

Exhibit 584

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

IN RE: CAMP LEJEUNE WATER)
LITIGATION) Case No. 7:23-cv-00897

This Document Relates to:)
ALL CASES)

_____))

VIDEOTAPED DEPOSITION

OF

THOMAS LONGO, M.D.

Monday, June 16, 2025

Raleigh, North Carolina

Reported by: Christine A. Taylor, RPR

Job No.: 7410689

1 On June 16, 2025, commencing at 9:08 a.m.,
2 the videotaped deposition of THOMAS LONGO, M.D.,
3 was taken pursuant to notice and pursuant to the
4 Federal Rules of Civil Procedure, on behalf of
5 the Defendant, at Ward and Smith, P.A., 751
6 Corporate Center Drive, Suite 300, Raleigh, North
7 Carolina.

8 - - -
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

1 APPEARANCES:

2
3 Representing the Plaintiff:

4 MILBERG COLEMAN BRYSON PHILLIPS GROSSMAN

BY: PATRICK M. WALLACE, ESQ.

5 DAVID MICELLI, ESQ. (Zoom)

900 West Morgan Street

6 Raleigh, North Carolina 27603

919.600.5000

7 pwallace@milberg.com

8 and

9 WARD AND SMITH, P.A.

BY: JENNA FREUCHTENICHT BUTLER, ESQ.

10 127 Racine Drive

Wilmington, North Carolina 28406

11 910.794.4829

jfb@wardandsmith.com

12
13 Representing the Defendant:

14 U.S. DEPARTMENT OF JUSTICE

BY: MEGAN GADDY, ESQ.

15 HAROON ANWAR, ESQ. (via Zoom)

Trial Attorney, Civil Division

16 P.O. Box 340

Washington, DC 20044

17 202.616.8461

megan.gaddy@usdoj.gov

18
19
20 Also Present:

21 Tano Paul, Videographer

22 JT Malone (Zoom)

23 Amanda Memmler (Zoom)

24 Zina Bash (Zoom)

25 Charles Ellis (Zoom)

C O N T E N T S

	PAGE
EXAMINATION BY MS. GADDY	6
EXAMINATION BY MR. WALLACE	210

* * *

E X H I B I T S

EXHIBIT	DESCRIPTION	PAGE
Exhibit 1	Invoices,	10
	CL_PLG-EXPERT_LONGO_00000001 - 4	
Exhibit 2	Specific Causation Expert Report	13
	for Jefferson Criswell Thomas	
	Longo, M.D.	
Exhibit 3	Specific Causation Expert Report	14
	for Terry Dyer Thomas Longo, M.D.	
Exhibit 4	Rebuttal Expert Report Thomas	15
	Longo, M.D.	
Exhibit 5	3/11/2020 Medical Record	49
	01482_CRISWELL_VBA_000000286 - 291	
Exhibit 6	Medical Record starting 10-15-97	54
	01482_CRISWELL_0000000095	
Exhibit 7	7/11/2014 Progress Note	56
	01482_CRISWELL_000004928 - 4929	

1	Exhibit 8	6/3/2015 Medical Document Report	58
2		01482_CRISWELL_00000020 - 21	
3	Exhibit 9	Medical Records	60
4		01482_CRISWELL_000001023 - 1029	
5	Exhibit 10	Article: Estimating Impact of Body	101
6		Mass Index on Bladder Cancer Risks	
7		Stratification by Smoking Status	
8	Exhibit 11	Association of body mass index with	106
9		bladder cancer risk: a	
10		dose-response meta-analysis of	
11		prospective cohort studies	
12	Exhibit 12	3/12/2024 Deposition Transcript of	133
13		Jefferson M. Criswell	
14	Exhibit 13	1998 Medical Record	149
15		01482_CRISWELL_000000123	
16	Exhibit 14	Specific Causation Expert Report	178
17		for Jimmy Laramore by John P.	
18		Sfakianos, M.D.	
19	Exhibit 15	Consultant Retainer Agreement	209
20		CL_PLG-EXPERT_LONGO_00000005 - 10	
21	Exhibit 16	Deposition Transcript of Dr. Scott	219
22		Shelfo	
23			
24		(Exhibit 16 retained by Counsel.)	
25			

P R O C E E D I N G S

* * *

THE VIDEOGRAPHER: On record at
9:08 a.m. Today's date is June 16, 2025.
This is the deposition of Dr. Thomas Longo
in the matter of Camp Lejeune Water
Litigation. Case number 7:23-CV-00897.

Counsel please introduce yourselves,
after which our court reporter will swear
in the witness.

MR. WALLACE: Good morning. This is
Pat Wallace, Milberg, on behalf of
plaintiffs.

MS. BUTLER: I'm Jenna Butler with
Ward and Smith on behalf of the
plaintiffs.

MS. GADDY: Megan Gaddy for the
United States.

* * *

THOMAS LONGO, M.D.,
having first been duly sworn, was examined
and testified as follows:

* * *

EXAMINATION

BY MS. GADDY:

1 Q. Thank you. Good morning.

2 A. Good morning.

3 Q. Doctor, could you please state your
4 full name for the record.

5 A. My name is Thomas Andrew Longo.

6 Q. And could you please state your
7 current address. And your business address is
8 fine.

9 A. My current address is 2805 Rothgeb
10 Drive, Raleigh, North Carolina.

11 Q. Okay. And my name is Megan Gaddy.
12 I'm an attorney with the Department of Justice.
13 I represent the United States in the Camp Lejeune
14 Water Litigation, which is currently pending in
15 the Eastern District of North Carolina.

16 I'm going to go through just a few
17 ground rules before we get started to ensure that
18 we're all on the same page. I'm going to ask you
19 some questions today. And all I ask is that you
20 answer them to the best of your ability.

21 Do you understand?

22 A. Yes.

23 Q. If you do not understand a question,
24 please let me know and I will rephrase the
25 question. But if you answer the question, I will

1 assume you understood it.

2 Does that make sense?

3 A. Yes.

4 Q. And in a normal conversation, it's
5 typical that you may understand what I'm asking
6 before I complete the question. But for the
7 record and the court reporter, I ask that you
8 please let me know finish the question completely
9 before answering, and I will do the same. Okay?

10 A. Yes.

11 Q. When answering the question, please
12 say your answers out loud so that the court
13 reporter can accurately transcribe them. So if
14 the answer is a yes or no, please say yes or no.
15 They can't transcribe an uh-huh or a head nod.

16 Does that make sense?

17 A. Yes.

18 Q. And please try to talk at a
19 reasonable pace so the court reporter can report
20 everything.

21 And do you understand that a few
22 moments ago you took an oath to tell the truth?

23 A. Yes.

24 Q. And do you understand that this is
25 the same oath that you would take in court

1 subject to the same penalties for perjury?

2 A. Yes.

3 Q. During the deposition you may hear
4 your attorney say "objection." But unless your
5 attorney instructs you not to answer the
6 question, please answer the question after the
7 objection has been made. Okay?

8 A. Yes.

9 Q. Is there any reason why you are
10 unable to give your most truthful testimony
11 today?

12 A. No.

13 Q. And at any point you can ask for a
14 break. We will be taking breaks periodically
15 today. All I ask is that you please finish
16 answering the question before we take the break.
17 Okay?

18 A. Yes.

19 Q. And at any point today you can also
20 correct your testimony while you are here. Okay?

21 A. Yes.

22 Q. Okay. Doctor, when did you begin
23 working as an expert witness in this case?

24 A. I first began conversations with
25 counsel in December 2022, January 2023.

1 Q. And is that when you first became
2 properly an expert witness in December of 2022?

3 MR. WALLACE: Objection. Form.

4 THE WITNESS: Correct.

5 BY MS. GADDY:

6 Q. Okay. And you are being compensated
7 at a rate of \$750 an hour for your work in this
8 case; right?

9 A. Correct.

10 Q. And are you being compensated at that
11 same rate for your deposition today?

12 A. Correct.

13 Q. Okay. I want to show you what will
14 be marked as Exhibit 1.

15 (Longo Exhibit 1 marked for
16 identification.)

17 BY MS. GADDY:

18 Q. Can you see this, Doctor?

19 A. Yes, I can.

20 Q. Do you recognize this?

21 A. Yes.

22 Q. These are the invoices associated
23 with your work in this case that you produced to
24 us; correct?

25 A. That is correct.

1 Q. And based on the invoices, you've
2 been paid about \$46,000 to date for your work in
3 this case?

4 A. Correct.

5 Q. Does your payment depend on the
6 outcome of this case?

7 A. No, it does not.

8 Q. And what percentage of your annual
9 income is earned from serving as an expert
10 witness?

11 A. Less than 10 percent.

12 Q. And other than this case, have you
13 ever served as an expert witness for a plaintiff?

14 A. I -- no, I have not.

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

17 A. No, I have not.

18 Q. Have you testified at a deposition
19 before?

20 A. Yes, I have.

21 Q. And how many times have you testified
22 at a deposition?

23 A. Twice.

24 Q. And what were the nature of your
25 those two cases?

1 A. One case was a medical malpractice
2 case. The second case was as a treating
3 physician for one of the Camp Lejeune patients.

4 Q. And was that Camp Lejeune patient
5 Terry Dyer?

6 A. No.

7 Q. What was the name of that plaintiff?

8 A. Ciotti.

9 Q. And in the medical malpractice case,
10 what -- in what capacity were you testifying?

11 A. I was named as one of the residents
12 in the case and after my deposition was dropped
13 from the case.

14 Q. And what were the parties of that
15 case?

16 A. I don't understand the question.

17 Q. Who was the plaintiff in that case?

18 A. A patient named Wohlers.

19 Q. How do you spell that?

20 A. W-O-H-L-E-R-S.

21 Q. Okay. And a moment ago you said you
22 were deposed in the Ciotti case in your role as a
23 treating physician; right?

24 A. That is correct.

25 Q. And in that deposition do you recall

1 mentioning having previously testified in a
2 medical malpractice case?

3 A. If I asked, I would have said yes. I
4 don't remember if I was asked.

5 Q. And is that the same medical
6 malpractice case that you just described?

7 A. Correct.

8 Q. Okay. I'm going to show you what
9 will be marked as Exhibit 2.

10 (Longo Exhibit 2 marked for
11 identification.)

12 BY MS. GADDY:

13 Q. Doctor, do you recognize this?

14 A. Yes, I do.

15 Q. And this is your expert report for
16 Mr. Criswell in this case; correct?

17 A. It appears to be the cover sheet,
18 yes.

19 Q. And I can scroll just to show. And
20 this is the full report for Mr. Criswell; right?

21 A. Yes, it looks like it is.

22 Q. And turning to the last three pages
23 of this document, this is your CV; correct?

24 A. That is correct.

25 Q. And is this CV a complete

1 representation of your education and employment
2 background?

3 MR. WALLACE: Objection.

4 THE WITNESS: It is -- yes, it is a
5 summary of my education and employment
6 background.

7 BY MS. GADDY:

8 Q. Okay. Does this CV contain all of
9 your publications to date?

10 A. Yes, it does.

11 Q. And is this version of your CV the
12 most current version?

13 A. Yes.

14 Q. I'm next going to show you what will
15 be marked Exhibit 3.

16 (Longo Exhibit 3 marked for
17 identification.)

18 BY MS. GADDY:

19 Q. And I can scroll through.

20 Doctor, do you recognize this
21 exhibit?

22 A. Yes, I do.

23 Q. This is the report for Terry Dyer in
24 this case; correct?

25 A. Correct.

1 Q. And turning to the last three pages,
2 is this the same CV we spoke about just a bit
3 ago?

4 A. Yes, it is.

5 Q. Next I'll show you what will be
6 marked Exhibit 4.

7 (Longo Exhibit 4 marked for
8 identification.)

9 BY MS. GADDY:

10 Q. Do you recognize this document?

11 A. Yes.

12 Q. And this is your rebuttal expert
13 report in this litigation; correct?

14 A. That is correct.

15 Q. Do these three reports, Exhibits 2,
16 3, and 4 contain all of the opinions you have
17 formed to date in this case?

18 MR. WALLACE: Objection form.

19 THE WITNESS: That is correct they
20 do.

21 BY MS. GADDY:

22 Q. Okay. Doctor you aren't an attorney;
23 correct?

24 A. Correct.

25 Q. You aren't an economist?

1 A. Correct.

2 Q. You aren't an accountant?

3 A. Correct.

4 Q. And you aren't an epidemiologist;

5 right?

6 A. Correct.

7 Q. You don't have any certification in

8 epidemiology?

9 A. Correct.

10 Q. And you've never been a principal

11 investigator for an epidemiological study; right?

12 A. That is correct.

13 Q. You've never published peer-reviewed

14 literature on epidemiology; right?

15 A. Correct.

16 Q. And you haven't taught any courses on

17 epidemiology?

18 A. Correct.

19 Q. You aren't a geneticist; right?

20 A. Correct.

21 Q. And you aren't a toxicologist;

22 correct?

23 A. Correct.

24 Q. So you don't have a certification in

25 toxicology?

1 A. Correct.

2 Q. And you've never been a principal
3 investigator for a toxicological study; correct?

4 A. Correct.

5 Q. You've never published peer-reviewed
6 literature on toxicology?

7 A. Correct.

8 MR. WALLACE: Objection.

9 BY MS. GADDY:

10 Q. You haven't taught any courses on
11 toxicology; right?

12 A. Correct.

13 Q. You aren't an exposure expert; right?

14 MR. WALLACE: Objection.

15 THE WITNESS: Correct.

16 BY MS. GADDY:

17 Q. In other words, you're not an expert
18 in using models to estimate exposure to
19 chemicals; right?

20 MR. WALLACE: Objection.

21 THE WITNESS: Correct.

22 BY MS. GADDY:

23 Q. And you're not a risk assessment
24 expert; right?

25 A. Correct.

1 Q. So you're not an expert in evaluating
2 the level of increased risk for an individual
3 from exposure to a chemical; right?

4 MR. WALLACE: Objection. Form.
5 Foundation.

6 THE WITNESS: Correct.

7 BY MS. GADDY:

8 Q. And you're not a regulatory expert;
9 right?

10 A. Correct.

11 Q. You don't have any degrees in
12 biochemistry?

13 A. Correct.

14 Q. Or environmental health?

15 A. Correct.

16 Q. Or psychology?

17 A. Correct.

18 Q. You've never published peer-reviewed
19 literature regarding the effects of TCE on
20 bladder cancer; right?

21 A. Correct.

22 Q. And same goes for PCE?

23 A. Correct.

24 Q. Same for vinyl chloride?

25 A. Correct.

1 Q. And same for benzene?

2 A. Correct.

3 Q. You've never published peer-reviewed
4 literature regarding the effects of Camp Lejeune
5 water on bladder cancer; right?

6 A. Correct.

7 Q. Have you ever physically examined
8 Mr. Criswell?

9 A. No, I have not.

10 Q. Have you ever physically examined
11 Ms. Dyer?

12 A. No, I have not.

13 Q. And you are a practicing urologic
14 oncologist; right?

15 A. That is correct.

16 Q. Meaning you perform surgeries to
17 treat urologic cancers?

18 A. Yes.

19 Q. What type of urologic cancers do you
20 treat?

21 A. I treat all malignancies of the
22 genitourinary tract. So that would begin with
23 the kidneys, the ureters, the bladder, the
24 prostate, the seminal vesicles, the testes, and
25 the penis with a primary focus on bladder.

1 Q. And bladder cancer or urothelial
2 carcinoma is one of the urologic cancers that you
3 treat; right?

4 A. That is correct.

5 Q. How do you typically treat this type
6 of cancer?

7 A. The treatment of urothelial cell
8 carcinoma is dependent upon the grade and the
9 stage of the carcinoma. If you'd like me to
10 expand, I could.

11 Q. Sure. Briefly if you could.

12 A. There are many little varieties of
13 urothelial cell carcinoma, but it breaks down
14 into two large categories. It's either low grade
15 or high grade. In an older staging system, it
16 was 1, 2, and 3, but current staging it's low
17 grade and high grade.

18 The -- for most low grade cancers,
19 they simply need a transurethral resection of
20 bladder tumor and surveillance with office
21 cystoscopy for recurrences. If they have
22 multiple recurrences, we may start adding
23 intravesical therapy, which I can explain further
24 when I go into the next stage.

25 For high grade bladder cancers, the

1 next big decision point is a nonmuscle invasive
2 or muscle invasive. If you're to look at the
3 picture of the bladder under a microscope, you'd
4 see that there's multiple layers to the bladder,
5 the last layer of which is the detrusor muscle or
6 the muscularis propria. That's the last layer of
7 defense before the bladder cancer escapes the
8 bladder. Once it's outside of the bladder, we no
9 longer think it's curable.

10 If it's high grade non-muscle
11 invasive bladder cancer, we would give patients
12 the following options. One option is to simply
13 do simply the transurethral resection of the
14 bladder tumor which I mentioned a moment ago.
15 That's where a camera is inserted through the
16 patient's urethra into their bladder under
17 anesthesia. There's a little wire that can get
18 hot to various degrees. One level will cut. The
19 other will burn or cauterize so that the tissue
20 stops bleeding, so you can remove the tumor that
21 way.

22 The second option would be
23 transurethral resection bladder -- of the bladder
24 tumor plus intravesical therapy. Intravesical
25 therapy means that at sometimes immediately

1 post-operatively, but also at a later date
2 several weeks later, you would put a chemical
3 inside the bladder.

4 There are multiple chemicals that are
5 available to be put inside the bladder. The
6 chemical with the best evidence is a drug called
7 BCG. It's actually a live attenuated
8 tuberculosis vaccine. BCG has been proven to
9 reduce the likelihood of the tumor coming back.
10 And it's the only thing that shows that we will
11 keep a nonmuscle invasive bladder cancer from
12 becoming a muscle invasive bladder cancer. So it
13 reduces the likelihood of recurrence and it also
14 reduces the likelihood of progression.

15 There are several chemotherapies we
16 can put inside the bladder that will reduce the
17 likelihood of recurrence. But none of those have
18 been shown to reduce the likelihood of
19 progression.

20 So option one is TRBT. Option two is
21 TRBT plus intravesical therapy. A third option
22 would be clinical trials. Those vary at times.
23 And there are so many that I couldn't describe
24 all of them.

25 Then the fourth option for a high

1 grade nonmuscle invasive bladder cancer would be
2 a radical cystectomy, which is where we'd remove
3 the entire bladder.

4 In a man, we'd remove the bladder,
5 the prostate, the seminal vesicles and the lymph
6 nodes from down in the pelvis. We then have
7 detached their kidneys and the ureters from the
8 bladder and it has to be brought to the outside
9 world. Those are commonly done with urinary
10 diversions which almost always involve a piece of
11 bowel.

12 In a woman, it would be the bladder,
13 the uterus, the ovaries, a strip of the vagina
14 where the bladder sits on top of the vagina, all
15 the pelvic lymph nodes, and again ureters from
16 the kidneys have been detached on the bladder.
17 We, again, have to do a urinary diversion to
18 bring it to the outside world. So that's high
19 grade nonmuscle invasive bladder cancer.

20 If you have high grade muscle
21 invasive bladder cancer, the options would again
22 be a transurethral resection of the bladder
23 tumor, but that would be palliative and not
24 curative. So you'd have to tell the patient that
25 that wouldn't cure them of their disease. Their

1 disease would recur, progress, and ultimately to
2 their death.

3 You could do something called
4 chemotherapy plus radiation. Again, that's
5 thought to be palliative, although there is a
6 select population of patients who it could be
7 curative in. That's where you begin giving the
8 patient chemotherapy. While they're receiving
9 chemotherapy, they get radiated, then they get
10 more chemotherapy on the other side. It does
11 allow them to preserve their bladder, but the
12 risk is that it would not have cured them. It
13 will recur, spread, and lead to their death.

14 And then the gold standard, the
15 absolute best cancer control would be, again, the
16 radical cystectomy which I described a moment
17 ago.

18 Q. Thank you. That was very helpful.

19 I'm just going back. When you were
20 describing the intravesical therapy that's given
21 to patients with nonmuscle invasive bladder
22 cancer --

23 A. Yes.

24 Q. -- you mentioned BCG; right?

25 A. Correct.

1 Q. And you said that's -- that's not a
2 form of chemotherapy; right?

3 A. Correct. It's immunotherapy.

4 Q. Okay. In your practice, how many
5 patients per year would you estimate that you
6 diagnose with bladder cancer?

7 A. In my practice, if you look, there's
8 a split point. For a while I was at Duke
9 University. There, I would -- I had a much
10 larger proportion of my patients that had bladder
11 cancer. In fact, almost my entire day was filled
12 with patients with bladder cancer. And I would
13 remove roughly one to two bladders a week in that
14 radical operation that we were talking about.

15 Having since left Duke and joined the
16 different practice, I'm now down to maybe one
17 bladder every other week. But that's still a
18 very high volume urologic oncology practice for
19 bladder cancer. So it's more in the neighborhood
20 of probably 30 bladders removed. Again, a large
21 portion of my day, though, does involve seeing
22 patients with bladder cancer. I probably see one
23 or two new bladder cancers a day and then
24 follow-up visits to patients that have already
25 been established with me. It's probably in the

1 neighborhood between five to ten a day.

2 Q. And when you say you used to work at
3 Duke, about how long were you at Duke versus your
4 private practice?

5 A. I was at Duke starting with my
6 fellowship in 2015 up until the summer of 2023.
7 And then I've been at my other practice for
8 almost two years now.

9 Q. And when you were describing that you
10 would mostly see bladder cancer patients and you
11 were removing one to two bladders per week, I
12 think, is that consistent throughout your
13 entirety at being at Duke?

14 A. I would say that is a fair estimate,
15 correct.

16 Q. Okay. And at your current practice,
17 your private practice, you see maybe one bladder
18 cancer patient a week, is that what you said? Or
19 one removal a week?

20 MR. WALLACE: Objection.

21 THE WITNESS: Yeah. In my current
22 practice, I probably remove one bladder a
23 week. That's fair.

24 BY MS. GADDY:

25 Q. About how many patients would you say

1 you diagnose per week?

2 A. Diagnosis is probably one new
3 diagnosis a week. Most of the patients seen by
4 me have been referred by other urologists.

5 Q. Okay. And what do you tell your
6 patients about the risk factors for bladder
7 cancer?

8 MR. WALLACE: Objection.

9 THE WITNESS: When I first see the
10 patients, I'll run through a list of risk
11 factors to see which of those factors
12 they've been exposed to. Because I
13 believe that bladder cancer is almost
14 always a disease of toxic exposure. And
15 if we can ask enough questions, we
16 typically can find an exposure that could
17 contribute to their bladder cancer.

18 BY MS. GADDY:

19 Q. When you say toxic exposure, does
20 that include exposure to cigarettes?

21 A. Correct.

22 Q. And would you agree that smoking is
23 the most significant risk factor for bladder
24 cancer?

25 MR. WALLACE: Objection. Form.

1 Foundation.

2 THE WITNESS: I think smoking is well
3 established as the most common exposure in
4 bladder cancer.

5 BY MS. GADDY:

6 Q. Would you say that it's a risk factor
7 with the most evidence of increasing your risk of
8 bladder cancer?

9 MR. WALLACE: Objection. Form.
10 Foundation.

11 THE WITNESS: Yes.

12 BY MS. GADDY:

13 Q. What are other well-known risk
14 factors for bladder cancer other than smoking?

15 A. So we always begin with smoking.
16 There are occupations that we always look for.
17 In the past, it would be unusual things like
18 aniline dye factors that are very uncommon.

19 But now there are certain industries
20 that are notorious for having had risk factors,
21 such as the laundry industry. There's certain
22 manufacturing plants, industrial degreasers often
23 involved risk for bladder cancer.

24 I'm particularly sensitive to well
25 water because I came from an agricultural

1 background and many of the herbicides, pesticides
2 have a link to bladder cancer.

3 There is some unusual parasitic
4 infections that we don't see in the United States
5 but are endemic to other parts of the world.
6 There's radiation. There's chemotherapies in
7 their past. There's unusual herbal supplements
8 that have been tied to bladder cancer as well.

9 Q. Okay. And in your practice or in
10 your expert reports, you describe bladder cancer
11 as a disease of toxic exposure; right?

12 A. That is correct.

13 Q. And in your practice do you always
14 identify a toxic exposure as a cause of the
15 patient's bladder cancer?

16 A. Almost always. Nothing is
17 100 percent.

18 Q. And, again, that's including
19 cigarette smoke as well?

20 A. That is correct.

21 Q. In what percentage of your patients
22 diagnosed with bladder cancer are you able to
23 identify toxic exposure as a cause separate from
24 cigarette smoke?

25 MR. WALLACE: Objection. Form.

1 Foundation.

2 THE WITNESS: I'd say it would be
3 maybe one-third to one-half of the
4 patients have additional exposures that
5 are easy to identify.

6 BY MS. GADDY:

7 Q. And those exposures are separate from
8 tobacco?

9 A. Correct.

10 Q. And what types of exposures are
11 those?

12 A. They might be, as I said earlier,
13 occupational exposures or drinking water
14 exposures if they worked in an agricultural
15 environment. Increasing -- well, not increasing.
16 There are still radiation exposures from people
17 who are radiated as a pediatric cancer.

18 Q. Okay. So when you say in your
19 reports that it's typically a disease of toxic
20 exposure, you're not speaking specifically about
21 Camp Lejeune; right?

22 A. That is correct.

23 Q. And in your practice, you focus on
24 treating patients; right?

25 A. That is correct.

1 Q. And in your practice, identifying the
2 cause of the patient's bladder cancer is less
3 important than actually treating the patient;
4 right?

5 MR. WALLACE: Objection. Form.
6 Foundation.

7 THE WITNESS: I think that the
8 purpose of the visit for the patient is to
9 be treated for their malignancy. But it's
10 my duty as a physician to look for risk
11 factors, especially because in bladder
12 cancer most of them are modifiable meaning
13 the patient often can avoid them. And you
14 point them out, the possible etiology for
15 patient, so they can know to avoid it.
16 Their family can know to avoid it, perhaps
17 their co-workers or their friends, to
18 benefit their total health.

19 BY MS. GADDY:

20 Q. Would you say that treating the
21 patient is more important than identifying the
22 risk factors for a patient in your practice?

23 MR. WALLACE: Objection. Form.
24 Foundation.

25 THE WITNESS: Again, I think treating

1 the patient is the reason they came to my
2 office. But I would say that pointing out
3 a risk is part of the treatment for the
4 patient.

5 BY MS. GADDY:

6 Q. Do you perform a differential
7 diagnosis or etiology to determine the cause in
8 each of your patients that you diagnosed with
9 bladder cancer?

10 MR. WALLACE: Objection. Form.

11 THE WITNESS: Yes, I do.

12 BY MS. GADDY:

13 Q. What does performing a differential
14 diagnosis or etiology mean to you?

15 MR. WALLACE: Objection. Form.

16 THE WITNESS: It means that I'll go
17 through with the patient their history and
18 ask them questions about exposures.

19 BY MS. GADDY:

20 Q. Would you agree that performing a
21 reliable differential etiology requires ruling in
22 all potential causes and then ruling out
23 potential causes?

24 A. I do think that it should be as
25 exhaustive as possible, yes.

1 Q. In both ruling in and ruling out;
2 correct?

3 A. Correct.

4 Q. And how do you decide what risk
5 factors or potential causes to rule in?

6 A. I start going through the list in my
7 mind with the patient.

8 Q. And the list is potential risk
9 factors for the patient?

10 A. Correct. It's the ones we just spoke
11 about.

12 Q. Okay. And how do you decide risk
13 factors or potential causes to rule out?

14 A. Based upon their answers to my
15 questions.

16 Q. And so if a patient gives you an
17 answer to -- as to a specific risk factor, you
18 base it off of their answer whether to rule in or
19 rule out their risk factor?

20 MR. WALLACE: Objection.

21 THE WITNESS: Correct. So if the
22 patient answers a question in a particular
23 way, I might provide -- ask them a
24 follow-up question.

25 For instance, if I ask them if they

1 drank well water growing up and they gave
2 me affirmative, I would then press them
3 further upon, well, where was this well.
4 For instance, if it was on an industrial
5 farm, I would take more interest. If it
6 was an artisan well that's had purity
7 tests, I'd put that one to the side.

8 BY MS. GADDY:

9 Q. Do you consult any other sources of
10 evidence, whether that's medical records, to
11 decide whether to rule out or rule in a risk
12 factor, or do you just base it off of the
13 patient's self-reporting?

14 MR. WALLACE: Objection. Form.

15 THE WITNESS: No. If it's in the
16 medical record, then I'll absolutely ask
17 them about it to confirm or deny whatever
18 is there.

19 BY MS. GADDY:

20 Q. And are you always able to determine
21 the cause of a patient's bladder cancer?

22 A. Not always, no.

23 Q. And what percentage of your patients
24 are you able to determine the cause of their
25 bladder cancer?

1 MR. WALLACE: Objection. Form.
2 Foundation.

3 THE WITNESS: I would conservatively
4 say that about 80 percent of my patients
5 have an easily identifiable cause -- easy
6 identifiable potential cause of their
7 bladder cancer.

8 BY MS. GADDY:

9 Q. And that's after going through the
10 differential etiology and determining that cause
11 can't be ruled out?

12 A. That is correct.

13 Q. And so would you say 20 percent of
14 your patients, you're unable to determine the
15 cause of their bladder cancer?

16 MR. WALLACE: Objection.

17 THE WITNESS: I think that would be
18 reasonable overestimate.

19 BY MS. GADDY:

20 Q. For the patients that you are unable
21 to identify the cause, do you consider their
22 bladder cancer to be idiopathic?

23 MR. WALLACE: Objection.

24 THE WITNESS: I will label it as
25 cause unknown.

1 BY MS. GADDY:

2 Q. Do you consider idiopathic to mean an
3 unknown cause?

4 A. I think that's a fair definition.

5 Q. How many patients throughout your
6 career have you seen or treated that you know
7 spent time at Camp Lejeune?

8 A. I think -- I've been going through my
9 mind thinking the number of patients. In my own
10 capabilities as a treating physician, it's been
11 less than five patients.

12 Q. And that's over the scope of your
13 entire career?

14 A. That is correct.

15 Q. And how many of those five patients
16 do you know were at Camp Lejeune between 1953 and
17 1987?

18 A. All five of those patients.

19 Q. And do you know that because they
20 told you that?

21 A. Correct.

22 Q. And how many of those patients of
23 those five that you know spent time at Camp
24 Lejeune did you actually diagnose with bladder
25 cancer?

1 MR. WALLACE: Objection. Form.

2 THE WITNESS: Yes, it's under five
3 patients. And they all came with the
4 diagnosis of bladder cancer. I did not
5 de novo diagnose them with bladder cancer.

6 BY MS. GADDY:

7 Q. But they had bladder cancer as
8 opposed to something like kidney cancer?

9 A. Yes, that part is correct.

10 Q. Okay. And for those five patients
11 that spent time at Camp Lejeune and that were
12 diagnosed with bladder cancer, how many did you
13 determine the cause to be Camp Lejeune water?

14 A. In all situations I felt that the
15 Camp Lejeune water exposure was as likely as not
16 a contributing factor to their bladder cancer.

17 Q. And how did you make that
18 determination?

19 A. In looking through the risk factors
20 with the differential etiology.

21 Q. Did any of these five patients have
22 other risk factors other than Camp Lejeune water?

23 A. Yes. I recall some, but not all, of
24 them had a smoking history.

25 Q. And did you tell them that you

1 believe their cause of their bladder cancer was
2 the Camp Lejeune water?

3 MR. WALLACE: Objection.

4 THE WITNESS: I told them that I
5 think the Camp Lejeune water contributed
6 to their bladder cancer.

7 BY MS. GADDY:

8 Q. And your practice doesn't require
9 familiarity with TCE; correct?

10 MR. WALLACE: Objection.

11 THE WITNESS: No. I think a urologic
12 oncologist has to have some familiarity
13 with TCE.

14 BY MS. GADDY:

15 Q. Do you think it's required to be a
16 good urologist to be familiar with TCE?

17 MR. WALLACE: Objection. Form.

18 THE WITNESS: I think that it depends
19 on what time you're speaking of. I think
20 currently, yes, a good urologic oncologist
21 should have some familiarity with TCE and
22 its links to bladder cancer.

23 BY MS. GADDY:

24 Q. And that's your opinion that they
25 should be familiar, but it's not required; right?

1 MR. WALLACE: Objection.

2 THE WITNESS: Correct. Correct.

3 It's an opinion.

4 BY MS. GADDY:

5 Q. And would your opinion be the same
6 for PCE?

7 A. Yes.

8 MR. WALLACE: Same objection.

9 BY MS. GADDY:

10 Q. What about vinyl chloride?

11 MR. WALLACE: Same objection.

12 THE WITNESS: Yes.

13 BY MS. GADDY:

14 Q. And it's your opinion that a
15 urologist should be familiar with benzene; right?

16 A. Yes.

17 Q. But it's not required; correct?

18 MR. WALLACE: Objection.

19 THE WITNESS: Correct.

20 BY MS. GADDY:

21 Q. And you talked a little bit ago about
22 the cystectomy as a removal of the bladder and
23 some other portions; correct?

24 A. That is correct.

25 Q. And about how many cystectomies do

1 you perform in a year?

2 A. As I stated earlier, during my times
3 at Duke, I was probably in the range of 50 to 60
4 cystectomies a year. Now I'm probably in the
5 range of 30 to 40 cystectomies a year.

6 Q. And is it correct that a conduit
7 urinary diversion is a type of cystectomy?

8 A. No. That is incorrect.

9 Q. Can you clarify?

10 A. A conduit is the urinary diversion.
11 So that -- the cystectomy is the part of the
12 operation where you're removing the diseased
13 organ. The conduit is the part of the operation
14 where you're rebuilding some sort of -- well, in
15 this case, literally a conduit to get the urine
16 from inside the body to outside the body.

17 Q. Okay. So a conduit urinary diversion
18 is involved when performing a cystectomy?

19 A. Yes. It's the reconstructive portion
20 of the operation.

21 Q. And is it true that neobladders and
22 ostomy pouches are involved in performing a
23 urinary diversion?

24 A. Yes. Those are two types of urinary
25 diversions.

1 Q. And of those cystectomies that you
2 perform in a year, how many neobladders or ostomy
3 pouches do you perform in a year?

4 A. Of that set amount of -- it's a very,
5 very small portion of patients that choose a
6 neobladder, and the vast majority have chosen an
7 ileal conduit.

8 Q. And is a -- how does an ileal conduit
9 compare to an ostomy pouch?

10 MR. WALLACE: Objection. Form.

11 THE WITNESS: I'll just go through
12 all the things. So an ileal conduit is
13 where you take a piece of the small bowel
14 called the ileum, and that's why it's
15 called the ileal conduit, not the colon
16 conduit or the stomach conduit. You need
17 roughly 15 centimeters of length, but in
18 your mind what you're trying to do is
19 reach from inside their abdomen to outside
20 their abdomen.

21 So you have all the small bowel
22 there. You take out the small segment,
23 put the other two pieces back together
24 again. Now, you're left with a tube
25 that's attached to its blood supply. You

1 sew the ureters from the kidney to one
2 end, and you bring the other end out to
3 somewhere alongside their belly button
4 over here because that's through their
5 rectus muscle. I think the ostomy pouch
6 you're referring to is the actual bag that
7 they put on their stomach wall to collect
8 the urine.

9 A neobladder, on the other hand, is
10 again using a piece of your small bowel,
11 but instead of just taking a few
12 centimeters, you take about 60. So you
13 need a good length. You cut the tube open
14 and you sew it more or less back into a
15 ball. And you put that where the bladder
16 used to be sewing the ureters to one part
17 of it and then sewing that to the urethra
18 on the other end. So there's nothing
19 external after you've had a neobladder.

20 BY MS. GADDY:

21 Q. Okay. Thank you. That helps.

22 Doctor, have you ever been subject to
23 any disciplinary action or censure by any
24 licensing body?

25 A. No.

1 MR. WALLACE: Objection.

2 BY MS. GADDY:

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

5 MR. WALLACE: Objection.

6 THE WITNESS: No.

7 BY MS. GADDY:

8 Q. And, Doctor, would you agree that
9 medicine is not an exact science?

10 MR. WALLACE: Objection.

11 THE WITNESS: Yes. I would agree.

12 BY MS. GADDY:

13 Q. And you'd agree that cause of bladder
14 cancer is multifactorial; correct?

15 MR. WALLACE: Objection.

16 THE WITNESS: Yes.

17 MR. WALLACE: Form. Foundation.

18 THE WITNESS: Yes I would.

19 BY MS. GADDY:

20 Q. And would you agree that every
21 patient is different with idiosyncratic risk
22 factors?

23 MR. WALLACE: Objection. Form.

24 Foundation.

25 THE WITNESS: Yes, I would.

1 BY MS. GADDY:

2 Q. Would you agree that cancer is caused
3 by genetic mutations?

4 MR. WALLACE: Objection. Form.
5 Foundation.

6 THE WITNESS: I believe that genetic
7 mutations are involved in cancer, yes.

8 BY MS. GADDY:

9 Q. And those mutations can occur
10 randomly; correct?

11 MR. WALLACE: Objection. Form.
12 Foundation.

13 THE WITNESS: I don't think -- I do
14 not think that they occur randomly, but it
15 does depend on what kind of -- what type
16 of cancer you're speaking of.

17 BY MS. GADDY:

18 Q. Okay. So for bladder cancer, would
19 you agree that genetic mutations can occur
20 randomly to cause bladder cancer?

21 A. I do not know of any genetic syndrome
22 that causes bladder cancer.

23 Q. Would you agree that the precise
24 cause of bladder cancer is generally unknown?

25 MR. WALLACE: Objection.

1 THE WITNESS: No, I would disagree
2 with that statement.

3 BY MS. GADDY:

4 Q. Okay. What is the precise cause of
5 bladder cancer?

6 A. The -- there is usually a toxic
7 exposure. That toxic exposure somehow ingested
8 into the patient that's processed through the
9 liver and the kidneys. That is then dumped into
10 the bladder. The bladder as a storage vessel has
11 more toxic exposure than any portion of the body,
12 which because you're storing your urine for
13 whatever period of time after the exposure.

14 The cells that line the bladder, the
15 urothelial cells, because of the exposure, their
16 mutations may begin and then that incites the
17 cancer in what's called a field effect. So
18 there's one tumor in one portion of the bladder.
19 There are other changes going on throughout the
20 other cells and other parts of the bladder.

21 Q. And earlier you stated that there are
22 patients that did not have a toxic exposure but
23 still developed bladder cancer in your practice;
24 right?

25 MR. WALLACE: Objection. Form.

1 Foundation.

2 THE WITNESS: What I stated or meant
3 to state was that there was no identified
4 toxic exposure, but I'm still suspicious
5 that there is an exposure that we just
6 don't know about.

7 BY MS. GADDY:

8 Q. Okay. So, in your opinion, all
9 bladder cancers are caused by some form of toxic
10 exposure, whether we know it or not?

11 MR. WALLACE: Objection.

12 THE WITNESS: Yes.

13 BY MS. GADDY:

14 Q. Bladder cancer is one of the most
15 common cancers in the United States; right?

16 A. Correct.

17 Q. And you state in your report that you
18 employ a differential etiology in your practice
19 as a treating physician to assist in the
20 treatment options for your patients; correct?

21 A. I perform a differential etiology to
22 assist them in identifying potential causes so
23 that if it's an ongoing exposure, they can avoid
24 that exposure. But it doesn't help their
25 treatment going forward.

1 Q. Okay. So it doesn't assist in the
2 treatment options for a patient?

3 MR. WALLACE: Objection.

4 THE WITNESS: No. The treatment
5 options are based off of the
6 particularities of each individual's
7 cancer. The part where we're going
8 through low grade or high grade or
9 nonmuscle invasive, muscle invasive,
10 that's how we guide their treatment
11 choices.

12 BY MS. GADDY:

13 Q. Okay. And you performed a
14 differential etiology in this case for both
15 Mr. Criswell and Ms. Dyer; correct?

16 A. That is correct.

17 Q. And why did you employ this
18 methodology?

19 A. I did a full differential on each of
20 the patients because I wanted to see what other
21 risk factors they had and -- as opposed to just
22 attributing it to Camp Lejeune drinking water.

23 Q. Okay. And in order to rule in a
24 potential risk factor, did you review relevant
25 sources to determine if they sufficiently

1 established a causal relationship?

2 MR. WALLACE: Objection. Form.
3 Foundation.

4 THE WITNESS: Yes, I did.

5 BY MS. GADDY:

6 Q. Okay. And you identify smoking as a
7 known risk factor for bladder cancer; correct?

8 A. That is correct.

9 Q. And specifically in your reports you
10 state that some estimates attribute 50 percent of
11 all bladder cancers to smoking; right?

12 A. Yes, I do.

13 Q. And in your reports you talk about
14 this concept of someone's history of smoking
15 being, quote, medically insignificant; right?

16 MR. WALLACE: Objection. Form.
17 Foundation.

18 THE WITNESS: Yes, I think the amount
19 of exposure to smoking they have is --
20 either is insignificant or significant to
21 their development of bladder cancer;
22 correct.

23 BY MS. GADDY:

24 Q. And specifically you used the term
25 "medically insignificant"; right?

1 A. Correct.

2 Q. You also used the phrase "nonsmoker
3 for medical purposes"; correct?

4 A. Correct.

5 MR. WALLACE: Objection. Form.
6 Foundation.

7 BY MS. GADDY:

8 Q. And specifically for Mr. Criswell,
9 you note there's some inconsistencies in the
10 medical records about exactly how much he used to
11 smoke; right?

12 A. Yes. There were inconsistencies.

13 Q. You note in your report that one of
14 Mr. Criswell's medical records states that he
15 smoked less than half a pack of cigarettes per
16 day between 1972 and 1974; right?

17 MR. WALLACE: Objection.

18 THE WITNESS: Yes.

19 BY MS. GADDY:

20 Q. And you cite to a specific record
21 when you make that statement; correct?

22 A. Yes, I do.

23 Q. I'd like to show you that record.
24 And I will mark it as Exhibit 5.

25 (Longo Exhibit 5 marked for

1 identification.)

2 BY MS. GADDY:

3 Q. For the record, this is Bates stamped
4 01482_Criswell_VBA_286 through 291. Doctor, I'll
5 just scroll through this.

6 Doctor, do you recognize this
7 exhibit?

8 A. I'm sorry, it's too small for me to
9 see. Can you zoom in, please.

10 Q. Sure. Is this better?

11 A. Can you go even more?

12 Q. Yeah. How's that?

13 A. Okay. I can do that now. Entry
14 date, March 11, 2020, yeah.

15 Q. And this is the treatment record that
16 you cited in your report or this statement;
17 correct?

18 MR. WALLACE: Objection.

19 THE WITNESS: Is that the VA records
20 I'm looking at?

21 BY MS. GADDY:

22 Q. Yes. This is the -- let's see here.

23 A. Okay. Yes, I recognize this.

24 Q. This is the treatment record from the
25 VA dated March 11, 2020; right?

1 A. Yes.

2 Q. And this encompasses the record that
3 you cited in your report regarding Mr. Criswell
4 previously reporting that he smoked less than
5 half a pack per day between 1972 and 1974; right?

6 MR. WALLACE: Just -- I'm sorry.

7 Before you continue Megan, I just want to
8 note for the record that Dr. Longo doesn't
9 have a copy of his reports that you're
10 citing from in front of him. Instead,
11 he's just been handed a laptop by the
12 videographer that can -- that shows
13 Exhibit 5, the same one that's on the Zoom
14 screen right now.

15 BY MS. GADDY:

16 Q. Okay. If we go back to your report,
17 Doctor, so we can be on same page here.
18 Exhibit 2. We'll go to page 18.

19 And under tobacco use, you state,
20 quote, it is noted in one of Mr. Criswell's
21 medical records that he is a former smoker
22 smoking less than half a pack of cigarettes per
23 day between 1972 and 1974.

24 Did I read that right?

25 A. Yes, you did.

1 Q. And you cite to the record we were
2 just looking at, 288; correct?

3 A. Yes.

4 Q. And going back to Exhibit 5, which is
5 Bates stamped 288, if we turn to Bates 290, do
6 you see near the middle of the page where it says
7 "tobacco use screening"?

8 A. Yes.

9 Q. And it says the patient has never
10 used tobacco; correct?

11 A. It says that on that page, correct.

12 Q. And we know that to be false; right?

13 MR. WALLACE: Objection. Form.
14 Foundation.

15 THE WITNESS: As I said in my report,
16 there's conflicting -- conflicting records
17 in different spots, and I think that it's
18 a 2020 medical record referring back to a
19 date in 1974. And we don't know who
20 actually took that piece of information
21 down. It could have been a survey. It
22 could have been the patient himself. I
23 just -- the point of that -- my paragraph
24 there was that the number differs
25 throughout the medical record. And it

1 still does seem to be a very low number.

2 BY MS. GADDY:

3 Q. And we know that Mr. Criswell has
4 testified to smoking cigarettes at some point in
5 his life; right?

6 A. Yes.

7 Q. And, in fact, you note in your report
8 that Mr. Criswell testified in his deposition
9 that he smoked socially on a handful of occasions
10 as a teenager due to peer pressure in
11 approximately 1973 and 1974; right?

12 A. Yes.

13 Q. And that was his testimony in this
14 litigation where it was claimed centers around
15 the cause of his bladder cancer; correct?

16 MR. WALLACE: Objection.

17 THE WITNESS: Correct.

18 BY MS. GADDY:

19 Q. You also note in your report that
20 there are other records suggesting far more
21 minimal smoking for Mr. Criswell; right?

22 A. Yes.

23 Q. And you cite two records in making
24 that statement; right?

25 MR. WALLACE: Objection.

1 THE WITNESS: Yes.

2 BY MS. GADDY:

3 Q. I'd like to show you one of those
4 records that you cited in your report which will
5 be marked Exhibit 6.

6 (Longo Exhibit 6 marked for
7 identification.)

8 BY MS. GADDY:

9 Q. I'll scroll for the record. This is
10 Bates stamped 01482_Criswell_95.

11 Doctor, do you recognize this
12 exhibit?

13 A. Yes, I do.

14 Q. And, although, the physician's name
15 is not on this record, this is the treatment
16 record for Mr. Criswell's visit with his first
17 urologist Dr. Lostine; right?

18 MR. WALLACE: Objection. Form.
19 Foundation.

20 THE WITNESS: Yes.

21 BY MS. GADDY:

22 Q. And these summaries are from October
23 of 1997; correct?

24 A. Correct. I see the date.

25 Q. Okay. And in the second paragraph

1 under the date October 15, 1997, do you see where
2 it says "does not smoke or drink"?

3 A. Yes, I do.

4 Q. And this is what you were referencing
5 when stating in your report that there are other
6 records that suggest far more minimal smoking;
7 right?

8 A. That is correct.

9 Q. But this just states that
10 Mr. Criswell denied smoking or drinking at the
11 time of that visit in 1987; right?

12 MR. WALLACE: Objection.

13 THE WITNESS: I actually don't know
14 what question was asked. It could have
15 been that moment, the past year,
16 historically, but it's not clear through
17 that phrase "does not smoke or drink."

18 BY MS. GADDY:

19 Q. So it doesn't describe Mr. Criswell's
20 history of smoking; correct?

21 MR. WALLACE: Objection.

22 THE WITNESS: It just says that he
23 does not smoke.

24 BY MS. GADDY:

25 Q. And would you interpret that to mean

1 he does not smoke at that time?

2 MR. WALLACE: Objection.

3 THE WITNESS: I don't know how he
4 asked the question. I would assume it's
5 he does not smoke.

6 BY MS. GADDY:

7 Q. But not necessarily never -- have
8 never smoked?

9 MR. WALLACE: Objection. Form.
10 Foundation.

11 THE WITNESS: Yes. Not necessarily
12 he never smoked.

13 BY MS. GADDY:

14 Q. Now turning to the other record that
15 you cite in your report, which will be marked
16 Exhibit 7 and is Bates stamped
17 01482_Criswell_4928 through 4929. Scroll through
18 this.

19 (Longo Exhibit 7 marked for
20 identification.)

21 BY MS. GADDY:

22 Q. Doctor, do you recognize this
23 exhibit?

24 A. Yes, I do.

25 Q. And on the first page at the bottom,

1 the treatment note begins and is noted -- or
2 dated February 24, 2014; right?

3 A. I see that.

4 Q. And turning to the second page, do
5 you see where it says "smoking" under past
6 medical history?

7 A. Correct.

8 Q. And it says "denies smoking";
9 correct?

10 A. Correct.

11 Q. And we know that Mr. Criswell smoked
12 at some point in his life according to his
13 testimony in this case; right?

14 MR. WALLACE: Objection.

15 THE WITNESS: Yes.

16 BY MS. GADDY:

17 Q. At most, this record just establishes
18 that he denied smoking as of February of 2014;
19 right?

20 MR. WALLACE: Objection. Form.
21 Foundation.

22 THE WITNESS: Yes.

23 BY MS. GADDY:

24 Q. And there are a lot of medical
25 records in this case; right?

1 A. That is correct.

2 Q. And there are many records
3 referencing Mr. Criswell's smoking history that
4 were not cited in your report; right?

5 A. Correct.

6 Q. I'd like to show you just a couple of
7 those starting with what will be marked
8 Exhibit 8.

9 (Longo Exhibit 8 marked for
10 identification.)

11 BY MS. GADDY:

12 Q. Which, for the record, is Bates
13 stamped 01482_Criswell_20 through 21. I'll
14 scroll through.

15 Doctor, do you recognize this
16 exhibit?

17 A. Yes, I do.

18 Q. And this is a treatment summary for
19 Mr. Criswell dated June of 2015 from his current
20 urologist Dr. Shelfo; correct?

21 A. Yes, it is.

22 Q. On this first page towards the
23 bottom, do you see where it says "tobacco use"?

24 A. Yes, I do.

25 Q. And it says former smoker,

1 cigarettes, smokes less than half a pack per day;
2 correct?

3 A. Correct.

4 Q. And then continuing on to the next
5 page towards the top, it says "length of tobacco
6 use, years of tobacco use, 2"?

7 A. Yes.

8 Q. And date -- and date tobacco last
9 used teenager; correct?

10 A. Yes.

11 Q. And so this record from his current
12 urologist suggests that Mr. Criswell smoked less
13 than half a pack per day for two years as a
14 teenager; right?

15 MR. WALLACE: Objection.

16 THE WITNESS: Yes.

17 BY MS. GADDY:

18 Q. And there are usually 20 cigarettes
19 per pack; correct?

20 MR. WALLACE: Objection.

21 THE WITNESS: I actually don't know.
22 I think so, yes.

23 BY MS. GADDY:

24 Q. So assuming there's 20 per pack of
25 cigarettes, less than half a pack would be less

1 than 10; correct?

2 A. Yes.

3 Q. That could mean nine cigarettes?

4 A. Yes.

5 Q. That could mean five cigarettes?

6 A. Yes.

7 Q. Next I'm going to show you what we
8 will mark Exhibit 9. For the record, this
9 exhibit is Bates stamped 01482_Criswell_1023
10 through 1029.

11 (Longo Exhibit 9 marked for
12 identification.)

13 BY MS. GADDY:

14 Q. Scroll through.

15 Do you recognize this exhibit?

16 A. Yes.

17 Q. This exhibit contains the treatment
18 notes for Mr. Criswell's visit to a VA clinic on
19 December 12, 2013; right?

20 A. Yes, it does. There. I didn't see
21 the date. Yeah.

22 Q. Okay. Turning to the third page,
23 which is Bates stamped 1025, do you see where it
24 says "social history"?

25 A. I do.

1 Q. And under it, it says "tobacco quit
2 in 1974, restarted in 1977 and quit in 1978.
3 Smoked two to three cigs per day when he did
4 smoke."

5 Did I read that right?

6 A. Yes, you did.

7 Q. This is the most detailed account of
8 Mr. Criswell's smoking history in his medical
9 records; right?

10 MR. WALLACE: Objection.

11 THE WITNESS: Yeah, I believe so.

12 BY MS. GADDY:

13 Q. And it suggests that he quit smoking
14 twice in the 1970s, once in 1974 and 1978; right?

15 MR. WALLACE: Objection.

16 THE WITNESS: Yes. There are two
17 sets of dates there.

18 BY MS. GADDY:

19 Q. And it says he smoked two to three
20 cigarettes per day during that time frame; right?

21 A. When he did smoke, he smoked two to
22 three cigarettes per day, correct.

23 Q. This differs substantially from his
24 testimony that he only smoked socially on a
25 handful of occasions as a teenager; right?

1 MR. WALLACE: Objection.

2 THE WITNESS: I think it depends on
3 how you define social smoking, and what
4 number of cigarettes you would say is a
5 social situation.

6 BY MS. GADDY:

7 Q. Would you say two to three cigarettes
8 per day is more substantial than one every few
9 days?

10 MR. WALLACE: Objection.

11 THE WITNESS: I cannot tell from two
12 to three cigarettes per day when he did
13 smoke, if that's a daily occurrence or if
14 that is an occasional occurrence.

15 BY MS. GADDY:

16 Q. So as a treating physician if a
17 patient told you he smoked occasionally, would
18 you put something like two to three cigarettes
19 per day?

20 MR. WALLACE: Objection.

21 THE WITNESS: I think I would
22 probably drill down on that and try to
23 figure out exactly what they meant by it.
24 But I wasn't the treating physician.

25 BY MS. GADDY:

1 Q. And is it fair to say that there's
2 inconsistencies in the medical records regarding
3 Mr. Criswell's smoking history because
4 Mr. Criswell himself is inconclusive in
5 recounting how often he smoked?

6 MR. WALLACE: Objection. Form.
7 Foundation.

8 THE WITNESS: I think I tried to
9 allude to that in my sentence about his
10 smoking history where I said it does
11 differ throughout the medical record. But
12 all of the instances where smoking was
13 mentioned, it does seem low.

14 BY MS. GADDY:

15 Q. And that's based on his reporting to
16 his treating physicians; right?

17 MR. WALLACE: Objection.

18 THE WITNESS: Correct. It was all
19 taken from medical records.

20 BY MS. GADDY:

21 Q. And specifically for Ms. Dyer, you
22 note that there are also some inconsistencies in
23 the medical records about exactly how much she
24 used to smoke; right?

25 A. Yes.

1 Q. And you note that in Ms. Dyer's
2 deposition in this case she testifies having
3 maybe a cigarette at a nightclub when she was
4 dating her husband; right?

5 MR. WALLACE: Objection. Foundation.

6 THE WITNESS: Yes.

7 BY MS. GADDY:

8 Q. And that is her testimony in this
9 case where the cause of her bladder cancer is at
10 issue; right?

11 MR. WALLACE: Objection. Foundation.

12 THE WITNESS: Yes.

13 BY MS. GADDY:

14 Q. In contrast, you also note in your
15 report that Ms. Dyer's medical records note that
16 she previously smoked two cigarettes per day for
17 two years; right?

18 A. Yes, I did.

19 Q. And in other medical records it says
20 she smoked half a pack per day for two years;
21 right?

22 MR. WALLACE: Objection. Foundation.

23 THE WITNESS: Yes.

24 BY MS. GADDY:

25 Q. And in others it said a fourth a pack

1 per day for one year; right?

2 MR. WALLACE: Objection. Foundation.

3 THE WITNESS: Yes.

4 BY MS. GADDY:

5 Q. Physicians note a patient's smoking
6 history based on the patient's own
7 self-reporting; correct?

8 MR. WALLACE: Objection. Form.
9 Foundation.

10 THE WITNESS: That is correct. It's
11 self-reported.

12 BY MS. GADDY:

13 Q. And all of these medical records
14 noting her smoking history do not support
15 Ms. Dyer's testimony about smoking maybe one
16 cigarette at a nightclub on occasion; right?

17 MR. WALLACE: Objection. Form.
18 Foundation.

19 THE WITNESS: Yes.

20 BY MS. GADDY:

21 Q. You later refer to Ms. Dyer as
22 previously being a less than one pack a day
23 smoker for approximately two years; correct?

24 MR. WALLACE: Objection.

25 THE WITNESS: Correct. I think

1 that's fair.

2 BY MS. GADDY:

3 Q. And that could mean five cigarettes
4 per day; right?

5 MR. WALLACE: Objection. Form.

6 THE WITNESS: Yes.

7 BY MS. GADDY:

8 Q. Or 19 cigarettes per day?

9 MR. WALLACE: Objection. Form.

10 THE WITNESS: Yes.

11 BY MS. GADDY:

12 Q. And even if we assumed Ms. Dyer only
13 smoked one cigarette per day for two years, that
14 would be approximately 730 cigarettes; right?

15 MR. WALLACE: Objection.

16 THE WITNESS: Correct.

17 BY MS. GADDY:

18 Q. Going back to the phrase you used in
19 your report "medically insignificant," is there a
20 source in your field that defines what
21 constitutes medically insignificant smoking?

22 A. The American Cancer Society.

23 Q. And what is the limit according to
24 the American Cancer Society for what is
25 considered medically insignificant?

1 MR. WALLACE: Objection. Foundation.

2 THE WITNESS: I don't have it in
3 front of me right now. I believe I put it
4 in my report.

5 BY MS. GADDY:

6 Q. Okay. Do you recall stating that the
7 Center for Disease Control defines nonsmokers as
8 an adult who has never smoked or who has smoked
9 less than 100 cigarettes in their lifetime?

10 MR. WALLACE: Objection. Foundation.

11 THE WITNESS: Yes, that's -- I think
12 I was referring to that, not the American
13 Cancer Society. Apologies.

14 BY MS. GADDY:

15 Q. No worries. And so you go on in your
16 report to state that Mr. Criswell's smoking
17 history characterized him as a nonsmoker for
18 medical purposes under this definition; right?

19 A. Correct.

20 Q. Mr. Criswell's medical records
21 suggests he smoked two to three cigarettes per
22 day for approximately two years; right?

23 MR. WALLACE: Objection. Foundation.
24 Form.

25 THE WITNESS: In places that's what

1 it suggests, yes.

2 BY MS. GADDY:

3 Q. And based on those medical records,
4 two cigarettes per day for two years would equal
5 1,460 cigarettes; right?

6 A. Yes.

7 Q. Three cigarettes per day for two
8 years would equal 2,190 cigarettes; right?

9 A. That is correct.

10 Q. And even if we assume Mr. Criswell
11 only smoked one cigarette per day for one year,
12 that would put him well above the 100 cigarettes
13 threshold; right?

14 A. Yes.

15 Q. And for Ms. Dyer you state in your
16 report that her medical records would place for
17 outside of this definition of 100 cigarettes or
18 less; correct?

19 A. Yes.

20 Q. So based on Ms. Dyer's medical
21 records that were created prior to this
22 litigation, Ms. Dyer cannot be classified as a
23 nonsmoker; correct?

24 MR. WALLACE: Objection. Form.
25 Foundation.

1 THE WITNESS: Again, it says
2 different things in different places in
3 her medical records.

4 BY MS. GADDY:

5 Q. So depending on what medical records
6 you rely on, she's either a nonsmoker or she's a
7 previous smoker; right?

8 A. Yes.

9 Q. How do you determine which medical
10 records to rely on and which to ignore?

11 MR. WALLACE: Objection.

12 THE WITNESS: You would look at the
13 date it was obtained. So is it in closer
14 proximity to when she smoked. You may
15 look at the source. And you also look at
16 what the patient still says. The patient
17 was the original source even if it -- so
18 you'd look to -- you'd trust the patient
19 to tell you the truth.

20 BY MS. GADDY:

21 Q. Is that the same even if it's her
22 deposition testimony in this case?

23 MR. WALLACE: Objection.

24 THE WITNESS: Well, yeah, because I
25 believe she took the same oath I did to

1 tell the truth.

2 BY MS. GADDY:

3 Q. You also state in your reports that
4 those who have quit smoking for 25 years or more
5 have the same risk as those who never smoked;
6 right?

7 A. Correct. It diminishes with time.

8 Q. But even those with a long latency
9 period are still at an increased risk for
10 developing bladder cancer compared to the general
11 population; right?

12 MR. WALLACE: Objection. Foundation.

13 THE WITNESS: Yes, to a degree.

14 BY MS. GADDY:

15 Q. And based on the medical records we
16 looked at, at least one of the medical records
17 indicated that Mr. Criswell stopped smoking in
18 1978; right?

19 MR. WALLACE: Objection. Foundation.

20 THE WITNESS: Yes.

21 BY MS. GADDY:

22 Q. And with his diagnosis of bladder
23 cancer in 1997, that would put his latency period
24 at 19 years; correct?

25 A. Yes.

1 Q. In order for Mr. Criswell to have a
2 latency of 25 years or more, he would have had to
3 quit smoking in 1972; right?

4 A. Yes.

5 Q. And even the most minimal account of
6 Mr. Criswell's smoking history places his date --
7 his quit date at 1974; right?

8 A. Correct.

9 Q. Would you agree that the age of onset
10 of smoking is highly associated with bladder
11 cancer risk?

12 A. Bladder cancer develops in older
13 people, but I do not think that the age is the
14 risk. I think it's the time from exposure that's
15 the -- that you're alluding to. So I don't think
16 that age is a risk factor, but I think older
17 people get bladder cancer, yes, absolutely.

18 Q. Let me try to clarify the question.

19 Would you agree that if a person
20 smokes at the age of 13, they're at an increased
21 risk compared to someone who started smoking at
22 the age of, say, 40?

23 A. In -- so they are at an increased
24 risk at a younger age, but I believe the risk is
25 the same no matter what age you start smoking.

1 It's just what period of time from when you
2 started smoking to when your risk is -- or when
3 the latency period would hit and your cancer
4 would develop.

5 Q. So you aren't aware of any literature
6 that states that smoking at an early age, such as
7 the age of 13, increases your risk of bladder
8 cancer compared to smoking at a later age?

9 A. I think it gives you more exposure
10 because presumably if you start that young, you
11 would continue smoking. But I don't think it's a
12 one for one. I think a cigarette at 13 has the
13 same as a cigarette at 40. It's just -- if you
14 start at 13, you'll have more accumulative
15 exposure.

16 Q. So regardless of whether -- assuming
17 they smoke for two years at age 13 versus age 40,
18 your testimony is that the risk is the same?

19 A. For smoking, yes. There are
20 chemicals that have been proven to have higher
21 risk if you're exposed at a younger age.

22 Q. But for smoking your testimony is it
23 doesn't matter at what age you smoke?

24 A. Yes, it's a one to one.

25 Q. And Mr. Criswell reported beginning

1 smoking around the age of 13 or 14; right?

2 A. I trust your math that that's
3 correct, yes.

4 Q. And Ms. Dyer's testimony suggests
5 that she smoked between 1975 and 1977; right?

6 MR. WALLACE: Objection.

7 THE WITNESS: Yes.

8 BY MS. GADDY:

9 Q. You state in your report that her
10 quit date was likely 1977 around the time that
11 she became pregnant with her first child; right?

12 MR. WALLACE: Objection.

13 THE WITNESS: Correct.

14 BY MS. GADDY:

15 Q. And this would suggest that Ms. Dyer
16 smoked between the age of 18 to 20 years old;
17 right?

18 A. Yes.

19 Q. Did you factor in both Mr. Criswell
20 and Ms. Dyer's age that they began smoking into
21 your differential?

22 A. I factored in their start -- pardon
23 me, the start and stop dates to the time to
24 develop bladder cancer, but I did not consider
25 their age as an independent risk factor for them

1 developing bladder cancer.

2 Q. Okay. You also state in your report
3 for Mr. Criswell that conventional wisdom would
4 suggest that secondhand exposure to cigarette
5 smoking could also contribute to bladder cancer;
6 right?

7 A. That is correct.

8 Q. And you go on to say in your report
9 that secondhand smoke exposure should be
10 analogous to direct smoking albeit to a lesser
11 degree; right?

12 A. Yes, I did.

13 Q. But you conclude that there is
14 insufficient evidence to support this
15 association; right?

16 MR. WALLACE: Objection.

17 THE WITNESS: Yes. When they look at
18 the epidemiologic studies for secondhand
19 smoking, there is not clear data showing
20 that the secondhand smoke -- secondhand
21 smoking leads to bladder cancer. But
22 because it's an analogous thing meaning
23 whether or not you're the one puffing the
24 cigarette or you're the one breathing the
25 air, we assume it to be true. It's just a

1 much harder study to produce.

2 BY MS. GADDY:

3 Q. Did you perform any literature review
4 for the relationship between secondhand smoke
5 exposure and bladder cancer for this report?

6 A. Yes, I did look at the literature.

7 Q. And do you recall what search terms
8 you used?

9 A. Secondhand smoking and bladder
10 cancer.

11 Q. Did you find any studies that showed
12 a positive association between secondhand smoke
13 and bladder cancer?

14 A. I don't recall any particular studies
15 that I -- by specific studies. I looked at the
16 literature as a whole.

17 Q. And just generally did you see any
18 that showed a positive association?

19 A. Generally, there are positives and
20 negatives.

21 Q. Why did a positive association in
22 those studies not support ruling this risk factor
23 in?

24 A. Because there wasn't clear -- there
25 wasn't a preponderance of data looking at

1 epidemiologic studies in other sources to clearly
2 indicate. But, again, in our world, we assume it
3 to be true, we definitely encourage our patients'
4 families to stop smoking even if they've stopped.

5 Q. And you note in your report that the
6 studies that you have reviewed report
7 inconsistent results; right?

8 A. Yes.

9 Q. And your conclusion that the
10 literature was inconsistent on this type of
11 exposure, that means to not rule in secondhand
12 smoke as a risk factor for Mr. Criswell; right?

13 MR. WALLACE: Objection.

14 THE WITNESS: Yes, I considered it,
15 but I did not -- did not consider it -- I
16 considered it in my differential, but did
17 not attribute a great portion to
18 secondhand smoke.

19 BY MS. GADDY:

20 Q. Did you rule out secondhand smoke as
21 a risk factor for Mr. Criswell?

22 A. No, I did not.

23 Q. So you considered that Mr. Criswell
24 was exposed to secondhand smoke when forming your
25 opinion?

1 A. Yes, I did.

2 Q. And you note in your report that
3 Mr. Criswell was exposed to secondhand smoke from
4 his parents whom he lived with until he was 17;
5 right?

6 A. Yes.

7 Q. But you didn't think that was a cause
8 of his bladder cancer?

9 MR. WALLACE: Objection.

10 THE WITNESS: I thought it to be an
11 unlikely cause, but it was considered.

12 BY MS. GADDY:

13 Q. Why was it an unlikely cause?

14 A. Again, because secondhand smoke is
15 hard to determine the level of exposure they
16 might not -- even though they live in the same
17 home, perhaps his parents stepped outside every
18 time they went to smoke or they didn't smoke at
19 the house at all. Too many other confounding
20 factors that I cannot rule in or out regarding
21 his exposure.

22 Q. So if Mr. Criswell testified at his
23 deposition that his parents smoke inside of the
24 home, would that change your opinion?

25 A. No. Because, again, I did consider

1 it and it could contribute.

2 Q. But you didn't determine it was a
3 likely cause of his bladder cancer?

4 A. I didn't -- I didn't determine it was
5 a likely cause or an unlikely cause. I noted it
6 and carried on with the differential etiology.

7 Q. So if Mr. Criswell's parents smoked
8 in the home with him since he was a child up
9 until the age of 17, would you rule that in as a
10 likely cause of his bladder cancer?

11 MR. WALLACE: Objection.

12 THE WITNESS: I would. But, again, I
13 don't think any of the causes are
14 exclusive meaning if you have one, you
15 can't have the other. So I considered it
16 and I put it on my list. But I didn't
17 rule it in or out entirely. My answer
18 remains.

19 BY MS. GADDY:

20 Q. So if you don't rule -- excuse me.

21 So if you don't rule in a risk factor
22 or rule out a risk factor, how does that play
23 into your differential diagnosis?

24 A. Well, if I can rule something out
25 entirely, then so be it. If I cannot rule out

1 entirely, I would name that as a risk factor to
2 the patient and tell them to avoid it. So,
3 again, if they're a smoker and they had exposure
4 to contaminated well water and they're getting
5 radiated, I would say, well, you're mostly a
6 smoker so you can do the other two things. No, I
7 tell them avoid all the things. I considered
8 them all in -- don't necessarily have to have a
9 ranking.

10 Q. Okay.

11 MR. WALLACE: Megan --

12 BY MS. GADDY:

13 Q. Is it true that --

14 MR. WALLACE: I'm sorry, Megan, we've
15 been going for a little bit over an hour.
16 I don't want to interrupt kind of your
17 topics. But when you reach a good
18 stopping point, can we take a break?

19 BY MS. GADDY:

20 Q. Sure. I'm almost at a stopping
21 point.

22 Doctor, so you said -- would you
23 agree that in your report you concluded that
24 Mr. Criswell only had one risk factor for bladder
25 cancer?

1 MR. WALLACE: Objection. Foundation.

2 THE WITNESS: No, I don't think so.

3 I think I addressed that he had remote
4 smoking history and he was exposed to
5 secondhand smoke and that he was exposed
6 to Camp Lejeune water.

7 BY MS. GADDY:

8 Q. Let's take a look at your report.

9 For the record, this is Exhibit 2.

10 Do you see in this third paragraph
11 towards the bottom you state "In Mr. Criswell's
12 case, as I discussed later in this report, he
13 only had one recognized risk factor, exposure to
14 the chemicals in the water at Camp Lejeune."

15 Did I read that right?

16 A. Yes, you did.

17 Q. So you only determined that
18 Mr. Criswell had one risk factor for bladder
19 cancer?

20 MR. WALLACE: Objection.

21 THE WITNESS: Yes. So I addressed
22 his smoking history and his secondhand
23 smoking and I thought it was Camp Lejeune
24 drinking water, yes.

25 BY MS. GADDY:

1 Q. But is it your testimony now that you
2 do consider his smoking including secondhand
3 smoke to be a risk factor for his bladder cancer?

4 MR. WALLACE: Objection. Form.

5 THE WITNESS: I think perhaps I'm
6 just misspeaking in that when I say I
7 considered, that means that I went through
8 it, said yes he had this history of
9 smoking, of secondhand smoke exposure.
10 And when I look at his history in a
11 totality, I think that it's the Camp
12 Lejeune drinking water that is his risk
13 factor. So I identified other risk
14 factors, but I think the risk factor in
15 Mr. Criswell's situation is the Camp
16 Lejeune drinking water. Sorry if I was
17 unclear. Sorry.

18 BY MS. GADDY:

19 Q. That's okay. Just to clarify, so
20 does that mean that you ruled out secondhand
21 smoke or smoking cigarettes as a risk factor or
22 you considered it, but you just didn't consider
23 it a risk factor?

24 MR. WALLACE: Objection.

25 THE WITNESS: I considered it, but I

1 did not consider it a major risk factor in
2 Mr. Criswell's situation.

3 BY MS. GADDY:

4 Q. Why did you not consider it a major
5 risk factor?

6 MR. WALLACE: Objection. Asked and
7 answered.

8 THE WITNESS: Again, as I said, if
9 you look through the medical record, I
10 thought it was a small amount of smoking
11 exposure, and I used the definitions that
12 we had sent out earlier from the CDC.

13 And then in looking at the
14 epidemiologic research, so looking at what
15 peer-reviewed literature there was for
16 secondhand smoke, again, there's no good
17 evidence that I can pin for secondhand
18 smoke and it being a risk factor for his
19 cancer.

20 BY MS. GADDY:

21 Q. So you didn't consider it a risk
22 factor because in part his CDC definition of a
23 nonsmoker being less than 100 cigarettes applied
24 to Mr. Criswell?

25 MR. WALLACE: Objection.

1 Mischaracterizes earlier testimony and
2 form.

3 THE WITNESS: Again, I looked at his
4 medical record in totality. And, again,
5 there's various places where the smoking
6 history changes. I think in all
7 situations it's below a certain amount
8 that I do not consider it to be a major
9 risk factor for Mr. Criswell's bladder
10 cancer. However, I do not think that
11 causes of bladder cancer exposures, I
12 don't think they're exclusive. Meaning I
13 don't think just because you have one that
14 the other cannot contribute and vice
15 versa. I'm not claiming synergistic
16 effect or anything like that. I just know
17 that there are multiple sources that can
18 all contribute.

19 BY MS. GADDY:

20 Q. Understood. But in this case for
21 Mr. Criswell, your report only identifies one
22 major risk factor for bladder cancer; correct?

23 MR. WALLACE: Objection.

24 THE WITNESS: Yes.

25 MS. GADDY: I think this is a good

1 stopping point if we want to take a quick
2 15-minute break. Does that work for
3 everyone?

4 MR. WALLACE: That sounds good.
5 Thanks.

6 MS. GADDY: We can go off the record.

7 THE WITNESS: Thank you.

8 THE VIDEOGRAPHER: Off record at
9 10:25 a.m.

10 (Recess taken from 10:25 a.m. until 10:49 a.m.)

11 THE VIDEOGRAPHER: On record at
12 10:49 a.m.

13 MR. WALLACE: I just want to note one
14 more -- one thing for record before we
15 begin. We've printed out copies of
16 Dr. Longo's reports for Criswell, Dyer,
17 and his supplemental report, which has
18 been identified as Exhibits 2, 3, 4. So
19 he has that in front of him. All right.
20 Megan, go ahead.

21 MS. GADDY: Thank you, Counsel.

22 BY MS. GADDY:

23 Q. So, Doctor, I next want to turn to
24 your discussion of chewing tobacco. You state in
25 your report for Mr. Criswell that chewing tobacco

1 is suspected of having a causal relationship with
2 bladder cancer; right?

3 A. Can you tell me which page that is so
4 I can look at it?

5 Q. Sure. I believe that's page 17.

6 A. Yes.

7 Q. And if you look towards the bottom
8 paragraph, it starts similarly.

9 A. Yes, that is correct. I did state
10 that.

11 Q. Okay. And similar to secondhand
12 smoke, you found that evidence is sparse
13 regarding chewing tobacco and bladder cancer;
14 right?

15 A. Yes, that is correct. When you look
16 at the peer-reviewed literature on chewing
17 tobacco, it is hard to find strong evidence for a
18 causal relationship.

19 Q. Did you perform a literature review
20 to assess this relationship between chewing
21 tobacco and bladder cancer for your report in
22 this case?

23 A. Yes, I did.

24 Q. Do you recall what your search terms
25 were?

1 A. Smokeless tobacco and bladder cancer.

2 Q. And in your literature review, did
3 you find any studies demonstrating a positive
4 association between chewing tobacco and bladder
5 cancer?

6 A. Yes. There were studies that showed
7 both positive and negative results regarding
8 smokeless tobacco and bladder cancer.

9 Q. And why did these studies that showed
10 a positive association not support ruling in this
11 risk factor for Mr. Criswell?

12 MR. WALLACE: Objection.

13 THE WITNESS: In looking at the
14 literature in totality and considering
15 many different factors, there was not
16 enough evidence to either support or deny
17 that chewing tobacco causes bladder
18 cancer. So, again, it was considered, but
19 does not appear to be a major risk factor
20 in his development.

21 BY MS. GADDY:

22 Q. And that's because the literature was
23 sparse on this type of association?

24 A. The evidence was sparse. There are
25 many papers on it, but the evidence in the papers

1 did not come to definitive conclusions.

2 Q. Okay. So in order for a risk factor
3 to be ruled in, the literature has to show
4 consistent results?

5 MR. WALLACE: Objection.

6 THE WITNESS: The literature in the
7 totality and there's criteria that are
8 used by epidemiologists and statisticians
9 to come up with that answer. But, yes,
10 the literature should tend to have more
11 evidence in favor of than against if
12 you're going to consider it as a risk
13 factor.

14 BY MS. GADDY:

15 Q. And the evidence in those studies
16 that support a positive association, the study
17 itself has to be methodologically sound; right?

18 A. Yes. In order for it to be
19 considered true, it has to have proper
20 methodology, yes.

21 Q. And should those studies account for
22 confounding variables as well?

23 A. All the studies will make an attempt
24 to account for confounding variables. Whether or
25 not they're capable of doing that depends upon

1 the study and the data that was available to
2 them.

3 Q. And, again, you're not an
4 epidemiologist; right?

5 A. I am not an epidemiologist, no.

6 Q. And Mr. Criswell testified at his
7 deposition to using chewing tobacco for four
8 years between 1986 and 1990; right?

9 A. Yes, that is what he said.

10 Q. Okay. And this was only about seven
11 years prior to his bladder cancer diagnosis in
12 1997; right?

13 A. Correct.

14 Q. But you found that the literature was
15 insufficient for chewing tobacco in order to rule
16 in that risk factor for Mr. Criswell; right?

17 MR. WALLACE: Objection. Form.
18 Foundation.

19 THE WITNESS: Again, it was
20 considered, but thought to be unlikely to
21 be a major contributor to his development
22 of bladder cancer.

23 BY MS. GADDY:

24 Q. So you considered it, but you ruled
25 it out as a potential risk factor for

1 Mr. Criswell; right?

2 MR. WALLACE: Objection. Form.
3 Foundation.

4 THE WITNESS: Again, as I just
5 answered the last question, I did consider
6 it. I never rule -- I don't deal in
7 absolutes. So I wouldn't say I ruled it
8 out, but I do not consider it as a major
9 risk factor for his development of bladder
10 cancer.

11 BY MS. GADDY:

12 Q. And just to clarify, what constitutes
13 a major risk factor as opposed to just the risk
14 factor?

15 A. So there's no strict definition, but
16 we do weigh how great an exposure was. And in
17 this case, you would look at what was the period
18 from the exposure to the time of development.
19 Figure out if you think it's a big enough
20 exposure or to a severe enough degree with an
21 appropriate amount of time from exposure to
22 development of disease to consider it a major
23 risk factor. But I would never say it's
24 impossible that it could be related or rule -- I
25 don't rule anything 100 percent out. No

1 absolutes in my world.

2 Q. Okay. So outside of the literature
3 for chewing tobacco, would you consider four
4 years of exposure to chewing tobacco to be a
5 major risk factor for a patient?

6 A. Not a major risk factor, no. I would
7 consider it a risk factor.

8 Q. That -- sorry. Continue.

9 A. I'm sorry. Yes, I would consider it
10 a risk factor, but I would not consider it a
11 major risk factor.

12 Q. And what did you mean when you said
13 chewing tobacco is suspected of having a causal
14 relationship. What did you mean by
15 "suspected of"?

16 A. Similar to secondhand smoke, we again
17 think that it's analogous to smoking in that
18 there's some sort of similar relationship, even
19 though it's by a different route or means, but we
20 cannot prove -- we don't have a good body of
21 evidence that proves that.

22 Q. So based on your expertise as a
23 treating physician in bladder cancer, it's common
24 sense to you that chewing tobacco would increase
25 your risk of bladder cancer?

1 MR. WALLACE: Objection.

2 THE WITNESS: Yes. And that's why I
3 consider it as a risk factor.

4 BY MS. GADDY:

5 Q. But, ultimately, you didn't consider
6 a major risk factor because the literature wasn't
7 sufficient; right?

8 A. I did not consider it a major risk
9 factor in Mr. Criswell's case for a combination
10 of minimal evidence in the body of literature we
11 have and a small exposure in close proximity to
12 his diagnosis of bladder cancer. So I used the
13 evidence in medical literature and applied it to
14 his specific case.

15 Q. And so is it your testimony that
16 Mr. Criswell -- chewing tobacco for four years is
17 not sufficient to rule it in as a major risk
18 factor?

19 MR. WALLACE: Objection. Form.

20 THE WITNESS: I do not think that
21 chewing tobacco in Mr. Criswell's case is
22 a major contributor to his development of
23 bladder cancer, correct.

24 BY MS. GADDY:

25 Q. And that's in part because you

1 determined that his exposure was minimal to
2 chewing tobacco?

3 MR. WALLACE: Objection. Asked and
4 answered.

5 THE WITNESS: Once again, I would
6 answer it the same way I did previous to
7 you where it's a body of evidence in
8 peer-reviewed literature that does not
9 support causation. Plus a small exposure
10 plus that exposure was in close proximity,
11 meaning there's a short interval from he
12 was exposed to the time that he developed
13 the disease to consider it a major risk
14 factor. But I would consider it a risk
15 factor.

16 BY MS. GADDY:

17 Q. So is it your testimony that
18 Mr. Criswell's latency with respect to chewing
19 tobacco and his bladder cancer was too small or
20 too short?

21 MR. WALLACE: Objection.

22 THE WITNESS: Again, I wouldn't say
23 anything is too short. I think that its
24 short latency period makes it a less
25 likely on the differential etiology to be

1 the major risk factor. But I don't
2 have -- there's no threshold that I hold.

3 BY MS. GADDY:

4 Q. And is the latency period, does that
5 depend on the risk factor we're talking about in
6 terms of whether something is too short or too
7 long?

8 MR. WALLACE: Objection.

9 THE WITNESS: We -- we do think that
10 there's probably different latency periods
11 for different exposures. We don't have
12 data on latency periods for all the
13 different exposures though.

14 BY MS. GADDY:

15 Q. And is that the case for chewing
16 tobacco?

17 A. Correct. Because we don't have
18 evidence -- good evidence that chewing tobacco
19 causes bladder cancer.

20 Q. You state in your report for
21 Mr. Criswell that according to some studies there
22 is an association between alcohol consumption and
23 the development of bladder cancer; right?

24 A. Again, can you tell me which page to
25 flip to before I confirm that?

1 Q. Sure.

2 A. Thank you.

3 Q. I believe it's the next page on
4 page 18.

5 A. Yes. Yes, I agree.

6 Q. But you go on in your report to note
7 that recent meta-analyses of cohort studies did
8 not observe a significant association between
9 alcohol intake and bladder cancer; right?

10 A. That is correct.

11 Q. So is it your opinion that when there
12 are recent studies that do not find a significant
13 association for a risk factor that that risk
14 factor is less likely a cause of their bladder
15 cancer?

16 MR. WALLACE: Objection.

17 THE WITNESS: No, I don't think that
18 the most recent piece of literature as a
19 standalone can ever refute what we've had
20 before. Certain types of literature might
21 give more credence to things than others,
22 in particular, a meta-analysis because a
23 meta-analysis does evaluate multiple
24 studies that have gone before it in order
25 to develop a larger body of evidence to

1 put forth a conclusion. But I don't
2 consider the most recent piece of evidence
3 to be a trump card. It has to be
4 considered in the totality of medical
5 literature.

6 BY MS. GADDY:

7 Q. So when you describe that there are
8 recent meta-analyses of studies that didn't
9 observe a significant association between alcohol
10 and bladder cancer, are you speaking specifically
11 about recent studies or are you also referring to
12 just the totality of the literature?

13 MR. WALLACE: Objection.

14 THE WITNESS: Well, in -- as I was
15 referring to just a moment before, a
16 meta-analysis takes existing literature
17 and pools it together in order to develop
18 a hypothesis.

19 So, generally speaking, a more recent
20 meta-analysis will have looked at some of
21 the studies that preceded it to come
22 together with a more significant
23 conclusion.

24 BY MS. GADDY:

25 Q. Okay. And when you say that a study

1 does not find a significant association, what do
2 you constitute a significant association?

3 MR. WALLACE: Objection.

4 THE WITNESS: Well, I'll preface it
5 by saying I'm neither a statistician nor
6 an epidemiologist. But when they develop
7 the study, they'll set out a priori, so
8 even before the study begins, they'll
9 determine what constitutes significance
10 and they'll define it before they begin.
11 And -- so it's a -- significance is a
12 definition that you can find in whichever
13 paper that you're reading. And it will be
14 typically in the methodology statistics
15 section.

16 BY MS. GADDY:

17 Q. Okay. And understanding that we're
18 in agreement, you're not an epidemiologist, is
19 there a general definition of significant
20 association in the epidemiological literature or
21 is it dependent on the author of the study?

22 A. It's dependent on the author of the
23 study.

24 Q. Okay. You note in your report for
25 Mr. Criswell that prior to his diagnosis of

1 bladder cancer he drank approximately two to four
2 times per month having one to two drinks per
3 occasion; right?

4 A. That is correct.

5 Q. And you cite to a record Bates
6 stamped 288; right?

7 A. Yes, I do.

8 Q. And that's the same record we looked
9 at earlier, which I believe is Exhibit 5. So I
10 will pull that up again. Do you see Exhibit 5,
11 Dr. Longo?

12 A. Yes, I do. It's the VA records again
13 dated March 11, 2020.

14 Q. Correct. So if we look at Exhibit 5
15 on this page, we'll turn to Bates Stamp 288. Do
16 you see where it says "alcohol use screen"?

17 A. Yes, I do.

18 Q. And it asks how often did you
19 drink -- did you have a drink containing alcohol
20 in the past year; right?

21 A. Yes, that's what it states.

22 Q. And the response is two to four times
23 a month?

24 A. Correct.

25 Q. And then it asks "How many drinks

1 containing alcohol did you have on a typical day
2 when you were drinking in the past year?"

3 And the response is one or two;
4 right?

5 A. Yes.

6 Q. So this record shows that
7 Mr. Criswell reported in 2020 that in the past
8 year that was his alcohol use; right?

9 A. Yes, that's what it states.

10 Q. And Mr. Criswell was diagnosed with
11 bladder cancer in 1997; right?

12 A. Yes.

13 Q. Are you aware of any medical records
14 for Mr. Criswell that discussed his alcohol
15 consumption prior to 1997?

16 A. I do not recall any medical records
17 that discuss his alcohol consumption prior to
18 1997.

19 Q. And that's because there are none;
20 right?

21 MR. WALLACE: Objection.

22 THE WITNESS: There are none that I
23 recall. But I don't know if they exist.

24 BY MS. GADDY:

25 Q. You don't discuss BMI or obesity in

1 your initial reports for either Mr. Criswell or
2 Ms. Dyer; right?

3 A. That is correct.

4 Q. But you do address it in your
5 rebuttal report; right?

6 A. Yes, I do.

7 Q. And turning to your rebuttal report,
8 which is Exhibit 4 starting on page 3, you state
9 that the literature has reported inconsistent
10 associations between BMI and bladder cancer risk;
11 right?

12 A. Yes, I do.

13 Q. You also state in your rebuttal
14 report that higher levels of BMI tend to be
15 associated with other unhealthy behaviors; right?

16 A. Correct. They have many confounding
17 factors.

18 Q. What other unhealthy behaviors that
19 are associated with BMI that also contribute to
20 bladder cancer risks?

21 A. BMI refers to body mass index. It is
22 associated with low levels of activity which is
23 an ongoing area of research regarding bladder
24 cancer. It's associated with higher levels of
25 alcohol consumption. There are certain chemicals

1 that are determined lipophilic, and that means
2 that they're stored in body fat. So it could be
3 that a person's heavy and they had an exposure
4 and they're more likely to have a prolonged
5 exposure because whatever chemical that is is
6 stored in their fat and is slowly released over
7 time. It's also confusing because BMI typically
8 refers to one point in time where we know it
9 fluctuates, and it's hard to say when someone was
10 heavy and that affected the downstream effects.
11 So to what extent and how long they were heavy
12 and to what degree.

13 Q. Okay. So thinking about these other
14 unhealthy behaviors that are associated with BMI
15 and also increased bladder cancer risk, are any
16 of those unhealthy behaviors found in
17 Mr. Criswell or Ms. Dyer's medical history?

18 MR. WALLACE: Objection.

19 THE WITNESS: Ms. Dwyer -- Dyer is --
20 has a note to have a high BMI at the time
21 of her cystectomy. In prior medical
22 records, it notes that she was the winner
23 of -- well, it does not note her BMI in
24 other areas. So, again, we're using one
25 point in time and it's at the time of

1 diagnosis that she's obese.

2 BY MS. GADDY:

3 Q. And for Mr. Criswell as well, did you
4 note his BMI history?

5 A. I did not note an -- a high BMI in
6 Mr. Criswell.

7 Q. And in your supplemental materials
8 list, you list two studies regarding BMI and
9 bladder cancer; right?

10 A. That is correct.

11 Q. And the first study was by Choi, et
12 al., from 2018 titled "Estimating Impact of Body
13 Mass Index on Bladder Cancer Risks Stratification
14 by Smoking Status"; right?

15 A. I can't recall the entire title
16 offhand, but I will believe that that's what the
17 title is.

18 Q. No worries.

19 A. I do --

20 Q. I will share my screen. This will be
21 marked Exhibit 10.

22 (Longo Exhibit 10 marked for
23 identification.)

24 BY MS. GADDY:

25 Q. Is this is the study that I just

1 named off, Doctor?

2 A. Yes, it is.

3 Q. And this study found -- I'm reading
4 from page 3. Can you see my screen or read this?

5 A. Can you zoom in, please?

6 Q. Yeah. Is this better?

7 A. Yes.

8 Q. And this fourth paragraph that starts
9 "increasing trend," it states "Increasing trend
10 in risk of bladder cancer according to age, BMI,
11 and smoking status," and it reads, "The hazard
12 ratio for bladder cancer was lowest in people
13 with BMI less than 18.5 and highest for those
14 with BMI greater or equal to 30 in both models.
15 A significant increasing trend in risk of bladder
16 cancer was seen with increasing BMI in a
17 multivariant adjusted model."

18 Did I read that right?

19 A. Yes, you read that correctly.

20 Q. The study also found that there was a
21 positive association between bladder cancer and
22 BMI when stratified by smoking status; right?

23 A. Yes, it did.

24 Q. And the study concludes that
25 increasing BMI was a risk factor for bladder

1 cancer independent of confounding variables;
2 right?

3 A. I'm sorry, I just couldn't catch it.
4 Can you repeat that?

5 Q. Sure. The study includes that
6 increasing BMI was a risk factor for bladder
7 cancer independent of confounding variables?

8 A. Yes.

9 Q. So this study supports ruling in BMI
10 as a risk factor for bladder cancer; right?

11 MR. WALLACE: Objection.

12 THE WITNESS: When I examined this
13 study as it was brought forth to me
14 because of Dr. Cates, I looked at the
15 study and I noted initially that the
16 non-obesity group had a 0.09 percent risk
17 of bladder cancer whereas the obese group
18 had a .1 percent. So that's a one
19 one-hundredth of a difference between the
20 nonobese and the obese.

21 Then I looked at the study in
22 totality, which is a database from South
23 Korea, and I found that the population was
24 not particularly similar to the one that
25 we're talking about in American in the

1 southeast of U.S., and I found that that
2 conclusion, although statistically true,
3 is probably of little clinical
4 significance considering what a small
5 difference they were able to find. And
6 then I placed it in the context of the
7 entire body of obesity and bladder cancer
8 literature and did not find that it
9 profoundly changed my opinion.

10 BY MS. GADDY:

11 Q. Okay. So is it your testimony that
12 although this study found the positive
13 association between BMI and bladder cancer risk,
14 it didn't find a significant enough association
15 for it to be notable?

16 MR. WALLACE: Objection.

17 THE WITNESS: I would state that
18 while true, this one study did find an
19 association, it was not of a great enough
20 significance to overturn the entire body
21 of literature regarding obesity and
22 bladder cancer and is just a component of
23 one amongst many.

24 BY MS. GADDY:

25 Q. Would you agree that a BMI greater or

1 equal to 30 increases one's risk of bladder
2 cancer?

3 MR. WALLACE: Objection.

4 THE WITNESS: I would -- I do not
5 have enough evidence to agree or disagree
6 with the BMI being over 30 causing bladder
7 cancer.

8 BY MS. GADDY:

9 Q. Would you counsel one of your
10 patients to lose weight if they had a BMI greater
11 than 30?

12 A. I would counsel any patient
13 regardless of disease with a BMI of over 30 to
14 lose weight.

15 Q. So you wouldn't specifically counsel
16 one of your bladder cancer patients to lose
17 weight to decrease their chances of having
18 bladder cancer or having a recurrence?

19 A. Correct. I would encourage them to
20 lose weight for overall health purposes but not
21 specific to bladder cancer purposes.

22 Q. And turning to the other study that
23 you listed in your materials considered, this was
24 a study by Zhao, et al., from 2017 titled
25 "Association of body mass index with bladder

1 cancer risk: a dose-response meta-analysis of
2 prospective cohort studies"; right?

3 A. That is correct.

4 Q. And for the record, we'll mark this
5 as Exhibit 11.

6 (Longo Exhibit 11 marked for
7 identification.)

8 BY MS. GADDY:

9 Q. This was a meta-analysis that
10 examined 14 cohort studies that export the dose
11 response relationship between BMI and bladder
12 cancer; right?

13 A. Yes, it is.

14 Q. And, overall, the study found -- and
15 I'll turn to the specific page. I think it's
16 page 5. Under discussion. In the second
17 paragraph where it starts overall, it states
18 "Overall, the dose-response meta-analysis random
19 effects model across all the studies show that
20 there was a potential nonlinear association
21 between BMI and bladder cancer risk, and the risk
22 increased by 3.1 percent for each 5 kilogram per
23 meters square increase."

24 Did I read that right?

25 A. Yes. You read that sentence

1 correctly.

2 Q. This study goes on to say, "Further,
3 our findings indicated that a positive
4 association was found between bladder cancer and
5 obesity compared with normal weight with little
6 variability; correct?

7 A. Yes, that is what the state -- the
8 sentence reads.

9 Q. So this study supports ruling in BMI
10 as a risk factor for bladder cancer; right?

11 MR. WALLACE: Objection.

12 THE WITNESS: I think if you were to
13 look at the data in the study and they
14 do have a -- I don't have the study before
15 they. But if you can scroll down, they do
16 have the risk ratios of every -- every one
17 of the studies they considered. If you
18 can keep going down, I believe there's --
19 there, this figure. If you were to look
20 at --

21 MR. WALLACE: I'm sorry, when you say
22 this figure, can you just for the record
23 say what.

24 THE WITNESS: Can you -- I can't see
25 what figure that is. Maybe --

1 BY MS. GADDY:

2 Q. Figure 3.

3 A. In Figure 3 of their meta-analysis,
4 they've plotted out the risks of every one of the
5 studies each individual study they've looked at
6 and you can see that the studies fall almost
7 evenly if you're to count them up. In fact, I
8 think it might be 2, 3, 4, 5 -- 1, 2, 3, 4, 5, 6,
9 7, 8, they fall pretty evenly on either side of
10 the line where -- that represents the relative
11 risk of 1 which there is no effect. So I think
12 this meta-analysis supports that there's still a
13 lot of work to be done in the risk of obesity
14 causing bladder cancer.

15 Q. So is it your opinion that if the
16 cohort of studies kind of teeters closely around
17 1.0 for a risk ratio -- risk ratio, that that
18 isn't a significant association?

19 MR. WALLACE: Objection. Form.
20 Foundation.

21 THE WITNESS: Are you referring to
22 significance as clinically significant or
23 as statistically significant?

24 BY MS. GADDY:

25 Q. Statistically significant.

1 MR. WALLACE: Same objection.

2 THE WITNESS: It would -- it would
3 also -- well, so it can be -- if it's
4 around one, it may or may not be
5 statistically significant depending upon
6 how they powered the studies and set the
7 study up to begin with. But, again, I'm
8 not a statistician. I'd have to defer to
9 an epidemiologist for that answer.

10 BY MS. GADDY:

11 Q. In your review of this study
12 regarding BMI and bladder cancer, it's your
13 opinion that this study did not demonstrate a
14 significant association for BMI bladder cancer
15 based on them all sort of teetering on this 1.0
16 risk ratio?

17 MR. WALLACE: Objection.

18 THE WITNESS: I think that this one
19 study alone cannot overturn all of the
20 other evidence that we have for or against
21 bladder cancer being caused by obesity.
22 There's not enough evidence here for me to
23 say yes or no.

24 BY MS. GADDY:

25 Q. And there's not enough evidence in

1 here because the studies it looks at teeter
2 around 1.0 for risk ratio; right?

3 MR. WALLACE: Objection. Form.
4 Foundation.

5 THE WITNESS: Again, I'm not an
6 epidemiologist or a statistician, but this
7 data looks very evenly split to me.

8 BY MS. GADDY:

9 Q. You'd agree that bladder cancer is
10 more common in men than women; right?

11 A. Yes, it is.

12 Q. And one possible explanation for that
13 is that smoking is more common in men than women;
14 right?

15 MR. WALLACE: Objection.

16 THE WITNESS: That is one of the
17 common explanations.

18 BY MS. GADDY:

19 Q. Would you agree that bladder cancer
20 is most common among white Americans compared to
21 black or Hispanic Americans?

22 A. Yes, it is.

23 Q. And you state in your reports that
24 approximately 80 percent of all bladder cancers
25 are diagnosed in individuals 65 or older; right?

1 A. Correct.

2 Q. Would you agree then that bladder
3 cancer can be described as a disease of aging?

4 A. No. As I answered earlier today, I
5 think it's a disease that occurs in older people,
6 but it's not a consequence of aging itself. I
7 think that you're exposed and there has to be a
8 certain period of time before you can develop
9 bladder cancer, but it's not -- there's no
10 mechanism related to aging itself that causes
11 bladder cancer.

12 Q. Would you agree that just because
13 someone is diagnosed earlier in their life, that
14 does not indicate that their bladder cancer was
15 caused by chemical exposure; right?

16 MR. WALLACE: Objection.

17 THE WITNESS: No. I think all
18 bladder cancer is caused by an exposure
19 regardless of age.

20 BY MS. GADDY:

21 Q. And based on your testimony earlier,
22 that could be smoking exposure?

23 A. Yes, it could be smoking exposure.

24 Q. And it could also be unknown
25 exposures that we don't have clear evidence of;

1 right?

2 A. Yes, there can be unknown exposures.

3 Q. And, in your practice, how many
4 bladder cancer patients do you see that are under
5 65 years old?

6 MR. WALLACE: Objection.

7 THE WITNESS: In my practice, I think
8 I probably see 10 to 20 percent of
9 patients under 65 with bladder cancer. So
10 I'm in line with the current literature.
11 I don't think there's any unique about my
12 practice experience.

13 BY MS. GADDY:

14 Q. And how many would you say are under
15 50?

16 A. Under 50 is probably closer to that
17 10 percent range that would be under 50. Very --
18 very uncommon.

19 Q. You state in your report for Ms. Dyer
20 that for Ms. Dyer to be diagnosed at 52 with
21 bladder cancer and that she is the less common
22 gender together indicate that she received a
23 significant toxic exposure related to her age a
24 diagnosis the duration of time between her last
25 exposure, approximately 1975, and diagnosis,

1 2009, is well in line with the latency I expect
2 from toxic exposure induced bladder cancer;
3 right?

4 A. If you could tell me what page, but I
5 do believe that's correct.

6 Q. Yes. My apologies. So going back to
7 Exhibit 3, I believe it's page 22.

8 MR. WALLACE: I'm sorry, Megan.
9 Where at on page 22?

10 MS. GADDY: I think I -- actually it
11 might be -- my apologies. It's 23.
12 Page 23 at the very last paragraph. And
13 towards the end of that paragraph that
14 states for Ms. Dyer to be diagnosed.

15 THE WITNESS: Yes, I see that now.

16 BY MS. GADDY:

17 Q. Okay. And as we discussed earlier,
18 Ms. Dyer also quit smoking around 1975; right?

19 A. Yes.

20 Q. And as we discussed earlier, smoking
21 cigarettes is a form of toxic exposure; correct?

22 A. That is correct.

23 Q. And so Ms. Dyer's latency with
24 respect to smoking is what you would expect from
25 a toxic exposure induced bladder cancer; right?

1 MR. WALLACE: Objection.

2 THE WITNESS: Yes. That's well
3 within the latency period for smoking.

4 BY MS. GADDY:

5 Q. And is it fair to say that some
6 cancers have an unknown cause?

7 A. Yes, it is.

8 MR. WALLACE: Objection.

9 BY MS. GADDY:

10 Q. And do physicians in your field
11 typically refer to those cancers as idiopathic?

12 MR. WALLACE: Objection.

13 THE WITNESS: Yes, they do.

14 BY MS. GADDY:

15 Q. And no known cause is not the same
16 thing as no cause; correct?

17 A. Correct. No known cause is not the
18 same as no cause.

19 Q. So an idiopathic cancer is still
20 caused by something; right?

21 MR. WALLACE: Objection.

22 THE WITNESS: Yes, it is.

23 BY MS. GADDY:

24 Q. It's just that we can't identify that
25 something?

1 A. Yes.

2 Q. And the fact the majority of bladder
3 cancer cases have no known cause; right?

4 MR. WALLACE: Objection.

5 THE WITNESS: No, I believe that is
6 false. I think the majority of bladder
7 cancers have an identifiable known
8 exposure.

9 BY MS. GADDY:

10 Q. But some of these bladder cancer
11 cases do not have a known cause of their cancer;
12 right?

13 MR. WALLACE: Objection. Form.
14 Foundation.

15 THE WITNESS: Yes. As I've said
16 repeatedly, I think there's a small group
17 of bladder cancers that we have not found
18 the cause for.

19 BY MS. GADDY:

20 Q. Would you agree that we don't fully
21 understand all the causes of bladder cancer?

22 MR. WALLACE: Objection.

23 THE WITNESS: Yes, we do not fully
24 understand all the causes of bladder
25 cancer.

1 BY MS. GADDY:

2 Q. And science is continuing to identify
3 new potential causes of bladder cancer; right?

4 MR. WALLACE: Objection.

5 THE WITNESS: Yes.

6 BY MS. GADDY:

7 Q. And there are instances of bladder
8 cancer that we cannot explain; correct?

9 MR. WALLACE: Objection.

10 THE WITNESS: Yes. There's a
11 minority of instances we cannot explain.

12 BY MS. GADDY:

13 Q. Would you agree that having a risk
14 factor or even many risk factors for bladder
15 cancer doesn't necessarily mean that you will
16 ultimately get bladder cancer; right?

17 A. Yes, that's correct.

18 Q. And the fact that a person has a risk
19 factor does not automatically mean that that risk
20 factor is the cause of their bladder cancer;
21 right?

22 A. Yes. That, too, is also correct.

23 Q. And, particularly, if a patient has
24 one or two weak risk factors for bladder cancer,
25 that doesn't mean that unknown causes could --

1 could not have caused their bladder cancer;
2 right?

3 MR. WALLACE: Objection. Form.
4 Foundation.

5 THE WITNESS: Yes. There can always
6 be a mystery cause.

7 BY MS. GADDY:

8 Q. So, for example, if a patient comes
9 into your practice and says my aunt's first
10 cousin has bladder cancer, would you therefore
11 conclude in performing a differential etiology
12 that that risk factor is as likely as not the
13 cause of their bladder cancer?

14 MR. WALLACE: Objection.

15 THE WITNESS: I'm sorry. Can you
16 explain that scenario to me again?

17 BY MS. GADDY:

18 Q. Sure. So if a patient comes in and
19 says my aunt's first cousin has bladder cancer,
20 would you conclude that that -- the fact that
21 their aunt's first cousin has bladder cancer is
22 as likely as not the cause of their bladder
23 cancer as unknown causes?

24 MR. WALLACE: Objection.

25 THE WITNESS: So you're asking me the

1 patient has come to me and the patient's
2 got bladder cancer, but their aunt's first
3 cousin also has bladder cancer --

4 BY MS. GADDY:

5 Q. Correct.

6 A. What's the question?

7 Q. So in determining the cause of that
8 patient's bladder cancer, would you conclude that
9 the fact that their aunt's first cousin has
10 bladder cancer is as likely as not the cause of
11 that patient's bladder cancer?

12 MR. WALLACE: Objection. Form.
13 Foundation.

14 THE WITNESS: No, I don't think I
15 would reach that conclusion. I would
16 start with the differential etiology and
17 go through it as we discussed before risk
18 factor by risk factor and pursue each one
19 according to their answers.

20 BY MS. GADDY:

21 Q. And unknown causes for a disease
22 should not be ruled out in all cases just because
23 the risk factor is present; right?

24 MR. WALLACE: Objection. Form.
25 Foundation.

1 THE WITNESS: Unknown causes always
2 lays at the bottom of the list because if
3 I started my list with unknown causes, I
4 would also stop. You have to pursue all
5 the other things before you say unknown.

6 BY MS. GADDY:

7 Q. But unknown causes can't be ruled
8 out; right?

9 MR. WALLACE: Objection.

10 THE WITNESS: The unknown unknowns
11 cannot be ruled out, no.

12 BY MS. GADDY:

13 Q. Is it fair to say that Mr. Criswell's
14 bladder cancer might have occurred regardless of
15 the Camp Lejeune water exposure?

16 MR. WALLACE: Objection.

17 THE WITNESS: Yes. Mr. Criswell's
18 bladder cancer could have occurred for
19 some other reason that we don't know
20 about.

21 BY MS. GADDY:

22 Q. And same for Ms. Dyer, is it fair to
23 say that Ms. Dyer's bladder cancer might have
24 occurred regardless of the Camp Lejeune water
25 exposure?

1 A. Yeah --

2 MR. WALLACE: Objection.

3 THE WITNESS: Ms. Dyer's bladder
4 cancer may have occurred due to some
5 unknown cause not on the list.

6 BY MS. GADDY:

7 Q. You also note in your report for
8 Ms. Dyer, and I'm looking at page 20 at the very
9 bottom of the -- under other chemical exposure,
10 you note that drinking well water with high
11 levels of arsenic has been found to increase the
12 risk of developing bladder cancer; right?

13 A. That is correct.

14 Q. You only include this in your report
15 for Ms. Dyer and not for your report for
16 Mr. Criswell; right?

17 A. Yes.

18 Q. Why is that?

19 A. Ms. Dyer still lives in the region
20 that we're in. And there's been a lot of the
21 stuff in the news about arsenic. And the next
22 paragraph is about forever -- forever compounds,
23 the PFAS. I included it because it's part of the
24 local news cycle in southeast North Carolina.

25 Q. Okay. But, ultimately, going on to

1 page 21, towards the top you conclude that well
2 water and arsenic is not a risk factor for
3 Ms. Dyer; correct?

4 A. Correct. I didn't -- I didn't find
5 any evidence of that in her records.

6 Q. But as you stated just a moment ago,
7 elevated levels of arsenic have been found in
8 groundwater throughout North Carolina; correct?

9 MR. WALLACE: Objection. Misstates
10 prior testimony.

11 THE WITNESS: I don't know if it has
12 been found. I just know that it's in our
13 news a lot.

14 BY MS. GADDY:

15 Q. Okay. Have you investigated that
16 area of inquiry?

17 MR. WALLACE: Objection.

18 THE WITNESS: So I'm aware of the
19 literature regarding arsenic in drinking
20 water and bladder cancer. I have not
21 conducted any, like, studies of wells in
22 North Carolina. And I've looked for data
23 about the amount, but I have not found
24 anything for North Carolina specific.

25 BY MS. GADDY:

1 Q. Okay. And Ms. Dyer has lived in
2 Wilmington, North Carolina, for decades; right?

3 A. That is correct.

4 Q. And are you aware that Ms. Dyer's
5 treating physician, Dr. McCarthy, testified at
6 his deposition that southeast North Carolina has
7 about 13 percent higher cancer ratio than the
8 rest of the state?

9 MR. WALLACE: Objection. Foundation.
10 Form.

11 THE WITNESS: Yes. I'm aware that he
12 said that in his deposition, but I am
13 unaware of where he got that data from.

14 BY MS. GADDY:

15 Q. Do you have any reason to disagree
16 with Dr. McCarthy?

17 A. The only reason I would or would not
18 disagree is I've never seen any evidence of it.
19 However, Camp Lejeune is in eastern North
20 Carolina in that region.

21 Q. And so is Wilmington, North Carolina;
22 correct?

23 A. Correct. That's the -- they're all
24 in close proximity.

25 Q. You conclude for both Mr. Criswell

1 and Ms. Dyer that it is at least as likely as not
2 that their exposure to chemicals in the water at
3 Camp Lejeune caused their bladder cancer;
4 correct?

5 A. That is correct.

6 Q. And this conclusion was based on your
7 differential etiology that you performed in both
8 cases; right?

9 A. Yes, it is.

10 Q. And your differential etiology ruled
11 in exposure to the chemicals at Camp Lejeune in
12 part based on Dr. Reynolds' exposure
13 calculations; right?

14 MR. WALLACE: Objection.

15 THE WITNESS: Yes, I did.

16 BY MS. GADDY:

17 Q. And you determined that the
18 epidemiological literature was sufficient to rule
19 in the chemicals at Camp Lejeune despite not
20 being an epidemiologist yourself; correct?

21 A. Not quite. So I did my own
22 literature review, looked at the studies that
23 exist both epidemiological and at the data that
24 exists for each individual compound alone in
25 conjunction, drew my own independent conclusions,

1 but then I deferred to the epidemiologists that
2 are trained to do that to make certain that what
3 I thought I was reading was, in fact, supported
4 by a trained epidemiologist. And I found that my
5 opinion was agreed with our epidemiologist. But
6 I would defer to the epidemiologist to really go
7 through the minutiae of each study and defend the
8 papers.

9 So, yes, I'm not an epidemiologist.
10 I'm conversant in those types of studies. I
11 should be able to read them and understand what's
12 going on. And had I read them and come to a
13 different conclusion, I would have either said
14 that that I was -- I disagree, or I'd have to
15 educate myself in order to understand the
16 conclusions that were being drawn by the
17 epidemiologists.

18 Q. Okay. In the same way -- in the same
19 sense that you're not an epidemiologist with
20 respect to the chemicals at Camp Lejeune and
21 bladder cancer, you're also not trained to look
22 at the epidemiological studies around chewing
23 tobacco and bladder cancer; right?

24 A. Well, I am trained in order to read
25 those studies. I don't have a formal diploma at

1 the end. So, no, I don't consider myself an
2 expert. But as a trained urologic oncologist,
3 I'm expected to be able to read those papers and
4 understand the data that's being put forth.

5 Q. Okay. So in your own review as the
6 urologic oncologist of the epidemiological
7 literature about the chemicals at Camp Lejeune
8 and bladder cancer, you reached your own
9 conclusion that the literature was sufficient;
10 right?

11 A. I independently confirmed what our
12 epidemiologists have said, yes.

13 Q. Okay. But, again, you determined
14 that the literature was insufficient when it came
15 to secondhand smoke as a risk factor for bladder
16 cancer; right?

17 A. Correct. Again.

18 Q. And you determined that the
19 literature was insufficient to rule in BMI as a
20 risk factor for bladder cancer; right?

21 A. Yes. Again, I defer to the
22 epidemiologist, but that was my conclusion.

23 Q. You also concluded that unknown
24 causes could not have contributed to either
25 Mr. Criswell or Ms. Dyer's bladder cancer; right?

1 A. No. I did not address unknown
2 causes. I only addressed do I think the exposure
3 to Camp Lejeune water could be a major risk
4 factor for the development of bladder cancer.

5 Q. So you acknowledge that unknown
6 causes could have contributed to Mr. Criswell and
7 Ms. Dyer's bladder cancer?

8 A. Yes. In answering the -- so the
9 question I was asked was do I think contaminated
10 the groundwater at Camp Lejeune could contribute
11 to either of those patients' bladder cancer. But
12 I did not exclude other causes as being present.

13 Q. Outside of litigation, have you ever
14 diagnosed a patient with chemically-induced
15 bladder cancer?

16 A. Yes.

17 Q. Have you ever treated patients for
18 bladder cancer following an exposure to TCE, PCE,
19 vinyl chloride, or benzene?

20 A. Yes.

21 Q. Okay. In your report for
22 Mr. Criswell, you note that his original
23 diagnosis in 1997 was high grade 2 superficial
24 muscle invading bladder cancer -- bladder
25 carcinoma; right?

1 A. Can you tell me what the page is so I
2 can confirm, please.

3 Q. Yes. It's page 5.

4 A. Yes.

5 Q. And you acknowledge in your report
6 that a radical cystectomy of the bladder with
7 orthotopic pouch was the standard treatment for
8 his type of bladder cancer at that time; right?

9 A. That was what Dr. Moseley explained
10 to him. And it is agreed upon option for that
11 type of bladder cancer well within the
12 guidelines.

13 Q. Okay. So is it your opinion that
14 that is a standard treatment for this type of
15 bladder cancer?

16 MR. WALLACE: Objection.

17 THE WITNESS: Again, in the staging
18 system in 1997 was slightly different than
19 it is now. I would agree that if
20 current -- within the current guidelines
21 for high grade muscle invasive bladder
22 cancer a radical cystectomy is well within
23 the standard of care for a high grade
24 muscle invasive bladder cancer, yes.

25 BY MS. GADDY:

1 Q. I believe you testified in the
2 beginning of the deposition that a cystectomy for
3 this type of bladder cancer is the gold standard
4 treatment; right?

5 A. Yes, it is.

6 Q. And, nonetheless, Mr. Criswell opted
7 to undergo BCG treatment instead; right?

8 A. Yes, he did.

9 Q. And had Mr. Criswell underwent the
10 standard treatment, a radical cystectomy, his
11 chances for bladder cancer recurrence would be
12 near zero; right?

13 A. Well, the radical cystectomy is
14 offered in that situation for cancer cure, not
15 necessarily a prevent recurrence. Although, of
16 course, it does dramatically reduce the
17 likelihood of recurrence. But the ultimate
18 outcome of any cancer treatment is to preserve
19 the patient's quality of life and their life.

20 So if it would have prevented
21 recurrence in the bladder, but, again, the
22 ultimate outcome is that he's still alive and
23 with us.

24 Q. And BCG often comes with side
25 effects; right?

1 A. That is correct.

2 Q. The most common of which are --
3 apologize if I mispronounce these -- cystitis?

4 A. Correct.

5 Q. Dysuria?

6 A. Yes.

7 Q. Hematuria?

8 A. Yes.

9 Q. Malaise?

10 A. Yes.

11 Q. And fatigue; right?

12 A. Those are very common side effects of
13 BCG, yes.

14 Q. And you note in your report on the
15 same page that it's actually very rare that a
16 patient is able to complete the entire regimen of
17 BCG because of BCG toxicity; right?

18 A. That is also correct.

19 Q. Typically, these side effects from
20 BCG improve with time; right?

21 A. They typically improve with time away
22 from BCG, yes.

23 Q. And at one point in your report on
24 page 6 -- let's see, in the third paragraph
25 towards the bottom the sentence starts "concern

1 over future BCG treatment." Do you see that?

2 A. Yes, I do.

3 Q. You say "Concern over future BCG
4 treatment was expressed by Dr. Moseley since
5 Mr. Criswell was considered a urological cripple
6 since his last BCG treatment"; right?

7 A. Yes, that's how Dr. Moseley termed
8 it.

9 Q. Okay. Is that language that you
10 routinely use to describe bladder symptomology in
11 your practice?

12 A. Common amongst urologic oncologists
13 is the term "bladder cripple." So close to
14 urological cripple, but bladder cripple.

15 Q. Would you agree that bladder cripple
16 implies a permanently nonfunctional bladder?

17 MR. WALLACE: Objection.

18 THE WITNESS: Yes. We usually --
19 that term would apply when it no longer
20 functions as a storage vessel.

21 BY MS. GADDY:

22 Q. And there's no evidence to support
23 that Mr. Criswell has a permanently nonfunctional
24 bladder; right?

25 A. No, I would disagree. If Dr. Moseley

1 terms it that, then that would be the evidence.
2 He does not necessarily have to fully enumerate
3 every single symptom that led to that conclusion.
4 But if it's there in his medical record, he must
5 have considered it to be true.

6 Q. But would you agree that
7 Mr. Criswell's bladder is functioning currently?

8 MR. WALLACE: Objection.

9 THE WITNESS: I know that
10 Mr. Criswell is still living with an
11 intact bladder, yes.

12 BY MS. GADDY:

13 Q. And so he's never had a permanently
14 nonfunctional bladder; right?

15 MR. WALLACE: Objection.

16 THE WITNESS: He -- correct. He is
17 functioning with his bladder. Now to what
18 degree the bladder is functional, I don't
19 know. But he is still alive with his
20 bladder intact.

21 BY MS. GADDY:

22 Q. And you also state on this same page,
23 page 6 of your report, that around the time he
24 received his BCG treatment, Mr. Criswell's
25 symptoms made him unable to work; right?

1 A. Can you just show me -- or tell me
2 which line to look at and I'll find it.

3 Q. Yeah. I believe it's the -- let's
4 see. So a little bit above the sentence we were
5 looking at before where it starts "following his
6 BCG maintenance"?

7 A. Yes, I see it now.
8 Thank you. Yes.

9 Q. Okay. So you state that he was
10 unable to work because of his BCG treatments?

11 A. Uh-huh. That is correct.

12 Q. In your capacity as an expert in this
13 case, are you offering an opinion as to
14 Mr. Criswell's ability to work both past and
15 present?

16 A. No. I only have the medical record
17 available to me.

18 Q. Okay. And what did you rely on in
19 making that statement that Mr. Criswell was
20 unable to work due to his symptoms?

21 A. It was within his medical record and
22 the documents that I reviewed in preparation for
23 this report that he was unable to work at that
24 time.

25 Q. Are you aware that Mr. Criswell

1 testified in his deposition that when he was
2 receiving BCG treatment, he took an estimate of
3 10 sick days from his work as a PE teacher?

4 A. You'd have to point that to that
5 specific amount of time. But, yes, I believe
6 that to be true.

7 Q. I'll go ahead and share my screen.
8 This will be marked Exhibit 12. For the record,
9 this is Mr. Criswell's deposition in this case.

10 (Longo Exhibit 12 marked for
11 identification.)

12 BY MS. GADDY:

13 Q. And specifically looking at page 81
14 of his testimony -- can you read this okay?

15 A. Yes, I can.

16 Q. I'm going to line -- starting with
17 line 15, the question was: "So what work were
18 you unable to do?"

19 "ANSWER: Well, I -- when I went
20 through all this, I wasn't able to work at all.
21 I was a PE teacher. So I had to take sick leave.

22 "QUESTION: And this was in 1997?

23 "ANSWER: Yes, sir.

24 "QUESTION: When were you were first
25 diagnosed?

1 "ANSWER: Yes, sir.

2 "QUESTION: And how long did you have
3 to take leave?

4 "ANSWER: At different times. You
5 know, probably, say, maybe 10 -- 10 sick leaves,
6 10 days."

7 Did I read that right?

8 A. Yes, you did.

9 Q. And going on to page 82 of his
10 deposition starting at line 1, he was asked:
11 "And these were sick leaves in order to see your
12 doctor?

13 "ANSWER: It was to get over the
14 treatments and the surgery. Yes, sir.

15 "QUESTION: Other than the sick
16 leave, are you claiming any other time when you
17 were unable to work due to the --

18 "ANSWER: No, sir."

19 Did I read that right?

20 A. Yes, you did.

21 Q. And so Mr. Criswell testified that
22 other than these 10 sick leaves -- days of sick
23 leave, he was otherwise able to work; right?

24 MR. WALLACE: Objection.

25 THE WITNESS: Yes, he did.

1 BY MS. GADDY:

2 Q. And after Mr. Criswell went through
3 his BCG treatment, he has no evidence of disease
4 up until 2014; right?

5 A. Correct.

6 Q. And, in fact, from late 2002 until
7 2014, Mr. Criswell did not return to see his
8 urologist; right?

9 A. I could find any records of him
10 seeing a urologist between those two dates.

11 Q. And you note this in your report on
12 page 9. And you say Mr. Criswell had a lapse of
13 several years of surveillance; right?

14 A. Yes, I do.

15 Q. Towards -- okay. And this was a
16 lapse of about 12 years; right?

17 A. Correct.

18 Q. If Mr. Criswell was your patient at
19 that time, would you have recommended against
20 this lapse of 12 years of surveillance?

21 MR. WALLACE: Objection.

22 THE WITNESS: Well, generally what
23 we -- so there is no absolute guideline
24 for what we're supposed to do. There are
25 guidelines that we generally turn to. The

1 most commonly used guidelines for bladder
2 cancer and surveillance in most cancer
3 surveillance are the national
4 comprehensive network guidelines.

5 They're composed by a group of
6 experts over a range of fields that review
7 the literature and current trends and
8 standard of care, and they put forth the
9 recommendations.

10 If you are to look at what's
11 recommended for high grade bladder cancer
12 surveillance, they do have very specific
13 recommendations for the first five years,
14 and it become increasingly vague from five
15 to ten. And at ten, they don't make any
16 recommendations.

17 And so if it was my patient, I would
18 have presented that data to him. I would
19 have shown him the little chart that says
20 what you're supposed to be followed up on.
21 But really at five years, there's not a
22 lot of strong recommendations.

23 BY MS. GADDY:

24 Q. But there is some recommendation;
25 right?

1 A. Yes. Generally, you would go see at
2 least your primary care physician.

3 Q. Would you advise your patient to
4 still do an annual cystoscopy every year?

5 A. Yes. But that's delving more into
6 the matter of opinion, so expert opinion versus
7 there is strong evidence for it. The evidence
8 exists for the first five years. And then five
9 to ten, it's much more vague because the evidence
10 starts to peter out.

11 Q. But as your role as a treating
12 physician, you would recommend doing an annual
13 cystoscopy even after five years?

14 MR. WALLACE: Objection.

15 THE WITNESS: In my patients I do try
16 to keep a close -- close to me. I've
17 established a relationship, and I think
18 that's important for the human element of
19 this disease to have an ongoing
20 relationship, yes.

21 BY MS. GADDY:

22 Q. But not to monitor their bladder
23 cancer specifically?

24 MR. WALLACE: Objection.

25 THE WITNESS: Oh, no. Both are

1 important components.

2 BY MS. GADDY:

3 Q. Okay. And it's your opinion in your
4 report that this lapse of surveillance did not
5 impact Mr. Criswell's recurrence or his ultimate
6 outcome with respect to his bladder cancer;
7 right?

8 A. Yes. I stand by that opinion.

9 Q. Would you agree that Mr. Criswell
10 could have had this recurrence for years prior to
11 2014?

12 MR. WALLACE: Objection.

13 THE WITNESS: I would disagree based
14 on the natural history of bladder cancer
15 that that tumor would have existed that
16 long without causing more harm. So, no, I
17 do not think he had it present for years.
18 It would be unusual.

19 BY MS. GADDY:

20 Q. Okay. To clarify, so he could have
21 had this recurrence since 2012 as opposed to 2014
22 when he finally returned to his doctor's office;
23 right?

24 MR. WALLACE: Objection. Form.

25 THE WITNESS: Even that much time is

1 probably a bit of a stretch. But, again,
2 I don't deal in absolutes. I couldn't say
3 it's impossible.

4 BY MS. GADDY:

5 Q. Okay. And you go on to say in your
6 report that even following this gap in
7 surveillance, it was several years after his
8 diagnosis that he suffered this recurrence;
9 right?

10 A. Correct. It was outside that
11 ten-year window that we were talking about from
12 initial diagnosis.

13 Q. And that recurrence was a low grade
14 noninvasive recurrence; right?

15 A. Yes. According to the records, it
16 was low grade noninvasive.

17 Q. And as we touched on a little
18 earlier, low grade noninvasive bladder cancer is
19 much less severe than his initial high grade
20 diagnosis; right?

21 A. It poses far less risk to his life,
22 but the treatments are very, very similar. And
23 the burden of treatment and the burden of
24 surveillance is very similar.

25 Q. But in terms of prognosis, a low

1 grade noninvasive bladder cancer is less severe
2 than a high grade noninvasive cancer?

3 MR. WALLACE: Objection.

4 THE WITNESS: Low grade is less
5 lethal, certainly.

6 BY MS. GADDY:

7 Q. Would you agree that Mr. Criswell's
8 bladder cancer outcome is such that even though
9 he went over a decade without any treatment or
10 surveillance, he is still not at risk for cancer
11 progression?

12 MR. WALLACE: Objection.

13 THE WITNESS: No. He will -- he
14 still has risk for cancer progression.

15 BY MS. GADDY:

16 Q. But his risk was so low that he could
17 go almost 12 years without seeking any treatment;
18 right?

19 MR. WALLACE: Objection.

20 THE WITNESS: No. He always had the
21 risk, but it was, again, the patient's
22 choice. I would say that in any situation
23 a physician or a scientist, we have a good
24 answer for each particular disease but not
25 the diseased person meaning there's a lot

1 of other factors that you have to put into
2 any time you make these recommendations.
3 And that's why there are recommendations
4 with options, and you and I might think
5 one option is good or bad. But it's the
6 patient's health and they get to decide
7 what they want to do.

8 BY MS. GADDY:

9 Q. So but in terms of just treating
10 physician perspective, outside of the personal
11 relationship with the patient, you would advise
12 they still see their physician shorter in time
13 than 12 years; right?

14 MR. WALLACE: Objection. Asked and
15 answered.

16 THE WITNESS: Yes. As I said, I
17 would continue to see that patient on a
18 regular basis or at least make the
19 recommendation to a patient that I see
20 them on a regular basis.

21 BY MS. GADDY:

22 Q. In following this recurrence of low
23 grade noninvasive bladder cancer in 2014,
24 Mr. Criswell had a recurrence of, again, a low
25 grade noninvasive bladder cancer in 2016; right?

1 A. Yes, he did.

2 Q. And he was given one dose of
3 mitomycin C to treat this recurrence?

4 A. That is correct.

5 Q. And since that recurrence in 2016,
6 Mr. Criswell has been no evidence of disease for
7 bladder cancer; right?

8 A. I believe that is correct up until
9 the most recent records I have. I don't think
10 he's had a recurrence.

11 Q. Okay. You also discuss in your
12 report for Mr. Criswell his claims of depression;
13 correct?

14 A. Yes.

15 Q. And you are not a psychologist or a
16 psychiatrist?

17 A. No, I am not.

18 Q. You did not conduct any psychological
19 testing of any kind on Mr. Criswell; right?

20 A. No, I did not.

21 Q. Have you ever spoken with
22 Mr. Criswell?

23 A. No, I have not.

24 Q. And, specifically, in your report on
25 page 8 you note that Mr. Criswell's depression

1 was found by the VA to be at least as likely as
2 not due to his bladder cancer; right?

3 A. Yes, that's what the records
4 indicate.

5 Q. And you state that this rationale by
6 the VA was based on the silence of Mr. Criswell's
7 service records regarding complaints of
8 depression; right?

9 MR. WALLACE: Objection.

10 THE WITNESS: So the -- I based that
11 on -- pardon me. Could you just rephrase?
12 Maybe I didn't catch a word or --

13 BY MS. GADDY:

14 Q. Sure. You note in your report that
15 the VA's rationale was based on the silence of
16 Mr. Criswell's service records of any complaints
17 of depression; right?

18 A. So, yes, because prior to the
19 diagnosis he didn't describe any symptoms of
20 depression. It was only after his diagnosis of
21 bladder cancer that there are records of clinical
22 depression.

23 Q. You state specifically that there's
24 silence of Mr. Criswell's service records. So
25 we're talking about Mr. Criswell's medical -- or

1 military service; right?

2 A. Correct. Meaning before his
3 diagnosis of bladder cancer, yes.

4 Q. Do you consider his service history
5 to be just prior to 1997 or the finite time he
6 was in the military?

7 MR. WALLACE: Objection.

8 THE WITNESS: I considered his
9 service records to be the records of when
10 he was serving in the military.

11 BY MS. GADDY:

12 Q. Right. So the VA's rationale that
13 there was no complaints of depression in his
14 service records is referring to his military
15 history; right?

16 MR. WALLACE: Objection.

17 THE WITNESS: Yeah, unless I'm
18 misunderstanding the question, I think
19 I've answered it. I think that while he
20 was a serviceman, he did not complain of
21 depression. The diagnosis of depression
22 only occurred later and was mentioned in
23 the medical records subsequent to him
24 developing bladder cancer. That's my
25 understanding.

1 BY MS. GADDY:

2 Q. And from 2002 until 2014,
3 Mr. Criswell was not undergoing any treatment or
4 surveillance for bladder cancer as we discussed;
5 right?

6 A. Yes. I found no records indicating
7 that he wasn't.

8 Q. And this VA decision was based on
9 complaints of depression from Mr. Criswell in
10 2012; right?

11 A. Yes, that's correct.

12 Q. And so that falls into that window
13 from 2002 to 2014 where Mr. Criswell wasn't
14 seeing his urologist; right?

15 MR. WALLACE: Objection.

16 THE WITNESS: Yes, it does.

17 BY MS. GADDY:

18 Q. And you are not qualified to say
19 whether or not Mr. Criswell's complaint of
20 depression in 2012 was due to his bladder cancer;
21 right?

22 A. No. I just note the time. That's
23 when he started to complain of depression.

24 Q. You also state that following
25 Mr. Criswell's recurrence in 2014 his depression

1 worsened; correct?

2 A. Based upon my review of the medical
3 records, that is correct.

4 Q. And you note that he reported
5 symptoms, such as poor sleep, impaired
6 concentration, poor attention, destructibility
7 and unprovoked irritability; correct?

8 A. And a loss of pleasurable thought.

9 Q. Are you aware that Mr. Criswell was
10 diagnosed with severe obstructive sleep apnea in
11 2011?

12 A. I did see it in his medical records,
13 yes.

14 Q. Are you aware that Mr. Criswell has
15 largely remained untreated for severe obstructive
16 sleep apnea?

17 A. I am unaware of his sleep apnea
18 treatments.

19 Q. Would you agree that these symptoms
20 could be attributed to untreated obstructive
21 sleep apnea?

22 MR. WALLACE: Objection. Foundation.
23 Form.

24 THE WITNESS: I agree that some of
25 them are certainly the same as being

1 overtired, but not suicidal ideations that
2 I'm aware of which was also one of his
3 symptoms.

4 BY MS. GADDY:

5 Q. So poor sleep would be attributed to
6 obstructive sleep apnea?

7 MR. WALLACE: Objection.

8 THE WITNESS: Poor sleep could be
9 sleep apnea. It could be depression.

10 BY MS. GADDY:

11 Q. And same for the other symptoms we
12 listed except for suicidal thoughts; right?

13 MR. WALLACE: Objection. Form.
14 Foundation.

15 THE WITNESS: Yes. I believe there's
16 a lot of overlap between the two.

17 BY MS. GADDY:

18 Q. And in your report on page 22 which
19 we -- you state Mr. Criswell will need lifelong
20 cancer surveillance; right?

21 A. Yes, I do.

22 Q. And is this referring to annual
23 cystoscopies?

24 A. Minimally, it refers to having an
25 established urologist in seeking -- seeking care.

1 But it would include cystoscopies.

2 Q. What else would it include?

3 A. Well, again, I would refer back to
4 the NCCN guidelines, the National Comprehensive
5 Network Guidelines, which are very specific for
6 the first five years. They're not as onerous for
7 cystoscopies and the low grade recurrences. So
8 there is a period of time where they may no
9 longer do annual cystoscopies.

10 But minimally I'd want to see him and
11 check the urine. And the truth is he's of the
12 age where most men would have a urologist anyway
13 that they see once a year. So it would just be
14 common practice to see him.

15 Q. Okay. You also claim on this same
16 page that shortly after Mr. Criswell was treated
17 with BCG in 1997, he suffered a heart attack;
18 right?

19 A. This is on page 22?

20 Q. Yes. Let me see if I can find the
21 exact. I actually may be mistaken.

22 Do you recall stating that
23 Mr. Criswell suffered a heart attack?

24 A. Well, I do recall, again, in his
25 medical records that he had a heart attack. And

1 I do believe it was after -- or in close
2 proximity to BCG treatment.

3 Q. Okay. So you recall looking at
4 medical records that noted a heart attack for
5 Mr. Criswell?

6 A. Yes, I do.

7 Q. Okay. I'm going to show you what
8 will be marked as Exhibit 13.

9 (Longo Exhibit 13 marked for
10 identification.)

11 BY MS. GADDY:

12 Q. For the record, this document is
13 Bates stamped 01482_Criswell_123. Do you
14 recognize this, Doctor?

15 A. Yes, I believe these are
16 Dr. Moseley's records -- medical records for
17 Mr. Criswell.

18 Q. And if you look at where it's at the
19 bottom here the note dated April 6, 1998, it says
20 "I saw Mike in the hospital today." And Mike is
21 referring to Mr. Criswell; right?

22 A. Yes.

23 Q. And it continues "His father-in-law
24 had a heart attack and is being transferred to
25 Crawford Long for a 3 vessel bypass. At this

1 time I am going to postpone his cysto and bladder
2 biopsies for Friday."

3 Did I read that right?

4 A. Yes.

5 Q. Is this the medical record that you
6 reviewed regarding a heart attack?

7 A. Yes.

8 Q. And this is speaking about
9 Mr. Criswell's father-in-law having a heart
10 attack; right?

11 A. Yes. It -- in reading it, it looks
12 like his father-in-law had a heart attack, was
13 being transferred.

14 Q. Are you aware of any other medical
15 records that discuss Mr. Criswell having a heart
16 attack?

17 A. No.

18 MS. GADDY: Okay. Counsel, it's -- I
19 notice that it's noon. Would this be a
20 good time for us to take a lunch break.
21 I'm happy to continue if you want to
22 though.

23 MR. WALLACE: Yeah, I think that
24 would be good.

25 MS. GADDY: Okay. So we'll go off

1 the record until around 1:00 p.m.

2 MR. WALLACE: Sounds good. Thank
3 you.

4 THE VIDEOGRAPHER: Off record at
5 12:02 p.m.

6 (Recess taken from 12:02 p.m. until 1:03 p.m.)

7 THE VIDEOGRAPHER: On record at
8 1:03 p.m.

9 BY MS. GADDY:

10 Q. Hi, Doctor.

11 A. Hello.

12 Q. So Mr. Criswell's recurrence rate for
13 bladder cancer decreases as time goes by without
14 a recurrence; right?

15 A. That is correct. It's our
16 expectation that the recurrence rate will
17 diminish over time.

18 Q. Okay. And you state in your report
19 that there is an incredible psychological burden
20 associated with bladder cancer; right?

21 A. Yes, I do.

22 Q. In your practice, have you ever
23 diagnosed a bladder cancer patient with
24 depression?

25 A. Yes, I have.

1 Q. Are you a psychologist?

2 A. No, I am not.

3 Q. Are you qualified to diagnose one
4 with depression or any other psychological
5 disorder?

6 A. I think as a trained medical doctor,
7 I'm familiar with depression. And, yes, I am
8 capable of correctly triaging somebody with
9 depression to the appropriate provider.

10 Q. And so do you refer them to a doctor
11 that diagnoses them or do you diagnose them
12 yourself with depression?

13 A. I would enter the diagnosis of
14 depression and use that as the reason for
15 referral to the correct provider.

16 Q. Okay. And when making that
17 diagnosis, do you perform any testing of any
18 kind?

19 A. I do not do formal testing, no.

20 Q. And are you qualified to evaluate
21 whether a person's response to having bladder
22 cancer reaches the clinical level of depression?

23 A. I am unaware of what threshold that
24 refers to.

25 Q. And you later state in your report

1 that it is well established that the cancer
2 diagnosis is distressing; right?

3 A. Correct.

4 Q. Would you agree that someone being
5 distressed is not necessarily the same thing as
6 someone experiencing major depressive --
7 depressive disorder?

8 A. I think that the distress of a cancer
9 diagnosis has the same symptoms as depression and
10 is treated with the same treatment algorithms in
11 most cases.

12 Q. But, again, just because someone is
13 distressed does not necessarily mean they have
14 major depressive disorder; right?

15 MR. WALLACE: Objection.

16 THE WITNESS: Yes. There's different
17 definitions for both.

18 BY MS. GADDY:

19 Q. Okay. And would you agree that there
20 is a difference between distress and anxiety
21 disorder?

22 A. Correct. I would agree that there's
23 a difference between distress and anxiety.

24 Q. And would you agree that there's a
25 difference between distress and post-traumatic

1 stress disorder?

2 A. I do not know that I can make the
3 distinction between post-traumatic stress
4 disorder and distress other than the temporality
5 of it.

6 Q. Okay. And with respect to Ms. Dyer,
7 are you offering any opinions as to whether
8 Ms. Dyer's bladder cancer treatment was proper?

9 A. I think that Ms. Dyer's bladder
10 cancer treatment can be seen to be within the
11 established guidelines for bladder cancer and not
12 be outside of the scope of standard of care.

13 Q. Are you aware that Ms. Dyer filed a
14 medical malpractice suit against Dr. Lovett in
15 2011?

16 A. Yes, I'm aware.

17 Q. And Dr. Lovett was her initial
18 urologist?

19 A. Yes, I'm aware.

20 Q. Ms. Dyer's cystectomy with an ileal
21 conduit involves an external bag that has to be
22 emptied and changed a few times a day; right?

23 A. The bag has to be emptied several
24 times a day. It is rare that it would have to be
25 changed several times a day. More typical is

1 that they last several days, the bag lasts
2 several days.

3 Q. Okay. Understood. Is that, meaning
4 emptying and changing the bag, something that the
5 patient can do themselves?

6 A. Most patients, assuming normal manual
7 dexterity, good hands, can easily empty their own
8 bag every day. Changing the bag, though,
9 oftentimes requires help from specialized nurses,
10 ostomy nurses, but not always.

11 Q. Okay. Remind me how often does
12 someone typically have to have their bag changed?

13 A. Standard for most patients, it
14 depends on their body habitus. So what their
15 shape and size is. And, honestly, what the
16 weather is like. Because it's an adhesive that
17 sticks to their skin. So, typically, the bag
18 will last longer in the winter, shorter in the
19 summer when they're sweating and the adhesive
20 wears off. Anywhere from, say, three to five
21 days during the summer, although there are
22 patients that do require daily bag changes. And
23 then sometimes as far as seven days in the
24 winter.

25 Q. Okay. You note that Ms. Dyer

1 complained of severe depression as a result of
2 her bladder cancer and treatment; right?

3 A. Yes.

4 Q. Are you aware that Ms. Dyer has a
5 history of anxiety and depression that predated
6 her bladder cancer?

7 A. I did see that in her medical
8 records.

9 Q. And are you aware that Ms. Dyer has a
10 known family history of depression?

11 A. You would have to refresh my memory.
12 But if it's in the medical records, then, yes,
13 I've seen that.

14 Q. Okay. Are you aware that Ms. Dyer's
15 father expressed suicidal ideations to Ms. Dyer
16 and sister when they were young?

17 MR. WALLACE: Objection. Foundation.

18 THE WITNESS: Again, I don't recall
19 that specifically. But if you showed me
20 the document, I could confirm it.

21 BY MS. GADDY:

22 Q. Do you recall looking at Ms. Dyer's
23 deposition testimony?

24 A. Yes, I do recall -- remember looking
25 at her deposition.

1 Q. Okay. Did you review her sister's
2 deposition testimony as well?

3 A. I do not recall reviewing her
4 sister's deposition.

5 Q. Okay. And are you aware that
6 Ms. Dyer's mother struggled with depression
7 herself?

8 MR. WALLACE: Objection. Foundation.

9 THE WITNESS: Again, if you can show
10 me within her deposition, I could -- it
11 will recall my memory. But I don't
12 remember offhand --

13 BY MS. GADDY:

14 Q. Okay.

15 A. -- her mother's depression.

16 Q. Again, you're not a psychologist or a
17 psychiatrist; right?

18 A. That is true. I am not a
19 psychologist or a psychiatrist.

20 Q. Would you agree that Ms. Dyer is now
21 bladder cancer free?

22 MR. WALLACE: Objection.

23 THE WITNESS: The way we would term
24 anybody following their diagnosis of a
25 cancer is no evidence of disease, but it

1 is rare in an oncology world that we'll
2 say you've been cured or you no longer
3 have the disease. So we would term it as
4 no evidence of disease. And that's the
5 reason that we have to continue doing
6 surveillance to make certain that it does
7 not recur.

8 BY MS. GADDY:

9 Q. And would you agree that Ms. Dyer has
10 a near zero likelihood of any bladder cancer
11 recurrence due to her cystectomy?

12 A. The likelihood of her having a
13 current urothelial cell cancer approaches zero,
14 but it will never reach zero. So she will never
15 be able to be entirely assured that she does not
16 have a chance of recurrence. So we would
17 continue to watch her. She'll never --

18 Q. Sorry, go ahead.

19 A. She'll never have a bladder cancer
20 recurrence, but I think we're just referring that
21 generally as urothelial cell carcinoma.

22 Q. Okay. So her chances of having a
23 bladder cancer recurrence is zero, but what would
24 you estimate her percentage likelihood of having
25 another type of recurrence?

1 MR. WALLACE: Objection. Form.
2 Foundation.

3 THE WITNESS: She still has
4 urothelial cells present within the lining
5 of the kidneys and the ureters. So she
6 could have a urothelial cell cancer
7 recurrence, which we're colloquially
8 referring to as bladder cancer because
9 it's far easier to say. And that is a low
10 chance of recurrence, single digit cancer
11 recurrence, but it is not a zero chance of
12 recurrence.

13 BY MS. GADDY:

14 Q. Okay. And Ms. Dyer doesn't require
15 annual cystoscopies to monitor her bladder
16 cancer; right?

17 A. She no longer has a bladder, so she
18 could not have cystoscopies.

19 Q. So when you say -- I think it's on
20 page 11 of your report for Ms. Dyer, which is
21 Exhibit 3. The very last paragraph where it
22 starts "It has been well established that bladder
23 cancer is the most expensive malignancy over the
24 lifetime of a patient."

25 So when you say in your report that

1 bladder cancer is an expensive disease due to the
2 high recurrence rate, this wouldn't be applicable
3 to Ms. Dyer given that her bladder was removed;
4 right?

5 MR. WALLACE: Objection.

6 THE WITNESS: It would still be
7 applicable because she'll require
8 specialist visitations, laboratory
9 monitoring, and surveillance with imaging,
10 particularly CT scans or MRIs, all
11 represent a good financial burden.

12 BY MS. GADDY:

13 Q. But not as severe of a financial
14 burden as receiving annual cystoscopies; right?

15 MR. WALLACE: Objection.

16 THE WITNESS: She'll save on the cost
17 of cystoscopies, but I think it's a
18 trivial amount compared to the total
19 scheme of ongoing surveillance every time
20 with a specialist, imaging labs.

21 BY MS. GADDY:

22 Q. And how often would you say Ms. Dyer
23 would be recommended to receive those CT scans
24 and what not?

25 A. Initially after the cystectomy, she

1 would have had the scans every three to six
2 months for several years, then every six months
3 for years after that until she reached once a
4 year. At around five years you may switch from
5 cross-sectional imaging, which is the more
6 expensive type of imaging, say a CT scan or MRI.
7 You could begin to consider just doing an
8 ultrasound which doesn't have as high of a cost.
9 However, any time an ultrasound is abnormal, we
10 then typically turn back to a more costly
11 cross-sectional imaging study. But her
12 surveillance with imaging would have probably
13 also be routinely at least once a year as she's
14 gotten beyond ten years.

15 Q. Okay. And you state in your report
16 that you are hopeful Ms. Dyer has been cured of
17 her bladder cancer; right?

18 A. Yes. That is our hope any time we do
19 this operation.

20 Q. And that's because her treatment has
21 made her chances of recurrence near zero as you
22 said before; right?

23 MR. WALLACE: Objection.

24 THE WITNESS: Yes. Her treatment --
25 pardon me. Her likelihood of recurrence

1 is very small after having had her bladder
2 removed, but not zero.

3 BY MS. GADDY:

4 Q. And you note that she will have to
5 change her ostomy appliances several times a
6 week; right?

7 A. Yes.

8 Q. And that she is unable to perform
9 this function herself and is reliant on her
10 husband?

11 A. Yes. She stated in her testimony
12 that she couldn't do it herself and typically
13 it's her husband that does it. And if he's not
14 available, she would need some other person to
15 assist her.

16 Q. And why would a patient not be able
17 to perform this function themselves?

18 A. It's usually some sort of physical
19 debilitation, perhaps they don't have -- again,
20 the manual dexterity, so they don't have the
21 hands that can cut the appliance and place it on
22 properly. It may be that its location, she just
23 can't see it properly to get it all lined up.
24 She has to have the hole in the appliance line up
25 with the stoma on her abdomen.

1 Q. Typically, as you said before, a
2 patient would be able to do this themselves apart
3 from any hand dexterity problems?

4 A. Without any handicap, most patients
5 are able to do it themselves. Although, there
6 are some that find it repugnant. And they won't
7 do it simply because they don't want to take care
8 of it, and they have somebody in their family do
9 it for them, or a nurse.

10 Q. Did you review the Camp Lejeune
11 Justice Act in reaching your opinions in this
12 case?

13 A. I reviewed the Camp Lejeune Justice
14 Act before reaching my opinions in this case,
15 yes.

16 Q. And why is that?

17 A. Because it was provided to me by
18 counsel as the framework for our discussion
19 today.

20 Q. Were you instructed to opine on the
21 CLJ legal causation standard?

22 MR. WALLACE: Objection. I'm going
23 to instruct the witness not to disclose
24 any communications between counsel and
25 Mr. Longo.

1 BY MS. GADDY:

2 Q. Are you going to follow your
3 counsel's advice?

4 A. Yes, I'll follow his advice.

5 Q. Okay. And you stated somebody
6 provided you with a copy of the Camp Lejeune
7 Justice Act; is that correct?

8 A. Correct.

9 Q. Did you independently research the
10 CLJA in preparing for your report?

11 A. No, I did not.

12 Q. Do you typically consider legal
13 standards when performing a differential
14 etiology?

15 A. No.

16 MR. WALLACE: Objection.

17 THE WITNESS: No, I don't consider
18 legal standards.

19 BY MS. GADDY:

20 Q. And have you ever previously reviewed
21 statutory language in rendering an expert
22 opinion?

23 A. No, I have not.

24 Q. Have you ever previously addressed
25 the legal burden of proof in rendering an expert

1 opinion?

2 A. No, I have not.

3 Q. Have you ever used the CLJA legal
4 causation standard in your nonlegal professional
5 work?

6 MR. WALLACE: Objection. Form.
7 Foundation.

8 THE WITNESS: Would that be the
9 phrase as likely as not --

10 BY MS. GADDY:

11 Q. Yes.

12 A. -- that you're referring to?

13 Yes. I use the phrase "as likely as
14 not" on almost a daily clinical basis when
15 discussing with my patients and with my
16 colleagues.

17 Q. Why do you use that specific
18 standard?

19 A. It's a common expression and everyday
20 use in our language. Patients often want to know
21 when they -- when we present them with a list of
22 risk factors what they think it could be. And
23 then treating physicians are also curious. And
24 the phrase "as likely as not" is commonly used.

25 Q. Do you use other standards of proof

1 like "more likely than not" in your practice?

2 MR. WALLACE: Objection.

3 THE WITNESS: I certainly would use
4 that phrase at times.

5 BY MS. GADDY:

6 Q. What is your understanding of the
7 CLJA's language requiring evidence, quote,
8 sufficient to conclude that a causal relationship
9 exists?

10 MR. WALLACE: Objection.

11 THE WITNESS: The way I understood it
12 was once I've looked through all of the
13 evidence, I've composed my list of risk
14 factors as to possible etiologies for that
15 patient's bladder cancer. I would use "as
16 likely as not" if I think it could be a
17 contributing factor to their bladder
18 cancer. And it does not mean that I've
19 ruled out other risk factors as
20 contributors, but that this one particular
21 one is as likely as not to contribute to
22 that patient's bladder cancer.

23 BY MS. GADDY:

24 Q. And what is your understanding of the
25 phrase "reasonable degree of medical

1 probability"?

2 A. When I use that phrase, "reasonable
3 degree of medical probability," I primarily -- I
4 generally thought of it as when I examine the
5 peer-reviewed literature to establish is there
6 evidence that there's contaminated water at Camp
7 Lejeune? Is there evidence that possible
8 compounds within the water at Camp Lejeune could
9 cause bladder cancer? Is there evidence of
10 biological probability that those compounds could
11 cause bladder cancer?

12 And I put that whole argument
13 together in totality. That's how I would use the
14 term "medical degree of certainty."

15 And then I use the "as likely as not"
16 when I was applying it to specific cases when I
17 looked at each patient's individual risk factors,
18 idiosyncrasies, medical history, et cetera.

19 Q. Okay. And so when you go through the
20 literature to determine if there's a reasonable
21 degree of medical probability, you'd agree with
22 me you're not an epidemiologist; right?

23 A. I've answered this question before
24 that, yes, I'm not an epidemiologist, but I'm
25 conversant in their literature.

1 Q. Okay. So how do you determine
2 whether to a reasonable degree of medical
3 probability that the epidemiological literature
4 is sufficient for a given risk factor?

5 MR. WALLACE: Objection.

6 THE WITNESS: Again, I'll defer to
7 our epidemiologist for the specifics of
8 this, but there are things that you look
9 for in studies. So to begin with, you'd
10 look for studies that have a similar
11 population. So is there a group of
12 Marines that were not based at Camp
13 Lejeune based at another Marine base that
14 have had either the exact same exposure
15 and did they develop it or did they not
16 have an exposure and they developed that
17 cancer.

18 Barring that, you'd look for
19 populations that might resemble an
20 exposure that system. And that's where
21 you start to look at the occupational
22 epidemiology. You'd look for other
23 contaminated drinking water with those
24 exposures. And then you'll look at the
25 studies and how they're conducted. Were

1 they large sample sizes with high
2 statistical probability? Were they small
3 almost anecdotal studies with just a few
4 people that developed the bladder cancer
5 that we're interested in?

6 And then you would combine that with
7 other data that we have based off of
8 usually animal data to try and put
9 together a picture that tends to -- trying
10 to put together a coherent picture to
11 either support or deny the hypothesis.

12 BY MS. GADDY:

13 Q. Okay. And is it your independent
14 opinion that the epidemiological literature
15 around the chemicals at Camp Lejeune and bladder
16 cancer is sufficient based on the criteria that
17 you just described?

18 A. My independent review of the
19 literature was in line with our epidemiologist's
20 review of the literature that, yes, there does
21 suggest causality between PCE and TCE and other
22 compounds to developing bladder cancer.

23 Q. Okay. So just to clarify, did you
24 perform an independent opinion before reading the
25 epidemiologist experts in this case?

1 A. Yes. I developed an opinion before
2 reading the experts.

3 Q. Okay. And you state in your reports
4 that as early as 2015 when you began your
5 fellowship, you were familiarizing yourself with
6 the Camp Lejeune water contamination with the
7 goal of being a well-informed citizen; right?

8 A. Yes.

9 Q. And, again, you're not a toxicologist
10 or a epidemiologist; right?

11 A. Correct. I'm not a toxicologist nor
12 an epidemiologist.

13 Q. And you've never actually determined
14 that a patient was, in fact, exposed to
15 contaminants at Camp Lejeune; right?

16 MR. WALLACE: Objection.

17 THE WITNESS: If you mean that have I
18 drawn blood or established that they have
19 a toxin, no, I have not.

20 BY MS. GADDY:

21 Q. And your goal in informing yourself
22 about the issues at Camp Lejeune was to be a
23 well-informed citizen, not a qualified expert in
24 epidemiology; right?

25 A. My goal in 2015 was I was becoming a

1 urologic oncologist here in southeastern North
2 Carolina. Reports had begun to emerge that there
3 was some increased incidence of bladder cancer
4 amongst those that served at Camp Lejeune which
5 is in close proximity to where I work now. And I
6 felt it was necessary as a urologic oncologist to
7 be familiar with the data surrounding it so I
8 could either look for further evidence or refute
9 it if it was false.

10 Q. And do you do that for all types of
11 risk factors for bladder cancer?

12 A. If there is a new risk factor that
13 comes up or new data that comes up, I do try to
14 familiarize myself either for or against the
15 causality of it, so I can be a qualified urologic
16 oncologist and I can pass that knowledge on to my
17 patients.

18 Q. You also state in your reports that
19 you are a bioethicist with a certificate in
20 bioethics from the National Catholic Bioethics
21 Center; right?

22 A. Yes.

23 Q. And reading directly from your
24 report, I believe it's on page 1 of either of the
25 reports. And it's the last paragraph of that

1 background section, and the sentence that starts
2 with bioethics are intimately incorporated. Do
3 you see that?

4 A. Yes, I do.

5 Q. You state bioethics are intimately
6 incorporated in my practice as a clinician and in
7 my decision to accept a role as an expert witness
8 in cases involving malignancies from toxic
9 exposure to Camp Lejeune water; right?

10 A. Yes.

11 Q. So is it fair to say that you
12 accepted the role as an expert witness for the
13 plaintiffs in this case because, in part, you
14 felt a moral calling to do so?

15 MR. WALLACE: Objection.

16 THE WITNESS: The reason to accept
17 the case is to look for the truth and that
18 does have a moral dimension that's being
19 played out in front of us. The truth
20 should defend both sides. So, yes, I felt
21 that it was my obligation as an ethicist
22 to examine the data and to make certain
23 that the justice was done regardless of a
24 winning side.

25 BY MS. GADDY:

1 Q. Did you consult with anyone
2 associated with the National Catholic Bioethics
3 Center about your role in this case as an expert
4 witness?

5 A. No, I did not.

6 Q. Do you feel like if you felt morally
7 called to serve as an expert witness for
8 plaintiffs, that would impair your ability to
9 form an unbiased opinion in this case?

10 A. No. The bioethics demands that
11 you're -- use reason with an ontologically
12 directed goal. That goal being the inherent
13 value and dignity of every human being.

14 So the goal should remove any bias
15 you have and that you're just there to protect
16 the human. The way you reach that should be done
17 by reason with a set of facts that can be
18 understood and by any person regardless of
19 background.

20 Q. I think you touch on that a little
21 bit in your report where you later state that
22 there's the scientific dimension of each
23 individual case and then there's a philosophical
24 dimension; right?

25 A. Yes.

1 Q. And you go on to state that this
2 valuation of moral acts is linked to the legal
3 dimension; right?

4 A. Yes.

5 Q. Did you make moral conclusions in
6 this case?

7 A. I made no moral conclusions in this
8 case.

9 Q. Do you have opinions on the morality
10 of this case?

11 MR. WALLACE: Objection.

12 THE WITNESS: I was not asked to form
13 an opinion on the morality of this case.
14 And I have not formed an opinion on the
15 morality of this case.

16 BY MS. GADDY:

17 Q. Okay. So were your opinions in this
18 case based on objective science alone?

19 A. Correct.

20 Q. And you're relying on specifically
21 Drs. Patent, Plunkett, Gilbert, Polk, and Burke
22 for the opinions in the general causation section
23 of your report; correct?

24 A. And Dr. Reynolds, yes.

25 Q. And Dr. Reynolds. Okay.

1 Did you review the reports of DOJ's
2 experts, Drs. Goodman, Shields, and Lipscomb?

3 A. No.

4 Q. And why -- why not?

5 A. They weren't provided to me.

6 Q. And you state in your reports on
7 page 2 -- let's see here -- under methodology in
8 the sentence that starts "in order to." You
9 state "In order to rule in a new risk factor as a
10 potential cause of bladder cancer, I review all
11 relevant resources to determine they sufficiently
12 established a causal relationship between the
13 risk factor and bladder cancer; right?

14 A. Yes.

15 Q. And you did this for each risk factor
16 for bladder cancer; right?

17 A. Yes.

18 Q. And in analyzing the epidemiological
19 and toxicological literature on an association, a
20 literature search is a key step?

21 A. Correct. A literature search is a
22 key step.

23 Q. Okay. And a literature search should
24 be crafted to produce both positive and negative
25 results; right?

1 A. Yes. It should be agnostic of the
2 result.

3 Q. Otherwise, you risk forming an
4 unbalanced opinion; right?

5 MR. WALLACE: Objection.

6 THE WITNESS: Balance or bias. I
7 think the word would be a biased opinion.
8 The balance may come from the data.

9 BY MS. GADDY:

10 Q. Okay. And did you perform a search
11 using a research database like Google Scholar or
12 PubMed?

13 MR. WALLACE: Objection.

14 THE WITNESS: I -- yes, I used PubMed
15 in my search.

16 BY MS. GADDY:

17 Q. Okay. Do you recall what your search
18 criteria was?

19 MR. WALLACE: Objection.

20 THE WITNESS: I don't -- I will
21 probably leave some of them out. But it
22 would have been bladder cancer, Camp
23 Lejeune, contaminated water, TCE, PCE,
24 vinyl chloride, benzene, dry cleaning
25 workers. That's all I can recall at the

1 moment.

2 BY MS. GADDY:

3 Q. Okay. Did anyone provide you with
4 any studies for your report?

5 A. No.

6 Q. You also state in your reports that
7 you reviewed the plaintiffs' general causation
8 reports as we discussed; right?

9 A. Yes, I did.

10 Q. And you also state that you
11 incorporated and relied on those general
12 causation reports for your opinions; right?

13 A. Yes, I did.

14 Q. How did you decide which studies to
15 include or not include in your reports?

16 A. Again, I'll rely upon the
17 epidemiologists and the toxicologists and the
18 exposure experts. But you look for patients --
19 you look at the population in the report and how
20 close it matches the question that you're asking.

21 So you would include anybody that had
22 contaminated water from -- obviously, if you can
23 get to Camp Lejeune and there was a Camp
24 Pendleton as well that came out in the paper,
25 those two populations match as closely we could

1 hope for. You then look for other populations
2 which we mentioned, the dry cleaning workers
3 because they have exposures to those chemicals
4 that we're talking about and it was felt that
5 this water contamination came from a dry cleaning
6 worker. You would look for contaminated water
7 populations because, again, that tends to match
8 the population that we're speaking about.

9 Q. Okay. And you have an entire section
10 in your reports entitled general causation;
11 right?

12 A. Yes.

13 Q. And I'll direct your attention to --
14 we're looking at the Criswell report which is
15 Exhibit 2. I believe your general causation
16 section begins on page 11 and it continues until
17 page 14.

18 A. Yes.

19 Q. I'm now going to direct your
20 attention to what I'll mark as Exhibit 14.

21 (Longo Exhibit 14 marked for
22 identification.)

23 BY MS. GADDY:

24 Q. I'll just briefly scroll here. It's
25 a long document.

1 Do you recognize this, Doctor?

2 A. No, I do not.

3 Q. This is one of the specific causation
4 reports reported by John Sfakianos; right?

5 MR. WALLACE: Objection. Foundation.

6 THE WITNESS: That's what the title
7 says, but I've not read this document.

8 BY MS. GADDY:

9 Q. Okay. Are you aware of Dr. Sfakianos
10 is another one of plaintiffs' urology experts in
11 this case?

12 A. No, I am not.

13 Q. Okay. So you have not reviewed his
14 reports in this case; right?

15 A. No, I have not.

16 Q. And turning to page 9, starting on
17 page 9, do you see where it says "general
18 causation"?

19 A. Yes, I do.

20 Q. And I'll just briefly scroll through
21 here. Does this look to be the same general
22 causation section that is in your reports?

23 MR. WALLACE: Objection.

24 THE WITNESS: It's a 49-page
25 document. I haven't read the whole thing.

1 BY MS. GADDY:

2 Q. Would you like to take time to read
3 this section and compare it to your report?

4 A. Certainly.

5 Q. We can go off the record while --

6 MR. WALLACE: No, we can stay on.
7 You're asking him to stay on, it's okay he
8 spend time on the record doing it.

9 MS. GADDY: Okay. That's fine.

10 THE WITNESS: Can you scroll down?

11 BY MS. GADDY:

12 Q. Sure.

13 A. Can you go down to the next page,
14 please.

15 Q. Sure.

16 A. And can you continue to scroll.
17 And then on to the next page.
18 Okay.

19 Q. Okay. Thank you for reviewing.

20 Understanding that you have not
21 reviewed Dr. Sfakianos's report until today, does
22 this look to be the same section on general
23 causation that is in your reports?

24 A. Yes, it looks the same.

25 Q. Okay. Were you asked to provide your

1 section on general causation to anyone?

2 A. I provided several drafts of my
3 report to the counsel.

4 Q. Okay. But you haven't had any
5 conversations with Dr. Sfakianos?

6 A. No, I have not.

7 Q. Okay. Thank you.

8 Would you agree that occupational
9 exposures -- exposure levels would be magnitudes
10 higher than chemical levels present in Camp
11 Lejeune?

12 A. No. I would probably tend to
13 disagree with that statement because occupational
14 exposures are usually only one route of exposure,
15 and they're limited to discrete amount of time
16 while the person's at work versus at Camp
17 Lejeune, these patients had exposure both through
18 consumption, dermal when they took a shower,
19 inhalation when they cooked, and it was also an
20 unremitting exposure because they didn't get to
21 go home from work. They drank it at work. They
22 drank it at home. They bathed in it. They
23 cooked with it. They cleaned with it. There was
24 no escaping the exposure.

25 So I would tend to disagree that

1 there's higher magnitudes of exposure at work
2 than versus drinking water.

3 Q. Okay. Apart from there being more of
4 an opportunity for exposure potentially at Camp
5 Lejeune, would you agree that the magnitude in
6 the level of the chemical at issue is oftentimes
7 higher in occupational studies than it is in the
8 Camp Lejeune water?

9 MR. WALLACE: Objection. Foundation.
10 Form.

11 THE WITNESS: Yeah, I would again --
12 I would disagree. If you look at each
13 particular study, they'll tell you what
14 the level of exposure was. But it's not
15 something I would say that occupational
16 exposures always have higher or lesser
17 exposure concentrations than at
18 groundwater.

19 BY MS. GADDY:

20 Q. Would you say more often than not the
21 studies that discuss occupational exposures are
22 higher in magnitude in terms of the chemical at
23 issue than those at Camp Lejeune?

24 MR. WALLACE: Objection.

25 THE WITNESS: I don't know if I would

1 be comfortable saying that because I think
2 there are more occupational exposures,
3 period, than groundwater exposures.

4 BY MS. GADDY:

5 Q. Okay. Do you consider Camp Lejeune
6 water specifically as a risk factor when
7 evaluating your patients in your practice?

8 A. Within my own practice, one of my
9 questions that I always ask a patient is did you
10 ever serve in the military, which if they say
11 yes, I would then drill down to try to figure out
12 if they were ever at Camp Lejeune. But I don't
13 ask them just de novo were you ever at Camp
14 Lejeune.

15 Q. Okay. And is there a patient form of
16 some kind that you give to your patients before
17 you meet with them?

18 A. No, I don't give any patient intake
19 forms about risk factors. I just sit down and
20 speak with them.

21 Q. So your practice is the associated
22 urologist of North Carolina; right?

23 A. Correct.

24 Q. And so if they have a patient intake
25 form, you don't use that personally?

1 A. No. I don't -- I don't see it. I
2 just sit down with the patient and begin
3 speaking.

4 Q. Okay. Are you aware of that patient
5 intake form?

6 A. I'm sure there's some sort of address
7 and insurance that they fill out. But as far as
8 medical history, it's just me talking to the
9 patient.

10 Q. Okay. You're not an expert in
11 modeling chemical exposures in individuals;
12 right?

13 A. No, I am not.

14 Q. And you're relying on plaintiffs'
15 experts: Dr. Reynolds, Dr. Bird, and Dr. Hatten;
16 right?

17 A. Yes, I rely on them.

18 Q. Did you review the reports of United
19 States' experts Dr. LaKind and Dr. Bailey?

20 A. No, I did not.

21 Q. Were you provided their reports?

22 A. I was not provided their reports.

23 Q. And, in your report, you state that
24 Dr. Kelly Reynolds, who I understand has been
25 retained by the plaintiffs, authored a report

1 that utilizes ATSDRs modeling results and then
2 developments data showing the anticipated
3 ingestion figures; right?

4 MR. WALLACE: Objection.

5 THE WITNESS: Yes, I did.

6 BY MS. GADDY:

7 Q. And Dr. Reynolds uses ATSDR's water
8 models to estimate daily exposure levels in
9 plaintiffs; right?

10 MR. WALLACE: Objection.

11 THE WITNESS: Can you show me where.

12 I believe that is correct, but I just want
13 to confirm it.

14 BY MS. GADDY:

15 Q. In your report?

16 A. Yes, please.

17 Q. One moment. I believe it's on -- if
18 we're looking at the Criswell report, Exhibit 2,
19 page 10.

20 A. Yes, I see it. Thank you for helping
21 me.

22 Q. And do you see the sentence that
23 begins "Dr. Kelly Reynolds who I understand"?

24 A. Yes.

25 Q. And so Dr. Reynolds uses ATSDR's

1 water models to estimate daily exposure levels in
2 plaintiffs; right?

3 A. Yes, that is correct.

4 Q. Did you review ATSDR's water modeling
5 reports yourself?

6 A. I read their paper. I did not review
7 the modeling reports themselves.

8 Q. Okay. And were you aware that
9 ATSDR's water modeling reports state that the
10 available data are not specific enough to
11 accurately estimate daily levels of contaminants
12 in Camp Lejeune water?

13 MR. WALLACE: Objection. Foundation.

14 THE WITNESS: Yes. I am aware of
15 that.

16 BY MS. GADDY:

17 Q. Were you aware that the ATSDR's water
18 modeling reports state that the models cannot be
19 used to determine whether an individual or family
20 member suffer health effects?

21 MR. WALLACE: Objection. Foundation.

22 THE WITNESS: I am aware of that
23 statement.

24 BY MS. GADDY:

25 Q. Okay. And your reports do not define

1 substantial exposure; right?

2 A. I do not believe I define
3 substantial.

4 Q. You do not quantify substantial
5 exposure; right?

6 A. Correct. I do not quantify
7 substantial exposure.

8 Q. And why not?

9 A. Because I am neither a toxicologist
10 nor a statistician. I defer to the -- but I
11 would say that the EPA has established some MCLs,
12 and these appear to be all above the thresholds
13 of the MCLs. But I do not have a lower threshold
14 or a definition for substantial. I defer to the
15 experts in those fields.

16 Q. Why did you rely on Dr. Reynolds'
17 report given the statements in ATSDR's reports?

18 MR. WALLACE: Objection. Form.
19 Foundation.

20 THE WITNESS: Again, because we're
21 trying to deal with the best available
22 data that we have to establish the truth.
23 And that's the best available data we have
24 for Camp Lejeune.

25 BY MS. GADDY:

1 Q. And the best available data we have
2 is by ATSDR's own statement not specific enough
3 to accurately estimate daily levels of
4 contaminants; right?

5 MR. WALLACE: Objection. Form.
6 Foundation.

7 THE WITNESS: That's the statement
8 that they have made.

9 BY MS. GADDY:

10 Q. Okay. And you're relying on Drs.
11 Bird and Hatten for their opinions on what
12 substantial exposure means; right?

13 A. Yes, I am.

14 Q. And you do not identify a threshold
15 amount of exposure for any of the chemicals at
16 issue where an individual is guaranteed or as
17 likely as not to develop bladder cancer; right?

18 A. I do not have any independently
19 established thresholds.

20 Q. You relied on in Dr. Reynolds'
21 calculations to quantify exposure for these two
22 plaintiffs; right?

23 MR. WALLACE: Objection.

24 THE WITNESS: Yes.

25 BY MS. GADDY:

1 Q. And you don't rely on exposure
2 calculations other than those of Dr. Reynolds;
3 right?

4 MR. WALLACE: Objection.

5 THE WITNESS: Yes.

6 BY MS. GADDY:

7 Q. Are you aware of whether Dr. Reynolds
8 has used a total mass of ingested chemicals which
9 she measured in micrograms is a standard exposure
10 metric in risk assessment?

11 MR. WALLACE: Objection. Foundation.

12 THE WITNESS: I am unaware of what
13 the standard metrics are used. I think
14 those were the metrics used in the papers
15 where she derived the data, but I'm
16 unaware of the standard metrics.

17 BY MS. GADDY:

18 Q. And you've used Dr. Reynolds' total
19 ingestion metric to conclude that Mr. Criswell
20 and Ms. Dyer's exposure were significant and
21 substantial; right?

22 MR. WALLACE: Objection.

23 THE WITNESS: Yes. And I think at
24 face value when you think about 5,000 days
25 on base or 800 plus days on base, that

1 strikes me as substantial exposure, yes.
2 Even without the nuances of a
3 toxicologist.

4 BY MS. GADDY:

5 Q. Okay. And that's in your opinion as
6 a citizen or a treating physician but not an
7 epidemiologist or a risk assessment expert;
8 right?

9 MR. WALLACE: Objection. Form.

10 THE WITNESS: That's my opinion as a
11 urologic oncologist.

12 BY MS. GADDY:

13 Q. Okay. In your practice, have you
14 ever used this methodology to ascertain a
15 patient's health outcomes?

16 MR. WALLACE: Objection.

17 THE WITNESS: No, I have not.

18 BY MS. GADDY:

19 Q. Okay. You opine in both of your
20 reports that the chemicals at Camp Lejeune are
21 capable of causing bladder cancer; right?

22 A. I opine that both TCE and PCE have
23 evidence showing that they're capable of causing
24 bladder cancer, yes.

25 Q. Okay. And is it your opinion that

1 TCE and PCE in Camp Lejeune water were sufficient
2 together to cause bladder cancer?

3 A. I think that they were both they were
4 sufficient together and independent of one
5 another to cause bladder cancer.

6 Q. And that is based on your independent
7 review of the epidemiological literature?

8 A. That's based upon my review which was
9 confirmed by the trained epidemiologist and the
10 toxicologist.

11 Q. Would you agree with the principle
12 that a dose makes a poison?

13 MR. WALLACE: Objection. Form.
14 Foundation.

15 THE WITNESS: I think the principle
16 of the dose makes the poison is a little
17 bit more nuanced than that. It really
18 depends upon the poison you're speaking
19 about.

20 BY MS. GADDY:

21 Q. Are you aware that this is a
22 fundamental principle in toxicology?

23 MR. WALLACE: Objection. Form.
24 Foundation.

25 THE WITNESS: Again, I'm not a

1 toxicologist, but I am aware of that term.
2 But I do think it does matter what poison
3 you're speaking of.

4 BY MS. GADDY:

5 Q. Okay. And we're talking about the
6 TCE. Would you agree that the dose makes the
7 poison?

8 MR. WALLACE: Objection.

9 THE WITNESS: One of -- well, so one
10 of the criteria they use to help establish
11 whether there's a causal relationship
12 oftentimes is a dose response relationship
13 meaning the higher the dose you give, the
14 more likely you are to have that outcome
15 occur.

16 Finding a dose response in the real
17 world is very, very difficult because it
18 would be unethical to perform an
19 experiment where you gave somebody or a
20 group of people an increasing dose of a
21 poison until you establish that you've
22 reached that threshold.

23 So, instead, they try to look at
24 these things backwards. It's almost the
25 reason for the field of epidemiology. As

1 you look at a group of people that had an
2 exposure and you try to stratify their
3 exposure, which is very, very hard to do
4 retroactively. And then you try to
5 establish in some sort of an animal model.
6 But most animal models are limited to
7 lower order mammals like mice or rats.

8 So to find a real dose response is
9 almost to -- is very, very hard within any
10 of the literature no matter what the
11 compound.

12 BY MS. GADDY:

13 Q. And do you have an opinion on what
14 the level of exposure to TCE is that is necessary
15 to cause bladder cancer?

16 MR. WALLACE: Objection.

17 THE WITNESS: Again, not as a tox --
18 I'm not a trained toxicologist. But I am
19 aware of the EPA's MCLs which suggest that
20 anything above that level there's a risk
21 posed. I don't know that there's a lower
22 bound or upper bound where it occurs.

23 BY MS. GADDY:

24 Q. Are you aware of any peer-reviewed
25 studies that have found that any dose is

1 sufficient?

2 MR. WALLACE: Objection. Form.
3 Foundation.

4 THE WITNESS: I could not name that
5 study.

6 BY MS. GADDY:

7 Q. And are you aware of what the lowest
8 level of TCE exposure could be that has been
9 shown in an epidemiological study to increase the
10 risk of bladder cancer?

11 MR. WALLACE: Objection. Form.
12 Foundation.

13 THE WITNESS: As I've said, I'm not a
14 toxicologist, and I am unaware of any
15 lower threshold. I just would never pin
16 myself down to one number and I do not
17 have good evidence for a lowest threshold.

18 BY MS. GADDY:

19 Q. Okay. And people with no exposure to
20 the chemicals at Camp Lejeune can still get
21 bladder cancer; correct?

22 A. If they've been exposed to other
23 toxins, yes.

24 Q. Including smoking?

25 A. Yes.

1 Q. And did you evaluate each of the
2 chemicals individually?

3 A. I looked at the literature for PCE,
4 TCE, benzene, vinyl chloride, if that's what
5 you're referring to, yes.

6 Q. Okay. Did anyone suggest that you
7 frame your opinion based on the mixture rather
8 than the individual chemicals?

9 MR. WALLACE: Objection. I'm going
10 to instruct the witness not to -- in his
11 answering of the DOJ's question not to
12 disclose any communications with counsel.
13 So to the extent -- maybe if you could
14 rephrase that, that would be more helpful.

15 BY MS. GADDY:

16 Q. Sure.

17 MR. WALLACE: Thanks, Megan.

18 BY MS. GADDY:

19 Q. Sure. In reviewing the
20 epidemiological literature and in forming your
21 opinions, were you looking at the individual
22 chemicals or mixture?

23 A. I was looking at both the individual
24 chemicals and the mixture. And, in fact, in most
25 epidemiologic studies, they were unable to

1 separate the chemicals out primarily because
2 those are metabolites of one another. And that
3 PCE becomes TCE becomes vinyl chloride becomes
4 benzene. And when people have been exposed to
5 one, in almost, but not all, in almost every case
6 they've been exposed to multiple of those
7 compounds.

8 And, in this instance, it's actually
9 applicable because we don't change the ground
10 water was contaminated with any one individual
11 compound but all of the compounds together. So I
12 consider them individually and in combination.

13 Q. And do you know of any scientific
14 literature that has specifically studied the
15 carcinogenic effects of the mixture of the
16 chemicals at Camp Lejeune?

17 A. There are multiple epidemiologic
18 studies that have looked at those mixtures of
19 compounds. Primarily because there are
20 occupational studies from laundromats or dry
21 cleaning services which is similar to the
22 contamination that we're speaking about today at
23 Camp Lejeune.

24 Q. Did those specific epidemiological
25 studies look at the carcinogenic effects of the

1 mixture of chemicals?

2 A. The epidemiologic studies were able
3 to look at -- depending upon the study, the
4 incidence or how often does that cancer occur,
5 and at times the mortality of that cancer.
6 Although, that's harder to get to because you
7 have to wait a long time for the people to pass
8 away. So if that's what you mean by cancer
9 effects, they were.

10 Q. So the exact relationship between the
11 interactions of the chemicals, so TCE, PCE,
12 benzene, and vinyl chloride is not known; right?

13 MR. WALLACE: Objection.

14 THE WITNESS: Well, we know how
15 they're metabolized in the body. That
16 relationship is known.

17 BY MS. GADDY:

18 Q. But how they interact together is not
19 known; right?

20 A. How they interact with one another is
21 not fully understood, correct.

22 Q. Would you agree that synergy requires
23 empirical scientific evidence, not just
24 theoretical plausibility?

25 MR. WALLACE: Objection. Form and

1 foundation.

2 THE WITNESS: By synergy, you're
3 referring to the fact that if the -- each
4 individual compounds effects are greater
5 when they're given as a combo than if they
6 were individually added, is that what you
7 refer to by synergy?

8 BY MS. GADDY:

9 Q. Correct.

10 A. It goes back to the earlier statement
11 where it's nearly impossible to look for those
12 effects in a pure form because it would be
13 unethical to give a human being one of those
14 chemicals alone or in combination to see what the
15 outcome is. So instead everything -- instead,
16 what's typically done is you look at the
17 epidemiologic studies. You have the group of
18 people that were exposed that seem to have the
19 occurrence you're looking for, in this case
20 bladder cancer, and you try to look backwards.
21 But, again, they weren't ever -- with rare
22 exceptions, were they ever given just one
23 compound or the other versus just in combination.
24 So it's a question that I don't know that I can
25 answer based off of the data we have.

1 Q. Okay. And are there any Camp Lejeune
2 or other contaminated water studies that show
3 exposures to TCE, PCE, benzene, and vinyl
4 chloride together caused higher cancer rates than
5 exposure to each one separately?

6 MR. WALLACE: Objection.

7 THE WITNESS: Again, I would defer to
8 our epidemiologist expertise for that
9 question.

10 MS. GADDY: Okay. Counsel, do you
11 think, if it's okay, we could take a quick
12 10-minute break?

13 MR. WALLACE: Sure.

14 MS. GADDY: We can go off the record.

15 THE WITNESS: Thank you.

16 THE VIDEOGRAPHER: Off record at
17 1:57 p.m.

18 (Recess taken from 1:57 p.m. until 2:17 p.m.)

19 THE VIDEOGRAPHER: On record at
20 2:17 p.m.

21 BY MS. GADDY:

22 Q. Okay, Doctor, I only have a few
23 questions before we conclude. Apologies in
24 advance if it seems like I'm bouncing around a
25 lot.

1 Are you familiar with the Campbell
2 Walsh Wein Urology textbook?

3 A. The Campbell Walsh, yeah, I'm
4 familiar with that textbook. Yes.

5 Q. Would you consider it an
6 authoritative source in your field of urology?

7 MR. WALLACE: Objection.

8 THE WITNESS: It's given to every
9 urology resident, yes.

10 BY MS. GADDY:

11 Q. Okay. In going back to your
12 evaluation of potential risk factors for both
13 Mr. Criswell and Ms. Dyer, did you consider the
14 remoteness of their smoking history when
15 determining whether that was a major risk factor?

16 A. As we discussed before, I did
17 consider the temporality of the situation. So
18 when they smoked and when they developed bladder
19 cancer, yes.

20 Q. And did the fact that they both
21 smoked decades prior to their bladder cancer
22 diagnosis impact your decision to rule it in or
23 rule out?

24 A. Again, I did not rule smoking in or
25 out. I was only asked to render an opinion on

1 the water, but I did take it into account, the
2 amount of time between smoking and development of
3 bladder cancer.

4 Q. And is it -- why did you take that
5 into account? What is the relevance of the time
6 between the smoking and the diagnosis?

7 A. In bladder cancer with any exposure
8 they talk about something called a latency
9 period. And there is an established amount of
10 time between actually having the exposure and
11 developing the disease. So it's not like I put
12 my hand on the hot fire and I burn my hand. It's
13 known I was exposed and then years later.

14 The latency period is not pinned down
15 with an upper or lower threshold. Generally,
16 there's an average of around 20 years for smoking
17 before their bladder cancer develops. But you
18 can certainly find patients that are on extreme
19 ends of either of that by decades difference.

20 Q. Okay. And how does the latency of
21 smoking in bladder cancer compare to latency of
22 other chemical exposures in bladder cancer?

23 A. So for smoking versus TCE, PCE, and
24 all the other chemicals we're talking about, I
25 think there's data for smoking latency period. I

1 don't think there's specific data for those
2 chemicals and their latency period. Although, we
3 generally -- we use surrogates. So we would use
4 things like smoking to say it must be a period of
5 years, not months or days before they can develop
6 the cancer.

7 Q. Okay. So it your opinion that we
8 don't know the latency period when it comes to
9 the chemicals like TCE and PCE and bladder
10 cancer?

11 A. Yes. I do not know the latency
12 period.

13 Q. Okay. And turning to your
14 preparation for today what, if anything, did you
15 do to prepare for your deposition today?

16 A. In preparation for the deposition, I
17 reread my own reports, the other expert reports
18 that are referenced within my report, and I met
19 with counsel.

20 Q. Okay. And without telling me what
21 you discussed, how many times did you meet with
22 counsel?

23 A. We met twice prior to the deposition.

24 Q. And how long were each of these two
25 meetings?

1 A. Once was say between 2 to 3 hours in
2 time and once was between 1 to 2 hours in times.

3 Q. And were both of those meetings in
4 person? Over the phone?

5 A. They were over Zoom, like everything
6 is.

7 Q. Okay. And who else was in the room
8 with you during these meetings?

9 A. Physically, no one was in the room.
10 But Patrick Wallace was there. Jenna Butler --

11 MR. WALLACE: It's okay. I can
12 instruct the witness. You can mention
13 identities of the attorneys but not the
14 substance or the communications thereof.

15 THE WITNESS: Okay. So Patrick
16 Wallace was there, Jenna Butler, David
17 Micelli, JT Malone, Charles Ellis. There
18 might have been somebody else on the Zoom
19 call, but you know those banners get
20 pretty long. I don't remember everybody's
21 name there.

22 BY MS. GADDY:

23 Q. I appreciate you recalling that. Did
24 you review any documents with counsel during
25 these meetings?

1 A. I had my reports, but I don't think
2 we specifically reviewed any one document.

3 Q. Okay. And have you had any
4 communications with anyone other than your
5 attorneys to prepare for your deposition today?

6 A. No, I have not.

7 Q. Have you had any communications with
8 any of the plaintiffs in the Camp Lejeune water
9 litigation about your deposition?

10 A. No, I have not.

11 Q. Have you had any communications with
12 any of plaintiffs, Terry Dyer, or Mr. Criswell's
13 treating physicians?

14 A. No, I have not.

15 Q. And you mentioned previously that you
16 first began working on this case in December of
17 2022; is that right?

18 A. I was -- first began discussions
19 about Camp Lejeune water contamination and
20 bladder cancer around December 2022, yes.

21 Q. Okay. And when would you say you
22 became officially an expert in this case?

23 A. Shortly after that first contact.

24 Q. Okay. And what information were you
25 provided during that initial contact?

1 MR. WALLACE: Objection. I'm going
2 to instruct the witness not to disclose
3 any communications with counsel -- with
4 counsel for the PLG in answering that
5 question. To the extent you can answer
6 that question without disclosing
7 communications, that's okay.

8 THE WITNESS: The first contact I had
9 was somebody who knew I was a Duke
10 urologic oncologist with an interest in
11 bladder cancer, and I was asked if I would
12 look at cases regarding Camp Lejeune water
13 contamination and bladder cancer.

14 BY MS. GADDY:

15 Q. And how many times did you speak with
16 plaintiff's counsel prior to being formerly
17 retained as an expert?

18 MR. WALLACE: Objection.

19 THE WITNESS: Very few times.
20 Maybe -- maybe three times. Two, three
21 times.

22 BY MS. GADDY:

23 Q. Okay. And who first contacted you?

24 A. I was first contacted by Mike
25 Dowling.

1 Q. Okay. And did you eventually execute
2 a retainer agreement for your work in this case?

3 A. Yes, I did, within a few months of
4 our initial contact.

5 Q. Okay. Was that in early 2023?

6 A. May -- March, May 2023. Yeah. Early
7 2023.

8 Q. Okay. And did you perform any work
9 in connection with this case prior to executing
10 that retainer agreement?

11 MR. WALLACE: Objection. Sorry. Go
12 ahead.

13 THE WITNESS: Yeah, I had done a
14 general literature review to look and see
15 if there is evidence of Camp Lejeune water
16 contamination and if there is an increased
17 incidence of bladder cancer.

18 BY MS. GADDY:

19 Q. Okay. Was that the first time you
20 had done a literature review on that subject?

21 A. No. The first time I had done a
22 literature review on that subject was back in
23 2015 when I began my fellowship as a research
24 fellow. One of the ideas proposed was given our
25 proximity to Camp Lejeune and our awareness that

1 there might be an increased incidence of bladder
2 cancer. Did we have enough patients at our
3 medical center to study the effects?

4 So we had to do a literature search
5 before we could even begin to do medical records
6 search. But that study never led to anything
7 further than a literature search. So I had been
8 familiar with the literature sounding Camp
9 Lejeune and some of the proposed toxic exposures
10 since at least 2015.

11 Q. Okay. And do you recall why that
12 2015 study didn't make it past a literature
13 review?

14 A. Yes. It was because we were unable
15 to find enough patients within our own group of
16 patients at Duke University to go forward with
17 any kind of analysis.

18 Q. Do you know what that was based on?
19 What sorts of patients they were looking for?

20 A. We were looking for patients who'd
21 been living or stationed at Camp Lejeune who
22 subsequently -- who subsequently developed
23 bladder cancer. However, there was the most
24 difficult piece of information to ascertain was
25 whether or not somebody had been stationed at

1 Camp Lejeune. As you probably have learned
2 through -- in the epidemiology itself, it's
3 uncommon that patients would be aware of an
4 exposure until years down the road. And so
5 patients don't come to the office and say I was
6 exposed to Camp Lejeune, volunteer that
7 information when we sit down and take a history.
8 So that was a missing piece of information.

9 Q. Okay. Understood. And in beginning
10 your role as an expert witness in this case, what
11 is your understanding of your assignment in this
12 matter?

13 A. I was asked to be a specific
14 causation expert for Camp Lejeune water exposure
15 in the development of bladder cancer.

16 Q. Okay. Was it part of your assignment
17 to evaluate all the plaintiffs in this case or
18 just Mr. Criswell and Ms. Dyer?

19 A. I was not assigned to all the
20 plaintiffs in this case. I was -- I have
21 reviewed other medical records. But the only
22 reports I was asked to produce were on Criswell
23 and Dyer.

24 Q. Okay. I'm going to briefly pull up
25 what will be marked as Exhibit 15, I believe.

1 (Longo Exhibit 15 marked for
2 identification.)

3 BY MS. GADDY:

4 Q. Just scroll through here. For the
5 record, this is Bates stamped
6 CL_PLG-Expert_Longo_5 through 9 -- through 10.
7 Excuse me.

8 Doctor, do you recognize this
9 exhibit?

10 A. Yes, I do.

11 Q. And is this your retainer agreement?

12 A. That is correct.

13 Q. Is this a complete and accurate copy
14 of your retainer agreement?

15 A. It was a quick scroll, but I believe
16 it is accurate.

17 Q. I appreciate that. And do you have
18 any staff supporting your work in this case?

19 A. Pardon me. Do I have any staff, did
20 you say?

21 Q. Any staff that support you in your
22 work in this case?

23 A. No, I do not.

24 Q. Okay. All right. Doctor, are there
25 any answers to my questions that you wish to

1 change before we wrap up this deposition?

2 A. No, thank you.

3 Q. Okay. And is there any information I
4 asked about that you did not remember then but
5 you remember now that you wish to clarify?

6 MR. WALLACE: Objection.

7 THE WITNESS: Nothing has come to
8 memory.

9 MS. GADDY: Okay. Thank you for your
10 patience doctor in answering my questions
11 today. I have no further questions.

12 MR. WALLACE: Megan, I have some
13 questions, but I need a few minutes just
14 to kind of gather my thoughts, if that's
15 all right. So we can take a break for
16 about ten minutes.

17 MS. GADDY: Okay. Want to go off the
18 record for ten minutes.

19 MR. WALLACE: Yeah. That works.

20 THE VIDEOGRAPHER: Off record at
21 2:30 p.m.

22 (Recess taken from 2:30 p.m. until 2:46 p.m.)

23 THE VIDEOGRAPHER: On record at
24 2:46 p.m.

25 EXAMINATION

1 BY MR. WALLACE:

2 Q. Dr. Longo, we are back after a brief
3 break, and I just have a handful of questions to
4 ask you.

5 First, you were asked earlier today
6 some questions about Mr. Criswell opting to keep
7 his bladder. Do you recall that testimony?

8 A. Yes, I recall.

9 Q. Do you have any experience in
10 counseling patients in deciding between various
11 treatment options, which would include
12 intravesical treatments versus removing their
13 bladder?

14 A. Yes. It's a conversation that I have
15 frequently with every consultation with high
16 grade muscle invasive bladder cancer.

17 Q. In those times where counseling your
18 patients, do you hear feedback from patients as
19 to why they would want to choose intravesical
20 treatments versus removing their bladder?

21 A. I think that if a patient has an
22 opportunity to preserve their bladder, so keep
23 them in place without having it removed, they are
24 searching for that opportunity and it's one of
25 the ongoing areas of research within urologic

1 oncology. They will do whatever they can to
2 preserve their bladder.

3 Q. What are some of the reasons that
4 patients in your experience give for wanting to
5 keep their bladder?

6 A. They all touch upon the quality of
7 life after your bladder has been removed. And if
8 you are to think about what a taken for granted
9 organ it is, if it will make sense to you, even
10 throughout this deposition today we've stopped
11 about every hour to all use the bathroom, and
12 there's almost no function that you wouldn't
13 postpone if you had to use the toilet first.

14 So, although, it gets it placed in
15 the back of mind, it's actually one of the most
16 important things that we do every day. These men
17 and women are trying to preserve that because
18 preserves normal life versus walking around with
19 a bag of urine literally hanging on their side
20 and the subsequent risks and downstream effects
21 that you get from having that.

22 For instance, they know that they'll
23 have to undergo -- or they'll have a higher
24 likelihood of having infections as time goes by.
25 There's the potential that there's scar tissue

1 with the internal reanastomosis where you put
2 things back together again. And the scarring can
3 destroy kidney function.

4 There is a psychological repugnance
5 to having that bag on their side. There are
6 sexual side effects from removing those organs,
7 particularly with erectile dysfunction in men.
8 But as I mentioned at the very beginning of the
9 deposition, there's also a hole in the vagina
10 that has to be surgically repaired.

11 So there are a multitude of reasons
12 why a patient would not want to lose their
13 bladder.

14 Q. What is the role of a treating
15 physician in counseling the patient trying to
16 decide between two equally valid treatment
17 options of intravesical treatments or bladder
18 removal?

19 A. Again, when you sit down with the
20 patient, as physicians we always seem to know the
21 right answer for the particular disease but not
22 the diseased person. And so that's when we use
23 that phrase, the risks alternatives and benefits.
24 And so you do list out all of those things. You
25 say, well, here are those options. And as I did

1 at the beginning, some of those options have
2 greater risks in that it might not cure you of
3 cancer, but the benefit of choosing that one
4 might be a more normal quality of life, and
5 that's why they might choose one versus the
6 other.

7 Q. Thank you, Dr. Longo.

8 I'd like to switch gears to a
9 different topic regarding smoking. Do you recall
10 being asked about the smoking histories of
11 Ms. Dyer and Mr. Criswell?

12 A. Yes, I do.

13 Q. All right. Would it be accurate to
14 say that you considered their smoking history as
15 part of the differential etiology that you
16 employed in each of their cases?

17 A. Yes. In each case, I went through
18 the medical record. I saw there's differences as
19 to what was listed in different parts, but I did
20 consider the medical record as a whole and I
21 considered it as a risk factor in each of their
22 cases.

23 Q. Okay. There's been some, I think,
24 maybe confusion with regard to terminology. When
25 we say -- when I'm saying if you consider their

1 smoking history, would that also be fair to say
2 that you ruled in their smoking history as a
3 potential cause of bladder cancer?

4 A. Yes. I did consider it as a
5 potential cause of the bladder cancer.

6 Q. Okay. Do you -- are you able to know
7 exactly how many cigarettes Ms. Dyer or
8 Mr. Criswell smoked in their lives prior to the
9 bladder cancer diagnosis?

10 A. I rely entirely upon what they've
11 said previous in their medical record. And I
12 cannot tell you the number of cigarettes they've
13 had.

14 Q. Did you, in your report, account for
15 the possibility that Ms. Dyer and Mr. Criswell's
16 smoking history could have been greater or less
17 than what was listed in their medical records?

18 A. Yes. I believe within the report I
19 did explain that there are disparities in the
20 accounts that, while I might place the most
21 credence on one value, I did try to consider the
22 smoking history at its utmost value and at its
23 lowest value.

24 Q. When you considered the smoking
25 history of Ms. Dyer and Mr. Criswell at the

1 higher value, did that provide smoking as a
2 overwhelming factor that would cause their
3 bladder cancer?

4 A. When considered -- when their smoking
5 history was considered at its highest level in
6 either instance, Dyer or Criswell, there was not
7 a great enough smoking history to make it an
8 overwhelming risk factor to eliminate other risk
9 factors as a potential cause for bladder cancer.
10 Or another way to say it is that I still consider
11 the contaminated water as likely as not to
12 contribute as a cause for the bladder cancer.

13 Q. When looking at two different risk
14 factors, such as smoking and exposure to
15 contaminated water, are you able to effectively
16 separate those two out as risk factors from each
17 other and view them independently from one
18 another?

19 MS. GADDY: Objection. Form.

20 THE WITNESS: When I consider risk
21 factors for bladder cancer, I consider
22 their presence and the degree of exposure,
23 but I cannot say that one is the cause and
24 eliminates the other as a potential cause.

25 BY MR. WALLACE:

1 Q. Did you review Dr. Cates' report that
2 was submitted on behalf of the DOJ in this case?

3 A. Yes.

4 Q. Do you recall a section where he
5 talked about Ms. Dyer's smoking history?

6 A. Yes, I do.

7 Q. On page 19 -- actually, tell you
8 what --

9 MS. BUTLER: I'm sorry, can I
10 interject? I understand that there may be
11 some feedback on the Zoom. Ms. Gaddy, are
12 you hearing some people talk on the Zoom?

13 MS. GADDY: I am not, but I can go on
14 mute in case it's feedback from my end.

15 MS. BUTLER: I don't -- I don't know.
16 I just got a text that there's somebody
17 talking on the Zoom, but if you're not
18 hearing it -- and you can hear the
19 deponent okay?

20 MS. GADDY: Yeah, I can hear
21 perfectly fine. I don't hear any talking.

22 MS. BUTLER: You're not getting
23 interference. Then it might just be the
24 Zoom participants on our end. So I think
25 we're okay. I'm sorry, I got a text about

1 that. I wanted to make sure you could
2 hear okay.

3 MS. GADDY: That's okay. Thank you.

4 BY MR. WALLACE:

5 Q. Okay. In Dr. Cates' report, he
6 describes Ms. Dyer as, quote, a former smoker
7 with a short duration and low intensity. Do you
8 agree with that assessment?

9 A. I do agree with that assessment.

10 Q. In Dr. Cates' report of -- regarding
11 Mr. Criswell, just to make sure, you reviewed
12 that report as well?

13 A. I did review that report.

14 Q. In that report, he identified the
15 possibility that Mr. Criswell could have smoked
16 two to three cigarettes per day for two years.
17 Would this conclusion change your opinion that
18 the chemicals at Camp Lejeune were at least as
19 likely to cause Mr. Criswell bladder cancer?

20 A. Even if I do assume that higher level
21 of smoking, it does not change my opinion that
22 the chemicals at Camp Lejeune's groundwater could
23 have been a potential cause of the bladder
24 cancer.

25 Q. In addition to reviewing Dr. Cates'

1 report, you also reviewed the deposition
2 testimony of Mr. Criswell's. One of his treating
3 physicians, Dr. Shelfo. Do you recall that?

4 A. Yes, I do.

5 Q. And in his deposition, do you recall
6 what his opinion was on Mr. Criswell's smoking?
7 And if not, it's okay. We can direct you to it.

8 A. I do not recall the specific terms he
9 used, but he considered him a former smoker.

10 Q. Okay. Bear with me here. I am going
11 to share his deposition transcript.

12 MR. WALLACE: Megan, correct me if
13 I'm wrong, but are we at Exhibit 16?

14 MS. GADDY: That's correct, 16.

15 (Longo Exhibit 16 marked for
16 identification.)

17 BY MR. WALLACE:

18 Q. Dr. Longo, if you could open up the
19 document on Zoom, Number 16. Does that show?

20 A. I don't know -- can I -- thank you
21 for opening it.

22 Q. Okay. So just to confirm, Dr. Longo,
23 you have what I've just designated as Exhibit 16
24 the deposition of Dr. Scott Shelfo up?

25 A. Yes, I do.

1 Q. If you could go to page 104 of that
2 deposition transcript for me. Just let me know
3 when you're there.

4 A. Just take a minute. Okay. I'm on
5 page 104 now.

6 Q. I'm going to start reading from
7 line 5 that starts "I guess generally speaking."
8 Do you see that?

9 A. I do see that.

10 Q. I'll read it here. "I guess,
11 generally speaking, was it your testimony in
12 Mr. Criswell's case his smoking was not a risk
13 factor because he was not a heavy smoker and a
14 long-term smoker?

15 "ANSWER: Yes. That was the gist of
16 it. Yes. It was a very short period of time and
17 he was considered a very young age and not
18 continued. So the risk -- personally, I think
19 the risk isn't there.

20 "QUESTION: So is that within any
21 reasonable degree of medical probability?

22 "ANSWER: It might be, yes."

23 Do you agree with Dr. Shelfo's
24 opinion that, quote, the risk isn't there,
25 regarding Mr. Criswell's smoking history and as a

1 causation factor for bladder cancer?

2 MS. GADDY: Objection. Form.

3 THE WITNESS: I would agree that it
4 is a low risk probability that it's a
5 causation of his bladder cancer.

6 BY MR. WALLACE:

7 Q. Thank you. You can go ahead and
8 close that Exhibit 16. I want to switch to a
9 different topic.

10 You were asked earlier today about if
11 the prospect of mis -- sorry -- unknown causes of
12 bladder cancer. Do you recall that testimony?

13 A. Yes, I do.

14 Q. Okay. And there was a term that
15 sometimes gets used with regards to unknown
16 causes. Is that idiopathic?

17 A. Idiopathic is a term used.

18 Q. And what is your understanding of
19 that term?

20 A. My understanding of the term
21 "idiopathic" is that it -- there is a list of
22 known causes. And if you're unable to determine
23 the cause, that cause could be determined to be
24 idiopathic. So there is a cause, but it is an
25 unknown cause.

1 Q. And what role do unknown causes or
2 idiopathic causes have within a differential
3 etiology of bladder cancer?

4 A. Generally, it is considered a
5 diagnosis of exclusion meaning that you've gone
6 through all of the well-established risk factors.
7 If you're unable to determine what -- if you're
8 unable to discover a known risk factor for a
9 particular patient, you might term their cause as
10 idiopathic.

11 Q. Why not -- or take a step back. When
12 you are performing the differential etiology, do
13 you recognize that there's the potential for
14 unknown causes after you apply the differential
15 etiology?

16 A. Yes. Once you've applied a
17 differential etiology, there's always the
18 possibility that there's some cause you have not
19 looked for or discovered.

20 Q. You used a phrase in answering a
21 question for Ms. Gaddy that I'm going to mess up
22 a little bit. I believe it was something to the
23 effect of if you start out with an unknown cause,
24 you're going to end with an unknown cause. Do
25 you recall that testimony?

1 A. Yes. I remember saying that.

2 Q. Can you explain what you meant by
3 saying if you start out with an unknown cause as
4 part of your differential etiology, you'll end
5 with an unknown cause?

6 A. What I meant by that statement was
7 that if you think anytime there's an unknown
8 cause that it is as likely as not the cause of
9 that person's disease, you could begin your list
10 and end your list with that one thing saying that
11 I found it, it was idiopathic. Whereas, I would
12 argue that you should start with all of the
13 unknown causes and work your way through before
14 you rest upon idiopathic. If you start with
15 idiopathic, then idiopathic would be your cause
16 100 percent of the time.

17 Q. Okay. And I think I heard you maybe
18 incorrectly. Did you say you start -- you should
19 start with all the known causes. I believe you
20 said start with all the unknown causes.

21 A. I meant to say you would start with
22 known causes of any particular disease, in this
23 case bladder cancer, before stopping and saying
24 idiopathic must be the cause.

25 Q. Is there any limit to the possibility

1 of unknown causes that you could include as part
2 of your differential etiology?

3 A. I don't think there's a limit to the
4 unknown.

5 Q. Okay. When you reviewed the medical
6 records for Ms. Dyer and Mr. Criswell, are you
7 aware of any evidence to support the existence of
8 a mysterious or unknown cause or causes that
9 could have contributed to their diagnosis of
10 bladder cancer?

11 A. In both cases I was able to find
12 known risk factors for bladder cancer within
13 their medical history which does include smoking
14 histories in both of those patients, but it also
15 includes exposure to Camp Lejeune drinking water.

16 Q. Okay. Dr. Longo, I don't have any
17 further questions for you, although, I do reserve
18 the right to ask any further questions after
19 Ms. Gaddy has questions for you.

20 MR. WALLACE: So, Ms. Gaddy, I'll
21 turn it back over to you?

22 MS. GADDY: I don't have any further
23 questions. Thank you, Counsel. Thank
24 you, Dr. Longo.

25 MR. WALLACE: Thank you, Dr. Longo.

1 THE WITNESS: Thank you very much.

2 MS. GADDY: Thank you to the court
3 reporter and the videographer.

4 THE VIDEOGRAPHER: This concludes the
5 deposition. The time is 3:03 p.m. We're
6 now off the record.

7 - - -

8 (Read and sign reserved.)

9 - - -

10 (Deposition concluded at 3:03 p.m.)

11 - - -

12

13

14

15

16

17

18

19

20

21

22

23

24

25

I, the undersigned, THOMAS LONGO, M.D., do hereby certify that I have read the foregoing deposition transcript and find it to be a true and accurate transcription of my testimony, with the following corrections, if any:

[illegible]

Golkow Technologies,
A Veritext Division
www.veritext.com
877-370-3377
Case 7:23-cv-00897-RJ Document 507-5 Filed 08/26/25 Page 227 of 291

CERTIFICATE OF REPORTER

I, Christine A. Taylor, Registered Professional Reporter and Notary Public for the State of North Carolina at Large, do hereby certify:

That the foregoing deposition was taken before me on the date and at the time and location stated in this transcript; that the deponent was duly sworn to testify to the truth, the whole truth and nothing but the truth; that the testimony of the deponent and all objections made at the time of the examination were recorded stenographically by me and were thereafter transcribed; that the foregoing deposition as typed is a true, accurate and complete record of the testimony of the deponent and of all objections made at the time of the examination to the best of my ability.

I further certify that I am neither related to nor counsel for any party to the cause pending or interested in the events thereof. Witness my hand, this 29th of June, 2025.



Christine A. Taylor,
Registered Professional Reporter
Notary Public 19960530077
State of North Carolina

0	10-15-97 4:22	208:25 209:1	19960530077
0.09 103:16	100 29:17 67:9	16 1:14 2:1	227:18
0000000095	68:12,17 82:23	5:21,24 6:4	1997 54:23
4:23	89:25 223:16	219:13,14,15	55:1 70:23
000000001 4:12	101 5:5	219:19,23	88:12 98:11,15
000000005 5:20	1023 60:9	221:8	98:18 126:23
0000000123 5:15	1025 60:23	17 77:4 78:9	127:18 133:22
000000020 5:2	1029 5:4 60:10	85:5	144:5 148:17
0000000286 4:21	104 220:1,5	178 5:16	1998 5:14
0000001023 5:4	106 5:8	18 51:18 73:16	149:19
0000004928 4:25	10:25 84:9,10	94:4	1:00 151:1
00897 1:4 6:7	10:49 84:10,12	18.5 102:13	1:03 151:6,8
01482 4:21,23	11 5:8 50:14,25	19 66:8 70:24	1:57 199:17,18
4:25 5:2,4,15	97:13 106:5,6	217:7	2
50:4 54:10	159:20 178:16	1953 36:16	2 4:13 13:9,10
56:17 58:13	12 5:12 60:19	1970s 61:14	15:15 20:16
60:9 149:13	133:8,10	1972 49:16	51:18 59:6
1	135:16,20	51:5,23 71:3	80:9 84:18
1 4:11 10:14,15	140:17 141:13	1973 53:11	108:8,8 126:23
20:16 103:18	123 149:13	1974 49:16	175:7 178:15
108:8,11	127 3:10	51:5,23 52:19	185:18 203:1,2
134:10 171:24	12:02 151:5,6	53:11 61:2,14	2,190 68:8
203:2	13 4:13 5:14	71:7	20 35:13 58:13
1,460 68:5	71:20 72:7,12	1975 73:5	59:18,24 73:16
1.0 108:17	72:14,17 73:1	112:25 113:18	112:8 120:8
109:15 110:2	122:7 149:8,9	1977 61:2 73:5	201:16
10 4:11 5:5,20	133 5:12	73:10	2002 135:6
11:11 60:1	14 4:16 5:16	1978 61:2,14	145:2,13
101:21,22	73:1 106:10	70:18	20044 3:16
112:8,17 133:3	178:17,20,21	1986 88:8	2009 113:1
134:5,5,6,22	149 5:14	1987 36:17	2011 146:11
185:19 199:12	15 4:18 5:19	55:11	154:15
209:6	41:17 55:1	1990 88:8	
	84:2 133:17		

2012 138:21 145:10,20 2013 60:19 2014 57:2,18 135:4,7 138:11 138:21 141:23 145:2,13,25 2015 26:6 58:19 170:4,25 206:23 207:10 207:12 2016 141:25 142:5 2017 105:24 2018 101:12 202.616.8461 3:17 2020 50:14,25 52:18 97:13 98:7 2022 9:25 10:2 204:17,20 2023 9:25 26:6 206:5,6,7 2025 1:14 2:1 6:4 227:13 209 5:19 21 5:2 58:13 121:1 210 4:4 21572 227:15 219 5:21 22 113:7,9 147:18 148:19	23 113:11,12 24 57:2 25 70:4 71:2 27603 3:6 2805 7:9 28406 3:10 286 50:4 288 52:2,5 97:6 97:15 290 52:5 291 4:21 50:4 29th 227:13 2:17 199:18,20 2:30 210:21,22 2:46 210:22,24	4 4 4:12,18 15:6 15:7,16 84:18 99:8 108:8,8 40 40:5 71:22 72:13,17 46,000 11:2 49 4:20 179:24 4928 56:17 4929 4:25 56:17	65 110:25 112:5,9 7 7 4:24 56:16,19 108:9 7/11/2014 4:24 730 66:14 7410689 1:25 750 10:7 751 2:5 7:23 1:4 6:7
202.616.8461 3:17 2020 50:14,25 52:18 97:13 98:7 2022 9:25 10:2 204:17,20 2023 9:25 26:6 206:5,6,7 2025 1:14 2:1 6:4 227:13 209 5:19 21 5:2 58:13 121:1 210 4:4 21572 227:15 219 5:21 22 113:7,9 147:18 148:19	3 3 4:16 14:15,16 15:16 20:16 84:18 99:8 102:4 108:2,3 108:8,8 113:7 149:25 159:21 203:1 3.1 106:22 3/11/2020 4:20 3/12/2024 5:12 30 25:20 40:5 102:14 105:1,6 105:11,13 300 2:6 340 3:16 3:03 225:5,10	5 5 4:20 49:24,25 51:13 52:4 97:9,10,14 106:16,22 108:8,8 127:3 209:6 220:7 5,000 189:24 50 40:3 48:10 112:15,16,17 52 112:20 54 4:22 56 4:24 58 5:1	8 8 5:1 58:8,9 108:9 142:25 80 35:4 110:24 800 189:25 81 133:13 82 134:9
202.616.8461 3:17 2020 50:14,25 52:18 97:13 98:7 2022 9:25 10:2 204:17,20 2023 9:25 26:6 206:5,6,7 2025 1:14 2:1 6:4 227:13 209 5:19 21 5:2 58:13 121:1 210 4:4 21572 227:15 219 5:21 22 113:7,9 147:18 148:19	3 3 4:16 14:15,16 15:16 20:16 84:18 99:8 102:4 108:2,3 108:8,8 113:7 149:25 159:21 203:1 3.1 106:22 3/11/2020 4:20 3/12/2024 5:12 30 25:20 40:5 102:14 105:1,6 105:11,13 300 2:6 340 3:16 3:03 225:5,10	6 6 4:3,22 54:5,6 108:8 129:24 131:23 149:19 6/3/2015 5:1 60 5:3 40:3 42:12	9 9 5:3 60:8,11 135:12 179:16 179:17 209:6 900 3:5 910.794.4829 3:11 919.600.5000 3:6 95 54:10 9:08 2:1 6:4

a	accountant	additional 30:4	agree 27:22
a.m. 2:1 6:4	16:2	address 7:7,7,9	32:20 43:8,11
84:9,10,10,12	accounts	99:4 126:1	43:13,20 44:2
abdomen 41:19	215:20	184:6	44:19,23 71:9
41:20 162:25	accumulative	addressed 80:3	71:19 79:23
ability 7:20	72:14	80:21 126:2	94:5 104:25
132:14 173:8	accurate	164:24	105:5 110:9,19
227:10	209:13,16	adhesive	111:2,12
able 29:22	214:13 226:5	155:16,19	115:20 116:13
34:20,24 104:5	227:9	adjusted	127:19 130:15
124:11 125:3	accurately 8:13	102:17	131:6 138:9
129:16 133:20	186:11 188:3	adult 67:8	140:7 146:19
134:23 158:15	acknowledge	advance 199:24	146:24 153:4
162:16 163:2,5	126:5 127:5	advice 164:3,4	153:19,22,24
197:2 215:6	act 163:11,14	advise 137:3	157:20 158:9
216:15 224:11	164:7	141:11	167:21 181:8
abnormal	action 42:23	affected 100:10	182:5 191:11
161:9	43:4	affirmative	192:6 197:22
above 68:12	activity 99:22	34:2	218:8,9 220:23
132:4 187:12	acts 174:2	age 71:9,13,16	221:3
193:20	actual 42:6	71:20,22,24,25	agreed 124:5
absolute 24:15	actually 22:7	72:6,7,8,17,17	127:10
135:23	31:3 36:24	72:21,23 73:1	agreement 5:19
absolutely	52:20 55:13	73:16,20,25	96:18 206:2,10
34:16 71:17	59:21 113:10	78:9 102:10	209:11,14
absolutes 89:7	129:15 148:21	111:19 112:23	agricultural
90:1 139:2	170:13 196:8	148:12 220:17	28:25 30:14
accept 172:7,16	201:10 212:15	aging 111:3,6	ahead 84:20
accepted	217:7	111:10	133:7 158:18
172:12	added 198:6	agnostic 176:1	206:12 221:7
account 61:7	adding 20:22	ago 8:22 12:21	air 74:25
71:5 87:21,24	addition	15:3 21:14	al 101:12
201:1,5 215:14	218:25	24:17 39:21	105:24
		121:6	

albeit 74:10	95:20 106:1,9	205:4 210:10	applied 82:23
alcohol 93:22	106:18 108:3	222:20	91:13 222:16
94:9 95:9	108:12 207:17	answers 8:12	apply 130:19
97:16,19 98:1	analyzing	33:14,22	222:14
98:8,14,17	175:18	118:19 209:25	applying
99:25	andrew 7:5	anticipated	167:16
algorithms	anecdotal	185:2	appreciate
153:10	169:3	anwar 3:15	203:23 209:17
alive 128:22	anesthesia	anxiety 153:20	approaches
131:19	21:17	153:23 156:5	158:13
allow 24:11	aniline 28:18	anybody	appropriate
allude 63:9	animal 169:8	157:24 177:21	89:21 152:9
alluding 71:15	193:5,6	anytime 223:7	approximately
alongside 42:3	annual 11:8	anyway 148:12	53:11 65:23
alternatives	137:4,12	apart 163:2	66:14 67:22
213:23	147:22 148:9	182:3	97:1 110:24
amanda 3:23	159:15 160:14	apnea 146:10	112:25
american 66:22	answer 7:20,25	146:16,17,21	april 149:19
66:24 67:12	8:14 9:5,6	147:6,9	area 99:23
103:25	33:17,18 78:17	apologies 67:13	121:16
americans	87:9 92:6	113:6,11	areas 100:24
110:20,21	109:9 133:19	199:23	211:25
amount 41:4	133:23 134:1,4	apologize 129:3	argue 223:12
48:18 82:10	134:13,18	appear 86:19	argument
83:7 89:21	140:24 198:25	187:12	167:12
121:23 133:5	205:5 213:21	appearances	arsenic 120:11
160:18 181:15	220:15,22	3:1	120:21 121:2,7
188:15 201:2,9	answered 82:7	appears 13:17	121:19
analogous	89:5 92:4	appliance	article 5:5
74:10,22 90:17	111:4 141:15	162:21,24	artisan 34:6
analyses 94:7	144:19 167:23	appliances	ascertain
95:8	answering 8:9	162:5	190:14 207:24
analysis 5:10	8:11 9:16	applicable	asked 13:3,4
94:22,23 95:16	126:8 195:11	160:2,7 196:9	55:14 56:4

82:6 92:3 126:9 134:10 141:14 174:12 180:25 200:25 205:11 208:13 208:22 210:4 211:5 214:10 221:10 asking 8:5 117:25 177:20 180:7 asks 97:18,25 assess 85:20 assessment 17:23 189:10 190:7 218:8,9 assigned 208:19 assignment 208:11,16 assist 46:19,22 47:1 162:15 associated 10:22 71:10 99:15,19,22,24 100:14 151:20 173:2 183:21 association 5:8 74:15 75:12,18 75:21 86:4,10 86:23 87:16 93:22 94:8,13 95:9 96:1,2,20 102:21 104:13	104:14,19 105:25 106:20 107:4 108:18 109:14 175:19 associations 99:10 assume 8:1 56:4 68:10 74:25 76:2 218:20 assumed 66:12 assuming 59:24 72:16 155:6 assured 158:15 atsdr's 185:7 185:25 186:4,9 186:17 187:17 188:2 atsdrs 185:1 attached 41:25 attack 148:17 148:23,25 149:4,24 150:6 150:10,12,16 attempt 87:23 attention 146:6 178:13,20 attenuated 22:7 attorney 3:15 7:12 9:4,5 15:22 attorneys 203:13 204:5	attribute 48:10 76:17 attributed 146:20 147:5 attributing 47:22 aunt's 117:9,19 117:21 118:2,9 author 96:21 96:22 authored 184:25 authoritative 200:6 automatically 116:19 available 22:5 88:1 132:17 162:14 186:10 187:21,23 188:1 average 201:16 avoid 31:13,15 31:16 46:23 79:2,7 aware 72:5 98:13 121:18 122:4,11 132:25 146:9 146:14 147:2 150:14 154:13 154:16,19 156:4,9,14 157:5 179:9	184:4 186:8,14 186:17,22 189:7 191:21 192:1 193:19 193:24 194:7 208:3 224:7 awareness 206:25 b b 4:9 back 22:9 24:19 41:23 42:14 51:16 52:4,18 66:18 113:6 148:3 161:10 198:10 200:11 206:22 211:2 212:15 213:2 222:11 224:21 background 14:2,6 29:1 172:1 173:19 backwards 192:24 198:20 bad 141:5 bag 42:6 154:21,23 155:1,4,8,8,12 155:17,22 212:19 213:5 bailey 184:19
---	---	---	--

balance 176:6,8	bcg 22:7,8	101:16 107:18	bioethicist
ball 42:15	24:24 128:7,24	113:5,7 115:5	171:19
banners 203:19	129:13,17,17	128:1 132:3	bioethics
barring 168:18	129:20,22	133:5 142:8	171:20,20
base 33:18	130:1,3,6	147:15 149:1	172:2,5 173:2
34:12 168:13	131:24 132:6	149:15 171:24	173:10
189:25,25	132:10 133:2	178:15 185:12	biological
based 11:1	135:3 148:17	185:17 187:2	167:10
33:14 47:5	149:2	208:25 209:15	biopsies 150:2
63:15 65:6	bear 219:10	215:18 222:22	bird 184:15
68:3,20 70:15	becoming	223:19	188:11
90:22 109:15	22:12 170:25	belly 42:3	bit 15:2 39:21
111:21 123:6	began 9:24	benefit 31:18	79:15 132:4
123:12 138:13	73:20 170:4	214:3	139:1 173:21
143:6,10,15	204:16,18	benefits 213:23	191:17 222:22
145:8 146:2	206:23	benzene 19:1	black 110:21
168:12,13	beginning	39:15 126:19	bladder 5:6,9
169:7,16	72:25 128:2	176:24 195:4	18:20 19:5,23
174:18 191:6,8	208:9 213:8	196:4 197:12	19:25 20:1,20
195:7 198:25	214:1	199:3	20:25 21:3,4,7
207:18	begins 57:1	best 7:20 22:6	21:8,8,11,14,16
bash 3:24	96:8 178:16	24:15 187:21	21:23,23 22:3
basis 141:18,20	185:23	187:23 188:1	22:5,12,16
165:14	begun 171:2	227:10	23:1,3,4,8,12
bates 50:3 52:5	behalf 2:4 6:12	better 50:10	23:14,16,19,21
52:5 54:10	6:15 217:2	102:6	23:22 24:11,21
56:16 58:12	behaviors	beyond 161:14	25:6,10,12,17
60:9,23 97:5	99:15,18	bias 173:14	25:19,22,23
97:15 149:13	100:14,16	176:6	26:10,17,22
209:5	believe 27:13	biased 176:7	27:6,13,17,23
bathed 181:22	38:1 44:6	big 21:1 89:19	28:4,8,14,23
bathroom	61:11 67:3	biochemistry	29:2,8,10,15,22
212:11	69:25 71:24	18:12	31:2,11 32:9
	85:5 94:3 97:9		34:21,25 35:7

35:15,22 36:24	105:21,25	140:1,8 141:23	216:12,21
37:4,5,7,12,16	106:11,21	141:25 142:7	218:19,23
38:1,6,22	107:4,10	143:2,21 144:3	221:1,5,12
39:22 42:15	108:14 109:12	144:24 145:4	222:3 223:23
43:13 44:18,20	109:14,21	145:20 150:1	224:10,12
44:22,24 45:5	110:9,19,24	151:13,20,23	bladders 25:13
45:10,10,14,18	111:2,9,11,14	152:21 154:8,9	25:20 26:11
45:20,23 46:9	111:18 112:4,9	154:11 156:2,6	blader 22:11
46:14 48:7,11	112:21 113:2	157:21 158:10	bleeding 21:20
48:21 53:15	113:25 115:2,6	158:19,23	blood 41:25
64:9 70:10,22	115:10,17,21	159:8,15,17,22	170:18
71:10,12,17	115:24 116:3,7	160:1,3 161:17	bmi 98:25
72:7 73:24	116:14,16,20	162:1 166:15	99:10,14,19,21
74:1,5,21 75:5	116:24 117:1	166:17,22	100:7,14,20,23
75:9,13 77:8	117:10,13,19	167:9,11 169:4	101:4,5,8
78:3,10 79:24	117:21,22	169:15,22	102:10,13,14
80:18 81:3	118:2,3,8,10,11	171:3,11	102:16,22,25
83:9,11,22	119:14,18,23	175:10,13,16	103:6,9 104:13
85:2,13,21	120:3,12	176:22 188:17	104:25 105:6
86:1,4,8,17	121:20 123:3	190:21,24	105:10,13
88:11,22 89:9	124:21,23	191:2,5 193:15	106:11,21
90:23,25 91:12	125:8,15,20,25	194:10,21	107:9 109:12
91:23 92:19	126:4,7,11,15	198:20 200:18	109:14 125:19
93:19,23 94:9	126:18,24,24	200:21 201:3,7	body 5:5,8
94:14 95:10	127:6,8,11,15	201:17,21,22	40:16,16 42:24
97:1 98:11	127:21,24	202:9 204:20	45:11 90:20
99:10,20,23	128:3,11,21	205:11,13	91:10 92:7
100:15 101:9	130:10,13,14	206:17 207:1	94:25 99:21
101:13 102:10	130:15,16,24	207:23 208:15	100:2 101:12
102:12,15,21	131:7,11,14,17	211:7,13,16,20	104:7,20
102:25 103:6	131:18,20	211:22 212:2,5	105:25 155:14
103:10,17	136:1,11	212:7 213:13	197:15
104:7,13,22	137:22 138:6	213:17 215:3,5	bottom 56:25
105:1,6,16,18	138:14 139:18	215:9 216:3,9	58:23 80:11

85:7 119:2 120:9 129:25 149:19 bouncing 199:24 bound 193:22 193:22 bowel 23:11 41:13,21 42:10 box 3:16 break 9:14,16 79:18 84:2 150:20 199:12 210:15 211:3 breaks 9:14 20:13 breathing 74:24 brief 211:2 briefly 20:11 178:24 179:20 208:24 bring 23:18 42:2 brought 23:8 103:13 bryson 3:4 burden 139:23 139:23 151:19 160:11,14 164:25 burke 174:21 burn 21:19 201:12	business 7:7 butler 3:9 6:14 6:14 203:10,16 217:9,15,22 button 42:3 bypass 149:25 c c 4:1 6:1 142:3 calculations 123:13 188:21 189:2 call 203:19 called 22:6 24:3 41:14,15 45:17 173:7 201:8 calling 172:14 camera 21:15 camp 1:4 6:6 7:13 12:3,4 19:4 30:21 36:7,16,23 37:11,13,15,22 38:2,5 47:22 80:6,14,23 81:11,15 119:15,24 122:19 123:3 123:11,19 124:20 125:7 126:3,10 163:10,13 164:6 167:6,8 168:12 169:15	170:6,15,22 171:4 172:9 176:22 177:23 177:23 181:10 181:16 182:4,8 182:23 183:5 183:12,13 186:12 187:24 190:20 191:1 194:20 196:16 196:23 199:1 204:8,19 205:12 206:15 206:25 207:8 207:21 208:1,6 208:14 218:18 218:22 224:15 campbell 200:1 200:3 cancer 5:6,9 18:20 19:5 20:1,6 21:7,11 22:11,12 23:1 23:19,21 24:15 24:22 25:6,11 25:12,19,22 26:10,18 27:7 27:13,17,24 28:4,8,14,23 29:2,8,10,15,22 30:17 31:2,12 32:9 34:21,25 35:7,15,22 36:25 37:4,5,7	37:8,12,16 38:1,6,22 43:14 44:2,7 44:16,18,20,22 44:24 45:5,17 45:23 46:14 47:7 48:7,21 53:15 64:9 66:22,24 67:13 70:10,23 71:11 71:12,17 72:3 72:8 73:24 74:1,5,21 75:5 75:10,13 77:8 78:3,10 79:25 80:19 81:3 82:19 83:10,11 83:22 85:2,13 85:21 86:1,5,8 86:18 88:11,22 89:10 90:23,25 91:12,23 92:19 93:19,23 94:9 94:15 95:10 97:1 98:11 99:10,20,24 100:15 101:9 101:13 102:10 102:12,16,21 103:1,7,10,17 104:7,13,22 105:2,7,16,18 105:21 106:1 106:12,21
---	--	---	---

107:4,10	151:13,20,23	224:10,12	carried 78:6
108:14 109:12	152:22 153:1,8	cancers 19:17	case 1:4 6:7
109:14,21	154:8,10,11	19:19 20:2,18	9:23 10:8,23
110:9,19 111:3	156:2,6 157:21	20:25 25:23	11:3,6,12 12:1
111:9,11,14,18	157:25 158:10	46:9,15 48:11	12:2,2,9,12,13
112:4,9,21	158:13,19,23	110:24 114:6	12:15,17,22
113:2,25	159:6,8,10,16	114:11 115:7	13:2,6,16
114:19 115:3	159:23 160:1	115:17	14:24 15:17
115:10,11,21	161:17 166:15	capabilities	40:15 47:14
115:25 116:3,8	166:18,22	36:10	57:13,25 64:2
116:15,16,20	167:9,11	capable 87:25	64:9 69:22
116:24 117:1	168:17 169:4	152:8 190:21	80:12 83:20
117:10,13,19	169:16,22	190:23	85:22 89:17
117:21,23	171:3,11	capacity 12:10	91:9,14,21
118:2,3,8,10,11	175:10,13,16	132:12	93:15 132:13
119:14,18,23	176:22 188:17	carcinogenic	133:9 163:12
120:4,12	190:21,24	196:15,25	163:14 169:25
121:20 122:7	191:2,5 193:15	carcinoma 20:2	172:13,17
123:3 124:21	194:10,21	20:8,9,13	173:3,9,23
124:23 125:8	197:4,5,8	126:25 158:21	174:6,8,10,13
125:16,20,25	198:20 199:4	card 95:3	174:15,18
126:4,7,11,15	200:19,21	care 127:23	179:11,14
126:18,24	201:3,7,17,21	136:8 137:2	196:5 198:19
127:8,11,15,22	201:22 202:6	147:25 154:12	204:16,22
127:24 128:3	202:10 204:20	163:7	206:2,9 208:10
128:11,14,18	205:11,13	career 36:6,13	208:17,20
136:2,2,11	206:17 207:2	carolina 1:2,15	209:18,22
137:23 138:6	207:23 208:15	2:7 3:6,10 7:10	214:17 217:2
138:14 139:18	211:16 214:3	7:15 120:24	217:14 220:12
140:1,2,8,10,14	215:3,5,9	121:8,22,24	223:23
141:23,25	216:3,9,12,21	122:2,6,20,21	cases 1:6 11:25
142:7 143:2,21	218:19,24	171:2 183:22	115:3,11
144:3,24 145:4	221:1,5,12	227:3,18	118:22 123:8
145:20 147:20	222:3 223:23		153:11 167:16

172:8 205:12 214:16,22 224:11 catch 103:3 143:12 categories 20:14 cates 103:14 217:1 218:5,10 218:25 catholic 171:20 173:2 causal 48:1 85:1,18 90:13 166:8 175:12 192:11 causality 169:21 171:15 causation 4:13 4:16 5:16 92:9 163:21 165:4 174:22 177:7 177:12 178:10 178:15 179:3 179:18,22 180:23 181:1 208:14 221:1,5 cause 29:14,23 31:2 32:7 34:21,24 35:5 35:6,10,15,21 35:25 36:3 37:13 38:1 43:13 44:20,24	45:4 53:15 64:9 77:7,11 77:13 78:3,5,5 78:10 94:14 114:6,15,16,17 114:18 115:3 115:11,18 116:20 117:6 117:13,22 118:7,10 120:5 167:9,11 175:10 191:2,5 193:15 215:3,5 216:2,9,12,23 216:24 218:19 218:23 221:23 221:23,24,25 222:9,18,23,24 223:3,5,8,8,15 223:24 224:8 227:12 caused 44:2 46:9 109:21 111:15,18 114:20 117:1 123:3 199:4 causes 32:22,23 33:5,13 44:22 46:22 78:13 83:11 86:17 93:19 111:10 115:21,24 116:3,25 117:23 118:21	119:1,3,7 125:24 126:2,6 126:12 221:11 221:16,22 222:1,2,14 223:13,19,20 223:22 224:1,8 causing 105:6 108:14 138:16 190:21,23 cauterize 21:19 cdc 82:12,22 cell 20:7,13 158:13,21 159:6 cells 45:14,15 45:20 159:4 censure 42:23 center 2:6 67:7 171:21 173:3 207:3 centers 53:14 centimeters 41:17 42:12 certain 28:19 28:21 83:7 94:20 99:25 111:8 124:2 158:6 172:22 certainly 140:5 146:25 166:3 180:4 201:18 certainty 167:14	certificate 171:19 227:1 certification 16:7,24 certify 226:3 227:4,11 cetera 167:18 chance 158:16 159:10,11 chances 105:17 128:11 158:22 161:21 change 77:24 162:5 196:9 210:1 218:17 218:21 226:8 changed 104:9 154:22,25 155:12 changes 45:19 83:6 155:22 changing 155:4 155:8 characterized 67:17 charles 3:25 203:17 chart 136:19 check 148:11 chemical 18:3 22:2,6 100:5 111:15 120:9 181:10 182:6 182:22 184:11
--	--	---	---

201:22 chemically 126:14 chemicals 17:19 22:4 72:20 80:14 99:25 123:2,11 123:19 124:20 125:7 169:15 178:3 188:15 189:8 190:20 194:20 195:2,8 195:22,24 196:1,16 197:1 197:11 198:14 201:24 202:2,9 218:18,22 chemotherapi... 22:15 29:6 chemotherapy 24:4,8,9,10 25:2 chewing 84:24 84:25 85:13,16 85:20 86:4,17 88:7,15 90:3,4 90:13,24 91:16 91:21 92:2,18 93:15,18 124:22 child 73:11 78:8 chloride 18:24 39:10 126:19	176:24 195:4 196:3 197:12 199:4 choi 101:11 choice 140:22 choices 47:11 choose 41:5 211:19 214:5 choosing 214:3 chosen 41:6 christine 1:23 227:2,17 cigarette 29:19 29:24 64:3 65:16 66:13 68:11 72:12,13 74:4,24 cigarettes 27:20 49:15 51:22 53:4 59:1,18,25 60:3,5 61:20 61:22 62:4,7 62:12,18 64:16 66:3,8,14 67:9 67:21 68:4,5,7 68:8,12,17 81:21 82:23 113:21 215:7 215:12 218:16 cigs 61:3 ciotti 12:8,22 cite 49:20 52:1 53:23 56:15	97:5 cited 50:16 51:3 54:4 58:4 citing 51:10 citizen 170:7,23 190:6 civil 2:4 3:15 cl 4:12 5:20 209:6 claim 148:15 claimed 53:14 claiming 83:15 134:16 claims 142:12 clarify 40:9 71:18 81:19 89:12 138:20 169:23 210:5 classified 68:22 cleaned 181:23 cleaning 176:24 178:2,5 196:21 clear 55:16 74:19 75:24 111:25 clearly 76:1 clinic 60:18 clinical 22:22 104:3 143:21 152:22 165:14 clinically 108:22	clinician 172:6 clj 163:21 clja 164:10 165:3 clja's 166:7 close 91:11 92:10 122:24 130:13 137:16 137:16 149:1 171:5 177:20 221:8 closely 108:16 177:25 closer 69:13 112:16 coherent 169:10 cohort 5:11 94:7 106:2,10 108:16 coleman 3:4 colleagues 165:16 collect 42:7 colloquially 159:7 colon 41:15 combination 91:9 196:12 198:14,23 combine 169:6 combo 198:5 come 87:1,9 95:21 118:1
---	---	---	--

124:12 176:8 208:5 210:7 comes 117:8,18 128:24 171:13 171:13 202:8 comfortable 183:1 coming 22:9 commencing 2:1 common 28:3 46:15 90:23 110:10,13,17 110:20 112:21 129:2,12 130:12 148:14 165:19 commonly 23:9 136:1 165:24 communicati... 163:24 195:12 203:14 204:4,7 204:11 205:3,7 compare 41:9 180:3 201:21 compared 70:10 71:21 72:8 107:5 110:20 160:18 compensated 10:6,10 complain 144:20 145:23	complained 156:1 complaint 145:19 complaints 143:7,16 144:13 145:9 complete 8:6 13:25 129:16 209:13 227:9 completely 8:8 component 104:22 components 138:1 composed 136:5 166:13 compound 123:24 193:11 196:11 198:23 compounds 120:22 167:8 167:10 169:22 196:7,11,19 198:4 comprehensive 136:4 148:4 concentration 146:6 concentrations 182:17 concept 48:14 concern 129:25 130:3	conclude 74:13 117:11,20 118:8 121:1 122:25 166:8 189:19 199:23 concluded 79:23 125:23 225:10 concludes 102:24 225:4 conclusion 76:9 95:1,23 104:2 118:15 123:6 124:13 125:9 125:22 131:3 218:17 conclusions 87:1 123:25 124:16 174:5,7 conduct 142:18 conducted 121:21 168:25 conduit 40:6,10 40:13,15,17 41:7,8,12,15,16 41:16 154:21 confirm 34:17 93:25 127:2 156:20 185:13 219:22 confirmed 125:11 191:9 conflicting 52:16,16	confounding 77:19 87:22,24 99:16 103:1,7 confusing 100:7 confusion 214:24 conjunction 123:25 connection 206:9 consequence 111:6 conservatively 35:3 consider 35:21 36:2 73:24 76:15 77:25 81:2,22 82:1,4 82:21 83:8 87:12 89:5,8 89:22 90:3,7,9 90:10 91:3,5,8 92:13,14 95:2 125:1 144:4 161:7 164:12 164:17 183:5 196:12 200:5 200:13,17 214:20,25 215:4,21 216:10,20,21 considered 66:25 76:14,16
--	---	--	---

76:23 77:11 78:15 79:7 81:7,22,25 86:18 87:19 88:20,24 95:4 105:23 107:17 130:5 131:5 144:8 214:14 214:21 215:24 216:4,5 219:9 220:17 222:4 considering 86:14 104:4 consistent 26:12 87:4 constitute 96:2 constitutes 66:21 89:12 96:9 consult 34:9 173:1 consultant 5:19 consultation 211:15 consumption 93:22 98:15,17 99:25 181:18 contact 204:23 204:25 205:8 206:4 contacted 205:23,24 contain 14:8 15:16	containing 97:19 98:1 contains 60:17 contaminants 170:15 186:11 188:4 contaminated 79:4 126:9 167:6 168:23 176:23 177:22 178:6 196:10 199:2 216:11 216:15 contamination 170:6 178:5 196:22 204:19 205:13 206:16 context 104:6 continue 51:7 72:11 90:8 141:17 150:21 158:5,17 180:16 continued 220:18 continues 149:23 178:16 continuing 59:4 116:2 contrast 64:14 contribute 27:17 74:5 78:1 83:14,18 99:19 126:10	166:21 216:12 contributed 38:5 125:24 126:6 224:9 contributing 37:16 166:17 contributor 88:21 91:22 contributors 166:20 control 24:15 67:7 conventional 74:3 conversant 124:10 167:25 conversation 8:4 211:14 conversations 9:24 181:5 cooked 181:19 181:23 copies 84:15 copy 51:9 164:6 209:13 corporate 2:6 correct 9:20 10:4,9,12,24,25 11:4 12:24 13:7,16,23,24 14:24,25 15:13 15:14,19,23,24 16:1,3,6,9,12 16:15,18,20,22	16:23 17:1,3,4 17:7,12,15,21 17:25 18:6,10 18:13,15,17,21 18:23,25 19:2 19:6,15 20:4 24:25 25:3 26:15 27:21 29:12,20 30:9 30:22,25 33:2 33:3,10,21 35:12 36:14,21 37:9 38:9 39:2 39:2,17,19,23 39:24 40:6 43:14 44:10 46:16,20 47:15 47:16 48:7,8 48:22 49:1,3,4 49:21 50:17 52:2,10,11 53:15,17 54:23 54:24 55:8,20 57:7,9,10 58:1 58:5,20 59:2,3 59:9,19 60:1 61:22 63:18 65:7,10,23,25 66:16 67:19 68:9,18,23 70:7,24 71:8 73:3,13 74:7 83:22 85:9,15 88:13 91:23
--	--	---	---

93:17 94:10	cost 160:16	credence 94:21	135:2,7,12,18
97:4,14,24	161:8	215:21	138:9 141:24
99:3,16 101:10	costly 161:10	cripple 130:5	142:6,12,19,22
105:19 106:3	counsel 5:24	130:13,14,14	145:3,9,13
107:6 111:1	6:8 9:25 84:21	130:15	146:9,14
113:5,21,22	105:9,12,15	criswell 4:14,21	147:19 148:16
114:16,17	150:18 163:18	4:23,25 5:2,4	148:23 149:5
116:8,17,22	163:24 181:3	5:13,15 13:16	149:13,17,21
118:5 120:13	195:12 199:10	13:20 19:8	150:15 178:14
121:3,4,8	202:19,22	47:15 49:8	185:18 189:19
122:3,22,23	203:24 205:3,4	50:4 51:3 53:3	200:13 208:18
123:4,5,20	205:16 224:23	53:8,21 54:10	208:22 211:6
125:17 129:1,4	227:12	55:10 56:17	214:11 215:8
129:18 131:16	counsel's 164:3	57:11 58:13,19	215:25 216:6
132:11 135:5	counseling	59:12 60:9	218:11,15,19
135:17 139:10	211:10,17	63:4 68:10	224:6
142:4,8,13	213:15	70:17 71:1	criswell's 49:14
144:2 145:11	count 108:7	72:25 73:19	51:20 54:16
146:1,3,7	couple 58:6	74:3 76:12,21	55:19 58:3
151:15 152:15	course 128:16	76:23 77:3,22	60:18 61:8
153:3,22 164:7	courses 16:16	79:24 80:18	63:3 67:16,20
164:8 170:11	17:10	82:24 83:21	71:6 78:7
174:19,23	court 1:1 6:9	84:16,25 86:11	80:11 81:15
175:21 183:23	8:7,12,19,25	88:6,16 89:1	82:2 83:9 91:9
185:12 186:3	43:4 225:2	91:16 93:21	91:21 92:18
187:6 194:21	cousin 117:10	96:25 98:7,10	119:13,17
197:21 198:9	117:19,21	98:14 99:1	131:7,24
209:12 219:12	118:3,9	100:17 101:3,6	132:14 133:9
219:14	cover 13:17	120:16 122:25	138:5 140:7
corrections	crafted 175:24	125:25 126:6	142:25 143:6
226:6	crawford	126:22 128:6,9	143:16,24,25
correctly	149:25	130:5,23	145:19,25
102:19 107:1	created 68:21	131:10 132:19	150:9 151:12
152:8		132:25 134:21	204:12 215:15

219:2,6 220:12 220:25 criteria 87:7 169:16 176:18 192:10 cross 161:5,11 ct 160:10,23 161:6 curable 21:9 curative 23:24 24:7 cure 23:25 128:14 214:2 cured 24:12 158:2 161:16 curious 165:23 current 7:7,9 14:12 20:16 26:16,21 58:19 59:11 112:10 127:20,20 136:7 158:13 currently 7:14 38:20 131:7 cut 21:18 42:13 162:21 cv 1:4 6:7 13:23 13:25 14:8,11 15:2 cycle 120:24 cystectomies 39:25 40:4,5 41:1	cystectomy 23:2 24:16 39:22 40:7,11 40:18 100:21 127:6,22 128:2 128:10,13 154:20 158:11 160:25 cystitis 129:3 cysto 150:1 cystoscopies 147:23 148:1,7 148:9 159:15 159:18 160:14 160:17 cystoscopy 20:21 137:4,13	187:23 188:1 189:15 198:25 201:25 202:1 database 103:22 176:11 date 6:4 11:2 14:9 15:17 22:1 50:14 52:19 54:24 55:1 59:8,8 60:21 69:13 71:6,7 73:10 227:5 dated 50:25 57:2 58:19 97:13 149:19 dates 61:17 73:23 135:10 dating 64:4 david 3:5 203:16 day 25:11,21 25:23 26:1 49:16 51:5,23 59:1,13 61:3 61:20,22 62:8 62:12,19 64:16 64:20 65:1,22 66:4,8,13 67:22 68:4,7 68:11 98:1 154:22,24,25 155:8 212:16 218:16	days 62:9 133:3 134:6,22 155:1 155:2,21,23 189:24,25 202:5 dc 3:16 de 37:5 183:13 deal 89:6 139:2 187:21 death 24:2,13 debilitation 162:19 decade 140:9 decades 122:2 200:21 201:19 december 9:25 10:2 60:19 204:16,20 decide 33:4,12 34:11 141:6 177:14 213:16 deciding 211:10 decision 21:1 145:8 172:7 200:22 decrease 105:17 decreases 151:13 defend 124:7 172:20 defendant 2:5 3:13 11:16
	d		
	d 6:1 daily 62:13 155:22 165:14 185:8 186:1,11 188:3 data 74:19 75:25 88:1 93:12 107:13 110:7 121:22 122:13 123:23 125:4 136:18 169:7,8 171:7 171:13 172:22 176:8 185:2 186:10 187:22		

defense 21:7	demonstrate	157:2,4,10	designated
defer 109:8	109:13	202:15,16,23	219:23
124:6 125:21	demonstrating	204:5,9 210:1	despite 123:19
168:6 187:10	86:3	212:10 213:9	destroy 213:3
187:14 199:7	denied 55:10	219:1,5,11,24	destructibility
deferred 124:1	57:18	220:2 225:5,10	146:6
define 62:3	denies 57:8	226:4 227:5,9	detached 23:7
96:10 186:25	deny 34:17	depression	23:16
187:2	86:16 169:11	142:12,25	detailed 61:7
defines 66:20	department	143:8,17,20,22	determination
67:7	3:14 7:12	144:13,21,21	37:18
definitely 76:3	depend 11:5	145:9,20,23,25	determine 32:7
definition 36:4	44:15 93:5	147:9 151:24	34:20,24 35:14
67:18 68:17	dependent 20:8	152:4,7,9,12,14	37:13 47:25
82:22 89:15	96:21,22	152:22 153:9	69:9 77:15
96:12,19	depending 69:5	156:1,5,10	78:2,4 96:9
187:14	109:5 197:3	157:6,15	167:20 168:1
definitions	depends 38:18	depressive	175:11 186:19
82:11 153:17	62:2 87:25	153:6,7,14	221:22 222:7
definitive 87:1	155:14 191:18	derived 189:15	determined
degreasers	deponent	dermal 181:18	80:17 92:1
28:22	217:19 226:1	describe 22:23	100:1 123:17
degree 70:13	227:6,7,10	29:10 55:19	125:13,18
74:11 89:20	deposed 12:22	95:7 130:10	170:13 221:23
100:12 131:18	deposition 1:11	143:19	determining
166:25 167:3	2:2 5:12,21 6:5	described 13:6	35:10 118:7
167:14,21	9:3 10:11	24:16 111:3	200:15
168:2 216:22	11:18,22 12:12	169:17	detrusor 21:5
220:21	12:25 53:8	describes 218:6	develop 72:4
degrees 18:11	64:2 69:22	describing	73:24 94:25
21:18	77:23 88:7	24:20 26:9	95:17 96:6
delving 137:5	122:6,12 128:2	description	111:8 168:15
demands	133:1,9 134:10	4:10	188:17 202:5
173:10	156:23,25		

developed 45:23 92:12 168:16 169:4 170:1 200:18 207:22	diagnosis 27:2 27:3 32:7,14 37:4 70:22 78:23 88:11 91:12 96:25 101:1 112:24 112:25 126:23 139:8,12,20 143:19,20 144:3,21 152:13,17 153:2,9 157:24 200:22 201:6 215:9 222:5 224:9	46:18,21 47:14 47:19 73:21 76:16 78:6,23 92:25 117:11 118:16 123:7 123:10 164:13 214:15 222:2 222:12,14,17 223:4 224:2	disciplinary 42:23 43:4 disclose 163:23 195:12 205:2 disclosing 205:6 discover 222:8 discovered 222:19 discrete 181:15 discuss 98:17 98:25 142:11 150:15 182:21 discussed 80:12 98:14 113:17 113:20 118:17 145:4 177:8 200:16 202:21 discussing 165:15 discussion 84:24 106:16 163:18 discussions 204:18 disease 23:25 24:1 27:14 29:11 30:19 67:7 89:22 92:13 105:13 111:3,5 118:21 135:3 137:19 140:24 142:6 157:25 158:3,4
developing 70:10 74:1 120:12 144:24 169:22 201:11	143:19,20 144:3,21 152:13,17 153:2,9 157:24 200:22 201:6 215:9 222:5 224:9	differs 52:24 61:23 difficult 192:17 207:24 digit 159:10 dignity 173:13 dimension 172:18 173:22 173:24 174:3 diminish 151:17 diminishes 70:7 diploma 124:25 direct 74:10 178:13,19 219:7 directed 173:12 directly 171:23 disagree 45:1 105:5 122:15 122:18 124:14 130:25 138:13 181:13,25 182:12	
development 48:21 86:20 88:21 89:9,18 89:22 91:22 93:23 126:4 201:2 208:15	differ 63:11 difference 103:19 104:5 153:20,23,25 201:19 differences 214:18 different 25:16 43:21 52:17 69:2,2 86:15 90:19 93:10,11 93:13 124:13 127:18 134:4 153:16 214:9 214:19 216:13 221:9 differential 32:6,13,21 35:10 37:20		
developments 185:2			
develops 71:12 201:17			
dexterity 155:7 162:20 163:3			
diagnose 25:6 27:1 36:24 37:5 152:3,11			
diagnosed 29:22 32:8 37:12 98:10 110:25 111:13 112:20 113:14 126:14 133:25 146:10 151:23			
diagnoses 152:11			

160:1 201:11 213:21 223:9 223:22 diseased 40:12 140:25 213:22 disorder 152:5 153:7,14,21 154:1,4 disparities 215:19 distinction 154:3 distress 153:8 153:20,23,25 154:4 distressed 153:5,13 distressing 153:2 district 1:1,2 7:15 diversion 23:17 40:7,10,17,23 diversions 23:10 40:25 division 3:15 doctor 7:3 9:22 10:18 13:13 14:20 15:22 42:22 43:8 50:4,6 51:17 54:11 56:22 58:15 79:22 84:23 102:1	134:12 149:14 151:10 152:6 152:10 179:1 199:22 209:8 209:24 210:10 doctor's 138:22 document 1:5 5:1 13:23 15:10 149:12 156:20 178:25 179:7,25 204:2 219:19 documents 132:22 203:24 doing 87:25 137:12 158:5 161:7 180:8 doj 217:2 doj's 175:1 195:11 dose 5:10 106:1 106:10,18 142:2 191:12 191:16 192:6 192:12,13,16 192:20 193:8 193:25 dowling 205:25 downstream 100:10 212:20 dr 5:21 6:5 51:8 54:17 58:20 84:16 97:11 103:14	122:5,16 123:12 127:9 130:4,7,25 149:16 154:14 154:17 174:24 174:25 179:9 180:21 181:5 184:15,15,15 184:19,19,24 185:7,23,25 187:16 188:20 189:2,7,18 211:2 214:7 217:1 218:5,10 218:25 219:3 219:18,22,24 220:23 224:16 224:24,25 drafts 181:2 dramatically 128:16 drank 34:1 97:1 181:21,22 drawn 124:16 170:18 drew 123:25 drill 62:22 183:11 drink 55:2,17 97:19,19 drinking 30:13 47:22 55:10 80:24 81:12,16 98:2 120:10	121:19 168:23 182:2 224:15 drinks 97:2,25 drive 2:6 3:10 7:10 dropped 12:12 drs 174:21 175:2 188:10 drug 22:6 dry 176:24 178:2,5 196:20 due 53:10 120:4 132:20 134:17 143:2 145:20 158:11 160:1 duke 25:8,15 26:3,3,5,13 40:3 205:9 207:16 duly 6:21 227:6 dumped 45:9 duration 112:24 218:7 duty 31:10 dwyer 100:19 dye 28:18 dyer 4:17 12:5 14:23 19:11 47:15 63:21 65:21 66:12 68:15,22 73:15 84:16 99:2 100:19 112:19
---	--	--	---

112:20 113:14 113:18 119:22 120:8,15,19 121:3 122:1 123:1 154:6,13 155:25 156:4,9 156:15 157:20 158:9 159:14 159:20 160:3 160:22 161:16 200:13 204:12 208:18,23 214:11 215:7 215:15,25 216:6 218:6 224:6 dyer's 64:1,15 65:15 68:20 73:4,20 100:17 113:23 119:23 120:3 122:4 125:25 126:7 154:8,9,20 156:14,22 157:6 189:20 217:5 dysfunction 213:7 dysuria 129:5	earlier 30:12 40:2 45:21 82:12 83:1 97:9 111:4,13 111:21 113:17 113:20 139:18 198:10 211:5 221:10 early 72:6 170:4 206:5,6 earned 11:9 easier 159:9 easily 35:5 155:7 eastern 1:2 7:15 122:19 easy 30:5 35:5 economist 15:25 educate 124:15 education 14:1 14:5 effect 45:17 83:16 108:11 222:23 effectively 216:15 effects 18:19 19:4 100:10 106:19 128:25 129:12,19 186:20 196:15 196:25 197:9 198:4,12 207:3	212:20 213:6 either 20:14 48:20 69:6 86:16 99:1 108:9 124:13 125:24 126:11 168:14 169:11 171:8,14,24 201:19 216:6 element 137:18 elevated 121:7 eliminate 216:8 eliminates 216:24 ellis 3:25 203:17 emerge 171:2 empirical 197:23 employ 46:18 47:17 employed 214:16 employment 14:1,5 emptied 154:22 154:23 empty 155:7 emptying 155:4 encompasses 51:2 encourage 76:3 105:19	endemic 29:5 ends 201:19 ensure 7:17 enter 152:13 entire 23:3 25:11 36:13 101:15 104:7 104:20 129:16 178:9 entirely 78:17 78:25 79:1 158:15 215:10 entirety 26:13 entitled 178:10 entry 50:13 enumerate 131:2 environment 30:15 environmental 18:14 epa 187:11 epa's 193:19 epidemiologic 74:18 76:1 82:14 195:25 196:17 197:2 198:17 epidemiologi... 16:11 96:20 123:18,23 124:22 125:6 168:3 169:14 175:18 191:7
e			
e 4:1,9 6:1,1 12:20			

194:9 195:20 196:24 epidemiologist 16:4 88:4,5 96:6,18 109:9 110:6 123:20 124:4,5,6,9,19 125:22 167:22 167:24 168:7 169:25 170:10 170:12 190:7 191:9 199:8 epidemiologi... 169:19 epidemiologi... 87:8 124:1,17 125:12 177:17 epidemiology 16:8,14,17 168:22 170:24 192:25 208:2 equal 68:4,8 102:14 105:1 equally 213:16 erectile 213:7 escapes 21:7 escaping 181:24 especially 31:11 esq 3:4,5,9,14 3:15 establish 167:5 187:22 192:10	192:21 193:5 established 25:25 28:3 48:1 137:17 147:25 153:1 154:11 159:22 170:18 175:12 187:11 188:19 201:9 222:6 establishes 57:17 estimate 17:18 25:5 26:14 133:2 158:24 185:8 186:1,11 188:3 estimates 48:10 estimating 5:5 101:12 et 101:11 105:24 167:18 ethicist 172:21 etiologies 166:14 etiology 31:14 32:7,14,21 35:10 37:20 46:18,21 47:14 78:6 92:25 117:11 118:16 123:7,10 164:14 214:15 222:3,12,15,17 223:4 224:2	evaluate 94:23 152:20 195:1 208:17 evaluating 18:1 183:7 evaluation 200:12 evenly 108:7,9 110:7 events 227:12 eventually 206:1 everybody's 203:20 everyday 165:19 evidence 22:6 28:7 34:10 74:14 82:17 85:12,17 86:16 86:24,25 87:11 87:15 90:21 91:10,13 92:7 93:18,18 94:25 95:2 105:5 109:20,22,25 111:25 121:5 122:18 130:22 131:1 135:3 137:7,7,9 142:6 157:25 158:4 166:7,13 167:6,7,9 171:8 190:23	194:17 197:23 206:15 224:7 exact 43:9 148:21 168:14 197:10 exactly 49:10 62:23 63:23 215:7 examination 4:3,4 6:24 210:25 227:8 227:10 examine 167:4 172:22 examined 6:21 19:7,10 103:12 106:10 example 117:8 except 147:12 exceptions 198:22 exclude 126:12 exclusion 222:5 exclusive 78:14 83:12 excuse 78:20 209:7 execute 206:1 executing 206:9 exhaustive 32:25 exhibit 4:10,11 4:13,16,18,20
---	--	---	--

4:22,24 5:1,3,5 5:8,12,14,16,19 5:21,24 10:14 10:15 13:9,10 14:15,16,21 15:6,7 49:24 49:25 50:7 51:13,18 52:4 54:5,6,12 56:16,19,23 58:8,9,16 60:8 60:9,11,15,17 80:9 97:9,10 97:14 99:8 101:21,22 106:5,6 113:7 133:8,10 149:8 149:9 159:21 178:15,20,21 185:18 208:25 209:1,9 219:13 219:15,23 221:8 exhibits 15:15 84:18 exist 98:23 123:23 existed 138:15 existence 224:7 existing 95:16 exists 123:24 137:8 166:9 expand 20:10	expect 113:1,24 expectation 151:16 expected 125:3 expensive 159:23 160:1 161:6 experience 112:12 211:9 212:4 experiencing 153:6 experiment 192:19 expert 4:12,13 4:16,18 5:16 5:20 9:23 10:2 11:9,13,16 13:15 15:12 17:13,17,24 18:1,8 29:10 125:2 132:12 137:6 164:21 164:25 170:23 172:7,12 173:3 173:7 184:10 190:7 202:17 204:22 205:17 208:10,14 209:6 expertise 90:22 199:8 experts 136:6 169:25 170:2	175:2 177:18 179:10 184:15 184:19 187:15 explain 20:23 116:8,11 117:16 215:19 223:2 explained 127:9 explanation 110:12 explanations 110:17 export 106:10 exposed 27:12 72:21 76:24 77:3 80:4,5 92:12 111:7 170:14 194:22 196:4,6 198:18 201:13 208:6 exposure 17:13 17:18 18:3 27:14,16,19,20 28:3 29:11,14 29:23 30:20 37:15 45:7,7 45:11,13,15,22 46:4,5,10,23,24 48:19 71:14 72:9,15 74:4,9 75:5 76:11 77:15,21 79:3 80:13 81:9	82:11 89:16,18 89:20,21 90:4 91:11 92:1,9 92:10 100:3,5 111:15,18,22 111:23 112:23 112:25 113:2 113:21,25 115:8 119:15 119:25 120:9 123:2,11,12 126:2,18 168:14,16,20 172:9 177:18 181:9,14,17,20 181:24 182:1,4 182:14,17 185:8 186:1 187:1,5,7 188:12,15,21 189:1,9,20 190:1 193:2,3 193:14 194:8 194:19 199:5 201:7,10 208:4 208:14 216:14 216:22 224:15 exposures 30:4 30:7,10,13,14 30:16 32:18 83:11 93:11,13 111:25 112:2 168:24 178:3 181:9,14
--	---	--	--

182:16,21 183:2,3 184:11 199:3 201:22 207:9 expressed 130:4 156:15 expression 165:19 extent 100:11 195:13 205:5 external 42:19 154:21 extreme 201:18	83:22 86:11,19 87:2,13 88:16 88:25 89:9,13 89:14,23 90:5 90:6,7,10,11 91:3,6,9,18 92:14,15 93:1 93:5 94:13,14 102:25 103:6 103:10 107:10 116:14,19,20 117:12 118:18 118:18,23 121:2 125:15 125:20 126:4 166:17 168:4 171:12 175:9 175:13,15 183:6 200:15 214:21 216:2,8 220:13 221:1 222:8 factored 73:22 factors 27:6,11 27:11 28:14,18 28:20 31:11,22 33:5,9,13 37:19,22 43:22 47:21 77:20 81:14 86:15 99:17 116:14 116:24 141:1 165:22 166:14 166:19 167:17	171:11 183:19 200:12 216:9 216:14,16,21 222:6 224:12 facts 173:17 fair 26:14,23 36:4 63:1 66:1 114:5 119:13 119:22 172:11 215:1 fall 108:6,9 falls 145:12 false 52:12 115:6 171:9 familiar 38:16 38:25 39:15 152:7 171:7 200:1,4 207:8 familiarity 38:9,12,21 familiarize 171:14 familiarizing 170:5 families 76:4 family 31:16 156:10 163:8 186:19 far 53:20 55:6 139:21 155:23 159:9 184:7 farm 34:5 fat 100:2,6	father 149:23 150:9,12 156:15 fatigue 129:11 favor 87:11 february 57:2 57:18 federal 2:4 feedback 211:18 217:11 217:14 feel 173:6 fellow 206:24 fellowship 26:6 170:5 206:23 felt 37:14 171:6 172:14,20 173:6 178:4 field 45:17 66:20 114:10 192:25 200:6 fields 136:6 187:15 figure 62:23 89:19 107:19 107:22,25 108:2,3 183:11 figures 185:3 filed 154:13 fill 184:7 filled 25:11 finally 138:22 financial 160:11,13
f			
face 189:24 fact 25:11 53:7 108:7 115:2 116:18 117:20 118:9 124:3 135:6 170:14 195:24 198:3 200:20 factor 27:23 28:6 33:17,19 34:12 37:16 47:24 48:7 71:16 73:19,25 75:22 76:12,21 78:21,22 79:1 79:24 80:13,18 81:3,13,14,21 81:23 82:1,5 82:18,22 83:9			

find 27:16 75:11 85:17 86:3 94:12 96:1,12 104:5 104:8,14,18 121:4 132:2 135:9 148:20 163:6 193:8 201:18 207:15 224:11 226:4 finding 192:16 findings 107:3 fine 7:8 180:9 217:21 finish 8:8 9:15 finite 144:5 fire 201:12 first 6:21 9:24 10:1 27:9 54:16 56:25 58:22 73:11 101:11 117:9 117:19,21 118:2,9 133:24 136:13 137:8 148:6 204:16 204:18,23 205:8,23,24 206:19,21 211:5 212:13 five 26:1 36:11 36:15,18,23 37:2,10,21 60:5 66:3	136:13,14,21 137:8,8,13 148:6 155:20 161:4 flip 93:25 fluctuates 100:9 focus 19:25 30:23 follow 25:24 33:24 164:2,4 followed 136:20 following 21:12 126:18 132:5 139:6 141:22 145:24 157:24 226:6 follows 6:22 foregoing 226:3 227:5,9 forever 120:22 120:22 form 10:3 15:18 18:4 25:2 27:25 28:9 29:25 31:5,23 32:10 32:15 34:14 35:1 37:1 38:17 41:10 43:17,23 44:4 44:11 45:25 46:9 48:2,16	49:5 52:13 54:18 56:9 57:20 63:6 65:8,17 66:5,9 67:24 68:24 81:4 83:2 88:17 89:2 91:19 108:19 110:3 113:21 115:13 117:3 118:12,24 122:10 138:24 146:23 147:13 159:1 165:6 173:9 174:12 182:10 183:15 183:25 184:5 187:18 188:5 190:9 191:13 191:23 194:2 194:11 197:25 198:12 216:19 221:2 formal 124:25 152:19 formed 15:17 174:14 former 51:21 58:25 218:6 219:9 formerly 205:16 forming 76:24 176:3 195:20	forms 183:19 forth 95:1 103:13 125:4 136:8 forward 46:25 207:16 found 85:12 88:14 100:16 102:3,20 103:23 104:1 104:12 106:14 107:4 115:17 120:11 121:7 121:12,23 124:4 143:1 145:6 193:25 223:11 foundation 18:5 28:1,10 30:1 31:6,24 35:2 43:17,24 44:5,12 46:1 48:3,17 49:6 52:14 54:19 56:10 57:21 63:7 64:5,11 64:22 65:2,9 65:18 67:1,10 67:23 68:25 70:12,19 80:1 88:18 89:3 108:20 110:4 115:14 117:4 118:13,25
--	---	---	--

122:9 146:22	functional	46:7,13 47:12	110:8,18
147:14 156:17	131:18	48:5,23 49:7	111:20 112:13
157:8 159:2	functioning	49:19 50:2,21	113:10,16
165:7 179:5	131:7,17	51:15 53:2,18	114:4,9,14,23
182:9 186:13	functions	54:2,8,21	115:9,19 116:1
186:21 187:19	130:20	55:18,24 56:6	116:6,12 117:7
188:6 189:11	fundamental	56:13,21 57:16	117:17 118:4
191:14,24	191:22	57:23 58:11	118:20 119:6
194:3,12 198:1	further 20:23	59:17,23 60:13	119:12,21
four 88:7 90:3	34:3 107:2	61:12,18 62:6	120:6 121:14
91:16 97:1,22	171:8 207:7	62:15,25 63:14	121:25 122:14
fourth 22:25	210:11 224:17	63:20 64:7,13	123:16 127:25
64:25 102:8	224:18,22	64:24 65:4,12	130:21 131:12
frame 61:20	227:11	65:20 66:2,7	131:21 133:12
195:7	future 130:1,3	66:11,17 67:5	135:1 136:23
framework	g	67:14 68:2	137:21 138:2
163:18	g 6:1	69:4,20 70:2	138:19 139:4
free 157:21	gaddy 3:14 4:3	70:14,21 73:8	140:6,15 141:8
frequently	6:17,17,25	73:14 75:2	141:21 143:13
211:15	7:11 10:5,17	76:19 77:12	144:11 145:1
freuchtenicht	13:12 14:7,18	78:19 79:12,19	145:17 147:4
3:9	15:9,21 17:9	80:7,25 81:18	147:10,17
friday 150:2	17:16,22 18:7	82:3,20 83:19	149:11 150:18
friends 31:17	26:24 27:18	83:25 84:6,21	150:25 151:9
front 51:10	28:5,12 30:6	84:22 86:21	153:18 156:21
67:3 84:19	31:19 32:5,12	87:14 88:23	157:13 158:8
172:19	32:19 34:8,19	89:11 91:4,24	159:13 160:12
full 7:4 13:20	35:8,19 36:1	92:16 93:3,14	160:21 162:3
47:19	37:6 38:7,14	95:6,24 96:16	164:1,19
fully 115:20,23	38:23 39:4,9	98:24 101:2,24	165:10 166:5
131:2 197:21	39:13,20 42:20	104:10,24	166:23 169:12
function 162:9	43:2,7,12,19	105:8 106:8	170:20 172:25
162:17 212:12	44:1,8,17 45:3	108:1,24	174:16 176:9
213:3		109:10,24	176:16 177:2

178:23 179:8 180:1,9,11 182:19 183:4 185:6,14 186:16,24 187:25 188:9 188:25 189:6 189:17 190:4 190:12,18 191:20 192:4 193:12,23 194:6,18 195:15,18 197:17 198:8 199:10,14,21 200:10 203:22 205:14,22 206:18 209:3 210:9,17 216:19 217:11 217:13,20 218:3 219:14 221:2 222:21 224:19,20,22 225:2 gap 139:6 gather 210:14 gears 214:8 gender 112:22 general 70:10 96:19 174:22 177:7,11 178:10,15 179:17,21	180:22 181:1 206:14 generally 44:24 75:17,19 95:19 135:22,25 137:1 158:21 167:4 201:15 202:3 220:7,11 222:4 genetic 44:3,6 44:19,21 geneticist 16:19 genitourinary 19:22 getting 79:4 217:22 gilbert 174:21 gist 220:15 give 9:10 21:11 94:21 183:16 183:18 192:13 198:13 212:4 given 24:20 142:2 160:3 168:4 187:17 198:5,22 200:8 206:24 gives 33:16 72:9 giving 24:7 go 7:16 20:24 32:16 41:11 50:11 51:16,18 67:15 74:8	84:6,20 94:6 118:17 124:6 133:7 137:1 139:5 140:17 150:25 158:18 167:19 174:1 180:5,13 181:21 199:14 206:11 207:16 210:17 217:13 220:1 221:7 goal 170:7,21 170:25 173:12 173:12,14 goes 18:22 107:2 151:13 198:10 212:24 going 7:16,18 13:8 14:14 24:19 33:6 35:9 36:8 45:19 46:25 47:7 52:4 60:7 66:18 79:15 87:12 107:18 113:6 120:25 124:12 133:16 134:9 149:7 150:1 163:22 164:2 178:19 195:9 200:11 205:1 208:24 219:10 220:6 222:21,24	gold 24:14 128:3 good 6:11 7:1,2 38:16,20 42:13 79:17 82:16 83:25 84:4 90:20 93:18 140:23 141:5 150:20,24 151:2 155:7 160:11 194:17 goodman 175:2 google 176:11 gotten 161:14 grade 20:8,14 20:15,17,17,18 20:25 21:10 23:1,19,20 47:8,8 126:23 127:21,23 136:11 139:13 139:16,18,19 140:1,2,4 141:23,25 148:7 211:16 granted 212:8 great 76:17 89:16 104:19 216:7 greater 102:14 104:25 105:10 198:4 214:2 215:16
---	--	--	---

grossman 3:4 ground 7:17 196:9 groundwater 121:8 126:10 182:18 183:3 218:22 group 103:16 103:17 115:16 136:5 168:11 192:20 193:1 198:17 207:15 growing 34:1 guaranteed 188:16 guess 220:7,10 guide 47:10 guideline 135:23 guidelines 127:12,20 135:25 136:1,4 148:4,5 154:11	handed 51:11 handful 53:9 61:25 211:3 handicap 163:4 hands 155:7 162:21 hanging 212:19 happy 150:21 hard 77:15 85:17 100:9 193:3,9 harder 75:1 197:6 harm 138:16 haroon 3:15 hatten 184:15 188:11 hazard 102:11 head 8:15 health 18:14 31:18 105:20 141:6 186:20 190:15 hear 9:3 211:18 217:18,20,21 218:2 heard 223:17 hearing 217:12 217:18 heart 148:17,23 148:25 149:4 149:24 150:6,9 150:12,15	heavy 100:3,10 100:11 220:13 hello 151:11 help 46:24 155:9 192:10 helpful 24:18 195:14 helping 185:20 helps 42:21 hematuria 129:7 herbal 29:7 herbicides 29:1 hi 151:10 high 20:15,17 20:25 21:10 22:25 23:18,20 25:18 47:8 100:20 101:5 120:10 126:23 127:21,23 136:11 139:19 140:2 160:2 161:8 169:1 211:15 higher 72:20 99:14,24 122:7 181:10 182:1,7 182:16,22 192:13 199:4 212:23 216:1 218:20 highest 102:13 216:5	highly 71:10 hispanic 110:21 historically 55:16 histories 214:10 224:14 history 32:17 37:24 48:14 55:20 57:6 58:3 60:24 61:8 63:3,10 65:6,14 67:17 71:6 80:4,22 81:8,10 83:6 100:17 101:4 138:14 144:4 144:15 156:5 156:10 167:18 184:8 200:14 208:7 214:14 215:1,2,16,22 215:25 216:5,7 217:5 220:25 224:13 hit 72:3 hold 93:2 hole 162:24 213:9 home 77:17,24 78:8 181:21,22 honestly 155:15
h			
h 4:9 12:20 habitus 155:14 half 30:3 49:15 51:5,22 59:1 59:13,25 64:20 hand 42:9 163:3 201:12 201:12 227:13			

hope 161:18 178:1 hopeful 161:16 hospital 149:20 hot 21:18 201:12 hour 10:7 79:15 212:11 hours 203:1,2 house 77:19 how's 50:12 huh 8:15 132:11 human 137:18 173:13,16 198:13 hundredth 103:19 husband 64:4 162:10,13 hypothesis 95:18 169:11	60:12 101:23 106:7 133:11 149:10 178:22 209:2 219:16 identified 46:3 81:13 84:18 218:14 identifies 83:21 identify 29:14 29:23 30:5 35:21 48:6 114:24 116:2 188:14 identifying 31:1,21 46:22 identities 203:13 idiopathic 35:22 36:2 114:11,19 221:16,17,21 221:24 222:2 222:10 223:11 223:14,15,15 223:24 idiosyncrasies 167:18 idiosyncratic 43:21 ignore 69:10 ileal 41:7,8,12 41:15 154:20 ileum 41:14	imaging 160:9 160:20 161:5,6 161:11,12 immediately 21:25 immunothera... 25:3 impact 5:5 101:12 138:5 200:22 impair 173:8 impaired 146:5 implies 130:16 important 31:3 31:21 137:18 138:1 212:16 impossible 89:24 139:3 198:11 improve 129:20,21 incidence 171:3 197:4 206:17 207:1 incites 45:16 include 27:20 120:14 148:1,2 177:15,15,21 211:11 224:1 224:13 included 120:23 includes 103:5 224:15	including 29:18 81:2 194:24 income 11:9 inconclusive 63:4 inconsistencies 49:9,12 63:2 63:22 inconsistent 76:7,10 99:9 incorporated 172:2,6 177:11 incorrect 40:8 incorrectly 223:18 increase 90:24 106:23 120:11 194:9 increased 18:2 70:9 71:20,23 100:15 106:22 171:3 206:16 207:1 increases 72:7 105:1 increasing 28:7 30:15,15 102:9 102:9,15,16,25 103:6 192:20 increasingly 136:14 incredible 151:19
i			
ideas 206:24 ideations 147:1 156:15 identifiable 35:5,6 115:7 identification 10:16 13:11 14:17 15:8 50:1 54:7 56:20 58:10			

independent 73:25 103:1,7 123:25 169:13 169:18,24 191:4,6 independently 125:11 164:9 188:18 216:17 index 5:6,8 99:21 101:13 105:25 indicate 76:2 111:14 112:22 143:4 indicated 70:17 107:3 indicating 145:6 individual 18:2 108:5 123:24 167:17 173:23 186:19 188:16 195:8,21,23 196:10 198:4 individual's 47:6 individually 195:2 196:12 198:6 individuals 110:25 184:11 induced 113:2 113:25 126:14	industrial 28:22 34:4 industries 28:19 industry 28:21 infections 29:4 212:24 information 52:20 204:24 207:24 208:7,8 210:3 informed 170:7 170:23 informing 170:21 ingested 45:7 189:8 ingestion 185:3 189:19 inhalation 181:19 inherent 173:12 initial 99:1 139:12,19 154:17 204:25 206:4 initially 103:15 160:25 inquiry 121:16 inserted 21:15 inside 22:3,5,16 40:16 41:19 77:23	insignificant 48:15,20,25 66:19,21,25 instance 33:25 34:4 196:8 212:22 216:6 instances 63:12 116:7,11 instruct 163:23 195:10 203:12 205:2 instructed 163:20 instructs 9:5 insufficient 74:14 88:15 125:14,19 insurance 184:7 intact 131:11 131:20 intake 94:9 183:18,24 184:5 intensity 218:7 interact 197:18 197:20 interactions 197:11 interest 34:5 205:10 interested 169:5 227:12	interference 217:23 interject 217:10 internal 213:1 interpret 55:25 interrupt 79:16 interval 92:11 intimately 172:2,5 intravesical 20:23 21:24,24 22:21 24:20 211:12,19 213:17 introduce 6:8 invading 126:24 invasive 21:1,2 21:11 22:11,12 23:1,19,21 24:21 47:9,9 127:21,24 211:16 investigated 121:15 investigator 16:11 17:3 invoices 4:11 10:22 11:1 involve 23:10 25:21 involved 28:23 40:18,22 44:7
--	---	--	---

involves 154:21 involving 172:8 irritability 146:7 issue 64:10 182:6,23 188:16 issues 170:22	key 175:20,22 kidney 37:8 42:1 213:3 kidneys 19:23 23:7,16 45:9 159:5 kilogram 106:22 kind 44:15 79:16 108:16 142:19 152:18 183:16 207:17 210:14 knew 205:9 know 7:24 8:8 31:15,16 36:6 36:16,19,23 44:21 46:6,10 52:12,19 53:3 55:13 56:3 57:11 59:21 83:16 98:23 100:8 119:19 121:11,12 131:9,19 134:5 154:2 165:20 182:25 193:21 196:13 197:14 198:24 202:8 202:11 203:19 207:18 212:22 213:20 215:6 217:15 219:20 220:2	knowledge 171:16 known 28:13 48:7 114:15,17 115:3,7,11 156:10 197:12 197:16,19 201:13 221:22 222:8 223:19 223:22 224:12 korea 103:23	late 135:6 latency 70:8,23 71:2 72:3 92:18,24 93:4 93:10,12 113:1 113:23 114:3 201:8,14,20,21 201:25 202:2,8 202:11 laundromats 196:20 laundry 28:21 law 149:23 150:9,12 layer 21:5,6 layers 21:4 lays 119:2 lead 24:13 leads 74:21 learned 208:1 leave 133:21 134:3,16,23 176:21 leaves 134:5,11 134:22 led 131:3 207:6 left 25:15 41:24 legal 163:21 164:12,18,25 165:3 174:2 lejeune 1:4 6:6 7:13 12:3,4 19:4 30:21 36:7,16,24
j		l	
january 9:25 jefferson 4:14 5:13 jenna 3:9 6:14 203:10,16 jfb 3:11 jimmy 5:17 job 1:25 john 5:17 179:4 joined 25:15 jt 3:22 203:17 june 1:14 2:1 6:4 58:19 227:13 justice 3:14 7:12 163:11,13 164:7 172:23		l 12:20 label 35:24 laboratory 160:8 labs 160:20 lakind 184:19 language 130:9 164:21 165:20 166:7 lapse 135:12,16 135:20 138:4 laptop 51:11 laramore 5:17 large 20:14 25:20 169:1 227:3 largely 146:15 larger 25:10 94:25 lasts 155:1	
k			
keep 22:11 107:18 137:16 211:6,22 212:5 kelly 184:24 185:23			

37:11,13,15,22	lethal 140:5	167:15 188:17	literature
38:2,5 47:22	level 18:2 21:18	192:14 216:11	16:14 17:6
80:6,14,23	77:15 152:22	218:19 223:8	18:19 19:4
81:12,16	182:6,14	limit 66:23	72:5 75:3,6,16
119:15,24	193:14,20	223:25 224:3	76:10 82:15
122:19 123:3	194:8 216:5	limited 181:15	85:16,19 86:2
123:11,19	218:20	193:6	86:14,22 87:3
124:20 125:7	levels 99:14,22	line 45:14	87:6,10 88:14
126:3,10	99:24 120:11	108:10 112:10	90:2 91:6,10
163:10,13	121:7 181:9,10	113:1 132:2	91:13 92:8
164:6 167:7,8	185:8 186:1,11	133:16,17	94:18,20 95:5
168:13 169:15	188:3	134:10 162:24	95:12,16 96:20
170:6,15,22	licensing 42:24	169:19 220:7	99:9 104:8,21
171:4 172:9	life 53:5 57:12	226:8	112:10 121:19
176:23 177:23	111:13 128:19	lined 162:23	123:18,22
181:11,17	128:19 139:21	lining 159:4	125:7,9,14,19
182:5,8,23	212:7,18 214:4	link 29:2	136:7 167:5,20
183:5,12,14	lifelong 147:19	linked 174:2	167:25 168:3
186:12 187:24	lifetime 67:9	links 38:22	169:14,19,20
190:20 191:1	159:24	lipophilic 100:1	175:19,20,21
194:20 196:16	likelihood 22:9	lipscomb 175:2	175:23 191:7
196:23 199:1	22:13,14,17,18	list 27:10 33:6	193:10 195:3
204:8,19	128:17 158:10	33:8 78:16	195:20 196:14
205:12 206:15	158:12,24	101:8,8 119:2	206:14,20,22
206:25 207:9	161:25 212:24	119:3 120:5	207:4,7,8,12
207:21 208:1,6	likely 37:15	165:21 166:13	litigation 1:4
208:14 218:18	73:10 78:3,5	213:24 221:21	6:7 7:14 15:13
224:15	78:10 92:25	223:9,10	53:14 68:22
lejeune's	94:14 100:4	listed 105:23	126:13 204:9
218:22	117:12,22	147:12 214:19	little 20:12
length 41:17	118:10 123:1	215:17	21:17 39:21
42:13 59:5	143:1 165:9,13	literally 40:15	79:15 104:3
lesser 74:10	165:24 166:1	212:19	107:5 132:4
182:16	166:16,21		136:19 139:17

173:20 191:16 222:22 live 22:7 77:16 lived 77:4 122:1 liver 45:9 lives 120:19 215:8 living 131:10 207:21 local 120:24 location 162:22 227:5 long 26:3 70:8 93:7 100:11 134:2 138:16 149:25 178:25 197:7 202:24 203:20 220:14 longer 21:9 130:19 148:9 155:18 158:2 159:17 longo 1:13 2:2 4:12,15,17,19 5:20 6:5,20 7:5 10:15 13:10 14:16 15:7 49:25 51:8 54:6 56:19 58:9 60:11 97:11 101:22 106:6 133:10 149:9 163:25	178:21 209:1,6 211:2 214:7 219:15,18,22 224:16,24,25 226:2,25 longo's 84:16 look 21:2 25:7 28:16 31:10 69:12,15,15,18 74:17 75:6 80:8 81:10 82:9 85:4,7,15 89:17 97:14 107:13,19 124:21 132:2 136:10 149:18 168:8,10,18,21 168:22,24 171:8 172:17 177:18,19 178:1,6 179:21 180:22 182:12 192:23 193:1 196:25 197:3 198:11,16,20 205:12 206:14 looked 70:16 75:15 83:3 95:20 97:8 103:14,21 108:5 121:22 123:22 166:12 167:17 195:3 196:18 222:19	looking 37:19 50:20 52:2 75:25 82:13,14 86:13 120:8 132:5 133:13 149:3 156:22 156:24 178:14 185:18 195:21 195:23 198:19 207:19,20 216:13 looks 13:21 110:1,7 150:11 180:24 lose 105:10,14 105:16,20 213:12 loss 146:8 lostine 54:17 lot 57:24 108:13 120:20 121:13 136:22 140:25 147:16 199:25 loud 8:12 lovett 154:14 154:17 low 20:14,16,18 47:8 53:1 63:13 99:22 139:13,16,18 139:25 140:4 140:16 141:22 141:24 148:7	159:9 218:7 221:4 lower 187:13 193:7,21 194:15 201:15 lowest 102:12 194:7,17 215:23 lunch 150:20 lymph 23:5,15 m m 3:4 5:13 m.d. 1:13 2:2 4:15,17,19 5:18 6:20 226:2,25 made 9:7 131:25 161:21 174:7 188:8 227:7,10 magnitude 182:5,22 magnitudes 181:9 182:1 maintenance 132:6 major 82:1,4 83:8,22 86:19 88:21 89:8,13 89:22 90:5,6 90:11 91:6,8 91:17,22 92:13 93:1 126:3
--	--	--	--

153:6,14 200:15 majority 41:6 115:2,6 make 8:2,16 37:17 49:21 87:23 124:2 136:15 141:2 141:18 154:2 158:6 172:22 174:5 207:12 212:9 216:7 218:1,11 makes 92:24 191:12,16 192:6 making 53:23 132:19 152:16 malaise 129:9 malignancies 19:21 172:8 malignancy 31:9 159:23 malone 3:22 203:17 malpractice 12:1,9 13:2,6 154:14 mammals 193:7 man 23:4 manual 155:6 162:20	manufacturing 28:22 march 50:14,25 97:13 206:6 marine 168:13 marines 168:12 mark 49:24 60:8 106:4 178:20 marked 10:14 10:15 13:9,10 14:15,16 15:6 15:7 49:25 54:5,6 56:15 56:19 58:7,9 60:11 101:21 101:22 106:6 133:8,10 149:8 149:9 178:21 208:25 209:1 219:15 mass 5:6,8 99:21 101:13 105:25 189:8 match 177:25 178:7 matches 177:20 materials 101:7 105:23 math 73:2 matter 6:6 71:25 72:23 137:6 192:2 193:10 208:12	mccarthy 122:5 122:16 mcls 187:11,13 193:19 mean 32:14 36:2 55:25 60:3,5 66:3 81:20 90:12,14 116:15,19,25 153:13 166:18 170:17 197:8 meaning 19:16 31:12 74:22 78:14 83:12 92:11 140:25 144:2 155:3 192:13 222:5 means 21:25 32:16 76:11 81:7 90:19 100:1 188:12 meant 46:2 62:23 223:2,6 223:21 measured 189:9 mechanism 111:10 medical 4:20 4:22 5:1,3,14 12:1,9 13:2,5 34:10,16 49:3 49:10,14 51:21 52:18,25 57:6	57:24 61:8 63:2,11,19,23 64:15,19 65:13 67:18,20 68:3 68:16,20 69:3 69:5,9 70:15 70:16 82:9 83:4 91:13 95:4 98:13,16 100:17,21 131:4 132:16 132:21 143:25 144:23 146:2 146:12 148:25 149:4,16 150:5 150:14 152:6 154:14 156:7 156:12 166:25 167:3,14,18,21 168:2 184:8 207:3,5 208:21 214:18,20 215:11,17 220:21 224:5 224:13 medically 48:15,25 66:19 66:21,25 medicine 43:9 meet 183:17 202:21 meetings 202:25 203:3,8 203:25
--	--	--	--

megan 3:14 6:17 7:11 51:7 79:11,14 84:20 113:8 195:17 210:12 219:12 megan.gaddy 3:17 member 186:20 memmler 3:23 memory 156:11 157:11 210:8 men 110:10,13 148:12 212:16 213:7 mention 203:12 mentioned 21:14 24:24 63:13 144:22 178:2 204:15 213:8 mentioning 13:1 mess 222:21 met 202:18,23 meta 5:10 94:7 94:22,23 95:8 95:16,20 106:1 106:9,18 108:3 108:12 metabolites 196:2 metabolized 197:15	meters 106:23 methodologi... 87:17 methodology 47:18 87:20 96:14 175:7 190:14 metric 189:10 189:19 metrics 189:13 189:14,16 mice 193:7 micelli 3:5 203:17 micrograms 189:9 microscope 21:3 middle 52:6 mike 149:20,20 205:24 milberg 3:4 6:12 milberg.com 3:7 military 144:1 144:6,10,14 183:10 mind 33:7 36:9 41:18 212:15 minimal 53:21 55:6 71:5 91:10 92:1	minimally 147:24 148:10 minority 116:11 minute 84:2 199:12 220:4 minutes 210:13 210:16,18 minutiae 124:7 mis 221:11 mischaracteri... 83:1 mispronounce 129:3 missing 208:8 misspeaking 81:6 misstates 121:9 mistaken 148:21 misunderstan... 144:18 mitomycin 142:3 mixture 195:7 195:22,24 196:15 197:1 mixtures 196:18 model 102:17 106:19 193:5 modeling 184:11 185:1 186:4,7,9,18	models 17:18 102:14 185:8 186:1,18 193:6 modifiable 31:12 moment 12:21 21:14 24:16 55:15 95:15 121:6 177:1 185:17 moments 8:22 monday 1:14 monitor 137:22 159:15 monitoring 160:9 month 97:2,23 months 161:2,2 202:5 206:3 moral 172:14 172:18 174:2,5 174:7 morality 174:9 174:13,15 morally 173:6 morgan 3:5 morning 6:11 7:1,2 mortality 197:5 moseley 127:9 130:4,7,25 moseley's 149:16
--	--	---	--

mother 157:6	name 7:4,5,11	neobladder	nonlegal 165:4
mother's	12:7 54:14	41:6 42:9,19	nonlinear
157:15	79:1 194:4	neobladders	106:20
mri 161:6	203:21	40:21 41:2	nonmuscle
mrts 160:10	named 12:11	network 136:4	21:1 22:11
multifactorial	12:18 102:1	148:5	23:1,19 24:21
43:14	national 136:3	never 16:10,13	47:9
multiple 20:22	148:4 171:20	17:2,5 18:18	nonobese
21:4 22:4	173:2	19:3 52:9 56:7	103:20
83:17 94:23	natural 138:14	56:8,12 67:8	nonsmoker
196:6,17	nature 11:24	70:5 89:6,23	49:2 67:17
multitude	nccn 148:4	122:18 131:13	68:23 69:6
213:11	near 52:6	158:14,14,17	82:23
multivariant	128:12 158:10	158:19 170:13	nonsmokers
102:17	161:21	194:15 207:6	67:7
muscle 21:2,5	nearly 198:11	new 25:23 27:2	noon 150:19
21:10 22:12	necessarily	116:3 171:12	normal 8:4
23:20 42:5	56:7,11 79:8	171:13 175:9	107:5 155:6
47:9 126:24	116:15 128:15	news 120:21,24	212:18 214:4
127:21,24	131:2 153:5,13	121:13	north 1:2,15
211:16	necessary	nightclub 64:3	2:6 3:6,10 7:10
muscularis	171:6 193:14	65:16	7:15 120:24
21:6	need 20:19	nine 60:3	121:8,22,24
mutations 44:3	41:16 42:13	nod 8:15	122:2,6,19,21
44:7,9,19	147:19 162:14	nodes 23:6,15	171:1 183:22
45:16	210:13	non 21:10	227:3,18
mute 217:14	negative 86:7	103:16	notable 104:15
mysterious	175:24	nonfunctional	notary 227:3
224:8	negatives 75:20	130:16,23	227:18
mystery 117:6	neighborhood	131:14	note 4:24 49:9
n	25:19 26:1	noninvasive	49:13 51:8
n 4:1,1 6:1	neither 96:5	139:14,16,18	53:7,19 57:1
	187:9 227:11	140:1,2 141:23	63:22 64:1,14
		141:25	64:15 65:5

76:5 77:2	o	62:10,20 63:6	135:21 137:14
84:13 94:6	o 4:1 6:1 12:20	63:17 64:5,11	137:24 138:12
96:24 100:20	oath 8:22,25	64:22 65:2,8	138:24 140:3
100:23 101:4,5	69:25	65:17,24 66:5	140:12,19
120:7,10	obese 101:1	66:9,15 67:1	141:14 143:9
126:22 129:14	103:17,20	67:10,23 68:24	144:7,16
135:11 142:25	obesity 98:25	69:11,23 70:12	145:15 146:22
143:14 145:22	103:16 104:7	70:19 73:6,12	147:7,13
146:4 149:19	104:21 107:5	74:16 76:13	153:15 156:17
155:25 162:4	108:13 109:21	77:9 78:11	157:8,22 159:1
noted 51:20	objection 9:4,7	80:1,20 81:4	160:5,15
57:1 78:5	10:3 14:3	81:24 82:6,25	161:23 163:22
103:15 149:4	15:18 17:8,14	83:23 86:12	164:16 165:6
notes 60:18	17:20 18:4	87:5 88:17	166:2,10 168:5
100:22	26:20 27:8,25	89:2 91:1,19	170:16 172:15
notice 2:3	28:9 29:25	92:3,21 93:8	174:11 176:5
150:19	31:5,23 32:10	94:16 95:13	176:13,19
noting 65:14	32:15 33:20	96:3 98:21	179:5,23 182:9
notorious	34:14 35:1,16	100:18 103:11	182:24 185:4
28:20	35:23 37:1	104:16 105:3	185:10 186:13
novo 37:5	38:3,10,17	107:11 108:19	186:21 187:18
183:13	39:1,8,11,18	109:1,17 110:3	188:5,23 189:4
nuanced	41:10 43:1,5	110:15 111:16	189:11,22
191:17	43:10,15,23	112:6 114:1,8	190:9,16
nuances 190:2	44:4,11,25	114:12,21	191:13,23
number 6:7	45:25 46:11	115:4,13,22	192:8 193:16
36:9 52:24	47:3 48:2,16	116:4,9 117:3	194:2,11 195:9
53:1 62:4	49:5,17 50:18	117:14,24	197:13,25
194:16 215:12	52:13 53:16,25	118:12,24	199:6 200:7
219:19	54:18 55:12,21	119:9,16 120:2	205:1,18
nurse 163:9	56:2,9 57:14	121:9,17 122:9	206:11 210:6
nurses 155:9,10	57:20 59:15,20	123:14 127:16	216:19 221:2
	61:10,15 62:1	130:17 131:8	objections
		131:15 134:24	227:7,10

objective 174:18	occurrence 62:13,14	54:25 60:22	184:10 186:8
obligation 172:21	198:19	67:6 74:2	186:25 188:10
observe 94:8	occurs 111:5	79:10 81:19	190:5,13,19,25
95:9	193:22	85:11 87:2	192:5 194:19
obstructive 146:10,15,20	october 54:22	88:10 90:2	195:6 199:1,10
147:6	55:1	95:25 96:17,24	199:11,22
obtained 69:13	offered 128:14	100:13 104:11	200:11 201:20
obviously 177:22	offering 132:13	113:17 120:25	202:7,13,20
occasion 65:16	154:7	121:15 122:1	203:7,11,15
97:3	offhand 101:16	124:18 125:5	204:3,21,24
occasional 62:14	157:12	125:13 126:21	205:7,23 206:1
occasionally 62:17	office 20:20	127:13 130:9	206:5,8,19
occasions 53:9	32:2 138:22	132:9,18	207:11 208:9
61:25	208:5	133:14 135:15	208:16,24
occupational 30:13 168:21	officially 204:22	138:3,20 139:5	209:24 210:3,9
181:8,13 182:7	oftentimes 155:9 182:6	142:11 148:15	210:17 214:23
182:15,21	192:12	149:3,7 150:18	215:6 217:19
183:2 196:20	oh 137:25	150:25 151:18	217:25 218:2,3
occupations 28:16	okay 7:11 8:9	152:16 153:19	218:5 219:7,10
occur 44:9,14	9:7,17,20,22	154:6 155:3,11	219:22 220:4
44:19 192:15	10:6,13 11:15	155:25 156:14	221:14 223:17
197:4	12:21 13:8	157:1,5,14	224:5,16
occurred 119:14,18,24	14:8 15:22	158:22 159:14	old 73:16 112:5
120:4 144:22	25:4 26:16	161:15 164:5	older 20:15
	27:5 29:9	167:19 168:1	71:12,16
	30:18 33:12	169:13,23	110:25 111:5
	37:10 40:17	170:3 174:17	once 21:8 61:14
	42:21 44:18	174:25 175:23	92:5 148:13
	45:4 46:8 47:1	176:10,17	161:3,13
	47:13,23 48:6	177:3 178:9	166:12 203:1,2
	50:13,23 51:16	179:9,13 180:7	222:16
		180:9,18,19,25	oncologist 19:14 38:12,20
		181:4,7 182:3	125:2,6 171:1
		183:5,15 184:4	

171:6,16 190:11 205:10 oncologists 130:12 oncology 25:18 158:1 212:1 one's 105:1 onerous 148:6 ones 33:10 ongoing 46:23 99:23 137:19 160:19 211:25 onset 71:9 ontologically 173:11 open 42:13 219:18 opening 219:21 operation 25:14 40:12,13 40:20 161:19 operatively 22:1 opine 163:20 190:19,22 opinion 38:24 39:3,5,14 46:8 76:25 77:24 94:11 104:9 108:15 109:13 124:5 127:13 132:13 137:6,6 138:3,8 164:22 165:1 169:14	169:24 170:1 173:9 174:13 174:14 176:4,7 190:5,10,25 193:13 195:7 200:25 202:7 218:17,21 219:6 220:24 opinions 15:16 154:7 163:11 163:14 174:9 174:17,22 177:12 188:11 195:21 opportunity 182:4 211:22 211:24 opposed 37:8 47:21 89:13 138:21 opted 128:6 opting 211:6 option 21:12,22 22:20,20,21,25 127:10 141:5 options 21:12 23:21 46:20 47:2,5 141:4 211:11 213:17 213:25 214:1 order 47:23 71:1 87:2,18 88:15 94:24 95:17 124:15	124:24 134:11 175:8,9 193:7 organ 40:13 212:9 organs 213:6 original 69:17 126:22 orthotopic 127:7 ostomy 40:22 41:2,9 42:5 155:10 162:5 outcome 11:6 128:18,22 138:6 140:8 192:14 198:15 outcomes 190:15 outside 21:8 23:8,18 40:16 41:19 68:17 77:17 90:2 126:13 139:10 141:10 154:12 ovaries 23:13 overall 105:20 106:14,17,18 overestimate 35:18 overlap 147:16 overtired 147:1 overturn 104:20 109:19	overwhelming 216:2,8 own 36:9 65:6 123:21,25 125:5,8 155:7 183:8 188:2 202:17 207:15 <p style="text-align: center;">p</p> p 5:17 6:1 p.a. 2:5 3:9 p.m. 151:1,5,6 151:6,8 199:17 199:18,18,20 210:21,22,22 210:24 225:5 225:10 p.o. 3:16 pace 8:19 pack 49:15 51:5,22 59:1 59:13,19,24,25 64:20,25 65:22 page 4:2,10 7:18 51:17,18 52:6,11 56:25 57:4 58:22 59:5 60:22 85:3,5 93:24 94:3,4 97:15 99:8 102:4 106:15,16 113:4,7,9,12 120:8 121:1
---	---	---	---

127:1,3 129:15 129:24 131:22 131:23 133:13 134:9 135:12 142:25 147:18 148:16,19 159:20 171:24 175:7 178:16 178:17 179:16 179:17,24 180:13,17 185:19 217:7 220:1,5 226:8 pages 13:22 15:1 paid 11:2 palliative 23:23 24:5 paper 96:13 177:24 186:6 papers 86:25 86:25 124:8 125:3 189:14 paragraph 52:23 54:25 80:10 85:8 102:8 106:17 113:12,13 120:22 129:24 159:21 171:25 parasitic 29:3 pardon 73:22 143:11 161:25 209:19	parents 77:4,17 77:23 78:7 part 32:3 37:9 40:11,13 42:16 47:7 82:22 91:25 120:23 123:12 172:13 208:16 214:15 223:4 224:1 participants 217:24 particular 33:22 75:14 94:22 140:24 166:20 182:13 213:21 222:9 223:22 particularities 47:6 particularly 28:24 103:24 116:23 160:10 213:7 parties 12:14 parts 29:5 45:20 214:19 party 227:12 pass 171:16 197:7 past 28:17 29:7 55:15 57:5 97:20 98:2,7 132:14 207:12	pat 6:12 patent 174:21 patience 210:10 patient 12:4,18 23:24 24:8 26:18 31:3,8 31:13,15,21,22 32:1,4,17 33:7 33:9,16,22 43:21 45:8 47:2 52:9,22 62:17 69:16,16 69:18 79:2 90:5 105:12 116:23 117:8 117:18 118:1 126:14 129:16 135:18 136:17 137:3 141:11 141:17,19 151:23 155:5 159:24 162:16 163:2 170:14 183:9,15,18,24 184:2,4,9 211:21 213:12 213:15,20 222:9 patient's 21:16 29:15 31:2 34:13,21 65:5 65:6 118:1,8 118:11 128:19	140:21 141:6 166:15,22 167:17 190:15 patients 12:3 21:11 24:6,21 25:5,10,12,22 25:24 26:10,25 27:3,6,10 29:21 30:4,24 32:8 34:23 35:4,14,20 36:5,9,11,15,18 36:22 37:3,10 37:21 41:5 45:22 46:20 47:20 76:3 105:10,16 112:4,9 126:11 126:17 137:15 155:6,13,22 163:4 165:15 165:20 171:17 177:18 181:17 183:7,16 201:18 207:2 207:15,16,19 207:20 208:3,5 211:10,18,18 212:4 224:14 patrick 3:4 203:10,15 paul 3:21 payment 11:5
---	---	---	--

pce 18:22 39:6 126:18 169:21 176:23 190:22 191:1 195:3 196:3 197:11 199:3 201:23 202:9	112:8,17 122:7 223:16 percentage 11:8 29:21 34:23 158:24 perfectly 217:21 perform 19:16 32:6 40:1 41:2 41:3 46:21 75:3 85:19 152:17 162:8 162:17 169:24 176:10 192:18 206:8 performed 47:13 123:7 performing 32:13,20 40:18 40:22 117:11 164:13 222:12 period 45:13 70:9,23 72:1,3 89:17 92:24 93:4 111:8 114:3 148:8 183:3 201:9,14 201:25 202:2,4 202:8,12 220:16 periodically 9:14 periods 93:10 93:12	perjury 9:1 permanently 130:16,23 131:13 person 71:19 116:18 140:25 162:14 173:18 203:4 213:22 person's 100:3 152:21 181:16 223:9 personal 141:10 personally 183:25 220:18 perspective 141:10 pesticides 29:1 peter 137:10 pfas 120:23 phillips 3:4 philosophical 173:23 phone 203:4 phrase 49:2 55:17 66:18 165:9,13,24 166:4,25 167:2 213:23 222:20 physical 162:18 physically 19:7 19:10 203:9 physician 12:3 12:23 31:10	36:10 46:19 62:16,24 90:23 122:5 137:2,12 140:23 141:10 141:12 190:6 213:15 physician's 54:14 physicians 63:16 65:5 114:10 165:23 204:13 213:20 219:3 picture 21:3 169:9,10 piece 23:10 41:13 42:10 52:20 94:18 95:2 207:24 208:8 pieces 41:23 pin 82:17 194:15 pinned 201:14 place 68:16 162:21 211:23 215:20 placed 104:6 212:14 places 67:25 69:2 71:6 83:5 plaintiff 3:3 11:13 12:7,17
---	--	--	---

plaintiff's 205:16	53:4 57:12	possible 31:14	183:7,8,21
plaintiffs 6:13	79:18,21 84:1	32:25 110:12	190:13
6:16 172:13	100:8,25	166:14 167:7	practicing
173:8 177:7	129:23 133:4	post 22:1	19:13
179:10 184:14	pointing 32:2	153:25 154:3	preceded 95:21
184:25 185:9	poison 191:12	postpone 150:1	precise 44:23
186:2 188:22	191:16,18	212:13	45:4
204:8,12	192:2,7,21	potential 32:22	predated 156:5
208:17,20	polk 174:21	32:23 33:5,8	preface 96:4
plants 28:22	pools 95:17	33:13 35:6	pregnant 73:11
plausibility	poor 146:5,6	46:22 47:24	preparation
197:24	147:5,8	88:25 106:20	132:22 202:14
play 78:22	population	116:3 175:10	202:16
played 172:19	24:6 70:11	200:12 212:25	prepare 202:15
please 6:8 7:3,6	103:23 168:11	215:3,5 216:9	204:5
7:24 8:8,11,14	177:19 178:8	216:24 218:23	preparing
8:18 9:6,15	populations	222:13	164:10
50:9 102:5	168:19 177:25	potentially	preponderance
127:2 180:14	178:1,7	182:4	75:25
185:16	portion 25:21	pouch 41:9	presence
pleasurable	40:19 41:5	42:5 127:7	216:22
146:8	45:11,18 76:17	pouches 40:22	present 3:20
plg 4:12 5:20	portions 39:23	41:3	118:23 126:12
205:4 209:6	posed 193:21	powered 109:6	132:15 138:17
plotted 108:4	poses 139:21	practice 25:4,7	159:4 165:21
plunkett	positive 75:12	25:16,18 26:4	181:10
174:21	75:18,21 86:3	26:7,16,17,22	presented
plus 21:24	86:7,10 87:16	29:9,13 30:23	136:18
22:21 24:4	102:21 104:12	31:1,22 38:8	preserve 24:11
92:9,10 189:25	107:3 175:24	45:23 46:18	128:18 211:22
point 9:13,19	positives 75:19	112:3,7,12	212:2,17
21:1 25:8	possibility	117:9 130:11	preserves
31:14 52:23	215:15 218:15	148:14 151:22	212:18
	222:18 223:25	166:1 172:6	

<p>press 34:2</p> <p>pressure 53:10</p> <p>presumably 72:10</p> <p>pretty 108:9 203:20</p> <p>prevent 128:15</p> <p>prevented 128:20</p> <p>previous 69:7 92:6 215:11</p> <p>previously 13:1 51:4 64:16 65:22 164:20 164:24 204:15</p> <p>primarily 167:3 196:1,19</p> <p>primary 19:25 137:2</p> <p>principal 16:10 17:2</p> <p>principle 191:11,15,22</p> <p>printed 84:15</p> <p>prior 68:21 88:11 96:25 98:15,17 100:21 121:10 138:10 143:18 144:5 200:21 202:23 205:16 206:9 215:8</p> <p>priori 96:7</p>	<p>private 26:4,17</p> <p>probability 167:1,3,10,21 168:3 169:2 220:21 221:4</p> <p>probably 25:20 25:22,25 26:22 27:2 40:3,4 62:22 93:10 104:3 112:8,16 134:5 139:1 161:12 176:21 181:12 208:1</p> <p>problems 163:3</p> <p>procedure 2:4</p> <p>processed 45:8</p> <p>produce 75:1 175:24 208:22</p> <p>produced 10:23</p> <p>professional 165:4 227:3,17</p> <p>profoundly 104:9</p> <p>prognosis 139:25</p> <p>progress 4:24 24:1</p> <p>progression 22:14,19 140:11,14</p> <p>prolonged 100:4</p>	<p>proof 164:25 165:25</p> <p>proper 87:19 154:8</p> <p>properly 10:2 162:22,23</p> <p>proportion 25:10</p> <p>proposed 206:24 207:9</p> <p>propria 21:6</p> <p>prospect 221:11</p> <p>prospective 5:11 106:2</p> <p>prostate 19:24 23:5</p> <p>protect 173:15</p> <p>prove 90:20</p> <p>proven 22:8 72:20</p> <p>proves 90:21</p> <p>provide 33:23 177:3 180:25 216:1</p> <p>provided 163:17 164:6 175:5 181:2 184:21,22 204:25</p> <p>provider 152:9 152:15</p> <p>proximity 69:14 91:11</p>	<p>92:10 122:24 149:2 171:5 206:25</p> <p>psychiatrist 142:16 157:17 157:19</p> <p>psychological 142:18 151:19 152:4 213:4</p> <p>psychologist 142:15 152:1 157:16,19</p> <p>psychology 18:16</p> <p>public 227:3,18</p> <p>publications 14:9</p> <p>published 16:13 17:5 18:18 19:3</p> <p>pubmed 176:12 176:14</p> <p>puffing 74:23</p> <p>pull 97:10 208:24</p> <p>pure 198:12</p> <p>purity 34:6</p> <p>purpose 31:8</p> <p>purposes 49:3 67:18 105:20 105:21</p> <p>pursuant 2:3,3</p> <p>pursue 118:18 119:4</p>
---	--	---	--

put 22:2,5,16 34:7 41:23 42:7,15 62:18 67:3 68:12 70:23 78:16 95:1 125:4 136:8 141:1 167:12 169:8 169:10 201:11 213:1 pwallace 3:7	222:21 questions 7:19 27:15 32:18 33:15 183:9 199:23 209:25 210:10,11,13 211:3,6 224:17 224:18,19,23 quick 84:1 199:11 209:15 quit 61:1,2,13 70:4 71:3,7 73:10 113:18 quite 123:21 quote 48:15 51:20 166:7 218:6 220:24	range 40:3,5 112:17 136:6 ranking 79:9 rare 129:15 154:24 158:1 198:21 rate 10:7,11 151:12,16 160:2 rates 199:4 rather 195:7 ratio 102:12 108:17,17 109:16 110:2 122:7 rationale 143:5 143:15 144:12 ratios 107:16 rats 193:7 reach 41:19 79:17 118:15 158:14 173:16 reached 125:8 161:3 192:22 reaches 152:22 reaching 163:11,14 read 51:24 61:5 80:15 102:4,18 102:19 106:24 106:25 124:11 124:12,24 125:3 133:14 134:7,19 150:3	179:7,25 180:2 186:6 220:10 225:8 226:3 reading 96:13 102:3 124:3 150:11 169:24 170:2 171:23 220:6 reads 102:11 107:8 real 192:16 193:8 really 124:6 136:21 191:17 reanastomosis 213:1 reason 9:9 32:1 119:19 122:15 122:17 152:14 158:5 172:16 173:11,17 192:25 226:8 reasonable 8:19 35:18 166:25 167:2 167:20 168:2 220:21 reasons 212:3 213:11 rebuilding 40:14 rebuttal 4:18 15:12 99:5,7 99:13
q	r		
qualified 145:18 152:3 152:20 170:23 171:15 quality 128:19 212:6 214:4 quantify 187:4 187:6 188:21 question 7:23 7:25,25 8:6,8 8:11 9:6,6,16 12:16 33:22,24 55:14 56:4 71:18 89:5 118:6 126:9 133:17,22,24 134:2,15 144:18 167:23 177:20 195:11 198:24 199:9 205:5,6 220:20	r 6:1 12:20 racine 3:10 radiated 24:9 30:17 79:5 radiation 24:4 29:6 30:16 radical 23:2 24:16 25:14 127:6,22 128:10,13 raleigh 1:15 2:6 3:6 7:10 random 106:18 randomly 44:10,14,20		

recall 12:25 37:23 67:6 75:7,14 85:24 98:16,23 101:15 148:22 148:24 149:3 156:18,22,24 157:3,11 176:17,25 207:11 211:7,8 214:9 217:4 219:3,5,8 221:12 222:25 recalling 203:23 receive 160:23 received 112:22 131:24 receiving 24:8 133:2 160:14 recent 94:7,12 94:18 95:2,8 95:11,19 142:9 recess 84:10 151:6 199:18 210:22 recognize 10:20 13:13 14:20 15:10 50:6,23 54:11 56:22 58:15 60:15 149:14 179:1 209:8 222:13	recognized 80:13 recommend 137:12 recommendat... 136:24 141:19 recommendat... 136:9,13,16,22 141:2,3 recommended 135:19 136:11 160:23 reconstructive 40:19 record 4:20,22 5:14 6:3 7:4 8:7 34:16 49:20,23 50:3 50:15,24 51:2 51:8 52:1,18 52:25 54:9,15 54:16 56:14 57:17 58:12 59:11 60:8 63:11 80:9 82:9 83:4 84:6 84:8,11,14 97:5,8 98:6 106:4 107:22 131:4 132:16 132:21 133:8 149:12 150:5 151:1,4,7 180:5,8 199:14	199:16,19 209:5 210:18 210:20,23 214:18,20 215:11 225:6 227:9 recorded 227:8 records 5:3 34:10 49:10,14 50:19 51:21 52:16 53:20,23 54:4 55:6 57:25 58:2 61:9 63:2,19 63:23 64:15,19 65:13 67:20 68:3,16,21 69:3,5,10 70:15,16 97:12 98:13,16 100:22 121:5 135:9 139:15 142:9 143:3,7 143:16,21,24 144:9,9,14,23 145:6 146:3,12 148:25 149:4 149:16,16 150:15 156:8 156:12 207:5 208:21 215:17 224:6 recounting 63:5	rectus 42:5 recur 24:1,13 158:7 recurrence 22:13,17 105:18 128:11 128:15,17,21 138:5,10,21 139:8,13,14 141:22,24 142:3,5,10 145:25 151:12 151:14,16 158:11,16,20 158:23,25 159:7,10,11,12 160:2 161:21 161:25 recurrences 20:21,22 148:7 reduce 22:9,16 22:18 128:16 reduces 22:13 22:14 refer 65:21 114:11 148:3 152:10 198:7 referenced 202:18 referencing 55:4 58:3 referral 152:15 referred 27:4
--	--	---	---

referring 42:6 52:18 67:12 95:11,15 108:21 144:14 147:22 149:21 158:20 159:8 165:12 195:5 198:3 refers 99:21 100:8 147:24 152:24 refresh 156:11 refute 94:19 171:8 regard 214:24 regarding 18:19 19:4 51:3 63:2 77:20 85:13 86:7 99:23 101:8 104:21 109:12 121:19 143:7 150:6 205:12 214:9 218:10 220:25 regardless 72:16 105:13 111:19 119:14 119:24 172:23 173:18 regards 221:15 regimen 129:16 region 120:19 122:20	registered 227:2,17 regular 141:18 141:20 regulatory 18:8 related 89:24 111:10 112:23 227:11 relates 1:5 relationship 48:1 75:4 85:1 85:18,20 90:14 90:18 106:11 137:17,20 141:11 166:8 175:12 192:11 192:12 197:10 197:16 relative 108:10 released 100:6 relevance 201:5 relevant 47:24 175:11 reliable 32:21 reliant 162:9 relied 177:11 188:20 rely 69:6,10 132:18 177:16 184:17 187:16 189:1 215:10 relying 174:20 184:14 188:10	remained 146:15 remains 78:18 remember 13:4 156:24 157:12 203:20 210:4,5 223:1 remind 155:11 remote 80:3 remoteness 200:14 removal 26:19 39:22 213:18 remove 21:20 23:2,4 25:13 26:22 173:14 removed 25:20 160:3 162:2 211:23 212:7 removing 26:11 40:12 211:12,20 213:6 render 200:25 rendering 164:21,25 repaired 213:10 repeat 103:4 repeatedly 115:16 rephrase 7:24 143:11 195:14	report 4:13,16 4:18 5:1,16 8:19 13:15,20 14:23 15:13 46:17 49:13 50:16 51:3,16 52:15 53:7,19 54:4 55:5 56:15 58:4 64:15 66:19 67:4,16 68:16 73:9 74:2,8 75:5 76:5,6 77:2 79:23 80:8,12 83:21 84:17,25 85:21 93:20 94:6 96:24 99:5,7 99:14 112:19 120:7,14,15 126:21 127:5 129:14,23 131:23 132:23 135:11 138:4 139:6 142:12 142:24 143:14 147:18 151:18 152:25 159:20 159:25 161:15 164:10 171:24 173:21 174:23 177:4,19 178:14 180:3 180:21 181:3
---	--	---	--

184:23,25 185:15,18 187:17 202:18 215:14,18 217:1 218:5,10 218:12,13,14 219:1 reported 1:23 65:11 72:25 98:7 99:9 146:4 179:4 reporter 6:9 8:7,13,19 225:3 227:1,3 227:17 reporting 34:13 51:4 63:15 65:7 reports 15:15 29:10 30:19 48:9,13 51:9 70:3 84:16 99:1 110:23 170:3 171:2,18 171:25 175:1,6 177:6,8,12,15 178:10 179:4 179:14,22 180:23 184:18 184:21,22 186:5,7,9,18,25 187:17 190:20 202:17,17 204:1 208:22	represent 7:13 160:11 representation 14:1 representing 3:3,13 represents 108:10 repugnance 213:4 repugnant 163:6 require 38:8 155:22 159:14 160:7 required 38:15 38:25 39:17 requires 32:21 155:9 197:22 requiring 166:7 reread 202:17 research 82:14 99:23 164:9 176:11 206:23 211:25 resection 20:19 21:13,23 23:22 resemble 168:19 reserve 224:17 reserved 225:8 resident 200:9	residents 12:11 resources 175:11 respect 92:18 113:24 124:20 138:6 154:6 response 5:10 97:22 98:3 106:1,11,18 152:21 192:12 192:16 193:8 rest 122:8 223:14 restarted 61:2 result 156:1 176:2 results 76:7 86:7 87:4 175:25 185:1 retained 5:24 184:25 205:17 retainer 5:19 206:2,10 209:11,14 retroactively 193:4 return 135:7 returned 138:22 review 47:24 75:3 85:19 86:2 109:11 123:22 125:5 136:6 146:2	157:1 163:10 169:18,20 175:1,10 184:18 186:4,6 191:7,8 203:24 206:14,20,22 207:13 217:1 218:13 reviewed 16:13 17:5 18:18 19:3 76:6 82:15 85:16 92:8 132:22 150:6 163:13 164:20 167:5 177:7 179:13 180:21 193:24 204:2 208:21 218:11 219:1 224:5 reviewing 157:3 180:19 195:19 218:25 reynolds 123:12 174:24 174:25 184:15 184:24 185:7 185:23,25 187:16 188:20 189:2,7,18 right 10:8 12:23 13:20 16:5,11,14,19 17:11,13,19,24
--	---	--	--

18:3,9,20 19:5	99:2,5,11,15	147:12,20	43:21 47:21,24
19:14 20:3	101:9,14	148:18 149:21	48:7 70:5,9
24:24 25:2	102:18,22	150:3,10	71:11,14,16,21
29:11 30:21,24	103:2,10 106:2	151:14,20	71:24,24 72:2
31:4 38:25	106:12,24	153:2,14	72:7,18,21
39:15 45:24	107:10 110:2	154:22 156:2	73:25 75:22
46:15 48:11,15	110:10,14,25	157:17 159:16	76:12,21 78:21
48:25 49:11,16	111:15 112:1	160:4,14	78:22 79:1,24
50:25 51:5,14	113:3,18,25	161:17,22	80:13,18 81:3
51:24 52:12	114:20 115:3	162:6 167:22	81:12,13,14,21
53:5,11,21,24	115:12 116:3	170:7,10,15,24	81:23 82:1,5
54:17 55:7,11	116:16,21	171:21 172:9	82:18,21 83:9
57:2,13,19,25	117:2 118:23	173:24 174:3	83:22 86:11,19
58:4 59:14	119:8 120:12	175:13,16,25	87:2,12 88:16
60:19 61:5,9	120:16 122:2	176:4 177:8,12	88:25 89:9,13
61:14,20,25	123:8,13	178:11 179:4	89:13,23 90:5
63:16,24 64:4	124:23 125:10	179:14 183:22	90:6,7,10,11,25
64:10,17,21	125:16,20,25	184:12,16	91:3,6,8,17
65:1,16 66:4	126:25 127:8	185:3,9 186:2	92:13,14 93:1
66:14 67:3,18	128:4,7,12,25	187:1,5 188:4	93:5 94:13,13
67:22 68:5,8	129:11,17,20	188:12,17,22	99:10 100:15
68:13 69:7	130:6,24	189:3,21 190:8	102:10,15,25
70:6,11,18	131:14,25	190:21 197:12	103:6,10,16
71:3,7 73:1,5	134:7,19,23	197:19 204:17	104:13 105:1
73:11,17 74:6	135:4,8,13,16	209:24 210:15	106:1,21,21
74:11,15 76:7	136:25 138:7	213:21 214:13	107:10,16
76:12 77:5	138:23 139:9	224:18	108:11,13,17
80:15 84:19	139:14,20	risk 5:9 17:23	108:17 109:16
85:2,14 87:17	140:18 141:13	18:2 24:12	110:2 116:13
88:4,8,12,16	141:25 142:7	27:6,10,23	116:14,18,19
89:1 91:7	142:19 143:2,8	28:6,7,13,20,23	116:24 117:12
93:23 94:9	143:17 144:1	31:10,22 32:3	118:17,18,23
97:3,6,20 98:4	144:12,15	33:4,8,12,17,19	120:12 121:2
98:8,11,20	145:5,10,14,21	34:11 37:19,22	125:15,20

126:3 139:21 140:10,14,16 140:21 165:22 166:13,19 167:17 168:4 171:11,12 175:9,13,15 176:3 183:6,19 189:10 190:7 193:20 194:10 200:12,15 214:21 216:8,8 216:13,16,20 220:12,18,19 220:24 221:4 222:6,8 224:12 risks 5:6 99:20 101:13 108:4 212:20 213:23 214:2 road 208:4 role 12:22 137:11 172:7 172:12 173:3 208:10 213:14 222:1 room 203:7,9 rothgeb 7:9 roughly 25:13 41:17 route 90:19 181:14 routinely 130:10 161:13	rpr 1:23 rule 33:5,13,18 33:19 34:11,11 47:23 76:11,20 77:20 78:9,17 78:20,21,22,24 78:25 88:15 89:6,24,25 91:17 123:18 125:19 175:9 200:22,23,24 ruled 35:11 81:20 87:3 88:24 89:7 118:22 119:7 119:11 123:10 166:19 215:2 rules 2:4 7:17 ruling 32:21,22 33:1,1 75:22 86:10 103:9 107:9 run 27:10 s s 4:1,9 6:1 12:20 sample 169:1 save 160:16 saw 149:20 214:18 saying 96:5 183:1 214:25 223:1,3,10,23	says 52:6,9,11 55:2,22 57:5,8 58:23,25 59:5 60:24 61:1,19 64:19 69:1,16 97:16 117:9,19 136:19 149:19 179:7,17 scan 161:6 scans 160:10 160:23 161:1 scar 212:25 scarring 213:2 scenario 117:16 scheme 160:19 scholar 176:11 science 43:9 116:2 174:18 scientific 173:22 196:13 197:23 scientist 140:23 scope 36:12 154:12 scott 5:21 219:24 screen 51:14 97:16 101:20 102:4 133:7 screening 52:7 scroll 13:19 14:19 50:5 54:9 56:17	58:14 60:14 107:15 178:24 179:20 180:10 180:16 209:4 209:15 search 75:7 85:24 175:20 175:21,23 176:10,15,17 207:4,6,7 searching 211:24 second 12:2 21:22 54:25 57:4 106:16 secondhand 74:4,9,18,20,20 75:4,9,12 76:11,18,20,24 77:3,14 80:5 80:22 81:2,9 81:20 82:16,17 85:11 90:16 125:15 section 96:15 172:1 174:22 178:9,16 179:22 180:3 180:22 181:1 217:4 sectional 161:5 161:11 see 10:18 21:4 25:22 26:10,17
---	---	---	---

27:9,11 29:4 47:20 50:9,22 52:6 54:24 55:1 57:3,5 58:23 60:20,23 75:17 80:10 97:10,16 102:4 107:24 108:6 112:4,8 113:15 129:24 130:1 132:4,7 134:11 135:7 137:1 141:12,17,19 146:12 148:10 148:13,14,20 156:7 162:23 172:3 175:7 179:17 184:1 185:20,22 198:14 206:14 220:8,9 seeing 25:21 135:10 145:14 seeking 140:17 147:25,25 seem 53:1 63:13 198:18 213:20 seems 199:24 seen 27:3 36:6 102:16 122:18 154:10 156:13 segment 41:22	select 24:6 self 34:13 65:7 65:11 seminal 19:24 23:5 sense 8:2,16 90:24 124:19 212:9 sensitive 28:24 sent 82:12 sentence 63:9 106:25 107:8 129:25 132:4 172:1 175:8 185:22 separate 29:23 30:7 196:1 216:16 separately 199:5 serve 173:7 183:10 served 11:13,15 171:4 service 143:7 143:16,24 144:1,4,9,14 serviceman 144:20 services 196:21 serving 11:9 144:10 set 41:4 96:7 109:6 173:17	sets 61:17 seven 88:10 155:23 several 22:2,15 135:13 139:7 154:23,25 155:1,2 161:2 162:5 181:2 severe 89:20 139:19 140:1 146:10,15 156:1 160:13 sew 42:1,14 sewing 42:16 42:17 sexual 213:6 sfakianos 5:18 179:4,9 181:5 sfakianos's 180:21 shape 155:15 share 101:20 133:7 219:11 she'll 158:17,19 160:7,16 sheet 13:17 shelfo 5:22 58:20 219:3,24 shelfo's 220:23 shields 175:2 short 92:11,20 92:23,24 93:6 218:7 220:16	shorter 141:12 155:18 shortly 148:16 204:23 show 10:13 13:8,19 14:14 15:5 49:23 54:3 58:6 60:7 87:3 106:19 132:1 149:7 157:9 185:11 199:2 219:19 showed 75:11 75:18 86:6,9 156:19 shower 181:18 showing 74:19 185:2 190:23 shown 22:18 136:19 194:9 shows 22:10 51:12 98:6 sick 133:3,21 134:5,11,15,22 134:22 side 24:10 34:7 108:9 128:24 129:12,19 172:24 212:19 213:5,6 sides 172:20 sign 225:8 signature 226:1 227:15
---	--	--	--

significance 96:9,11 104:4 104:20 108:22	128:14 140:22 200:17	smoked 49:15 51:4 53:9 56:8 56:12 57:11 59:12 61:3,19 61:21,24 62:17 63:5 64:16,20 66:13 67:8,8 67:21 68:11 69:14 70:5 73:5,16 78:7 200:18,21 215:8 218:15	72:2,6,8,11,19 72:22 73:1,20 74:5,10,19,21 75:9 76:4 80:4 80:22,23 81:2 81:9,21 82:10 83:5 90:17 101:14 102:11 102:22 110:13 111:22,23 113:18,20,24 114:3 194:24 200:14,24 201:2,6,16,21 201:23,25 202:4 214:9,10 214:14 215:1,2 215:16,22,24 216:1,4,7,14 217:5 218:21 219:6 220:12 220:25 224:13
significant 27:23 48:20 94:8,12 95:9 95:22 96:1,2 96:19 102:15 104:14 108:18 108:22,23,25 109:5,14 112:23 189:20	situations 37:14 83:7 six 161:1,2 size 155:15 sizes 169:1 skin 155:17 sleep 146:5,10 146:16,17,21 147:5,6,8,9 slightly 127:18 slowly 100:6 small 41:5,13 41:21,22 42:10 50:8 82:10 91:11 92:9,19 104:4 115:16 162:1 169:2	smokeless 86:1 86:8 smoker 51:21 58:25 65:23 69:7 79:3,6 218:6 219:9 220:13,14 smokes 59:1 71:20 smoking 5:7 27:22 28:2,14 28:15 37:24 48:6,11,14,19 51:22 53:4,21 55:6,10,20 57:5,8,18 58:3 61:8,13 62:3 63:3,10,12 65:5,14,15 66:21 67:16 70:4,17 71:3,6 71:10,21,25	social 60:24 62:3,5 socially 53:9 61:24 society 66:22 66:24 67:13 somebody 152:8 163:8 164:5 192:19 203:18 205:9 207:25 217:16
silence 143:6 143:15,24 similar 85:11 90:16,18 103:24 139:22 139:24 168:10 196:21 similarly 85:8 simply 20:19 21:12,13 163:7 single 131:3 159:10 sir 133:23 134:1,14,18 sister 156:16 sister's 157:1,4 sit 183:19 184:2 208:7 213:19 sits 23:14 situation 62:5 81:15 82:2	smith 2:5 3:9 6:15 smoke 29:19,24 49:11 55:2,17 55:23 56:1,5 61:4,21 62:13 63:24 72:17,23 74:9,20 75:4 75:12 76:12,18 76:20,24 77:3 77:14,18,18,23 80:5 81:3,9,21 82:16,18 85:12 90:16 125:15		

someone's 48:14	95:10,19 150:8 178:8 184:3	split 25:8 110:7 spoke 15:2 33:10	73:23 118:16 168:21 220:6
sorry 50:8 51:6 79:14 81:16,17 90:8,9 103:3 107:21 113:8 117:15 158:18 206:11 217:9 217:25 221:11	191:18 192:3 196:22 220:7 220:11 specialist 160:8 160:20 specialized 155:9	spoken 142:21 spots 52:17 spread 24:13 square 106:23 staff 209:18,19 209:21	222:23 223:3 223:12,14,18 223:19,20,21 started 7:17 71:21 72:2 119:3 145:23 starting 4:22 26:5 58:7 99:8 133:16 134:10 179:16
sort 40:14 90:18 109:15 162:18 184:6 193:5	specific 4:13,16 5:16 33:17 49:20 75:15 91:14 105:21 106:15 121:24 133:5 136:12 148:5 165:17 167:16 179:3 186:10 188:2 196:24 202:1 208:13 219:8	stage 20:9,24 staging 20:15 20:16 127:17 stamp 97:15 stamped 50:3 52:5 54:10 56:16 58:13 60:9,23 97:6 149:13 209:5 stand 138:8 standalone 94:19 standard 24:14 127:7,14,23 128:3,10 136:8 154:12 155:13 163:21 165:4 165:18 189:9 189:13,16 standards 164:13,18 165:25 start 20:22 33:6 71:25 72:10,14 73:22	starts 85:8 102:8 106:17 129:25 132:5 137:10 159:22 172:1 175:8 220:7 state 7:3,6 46:3 46:17 48:10 51:19 67:16 68:15 70:3 73:9 74:2 80:11 84:24 85:9 93:20 99:8,13 104:17 107:7 110:23 112:19 122:8 131:22 132:9 143:5,23 145:24 147:19 151:18 152:25 161:15 170:3 171:18 172:5
sorts 207:19 sound 87:17 sounding 207:8 sounds 84:4 151:2 source 66:20 69:15,17 200:6 sources 34:9 47:25 76:1 83:17 south 103:22 southeast 104:1 120:24 122:6 southeastern 171:1 sparse 85:12 86:23,24 speak 183:20 205:15 speaking 30:20 38:19 44:16	specifically 30:20 48:9,24 49:8 63:21 95:10 105:15 133:13 137:23 142:24 143:23 156:19 174:20 183:6 196:14 204:2 specifics 168:7 spell 12:19 spend 180:8 spent 36:7,23 37:11		

173:21 174:1 175:6,9 177:6 177:10 184:23 186:9,18 227:3 227:18 stated 40:2 45:21 46:2 121:6 162:11 164:5 227:6 statement 45:2 49:21 50:16 53:24 132:19 181:13 186:23 188:2,7 198:10 223:6 statements 187:17 states 1:1 6:18 7:13 29:4 46:15 49:14 55:9 72:6 97:21 98:9 102:9 106:17 113:14 184:19 stating 55:5 67:6 148:22 stationed 207:21,25 statistical 169:2 statistically 104:2 108:23 108:25 109:5	statistician 96:5 109:8 110:6 187:10 statisticians 87:8 statistics 96:14 status 5:7 101:14 102:11 102:22 statutory 164:21 stay 180:6,7 stenographic... 227:8 step 175:20,22 222:11 stepped 77:17 sticks 155:17 stoma 162:25 stomach 41:16 42:7 stop 73:23 76:4 119:4 stopped 70:17 76:4 212:10 stopping 79:18 79:20 84:1 223:23 stops 21:20 storage 45:10 130:20 stored 100:2,6 storing 45:12	stratification 5:7 101:13 stratified 102:22 stratify 193:2 street 3:5 stress 154:1,3 stretch 139:1 strict 89:15 strikes 190:1 strip 23:13 strong 85:17 136:22 137:7 struggled 157:6 studied 196:14 studies 5:11 74:18 75:11,14 75:15,22 76:1 76:6 86:3,6,9 87:15,21,23 93:21 94:7,12 94:24 95:8,11 95:21 101:8 106:2,10,19 107:17 108:5,6 108:16 109:6 110:1 121:21 123:22 124:10 124:22,25 168:9,10,25 169:3 177:4,14 182:7,21 193:25 195:25 196:18,20,25	197:2 198:17 199:2 study 16:11 17:3 75:1 87:16 88:1 95:25 96:7,8 96:21,23 101:11,25 102:3,20,24 103:5,9,13,15 103:21 104:12 104:18 105:22 105:24 106:14 107:2,9,13,14 108:5 109:7,11 109:13,19 124:7 161:11 182:13 194:5,9 197:3 207:3,6 207:12 stuff 120:21 subject 9:1 42:22 43:3 206:20,22 submitted 217:2 subsequent 144:23 212:20 subsequently 207:22,22 substance 203:14 substantial 62:8 187:1,3,4
--	--	--	--

187:7,14 188:12 189:21 190:1 substantially 61:23 suffer 186:20 suffered 139:8 148:17,23 sufficient 91:7 91:17 123:18 125:9 166:8 168:4 169:16 191:1,4 194:1 sufficiently 47:25 175:11 suggest 55:6 73:15 74:4 169:21 193:19 195:6 suggesting 53:20 suggests 59:12 61:13 67:21 68:1 73:4 suicidal 147:1 147:12 156:15 suit 154:14 suite 2:6 summaries 54:22 summary 14:5 58:18 summer 26:6 155:19,21	superficial 126:23 supplemental 84:17 101:7 supplements 29:7 supply 41:25 support 65:14 74:14 75:22 86:10,16 87:16 92:9 130:22 169:11 209:21 224:7 supported 124:3 supporting 209:18 supports 103:9 107:9 108:12 supposed 135:24 136:20 sure 20:11 50:10 79:20 85:5 94:1 103:5 117:18 143:14 180:12 180:15 184:6 195:16,19 199:13 218:1 218:11 surgeries 19:16 surgery 134:14 surgically 213:10	surrogates 202:3 surrounding 171:7 surveillance 20:20 135:13 135:20 136:2,3 136:12 138:4 139:7,24 140:10 145:4 147:20 158:6 160:9,19 161:12 survey 52:21 suspected 85:1 90:13,15 suspicious 46:4 swear 6:9 sweating 155:19 switch 161:4 214:8 221:8 sworn 6:21 227:6 symptom 131:3 symptomology 130:10 symptoms 131:25 132:20 143:19 146:5 146:19 147:3 147:11 153:9 syndrome 44:21	synergistic 83:15 synergy 197:22 198:2,7 system 20:15 127:18 168:20 t t 4:1,1,9 take 8:25 9:16 34:5 41:13,22 42:12 79:18 80:8 84:1 133:21 134:3 150:20 163:7 180:2 199:11 201:1,4 208:7 210:15 220:4 222:11 taken 2:3 63:19 84:10 151:6 199:18 210:22 212:8 227:5 takes 95:16 talk 8:18 48:13 201:8 217:12 talked 39:21 217:5 talking 25:14 93:5 103:25 139:11 143:25 178:4 184:8 192:5 201:24 217:17,21
--	---	--	---

tano 3:21	ten 26:1 136:15	testifies 64:2	thanks 84:5
taught 16:16	136:15 137:9	testify 227:6	195:17
17:10	139:11 161:14	testifying 12:10	theoretical
taylor 1:23	210:16,18	testimony 9:10	197:24
227:2,17	tend 87:10	9:20 53:13	therapy 20:23
tce 18:19 38:9	99:14 181:12	57:13 61:24	21:24,25 22:21
38:13,16,21	181:25	64:8 65:15	24:20
126:18 169:21	tends 169:9	69:22 72:18,22	thereof 203:14
176:23 190:22	178:7	73:4 81:1 83:1	227:12
191:1 192:6	term 48:24	91:15 92:17	thing 22:10
193:14 194:8	130:13,19	104:11 111:21	74:22 84:14
195:4 196:3	157:23 158:3	121:10 133:14	114:16 153:5
197:11 199:3	167:14 192:1	156:23 157:2	179:25 223:10
201:23 202:9	220:14 221:14	162:11 211:7	things 28:17
teacher 133:3	221:17,19,20	219:2 220:11	41:12 69:2
133:21	222:9	221:12 222:25	79:6,7 94:21
teenager 53:10	termed 130:7	226:5 227:7,9	119:5 168:8
59:9,14 61:25	terminology	testing 142:19	192:24 202:4
teeter 110:1	214:24	152:17,19	212:16 213:2
teetering	terms 75:7	tests 34:7	213:24
109:15	85:24 93:6	text 217:16,25	think 21:9
teeters 108:16	131:1 139:25	textbook 200:2	26:12 28:2
tell 8:22 23:24	141:9 182:22	200:4	31:7,25 32:24
27:5 37:25	219:8	thank 7:1 24:18	35:17 36:4,8
62:11 69:19	terry 4:17 12:5	42:21 84:7,21	38:5,11,15,18
70:1 79:2,7	14:23 204:12	94:2 132:8	38:19 42:5
85:3 93:24	testes 19:24	151:2 180:19	44:13,14 48:18
113:4 127:1	testified 6:22	181:7 185:20	52:17 59:22
132:1 182:13	11:18,21 13:1	199:15 210:2,9	62:2,21 63:8
215:12 217:7	53:4,8 77:22	214:7 218:3	65:25 67:11
telling 202:20	88:6 122:5	219:20 221:7	71:13,14,15,16
temporality	128:1 133:1	224:23,23,25	72:9,11,12
154:4 200:17	134:21	225:1,2	77:7 78:13
			80:2,3 81:5,11

81:14 83:6,10	thomas 1:13	92:12 100:7,8	titled 101:12
83:12,13,25	2:2 4:14,17,18	100:20,25,25	105:24
89:19 90:17	6:5,20 7:5	111:8 112:24	tobacco 30:8
91:20 92:23	226:2,25	127:8 129:20	51:19 52:7,10
93:9 94:17	thought 24:5	129:21 131:23	58:23 59:5,6,8
106:15 107:12	77:10 80:23	132:24 133:5	61:1 84:24,25
108:8,11	82:10 88:20	134:16 135:19	85:13,17,21
109:18 111:5,7	124:3 146:8	138:25 141:2	86:1,4,8,17
111:17 112:7	167:4	141:12 144:5	88:7,15 90:3,4
112:11 113:10	thoughts	145:22 148:8	90:13,24 91:16
115:6,16	147:12 210:14	150:1,20	91:21 92:2,19
118:14 126:2,9	three 13:22	151:13,17	93:16,18
137:17 138:17	15:1,15 61:3	160:19 161:9	124:23
141:4 142:9	61:19,22 62:7	161:18 180:2,8	today 7:19 9:11
144:18,19	62:12,18 67:21	181:15 197:7	9:15,19 10:11
150:23 152:6	68:7 155:20	201:2,5,10	111:4 149:20
153:8 154:9	161:1 205:20	203:2 206:19	163:19 180:21
158:20 159:19	205:20 218:16	206:21 212:24	196:22 202:14
160:17 165:22	threshold	220:16 223:16	202:15 204:5
166:16 173:20	68:13 93:2	225:5 227:5,7	210:11 211:5
176:7 183:1	152:23 187:13	227:10	212:10 221:10
189:13,23,24	188:14 192:22	times 11:21	today's 6:4
191:3,15 192:2	194:15,17	22:22 40:2	together 41:23
199:11 201:25	201:15	97:2,22 134:4	95:17,22
202:1 204:1	thresholds	154:22,24,25	112:22 167:13
211:21 212:8	187:12 188:19	162:5 166:4	169:9,10 191:2
214:23 217:24	tied 29:8	197:5 202:21	191:4 196:11
220:18 223:7	time 36:7,23	203:2 205:15	197:18 199:4
223:17 224:3	37:11 38:19	205:19,20,21	213:2
thinking 36:9	45:13 55:11	211:17	toilet 212:13
100:13	56:1 61:20	tissue 21:19	told 36:20 38:4
third 22:21	70:7 71:14	212:25	62:17
30:3 60:22	72:1 73:10,23	title 101:15,17	took 8:22 52:20
80:10 129:24	77:18 89:18,21	179:6	69:25 133:2

181:18 top 23:14 59:5 121:1 topic 214:9 221:9 topics 79:17 total 31:18 160:18 189:8 189:18 totality 81:11 83:4 86:14 87:7 95:4,12 103:22 167:13 touch 173:20 212:6 touched 139:17 towards 58:22 59:5 80:11 85:7 113:13 121:1 129:25 135:15 tox 193:17 toxic 27:14,19 29:11,14,23 30:19 45:6,7 45:11,22 46:4 46:9 112:23 113:2,21,25 172:8 207:9 toxicity 129:17 toxicological 17:3 175:19 toxicologist 16:21 170:9,11	187:9 190:3 191:10 192:1 193:18 194:14 toxicologists 177:17 toxicology 16:25 17:6,11 191:22 toxin 170:19 toxins 194:23 tract 19:22 trained 124:2,4 124:21,24 125:2 152:6 191:9 193:18 transcribe 8:13 8:15 transcribed 227:8 transcript 5:12 5:21 219:11 220:2 226:4 227:6 transcription 226:5 transferred 149:24 150:13 transurethral 20:19 21:13,23 23:22 traumatic 153:25 154:3 trbt 22:20,21	treat 19:17,20 19:21 20:3,5 142:3 treated 31:9 36:6 126:17 148:16 153:10 treating 12:2 12:23 30:24 31:3,20,25 36:10 46:19 62:16,24 63:16 90:23 122:5 137:11 141:9 165:23 190:6 204:13 213:14 219:2 treatment 20:7 32:3 46:20,25 47:2,4,10 50:15,24 54:15 57:1 58:18 60:17 127:7,14 128:4,7,10,18 130:1,4,6 131:24 133:2 135:3 139:23 140:9,17 145:3 149:2 153:10 154:8,10 156:2 161:20,24 211:11 213:16 treatments 132:10 134:14 139:22 146:18	211:12,20 213:17 trend 102:9,9 102:15 trends 136:7 triaging 152:8 trial 3:15 trials 22:22 tribunal 43:4 tried 63:8 trivial 160:18 true 40:21 74:25 76:3 79:13 87:19 104:2,18 131:5 133:6 157:18 226:4 227:9 trump 95:3 trust 69:18 73:2 truth 8:22 69:19 70:1 148:11 172:17 172:19 187:22 227:6,6,7 truthful 9:10 try 8:18 62:22 71:18 137:15 169:8 171:13 183:11 192:23 193:2,4 198:20 215:21 trying 41:18 169:9 187:21
---	--	--	--

212:17 213:15 tube 41:24 42:13 tuberculosis 22:8 tumor 20:20 21:14,20,24 22:9 23:23 45:18 138:15 turn 52:5 84:23 97:15 106:15 135:25 161:10 224:21 turning 13:22 15:1 56:14 57:4 60:22 99:7 105:22 179:16 202:13 twice 11:23 61:14 202:23 two 11:25 20:14 22:20 25:13,23 26:8 26:11 40:24 41:23 53:23 59:13 61:3,16 61:19,21 62:7 62:11,18 64:16 64:17,20 65:23 66:13 67:21,22 68:4,4,7 72:17 79:6 97:1,2,22 98:3 101:8 116:24 135:10	147:16 177:25 188:21 202:24 205:20 213:16 216:13,16 218:16,16 type 19:19 20:5 40:7 44:15 76:10 86:23 127:8,11,14 128:3 158:25 161:6 typed 227:9 types 30:10 40:24 94:20 124:10 171:10 typical 8:5 98:1 154:25 typically 20:5 27:16 30:19 96:14 100:7 114:11 129:19 129:21 155:12 155:17 161:10 162:12 163:1 164:12 198:16	120:25 ultrasound 161:8,9 unable 9:10 35:14,20 131:25 132:10 132:20,23 133:18 134:17 162:8 195:25 207:14 221:22 222:7,8 unaware 122:13 146:17 152:23 189:12 189:16 194:14 unbalanced 176:4 unbiased 173:9 unclear 81:17 uncommon 28:18 112:18 208:3 under 21:3,16 37:2 51:19 55:1 57:5 61:1 67:18 106:16 112:4,9,14,16 112:17 120:9 175:7 undergo 128:7 212:23 undergoing 145:3	undersigned 226:2 understand 7:21,23 8:5,21 8:24 12:16 115:21,24 124:11,15 125:4 184:24 185:23 217:10 understanding 96:17 144:25 166:6,24 180:20 208:11 221:18,20 understood 8:1 83:20 155:3 166:11 173:18 197:21 208:9 underwent 128:9 unethical 192:18 198:13 unhealthy 99:15,18 100:14,16 unique 112:11 united 1:1 6:18 7:13 29:4 46:15 184:18 university 25:9 207:16 unknown 35:25 36:3 44:24 111:24 112:2
	u		
	u.s. 3:14 104:1 uh 8:15 132:11 ultimate 128:17,22 138:5 ultimately 24:1 91:5 116:16		

114:6 116:25 117:23 118:21 119:1,3,5,7,10 120:5 125:23 126:1,5 221:11 221:15,25 222:1,14,23,24 223:3,5,7,13,20 224:1,4,8 unknowns 119:10 unprovoked 146:7 unremitting 181:20 untreated 146:15,20 unusual 28:17 29:3,7 138:18 upper 193:22 201:15 ureters 19:23 23:7,15 42:1 42:16 159:5 urethra 21:16 42:17 urinary 23:9,17 40:7,10,17,23 40:24 urine 40:15 42:8 45:12 148:11 212:19 urologic 19:13 19:17,19 20:2	25:18 38:11,20 125:2,6 130:12 171:1,6,15 190:11 205:10 211:25 urological 130:5,14 urologist 38:16 39:15 54:17 58:20 59:12 135:8,10 145:14 147:25 148:12 154:18 183:22 urologists 27:4 urology 179:10 200:2,6,9 urothelial 20:1 20:7,13 45:15 158:13,21 159:4,6 usdoj.gov 3:17 use 51:19 52:7 58:23 59:6,6 97:16 98:8 130:10 152:14 165:13,17,20 165:25 166:3 166:15 167:2 167:13,15 173:11 183:25 192:10 202:3,3 212:11,13 213:22	used 26:2 42:16 48:24 49:2,10 52:10 59:9 63:24 66:18 75:8 82:11 87:8 91:12 136:1 165:3,24 176:14 186:19 189:8,13,14,18 190:14 219:9 221:15,17 222:20 uses 185:7,25 using 17:18 42:10 88:7 100:24 176:11 usually 45:6 59:18 130:18 162:18 169:8 181:14 uterus 23:13 utilizes 185:1 utmost 215:22 v va 50:19,25 60:18 97:12 143:1,6 145:8 va's 143:15 144:12 vaccine 22:8 vagina 23:13 23:14 213:9	vague 136:14 137:9 valid 213:16 valuation 174:2 value 173:13 189:24 215:21 215:22,23 216:1 variability 107:6 variables 87:22 87:24 103:1,7 varieties 20:12 various 21:18 83:5 211:10 vary 22:22 vast 41:6 vba 4:21 50:4 versa 83:15 version 14:11 14:12 versus 26:3 72:17 137:6 181:16 182:2 198:23 201:23 211:12,20 212:18 214:5 vesicles 19:24 23:5 vessel 45:10 130:20 149:25 vice 83:14 videographer 3:21 6:3 51:12
---	---	---	--

84:8,11 151:4 151:7 199:16 199:19 210:20 210:23 225:3,4 videotaped 1:11 2:2 view 216:17 vinyl 18:24 39:10 126:19 176:24 195:4 196:3 197:12 199:3 visit 31:8 54:16 55:11 60:18 visitations 160:8 visits 25:24 volume 25:18 volunteer 208:6	34:14 35:1,16 35:23 37:1 38:3,10,17 39:1,8,11,18 41:10 43:1,5 43:10,15,17,23 44:4,11,25 45:25 46:11 47:3 48:2,16 49:5,17 50:18 51:6 52:13 53:16,25 54:18 55:12,21 56:2 56:9 57:14,20 59:15,20 61:10 61:15 62:1,10 62:20 63:6,17 64:5,11,22 65:2,8,17,24 66:5,9,15 67:1 67:10,23 68:24 69:11,23 70:12 70:19 73:6,12 74:16 76:13 77:9 78:11 79:11,14 80:1 80:20 81:4,24 82:6,25 83:23 84:4,13 86:12 87:5 88:17 89:2 91:1,19 92:3,21 93:8 94:16 95:13 96:3 98:21	100:18 103:11 104:16 105:3 107:11,21 108:19 109:1 109:17 110:3 110:15 111:16 112:6 113:8 114:1,8,12,21 115:4,13,22 116:4,9 117:3 117:14,24 118:12,24 119:9,16 120:2 121:9,17 122:9 123:14 127:16 130:17 131:8 131:15 134:24 135:21 137:14 137:24 138:12 138:24 140:3 140:12,19 141:14 143:9 144:7,16 145:15 146:22 147:7,13 150:23 151:2 153:15 156:17 157:8,22 159:1 160:5,15 161:23 163:22 164:16 165:6 166:2,10 168:5 170:16 172:15 174:11 176:5	176:13,19 179:5,23 180:6 182:9,24 185:4 185:10 186:13 186:21 187:18 188:5,23 189:4 189:11,22 190:9,16 191:13,23 192:8 193:16 194:2,11 195:9 195:17 197:13 197:25 199:6 199:13 200:7 203:10,11,16 205:1,18 206:11 210:6 210:12,19 211:1 216:25 218:4 219:12 219:17 221:6 224:20,25 walsh 200:2,3 want 10:13 51:7 79:16 84:1,13,23 141:7 148:10 150:21 163:7 165:20 185:12 210:17 211:19 213:12 221:8 wanted 47:20 218:1
w			
w 12:20 wait 197:7 walking 212:18 wall 42:7 wallace 3:4 4:4 6:11,12 10:3 14:3 15:18 17:8,14,20 18:4 26:20 27:8,25 28:9 29:25 31:5,23 32:10,15 33:20			

wanting 212:4	124:18 157:23	winter 155:18	67:2,11,25
ward 2:5 3:9	166:11 173:16	155:24	69:1,12,24
6:15	216:10 223:13	wire 21:17	70:13,20 73:7
wardandsmit...	we've 79:14	wisdom 74:3	73:13 74:17
3:11	84:15 94:19	wish 209:25	76:14 77:10
washington	212:10	210:5	78:12 80:2,21
3:16	weak 116:24	witness 6:10	81:5,25 82:8
watch 158:17	wears 155:20	9:23 10:2,4	83:3,24 84:7
water 1:4 6:6	weather 155:16	11:10,13,16	86:13 87:6
7:14 19:5	week 25:13,17	14:4 15:19	88:19 89:4
28:25 30:13	26:11,18,19,23	17:15,21 18:6	91:2,20 92:5
34:1 37:13,15	27:1,3 162:6	26:21 27:9	92:22 93:9
37:22 38:2,5	weeks 22:2	28:2,11 30:2	94:17 95:14
47:22 79:4	weigh 89:16	31:7,25 32:11	96:4 98:22
80:6,14,24	weight 105:10	32:16 33:21	100:19 103:12
81:12,16	105:14,17,20	34:15 35:3,17	104:17 105:4
119:15,24	107:5	35:24 37:2	107:12,24
120:10 121:2	wein 200:2	38:4,11,18	108:21 109:2
121:20 123:2	wells 121:21	39:2,12,19	109:18 110:5
126:3 167:6,8	went 77:18	41:11 43:6,11	110:16 111:17
168:23 170:6	81:7 133:19	43:16,18,25	112:7 113:15
172:9 176:23	135:2 140:9	44:6,13 45:1	114:2,13,22
177:22 178:5,6	214:17	46:2,12 47:4	115:5,15,23
182:2,8 183:6	west 3:5	48:4,18 49:18	116:5,10 117:5
185:7 186:1,4	whichever	50:19 52:15	117:15,25
186:9,12,17	96:12	53:17 54:1,20	118:14 119:1
191:1 196:10	white 110:20	55:13,22 56:3	119:10,17
199:2 201:1	wilmington	56:11 57:15,22	120:3 121:11
204:8,19	3:10 122:2,21	59:16,21 61:11	121:18 122:11
205:12 206:15	window 139:11	61:16 62:2,11	123:15 127:17
208:14 216:11	145:12	62:21 63:8,18	130:18 131:9
216:15 224:15	winner 100:22	64:6,12,23	131:16 134:25
way 21:21	winning 172:24	65:3,10,19,25	135:22 137:15
33:23 92:6		66:6,10,16	137:25 138:13

138:25 140:4	225:1 227:12	wrap 210:1	141:13 148:6
140:13,20	wohlers 12:18	wrong 219:13	161:2,3,4,14
141:16 143:10	woman 23:12	x	201:13,16
144:8,17	women 110:10	x 4:9	202:5 208:4
145:16 146:24	110:13 212:17	y	218:16
147:8,15	word 143:12	yeah 26:21	young 72:10
153:16 156:18	176:7	50:12,14 60:21	156:16 220:17
157:9,23 159:3	words 17:17	61:11 69:24	younger 71:24
160:6,16	work 10:7,23	102:6 120:1	72:21
161:24 163:23	11:2 26:2 84:2	132:3 144:17	z
164:17 165:8	108:13 131:25	150:23 182:11	zero 128:12
166:3,11 168:6	132:10,14,20	200:3 206:6,13	158:10,13,14
170:17 172:7	132:23 133:3	210:19 217:20	158:23 159:11
172:12,16	133:17,20	year 25:5 40:1	161:21 162:2
173:4,7 174:12	134:17,23	40:4,5 41:2,3	zhao 105:24
176:6,14,20	165:5 171:5	55:15 65:1	zina 3:24
179:6,24	181:16,21,21	68:11 97:20	zoom 3:5,15,22
180:10 182:11	182:1 206:2,8	98:2,8 137:4	3:23,24,25
182:25 185:5	209:18,22	139:11 148:13	50:9 51:13
185:11 186:14	223:13	161:4,13	102:5 203:5,18
186:22 187:20	worked 30:14	years 26:8 59:6	217:11,12,17
188:7,24 189:5	worker 178:6	59:13 64:17,20	217:24 219:19
189:12,23	workers 31:17	65:23 66:13	
190:10,17	176:25 178:2	67:22 68:4,8	
191:15,25	working 9:23	70:4,24 71:2	
192:9 193:17	204:16	72:17 73:16	
194:4,13	works 210:19	88:8,11 90:4	
195:10 197:14	world 23:9,18	91:16 112:5	
198:2 199:7,15	29:5 76:2 90:1	135:13,16,20	
200:8 203:12	158:1 192:17	136:13,21	
203:15 205:2,8	worries 67:15	137:8,13	
205:19 206:13	101:18	138:10,17	
208:10 210:7	worsened	139:7 140:17	
216:20 221:3	146:1		

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.