this person  
19 smoking was. Was it two-pack years 30 years ago? Well  
20 that was Mr. Howard. Was it, you know, one pack a day  
21 every 10 days 30 years ago, and then maybe some smoking  
22 in 2012? I mean, that's different than just saying he  
23 smoked it one time so he's at higher risk for getting  
24 urothelial carcinoma later on.

25 Q. And pivoting away from smoking, you did not

1 consider obesity as a risk factor for Mr. Mousser's  
2 UTUC, right?

3 A. Well, I would say I considered all the risk  
4 factors. I didn't give it much weight, though.

5 Q. So turning to your report in Mr. Mousser, I  
6 think it's Exhibit 11.

7 A. Yep.

8 Q. You would agree with me that you did not list  
9 obesity as a risk factor for UTUC?

10 A. Oh, I'm sorry, I misunderstood the question.  
11 Yeah, I mean, the data for obesity for renal cell  
12 carcinoma, there's more literature on that. There's  
13 really no correlation between obesity and transitional  
14 cell carcinoma; not as much. That's how I would answer  
15 that.

16 Q. Would you agree that Mr. Mousser has a history  
17 of diabetes?

18 MR. MANDELL: Objection.

19 A. I think he's on Metformin because he's  
20 prediabetic. I don't know if he has an actual diagnosis  
21 of diabetes, but he's on Metformin.

22 Q. Would you agree that Mr. Mousser has a history  
23 of hypertension?

24 A. Yes.

25 Q. Would you agree that Mr. Mousser has a history

1 of obesity?

2 MR. MANDELL: Objection.

3 A. I don't know if he meets the qualification for  
4 obesity, actually. I don't recall what his BMI is. I  
5 would have to look at the records.

6 Q. Would you agree that --

7 A. Sorry. BMI is body mass index.

8 Q. Would you agree that Mr. Mousser has a history  
9 of hypercholesterolemia?

10 A. Yes.

11 Q. And I think we discussed this before. You  
12 considered obesity as a risk factor for the development  
13 of renal cell carcinoma in Howard and Fancher. But in  
14 your reports you note that obesity is:

15 "Generally considered not to be as  
16 great of a risk factor as others, such as  
17 exposure to known carcinogens familial  
18 history," et cetera.

19 Is that fair?

20 A. That's fair.

21 Q. What literature do you rely on for that  
22 proposition?

23 A. I think I wouldn't quote anything specifically.  
24 I would just say the general urology literature. It's  
25 definitely a risk factor, I'm not saying that it's not.



1 I'm just saying if you list the risk factors in some  
2 type of order, it's not at the top. It's all relative,  
3 like we said, smoking and exposures and things like  
4 that.

5 Q. Is it therefore fair to say that you gave  
6 obesity less weight than other risk factors for kidney  
7 cancer?

8 A. I would say in general, yes.

9 Q. And the same thing for hypertension and renal  
10 cell carcinoma for Howard and Fancher. You noted that  
11 it's generally considered not to be associated with as  
12 great a risk as, for example, exposures to known  
13 carcinogens, familial history, et cetera; is that fair?

14 A. Well, it's fair in that I'm referring to poorly  
15 controlled hypertension for a long period of time.  
16 Patients that have hypertension and that are on one  
17 antihypertensive medication and it's well controlled,  
18 then that's what I'm referring to it not being as  
19 significant of a risk.

20 Q. And what do you mean when you say "poorly  
21 controlled hypertension"?

22 A. Very elevated hypertension for a long period of  
23 time that is either undiagnosed or the patient doesn't  
24 seek -- you know, have regular medical follow-up to be  
25 able to detect it.

1 Q. And same question as before regarding obesity.  
2 What literature did you rely on for the proposition that  
3 poorly controlled hypertension is generally considered  
4 not to be associated with as great of a risk when  
5 compared to known exposures, familial history, et  
6 cetera?

7 A. No, I said poorly controlled hypertension is a  
8 significant risk. One that is controlled and not,  
9 that's not as significant of a risk.

10 Q. Thank you. Sorry about that.

11 So controlled hypertension, what literature did  
12 you use for that proposition that controlled  
13 hypertension isn't as great of a risk factor?

14 A. I, think again, just the general urology  
15 literature where it's not considered to be as  
16 significant of a risk factor, as, let's say, you know,  
17 cigarette smoking, and other things that we've talked  
18 about.

19 Q. And is it fair to say you gave controlled  
20 hypertension less weight than other risk factors for  
21 kidney cancer?

22 A. Well, again, my opinions are for these specific  
23 patients. So yes, for these patients that I give less  
24 weight to hypertension than the toxin exposure at Camp  
25 Lejeune and in the case of Mr. Howard and Mr. Mousser,

1 the tobacco history, yes, that's a fair statement.

2 Q. Is it fair to say you did not consider  
3 hypertension as a risk factor in your differential for  
4 Mr. Mousser?

5 A. I think I just said I considered all the risk  
6 factors, but he is on one antihypertensive medication.  
7 So to me, that's not poorly controlled hypertension.

8 Q. Turning to the occupational or environmental  
9 exposures that you list as a risk factor for kidney  
10 cancer --

11 A. Which report are you in, I'm sorry?

12 Q. All of them.

13 A. Oh, okay.

14 Q. Yeah.

15 What scientific literature did you rely on to  
16 determine that Camp Lejeune water was a risk factor for  
17 the development of kidney cancer?

18 A. I rely on the general causation experts to --  
19 and their literature review for that.

20 Q. I think in your reports you mentioned the Bove  
21 studies, the four of them, including the ATSDR 2017  
22 assessment. Is that fair?

23 MR. MANDELL: Objection.

24 A. Yes.

25 Q. Is your evaluation or -- strike that.

1                   Is your assessment of that literature  
2                   independent from the general causation reports you  
3                   relied on in these cases?

4                   MR. MANDELL: Objection. Asked and  
5                   answered.

6                   A.        Yeah, I would say that I considered -- I relied  
7                   on the general causation expert reports for the  
8                   literature and the evaluation of the literature, and  
9                   that includes Camp Lejeune literature and non Camp  
10                  Lejeune literature.

11                  But again, I reviewed it myself in order to be  
12                  able to give it some type of weight in my initial  
13                  differential in terms of how much weight to give the  
14                  Camp Lejeune water exposure, and then, ultimately, in my  
15                  differential for each specific plaintiff, about how  
16                  likely that was to be have been causal to their kidney  
17                  cancer development.

18                  Q.        Turning to Mr. Mousser and his recurrent  
19                  cancer, would you agree that the development of  
20                  Mr. Mousser's low grade bladder cancer does not  
21                  independently impact or worsen his overall prognosis?

22                  A.        I would, because his overall prognosis is  
23                  determined by the high grade renal pelvic transitional  
24                  cell carcinoma that he had in 2020. That's the real  
25                  factor.

1           The low grade noninvasive cancer that he had in  
2           his bladder in January of 2025 is not as significant as  
3           the initial pathology in 2020.

4           Q.       And so just to confirm, you would agree then  
5           that Mr. Mousser's prognosis remains governed by his  
6           prior UTUC?

7           A.       His initial diagnosis in 2020.

8           Q.       Yeah.

9           A.       Although, I would say as a caveat that when you  
10          have high grade transitional cell carcinoma of the  
11          kidney, you're at high risk for developing a recurrence  
12          in the bladder, and those patients have to be surveilled  
13          very closely.

14          Q.       Would you agree that recurrence in the bladder  
15          is a well recognized risk in patients with a history of  
16          UTUC?

17          A.       Upper tract urethral carcinoma. Yes, it occurs  
18          in most studies 20 to 50 percent of patients, and in  
19          some, 70 percent. So it is common.

20          Q.       Would you agree that patients diagnosed with  
21          UTUC are at increased risk of occurrence?

22          A.       Be more specific. Recurrence where?

23          Q.       For example, like in Mr. Mousser's case. Like  
24          a recurrence in the bladder or the renal system.

25          A.       I think what I just said. If you have high

1 grade urethral carcinoma of the upper tract of the  
2 kidney like Mr. Mousser had, you have a 20 to 70 percent  
3 chance of having a recurrence in the bladder.

4 Q. This includes patients who weren't exposed to  
5 toxic chemicals, right?

6 A. Well, the toxic chemicals is the reason -- is  
7 more likely than not the reason that you got the cancer  
8 to begin with.

9 Are you asking if the bladder recurrence is  
10 related to that?

11 Q. I'm asking you in general with patients who do  
12 develop -- like, in general, patients with UTUC who go  
13 on to have a recurrence, in those patients when you  
14 mentioned the 20 to 70 percent figure; is that right?

15 A. 20 to 50 percent is the accepted range and then  
16 some studies are as high as 70 percent.

17 Q. Those patients specifically, that percentage  
18 includes patients who weren't exposed to toxic  
19 chemicals, right?

20 A. Yes. I think that's a general -- with renal  
21 cell -- with UTUC, that's just a general statement, yes.

22 Q. And you would agree that smoking is a risk  
23 factor associated with cancer recurrence among patients  
24 with UTUC, right?

25 A. It's more common if you're actively smoking at

1 the time of your recurrence. Again, if you have a --  
2 there's a decrease in risk if you're a long-term  
3 nonsmoker.

4 Does that answer your question?

5 Q. Yes.

6 A. Okay.

7 Q. Would you agree that the etiology of UTUC does  
8 not impact the treatment for the UTUC?

9 A. Does not affect -- what doesn't affect the  
10 treatment? The etiology?

11 Q. The etiology of UTUC does not impact its  
12 treatment?

13 A. I would generally agree with that, yes.

14 Q. Would you agree that the etiology of UTUC does  
15 not impact the treatment for recurrences of that cancer?

16 A. Can I just go back to the last question for a  
17 second?

18 Q. Sure.

19 A. I forgot to say something.

20 The only caveat to that would be if someone has  
21 a genetic syndrome, like Lynch syndrome, because those  
22 patients have other cancers -- are at high risk for  
23 other cancers in other parts of their body. So that  
24 makes a difference.

25 But for the general patient that doesn't have a

1 genetic syndrome, then I agree with what you said.

2 Q. I want to pivot to your opinions on the  
3 individual plaintiff's treatments.

4 In your report on Howard, you note that -- and  
5 just for reference, this is page 18 on your report on  
6 Mr. Howard.

7 For the record, this is Exhibit 10.

8 A. 1-8?

9 Q. 1-8.

10 A. Okay.

11 Q. You state that Mr. Howard's kidney cancer  
12 treatment was "reasonable and medically necessary,"  
13 right?

14 A. Yes.

15 Q. Are you aware of whether Mr. Howard's  
16 physicians determined that his kidney cancer was caused  
17 by toxic exposure?

18 MR. MANDELL: Objection.

19 A. I'm not aware.

20 Q. Would you agree that Mr. Howard's physicians  
21 treated his kidney cancer as if it was not caused by  
22 toxic exposure?

23 MR. MANDELL: Objection.

24 A. Well, I think that anybody would treat it as if  
25 it was not caused by toxic exposure, because again, when



1 the patient's there with the tumor, the primary focus is  
2 to remove the tumor. So that doesn't per se affect the  
3 initial treatment.

4 Q. And the same question for Mr. Fancher.

5 You state that his kidney cancer treatment was  
6 "reasonable and medically necessary," right?

7 A. That's correct.

8 Q. And the same question: Would you agree that  
9 Mr. Fancher's physicians treated his cancer as if it  
10 wasn't caused by toxic exposure?

11 MR. MANDELL: Objection.

12 A. Yes, only because, again, the primary treatment  
13 is to remove the tumor.

14 Q. And same line of questions for Mr. Mousser.

15 You state that Mr. Mousser's kidney cancer  
16 treatment was "reasonable and medically necessary,"  
17 right?

18 A. Yes.

19 Q. And would you agree that Mr. Mousser's  
20 physicians treated his cancer as if it wasn't caused by  
21 toxic exposure?

22 MR. MANDELL: Objection.

23 A. Well, and again, I don't think they treated  
24 with -- as if it was or was not related to the cancer --  
25 the toxic exposure. I think they just treated the

1 cancer. And that goes for all three patients, actually.

2 Q. And I'm going to pivot.

3 You note, just on the same page, for  
4 Mr. Howard, you note that his injuries are permanent,  
5 right?

6 A. Well, permanent in that he has a diagnosis of  
7 renal cell carcinoma that he'll never not have.

8 Q. And would you agree that the only permanent  
9 injury related to Mr. Howard's kidney cancer is the loss  
10 of his right kidney?

11 MR. MANDELL: Objection.

12 A. Anatomically, yes. I think that these patients  
13 can have emotional harms as well. So I don't know if I  
14 would agree with your statement completely, but I would  
15 say that the medical issue is that he lost his right  
16 kidney.

17 Q. Sure. And just to clarify, you aren't offering  
18 any opinions on -- related to psychology for any of  
19 these particular plaintiffs, right?

20 A. No. But you asked me if that was the only  
21 issue that could come from having a diagnosis of cancer.

22 Q. Right, yeah. You would agree that Mr. Howard  
23 has fully recovered from his nephrectomy, right?

24 A. Yes.

25 Q. And when we talk about Mr. Mousser's permanent

1 injuries, are we discussing the loss of his right  
2 kidney, ureter and the cuff of his bladder?

3 A. Yes.

4 Q. Are there any other permanent injuries that  
5 you're addressing in your report on Mr. Mousser?

6 MR. MANDELL: Objection.

7 But you can answer.

8 A. No.

9 Q. Would you agree that Mr. Mousser has made a  
10 full recovery from his nephroureterectomy?

11 A. From the surgery, you mean?

12 Q. Yes.

13 A. Yes.

14 Q. Would you agree that Mr. Mousser has made a  
15 full recovery from his transurethral resection?

16 A. As of July 30, 2025. But he's at risk for  
17 recurrence, so he's going to need continual  
18 surveillance.

19 Actually, I should say, as of January 2025,  
20 because that's the last time -- that's when the records  
21 ended that I reviewed.

22 Q. And when we talk about Mr. Fancher, are the  
23 permanent injuries related to his kidney cancer the loss  
24 of his right kidney and the bulge on his right flank?

25 MR. MANDELL: Objection.

1           A.           Yeah. The ones that I'm considering are the  
2           loss of his kidney and the bulge in his flank that is  
3           bothering him.

4           Q.           You would agree that Mr. Fancher has made a  
5           full recovery from his nephrectomy, right?

6           A.           Other than the fact that he was diagnosed with  
7           the kidney cancer and still needs surveillance, but yes,  
8           he's recovered from the surgery, sure.

9           Q.           Would you agree that potential risks associated  
10          with a nephrectomy include bleeding, incisional  
11          infection, hernia and even death?

12          A.           That's only four. There's more than that. But  
13          yes, I agree with all those four, sure.

14          Q.           In your practice, do you advise patients  
15          undergoing nephrectomies about these same risks?

16          A.           And more -- yes, and more so.

17          Q.           In your practice, do you provide patients  
18          undergoing nephrectomies consent forms discussing these  
19          risks?

20          A.           Yes.

21          Q.           And when we say and more risks, what more risks  
22          are associated with having a nephrectomy?

23          A.           Can I just go through them?

24          Q.           Sure.

25          A.           Bleeding, infection, injury to adjacent organs.

1 Obviously, it depends on which side you're operating on,  
2 but since it was the right side for each of the three  
3 plaintiffs, we can say, liver, gallbladder, intestine,  
4 inferior vena cava, small bowel, major vascular  
5 structures. And then you talk about open conversion if  
6 you're doing a minimally invasive procedure, and the  
7 other ones that you mentioned.

8 Q. You don't have any opinion regarding  
9 Mr. Howard's NHL diagnosis and treatment, right?

10 A. No.

11 Q. Your opinion is that Mr. Howard is expected to  
12 live a normal life expectancy, right?

13 A. In relation to his renal cell carcinoma, yes.

14 Q. And Mr. Howard has he -- had his nephrectomy in  
15 December of 2008, right?

16 A. That's right.

17 Q. His postoperative care was unremarkable, right?

18 A. In terms of the nephrectomy, yes.

19 Q. Yes.

20 And he has no evidence of recurrent or  
21 metastatic disease related to his kidney cancer?

22 A. That's correct, yes.

23 Q. And since at least 2018, Mr. Howard has had  
24 pulmonary nodules for which he receives routine  
25 surveillance, right?

1 A. Yes.

2 Q. Those nodules have not progressed, right?

3 A. That's correct.

4 Q. Would you agree that there's no reason to think  
5 that they will progress?

6 A. I agree with that.

7 Q. And in your report on Mr. Fancher, you note  
8 that he's also expected to live a normal life  
9 expectancy, right?

10 A. Yes. In relation to his kidney cancer, yes.

11 Q. Yes.

12 He had his nephrectomy -- strike that.

13 Mr. Fancher had his nephrectomy in 1997, right?

14 A. Yes.

15 Q. And since 1997, Mr. Fancher has undergone  
16 radiologic surveillance, right?

17 A. Not the entire time. It was broken up a little  
18 bit but yes, he's had it off and on since 1997.

19 Q. And just so the record is clear, when we talk  
20 about "on and off," is that -- would the year -- the  
21 ranges of 1998 to 2002 and 2014 to present be accurate?

22 A. That's exactly what I was referring to, yes.

23 Q. Mr. Fancher currently has no evidence of  
24 recurrent disease regarding his kidney cancer, right?

25 A. That's true.

1 Q. And his kidney function has been stable?

2 A. Yes.

3 Q. And same thing with Mr. Howard, his kidney  
4 function has been stable?

5 A. I'm not offering opinions about kidney  
6 function, but yes, it's been stable.

7 Q. And you -- in your report on Mr. Howard, you  
8 note that the medical billing associated with  
9 Mr. Howard's kidney disease treatment was reasonable and  
10 medically necessary, right?

11 A. As far as I could tell, yes.

12 Q. What is your basis for that statement?

13 A. Well, just -- there is no basis for the  
14 statement other than I was sent bills in the records as  
15 part of the records and everything seemed to be on point  
16 in terms of that he received bills for just the urologic  
17 medical care he was getting in relation to his prior  
18 nephrectomy.

19 Q. Is it fair to say that you didn't quantify the  
20 amount of Mr. Howard's medical expenses?

21 A. Yeah. I just generally looked at it, I didn't  
22 quantify anything.

23 Q. Okay. Is it fair to say that's generally  
24 consistent with your review of Mr. Fancher's case?

25 A. All three cases, yes.

1 Q. All three cases. In prior cases where you've  
2 served as an expert witness, have you opined on whether  
3 a party's medical bills were reasonable and medically  
4 necessary?

5 A. I can't remember the cases per se, but I think  
6 if they're -- well, first of all, only if they're  
7 included in the records I'm asked to review, first of  
8 all; and second of all, only if I'm asking to do that --  
9 or I should say asked to give an opinion about it.

10 Q. Have you ever -- have you previously testified  
11 at trial?

12 A. Only once.

13 Q. Did that case involve kidney cancer?

14 A. No.

15 Q. And in the depositions you've previously  
16 testified in, have you ever testified regarding the  
17 cause of kidney cancer?

18 A. I can't specifically recall.

19 Q. Have you ever been a party to a litigation in  
20 your personal capacity?

21 A. Yes.

22 Q. And in any of -- in those cases, did those  
23 cases ever involve toxic chemicals?

24 A. No.

25 Q. Did any of those cases involve the cause of



1 kidney cancer?

2 A. The cause of kidney cancer; no.

3 Q. You reviewed the ATSDR's 2017 assessment of  
4 evidence in preparing your reports, right?

5 A. It was part of the literature that I was given  
6 to review.

7 Q. Are you aware that the ATSDR concluded, in its  
8 assessment of the evidence, that there was sufficient  
9 evidence for causation for TCE exposure and kidney  
10 cancer?

11 A. Yes.

12 Q. Are you aware that the ATSDR concluded, in its  
13 assessment of the evidence, that there was below  
14 equipoise evidence for causation for PCE exposure and  
15 kidney cancer?

16 A. I don't recall that specifically.

17 Q. Do you recall whether the ATSDR stated in its  
18 assessment of the evidence that the epidemiological  
19 studies have not consistently observed an increased risk  
20 of PCE exposure in kidney cancer?

21 MR. MANDELL: Objection.

22 A. Well, I think I just -- I can tell -- I know  
23 that just from reviewing some literature that I relied  
24 on the general causation experts for but I think the  
25 questions you're asking me, I relied really on the

1           general causation experts to flush that out.

2                       MR. MARQUINA:   Can we take a 10-minute  
3                       break?

4                       THE VIDEOGRAPHER:   The time right now  
5                       is 12:47 p.m.   We're off the record.

6                       (Whereupon, a short break was taken.)

7                       THE VIDEOGRAPHER:   The time right now  
8                       is 1:01 p.m.   We're back on the record.

9           BY MR. MARQUINA:

10          Q.          Doctor, thank you for bearing with me.   Is  
11                       there anything in your testimony up to this point that  
12                       you would like to change?

13          A.          I don't know if I want to change it.   But I was  
14                       wondering if you could read back my last response when  
15                       it came to PCE in the literature, last question or two?

16          Q.          I am unsure which question you are referring  
17                       to.

18          A.          It was the last question you asked before we  
19                       broke.   It was about PCE not being a risk factor in some  
20                       studies.

21          Q.          Ah, one moment.   If I have it right, is the  
22                       question, were you aware that the ATSDR stated in its  
23                       assessment of the evidence that the epidemiological  
24                       studies have not consistently observed an increased risk  
25                       of PCE exposure in kidney cancer?

1 A. That was the question?

2 Q. I believe so.

3 A. Oh, okay. I mean I think the answer I would  
4 give to that is just that, from what I've reviewed after  
5 relying on the general causation experts, I feel that  
6 there was a -- there was a lot of good literature,  
7 legitimate literature that showed an elevated risk with  
8 PCE exposure.

9 Q. And, Doctor, we've talked -- throughout today,  
10 you've mentioned that you're relying on the general  
11 causation reports. I just want to make sure the record  
12 is clear. When we're talking about the general  
13 causation reports you're relying on, are we talking  
14 about the reports of Drs. Hatten and Dr. Bird?

15 A. Yes.

16 Q. So I wanted to ask, at trial is there any -- is  
17 there any testimony you intend to offer regarding the  
18 Bove studies beyond what's included in the reports of  
19 Drs. Hatten and Bird?

20 A. No, other than how they apply specifically to  
21 the plaintiffs that I've been asked to look at, meaning  
22 using those studies to plug the patients into the  
23 studies, yeah, with their exposures.

24 Q. Doctor, would you agree with the proposition  
25 that there are no cut and dry definitive risk factors

1 for kidney cancer?

2 A. I don't know what you mean by "cut and dry."  
3 Maybe you can be more specific.

4 Q. Sure. Do you recall -- do you recall giving a  
5 deposition -- or having your deposition taken in a case  
6 entitled Silberman versus Del Pizzo?

7 A. Of course, yes.

8 MR. MARQUINA: Can I get tab 37? I  
9 think it's this one.

10 (Whereupon, Deposition Transcript in  
11 the Matter of Gary Silberman v. Joseph Del  
12 Pizzo, et al. was marked as Del Pizzo Exhibit  
13 18, for identification, as of this date.)

14 MR. MARQUINA: And, Zach, I know that  
15 this is front and back. I'm happy to send you  
16 the standard copy if you want.

17 MR. MANDELL: That's fine. Thank you.

18 BY MR. MARQUINA:

19 Q. Doctor, is this the deposition transcript from  
20 the case we just mentioned, Silberman versus Del Pizzo?

21 A. It looks like it is.

22 Q. Doctor, could you please go to the part of the  
23 transcript on page 37?

24 A. Okay, I have it.

25 Q. Where it says -- one moment. Starting on

1 line 8, where the question posed is:

2 "So what are the risk factors for  
3 kidney cancer? Would smoking be one?

4 "ANSWER: Oh, I'm sorry. Risk factor  
5 for developing a kidney cancer?

6 "QUESTION: Yes.

7 "ANSWER: I thought you meant once you  
8 have the kidney cancer.

9 "You know, there are no definitive risk  
10 factors for kidney cancer. Smoking has been  
11 implicated, but there's studies that show it's  
12 related and some show that it's not. Obesity  
13 is another one that has been pointed to. But  
14 there are no cut and dry definitive risk  
15 factors."

16 Did I read that correctly?

17 A. Yes.

18 Q. So would you agree with the general proposition  
19 that there are no definitive risk factors for kidney  
20 cancer?

21 MR. MANDELL: Objection.

22 A. Well, I think it's out of context because I'm  
23 talking really about this specific patient, who was a  
24 very young patient when he was diagnosed with kidney  
25 cancer, but I don't think that changes any of the

1 testimony that I've given so far today.

2 Q. Is it therefore fair to say that the list of  
3 risk factors for kidney cancer, including UTUC that you  
4 included in your reports for the three plaintiffs, are  
5 more reflective of the risk factors you generally apply  
6 in your practice?

7 MR. MANDELL: Objection.

8 But you can answer.

9 A. Yes, but they are also patient specific as  
10 well.

11 MR. MARQUINA: I have no further  
12 questions.

13 MR. MANDELL: Great. I just have one  
14 clarifying question, and I think it's already  
15 been clarified, but I want to make sure.

16 EXAMINATION BY

17 MR. MANDELL:

18 Q. You were asked some questions, Dr. Del Pizzo, I  
19 think they were mostly focusing specifically on the Bove  
20 2014 study. But as like in your reports, you cite, and  
21 you do, you also used the other Bove and Camp Lejeune  
22 studies in your analysis, too, true?

23 A. Yeah. I think the five Camp Lejeune studies,  
24 based on my reliance on the general causation experts,  
25 were all -- is all legitimate epidemiology, and I think

1 I use all of it to formulate my opinions in this case,  
2 yeah.

3 MR. MANDELL: That's it. No questions.

4 MR. MARQUINA: No further questions for  
5 me.

6 THE VIDEOGRAPHER: The time right now  
7 is 1:07 p.m. We're off the record.

8 THE REPORTER: Would you like a copy of  
9 the transcript?

10 MR. MANDELL: Yeah, just our standard  
11 order.

12 (Time Noted: 1:08 p.m.)  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

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

STATE OF NEW YORK )

:ss

COUNTY OF )

I, JOSEPH DEL PIZZO, hereby certify that I have read the transcript of my testimony taken under oath in my deposition of the 30th day of July, 2025; that the transcript is a true, complete and correct record of my testimony, and that the answers on the record as given by me are true and correct.

\_\_\_\_\_  
JOSEPH DEL PIZZO

Signed and subscribed to before  
me, this                      day  
of                      , 2025.

\_\_\_\_\_  
Notary Public, State of New York



C E R T I F I C A T E

STATE OF NEW YORK )

) ss.:

COUNTY OF QUEENS )

I, BROOKE E. PERRY, a Notary Public  
within and for the State of New York, do hereby  
certify:

That JOSEPH DEL PIZZO, the witness  
whose deposition is hereinbefore set forth, was  
duly sworn by me and that such deposition is a  
true record of the testimony given by such  
witness.

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

IN WITNESS WHEREOF, I have hereunto set  
my hand this 30th day of July, 2025.



-----  
BROOKE E. PERRY

## ERRATA SHEET

CASE NAME: CAMP LEJEUNE WATER LITIGATION In Re: All  
Cases

DATE OF DEPOSITION: July 30, 2025

WITNESS'S NAME: JOSEPH DEL PIZZO

| PAGE | LINE (S) | CHANGE | REASON |
|------|----------|--------|--------|
|------|----------|--------|--------|

|       |       |       |       |
|-------|-------|-------|-------|
| _____ | _____ | _____ | _____ |
|-------|-------|-------|-------|

|       |       |       |       |
|-------|-------|-------|-------|
| _____ | _____ | _____ | _____ |
|-------|-------|-------|-------|

|       |       |       |       |
|-------|-------|-------|-------|
| _____ | _____ | _____ | _____ |
|-------|-------|-------|-------|

|       |       |       |       |
|-------|-------|-------|-------|
| _____ | _____ | _____ | _____ |
|-------|-------|-------|-------|

|       |       |       |       |
|-------|-------|-------|-------|
| _____ | _____ | _____ | _____ |
|-------|-------|-------|-------|

|       |       |       |       |
|-------|-------|-------|-------|
| _____ | _____ | _____ | _____ |
|-------|-------|-------|-------|

|       |       |       |       |
|-------|-------|-------|-------|
| _____ | _____ | _____ | _____ |
|-------|-------|-------|-------|

|       |       |       |       |
|-------|-------|-------|-------|
| _____ | _____ | _____ | _____ |
|-------|-------|-------|-------|

|       |       |       |       |
|-------|-------|-------|-------|
| _____ | _____ | _____ | _____ |
|-------|-------|-------|-------|

|       |       |       |       |
|-------|-------|-------|-------|
| _____ | _____ | _____ | _____ |
|-------|-------|-------|-------|

|       |       |       |       |
|-------|-------|-------|-------|
| _____ | _____ | _____ | _____ |
|-------|-------|-------|-------|

JOSEPH DEL PIZZO

SUBSCRIBED AND SWORN TO BEFORE ME

THIS \_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_.

\_\_\_\_\_

(NOTARY PUBLIC)

MY COMMISSION EXPIRES:

|                       |                       |                     |                       |
|-----------------------|-----------------------|---------------------|-----------------------|
| <b>&amp;</b>          | <b>10:45</b> 47:18    | <b>1997</b> 53:12   | 114:21 128:3          |
| <b>&amp;</b> 2:2      | <b>11</b> 3:22 31:21  | 125:13,15,18        | <b>2018</b> 124:23    |
| <b>0</b>              | 32:20 45:13           | <b>1998</b> 125:21  | <b>2020</b> 56:17,20  |
| <b>0000000001-...</b> | 78:21 110:6           | <b>1:01</b> 129:8   | 115:24 116:3,7        |
| 3:19 18:14            | <b>1100</b> 2:8       | <b>1:07</b> 134:7   | <b>2023</b> 11:25     |
| <b>00275</b> 1:7      | <b>11:59</b> 103:4    | <b>1:08</b> 134:12  | 19:4 97:15            |
| <b>00490</b> 1:8      | <b>12</b> 3:23 31:25  | <b>2</b>            | <b>2025</b> 1:16 5:5  |
| <b>00667</b> 1:9      | 32:23 78:10           | <b>2</b> 3:8 14:16  | 19:4,16 20:1          |
| <b>01145</b> 1:6      | <b>12:12</b> 103:7    | 35:15 36:2          | 116:2 122:16          |
| <b>01553</b> 1:10     | <b>12:47</b> 129:5    | <b>2.3</b> 103:22   | 122:19 135:8          |
| <b>02903</b> 2:3      | <b>13</b> 3:24 32:4   | <b>20</b> 116:18    | 135:18 136:19         |
| <b>1</b>              | 33:9 78:11            | 117:2,14,15         | 137:4                 |
| <b>1</b> 3:5 13:24    | <b>131</b> 4:7        | 137:22              | <b>22</b> 3:20        |
| 14:10 15:13           | <b>133</b> 3:3        | <b>2000</b> 53:11   | <b>23</b> 86:4        |
| 35:4 55:6,8           | <b>14</b> 3:5,8,11,14 | <b>20005</b> 2:9    | <b>24261</b> 136:21   |
| 100:2,14,19,21        | 4:1 19:4,16           | <b>2002</b> 125:21  | <b>25</b> 20:22 80:17 |
| 100:22 103:25         | 20:1 32:8 33:1        | <b>2003</b> 53:11   | <b>26</b> 98:17       |
| <b>1,000</b> 17:6     | 33:6,11,15            | <b>2005</b> 53:10   | <b>2nd</b> 2:3        |
| <b>1-8</b> 119:8,9    | 55:12,13 93:23        | <b>2008</b> 124:15  | <b>3</b>              |
| <b>1.4</b> 103:23     | <b>15</b> 3:15,17 4:2 | <b>2009</b> 56:10   | <b>3</b> 3:11 14:23   |
| <b>10</b> 3:21 24:2   | 31:13 32:12           | <b>2010</b> 27:21   | 55:6,11 57:15         |
| 31:12,17 32:16        | 33:18,22 55:12        | 49:4                | 57:19 72:4            |
| 33:21 34:10           | 55:14 78:20           | <b>2011</b> 56:23   | <b>30</b> 1:16 5:4    |
| 45:25 57:13           | <b>155</b> 1:15       | <b>2012</b> 57:3    | 98:11,12              |
| 106:16 107:11         | <b>16</b> 4:3 62:23   | 106:21 107:18       | 106:18 109:19         |
| 109:21 119:7          | 63:1,2 72:11          | 107:20 109:22       | 109:21 122:16         |
| 129:2                 | 72:12                 | <b>2014</b> 59:6,18 | 137:4                 |
| <b>10,000</b> 17:7    | <b>17</b> 3:18 4:4    | 67:24 68:5          | <b>30s</b> 49:8       |
| <b>10018</b> 1:16     | 86:9                  | 125:21 133:20       | <b>30th</b> 135:8     |
| <b>10065</b> 6:8      | <b>18</b> 3:19 4:7    | <b>2016</b> 53:12   | 136:19                |
| <b>10:40</b> 47:15    | 119:5 131:13          | <b>2017</b> 35:24   | <b>31</b> 3:21,22,23  |
|                       | <b>18th</b> 19:4      | 36:4,11,22          | <b>32</b> 3:24 4:1,2  |
|                       | <b>1986</b> 98:18     | 37:15 38:1          |                       |

|                         |                        |                        |                       |
|-------------------------|------------------------|------------------------|-----------------------|
| <b>33</b> 62:20         | <b>8</b>               | <b>accepted</b> 66:6   | <b>add</b> 23:18      |
| <b>35</b> 49:7          | <b>8</b> 3:19 18:12,15 | 66:13,17               | <b>additional</b>     |
| <b>37</b> 131:8,23      | 20:9 132:1             | 117:15                 | 19:15,19,21,25        |
| <b>38</b> 49:6,7        | <b>80</b> 19:8         | <b>account</b> 18:5    | 34:1                  |
| <b>4</b>                | <b>86</b> 4:4          | 64:4,12 69:10          | <b>address</b> 6:6    |
| <b>4</b> 3:14 15:2      | <b>891</b> 107:11      | 69:17 91:17            | 104:24 105:4          |
| 104:4                   | <b>897</b> 1:5         | 96:3,6 105:25          | <b>addressing</b>     |
| <b>40</b> 49:6 79:14    | <b>9</b>               | 107:17                 | 122:5                 |
| <b>41st</b> 1:15        | <b>9</b> 3:20 22:17,20 | <b>accountant</b>      | <b>adds</b> 19:10     |
| <b>5</b>                | 45:15,16               | 24:12                  | <b>adjacent</b>       |
| <b>5</b> 3:15 15:6      | <b>90</b> 10:10        | <b>accounted</b> 69:2  | 123:25                |
| 20:9 86:22,23           | <b>946</b> 6:8         | 107:25                 | <b>advise</b> 123:14  |
| <b>50</b> 49:5 116:18   | <b>9:48</b> 1:16 5:5   | <b>accounts</b> 64:6   | <b>affairs</b> 29:8   |
| 117:15                  | <b>a</b>               | <b>accurate</b> 8:20   | <b>affect</b> 42:10   |
| <b>525</b> 6:7          | <b>a.m.</b> 1:16 5:5   | 16:1 18:24             | 43:1,8 118:9,9        |
| <b>6</b>                | 47:15,18 103:4         | 23:23 34:19            | 120:2                 |
| <b>6</b> 3:2,17 13:25   | <b>ability</b> 7:7     | 94:23 125:21           | <b>affects</b> 26:19  |
| 15:10,13 86:23          | 42:10 75:24            | <b>accurately</b> 18:7 | 27:1 42:9 83:9        |
| <b>6,000</b> 17:6       | <b>able</b> 39:5 40:6  | <b>act</b> 34:22,25    | <b>age</b> 78:1,5,13  |
| <b>60</b> 10:10         | 46:11 66:17            | 35:5,9 36:10           | <b>ago</b> 91:16      |
| <b>60,000</b> 19:7      | 102:3 112:25           | 36:25 37:16            | 109:19,21             |
| <b>62</b> 4:3           | 115:12                 | 38:9 39:18             | <b>agree</b> 21:10,15 |
| <b>68th</b> 6:7         | <b>above</b> 35:20     | 43:1 77:14             | 21:24 25:2            |
| <b>7</b>                | 36:6 37:8,9            | <b>act's</b> 37:4,10   | 46:2 47:7             |
| <b>7</b> 3:18 17:10,13  | 57:19 71:14            | <b>action</b> 31:7,10  | 51:24 52:10,16        |
| <b>70</b> 116:19        | <b>academic</b> 42:13  | 136:15                 | 54:1,2,8 64:3,7       |
| 117:2,14,16             | <b>academies</b>       | <b>actively</b> 117:25 | 65:11,15,19,22        |
| <b>75</b> 20:21         | 56:10                  | <b>actual</b> 83:13    | 71:9 74:8,15          |
| <b>750</b> 17:5,21,24   | <b>acceptable</b>      | 110:20                 | 75:6 76:14,17         |
| <b>7:23</b> 1:5,6,7,8,9 | 70:21                  | <b>actually</b> 27:20  | 76:21 77:1,15         |
| 1:10                    | <b>acceptance</b>      | 48:18 49:7             | 82:2,15,25            |
|                         | 21:22                  | 79:9,9,17              | 83:4,7 84:1,4,8       |
|                         |                        | 108:5 111:4            | 84:18,21 85:10        |
|                         |                        | 121:1 122:19           | 85:16,20 87:21        |

|  |   |  |   |
|--|---|--|---|
| 88:21 89:7,18<br>92:12 99:25<br>100:12 102:3<br>103:13,16,19<br>105:23 109:4<br>110:8,16,22,25<br>111:6,8 115:19<br>116:4,14,20<br>117:22 118:7<br>118:13,14<br>119:1,20 120:8<br>120:19 121:8<br>121:14,22<br>122:9,14 123:4<br>123:9,13 125:4<br>125:6 130:24<br>132:18<br><b>agreed</b> 59:25<br>107:20<br><b>agreement</b> 13:5<br><b>ah</b> 129:21<br><b>ahead</b> 7:22<br>13:17<br><b>air</b> 101:21<br>102:2<br><b>al</b> 4:8 53:10,11<br>53:11,12,12,16<br>59:17 131:12<br><b>allan</b> 1:8 3:7,21<br>14:9 31:16<br>32:19<br><b>allegedly</b> 28:7<br>48:2 | <b>ambient</b> 101:21<br>102:2<br><b>american</b> 81:21<br><b>amount</b> 42:4<br>57:16 58:23<br>61:11 95:3<br>99:13,14 107:4<br>107:5 126:20<br><b>analogous</b> 67:4<br><b>analyses</b> 73:22<br>73:25<br><b>analysis</b> 16:14<br>52:19 53:19<br>55:19 56:18,25<br>57:6 60:7 71:8<br>71:13,17 72:2<br>72:14 73:2,7<br>73:17,20 86:24<br>93:20 95:2,14<br>96:14 105:14<br>106:3,9 109:11<br>133:22<br><b>analyze</b> 96:1<br><b>analyzed</b> 46:9<br>72:5<br><b>analyzing</b><br>53:24<br><b>anatomically</b><br>121:12<br><b>annual</b> 20:6<br><b>ans</b> 2:11 5:16<br>5:16<br><b>answer</b> 7:6,12<br>7:23 8:23 9:8 | 10:21 11:7,9<br>12:9 16:19<br>18:3 23:15,16<br>29:14,20 30:4<br>30:6,6,15 34:6<br>38:5 40:19,22<br>41:10 44:7<br>46:22 47:6<br>52:4 55:2,4<br>56:21 57:4<br>59:2 62:14<br>64:15,16 66:15<br>69:20 71:12<br>73:24 76:3,4,4<br>81:8 82:6<br>83:10,25 84:11<br>85:3 94:17<br>97:3,5 102:19<br>108:20 109:18<br>110:14 118:4<br>122:7 130:3<br>132:4,7 133:8<br><b>answered</b><br>11:10 40:10,22<br>43:5 97:4<br>109:9 115:5<br><b>answering</b> 8:2<br>8:3,9 84:12<br><b>answers</b> 45:22<br>76:6 135:10<br><b>antihypertens...</b><br>112:17 114:6<br><b>anybody</b> 10:22<br>119:24 | <b>appear</b> 18:4,22<br><b>appearance</b><br>18:5<br><b>appearances</b><br>5:13<br><b>application</b><br>43:2 52:23<br><b>applied</b> 38:1<br>73:6<br><b>applies</b> 38:15<br>52:15 96:23<br><b>apply</b> 40:6<br>46:13 66:21<br>97:12 130:20<br>133:5<br><b>applying</b> 39:17<br><b>appreciate</b><br>79:10,15<br><b>appropriate</b><br>21:12 42:4<br><b>approximately</b><br>10:8 19:7,24<br>20:17<br><b>approximation</b><br>91:8<br><b>aquagenesis</b><br>76:9 83:13<br>84:25<br><b>area</b> 85:3<br><b>areas</b> 21:11<br><b>article</b> 4:4<br>53:17 86:5<br><b>articles</b> 53:8,19<br>80:21 81:10 |
|--|---|--|---|

|   |  |   |  |
|---|--|---|--|
| <b>aschengrau</b><br>67:1,7,9<br><b>aside</b> 16:16<br>24:7 34:9<br>37:14 56:7<br><b>asked</b> 22:12<br>29:7 40:11,19<br>40:24 43:4<br>86:3 99:12<br>108:7 115:4<br>121:20 127:7,9<br>129:18 130:21<br>133:18<br><b>asking</b> 8:1 77:4<br>77:11 82:14<br>83:12,16,20<br>85:6 87:17<br>99:3 109:14<br>117:9,11 127:8<br>128:25<br><b>assess</b> 92:6<br><b>assessed</b> 51:25<br><b>assessment</b><br>25:5,8 35:24<br>36:4,11,22<br>37:15 38:1<br>60:1 62:7<br>63:16 64:3<br>67:11,19 71:7<br>114:22 115:1<br>128:3,8,13,18<br>129:23<br><b>assigned</b> 88:6 | <b>associated</b><br>29:12 44:3,15<br>44:16 45:23<br>46:5 49:16<br>64:9 65:2,8,13<br>65:17,21 90:19<br>100:25 101:10<br>104:24 112:11<br>113:4 117:23<br>123:9,22 126:8<br><b>association</b><br>46:19 53:25<br>72:15 81:22<br><b>assume</b> 7:23<br>87:17 101:18<br><b>assumptions</b><br>70:25<br><b>atsdr</b> 36:4,22<br>37:1 114:21<br>128:7,12,17<br>129:22<br><b>atsdr's</b> 35:24<br>36:11 37:2,9<br>37:15 38:1<br>128:3<br><b>attention</b> 98:9<br><b>attorney</b> 6:13<br>11:19,24<br><b>attorneys</b> 2:2,8<br>10:15 11:1<br><b>attributable</b><br>80:3<br><b>audio</b> 10:5 | <b>author</b> 86:20<br><b>average</b> 62:10<br>63:21 68:22<br>69:5,21<br><b>averaged</b> 71:3<br>71:6<br><b>averages</b> 20:21<br>69:4,13,18<br><b>aware</b> 11:22<br>27:14,22 29:3<br>56:8,9,13,16,18<br>56:19,22,24<br>57:1 66:5,20<br>67:11,18 68:16<br>69:23 70:3,17<br>70:20,24 71:2<br>71:5 72:1<br>81:21 89:14,14<br>100:5,23 101:3<br>101:8,16,20<br>102:5 119:15<br>119:19 128:7<br>128:12 129:22<br><br><b>b</b><br><br><b>back</b> 12:15<br>16:23 19:20<br>23:7 37:19<br>40:24 47:18,20<br>47:22,25 49:7<br>52:6 54:14<br>57:12 61:21<br>81:17 97:6<br>99:24 103:7 | 107:15 118:16<br>129:8,14<br>131:15<br><b>background</b><br>23:24 100:24<br>101:3,6,9,17<br>103:13,22<br>104:24 105:4<br>105:13,25<br><b>balkan</b> 79:5<br><b>banned</b> 102:20<br><b>banning</b> 102:23<br><b>base</b> 63:13,23<br>68:21 69:2<br>107:10<br><b>based</b> 36:10<br>43:16 59:5<br>62:7,10 63:17<br>99:15 101:5<br>106:14 133:24<br><b>basically</b> 69:1<br>75:9 104:10<br>105:9<br><b>basis</b> 102:15<br>126:12,13<br><b>bear</b> 6:23<br><b>bearing</b> 129:10<br><b>begins</b> 84:25<br><b>believe</b> 17:6<br>19:10 49:5<br>57:15 67:9<br>78:11 130:2<br><b>bell</b> 20:24 |
|---|--|---|--|

|  |   |   |  |
|--|---|---|--|
| <b>benefits</b> 29:9<br><b>benjamin</b><br>43:11<br><b>benzine</b> 27:12<br>30:16 44:4,17<br>44:18<br><b>best</b> 7:7 16:15<br>21:1,6 45:21<br>49:18 66:24<br>67:6 69:16<br>75:24 79:16<br>81:2,15<br><b>better</b> 83:20<br>85:4,4,6<br><b>beyond</b> 130:18<br><b>bias</b> 54:7<br><b>bibliography</b><br>38:20 40:15<br>53:13<br><b>big</b> 90:10<br><b>bill</b> 19:22<br><b>billed</b> 19:7<br><b>billing</b> 126:8<br><b>bills</b> 126:14,16<br>127:3<br><b>biochemistry</b><br>26:6,7<br><b>bird</b> 43:14,19<br>43:23 44:2,6<br>44:13,25 46:18<br>73:11 130:14<br>130:19<br><b>bird's</b> 47:5<br>73:21 | <b>bit</b> 43:9 71:23<br>73:4 89:17<br>125:18<br><b>bladder</b> 51:2,6<br>52:11,18,21<br>79:4 115:20<br>116:2,12,14,24<br>117:3,9 122:2<br><b>blanket</b> 103:19<br><b>bleeding</b><br>123:10,25<br><b>bleeds</b> 86:23<br><b>blood</b> 136:15<br><b>bm</b> 1:7,10<br><b>bmi</b> 111:4,7<br><b>bo</b> 1:6,7,8,9,10<br><b>body</b> 31:7<br>45:19 84:18<br>85:8 111:7<br>118:23<br><b>boisclair</b> 2:2<br><b>bothering</b><br>123:3<br><b>bottom</b> 86:22<br><b>bove</b> 59:6,17,17<br>60:3,12,16<br>61:18,21,25<br>62:3 65:7 66:4<br>67:24 68:4,14<br>68:25 69:3<br>71:19 97:24<br>100:20 105:19<br>114:20 130:18<br>133:19,21 | <b>bowel</b> 124:4<br><b>bradford</b> 71:24<br>72:1,13,23<br>73:2,6,12,16,20<br><b>brain</b> 103:24<br><b>break</b> 8:6,8,9<br>47:16,22 62:17<br>103:5 104:16<br>129:3,6<br><b>breast</b> 104:2<br><b>brief</b> 98:5<br><b>broadly</b> 76:7<br><b>broke</b> 129:19<br><b>broken</b> 125:17<br><b>brooke</b> 5:21<br>136:6,22<br><b>brought</b> 48:13<br><b>bulge</b> 122:24<br>123:2<br><b>burden</b> 34:18<br>35:3 36:25<br>37:4<br><b>burdens</b> 35:9<br>36:15<br><b>butcher</b> 79:6<br><br><b>c</b><br><br><b>c</b> 2:1 135:1<br>136:1,1<br><b>calculate</b> 61:11<br>64:18,22 68:14<br><b>calculated</b><br>69:18 | <b>calculations</b><br>61:4,7,14,16,23<br>61:24 62:2<br>67:20 68:1,7<br><b>call</b> 10:4,4,5<br><b>calls</b> 9:24 10:1<br>10:9<br><b>camp</b> 1:3 5:8<br>6:15 11:22<br>21:3 27:16<br>28:8 29:4,9<br>34:21,25 35:5<br>35:9 36:9,24<br>37:3,10,16<br>38:8 39:18<br>43:1 44:18<br>45:18,20 46:15<br>48:2,7,14<br>49:23 50:7,18<br>56:11 58:16,19<br>59:20 61:12<br>62:12 67:5<br>68:15 69:11<br>72:8,9 73:18<br>92:20 93:3,9<br>93:14 94:23<br>95:20,25 100:7<br>100:7 101:13<br>105:8,20,20<br>106:10,18<br>108:12 113:24<br>114:16 115:9,9<br>115:14 133:21<br>133:23 137:2 |
|--|---|---|--|

|  |  |   |   |
|--|--|---|---|
| <b>cancer</b> 3:6,9,12<br>14:7,13,20<br>26:19 27:1,9<br>27:12,15 28:1<br>28:2 29:18,22<br>29:24 30:2,9<br>30:23,24 31:2<br>38:25 44:3,15<br>44:16 46:7,9<br>46:20,24 49:16<br>50:11,13,24,25<br>51:2 52:18,21<br>58:25 59:5<br>71:3,6 72:6,19<br>74:2 76:7,8,18<br>77:19 78:7<br>79:5,12,23<br>80:9 82:4,9,16<br>82:18 83:2,8<br>83:19,22 84:1<br>85:22 87:2,23<br>88:24 89:8,19<br>89:21,22,25<br>90:20,24 92:4<br>92:10,13,15,16<br>92:19 93:2,13<br>94:24 95:7,9<br>97:21 99:1,19<br>100:1,13,25<br>101:10 102:21<br>103:14,17,24<br>104:2,2,2,4,5<br>104:18,22,25<br>105:25 108:15 | 108:17 109:1,5<br>109:16 112:7<br>113:21 114:10<br>114:17 115:17<br>115:19,20<br>116:1 117:7,23<br>118:15 119:11<br>119:16,21<br>120:5,9,15,20<br>120:24 121:1,9<br>121:21 122:23<br>123:7 124:21<br>125:10,24<br>127:13,17<br>128:1,2,10,15<br>128:20 129:25<br>131:1 132:3,5<br>132:8,10,20,25<br>133:3<br><b>cancers</b> 45:5,6<br>45:12,23 49:12<br>52:15 80:3<br>85:11,17 88:15<br>88:19 103:16<br>103:20 118:22<br>118:23<br><b>capacity</b><br>127:20<br><b>capture</b> 17:24<br><b>captured</b> 18:1<br><b>car</b> 106:23<br><b>carcinogenic</b><br>45:6 | <b>carcinogens</b><br>111:17 112:13<br><b>carcinoma</b> 4:5<br>28:1,3 31:4<br>46:6,7 49:20<br>49:24 50:4,15<br>50:21,24,25<br>51:10,13,22<br>52:24 76:20,22<br>77:2,16 79:4<br>79:21 80:14,16<br>81:2 82:12,13<br>82:13 83:14<br>86:7,18 88:11<br>90:7 96:21<br>109:24 110:12<br>110:14 111:13<br>112:10 115:24<br>116:10,17<br>117:1 121:7<br>124:13<br><b>care</b> 21:21<br>124:17 126:17<br><b>career</b> 41:9<br><b>carefully</b> 91:22<br><b>carolina</b> 1:1<br>5:10 6:17<br><b>carry</b> 98:14<br><b>case</b> 1:4 7:2<br>12:13 13:9<br>15:15 16:25<br>17:3,4,25 18:8<br>18:11 19:3<br>20:4,11,23 | 21:8 22:16<br>30:19,20,22<br>33:23 34:2,16<br>35:3 38:7 40:7<br>41:25 42:9<br>43:22 46:20<br>48:9 49:19<br>52:4,8 53:21<br>54:16 55:21<br>56:1 57:8,17<br>58:13,24 66:22<br>70:8 72:24<br>73:9 95:17<br>97:18 99:10<br>100:10,16,24<br>104:8 113:25<br>116:23 126:24<br>127:13 131:5<br>131:20 134:1<br>137:2<br><b>cases</b> 1:5 20:12<br>20:17,19 21:16<br>22:14 38:25<br>39:19,25 89:8<br>104:5,18,22<br>115:3 126:25<br>127:1,1,5,22,23<br>127:25 137:3<br><b>categories</b> 59:9<br>60:9,11,17<br>71:19<br><b>categorized</b><br>84:17 |
|--|--|---|---|



|   |   |   |  |
|---|---|---|--|
| <b>category</b> 46:9<br>67:23 68:4,8,9<br>98:1 107:8,9<br><b>causal</b> 35:10,11<br>36:16,17 72:16<br>115:16<br><b>causally</b> 99:18<br><b>causation</b> 3:21<br>3:22,23,24 4:1<br>9:12 11:14<br>13:20 23:10<br>31:15,19,23<br>32:2,6,19,21,24<br>33:13 34:15,18<br>35:3,18 36:5,6<br>37:1,8,21 38:7<br>39:17 43:10,13<br>43:23 46:3<br>52:19 53:20<br>54:18,24 57:9<br>59:3,22 66:10<br>71:15 72:24<br>73:25 100:17<br>114:18 115:2,7<br>128:9,14,24<br>129:1 130:5,11<br>130:13 133:24<br><b>cause</b> 50:2,12<br>50:20 72:18<br>74:2,10,14<br>75:8,16,17,20<br>76:1 88:16,21<br>88:22 89:3,8<br>91:5 92:6 | 95:12,15,18,25<br>97:18,21 106:4<br>108:8,15,17<br>127:17,25<br>128:2<br><b>caused</b> 46:24<br>49:11,23 50:10<br>50:18 72:7<br>88:25 89:1<br>119:16,21,25<br>120:10,20<br><b>causes</b> 74:16<br>75:6,7,8,13,14<br>75:25 76:9<br>77:19 89:19,24<br>90:24 94:5,15<br><b>cava</b> 124:4<br><b>caveat</b> 82:24<br>93:11 116:9<br>118:20<br><b>cell</b> 4:5 28:1,3<br>31:4 46:6,6<br>49:20,20,24<br>50:4,4,21,23,25<br>51:2,10,13,22<br>52:24 76:18,19<br>76:19,21,22<br>77:2,4,6,10,12<br>77:13,16 79:4<br>79:20,23 80:14<br>80:15 81:1<br>82:11,12,13<br>83:14,14 86:7<br>86:18 88:11 | 90:7 96:21<br>110:11,14<br>111:13 112:10<br>115:24 116:10<br>117:21 121:7<br>124:13<br><b>cells</b> 51:1 76:9<br>76:10 84:21,24<br>85:1,5<br><b>censored</b> 31:7<br><b>certain</b> 74:23<br>80:12 83:12<br><b>certainly</b> 47:9<br>93:12 98:6<br>106:8<br><b>certainty</b> 41:20<br>41:23 42:1,6<br>42:11 43:3<br>72:7<br><b>certification</b><br>24:17<br><b>certifications</b><br>25:13,21<br><b>certify</b> 135:6<br>136:8,14<br><b>cetera</b> 87:20<br>111:18 112:13<br>113:6<br><b>chance</b> 117:3<br><b>change</b> 23:18<br>103:11 129:12<br>129:13 137:6<br><b>changes</b> 132:25 | <b>characteristics</b><br>77:3,5<br><b>characterizati...</b><br>15:17 95:6<br><b>characterize</b><br>107:24<br><b>characterized</b><br>33:15<br><b>charge</b> 17:2<br><b>charging</b> 18:8<br><b>chart</b> 63:24<br>98:20<br><b>charts</b> 63:11<br>97:23<br><b>check</b> 90:4<br><b>chemical</b> 64:8<br>65:1,12,16,20<br>68:9,23 75:1<br>82:21 89:15<br><b>chemicals</b> 44:5<br>46:20 65:25<br>67:23 68:4<br>69:11 117:5,6<br>117:19 127:23<br><b>chemotherapy</b><br>79:12<br><b>chemours</b><br>55:14<br><b>child</b> 48:19<br><b>chloride</b> 27:8<br>30:7,9 44:4<br><b>chromophobe</b><br>77:12 |
|---|---|---|--|

|   |   |  |   |
|---|---|--|---|
| <b>chronic</b> 52:1,8<br><b>cigarette</b> 98:5,8<br>106:11 107:21<br>113:17<br><b>cigarettes</b><br>107:2<br><b>circle</b> 97:6<br><b>circling</b> 61:21<br>99:24,25<br><b>cite</b> 35:24 54:16<br>102:20 133:20<br><b>cited</b> 53:8<br><b>civilian</b> 62:10<br><b>clarified</b><br>133:15<br><b>clarify</b> 7:22<br>22:6 45:10<br>108:11 121:17<br><b>clarifying</b><br>79:15 133:14<br><b>classification</b><br>60:11 61:25<br><b>classifications</b><br>59:18 60:17<br>61:18<br><b>classify</b> 94:24<br><b>clear</b> 26:21<br>40:18 49:20<br>50:4 76:21<br>77:11 79:19<br>87:16 105:17<br>125:19 130:12<br><b>clearcut</b> 85:3 | <b>clearly</b> 7:12<br><b>clinical</b> 39:8<br>40:2,4 41:17<br>77:2,5 94:2,13<br>96:12<br><b>clja</b> 36:9<br><b>closely</b> 116:13<br><b>coast</b> 105:12,12<br><b>cohorts</b> 105:18<br><b>collection</b><br>18:24 87:18<br><b>collective</b> 16:1<br><b>come</b> 74:13<br>76:2 91:3<br>93:20 96:13<br>99:3 121:21<br><b>comes</b> 92:5<br><b>comfortable</b><br>99:17<br><b>coming</b> 36:24<br><b>comment</b> 88:12<br><b>commission</b><br>137:24<br><b>common</b> 76:22<br>76:24 85:13<br>90:24,25<br>103:17 104:3<br>116:19 117:25<br><b>communicati...</b><br>10:22 11:18<br>28:10,13,16,19<br>28:22,25 29:4<br><b>company</b> 55:14<br>55:15 | <b>comparable</b><br>106:11<br><b>compare</b> 40:3<br>76:2<br><b>compared</b> 66:4<br>103:16 109:6<br>113:5<br><b>comparing</b><br>58:18 65:10<br>105:18,19<br><b>compelling</b><br>95:20,21<br><b>compensation</b><br>3:19 16:24<br>17:12,20,21<br><b>complete</b> 8:20<br>15:25 23:22<br>80:1 135:9<br><b>completely</b><br>71:20 121:14<br><b>compound</b><br>29:23 98:2<br><b>compounds</b><br>46:24 62:9<br>63:18,20 70:16<br>95:3,5 100:22<br>107:10<br><b>concentration</b><br>63:19,25 65:7<br>65:9 68:23<br>69:5,14,21<br><b>concentrations</b><br>63:20,21 70:21<br>71:10 102:6,17 | <b>concerning</b><br>52:24 53:7<br><b>conclude</b> 35:10<br>35:11 36:16,17<br>48:4 49:9,10<br><b>concluded</b><br>67:21 68:2<br>128:7,12<br><b>conclusion</b><br>49:25 52:14<br>53:3 72:6<br>87:25 93:21<br><b>conclusions</b><br>43:21<br><b>concrete</b><br>106:21<br><b>condition</b> 74:11<br>74:17<br><b>confirm</b> 116:4<br><b>connection</b><br>16:25<br><b>consent</b> 123:18<br><b>conservative</b><br>64:14<br><b>consider</b> 16:5<br>16:11,13 52:18<br>74:20 77:21<br>79:20 99:12<br>110:1 114:2<br><b>consideration</b><br>22:1<br><b>considerations</b><br>72:13,23 73:3 |
|---|---|--|---|

|   |  |   |  |
|---|--|---|--|
| <b>considered</b> 3:6<br>3:9,12,15,16,18<br>14:3,7,13,20<br>15:1,5,9,15<br>16:2,2,7,8 55:9<br>56:4 70:6<br>77:18 78:5,16<br>78:23 79:2,22<br>96:20 98:6<br>100:14 101:5<br>105:2 106:2,8<br>108:19 110:3<br>111:12,15<br>112:11 113:3<br>113:15 114:5<br>115:6<br><b>considering</b><br>46:8 71:21<br>74:19 100:9,16<br>106:8 123:1<br><b>consistent</b><br>90:21 126:24<br><b>consistently</b><br>100:2,14<br>128:19 129:24<br><b>constitute</b><br>71:11<br><b>consulted</b><br>80:22 81:10<br><b>consumption</b><br>63:24 65:9<br><b>contact</b> 12:7,21<br><b>contacted</b><br>11:24 12:4 | <b>contained</b><br>16:17 34:4<br><b>contains</b> 24:1<br><b>contaminants</b><br>58:23<br><b>contaminate</b><br>69:24 70:1,18<br>73:17<br><b>contaminated</b><br>45:21 49:23<br>50:1,7,10,18<br>59:20<br><b>contamination</b><br>62:8 67:4<br>102:14<br><b>contents</b> 44:10<br><b>context</b> 42:17<br>70:14 71:15<br>73:4 89:17<br>104:7 132:22<br><b>contexts</b> 38:12<br><b>continual</b><br>122:17<br><b>continue</b> 35:4<br><b>continuing</b><br>89:24<br><b>contribute</b><br>83:13<br><b>control</b> 39:7<br>77:25<br><b>controlled</b><br>78:16 88:9<br>91:13,14,15,19<br>91:19 112:15 | 112:17,21<br>113:3,7,8,11,12<br>113:19 114:7<br><b>conversation</b><br>12:19<br><b>conversations</b><br>12:10<br><b>conversion</b><br>124:5<br><b>copy</b> 16:1<br>131:16 134:8<br><b>corps</b> 106:17<br><b>correct</b> 6:20<br>8:23 9:2,4<br>11:17 13:4<br>17:22 19:23<br>24:8,12,15<br>25:5,11,14,15<br>25:19,25 26:1<br>26:4,16 35:23<br>43:11,14,19<br>47:23 50:4<br>51:11,19 58:14<br>61:4,14 63:7<br>64:6,18,21,23<br>64:24 67:25<br>68:6 70:23<br>77:22 78:8,19<br>79:1 80:6<br>92:17 94:6<br>97:10,15,16,18<br>97:19 106:5<br>120:7 124:22<br>125:3 135:9,11 | <b>corrections</b> 9:6<br><b>correctly</b> 84:13<br>132:16<br><b>correlation</b><br>110:13<br><b>corresponds</b><br>36:21<br><b>council</b> 56:9<br><b>counsel</b> 5:12<br><b>counted</b> 68:22<br><b>county</b> 135:4<br>136:4<br><b>couple</b> 107:1<br><b>course</b> 21:18<br>74:4 75:2<br>76:16 83:3<br>93:15,18 105:2<br>131:7<br><b>court</b> 1:1 5:9<br>5:20 7:9 8:16<br>17:8 31:10<br><b>covering</b> 37:20<br><b>crafted</b> 54:2<br><b>credit</b> 107:17<br><b>credited</b> 107:19<br><b>criteria</b> 71:25<br>72:2 73:12<br><b>ct</b> 104:11<br><b>cubed</b> 67:16<br><b>cuff</b> 122:2<br><b>cumulative</b> 4:3<br>62:8,21 63:5<br>63:17,19,23<br>64:7,25 65:7,8 |
|---|--|---|--|

|   |  |  |  |
|---|--|--|--|
| 65:9 66:3 71:2<br>71:5<br><b>curious</b> 99:8<br><b>current</b> 21:20<br>23:6 40:22<br><b>currently</b><br>125:23<br><b>curriculum</b><br>3:20 22:19<br>23:1<br><b>cut</b> 130:25<br>131:2 132:14<br><b>cv</b> 1:5,6,7,8,9<br>1:10 23:8,13<br>23:17,20 24:5<br>55:7<br><b>cyclophosph...</b><br>79:6,11 | 31:18,22 32:1<br>32:5,9,13<br>62:24 69:1,1<br>86:10 131:13<br>137:4<br><b>dates</b> 48:8,10<br><b>david</b> 1:6,7<br>3:13,23 14:22<br>31:24 32:25<br><b>day</b> 17:7,7<br>67:13 68:21<br>69:10,14 93:14<br>106:25 109:20<br>135:8,17<br>136:19 137:22<br><b>days</b> 62:11<br>90:16 106:16<br>107:11 109:21<br><b>dayton</b> 98:16<br><b>dealership</b><br>106:23<br><b>death</b> 123:11<br><b>decade</b> 90:6<br><b>december</b><br>124:15<br><b>decent</b> 79:9<br><b>decide</b> 54:13<br><b>decrease</b> 118:2<br><b>deem</b> 95:12<br><b>deeply</b> 96:1<br><b>defendant</b> 1:14<br>2:8 20:15<br><b>defense</b> 20:21 | <b>define</b> 41:22<br>58:7,20 77:24<br>78:2<br><b>defined</b> 35:19<br><b>defining</b> 61:1<br><b>definitely</b> 44:22<br>111:25<br><b>definition</b> 36:8<br>36:10,21 37:9<br>37:11 40:2<br><b>definitive</b> 75:20<br>76:3 130:25<br>132:9,14,19<br><b>definitively</b><br>58:20<br><b>degree</b> 41:19<br>41:22,25 42:6<br>42:11,13 43:2<br>72:7<br><b>degrees</b> 26:5,8<br>26:11,13,15<br><b>del</b> 1:13 3:2,3,4<br>3:7,10,13,14,15<br>3:17,18,20 4:2<br>4:8 5:11 6:4<br>14:8,9,14,15,21<br>14:22,25 15:2<br>15:4,6,8,10<br>17:11,12 18:15<br>22:18,19 31:17<br>31:21,24 32:4<br>32:7,11,11<br>62:23 86:8<br>131:6,11,12,20 | 133:18 135:6<br>135:15 136:9<br>137:5,20<br><b>delpizzo</b> 3:19<br>18:14<br><b>department</b> 2:7<br>6:14 29:8<br><b>depend</b> 20:3<br><b>depending</b> 65:9<br><b>depends</b> 23:5<br>76:4 100:4<br>103:20 109:18<br>124:1<br><b>deponent</b> 5:11<br><b>deposed</b> 6:20<br><b>deposition</b> 1:13<br>4:7 5:6 7:1,9<br>8:24 9:5,11,13<br>9:14,15,19<br>10:12,15 11:9<br>11:12,13,20<br>17:6 18:5<br>19:17 98:21<br>106:15 131:5,5<br>131:10,19<br>135:8 136:10<br>136:11 137:4<br><b>depositions</b><br>98:20 127:15<br><b>derailment</b><br>98:19<br><b>dermal</b> 64:12<br>64:18 |
| <b>d</b>  |  |  |  |
| <b>d</b> 5:23 135:1<br><b>d.c.</b> 2:9<br><b>daily</b> 70:21<br>106:22<br><b>data</b> 65:5 66:18<br>95:20,20 96:11<br>98:7,7,22<br>99:21 100:8<br>109:1 110:11<br><b>date</b> 5:4 14:10<br>14:17,24 15:3<br>15:7,11 17:14<br>18:16,23,23<br>22:21 23:17   |  |  |  |

|   |   |  |   |
|---|---|--|---|
| <b>describe</b> 68:19<br><b>describing</b><br>107:25<br><b>description</b> 3:4<br><b>designation</b> 3:5<br>3:8,11 14:5,11<br>14:18<br><b>designed</b> 70:20<br><b>despite</b> 94:3,13<br><b>detailed</b> 93:20<br><b>detect</b> 112:25<br><b>detected</b><br>101:20 102:2<br><b>determine</b><br>54:15 61:16,24<br>72:15 74:2,10<br>74:14 75:19<br>114:16<br><b>determined</b><br>94:5,15 115:23<br>119:16<br><b>determining</b><br>65:12,16,20<br>70:25 105:24<br><b>develop</b> 49:24<br>50:11,19 58:24<br>80:15 81:6<br>82:3,8 83:1,22<br>85:9 92:15<br>108:25 117:12<br><b>developed</b> 59:5<br>90:17 91:15<br>106:18 | <b>developing</b><br>80:8,22 81:10<br>83:18 103:14<br>105:25 109:5<br>116:11 132:5<br><b>development</b><br>78:7,25 79:8<br>81:1,14 83:8<br>85:21 87:2,22<br>95:9 100:25<br>104:25 111:12<br>114:17 115:17<br>115:19<br><b>develops</b> 92:13<br>92:16<br><b>diabetes</b> 87:12<br>87:19 91:15,18<br>110:17,21<br><b>diagnosed</b> 49:7<br>49:19 50:3,14<br>51:12,16,18<br>52:20 97:14<br>116:20 123:6<br>132:24<br><b>diagnoses</b><br>30:12,13 53:6<br>82:19<br><b>diagnosis</b> 71:20<br>74:1,8,12,15,18<br>75:5,7 98:12<br>108:20 110:20<br>116:7 121:6,21<br>124:9 | <b>die</b> 84:21,24<br>85:5<br><b>difference</b><br>68:24,25<br>107:22 118:24<br><b>different</b> 36:14<br>40:17 74:24<br>77:1,4,5,7,15<br>79:20,23 80:1<br>83:9 90:14<br>105:18 109:22<br><b>differential</b><br>30:12,13 46:12<br>46:14 53:6<br>71:20 74:1,8<br>74:12,15,18<br>75:5,6 91:4<br>93:17 96:4,20<br>98:6 105:1<br>106:5,9 107:17<br>108:1,20 114:3<br>115:13,15<br><b>differently</b><br>77:14 83:9<br><b>directly</b> 40:4<br>45:20 58:9<br><b>disagree</b> 89:13<br>89:16 102:1,3<br>102:9<br><b>disagreeing</b><br>47:1,4<br><b>disciplinary</b><br>31:6,9 | <b>disclosure</b> 3:5,8<br>3:11 14:6,12<br>14:19<br><b>discovered</b><br>90:13 104:21<br><b>discuss</b> 89:11<br><b>discussed</b> 10:25<br>44:5 52:12<br>54:20 91:7<br>111:11<br><b>discussing</b><br>44:12 122:1<br>123:18<br><b>discussion</b><br>45:14<br><b>discussions</b><br>44:2,25<br><b>disease</b> 52:1,4,8<br>81:23 87:13<br>105:24 124:21<br>125:24 126:9<br><b>distinct</b> 77:2,16<br><b>district</b> 1:1,1,2<br>5:9,10 6:16<br><b>divergence</b><br>68:18<br><b>divulge</b> 11:6<br>12:10<br><b>doctor</b> 6:11<br>14:1 15:13<br>17:16 18:18<br>22:23 24:8<br>25:10,19 29:16<br>30:8 32:15 |
|---|---|--|---|

|   |   |  |   |
|---|---|--|---|
| 43:9 47:20<br>63:4 76:7<br>86:12 103:9<br>129:10 130:9<br>130:24 131:19<br>131:22<br><b>doctors</b> 74:9<br><b>document</b> 1:4<br>16:4 17:19<br>18:1,19,21<br>22:23,25 23:2<br>23:4,22 24:1<br>32:17,20,23<br>33:1,18 63:4,9<br>86:13,15,16<br>87:5<br><b>documents</b><br>10:18 11:1,8<br>11:11 14:2<br>15:18,20 33:21<br>37:14<br><b>doing</b> 71:20<br>95:14 124:6<br><b>dominant</b><br>85:21 87:1,22<br>88:3,4,11<br><b>dose</b> 71:3,6<br>83:5 85:19<br><b>doses</b> 67:13,15<br><b>double</b> 100:24<br>101:9<br><b>doubles</b> 101:13<br><b>doubling</b> 101:1 | <b>douglas</b> 86:16<br><b>downs</b> 1:6<br><b>dr</b> 3:14,15,17<br>5:11 9:14,14<br>9:15 11:12,13<br>11:13 14:25<br>15:4,8 33:13<br>43:11,14,16,19<br>43:23,23 44:2<br>44:2,5,6 45:3<br>45:11,19 46:18<br>46:18 47:2,5<br>52:14,23 54:21<br>61:3,7,16,22<br>62:7 63:16<br>64:3,18 65:24<br>65:24 66:9,12<br>66:22 67:20<br>68:1,7,13,14,25<br>69:1,3,4,9<br>73:11,11,16,21<br>73:21 86:16<br>130:14 133:18<br><b>draft</b> 23:5,6,8<br>23:20 32:18<br><b>drafted</b> 23:2,4<br>23:12 33:12<br><b>drinking</b> 56:11<br>70:21 71:9<br><b>drs</b> 43:23 44:13<br>44:25 130:14<br>130:19<br><b>drugs</b> 79:5,12 | <b>dry</b> 130:25<br>131:2 132:14<br><b>due</b> 99:2<br><b>duly</b> 5:24<br>136:11<br><b>duration</b> 57:25<br>58:4 60:24<br>65:15 92:1<br>98:9 108:22,24<br>109:12<br><b>e</b><br><b>e</b> 2:1,1 5:23,23<br>12:2 135:1,1<br>136:1,1,6,22<br><b>earlier</b> 47:25<br><b>early</b> 98:18<br><b>earned</b> 20:6<br><b>east</b> 6:7 105:12<br><b>eastern</b> 1:1<br>5:10 6:16<br><b>easy</b> 91:18<br>109:17<br><b>economist</b><br>24:10<br><b>education</b> 40:5<br>96:13<br><b>educational</b><br>23:23<br><b>effect</b> 39:4<br><b>effects</b> 27:8,12<br>29:17 30:2,8<br><b>efficacious</b><br>39:10 | <b>efficacy</b> 39:2,4<br>39:6<br><b>either</b> 35:19<br>46:18 95:15<br>112:23<br><b>elevated</b> 101:7<br>109:5 112:22<br>130:7<br><b>elevation</b> 86:17<br><b>elimination</b><br>75:14<br><b>emotional</b><br>121:13<br><b>employ</b> 80:19<br><b>employed</b><br>72:14<br><b>employment</b><br>23:24<br><b>endeavor</b> 7:20<br>8:3<br><b>ended</b> 122:21<br><b>endemic</b> 79:5<br><b>endourology</b><br>41:8<br><b>ensure</b> 21:20<br><b>entire</b> 125:17<br><b>entitled</b> 4:4<br>86:5 131:6<br><b>environmental</b><br>26:12,13 78:17<br>79:3 114:8<br><b>epa</b> 56:16,19,22<br>57:1 69:23<br>70:3,17 71:2,5 |
|---|---|--|---|

|   |  |  |  |
|---|--|--|--|
| 102:20<br><b>epa's</b> 67:11<br><b>epidemiologic</b><br>52:14,23 53:24<br>100:1,13<br><b>epidemiologi...</b><br>24:21 66:20<br>96:11 128:18<br>129:23<br><b>epidemiologist</b><br>24:15 43:17<br><b>epidemiology</b><br>24:17,24,25<br>25:2 44:12<br>45:8,11,15<br>46:19 52:18<br>133:25<br><b>equation</b> 68:20<br><b>equipoise</b> 35:20<br>36:5 37:7,9<br>128:14<br><b>equivalent</b> 39:6<br>39:7<br><b>erick</b> 2:10 3:2<br>5:14 6:13<br><b>erick.marquina</b><br>2:10<br><b>errata</b> 4:2<br>32:10 33:19<br>137:1<br><b>esq</b> 2:4,5,10,11<br><b>establish</b> 59:18<br>72:23 | <b>establishes</b><br>70:17<br><b>estimate</b> 27:19<br><b>estimated</b><br>67:12<br><b>estimates</b> 64:14<br><b>et</b> 4:8 53:10,10<br>53:11,11,12,16<br>59:17 87:19<br>111:18 112:13<br>113:5 131:12<br><b>etiology</b> 30:23<br>30:24 96:3,7<br>96:22 105:24<br>118:7,10,11,14<br><b>evaluate</b> 21:16<br>69:24 70:4<br>71:3,6<br><b>evaluated</b><br>71:24<br><b>evaluating</b><br>73:12 99:9<br><b>evaluation</b><br>56:17,20 74:13<br>114:25 115:8<br><b>event</b> 40:2<br><b>everybody</b><br>82:11<br><b>everyday</b> 42:23<br>101:17 102:15<br><b>evidence</b> 35:20<br>35:21,25 36:5<br>36:6,9,11,19,20<br>36:22 37:8,10 | 38:6 42:2,4<br>93:15 99:15,16<br>100:23 101:8<br>106:21,24<br>124:20 125:23<br>128:4,8,9,13,14<br>128:18 129:23<br><b>exact</b> 23:17<br>42:15,18 76:15<br><b>exactly</b> 125:22<br><b>examination</b><br>3:2 6:9 133:16<br><b>examined</b> 5:25<br><b>examines</b> 45:20<br><b>example</b> 7:13<br>22:12 37:7<br>39:8 44:11<br>72:3 83:17<br>90:5 92:14<br>96:23,25,25<br>99:9 103:21<br>112:12 116:23<br><b>examples</b> 74:25<br><b>excess</b> 71:10<br>79:7<br><b>exclude</b> 21:25<br><b>excuse</b> 38:14<br>45:5 50:8 56:8<br>57:2<br><b>execute</b> 13:5<br><b>exhibit</b> 14:9,16<br>14:23 15:2,6<br>15:10 17:13,17<br>18:15 22:20 | 31:17,21,25<br>32:4,8,12,16,20<br>32:23 33:1,6,9<br>33:11,15,18<br>34:10 45:13<br>55:6,8 57:13<br>62:23 78:21<br>86:9 93:23<br>110:6 119:7<br>131:12<br><b>exhibits</b> 3:4 4:9<br>15:13,25 16:10<br>16:17,21,22<br>31:14 33:21<br><b>existed</b> 56:13<br><b>exists</b> 35:11<br>36:16 56:15<br><b>expectancy</b><br>124:12 125:9<br><b>expected</b><br>124:11 125:8<br><b>expenses</b><br>126:20<br><b>experience</b><br>21:13 39:16,21<br>40:5 90:23<br><b>experiences</b><br>39:23<br><b>expert</b> 3:5,8,11<br>3:19,21,22,23<br>3:24 4:1,2,3<br>13:9 14:6,12<br>14:19 17:3<br>18:14 20:7,14 |
|---|--|--|--|



|  |  |  |  |
|--|--|--|--|
| 20:24 21:2,7<br>21:11,16,19,25<br>25:4,11 30:20<br>30:23 31:16,20<br>31:24 32:2,7<br>32:10,19,21,24<br>33:13,20 46:3<br>54:18 56:1<br>62:21 63:6<br>73:7 115:7<br>127:2<br><b>expertise</b> 96:12<br><b>experts</b> 59:22<br>66:10 100:17<br>114:18 128:24<br>129:1 130:5<br>133:24<br><b>expires</b> 137:24<br><b>explain</b> 85:11<br>85:17 87:14<br><b>exposed</b> 27:16<br>28:7 45:21<br>48:2,5 57:16<br>57:25 58:2,6<br>59:19 61:12<br>62:10 65:4<br>71:14,16 95:24<br>101:16 117:4<br>117:18<br><b>exposure</b> 4:3<br>29:12,17 30:2<br>30:9,16 44:3<br>44:18 46:15<br>49:22,25 50:7 | 50:9,17 58:18<br>58:19,23 59:6<br>59:7,8 60:9,11<br>60:17,24 61:3<br>61:7 62:2,3,7,8<br>62:21 63:6,11<br>63:16,17 64:3<br>64:7,9,12,13,18<br>64:22,25 65:2<br>65:12,13,15,17<br>65:19,21 66:21<br>67:20,22,23<br>68:3,4,8,9,10<br>68:11,22 70:15<br>70:22 71:9,19<br>72:18 75:1<br>79:3 84:15<br>89:15 92:19<br>93:3,9,16<br>94:23 95:2,18<br>97:1,25 98:22<br>98:23 99:2,13<br>99:14,17,22<br>100:23 101:4,9<br>106:11 107:3,8<br>107:9 108:12<br>108:13,14<br>111:17 113:24<br>115:14 119:17<br>119:22,25<br>120:10,21,25<br>128:9,14,20<br>129:25 130:8 | <b>exposures</b> 29:9<br>30:20 45:22<br>49:11 58:13<br>59:19 60:21<br>67:12 71:18<br>72:8 78:17<br>82:22 97:23<br>112:3,12 113:5<br>114:9 130:23<br><b>extensive</b> 74:13<br>91:1,2,23 94:3<br>94:13<br><b>extent</b> 11:5<br><b>extremely</b><br>105:10,11<br><b>eyes</b> 99:5 | 113:13,16<br>114:3,9,16<br>115:25 117:23<br>129:19 132:4<br><b>factoring</b> 30:11<br><b>factors</b> 4:5<br>29:22 30:11,14<br>46:16 48:13<br>49:16 71:21<br>72:5 74:14,23<br>77:18,22 78:6<br>78:14,18,24<br>79:8,20,24<br>80:8,15,18,22<br>81:1,6,7,11,14<br>81:23 82:3,16<br>83:4,7,13<br>84:14,17 85:10<br>85:16,20,21<br>86:6,17,25<br>87:1,6,12,18,19<br>87:22,22 88:10<br>90:19 91:16,24<br>91:25 92:2<br>94:4,14 95:23<br>96:9,12,18,19<br>106:8,10 110:4<br>112:1,6 113:20<br>114:6 130:25<br>132:2,10,15,19<br>133:3,5<br><b>facts</b> 82:10<br><b>failing</b> 54:5 |
|  |  | <b>f</b>   |  |
|  |  | <b>f</b> 136:1<br><b>fact</b> 107:19<br>108:21 123:6<br><b>factor</b> 29:24<br>73:17 77:24<br>78:2 82:19,25<br>85:25 88:4<br>90:15 91:3<br>92:1,2,11,13<br>95:8,11,13,13<br>96:10,10,15,16<br>96:24 98:3,14<br>99:4,8,14<br>101:5 109:11<br>110:1,9 111:12<br>111:16,25          |  |



|  |   |  |   |
|--|---|--|---|
| <b>fair</b> 7:7,8,17,24<br>8:4,5,10,24<br>13:1 15:17<br>16:9 18:6 19:2<br>19:7,18 24:1<br>25:7,16,18<br>26:2,5,8,10,11<br>30:15 31:2<br>34:24 35:13,25<br>36:6 37:18,21<br>37:25 44:9,19<br>45:17 52:17<br>54:5,23 55:16<br>57:6 58:22<br>60:3,10,20<br>61:6,10,15<br>62:4 64:17<br>66:11 69:7,9<br>69:16 72:20,22<br>87:3 88:15,24<br>89:18,23 90:18<br>92:9,18 93:2,7<br>94:20,25 95:1<br>95:6 96:22<br>97:11 104:16<br>104:17,20<br>105:3 108:2<br>111:19,20<br>112:5,13,14<br>113:19 114:1,2<br>114:22 126:19<br>126:23 133:2<br><b>fairly</b> 33:15<br>90:20,21 | 103:17<br><b>fall</b> 11:24<br><b>familial</b> 111:17<br>112:13 113:5<br><b>familiar</b> 6:23<br><b>family</b> 48:20<br>78:5,13,23<br>82:21 84:14<br>89:14<br><b>fancher</b> 1:7<br>3:13,23 13:22<br>14:22 15:16<br>28:23 31:24<br>32:25 33:24<br>37:23 38:3<br>50:3,6 62:5<br>68:2 74:6 78:4<br>78:15 80:23<br>93:1 95:19<br>96:4 97:8<br>111:13 112:10<br>120:4 122:22<br>123:4 125:7,13<br>125:15,23<br><b>fancher's</b> 29:1<br>50:9 93:2<br>94:22 120:9<br>126:24<br><b>far</b> 27:14,24<br>29:3 104:2<br>126:11 133:1<br><b>father</b> 9:24<br>10:3 | <b>fc</b> 55:14<br><b>fee</b> 18:7,7,9<br>20:10,12<br><b>feel</b> 130:5<br><b>fell</b> 61:17 62:1<br>67:21 68:2<br><b>fenaisitin</b> 79:7<br>79:12<br><b>field</b> 21:22 66:6<br>88:18<br><b>figure</b> 17:24<br>117:14<br><b>find</b> 45:24<br><b>finding</b> 90:2<br>104:13<br><b>fine</b> 131:17<br><b>finish</b> 8:1,3,8<br><b>firm</b> 20:24<br><b>firms</b> 21:3,5<br><b>first</b> 5:24 10:16<br>11:22,25 12:16<br>15:19 18:10<br>40:14 41:24<br>49:1,4 53:14<br>80:19 93:25<br>127:6,7<br><b>fits</b> 38:21<br><b>five</b> 47:12 53:8<br>53:19 83:17<br>133:23<br><b>flank</b> 122:24<br>123:2<br><b>flip</b> 40:12 | <b>floor</b> 2:3<br><b>fluctuations</b><br>69:10,18<br><b>flush</b> 129:1<br><b>focus</b> 120:1<br><b>focused</b> 86:24<br>92:7<br><b>focusing</b><br>133:19<br><b>follow</b> 108:10<br>112:24<br><b>follows</b> 6:1<br><b>ford</b> 55:15<br><b>forgot</b> 118:19<br><b>form</b> 22:16<br>28:2 66:18<br>67:19<br><b>formed</b> 33:23<br><b>former</b> 109:2,4<br><b>forming</b> 22:4<br>39:24 54:6<br>73:4<br><b>forms</b> 123:18<br><b>formulate</b> 70:7<br>134:1<br><b>forth</b> 136:10<br><b>found</b> 44:13<br>45:15 82:20<br>104:14<br><b>four</b> 44:5 53:14<br>107:8 114:21<br>123:12,13<br><b>framework</b><br>60:4,6,21 |
|--|---|--|---|

|  |   |   |  |
|--|---|---|--|
| <b>frank</b> 1:9 3:10<br>3:22,24 14:15<br>31:20 32:3,22<br>33:3<br><b>frequency</b> 58:4<br>58:6 65:19<br><b>frequently</b><br>84:18 91:21<br>102:5,17<br><b>front</b> 131:15<br><b>full</b> 17:7 64:8<br>65:1 122:10,15<br>123:5<br><b>fully</b> 89:20<br>121:23<br><b>function</b> 126:1<br>126:4,6<br><b>further</b> 133:11<br>134:4 136:14 | 98:7 100:17<br>102:16 108:23<br>111:24 112:8<br>113:14 114:18<br>115:2,7 117:11<br>117:12,20,21<br>118:25 128:24<br>129:1 130:5,10<br>130:12 132:18<br>133:24<br><b>generally</b> 47:7<br>66:6 72:1 94:2<br>94:12 102:24<br>109:4 111:15<br>112:11 113:3<br>118:13 126:21<br>126:23 133:5<br><b>generate</b> 9:17<br><b>genetic</b> 78:5,13<br>78:23 82:8,9<br>84:2,19 118:21<br>119:1<br><b>getting</b> 80:20<br>109:23 126:17<br><b>give</b> 8:20 20:19<br>27:19 38:19<br>39:23 42:10,19<br>46:11,15 53:5<br>65:1 74:24<br>75:25 80:11<br>91:7,11 96:1<br>96:14 97:5<br>103:21 110:4<br>113:23 115:12 | 115:13 127:9<br>130:4<br><b>given</b> 69:10<br>91:23 94:22<br>103:10 128:5<br>133:1 135:11<br>136:12<br><b>gives</b> 40:6 73:4<br><b>giving</b> 22:12<br>30:12 52:3<br>59:3 95:19<br>131:4<br><b>go</b> 6:19,23 7:22<br>13:17 15:24<br>17:5 36:2<br>45:13 47:11<br>48:13 55:6,11<br>55:11 57:12,15<br>70:25 72:11,11<br>81:17 91:16<br>92:2 103:1<br>117:12 118:16<br>123:23 131:22<br><b>goes</b> 36:3 39:12<br>104:9 109:2<br>121:1<br><b>going</b> 6:19,22<br>7:5 9:7 10:20<br>11:4 12:8 14:1<br>32:20,23 33:1<br>40:24 42:21<br>59:1 76:7 77:9<br>79:6 90:16<br>104:9 121:2 | 122:17<br><b>golkow</b> 5:3<br><b>good</b> 6:11,12<br>79:17 130:6<br><b>goodman</b> 9:15<br>11:13<br><b>gotten</b> 93:13<br><b>governed</b> 116:5<br><b>grade</b> 115:20<br>115:23 116:1<br>116:10 117:1<br><b>gray</b> 85:3<br><b>great</b> 111:16<br>112:12 113:4<br>113:13 133:13<br><b>ground</b> 6:19<br>102:6,14<br><b>grounded</b> 42:3<br><b>group</b> 5:19<br>10:23 12:12,17<br>12:21 20:24<br>67:22 68:3<br><b>guaranteed</b><br>76:12<br><b>guess</b> 15:23<br>59:11 69:12<br>85:4 108:20<br><b>guide</b> 37:3<br>39:24 55:3<br><b>guideline</b> 81:17<br><b>guidelines</b><br>67:12 80:21,24<br>81:9,21,22 |
| <b>g</b>   |   |   |  |
| <b>g</b> 135:1<br><b>gained</b> 21:22<br><b>gallbladder</b><br>124:3<br><b>gary</b> 4:7 131:11<br><b>general</b> 38:19<br>43:10,13,22<br>44:7 46:3 47:9<br>52:4 53:20<br>54:9,17,24<br>59:3,22 66:10<br>73:25 80:12<br>87:2 88:7,8   |   |   |  |

|                        |                        |                        |                        |
|------------------------|------------------------|------------------------|------------------------|
| <b>guides</b> 54:24    | <b>health</b> 26:12,13 | 78:23 79:4             | 126:3,7                |
| <b>h</b>               | 29:12 69:25            | 80:20 82:21            | <b>howard's</b> 28:14  |
| <b>h</b> 5:23          | 70:4,24 71:11          | 83:18,22 84:14         | 34:9 44:11             |
| <b>half</b> 17:7       | 74:11,17               | 89:14 91:2             | 49:22 74:2             |
| <b>hand</b> 40:11      | <b>healthcare</b>      | 98:5,10 107:17         | 92:18 97:18,21         |
| 88:1 107:7             | 42:20                  | 110:16,22,25           | 99:10 119:11           |
| 136:19                 | <b>hear</b> 7:21       | 111:8,18               | 119:15,20              |
| <b>handed</b> 15:14    | <b>heard</b> 11:25     | 112:13 113:5           | 121:9 124:9            |
| 17:17 63:10            | <b>heavily</b> 73:15   | 114:1 116:15           | 126:9,20               |
| <b>hang</b> 34:9       | 107:14                 | <b>hodgkin's</b>       | <b>human</b> 69:24     |
| <b>happen</b> 85:1     | <b>held</b> 1:14 5:6   | 97:15                  | 70:4 90:3              |
| <b>happy</b> 97:5      | <b>hereinbefore</b>    | <b>hold</b> 24:14 25:4 | <b>hypercholest...</b> |
| 131:15                 | 136:10                 | 25:10 41:19            | 111:9                  |
| <b>hard</b> 91:11,17   | <b>hereunto</b>        | <b>hour</b> 17:5,6,22  | <b>hypertension</b>    |
| <b>harms</b> 121:13    | 136:18                 | <b>hours</b> 19:8,25   | 78:17 87:12            |
| <b>hatten</b> 43:11,16 | <b>hernia</b> 123:11   | <b>howard</b> 1:8 3:7  | 88:9 91:12,14          |
| 43:23 44:2,5           | <b>high</b> 59:19      | 3:21 13:21             | 91:19 110:23           |
| 44:13,25 45:11         | 60:17,21 68:8          | 14:9 15:16             | 112:9,15,16,21         |
| 46:18 52:23            | 68:11 98:11            | 28:11 31:16            | 112:22 113:3,7         |
| 54:21 73:11,16         | 101:5,15 107:9         | 32:19 33:24            | 113:11,13,20           |
| 130:14,19              | 115:23 116:10          | 34:13 35:16            | 113:24 114:3,7         |
| <b>hatten's</b> 45:3   | 116:11,25              | 36:3 38:2              | <b>i</b>               |
| 45:19 47:2             | 117:16 118:22          | 49:19 55:9             | <b>ideas</b> 61:1      |
| 52:14 73:21            | <b>higher</b> 104:15   | 57:12,16,24            | <b>identical</b>       |
| <b>hazard</b> 46:5     | 109:23                 | 58:2 61:24,25          | 105:11                 |
| 65:8 99:20,21          | <b>highest</b> 107:7   | 67:21 72:4             | <b>identifiable</b>    |
| 99:25 100:1,12         | <b>hill</b> 71:24 72:2 | 78:4,10,15             | 82:16,19 94:4          |
| 100:19 101:14          | 72:13,23 73:2          | 80:23 96:4             | 95:8                   |
| <b>hazardous</b> 70:6  | 73:6,12,16,20          | 97:12,14               | <b>identification</b>  |
| <b>he'll</b> 121:7     | <b>histologically</b>  | 109:20 111:13          | 14:10,16,23            |
| <b>head</b> 7:15       | 52:11                  | 112:10 113:25          | 15:3,7,11              |
| <b>heading</b> 57:19   | <b>history</b> 33:4    | 119:4,6 121:4          | 17:13 18:15            |
|                        | 48:13 57:20            | 121:22 124:11          | 22:20 31:17,21         |
|                        | 75:3 78:5,13           | 124:14,23              |                        |

|  |   |  |   |
|--|---|--|---|
| 31:25 32:5,8<br>32:12 62:23<br>86:9 131:13<br><b>identified</b> 87:1<br>94:14<br><b>identify</b> 35:2<br>46:4 58:12,22<br>59:13 74:10<br>89:3,24 96:9<br><b>idiopathic</b><br>88:19,24 89:5<br>89:9,12 91:5<br>91:20 94:1,24<br>95:7,24 96:3,7<br>96:17,19,22<br>99:3,6<br><b>ignore</b> 99:5<br><b>iii</b> 3:5,8,11 14:6<br>14:12,19<br><b>imaging</b> 104:10<br>104:21<br><b>immune</b> 83:24<br>90:3,3,12,17<br><b>immunothera...</b><br>90:10<br><b>impact</b> 44:17<br>115:21 118:8<br>118:11,15<br><b>implicated</b><br>132:11<br><b>important</b><br>21:10,24 65:12<br>65:16,20 | <b>incidence</b><br>104:15<br><b>incidental</b><br>104:13<br><b>incisional</b><br>123:10<br><b>include</b> 18:10<br>18:25 24:4<br>36:3 53:10<br>63:10 80:2<br>123:10<br><b>included</b> 24:25<br>37:18,22 63:11<br>87:8 127:7<br>130:18 133:4<br><b>includes</b> 31:3,3<br>35:9 50:23<br>53:8 66:2,2<br>83:8 115:9<br>117:4,18<br><b>including</b> 12:11<br>35:10 100:19<br>109:6 114:21<br>133:3<br><b>income</b> 20:6<br><b>incorporate</b><br>44:24<br><b>incorporated</b><br>105:14<br><b>increase</b> 80:8<br>83:18<br><b>increased</b> 46:5<br>101:23 104:18<br>107:11 116:21 | 128:19 129:24<br><b>independent</b><br>21:17 38:8<br>46:17,23 47:10<br>52:22 53:1,20<br>59:12 60:7,25<br>61:1 71:17<br>73:21 115:2<br><b>independently</b><br>38:11 61:10<br>115:21<br><b>index</b> 3:1 111:7<br><b>indirectly</b><br>42:22 58:16<br>105:7<br><b>individual</b><br>58:24 61:17<br>67:22 68:3,9<br>69:10 92:9<br>95:5,8 98:1<br>119:3<br><b>individualistic</b><br>88:5<br><b>individuals</b><br>27:15,22 28:7<br>83:9<br><b>infancy</b> 38:23<br><b>infection</b><br>123:11,25<br><b>inferior</b> 124:4<br><b>inform</b> 37:15<br>39:16<br><b>information</b><br>12:6 22:1,3,4 | 24:4 44:6<br>48:11 69:12,15<br><b>ingested</b> 65:25<br>66:6<br><b>ingrid</b> 2:14 5:2<br><b>inhalation</b><br>64:12,23 67:15<br>101:22<br><b>inherent</b> 54:7<br><b>initial</b> 12:7,19<br>12:21 23:10<br>37:22 40:19,24<br>71:24 115:12<br>116:3,7 120:3<br><b>initially</b> 40:11<br>51:15 108:7<br><b>injuries</b> 121:4<br>122:1,4,23<br><b>injury</b> 74:11,17<br>75:13 121:9<br>123:25<br><b>insight</b> 64:8<br><b>instance</b> 51:21<br>92:9<br><b>instances</b><br>100:19<br><b>institution</b> 4:6<br>86:8,19<br><b>instruct</b> 10:21<br>12:9<br><b>insufficiency</b><br>88:10<br><b>intend</b> 34:1<br>130:17 |
|--|---|--|---|

|  |   |  |  |
|--|---|--|--|
| <b>intensity</b> 58:3,4<br>65:11 92:1<br>98:9 106:14<br>107:21 108:22<br>109:12<br><b>interested</b><br>136:16<br><b>intestine</b> 124:3<br><b>introduce</b> 39:3<br><b>invasive</b> 38:24<br>39:3,9 41:4<br>124:6<br><b>investigate</b><br>13:10,20<br><b>investigation</b><br>91:2,24 94:4<br>94:14<br><b>investigator</b><br>24:20 25:24<br><b>invoices</b> 18:22<br>18:25,25 19:2<br>19:6,19<br><b>involve</b> 127:13<br>127:23,25<br><b>involved</b> 21:3<br>25:1<br><b>involvement</b><br>48:9<br><b>involves</b> 74:18<br><b>involving</b> 21:8<br>30:20<br><b>island</b> 2:3<br><b>isophospham...</b><br>79:7,11 | <b>issue</b> 34:16<br>46:20 57:17<br>58:13,24<br>121:15,21<br><b>issued</b> 9:13<br><b>issues</b> 100:24<br><b>j</b><br><b>j</b> 4:2 5:23 32:11<br><b>jacqueline</b> 1:10<br><b>january</b> 116:2<br>122:19<br><b>jessica</b> 2:11<br>5:16<br><b>jessica.l.ans</b><br>2:11<br><b>job</b> 79:9<br><b>jordan</b> 1:10<br><b>joseph</b> 1:13 3:2<br>3:3,7,10,13,14<br>3:15,17,18,20<br>4:2,8 5:11 6:4<br>14:8,14,21,25<br>15:4,8 17:11<br>22:18 32:11<br>131:11 135:6<br>135:15 136:9<br>137:5,20<br><b>josephson</b> 9:14<br><b>josephson's</b><br>11:13<br><b>journal</b> 41:7,8<br><b>judicial</b> 55:16<br>55:21,25 56:3 | <b>july</b> 1:16 5:4<br>122:16 135:8<br>136:19 137:4<br><b>justice</b> 2:7 6:14<br>34:22,25 35:5<br>35:9 36:10,25<br>37:3,10,16<br>38:9 39:18<br>43:1<br><b>k</b><br><b>k</b> 135:1<br><b>keep</b> 90:4<br><b>kelly</b> 4:3 61:7<br>61:14 62:22<br>63:5 97:23<br><b>key</b> 53:25<br><b>kidney</b> 3:6,9,12<br>14:7,13,20<br>27:15,25 28:2<br>30:23,24 31:2<br>38:24,24 40:17<br>41:3 44:2,15<br>44:16 45:6,23<br>46:9,19,24<br>49:11,16 50:11<br>50:13 51:10<br>52:1,3,8 58:25<br>59:5 72:6,19<br>74:2 77:19<br>78:7 79:22<br>80:3,9 82:4,8<br>82:16,18 83:1<br>83:8,19 85:21 | 87:2,13,23<br>89:8,19,22,24<br>90:20,23 92:4<br>92:15,16,18<br>93:2 95:7,9<br>97:21 99:1,18<br>100:1,13,25<br>101:10 102:21<br>103:14,17<br>104:4,17,21,25<br>108:15,17<br>109:5 112:6<br>113:21 114:9<br>114:17 115:16<br>116:11 117:2<br>119:11,16,21<br>120:5,15 121:9<br>121:10,16<br>122:2,23,24<br>123:2,7 124:21<br>125:10,24<br>126:1,3,5,9<br>127:13,17<br>128:1,2,9,15,20<br>129:25 131:1<br>132:3,5,8,10,19<br>132:24 133:3<br><b>kidneys</b> 51:1<br><b>kilogram</b> 67:13<br><b>kind</b> 22:14<br>38:23 76:9<br>85:8,18 91:4<br>105:13 109:13 |
|--|---|--|--|

|  |   |  |   |
|--|---|--|---|
| <b>knew</b> 39:11<br>73:8<br><b>know</b> 8:7 16:4<br>16:5,6,6 17:18<br>21:5 23:16<br>27:24 29:22<br>30:13 38:20<br>40:6 42:15,19<br>42:22 46:1<br>48:9,10,15<br>55:3,19 56:3<br>56:14,14,15<br>64:13 65:7<br>68:13 69:13,14<br>70:1 73:14,15<br>74:25 80:18<br>81:23,25,25<br>82:20,21,23<br>83:10,15 84:13<br>84:16 90:1,14<br>90:15,25 91:11<br>101:12,18,19<br>101:22,24<br>102:8,19,20,21<br>102:22,23<br>103:22 106:6<br>108:23 109:17<br>109:20 110:20<br>111:3 112:24<br>113:16 121:13<br>128:22 129:13<br>131:2,14 132:9<br><b>knowing</b> 18:9<br>89:15 | <b>knowledge</b><br>16:15 21:1,6<br>21:13 28:9<br>66:24 69:16<br>75:1 82:22<br><b>known</b> 50:15<br>88:10,21 89:8<br>111:17 112:12<br>113:5<br><b>knows</b> 83:10,25<br><b>I</b><br><b>I</b> 2:8 5:23 12:2<br>135:1<br><b>labeled</b> 91:5<br>96:19<br><b>lag</b> 109:12<br><b>lajeune</b> 93:3<br><b>language</b> 35:5<br>36:4 37:19,20<br>37:22 45:24<br>105:4<br><b>large</b> 4:6 86:7<br>86:18 95:2<br><b>law</b> 20:24<br><b>lawyer</b> 12:11<br>24:8<br><b>leadership</b> 5:19<br>10:23 12:12,17<br>12:21<br><b>learn</b> 29:21<br><b>left</b> 98:17<br><b>legal</b> 5:7 20:24<br>40:1,1 41:16 | <b>legitimacy</b> 53:2<br>99:15<br><b>legitimate</b> 42:3<br>42:3 130:7<br>133:25<br><b>lejeune</b> 1:3 5:8<br>6:15 11:23<br>21:3 27:16<br>28:8 29:5,9<br>34:22,25 35:5<br>35:9 36:10,25<br>37:3,10,16<br>38:9 39:18<br>43:1 44:18<br>45:18,20 46:15<br>48:2,7,14<br>49:23 50:7,18<br>56:11 58:17,19<br>59:20 61:13<br>62:12 67:5<br>68:15 69:11<br>72:8,9 73:18<br>92:20 93:9,14<br>94:23 95:20,25<br>100:7,7 101:14<br>105:9,21<br>106:10,19<br>108:12 113:25<br>114:16 115:9<br>115:10,14<br>133:21,23<br>137:2<br><b>letter</b> 29:7 | <b>level</b> 70:1 71:16<br><b>levels</b> 45:17,22<br>46:5 54:19<br>69:24 70:18<br>101:17<br><b>licensing</b> 31:7<br><b>life</b> 75:2 90:11<br>101:17 124:12<br>125:8<br><b>lifetime</b> 70:22<br>71:3,6<br><b>likelihood</b> 80:8<br><b>likely</b> 35:12<br>36:18 37:11<br>38:12,16,22<br>39:9,21 40:9<br>41:1,6,13,16<br>42:6,7,25 45:4<br>50:1,8,10,12,20<br>72:17 75:21,22<br>75:25 76:3,4<br>95:16,17 99:2<br>108:14,15,25<br>109:15,16<br>115:16 117:7<br><b>limit</b> 22:2,7<br><b>limited</b> 44:21<br>68:11<br><b>line</b> 47:8 51:1<br>120:14 132:1<br>137:6<br><b>list</b> 3:6,15,16<br>3:18 14:8 15:1<br>15:5,9,15 16:5 |
|--|---|--|---|

|  |   |   |   |
|--|---|---|---|
| 16:6,7,8,12<br>17:5 22:13<br>55:8 56:4 59:8<br>80:15,22 81:5<br>81:6,10 110:8<br>112:1 114:9<br>133:2<br><b>listed</b> 54:21<br>81:1,14 82:3<br>86:20 87:19<br><b>lists</b> 16:1 17:21<br><b>liter</b> 62:11 66:3<br>68:15<br><b>literature</b><br>16:10 24:23<br>25:8,17 26:3<br>26:19 27:1,8<br>27:12 38:15,18<br>40:8,12,13,20<br>40:25 41:3<br>45:9,20 46:4<br>46:10,13 52:14<br>52:24 53:4,7<br>53:24,25 54:10<br>54:13,16,19,19<br>54:25 55:5<br>59:24 66:17<br>81:2,4,15<br>100:18 101:12<br>102:13 108:23<br>110:12 111:21<br>111:24 113:2<br>113:11,15<br>114:15,19 | 115:1,8,8,9,10<br>128:5,23<br>129:15 130:6,7<br><b>litigation</b> 1:3<br>5:4,9 6:16<br>11:23 16:3<br>21:4 27:23<br>29:5 42:17<br>54:11 127:19<br>137:2<br><b>little</b> 43:9 71:23<br>73:4 89:17<br>98:25 125:17<br><b>live</b> 124:12<br>125:8<br><b>lived</b> 48:10<br><b>liver</b> 124:3<br><b>living</b> 48:19<br><b>lock</b> 64:16<br><b>long</b> 10:8,8<br>82:1 90:22<br>109:2 112:15<br>112:22 118:2<br><b>look</b> 22:3,7,15<br>35:4 48:8<br>53:13 55:18<br>78:9 95:22<br>96:1,8,10<br>99:20,22 111:5<br>130:21<br><b>looked</b> 9:13<br>16:4 22:12<br>35:2 60:16<br>88:5 91:22 | 93:13 126:21<br><b>looking</b> 22:4<br>39:13 59:24<br>60:24 71:18<br>95:18 97:7<br><b>looks</b> 131:21<br><b>loss</b> 121:9<br>122:1,23 123:2<br><b>lost</b> 121:15<br><b>lot</b> 6:22 22:14<br>62:15 74:24<br>79:25 87:8<br>89:13 98:4,8<br>100:18 104:13<br>105:8 109:1<br>130:6<br><b>lots</b> 83:21<br><b>low</b> 59:18<br>60:16,21 97:1<br>102:6,17<br>103:23,24<br>106:15 107:3,4<br>115:20 116:1<br><b>lung</b> 83:18<br>104:2<br><b>lymphoma</b><br>97:15<br><b>lynch</b> 118:21<br><b>lynge</b> 53:11<br><b>m</b><br><b>m</b> 135:1<br><b>m.d.</b> 1:14 4:2<br>32:11 | <b>made</b> 122:9,14<br>123:4<br><b>magnitude</b><br>70:14<br><b>main</b> 67:3<br><b>major</b> 124:4<br><b>majority</b> 82:18<br>89:8<br><b>make</b> 7:11<br>81:20 99:6<br>130:11 133:15<br><b>makes</b> 118:24<br><b>making</b> 46:14<br>81:25<br><b>malignant</b><br>51:18<br><b>managed</b> 96:25<br><b>mandell</b> 2:2,2,4<br>2:5 3:3 5:18,18<br>9:7,22 10:2,17<br>10:20 11:4<br>12:8 13:11,13<br>13:16,19 16:18<br>18:2 19:13<br>22:9 23:14<br>29:13,19 30:3<br>30:10,17 33:5<br>33:8 34:3,5<br>36:12,23 37:5<br>37:12 38:4<br>41:14 43:4<br>44:20 46:21<br>47:13 49:2,13<br>49:17 52:2,25 |
|--|---|---|---|



|                       |                      |                        |                       |
|-----------------------|----------------------|------------------------|-----------------------|
| 53:22 55:1            | <b>marines</b> 62:9  | <b>masses</b> 104:14   | 112:20 122:11         |
| 56:5 58:10,15         | 64:13 68:15          | <b>materials</b> 3:6,9 | 130:3 131:2           |
| 59:1,21 60:5          | 70:15 71:13          | 3:12,14,16,17          | <b>meaning</b> 22:10  |
| 60:13,23 61:19        | 105:12,12,18         | 14:2,7,13,20           | 87:6 130:21           |
| 62:13,25 63:2         | 105:19               | 15:1,5,9,15            | <b>means</b> 42:2     |
| 64:5,10 65:3          | <b>mark</b> 2:5      | 16:1,2,16 55:9         | 50:25 51:9            |
| 66:1,8,14             | <b>marked</b> 14:9   | 56:4 57:5              | 88:3 102:23           |
| 67:14,17 69:19        | 14:15,22 15:2        | <b>math</b> 19:9       | <b>meant</b> 33:9     |
| 72:25 73:23           | 15:6,10 17:12        | <b>matter</b> 4:7 5:8  | 87:11 132:7           |
| 80:5,10 82:5          | 18:14 22:19          | 13:2,6 14:3            | <b>measured</b>       |
| 82:17 84:10,23        | 31:16,20,24          | 17:22 19:16            | 101:24                |
| 85:12 87:24           | 32:4,7,11            | 131:11 136:17          | <b>mechanism</b>      |
| 89:10 91:10           | 62:22 86:8           | <b>maximum</b>         | 45:6                  |
| 92:22,24 93:5         | 131:12               | 69:23 70:1,18          | <b>medical</b> 33:4   |
| 93:10 94:9,19         | <b>marquina</b> 2:10 | <b>mbmjustice.c...</b> | 38:12 41:20,23        |
| 97:2 100:3,6          | 3:2 5:14,14          | 2:5                    | 42:6,11,13            |
| 100:15 101:11         | 6:10,13 13:24        | <b>mcl</b> 70:6,25     | 43:2 57:20            |
| 102:11 103:18         | 15:12 17:9,15        | 71:10,14               | 72:7 91:2             |
| 104:6 105:6           | 18:12,17 22:17       | 102:22                 | 112:24 121:15         |
| 106:1 108:4,18        | 22:22 24:7           | <b>mcls</b> 70:4,10,20 | 126:8,17,20           |
| 109:8 110:18          | 31:12 32:14          | <b>mean</b> 10:4       | 127:3                 |
| 111:2 114:23          | 33:7,9,10 34:8       | 15:22 22:7,10          | <b>medically</b>      |
| 115:4 119:18          | 34:11 47:11,19       | 22:11,11 23:5          | 119:12 120:6          |
| 119:23 120:11         | 62:19 63:3           | 23:5 51:14             | 120:16 126:10         |
| 120:22 121:11         | 86:4,11 94:18        | 54:7 57:9 60:7         | 127:3                 |
| 122:6,25              | 102:25 103:8         | 65:5 71:14             | <b>medication</b>     |
| 128:21 131:17         | 108:6 129:2,9        | 74:22,24,25            | 79:13 112:17          |
| 132:21 133:7          | 131:8,14,18          | 83:1,21 85:13          | 114:6                 |
| 133:13,17             | 133:11 134:4         | 90:25 91:16            | <b>medicine</b> 26:15 |
| 134:3,10              | <b>marriage</b>      | 92:12 95:12,14         | 35:19 76:15           |
| <b>mandell's</b> 9:24 | 136:16               | 95:16 101:6            | 90:11                 |
| <b>marine</b> 62:12   | <b>mass</b> 64:1,2   | 102:15 103:21          | <b>medium</b> 59:19   |
| 68:21 69:2            | 65:25 66:5,12        | 106:13 109:9           | 60:17,21 67:22        |
| 106:16                | 66:21 111:7          | 109:22 110:11          | 68:3,9,11             |



|   |   |   |   |          |  |  |  |  |  |  |  |
|---|---|---|---|----------|--|--|--|--|--|--|--|
| <p>97:25 107:9</p> <p><b>meet</b> 9:18,21<br/>10:2,14 34:17</p> <p><b>meeting</b> 11:2</p> <p><b>meetings</b> 10:11<br/>10:19 11:2,2,7<br/>12:20</p> <p><b>meets</b> 111:3</p> <p><b>men</b> 103:23</p> <p><b>mention</b> 77:13<br/>81:24</p> <p><b>mentioned</b> 11:3<br/>20:10 48:1,12<br/>57:15,24 58:2<br/>60:4,15 65:23<br/>69:3 89:6<br/>96:24 107:23<br/>108:9 114:20<br/>117:14 124:7<br/>130:10 131:20</p> <p><b>mentions</b> 97:8</p> <p><b>mercier</b> 106:21</p> <p><b>mercier's</b><br/>107:16</p> <p><b>met</b> 10:16</p> <p><b>metabolic</b><br/>85:20,25 86:25<br/>87:6,12,14,18<br/>87:21</p> <p><b>metastatic</b> 90:8<br/>124:21</p> <p><b>meter</b> 67:15</p> <p><b>metformin</b><br/>110:19,21</p> | <p><b>methodologies</b><br/>68:17</p> <p><b>methodology</b><br/>38:22 41:6<br/>54:15 68:14<br/>96:6 105:23</p> <p><b>methods</b> 64:13</p> <p><b>metrics</b> 58:18<br/>58:19 62:3<br/>66:21 99:22</p> <p><b>microgram</b><br/>66:3 67:15</p> <p><b>micrograms</b><br/>62:11 63:25<br/>65:25 68:14</p> <p><b>mid</b> 49:8</p> <p><b>military</b> 98:17</p> <p><b>milligrams</b><br/>67:13</p> <p><b>mind</b> 78:8</p> <p><b>minimally</b><br/>38:24 39:3,8<br/>41:4 124:6</p> <p><b>minute</b> 129:2</p> <p><b>minutes</b> 9:25<br/>10:10 47:12</p> <p><b>missed</b> 89:7<br/>108:4</p> <p><b>mistake</b> 33:7</p> <p><b>misunderstood</b><br/>40:14 110:10</p> <p><b>mitigate</b> 93:15</p> <p><b>mode</b> 65:4</p> | <p><b>modes</b> 64:13</p> <p><b>modifiable</b><br/>77:21 78:2,18<br/>79:8 90:15,19</p> <p><b>modified</b> 78:3</p> <p><b>moment</b> 17:9<br/>17:16 129:21<br/>131:25</p> <p><b>month</b> 62:11<br/>63:22 68:24<br/>69:6,22</p> <p><b>monthly</b> 62:8<br/>62:10 63:17<br/>69:4</p> <p><b>months</b> 66:3<br/>68:15</p> <p><b>morning</b> 6:11<br/>6:12</p> <p><b>motor</b> 55:15</p> <p><b>mousser</b> 1:9<br/>3:10,22,25<br/>13:21 14:15<br/>15:16 28:17<br/>31:20 32:3,22<br/>33:3,24 37:23<br/>38:2 45:14<br/>50:14 51:12,17<br/>52:13,19 53:9<br/>62:5 68:8 74:5<br/>78:20 79:2<br/>97:8 106:14,25<br/>107:18,20<br/>108:1 110:5,16<br/>110:22,25</p> | <p>111:8 113:25<br/>114:4 115:18<br/>117:2 120:14<br/>122:5,9,14</p> <p><b>mousser's</b><br/>28:20 45:25<br/>50:17 52:8<br/>93:7 106:5<br/>107:16 108:8<br/>108:16 110:1<br/>115:20 116:5<br/>116:23 120:15<br/>120:19 121:25</p> <p><b>msph</b> 4:3 62:22</p> <p><b>multiple</b> 76:17</p> <p><b>mutated</b> 84:21<br/>84:24 85:5</p> <p><b>mutation</b> 76:8<br/>85:1,8 89:1</p> <p><b>mutations</b> 84:2<br/>84:4,9,19</p> <tr> <td colspan="4"><b>n</b></td></tr> <tr> <td colspan="4"> <p><b>n</b> 2:1 12:2<br/>135:1,1</p> <p><b>nah</b> 7:16</p> <p><b>name</b> 5:2 6:2<br/>6:13 12:2 21:5<br/>137:2,5</p> <p><b>names</b> 50:23</p> <p><b>national</b> 56:9<br/>56:10</p> <p><b>necessarily</b><br/>71:11 83:1</p> </td></tr> | <b>n</b> |  |  |  | <p><b>n</b> 2:1 12:2<br/>135:1,1</p> <p><b>nah</b> 7:16</p> <p><b>name</b> 5:2 6:2<br/>6:13 12:2 21:5<br/>137:2,5</p> <p><b>names</b> 50:23</p> <p><b>national</b> 56:9<br/>56:10</p> <p><b>necessarily</b><br/>71:11 83:1</p> |  |  |  |
| <b>n</b>  |   |   |   |          |  |  |  |  |  |  |  |
| <p><b>n</b> 2:1 12:2<br/>135:1,1</p> <p><b>nah</b> 7:16</p> <p><b>name</b> 5:2 6:2<br/>6:13 12:2 21:5<br/>137:2,5</p> <p><b>names</b> 50:23</p> <p><b>national</b> 56:9<br/>56:10</p> <p><b>necessarily</b><br/>71:11 83:1</p>  |   |   |   |          |  |  |  |  |  |  |  |

|  |   |  |   |
|--|---|--|---|
| <b>necessary</b> 38:7<br>119:12 120:6<br>120:16 126:10<br>127:4<br><b>need</b> 8:23<br>122:17<br><b>needs</b> 123:7<br><b>negative</b> 54:3<br><b>nephrectomies</b><br>123:15,18<br><b>nephrectomy</b><br>121:23 123:5<br>123:10,22<br>124:14,18<br>125:12,13<br>126:18<br><b>nephropathy</b><br>79:5<br><b>nephroureter...</b><br>122:10<br><b>neurological</b><br>81:22<br><b>never</b> 24:20,23<br>25:7,16,24<br>26:2 85:9<br>93:14 104:14<br>109:6,16 121:7<br><b>new</b> 1:16,17 5:7<br>5:7,25 6:8 9:16<br>39:11 41:4<br>89:24 90:11,13<br>104:4,17,21<br>135:3,20 136:2<br>136:7 | <b>nhl</b> 97:18 124:9<br><b>nielsen</b> 53:11<br><b>nix</b> 55:13<br><b>nodules</b> 124:24<br>125:2<br><b>non</b> 97:15<br>100:7 115:9<br><b>noninvasive</b><br>116:1<br><b>nonsmoker</b><br>118:3<br><b>nonsmoking</b><br>107:5<br><b>nonverbal</b> 7:16<br><b>noon</b> 102:25<br><b>nope</b> 10:16<br><b>normal</b> 124:12<br>125:8<br><b>north</b> 1:1 5:10<br>6:17<br><b>nos</b> 1:4<br><b>notary</b> 1:17<br>5:24 135:20<br>136:6 137:24<br><b>note</b> 58:10<br>111:14 119:4<br>121:3,4 125:7<br>126:8<br><b>noted</b> 112:10<br>134:12<br><b>notice</b> 1:14<br><b>number</b> 20:19<br>62:11,25 63:24<br>64:1 91:11 | <b>numbers</b> 80:11<br>80:13 102:24<br>104:9<br><b>nw</b> 2:8<br><b>ny</b> 1:16 6:8<br><br><b>o</b><br><br><b>o</b> 5:23,23 135:1<br><b>oath</b> 8:12,15<br>135:8<br><b>obese</b> 82:12<br>91:20<br><b>obesity</b> 78:16<br>87:13,19 88:9<br>110:1,9,11,13<br>111:1,4,12,14<br>112:6 113:1<br>132:12<br><b>object</b> 9:7<br>10:20 11:4<br>12:8 13:14<br>59:1<br><b>objected</b> 13:18<br><b>objection</b> 13:11<br>16:18 18:2<br>19:13 22:9<br>23:14 29:13,19<br>30:3,10,17<br>34:3,5 36:12<br>36:23 37:5,12<br>38:4 41:14<br>43:4 44:20<br>46:21 49:2,13<br>49:17 52:2,25 | 53:22 55:1<br>56:5 58:10,15<br>59:21 60:5,13<br>60:23 61:19<br>62:13 64:5,10<br>65:3 66:1,8,14<br>67:14,17 69:19<br>72:25 73:23<br>80:5,10 82:5<br>82:17 84:10,23<br>85:12 87:24<br>89:10 91:10<br>92:22 93:5,10<br>97:2 100:3,6<br>100:15 101:11<br>102:11 103:18<br>104:6 105:6<br>106:1 108:18<br>109:8 110:18<br>111:2 114:23<br>115:4 119:18<br>119:23 120:11<br>120:22 121:11<br>122:6,25<br>128:21 132:21<br>133:7<br><b>objections</b> 47:9<br><b>objectively</b><br>21:16<br><b>observed</b><br>128:19 129:24<br><b>obviously</b><br>22:13 39:5<br>63:25 75:19 |
|--|---|--|---|

|   |  |  |   |          |  |  |  |  |  |  |  |
|---|--|--|---|----------|--|--|--|--|--|--|--|
| <p>98:4 109:10<br/>124:1<br/><b>occasionally</b><br/>23:17<br/><b>occupational</b><br/>26:15 78:17<br/>79:3 114:8<br/><b>occur</b> 51:4,5,6<br/>84:4,6,9<br/><b>occurred</b> 92:10<br/>92:19 93:3,8<br/><b>occurrence</b><br/>86:18 116:21<br/><b>occurs</b> 91:21<br/>102:5,17<br/>116:17<br/><b>october</b> 19:4<br/><b>offer</b> 76:11<br/>80:7 130:17<br/><b>offered</b> 30:19<br/>30:22<br/><b>offering</b> 7:2<br/>34:1 52:7<br/>97:17 121:17<br/>126:5<br/><b>office</b> 1:15<br/><b>offices</b> 5:6<br/><b>oh</b> 13:12 40:14<br/>53:17 59:14<br/>69:7 91:18<br/>99:6 110:10<br/>114:13 130:3<br/>132:4</p> | <p><b>okay</b> 11:18<br/>16:15 19:24<br/>23:11 33:8,21<br/>37:14 40:18<br/>49:1 52:10<br/>58:5 75:18<br/>90:23 92:24<br/>94:11 100:11<br/>114:13 118:6<br/>119:10 126:23<br/>130:3 131:24<br/><b>old</b> 49:5<br/><b>once</b> 75:12<br/>127:12 132:7<br/><b>oncologic</b> 39:2<br/>39:4<br/><b>oncology</b> 38:24<br/>39:6 40:17<br/>41:4 42:20<br/><b>ones</b> 123:1<br/>124:7<br/><b>open</b> 39:1,10<br/>124:5<br/><b>operating</b><br/>124:1<br/><b>operation</b> 39:1<br/><b>opined</b> 127:2<br/><b>opining</b> 59:23<br/><b>opinion</b> 21:17<br/>30:20,23 42:5<br/>42:7,10 45:4<br/>49:22 50:6,9<br/>50:17 54:6<br/>59:4,4 70:11</p> | <p>70:13 90:18<br/>95:7,21 107:22<br/>108:16 124:8<br/>124:11 127:9<br/><b>opinions</b> 7:1,3<br/>22:5,16 33:22<br/>34:2 39:24<br/>41:19,24 42:3<br/>42:20 46:17,23<br/>47:10 52:3,7<br/>52:22 53:1<br/>55:17,21,25<br/>56:3 66:11,19<br/>67:19 70:7<br/>73:5 80:2,7<br/>97:17 113:22<br/>119:2 121:18<br/>126:5 134:1<br/><b>opportunity</b><br/>9:1<br/><b>options</b> 42:21<br/><b>oral</b> 67:12<br/><b>order</b> 22:16<br/>35:2 46:11<br/>54:18 75:19<br/>112:2 115:11<br/>134:11<br/><b>organic</b> 62:9<br/>63:18 100:21<br/>107:10<br/><b>organs</b> 123:25<br/><b>outcome</b> 20:3<br/>136:17</p> | <p><b>outcomes</b> 39:7<br/>76:12<br/><b>outline</b> 54:18<br/>55:5<br/><b>outside</b> 42:16<br/><b>overall</b> 53:5<br/>115:21,22<br/><b>overcome</b><br/>97:20<br/><b>own</b> 73:22</p> <tr> <td colspan="4"><b>p</b></td></tr> <tr> <td colspan="4"> <p><b>p</b> 2:1,1 5:23,23<br/><b>p.m.</b> 103:7<br/>129:5,8 134:7<br/>134:12<br/><b>pace</b> 7:20<br/><b>pack</b> 83:17<br/>98:10 106:16<br/>109:19,20<br/><b>page</b> 3:2,4<br/>34:12 35:4,15<br/>36:2 45:13,15<br/>45:16,25 55:6<br/>55:11 57:15,18<br/>57:19 72:4,11<br/>72:12 78:10,20<br/>86:22,23,23<br/>93:25 94:7<br/>119:5 121:3<br/>131:23 137:6<br/><b>pain</b> 79:12<br/><b>paper</b> 87:8</p> </td></tr> | <b>p</b> |  |  |  | <p><b>p</b> 2:1,1 5:23,23<br/><b>p.m.</b> 103:7<br/>129:5,8 134:7<br/>134:12<br/><b>pace</b> 7:20<br/><b>pack</b> 83:17<br/>98:10 106:16<br/>109:19,20<br/><b>page</b> 3:2,4<br/>34:12 35:4,15<br/>36:2 45:13,15<br/>45:16,25 55:6<br/>55:11 57:15,18<br/>57:19 72:4,11<br/>72:12 78:10,20<br/>86:22,23,23<br/>93:25 94:7<br/>119:5 121:3<br/>131:23 137:6<br/><b>pain</b> 79:12<br/><b>paper</b> 87:8</p> |  |  |  |
| <b>p</b>  |  |  |   |          |  |  |  |  |  |  |  |
| <p><b>p</b> 2:1,1 5:23,23<br/><b>p.m.</b> 103:7<br/>129:5,8 134:7<br/>134:12<br/><b>pace</b> 7:20<br/><b>pack</b> 83:17<br/>98:10 106:16<br/>109:19,20<br/><b>page</b> 3:2,4<br/>34:12 35:4,15<br/>36:2 45:13,15<br/>45:16,25 55:6<br/>55:11 57:15,18<br/>57:19 72:4,11<br/>72:12 78:10,20<br/>86:22,23,23<br/>93:25 94:7<br/>119:5 121:3<br/>131:23 137:6<br/><b>pain</b> 79:12<br/><b>paper</b> 87:8</p>  |  |  |   |          |  |  |  |  |  |  |  |

|  |  |   |  |
|--|--|---|--|
| <b>papillary</b> 76:24<br>77:12  | 112:23 118:25<br>132:23,24   | 130:8   | <b>perchloroeth...</b><br>27:5 56:20           |
| <b>paragraph</b><br>35:25 55:13,14<br>94:9   | 133:9  | <b>peer</b> 24:23 25:8<br>25:17 26:3,18<br>26:25 27:7,11<br>38:14,15,20<br>40:12,25 41:9            | <b>perfect</b> 55:11<br>90:5                   |
| <b>paragraphs</b><br>55:12   | <b>patient's</b> 58:18<br>83:18 120:1  | <b>peers</b> 21:22  | <b>perform</b> 13:2<br>54:10                   |
| <b>parameters</b><br>37:1,2,25   | <b>patients</b> 27:18<br>27:25 39:15   | <b>pelvic</b> 115:23  | <b>performed</b> 19:3<br>19:21,25 20:1<br>74:1 |
| <b>parcel</b> 99:11  | 42:19,24 46:16<br>48:1 49:10,15<br>51:24 74:25   | <b>pelvis</b> 46:7<br>50:24 51:4,11<br>103:17   | <b>period</b> 90:22<br>107:4 112:15<br>112:22  |
| <b>park</b> 2:3  | 76:12 80:12  | <b>penalties</b> 8:16   | <b>perjury</b> 8:17                            |
| <b>part</b> 73:20<br>99:11 126:15<br>128:5 131:22  | 82:1,3,7,15,20<br>82:21 84:6,8<br>84:12,13 87:8<br>88:2 89:13<br>90:24 91:1,6,8<br>91:12,13 96:18                                  | <b>pending</b> 6:16<br>8:7  | <b>permanent</b><br>121:4,6,8,25<br>122:4,23   |
| <b>particular</b> 16:9<br>72:15 74:10<br>80:4 121:19   | 112:16 113:23<br>113:23 116:12<br>116:15,18,20<br>117:4,11,12,13<br>117:17,18,23<br>118:22 121:1<br>121:12 123:14<br>123:17 130:22 | <b>pendleton</b><br>105:20  | <b>perry</b> 5:21<br>136:6,22                  |
| <b>particularly</b><br>86:24 97:1  |  | <b>people</b> 41:3<br>82:13 83:15,21<br>85:8 91:15<br>101:16 104:11<br>109:6                        | <b>person</b> 10:14<br>10:17 93:19<br>109:18   |
| <b>parties</b> 136:15  |  | <b>people's</b> 90:3  | <b>personal</b><br>127:20                      |
| <b>parts</b> 118:23  |  | <b>percent</b> 20:9,21<br>20:22 103:23<br>103:23,25<br>104:4 116:18<br>116:19 117:2<br>117:14,15,16 | <b>personally</b><br>70:13                     |
| <b>party</b> 127:19  |  | <b>percentage</b><br>20:6,18,19<br>80:3 83:11,12<br>91:7 117:17                                     | <b>perspective</b><br>39:14                    |
| <b>party's</b> 127:3   |  | <b>percentages</b><br>83:15   | <b>pesch</b> 53:10                             |
| <b>past</b> 10:7   | <b>patrick</b> 12:2  |   | <b>pharmacology</b><br>26:9                    |
| <b>pathology</b><br>116:3  | <b>pavilion</b> 6:8  |   | <b>phase</b> 3:5,8,11<br>14:6,12,19            |
| <b>patience</b> 32:15  | <b>pay</b> 98:9  |   | <b>phd</b> 4:4 62:22                           |
| <b>patient</b> 33:2<br>48:7,12,16,18<br>48:21,22,23,23<br>48:25 49:4,6<br>71:22 77:25<br>80:19 83:1,19<br>92:6 96:24 | <b>payment</b> 20:3<br><b>pce</b> 27:1,4<br>29:25 30:1<br>44:3,6,16,17<br>128:14,20<br>129:15,19,25                                |   |  |

|  |   |  |   |
|--|---|--|---|
| <b>phrase</b> 36:20<br>38:11 41:13<br>42:12,15,16,18<br>43:2 85:5 86:1<br>86:2 87:17<br>96:23 107:25<br>108:10,11<br><b>physician</b><br>21:10,24 30:1<br><b>physicians</b><br>21:15,19 28:14<br>28:20 29:1<br>88:18 119:16<br>119:20 120:9<br>120:20<br><b>picture</b> 65:1<br><b>piece</b> 16:9<br><b>pivot</b> 43:9<br>71:23 119:2<br>121:2<br><b>pivoting</b> 109:25<br><b>pizzo</b> 1:13 3:2,3<br>3:4,14,15,17<br>4:2,8 5:11 6:4<br>14:9,15,22,25<br>15:2,4,6,8,10<br>17:13 18:15<br>22:19 31:17,21<br>31:25 32:4,8<br>32:11,12 62:23<br>86:9 131:6,12<br>131:12,20<br>133:18 135:6<br>135:15 136:9 | 137:5,20<br><b>pizzo's</b> 3:7,10<br>3:13,18,20<br>14:8,14,21<br>17:11 22:18<br><b>place</b> 68:7<br><b>plaintiff</b> 2:2 3:7<br>3:10,13 14:8<br>14:14,21 20:22<br>60:7 61:17<br>63:22 72:16<br>115:15<br><b>plaintiff's</b> 5:19<br>10:23 12:12,16<br>12:21 72:6,18<br>119:3<br><b>plaintiffs</b> 3:5,8<br>3:11 14:5,11<br>14:18 21:3<br>27:23 29:4<br>33:23 43:22<br>46:13 59:5<br>61:12 63:23<br>90:9 93:13<br>105:1 121:19<br>124:3 130:21<br>133:4<br><b>play</b> 92:3<br><b>played</b> 93:16<br><b>playing</b> 90:15<br><b>please</b> 5:1,12<br>6:2,5 7:22 8:6<br>8:8 20:20 34:9<br>48:17 51:14 | 71:4 131:22<br><b>plot</b> 62:2 65:6<br>71:18<br><b>plotting</b> 97:23<br><b>plug</b> 99:22<br>130:22<br><b>plus</b> 106:18<br><b>point</b> 126:15<br>129:11<br><b>pointed</b> 132:13<br><b>police</b> 98:16<br><b>poorly</b> 78:16<br>88:9 91:13<br>112:14,20<br>113:3,7 114:7<br><b>population</b><br>45:21 59:24<br><b>populations</b><br>105:11<br><b>posed</b> 132:1<br><b>positive</b> 54:3<br><b>possibility</b><br>97:20<br><b>possible</b> 85:7<br><b>postoperative</b><br>124:17<br><b>postsurgery</b><br>51:25<br><b>potent</b> 85:17<br><b>potential</b> 29:12<br>69:24 70:4<br>74:16 75:6,7<br>75:12,14,25<br>76:1 89:19,24 | 123:9<br><b>practice</b> 27:14<br>29:11 38:21,23<br>39:8,22 40:5<br>76:11 91:6<br>123:14,17<br>133:6<br><b>prediabetic</b><br>110:20<br><b>preparation</b><br>9:18 10:12<br>11:8 19:17<br><b>prepare</b> 9:10<br>10:14,15 11:19<br><b>preparing</b> 16:3<br>16:11 34:25<br>38:9 54:11<br>128:4<br><b>presence</b> 92:10<br><b>present</b> 2:13<br>125:21<br><b>press</b> 53:12,16<br>53:17<br><b>pretty</b> 79:17<br><b>prevalent</b><br>85:11<br><b>previous</b> 30:6<br>73:7 84:11<br>94:17<br><b>previously</b> 9:13<br>48:1 65:23<br>127:10,15<br><b>primary</b> 25:2<br>120:1,12 |
|--|---|--|---|

|  |  |   |   |
|--|--|---|---|
| <b>principal</b> 24:20<br>25:24  | <b>proposition</b><br>45:19 76:14<br>88:7,8 102:16<br>111:22 113:2<br>113:12 130:24<br>132:18  | <b>purpose</b> 6:25<br><b>pursuant</b> 1:14<br><b>put</b> 59:6 80:13<br>107:11  | 108:21 110:10<br>113:1 118:4,16<br>120:4,8 129:15<br>129:16,18,22<br>130:1 132:1,6<br>133:14  |
| <b>prior</b> 20:23<br>51:25 56:1<br>116:6 126:17<br>127:1  | <b>prostate</b> 104:1<br><b>protective</b><br>70:24<br><b>protects</b> 83:24<br><b>provide</b> 21:17<br>64:8 123:17<br><b>provided</b> 12:6<br><b>providence</b> 2:3   | <b>q</b>  | <b>questions</b> 7:6<br>7:12,21 12:9<br>87:17 120:14<br>128:25 133:12<br>133:18 134:3,4   |
| <b>probability</b><br>42:13<br><b>probably</b> 6:22<br><b>procedure</b><br>124:6<br><b>process</b> 74:9<br>75:13 76:8<br>84:25 89:2<br><b>processes</b> 81:23<br><b>produce</b> 54:3<br><b>profiles</b> 46:8<br><b>prognosis</b><br>115:21,22<br>116:5<br><b>prognostic</b><br>77:16<br><b>progress</b> 125:5<br><b>progressed</b><br>125:2<br><b>proliferate</b><br>84:22,24 85:6<br><b>proliferation</b><br>76:10<br><b>prominent</b> 90:6<br><b>proof</b> 35:9<br>36:15,25 37:4<br><b>properly</b> 7:11 | <b>psychology</b><br>25:11,14,17<br>121:18<br><b>public</b> 1:17<br>5:24 135:20<br>136:6 137:24<br><b>publications</b><br>24:2 25:1<br>41:10,12 42:14<br><b>published</b><br>24:23 25:7,16<br>26:3,18,25<br>27:7,11 40:8<br>40:13,16,21<br>56:16,19,22<br>57:1,2,7 86:16<br><b>pull</b> 22:17<br>93:22<br><b>pulmonary</b><br>124:24 | <b>qualification</b><br>111:3<br><b>quantify</b><br>101:19 126:19<br>126:22<br><b>quarters</b><br>107:11<br><b>queens</b> 136:4<br><b>question</b> 7:13<br>7:23 8:2,3,7,9<br>9:6 10:24<br>12:14 15:24<br>19:11 29:15,25<br>30:7 36:13<br>40:14,19,23,24<br>41:11 44:7<br>45:10,22 52:5<br>54:9 58:5<br>59:11,14 60:14<br>61:20 62:15<br>63:16 64:15,25<br>71:4 76:6 81:5<br>81:9,18 83:11<br>83:20,25 84:11<br>84:13 86:3,12<br>88:14 93:1<br>98:19 100:11<br>102:19 106:20 | <b>quick</b> 78:9<br><b>quite</b> 18:10<br>64:16 87:14<br><b>quote</b> 66:17<br>111:23<br><b>quoted</b> 36:3<br>45:24<br><b>quotes</b> 35:5   |
|  |  |   | <b>r</b>  |
|  |  |   | <b>r</b> 2:1 136:1<br><b>raaschou</b> 53:11<br><b>race</b> 78:5,13<br><b>radiologic</b><br>125:16<br><b>random</b> 39:12<br>39:13 84:16,17<br><b>randomized</b><br>39:14<br><b>randomly</b> 84:5<br>84:7,9<br><b>range</b> 117:15 |

|  |  |   |  |
|--|--|---|--|
| <b>ranges</b> 125:21<br><b>rate</b> 104:17<br><b>rates</b> 17:25,25<br><b>rather</b> 7:14<br><b>ratio</b> 46:5 65:8<br>100:19<br><b>ratios</b> 99:21,25<br>100:1,12<br>101:14<br><b>reaching</b> 43:21<br>75:8<br><b>read</b> 129:14<br>132:16 135:7<br><b>reading</b> 33:13<br>34:19 35:13<br>72:20 87:3<br>94:20<br><b>real</b> 33:11 78:9<br>109:18 115:24<br><b>really</b> 22:11,15<br>52:3 70:7<br>75:24 82:23<br>90:6 91:22<br>110:13 128:25<br>132:23<br><b>reason</b> 8:19<br>19:11 52:12<br>91:12 101:25<br>102:9,21 104:8<br>104:8 117:6,7<br>125:4 137:6<br><b>reasonable</b><br>7:20 41:19,22<br>41:25 42:5,11 | 42:12 43:2<br>72:7 74:16<br>75:5,12 104:12<br>119:12 120:6<br>120:16 126:9<br>127:3<br><b>reasons</b> 104:12<br>106:13<br><b>rebuttal</b> 33:16<br>93:22 97:7,11<br><b>recall</b> 19:24<br>20:2,17 23:4<br>23:12 41:12,15<br>47:1,4 48:21<br>49:14,15 55:20<br>55:23,25 56:2<br>100:9 111:4<br>127:18 128:16<br>128:17 131:4,4<br><b>received</b> 16:24<br>23:9 63:12<br>126:16<br><b>receives</b> 124:24<br><b>recent</b> 21:12<br>23:20<br><b>recently</b> 33:3<br>102:20<br><b>recognize</b><br>18:19 22:23<br>33:18 63:4<br>86:13<br><b>recognized</b><br>116:15 | <b>recollection</b><br>12:5 27:20<br>31:1 43:18<br>49:18 67:6<br>87:5 106:23<br><b>record</b> 5:2,13<br>6:3,6 7:10 17:5<br>26:21 27:3<br>40:18 47:11,15<br>47:18 50:22<br>55:13 70:9<br>79:19 87:16<br>103:1,4,7<br>119:7 125:19<br>129:5,8 130:11<br>134:7 135:10<br>135:11 136:12<br><b>records</b> 22:14<br>106:15 111:5<br>122:20 126:14<br>126:15 127:7<br><b>recovered</b><br>121:23 123:8<br><b>recovery</b><br>122:10,15<br>123:5<br><b>recurred</b> 90:7<br><b>recurrence</b> 4:5<br>51:18,21 86:6<br>93:8 116:11,14<br>116:22,24<br>117:3,9,13,23<br>118:1 122:17 | <b>recurrences</b><br>118:15<br><b>recurrent</b><br>115:18 124:20<br>125:24<br><b>refer</b> 31:2<br>88:18<br><b>reference</b> 40:20<br>53:17 54:14<br>81:24 119:5<br><b>referenced</b><br>60:12<br><b>references</b><br>16:13<br><b>referred</b> 51:5<br><b>referring</b> 26:22<br>28:1 34:21<br>48:23 55:7<br>75:16 82:10<br>87:15 100:4<br>102:12,13<br>105:19 112:14<br>112:18 125:22<br>129:16<br><b>refers</b> 26:23<br>27:4 87:18<br>94:2,12<br><b>reflect</b> 15:14,25<br>19:3 23:22<br>33:22<br><b>reflected</b> 16:10<br>51:16<br><b>reflective</b> 133:5 |
|--|--|---|--|



|   |  |   |   |
|---|--|---|---|
| <b>reflects</b> 18:7<br>21:20 55:13,14<br><b>refresh</b> 87:5<br><b>refused</b> 107:1<br><b>regarding</b> 13:2<br>13:21 14:2<br>26:19 27:1,8<br>27:12 29:17,25<br>30:1,7,8,16<br>33:20,23 34:13<br>35:16 36:4<br>37:20 45:11,12<br>45:14,17 46:18<br>50:3 51:17<br>52:7,15,23<br>59:17 60:21<br>81:5,11 91:6<br>97:14 113:1<br>124:8 125:24<br>127:16 130:17<br><b>regardless</b><br>92:10,19 93:3<br>93:8<br><b>regular</b> 112:24<br><b>regulation</b> 85:2<br><b>related</b> 29:8<br>45:15 99:18<br>117:10 120:24<br>121:9,18<br>122:23 124:21<br>132:12 136:14<br><b>relates</b> 1:4<br><b>relation</b> 124:13<br>125:10 126:17 | <b>relationship</b><br>35:11,12 36:16<br>36:17 83:5<br>108:24<br><b>relative</b> 46:15<br>104:1,3 112:2<br><b>relatively</b> 90:11<br>107:4<br><b>relevant</b> 21:22<br>22:1,5 46:4,13<br>48:13 54:19,22<br>55:5 59:23<br>66:18 67:9<br><b>reliable</b> 105:23<br><b>reliance</b> 133:24<br><b>relied</b> 43:22<br>44:1 45:18<br>46:2,3,24 53:2<br>54:17 55:4<br>59:17 61:3<br>63:7 66:9 67:3<br>73:14,15,18<br>105:8 115:3,6<br>128:23,25<br><b>rely</b> 44:25 45:3<br>45:7,10 52:13<br>61:6 73:11<br>96:12 111:21<br>113:2 114:15<br>114:18<br><b>relying</b> 58:16<br>59:22 100:17<br>130:5,10,13 | <b>remains</b> 116:5<br><b>remember</b> 12:1<br>47:8 127:5<br><b>remove</b> 120:2<br>120:13<br><b>renal</b> 4:5 28:1,3<br>31:3 46:6,7<br>49:20,24 50:4<br>50:24 51:4,10<br>52:15,24 76:18<br>76:19,22 77:2<br>77:15 79:20<br>80:14,15 81:1<br>82:11,12,13<br>83:14 86:7,18<br>88:10,10 90:7<br>94:24 96:21<br>103:17 104:14<br>110:11 111:13<br>112:9 115:23<br>116:24 117:20<br>121:7 124:13<br><b>reopen</b> 9:5<br><b>repairs</b> 84:19<br><b>repeat</b> 12:14<br>86:3<br><b>replicate</b> 85:2<br><b>report</b> 3:7,10<br>3:13,21,22,23<br>3:24 4:1,3<br>11:12 14:8,14<br>14:21 16:13<br>31:16,20,24<br>32:3,7,19,21,24 | 33:2,12,14,16<br>34:10,12 35:4<br>35:8,15 36:2,3<br>37:19 43:10,14<br>44:10,11,12<br>45:3,13,19,25<br>47:2,5 51:17<br>52:13 53:9<br>54:22 56:10<br>57:12 58:21<br>60:18 62:22<br>63:6,7,11,13<br>65:24 66:22<br>72:4 78:20<br>79:2 81:25<br>93:22 97:7,11<br>105:16 110:5<br>114:11 119:4,5<br>122:5 125:7<br>126:7<br><b>reported</b> 79:24<br><b>reporter</b> 4:9<br>5:20 6:2,5 7:9<br>63:1 134:8<br><b>reports</b> 4:2<br>9:12,17 11:14<br>16:3,11 23:10<br>32:10 33:20<br>34:4 35:1<br>37:22 38:2,9<br>43:23 44:1<br>46:3,25 47:7<br>53:2,20 54:11<br>54:16,18,24 |
|---|--|---|---|



|  |  |  |   |
|--|--|--|---|
| 57:7,9 58:7<br>59:12 60:4,22<br>61:4 71:24<br>73:13,15,21<br>77:18 78:4,15<br>105:5 111:14<br>114:20 115:2,7<br>128:4 130:11<br>130:13,14,18<br>133:4,20<br><b>represent</b> 6:15<br>15:14 23:7<br>63:9<br><b>representation</b><br>23:23<br><b>require</b> 12:10<br>29:11 67:12<br><b>requires</b> 11:5<br>74:16 75:7<br><b>research</b> 38:8<br>38:11 56:9<br><b>researcher</b> 54:6<br><b>resection</b><br>122:15<br><b>respect</b> 3:6,9<br>3:12 14:7,13<br>14:20<br><b>respond</b> 7:14<br><b>responded</b><br>98:18<br><b>responding</b><br>7:15<br><b>response</b> 83:5<br>85:19 108:9,24 | 129:14<br><b>responses</b> 9:2,5<br><b>responsibility</b><br>13:8<br><b>result</b> 84:1<br><b>results</b> 4:5 39:2<br>54:3 86:7,18<br><b>retained</b> 4:9<br>12:16,18,22<br>13:3 18:11<br>73:8<br><b>retainer</b> 13:5<br><b>review</b> 9:2<br>10:18 11:1<br>15:22 16:16<br>17:5,16 52:17<br>54:10 56:12,23<br>57:2 63:15<br>100:18 114:19<br>126:24 127:7<br>128:6<br><b>reviewed</b> 9:12<br>11:8,11 16:20<br>16:22 24:23<br>25:8,17 26:3<br>26:18,25 27:7<br>27:11 34:25<br>37:15 38:14,15<br>38:20 40:25<br>41:9 43:10,13<br>46:10 53:4,21<br>54:17,25 61:17<br>115:11 122:21<br>128:3 130:4 | <b>reviewer</b> 41:7<br><b>reviewing</b><br>40:12 55:20,25<br>97:22 128:23<br><b>reynolds</b> 4:3<br>61:3,8,14,16,22<br>62:7,22 63:5<br>63:16 64:3,18<br>65:24,24 66:9<br>66:12,22 67:20<br>68:1,7,13 69:1<br>69:4,9 97:23<br><b>rhode</b> 2:3<br><b>rid</b> 85:9<br><b>right</b> 11:16<br>13:16 21:13,17<br>24:18,21,24<br>25:17,22 35:6<br>35:22 37:23<br>41:20 43:17,24<br>44:4 45:1,6,15<br>47:14,17 48:2<br>49:20,24 50:11<br>50:15,19,23,24<br>51:13 52:15<br>53:25 57:17,25<br>58:3,25 59:20<br>60:18 61:2<br>62:1,12 63:18<br>65:2,25 66:5<br>67:24 68:5,10<br>69:4 71:15,25<br>72:9 74:3<br>77:19 78:7,18 | 78:25 80:4,9<br>83:21 88:25<br>91:20 92:14<br>95:13 97:9<br>103:3,6,9,21<br>104:1,8,10<br>105:11 108:24<br>110:2 117:5,14<br>117:19,24<br>119:13 120:6<br>120:17 121:5<br>121:10,15,19<br>121:22,23<br>122:1,24,24<br>123:5 124:2,9<br>124:12,15,16<br>124:17,25<br>125:2,9,13,16<br>125:24 126:10<br>128:4 129:4,7<br>129:21 134:6<br><b>risk</b> 4:5 25:5,8<br>29:22,23 30:11<br>44:15,16 46:8<br>46:16 48:13<br>49:16 51:25<br>56:16,19 59:25<br>59:25 60:8<br>64:9 65:2,13<br>65:16,20 67:11<br>67:18 71:3,6,7<br>71:11,21 73:17<br>74:13,23 75:16<br>77:18,22,24 |
|--|--|--|---|

|                 |                       |                         |                        |
|-----------------|-----------------------|-------------------------|------------------------|
| 78:2,6,14,18,24 | 113:20 114:3,5        | <b>s</b>                | 57:20 81:17            |
| 79:8,20,24      | 114:9,16              | <b>s</b> 2:1 5:23 137:6 | 118:17 127:8           |
| 80:4,8,15,18,22 | 116:11,15,21          | <b>saying</b> 23:16     | <b>section</b> 37:21   |
| 80:25 81:5,6    | 117:22 118:2          | 25:3 47:6               | <b>sections</b> 44:9   |
| 81:11,14,23     | 118:22 122:16         | 70:10 93:18             | 44:11,14,22,23         |
| 82:3,10,16,19   | 128:19 129:19         | 94:16 99:17             | 44:24                  |
| 82:25 83:4,7    | 129:24 130:7          | 109:22 111:25           | <b>see</b> 57:22 59:6  |
| 83:12,18 84:14  | 130:25 132:2,4        | 112:1                   | 94:8                   |
| 84:16 85:10,16  | 132:9,14,19           | <b>says</b> 17:23       | <b>seeing</b> 15:19    |
| 85:20,21,25     | 133:3,5               | 34:15 37:7              | 58:17 71:18            |
| 86:6,17,25      | <b>risks</b> 29:12    | 98:8 101:13             | 80:19                  |
| 87:1,6,12,18,19 | 44:3 54:6             | 109:1 131:25            | <b>seek</b> 112:24     |
| 87:21,22 88:4   | 69:24 70:4            | <b>scans</b> 104:11     | <b>seemed</b> 126:15   |
| 88:10 90:15,19  | 123:9,15,19,21        | <b>scenario</b> 41:2    | <b>send</b> 131:15     |
| 91:3,24,25      | 123:21                | <b>schedule</b> 18:7,8  | <b>sense</b> 99:7      |
| 92:1,2,11,13    | <b>rn</b> 1:9         | 18:9 20:11,12           | <b>sent</b> 18:22      |
| 94:4,14 95:8    | <b>rodriguez</b> 2:14 | <b>scherr</b> 86:17     | 126:14                 |
| 95:11,13,13,23  | 5:3                   | <b>science</b> 35:19    | <b>sentence</b> 57:21  |
| 96:9,9,10,11,14 | <b>role</b> 93:16     | 76:15 89:23             | 86:23                  |
| 96:16,18,19,24  | <b>room</b> 6:8       | 90:2                    | <b>separate</b> 71:20  |
| 98:3,14 99:4,8  | <b>routine</b> 124:24 | <b>sciences</b> 56:10   | 83:19 96:25            |
| 99:13,20        | <b>row</b> 2:3        | <b>scientific</b> 21:21 | <b>separately</b> 46:9 |
| 100:25 101:3,4  | <b>rule</b> 74:20,20  | 41:20,23 42:1           | <b>series</b> 4:6 86:8 |
| 101:7,9,23      | 74:22,23 75:3         | 42:11 43:3              | <b>served</b> 20:14    |
| 103:14,22       | 75:3,12,14,23         | 96:11 114:15            | 127:2                  |
| 104:24 105:4    | <b>ruled</b> 75:8     | <b>scope</b> 13:8       | <b>services</b> 5:4    |
| 105:13,25       | 106:4,6 108:7         | <b>se</b> 22:11 120:2   | 17:2                   |
| 106:8,10        | 108:10                | 127:5                   | <b>serving</b> 20:7    |
| 107:12,13,14    | <b>rules</b> 6:19     | <b>search</b> 53:25     | <b>set</b> 24:7 34:8   |
| 109:2,5,10,23   | <b>ruling</b> 74:16   | 54:2                    | 56:7 136:10,18         |
| 110:1,3,9       | 75:5,7 107:24         | <b>second</b> 3:15      | <b>seven</b> 18:25     |
| 111:12,16,25    | 107:25                | 13:14 15:5              | 19:1,6                 |
| 112:1,6,12,19   |                       | 48:18,25 49:6           | <b>several</b> 104:18  |
| 113:4,8,9,13,16 |                       |                         | 106:13                 |

|                         |                        |                         |                         |
|-------------------------|------------------------|-------------------------|-------------------------|
| <b>shaking</b> 7:15     | 93:14 100:20           | <b>sold</b> 79:13       | 81:20 93:19             |
| <b>share</b> 45:5       | <b>site</b> 98:22      | <b>solutions</b> 5:7    | 101:12 113:22           |
| <b>sheet</b> 33:19      | <b>situation</b> 41:18 | <b>somebody</b>         | 115:15 116:22           |
| 137:1                   | 67:5 85:19             | 101:4 109:14            | 131:3 132:23            |
| <b>short</b> 47:16      | 94:3,13 99:14          | <b>sorry</b> 12:14      | 133:9                   |
| 103:5 107:4             | <b>situations</b>      | 13:12,15 30:5           | <b>specifically</b>     |
| 129:6                   | 96:23                  | 36:13 49:3              | 30:14 35:8              |
| <b>show</b> 14:1        | <b>six</b> 15:25 16:10 | 55:10 58:11             | 41:15 44:1,7            |
| 132:11,12               | 16:17                  | 59:14 69:7              | 48:25 50:13             |
| <b>showed</b> 130:7     | <b>slew</b> 31:13      | 75:10 92:23             | 51:9 60:14              |
| <b>shown</b> 102:13     | <b>small</b> 104:13    | 94:7,10 108:4           | 70:19 71:1              |
| <b>side</b> 40:12       | 124:4                  | 108:6 110:10            | 72:16 73:10,14          |
| 124:1,2                 | <b>smoke</b> 108:25    | 111:7 113:10            | 102:8 105:3             |
| <b>signature</b>        | 109:15                 | 114:11 132:4            | 111:23 117:17           |
| 136:21                  | <b>smoked</b> 106:15   | <b>sound</b> 6:22       | 127:18 128:16           |
| <b>signed</b> 135:17    | 106:22,24              | <b>sounds</b> 70:23     | 130:20 133:19           |
| <b>significance</b>     | 107:1,18,19,20         | 71:7                    | <b>spoke</b> 12:3       |
| 77:16                   | 108:22 109:7           | <b>southern</b> 1:2     | 48:22                   |
| <b>significant</b> 76:1 | 109:15,16,23           | <b>speak</b> 42:19      | <b>square</b> 1:15      |
| 98:13 99:5,9            | <b>smokers</b> 92:14   | <b>speaking</b> 42:23   | <b>ss</b> 135:3 136:3   |
| 107:5 112:19            | 109:3,4                | <b>specific</b> 3:21,22 | <b>stable</b> 126:1,4,6 |
| 113:8,9,16              | <b>smokes</b> 82:11    | 3:23,24 4:1             | <b>stadler</b> 9:14     |
| 116:2                   | 92:15                  | 9:12 11:14              | <b>stadler's</b> 11:12  |
| <b>significantly</b>    | <b>smoking</b> 83:17   | 13:20 15:23             | 33:13                   |
| 109:2                   | 83:22 88:9             | 23:9,10 29:23           | <b>stand</b> 5:1        |
| <b>silberman</b> 4:7    | 98:5,8 106:11          | 31:15,19,23             | <b>standard</b> 34:15   |
| 131:6,11,20             | 106:22 107:16          | 32:2,6,18,21,24         | 37:21 38:16             |
| <b>similar</b> 46:8     | 108:16,23              | 33:13 37:17             | 39:18 40:1,7,9          |
| 52:11 70:15             | 109:10,19,21           | 38:19 39:2              | 41:1,1,6 42:9           |
| 105:10,11               | 109:25 112:3           | 46:13 47:8              | 43:1 131:16             |
| <b>similarities</b>     | 113:17 117:22          | 51:14 52:18             | 134:10                  |
| 68:17,19                | 117:25 132:3           | 57:9 59:4 60:8          | <b>standards</b>        |
| <b>single</b> 4:6 22:13 | 132:10                 | 71:21 72:23             | 21:21 35:18             |
| 68:21 86:8,19           |                        | 73:9 80:12,24           |                         |

|                        |                        |                         |                       |
|------------------------|------------------------|-------------------------|-----------------------|
| <b>standing</b> 95:14  | <b>step</b> 12:15      | <b>study</b> 24:21      | 36:9,11,15,15         |
| <b>starr</b> 6:8       | 16:23 19:19            | 25:25 58:19             | 36:17,19,20,21        |
| <b>start</b> 69:1 89:2 | 23:7 37:19             | 59:6,18 60:2,3          | 128:8                 |
| <b>started</b> 38:22   | 52:6 53:25             | 60:12,16,18             | <b>supplemental</b>   |
| 38:23 39:3             | 54:14 75:13            | 61:18,21,25             | 3:14,16,17,24         |
| 106:22                 | <b>steven</b> 43:14    | 62:3 67:1,4,7,9         | 4:1 15:1,5,9          |
| <b>starting</b> 32:16  | <b>stopped</b> 106:17  | 67:9,24 68:5            | 32:3,7 33:2,12        |
| 36:19 80:14            | <b>street</b> 1:15 2:8 | 86:19,20 87:9           | 51:17                 |
| 85:1 131:25            | 6:7                    | 87:25 88:13             | <b>supplies</b> 102:6 |
| <b>state</b> 1:17 5:12 | <b>strike</b> 45:12    | 100:20 105:9            | 102:18                |
| 5:25 6:2,5 72:4        | 55:23 114:25           | 133:20                  | <b>support</b> 72:5   |
| 72:11,12 93:25         | 125:12                 | <b>subject</b> 8:16     | 98:23                 |
| 94:22 119:11           | <b>structured</b>      | 31:6,9                  | <b>supported</b> 81:2 |
| 120:5,15 135:3         | 72:14                  | <b>submitted</b> 57:8   | 81:3,15               |
| 135:20 136:2,7         | <b>structures</b>      | <b>subscribed</b>       | <b>suppose</b> 48:20  |
| <b>stated</b> 128:17   | 124:5                  | 135:17 137:21           | <b>sure</b> 7:11 10:1 |
| 129:22                 | <b>studied</b> 101:23  | <b>subsequent</b>       | 10:6,24 15:22         |
| <b>statement</b> 3:18  | <b>studies</b> 53:2,3  | 93:8                    | 15:25 29:15,25        |
| 17:12,20 89:16         | 58:17 60:22            | <b>subsequently</b>     | 36:14 44:24           |
| 102:1,10               | 65:6,7 66:4,21         | 60:1                    | 45:10 47:13           |
| 103:19 114:1           | 66:25 67:7             | <b>substance</b>        | 52:6 57:19            |
| 117:21 121:14          | 71:19 95:21            | 100:20                  | 59:9,11,15            |
| 126:12,14              | 97:24 99:23            | <b>substantial</b>      | 60:15 61:21           |
| <b>states</b> 1:1 5:9  | 100:2,4,5,7,9          | 57:16,25 58:3           | 62:16,18 67:8         |
| 5:15,17 6:14           | 100:13 101:14          | 58:6,8,14               | 70:2,3 72:3           |
| 6:15 9:5 21:8          | 101:22 102:13          | 99:13,18                | 77:8 78:10            |
| 23:8 34:15,17          | 105:8,9,18,19          | <b>substantive</b>      | 81:4,19 84:18         |
| 35:8,16,16             | 114:21 116:18          | 21:13                   | 87:16 88:3,7          |
| 63:12 79:13            | 117:16 128:19          | <b>subtypes</b> 77:1,6  | 94:8,19 95:4          |
| 104:5                  | 129:20,24              | 77:9                    | 97:3 101:1,8          |
| <b>stationed</b>       | 130:18,22,23           | <b>sufficiency</b>      | 103:2 105:2           |
| 105:20,20              | 132:11 133:22          | 42:2 99:16              | 118:18 121:17         |
| <b>statute</b> 34:16   | 133:23                 | <b>sufficient</b> 35:10 | 123:8,13,24           |
| 34:21 35:2             |                        | 35:11,20 36:5           | 130:11 131:4          |

|   |  |  |  |
|---|--|--|--|
| 133:15<br><b>surgery</b> 38:24<br>39:1,3,9,10,11<br>40:17 41:4<br>51:25 92:8<br>122:11 123:8<br><b>surrounding</b><br>45:8<br><b>surveillance</b><br>122:18 123:7<br>124:25 125:16<br><b>surveilled</b><br>116:12<br><b>swear</b> 5:21<br><b>sworn</b> 5:24<br>136:11 137:21<br><b>syndrome</b><br>78:13,24 82:9<br>118:21,21<br>119:1<br><b>syndromes</b><br>78:6 82:8<br><b>system</b> 45:21<br>60:11 83:24<br>90:3,3,12,17<br>116:24 | <b>table</b> 44:10<br><b>tabs</b> 13:24<br>31:12<br><b>take</b> 8:6,8,9,16<br>15:22 17:16<br>18:18 49:7<br>63:15 65:5<br>86:12 104:7<br>105:24 129:2<br><b>taken</b> 1:14<br>47:16 103:5<br>129:6 131:5<br>135:7<br><b>takes</b> 99:20<br><b>talk</b> 7:19 27:3<br>107:15 121:25<br>122:22 124:5<br>125:19<br><b>talked</b> 11:6<br>40:15 75:21<br>95:10 97:24<br>109:13 113:17<br>130:9<br><b>talking</b> 40:3<br>41:17,17 56:14<br>57:5,6 59:9<br>90:8 91:9<br>103:20 130:12<br>130:13 132:23<br><b>targeted</b> 90:12<br><b>tce</b> 26:19,22<br>29:12,17 44:3<br>44:6,16,17<br>101:17,20,22 | 102:1,5,14,16<br>102:20,22<br>128:9<br><b>techniques</b><br>39:14 40:16<br>41:5 104:21<br><b>telan</b> 12:2,4,11<br>12:19<br><b>tell</b> 8:13 15:20<br>45:7 47:7<br>126:11 128:22<br><b>telling</b> 10:25<br><b>tells</b> 98:13<br><b>tennis</b> 90:15<br><b>term</b> 41:16<br>50:8 51:11<br>58:7 74:9<br>88:20 89:4,12<br>91:21 93:25<br>94:12 109:2<br>118:2<br><b>terms</b> 12:13<br>39:2,6 46:11<br>60:8 68:22<br>70:14 95:19<br>96:2 115:13<br>124:18 126:16<br><b>testified</b> 5:25<br>127:10,16,16<br><b>testify</b> 21:11,15<br>21:19<br><b>testifying</b> 21:11<br>21:25 | <b>testimony</b> 8:20<br>17:7 18:5<br>21:20 47:23<br>103:10 106:15<br>107:1,16,18<br>129:11 130:17<br>133:1 135:7,10<br>136:12<br><b>tetrachloroet...</b><br>57:3<br><b>thank</b> 32:15<br>47:21 78:12<br>79:18 94:11,18<br>113:10 129:10<br>131:17<br><b>thanks</b> 63:2<br><b>therapy</b> 90:5<br>90:10<br><b>thin</b> 82:13<br><b>thing</b> 22:13<br>59:10 75:18<br>81:13 88:22<br>92:4 112:9<br>126:3<br><b>things</b> 40:15,16<br>41:5 54:20<br>60:25 67:19<br>74:19,20 77:7<br>90:4,13 106:25<br>108:23 109:13<br>112:3 113:17<br><b>think</b> 11:10<br>16:8,20,21<br>20:8,10 22:2,3 |
| <b>t</b>  |  |  |  |
| <b>t</b> 12:2 135:1<br>136:1,1<br><b>tab</b> 17:10 18:12<br>22:17 62:20<br>86:4 131:8   |  |  |  |

|                |                        |                        |                       |
|----------------|------------------------|------------------------|-----------------------|
| 22:15 24:25    | 127:5 128:22           | 90:22 103:3,6          | 64:2 65:24            |
| 29:21 33:5     | 128:24 130:3           | 104:9 106:18           | 66:5,12,21            |
| 36:24 38:21    | 131:9 132:22           | 107:5,5 109:12         | 100:21 107:10         |
| 40:1,3,10 41:5 | 132:25 133:14          | 109:15,23              | <b>touched</b> 75:4   |
| 42:1,8,22 43:7 | 133:19,23,25           | 112:15,23              | <b>tower</b> 1:15     |
| 44:6,21 45:7   | <b>third</b> 3:17 15:9 | 118:1 122:20           | <b>toxic</b> 30:20    |
| 51:15 53:7,8   | 94:9                   | 125:17 129:4,7         | 46:20 117:5,6         |
| 56:24 60:6     | <b>thought</b> 21:21   | 134:6,12               | 117:18 119:17         |
| 64:6 65:5,23   | 46:12 54:21            | <b>times</b> 1:15 10:2 | 119:22,25             |
| 69:3 70:5 73:9 | 87:11,15 98:21         | 10:7                   | 120:10,21,25          |
| 74:18 75:4,19  | 99:1 106:10            | <b>tobacco</b> 78:16   | 127:23                |
| 75:23 76:6     | 107:13 132:7           | 79:3 98:10             | <b>toxicologic</b>    |
| 77:11 78:8,21  | <b>three</b> 10:7 11:2 | 106:4,14,20            | 25:25                 |
| 81:3 82:14     | 33:23 43:22            | 108:1,8,13             | <b>toxicologist</b>   |
| 83:11,14,25    | 44:22,22 93:11         | 114:1                  | 25:19 43:17,19        |
| 88:4,8,12 89:6 | 93:12 121:1            | <b>today</b> 6:25 8:21 | 66:16                 |
| 89:11,16,21    | 124:2 126:25           | 9:19 10:12             | <b>toxicology</b>     |
| 91:18,21,22    | 127:1 133:4            | 103:10 130:9           | 25:22 26:3            |
| 93:18 94:16    | <b>threshold</b>       | 133:1                  | 44:13 56:23           |
| 95:10,10,11,22 | 58:12,21,23            | <b>today's</b> 5:4     | 57:2,2 66:7,13        |
| 95:25 96:8     | 59:13                  | 9:11 10:15,16          | <b>toxin</b> 69:6     |
| 97:15 98:18,20 | <b>thresholds</b> 59:8 | 11:19                  | 100:20 113:24         |
| 99:1,4,11,13   | 60:22 61:1             | <b>together</b> 19:6   | <b>toxins</b> 45:18   |
| 102:3,25       | <b>time</b> 5:5 6:25   | <b>told</b> 48:6,7     | 57:17 58:3,13         |
| 103:20 105:7,7 | 10:16 12:4             | <b>took</b> 8:12 9:25  | 61:11 72:8            |
| 108:21 109:9,9 | 15:19,22 18:10         | 61:23 69:5             | 100:24 101:9          |
| 109:10,17,18   | 18:18 23:9             | <b>tool</b> 71:7       | 107:8                 |
| 110:6,19       | 27:21 28:6             | <b>tools</b> 40:6      | <b>tract</b> 50:14    |
| 111:11,23      | 47:14,17 48:22         | <b>top</b> 35:16 112:2 | 51:9 116:17           |
| 113:14 114:5   | 49:9,10 57:25          | <b>topic</b> 25:2      | 117:1                 |
| 114:20 116:25  | 59:25 61:12            | <b>topics</b> 38:19    | <b>train</b> 98:19    |
| 117:20 119:24  | 63:15 69:2             | <b>total</b> 18:25     | <b>training</b> 21:12 |
| 120:23,25      | 73:9 80:20             | 19:12 62:8             | 29:11,16,17,21        |
| 121:12 125:4   | 86:12 87:14            | 63:17,20,21,24         | 29:23 30:1,8          |

|  |   |  |  |
|--|---|--|--|
| 40:5 96:13<br><b>transcribe</b> 7:10<br><b>transcribed</b><br>7:11<br><b>transcript</b> 4:7<br>9:2 131:10,19<br>131:23 134:9<br>135:7,9<br><b>transition</b><br>39:11<br><b>transitional</b><br>50:23,25 51:1<br>79:4 83:14<br>110:13 115:23<br>116:10<br><b>transurethral</b><br>122:15<br><b>treat</b> 27:18<br>119:24<br><b>treated</b> 27:15<br>28:6 48:1<br>119:21 120:9<br>120:20,23,25<br><b>treating</b> 28:14<br>28:20 29:1<br>30:16 79:5<br>80:17 82:1<br>90:23<br><b>treatment</b><br>42:21 90:7<br>92:7 118:8,10<br>118:12,15<br>119:12 120:3,5<br>120:12,16 | 124:9 126:9<br><b>treatments</b><br>119:3<br><b>trial</b> 9:6 18:5<br>127:11 130:16<br><b>trials</b> 39:13,14<br><b>tribunal</b> 31:10<br><b>trichloroethyl...</b><br>26:23 56:17,23<br><b>tried</b> 79:16<br><b>true</b> 26:14 61:9<br>93:19 125:25<br>133:22 135:9<br>135:11 136:12<br><b>truth</b> 8:13<br><b>truthful</b> 8:20<br><b>try</b> 53:5 74:14<br>75:19,23 76:2<br>92:6<br><b>trying</b> 42:8<br>76:5 80:1<br>85:23<br><b>tukes</b> 1:10<br><b>tumor</b> 85:9<br>92:5 120:1,2<br>120:13<br><b>tumors</b> 52:11<br><b>turn</b> 8:2 34:12<br>35:15 47:25<br>86:22<br><b>turning</b> 110:5<br>114:8 115:18<br><b>tvoc</b> 67:23 68:4<br>68:10,11 95:5 | 98:1<br><b>two</b> 27:25<br>34:17 35:9<br>36:14 39:13<br>40:16 77:7<br>79:23 98:10<br>105:10,17,18<br>106:10 107:13<br>107:21 109:19<br>129:15<br><b>type</b> 41:9 51:3<br>76:22 77:10<br>85:19 90:14<br>98:22,23,24<br>112:2 115:12<br><b>types</b> 40:17<br>76:17,19 77:4<br>77:6,13,15<br>79:23<br><b>typically</b> 96:18 | <b>undergoing</b><br>123:15,18<br><b>undergone</b><br>125:15<br><b>underlying</b><br>45:11 46:19<br>89:3<br><b>understand</b><br>6:17,20 7:1,3<br>7:18,21 8:12<br>8:15 9:1,4,9<br>10:24 15:21<br>29:15 53:5<br>59:14 85:23<br>86:2 88:13<br>89:12<br><b>understanding</b><br>12:18 26:22,24<br>27:4 36:8,20<br>37:3,8,13,16<br>39:17 43:16<br>51:7 63:12,14<br>80:25 81:13<br>86:1<br><b>understood</b><br>7:24 89:20<br>90:20<br><b>undiagnosed</b><br>112:23<br><b>unexplained</b><br>90:24<br><b>unit</b> 64:2 66:12<br><b>united</b> 1:1 5:9<br>5:15,16 6:14 |
|  |   | <b>u</b>   |  |
|  |   | <b>u.s.</b> 2:7<br><b>uh</b> 7:16<br><b>ultimately</b><br>46:14 115:14<br><b>unable</b> 8:19<br><b>unbalanced</b><br>54:6<br><b>uncommon</b><br>89:4<br><b>under</b> 36:9<br>44:13 103:25<br>135:7   |  |



|   |   |  |  |
|---|---|--|--|
| 6:15 9:5 21:8<br>23:8 63:12<br>79:13 104:5<br><b>universe</b> 31:3<br>89:19 90:19<br><b>unknown</b> 88:16<br>91:5 97:21<br><b>unmitigated</b><br>76:10<br><b>unmodifiable</b><br>77:21,24 78:6<br>78:14,24<br><b>unregulated</b><br>76:10<br><b>unremarkable</b><br>124:17<br><b>unsure</b> 129:16<br><b>update</b> 23:17<br><b>updated</b> 18:6,9<br>33:3,3<br><b>upper</b> 50:14<br>51:9 116:17<br>117:1<br><b>ureter</b> 51:2,5<br>51:11 122:2<br><b>urethral</b> 45:5<br>116:17 117:1<br><b>urologic</b> 126:16<br><b>urology</b> 41:8<br>111:24 113:14<br><b>urothelial</b> 45:5<br>45:12 46:6<br>50:15,21 51:10<br>51:13,22 | 109:24<br><b>usdoj.gov</b> 2:10<br>2:11<br><b>use</b> 39:8 42:22<br>42:23 50:8<br>51:11 54:15<br>55:3,18 56:18<br>56:25 58:20<br>60:6,10,20<br>65:24 66:12<br>67:18 69:15<br>70:5,7,10,10,12<br>71:8 72:1,2<br>73:16 74:10<br>78:16 79:3,7<br>88:20 89:4<br>96:6 98:10<br>105:10,16<br>106:4,6,14,20<br>107:24 108:1,8<br>108:9,11<br>113:12 134:1<br><b>used</b> 9:16 37:1<br>38:12 41:12<br>42:12,15,16<br>54:24 55:23<br>57:5 60:1,4,8<br>60:16 61:14,15<br>61:24 62:2<br>67:10 68:7,13<br>68:20 69:4,21<br>71:15 73:10<br>80:23 87:13<br>99:22 133:21 | <b>uses</b> 40:8 41:1<br>65:24 69:23<br>70:3 71:2,5<br>73:16<br><b>using</b> 20:11,12<br>37:2 44:10<br>67:20 68:1<br>72:22 74:9<br>130:22<br><b>usually</b> 74:12<br><b>utuc</b> 31:4 45:15<br>46:8 50:15,19<br>50:22 51:7,16<br>51:24 52:10,15<br>52:24 53:7<br>77:19 78:25<br>79:8,21 81:6<br>81:11,14 83:8<br>93:7 106:5,18<br>108:8 109:6,11<br>110:2,9 116:6<br>116:16,21<br>117:12,21,24<br>118:7,8,11,14<br>133:3 | <b>varies</b> 20:8<br><b>various</b> 14:1<br>50:22 63:10<br>76:19 104:11<br><b>vascular</b> 124:4<br><b>vc</b> 44:17,17<br><b>vena</b> 124:4<br><b>verbally</b> 7:13<br><b>veritext</b> 1:15<br>5:7<br><b>vernacular</b><br>42:23<br><b>version</b> 23:12<br><b>versus</b> 55:14,15<br>77:12,12 131:6<br>131:20<br><b>veterans</b> 29:8<br><b>video</b> 5:5<br><b>videographer</b><br>2:14 5:1,3,20<br>47:14,17 103:3<br>103:6 129:4,7<br>134:6<br><b>videotaped</b><br>1:13<br><b>vinyl</b> 27:8 30:7<br>30:9 44:4<br><b>vitae</b> 3:20<br>22:19 23:1<br><b>volatile</b> 62:9<br>63:18 100:21<br>107:10 |
|   |   | <b>v</b>   |  |
|   |   | <b>v</b> 4:7 131:11<br><b>vague</b> 7:16<br><b>validation</b> 4:4<br>86:6<br><b>values</b> 70:5<br>71:13   |  |



|                        |                       |                        |                        |
|------------------------|-----------------------|------------------------|------------------------|
| <b>w</b>               | 102:14,17,24          | 98:4,14,25             | <b>word</b> 55:3       |
| <b>w</b> 1:9,15 3:7,10 | 105:9 106:10          | 106:7 107:3            | 58:20 60:6             |
| 3:13,22,24             | 107:8 108:12          | 110:4 112:6            | 87:14 88:3             |
| 14:9,15,22             | 108:14 114:16         | 113:20,24              | 105:10 106:6           |
| 31:20 32:3             | 115:14 137:2          | 115:12,13              | <b>words</b> 89:9      |
| 135:1                  | <b>way</b> 38:1 39:20 | <b>welcome</b> 47:20   | 105:16                 |
| <b>walk</b> 107:15     | 40:4 41:16            | <b>went</b> 36:14      | <b>work</b> 13:2       |
| <b>want</b> 8:6,8 17:4 | 44:11 62:19           | 60:15 69:1             | 16:25 17:22            |
| 23:18 48:15            | 64:14 70:7            | <b>west</b> 105:12     | 18:23 19:3,8           |
| 52:5 71:23             | 71:12 72:3            | <b>whatnot</b> 96:13   | 19:15,19,21,25         |
| 75:24 94:10            | 73:19 75:11           | <b>whereof</b> 136:18  | 56:1 73:7              |
| 103:21 105:10          | 83:20 85:4,6          | <b>widely</b> 101:20   | <b>worked</b> 20:23    |
| 119:2 129:13           | 89:15 105:13          | 102:2                  | 21:2,7 69:13           |
| 130:11 131:16          | 136:16                | <b>william</b> 1:7     | 98:16,17               |
| 133:15                 | <b>wayne</b> 1:8 3:21 | <b>wind</b> 104:13     | <b>worsen</b> 115:21   |
| <b>wanted</b> 48:4     | 31:16 32:19           | <b>witness</b> 3:2     | <b>write</b> 29:7 41:3 |
| 108:10 130:16          | <b>ways</b> 34:17     | 5:22,23 6:4,7          | <b>writing</b> 87:9    |
| <b>washington</b> 2:9  | <b>we've</b> 37:20    | 13:9,12,15,18          | <b>wrote</b> 47:8      |
| <b>water</b> 1:3 5:8   | 39:13 54:20           | 14:4 17:3 20:7         | <b>x</b>               |
| 6:15 11:23             | 97:24 113:17          | 20:14,24 21:2          | <b>x</b> 1:2,11        |
| 21:3 27:16             | 130:9                 | 21:7,11,25             | <b>y</b>               |
| 28:7 29:5,9            | <b>week</b> 10:7      | 56:1 73:7              | <b>yates</b> 55:15     |
| 45:18,21 46:15         | 90:16 106:25          | 92:23 103:2            | <b>yeah</b> 33:7 43:7  |
| 48:2 49:23             | 107:2,21              | 127:2 136:9,13         | 53:17 57:23            |
| 50:1,7,10,18           | <b>weigh</b> 91:4     | 136:18                 | 61:2 69:5              |
| 56:11 58:17,19         | <b>weighed</b> 107:13 | <b>witness's</b> 137:5 | 78:12,12 82:11         |
| 59:20 63:21,22         | 108:13                | <b>witnesses</b> 3:6,9 | 83:21 84:6             |
| 67:4 68:23             | <b>weighing</b> 30:13 | 3:12 14:6,12           | 85:7 87:13             |
| 69:22 70:21            | 107:13                | 14:19 21:16,19         | 89:4 109:9             |
| 71:10 72:8             | <b>weight</b> 46:11   | 46:4                   | 110:11 114:14          |
| 73:18 92:20            | 46:15 53:5            | <b>women</b> 103:23    | 115:6 116:8            |
| 93:4,9 94:23           | 64:4,6 75:25          | <b>wondering</b>       | 121:22 123:1           |
| 95:24 102:6,7          | 88:6 95:19            | 129:14                 | 126:21 130:23          |
|                        | 96:2,14,16            |                        |                        |

|  |
|--|
| 133:23 134:2<br>134:10<br><b>year</b> 20:8 83:17<br>91:15 98:10<br>106:22 125:20<br><b>years</b> 24:2 49:5<br>79:14 80:17<br>91:14 98:11,12<br>98:17 104:18<br>106:17,18<br>109:19,19,21<br><b>yep</b> 55:10<br>78:23 110:7<br><b>york</b> 1:16,17<br>5:7,7,25 6:8<br>135:3,20 136:2<br>136:7<br><b>young</b> 48:18,21<br>132:24 |
| <b>z</b>   |
| <b>z</b> 5:23,23<br><b>zach</b> 94:18<br>131:14<br><b>zachary</b> 2:4 3:3<br>5:18<br><b>zhao</b> 53:10<br><b>zmandell</b> 2:5<br><b>zoom</b> 2:5 10:4  |

Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

DISCLAIMER: THE FOREGOING FEDERAL PROCEDURE RULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

VERITEXT LEGAL SOLUTIONS

COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

Veritext Legal Solutions is committed to maintaining the confidentiality of client and witness information, in accordance with the regulations promulgated under the Health Insurance Portability and Accountability Act (HIPAA), as amended with respect to protected health information and the Gramm-Leach-Bliley Act, as amended, with respect to Personally Identifiable Information (PII). Physical transcripts and exhibits are managed under strict facility and personnel access controls. Electronic files of documents are stored in encrypted form and are transmitted in an encrypted

fashion to authenticated parties who are permitted to access the material. Our data is hosted in a Tier 4 SSAE 16 certified facility.

Veritext Legal Solutions complies with all federal and State regulations with respect to the provision of court reporting services, and maintains its neutrality and independence regardless of relationship or the financial outcome of any litigation. Veritext requires adherence to the foregoing professional and ethical standards from all of its subcontractors in their independent contractor agreements.

Inquiries about Veritext Legal Solutions' confidentiality and security policies and practices should be directed to Veritext's Client Services Associates indicated on the cover of this document or at [www.veritext.com](http://www.veritext.com).