

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OHIO
WESTERN DIVISION

FILED IN CASE NO. 87-7117

DATE 6/22/88

MARY A. DENDINGER, :
et al. and ETTA M. :
WALLACE, et al., :

Plaintiffs, :

vs. :

Case No. C87-7117

CHRYSLER PLASTIC : (Hon. Nicholas J. Walinski)
PRODUCTS CORPORATION, :
et al., :

Defendants.:

Deposition of RALPH MICHAEL KELLY, M.D., a
witness of lawful age, taken on behalf of the defen-
dants under the Federal Rules of Civil Procedure, in
the above-entitled cause, wherein Mary A. Dendinger,
et al., are the plaintiffs, and Chrysler Plastic
Products Corporation, et al., are the defendants,
pending in United States District Court, Northern
District of Ohio, Western Division, before Luke T.
Lavin, Registered Professional Reporter, a Notary
Public in and for the State of Ohio, at the offices
of the deponent, Suite 106, 2450 Kipling Avenue,
Cincinnati, Ohio, at 10:05 o'clock a.m., on Friday,
May 6, 1988.

C O P Y

URL 11811

APPEARANCES:

On behalf of the plaintiffs:

Kirk J. Delli Bovi, Esq.
of
Murray & Murray
Murray Building
300 Central Avenue
Sandusky, Ohio 44870

On behalf of the defendant A. Schulman, Inc.:

Larry P. Meyer, Esq.
of
Manahan, Pietrykowski, Eamman & DeLaney
404 North Erie Street
P.O. Box 2328
Toledo, Ohio 43603

On behalf of the defendants The Goodyear Tire
& Rubber Company; The BF Goodrich Company;
Firestone Tire & Rubber Company; Conoco,
Inc.; Uniroyal, Inc.; Union Carbide
Corporation; Maxus Energy Corporation;
Tenneco, Inc. and Occidental Chemical Corp.:

Robert A. Bunda, Esq.
of
Fuller & Henry
One Seagate, 17th Floor
P.O. Box 2088
Toledo, Ohio 43603

Also present:

Amy Ng, Esq., Legal Department,
Conoco, Inc., 600 North Dairy Ashford,
McLean Building, Houston, Texas 77252.

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I N D E X

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RALPH MICHAEL KELLY, M.D.

called by the defendants under the Federal Rules of Civil Procedure, being first duly sworn in the above cause, testified on his oath as follows:

CROSS-EXAMINATION

BY MR. BUNDA:

Q Doctor, can you please state your name and your business address for the record?

A Yes. Ralph Michael Kelly, 2450 Kipling, Suite 106, Cincinnati 45239.

Q What is your home address, Doctor?

A Home address?

Q Yes, sir.

A 7360 Kirkwood, Cincinnati.

Q Doctor, do you have any plans to be traveling or out of the country during January of 1989?

A No.

Q Doctor, I've got a curriculum vitae for you

JRL 11813

1 that I received from you in another case. Is that
2 current, or do you have an updated one?

3 A Fairly current. There's a couple of addi-
4 tions. I have been a commissioned member of the
5 Sayer Commission, the state of Ohio, the EPA Super-
6 fund, a statewide organization legislated in, I
7 think, the '86 legislation.

8 Another article has been accepted for publi-
9 cation in Reproductive Toxicology, having to do with
10 methylene chloride. And another article's being
11 considered with respect to the CNS affects of methyl-
12 ene chloride.

13 Q Other than that, is that current?

14 A Yes.

15 Q If I could have that back, please.

16 Well, Doctor, if we can go through your
17 background for just a minute. Do you want to have
18 reference to this, or do you have a copy of your
19 curriculum vitae? I need to look at this one, too.

20 A That's fine.

21 Q Okay. You graduated from the University of
22 Michigan with an undergraduate degree. Is that
23 right?

24 A That's right.

UHL 11814

1 Q That's in 1969?

2 A Yes.

3 Q When did you start medical school, then?

4 A 1971.

5 Q What did you do in the two years between or
6 the year and a half between undergrad and medical
7 school?

8 A I was a VISTA volunteer, North Platte,
9 Nebraska. I did some work in a laboratory as a
10 laboratory technician.

11 Q What company were you working for when you
12 were a lab tech?

13 A I think it was Saint Joseph Hospital in Ann
14 Arbor.

15 Q You went straight through in medical school,
16 or did you take time off?

17 A No. I went straight through.

18 Q You previously have told me that all the
19 courses in medical school are pass-fail. Is that
20 right?

21 A They were, yes.

22 Q Were there any that you had to take over
23 again?

24 A No.

UPL 11815

1 Q After you graduated from medical school,
2 then you went to Detroit General Hospital as a resi-
3 dent. Is that right?

4 A That's correct.

5 Q When you began your course of study at the
6 University of Michigan School of Public Health, that
7 was while you were still working. Is that right?

8 A Yes.

9 Q Would you describe for me how that worked,
10 please?

11 A Yes. It's what's called a job-on-campus
12 program. You attend classes three days a month,
13 doing course work, reading, writing, research during
14 the month at home. So it's basically a full-time
15 master's program but tailored in such a way that I
16 could work as a physician during the day and then do
17 the study in the evenings.

18 Q Did you take the classes in the evenings,
19 too?

20 A The classes were over a weekend once a
21 month.

22 Q How many years did you do that?

23 A The program was a two-year program. I took
24 some course work in '79 and '80, I think, maybe '80

JAL 11816

1 and '81 independently, but the course was from '81 to
2 '83.

3 Q Was that full time through the year, or did
4 you take quarters?

5 A Full time through the year.

6 Q How many courses in all did that involve?

7 A I don't know. I think it was 60 credit
8 hours. It's hard because of the special nature of
9 the program. I never was clear, you know, when one
10 course was ending and another one was beginning, and
11 so it's hard to say how many different courses. But
12 they had to do with epidemiology, toxicology, indus-
13 trial hygiene, some administrative law, occupational
14 medicine, biostatistics. I think that covers the
15 general course work. There was a thesis associated,
16 and computer work, but all that was incorporated into
17 the other courses.

18 Q Do you remember who you had as instructors
19 in epidemiology?

20 A Well, Larry Fein was the overall coordinator
21 of the course. There were a couple of different
22 epidemiologists that talked.

23 Q These were lecturers?

24 A Yes.

UPL 11817

1 Q Did you have a text that you used during the
2 course of this study, or several texts, or was it
3 mostly course materials?

4 A Mostly course materials. We had some
5 primers in epidemiology. You're still taking about
6 epidemiology?

7 Q Yes. Let's focus on epidemiology first.

8 A Okay. We had a couple of texts, but mostly
9 it was articles and material prepared for the course.

10 Q Do you remember any of the texts that
11 related to epidemiology?

12 A I think one was called a primer in epidemi-
13 ology, but I don't remember who it was authored by..
14 I think there was one called Occupational Epidemiol-
15 ogy, and I don't remember the author of that one,
16 either.

17 Q Have you saved the course materials from
18 your epidemiology courses?

19 A Yes.

20 Q Do you still have them?

21 A Yes.

22 Q Do you have them here in the office?

23 A Some of them I do.

24 Q Did you have courses in occupational medi-

1 cine?

2 A Yes.

3 Q Do you remember who your lecturers were in
4 that area?

5 A Again, Larry Fein. I mean, he was the
6 overall coordinator of the course and he was the --
7 and in fact, with occupational medicine did mostly
8 that. There was a Kelly Brecks that did some, and
9 some other guest lecturers.

10 Q Did you use a text there?

11 A Again, no. There was some suggested ones,
12 Rohm's text, Zins' text, and then a lot of course
13 materials.

14 Q Have you received all your or the greater
15 extent of your course materials from all of the
16 courses you took during this master's program?

17 A I believe so, yes.

18 Q Do you remember who your instructors were
19 for toxicology?

20 A I'm remembering faces, but there was a Rory
21 somebody and -- I don't remember. These were all
22 faculty members of the University of Michigan.

23 Q And industrial hygiene, do you remember
24 anybody specifically?

UPL 11819

1 A A Dr. Smith, Armstrong and, again, I don't
2 remember any others.

3 Q That was Ralph Smith?

4 A Yes.

5 Q Did you ever have Ian Higgans coming in to
6 testify?

7 A Yes, yes.

8 Q Or, I'm sorry, not testify, but lecture.

9 A Yes.

10 Q That was on epidemiology?

11 A Yes.

12 Q When you went for your internship, how did
13 that work? You were at Detroit General Hospital as a
14 resident. Is that right?

15 A Yes.

16 Q Then where were you working when you were
17 going for your master's degree? You were also work-
18 ing at the time, right?

19 A Yes. I worked some at Wayne State Univer-
20 sity supervising residents in an outpatient, seeing
21 patients myself. I was working for the City of
22 Detroit doing both internal medicine and occupational
23 medicine work, and for a portion of that time that I
24 was taking the course work in Ann Arbor I was the

URL 11827

1 director of the Employee Medical Services at Detroit
2 Receiving Hospital.

3 Q Were those three jobs that you had in addi-
4 tion? I realize that some of these are overlapping,
5 but were you doing those three that you mentioned all
6 at the same time at any point?

7 A Never quite all three at the same time. I
8 worked for the City from 1980 on, and so that over-
9 lapped with both of the other jobs.

10 Q That was when you were at Herman Keifer
11 Hospital?

12 A At Herman Keifer, that's right.

13 Q Specifically, what were you doing there?

14 A Working in an internal medicine clinic, and
15 also doing occupational medicine, surveillance work
16 for the city health department.

17 Q I'm sorry. For the city --

18 A Health department.

19 Q What did that involve?

20 A We were involved with designing and deliver-
21 ing a program for small businesses in the city to
22 help them better monitor employee health. We were
23 also involved with follow-up of patients, concern
24 about cancer cases arising in a particular location

JRL 11821

1 of the city, helping to design studies, public
2 health, epidemiologic and otherwise on those situa-
3 tions.

4 Q What was the department of the city that you
5 were working for?

6 A Health department.

7 Q What was your title?

8 A Physician.

9 Q You were a physician in the health depart-
10 ment. Is that right?

11 A Yes.

12 Q Were you enforcing ordinances or regulations
13 of the City?

14 A I was not.

15 Q How was it that the City was involved in
16 this type of work?

17 A Well, the City has, I think, some legal
18 responsibility for maintenance of health. They were
19 involved with some surveillance work. There's a long
20 history of a hygiene department at the City, and
21 partly it was what was felt to be the responsibility
22 of the city to provide services like this for busi-
23 nesses and residents of the City.

24 Q Did you have legal authority to enter and

1 inspect the premises of businesses, or was this a
2 voluntary thing on behalf of the companies that you
3 were working with?

4 A Mostly voluntarily. I had no legal author-
5 ity as an individual. The City does have some legal
6 authority in certain areas. I'm not quite sure what
7 those are right now. But mostly the legal authority
8 got -- you know, when OSHA was created in '70, most
9 of that legal authority was transferred to MIOSHA,
10 Michigan OSHA.

11 Q Which was a state responsibility. Is that
12 right?

13 A Right.

14 Q Was there any delegation of that responsi-
15 bility from the state to the City?

16 A I don't think so.

17 Q In your job for the City, did you have a
18 responsibility for health other than occupational
19 matters?

20 A Internal medicine, yes. I saw adult medical
21 patients.

22 Q This clinic that you were working in was run
23 by the City?

24 A Yes.

UPL 11823

1 Q Was this work overlapping the work that you
2 were doing at the University Health Center?

3 A For some, yes.

4 Q You understand what I mean by overlapping?

5 A Yes.

6 Q It was at the same time?

7 A Right. During the year that I was director
8 of the health center, the employee medical depart-
9 ment -- Employee Health Services, I guess that was
10 the official name -- I was only working an afternoon
11 a week for the City. After and before I was doing
12 the employee health service work I worked more for
13 the City.

14 Q You worked in the Employee Health Services.
15 In other words, you were responsible for providing
16 medical care to the employees of the Detroit Receiv-
17 ing Hospital. Is that right?

18 A That's right.

19 Q You say you were director. How many doctors
20 did you have underneath you?

21 A There was one other doctor, a nurse, and the
22 the staff that went with that.

23 Q All right. The doctor was an intern?

24 A No, another staff physician.

DRL 11824

1 Q How many days a week were you doing this
2 work?

3 A I did that full time.

4 Q You worked for Herman Keifer Hospital with
5 regard to the internal medicine clinic, and your
6 other responsibilities for the health department,
7 that was one day a week, you say?

8 A A half-day a week during that year, yes.

9 Q What year was that?

10 A I think it was most of '83 and a part of
11 '82.

12 Q Well, let's back up just a second so I can
13 get this in chronology. You got out of medical
14 school. Is that right?

15 A Yes.

16 Q Then you went as an intern to which hospi-
17 tal?

18 A Detroit Receiving, Detroit General.

19 Q Detroit General is different from Detroit
20 Receiving?

21 A Well, Detroit Receiving replaced Detroit
22 General, and frequently the names were interchanged.

23 Q You were a resident in internal medicine.
24 Is that right?

UPL 11825

1 A That's right.

2 Q How long was that?

3 A I had a three-year residency, and then I was
4 chief medical resident for a fourth year.

5 Q Who was your supervisor as a resident? You
6 had a doctor supervising your activities?

7 A Carter Bishop was the head of the depart-
8 ment.

9 Q The internal medicine department?

10 A Yes.

11 Q Do you know if he's still there?

12 A He's still at the university, yes. He's not
13 the head of the department now.

14 Q When were you chief medical resident?

15 A July '78 to June '79.

16 Q What did you do after that, then?

17 A That's when I began work at and for Wayne
18 State University in the internal medicine department
19 as an instructor teaching, supervising of residents
20 and also seeing patients myself. I began working for
21 the City sometime in early 1980.

22 Q Well, let's back up for just a second.
23 Okay?

24 A Okay.

1 Q You were working for Wayne State University.
2 Is that right?

3 A Yes.

4 Q In what capacity?

5 A As an instructor in the medicine department.

6 Q Of the medical school?

7 A Yes.

8 Q The Wayne State University Medical School?

9 A That's right.

10 Q And then what else were you doing?

11 A Umm --

12 Q That was full time?

13 A That was full time.

14 Q How long did you do that?

15 A I did that until I left Detroit in August of
16 1984. It became less than full time early in 1980,
17 and then continued at at least a part-time basis
18 until I left.

19 Q From 1979 until 1980 you were doing that
20 full time?

21 A Yes.

22 Q And you were also seeing patients?

23 A Yes.

24 Q Is that when you began your work testifying

URL 11827

1 in workers' comp cases?

2 A No. I don't remember the first time I
3 testified. I think it was sometime in 1980, perhaps.
4 Maybe even later.

5 Q When did you, in addition to your responsi-
6 bilities at Wayne State, then take on an additional
7 job at your next post?

8 A At the City?

9 Q Yes, sir.

10 A That was early in 1980.

11 Q When you say at the City, are you talking
12 about the Employee Health Services, or are you --

13 A No. I'm talking about Herman Keifer.

14 Q That was part time. Is that right?

15 A That's right.

16 Q When did that begin in 1982?

17 A In 1980?

18 Q Oh, I'm sorry. I thought you told me it was
19 part time in part of 1982, and I presumed that it
20 began -- let me just ask you. When did it start?

21 A In 1980.

22 Q And that was part time or full time?

23 A Part time.

24 Q How extensive was the part-time work? And

JRL 11828

1 you understand what I'm asking. Was it one day a
2 week, or how often during a week's time?

3 A I actually forget. I think it was at least
4 three half-days a week. You understand that there
5 was, you know, some changes over the four-plus years,
6 and it's hard to remember exactly how much and when I
7 was working.

8 Q When you first began, were your responsi-
9 bilities at Herman Keifer as you have described them
10 earlier, or did they change over time?

11 A When I first began, they were primarily
12 internal medicine. The occupational medicine respon-
13 sibilities developed over time.

14 Q This was an internal medicine clinic that
15 they had there?

16 A Yes.

17 Q This was run by the City for the residents
18 of the City?

19 A That's right.

20 Q In 1980, then, you were working as an
21 instructor for the university and working at Herman
22 Keifer Hospital. Is that right?

23 A Yes.

24 Q Were you doing anything else at that time?

JRL 11829

1 A No.

2 Q Your duties at that time for the university,
3 were they part time as well?

4 A Yes.

5 Q How extensive were they?

6 A Well, again, it's hard to remember. I was
7 working full time divided between the two places.

8 Q Were you teaching classes or just supervis-
9 ing clinical instruction?

10 A Some teaching in an outpatient setting. Not
11 a formal structure, but there was a weekly seminar
12 that I wouldn't have responsibility for every week;
13 maybe once a month.

14 Q You say in an outpatient setting. Would you
15 have students come from the university to you?

16 A Residents.

17 Q I'm sorry.

18 A As part of their training would be in an
19 outpatient setting, and there would be an hour's
20 seminar prior to the start of the clinic.

21 Q Would they assist you in this clinic?

22 A Actually, I was their supervisor. They were
23 directly seeing the patients themselves and would
24 come to me for advice and help.

1 Q On a particular patient?

2 A That's right.

3 Q They were on a rotation basis?

4 A That's right.

5 Q You said you would have this seminar once a
6 week. That would be discussing patients that they
7 would be seeing?

8 A Yes. And I wouldn't have the seminar once a
9 week. There was one once a week.

10 Yes, the seminars were either exhibiting
11 difficult problems, general outpatient problems, how
12 to handle them, and so on.

13 Q Would there be a topic for each?

14 A Generally, yes.

15 Q How many of those did you present?

16 A Over the time I was there, quite a few.

17 Q How many residents at a time would be
18 assigned to your clinic?

19 A Oh, ten to 15.

20 Q You were never in a situation where you were
21 actually going and instructing or giving lectures to
22 students in the medical school?

23 A You're right.

24 Q How did your responsibilities, then, in 1980

URL 11831

1 for supervising the residents and treating patients
2 at the clinic, when did that change and how did it
3 change?

4 A It really didn't change much during the
5 entire time that I was there.

6 Q In Detroit, you mean?

7 A In Detroit, that's right.

8 Q Eventually you picked up this responsibility
9 for employee health care at Detroit Receiving?

10 A Yes.

11 Q That was late in '82?

12 A Yes.

13 Q And that was in addition to your other
14 responsibilities that you've described?

15 A Yes, although during that period, I guess,
16 the supervision of residents declined considerably.

17 Q Why was that?

18 A Because I was spending most of my time in
19 the Employee Health Service.

20 Q Now, you have down on your resume employment
21 at the University Health Center at Wayne State
22 University, and then you also have as a separate
23 category Herman Keifer Hospital.

24 What is the difference between those? I

1 thought I understood your testimony to be that you
2 were supervising the residents actually at Herman
3 Keifer.

4 A At Herman Keifer, no. I was seeing patients
5 myself. There were no residents at Herman Keifer.

6 Q All right. You were seeing patients your-
7 self at University Health Center?

8 A I was also doing that, yes.

9 Q And you were supervising the residents at
10 the University Health Center?

11 A That's right.

12 Q There was also an internal medicine clinic
13 at Herman Keifer?

14 A Yes.

15 Q And you would shuttle between those two?

16 A Yes.

17 Q And in 1981 you decided to get your masters'
18 degree in public health. Is that right?

19 A That's right.

20 Q Was there a concentration that you had when
21 you were getting that master's degree, or was that a
22 general Master's of Public Health?

23 A Occupational medicine was the concentration.

24 Q Was that the concentration for everybody

1 involved, or were other people --

2 A Yes.

3 Q -- concentrating?

4 A Yes. This was a course for physicians, and
5 it was in occupational medicine.

6 Q The thesis that you did for your master's was
7 then published in the Proceedings of the Society for
8 Prospective Medicine?

9 A Yes.

10 Q What is prospective medicine?

11 A Medicine in the future. Preventive medicine
12 is the general field.

13 Q Can you briefly describe your thesis for me?

14 A Yes. We designed a questionnaire for use in
15 small businesses, and we tested that questionnaire
16 for its reliability. We invited some of the employ-
17 ees into the health department at Herman Keifer, did
18 more extensive testing, follow-up, and then used that
19 as a basis to test the overall questionnaire for its
20 ability to give some surveillance, early monitoring,
21 early warning of possible problems, and the thesis
22 was a description of that.

23 Q Were there particular industries that you
24 were working with or designing this for?

1 A Mostly small businesses of a vast majority,
2 a vast variety.

3 Q Among those businesses, they did many
4 different things, used many different chemicals?

5 A Yes.

6 Q You weren't focusing on, for example, metal
7 plating or something?

8 A No.

9 Q In the course of your work for the City of
10 Detroit did you have any experience in businesses
11 involving exposure to vinyl chloride?

12 A I don't think so, no.

13 Q In your course work as a student at medical
14 school did you have any courses strictly devoted to
15 epidemiology?

16 A No, not per se. There was about two hours
17 having to do with occupational diseases.

18 Q Two hours in your medical training?

19 A Yes.

20 Q Do you know who taught that?

21 A A hygienist at Wayne State. I don't remem-
22 ber his name now.

23 Q When you say a hygienist, is that an indus-
24 trial hygienist?

UPL 11835

1 A An industrial hygienist, yes.

2 Q This two hours, that was two hours of lec-
3 ture?

4 A Yes, yes.

5 Q Did you have any discussion of vinyl chlo-
6 ride during those lectures?

7 A I don't think so. You know, vinyl chloride
8 made headlines in '74, and I know there was discus-
9 sion during that time, but in the particular class, I
10 don't think so.

11 Q When you say you know there was discussion,
12 you know that there was discussion in the medical
13 community?

14 A In the whole medical, right. That was big
15 news.

16 Q Did you use a text when you had that two
17 hours of instruction?

18 A No.

19 Q He provided you with materials?

20 A Yes.

21 Q When you were at the University of Michigan
22 what types of epidemiology, if I can call it an
23 instruction? I get the sense that your master's
24 program was not divided into real discrete segments

UPL 11836

1 of epidemiology and toxicology. I get the impression
2 that it was a continuum. Maybe you can explain to me
3 a little bit how that worked.

4 A Yes. It wasn't completely nonstructured,
5 and, you know, there was a here comes the epidemiolo-
6 gist who's going to talk for an hour. But frequently
7 we and the general course director tried to weave the
8 same process through. So, for example, when we were
9 maybe talking about vinyl chloride in the occupa-
10 tional medicine, we would be reviewing occupational
11 studies of vinyl chloride, critiquing, discussing
12 different modes, ways to do epi. projects, and so on.
13 So that's some of my difficulty in saying, well, this
14 course began here and ended there. But there were
15 nevertheless discrete hours or two-hour periods where
16 it was one subject or another.

17 Q To the extent that you're able, therefore,
18 can you describe for me the types of instruction that
19 you had in epidemiology? Was it broken down into
20 anything other than just epidemiology?

21 A No, not really. I mean, there were two or
22 three courses called epidemiology for which there was
23 a grade going from, you know, beginning to more
24 advanced. Much of the course work, in fact, involved

URL 11837

1 projects for us to do as part of our ways to getting
2 a better handle on what epidemiology was and how to
3 use it and how to design studies.

4 Q Do you remember the names of any of those
5 courses?

6 A They could have been Epi. I, II and III. I
7 don't know.

8 Q Do you remember what your grades were?

9 A No. I think my overall grade for the whole
10 program was an A minus.

11 Q Was there a discussion of vinyl chloride
12 during your master's instruction?

13 A Yes.

14 Q Can you describe for me what was said or
15 what you recall?

16 A That would be hard.

17 Q You just know that there was some discus-
18 sion?

19 A Yes.

20 Q After you graduated or received your degree
21 from the Michigan School of Public Health as a
22 master's, did you continue working on your other jobs
23 in Detroit?

24 A Yes.

1 Q For how long did that continue?

2 A I guess it was about a year.

3 Q Were you looking for work other than what
4 you were doing, or were you satisfied with what you
5 were doing after you got your master's?

6 A Well, I took another job, so I guess I was
7 looking. I wasn't real active, but, yes, I was
8 looking.

9 Q Did you attempt to find an occupational
10 medicine job around Detroit?

11 A Yes. I was interested in getting something
12 going at Wayne State, for that matter, and this other
13 job came along that was more interesting and looked
14 like it was going to happen sooner, and that's when I
15 decided to take it.

16 Q This other job, you mean the Cincinnati job?

17 A That's right.

18 Q Continuing along this line, then, with your
19 jobs, you came down to Cincinnati to run the Greater
20 Cincinnati Occupational Health Clinic. Is that
21 right?

22 A Yes.

23 Q Was that a full-time responsibility?

24 A Yes, it was.

URL 11839

1 Q How was that structured? What exactly was
2 or is the Greater Cincinnati Occupational Health
3 Center?

4 A It's a nonprofit corporation involved with
5 primarily treating, the treatment of patients. There
6 was some researching and teaching that went along
7 with it. There was grant money for doing some
8 research. Most of the monies came through patient
9 revenues.

10 Q Were you the first physician at this health
11 center?

12 A No. Another physician was there a couple of
13 months before I was.

14 Q And he was the first?

15 A Yes.

16 Q So it was a new clinic, essentially?

17 A Yes.

18 Q Who organized the clinic?

19 A Several people were involved, but basically
20 the Central Labor Council of the AFL-CIO.

21 Q That's of the international union or of the
22 local?

23 A That's the local.

24 Q Did it have a board of directors?

UPL 11840

1 A Yes.

2 Q Without getting into specific names of the
3 people on the board of directors, did they represent
4 various groups?

5 A Yes. There are about 11 people, I think,
6 six represented unions. Five. There was a City
7 Council rep, a couple medical school faculties, an
8 administrative and hospital, epidemiologist from the
9 University of Cincinnati, a representative of the
10 Chamber of Commerce.

11 Q Who was the epidemiologist from Cincinnati?

(457) 12 A Eula Bingham.

13 Q Who were the representatives from Cincinnati
14 medical school?

15 A Well, actually it was Columbus, Ohio State,
16 and it was a Dr. Keller, Martin Keller.

17 Q I thought you said there were several medi-
18 cal school faculty. Was Dr. Keller the only one?

19 A Yes, yes.

20 Q Was this center, if I can use the phrase, in
21 competition with or doing the same thing as the
22 University of Cincinnati health clinic or occupa-
23 tional health center?

24 A Yes, I think it basically was doing the same

UHL 11841

1 thing.

2 Q Were you working with the other physician
3 that was here at the center before you, or did you
4 replace him?

5 A No. We worked together. He left in June of
6 '85.

7 Q What was his name?

8 A David Egelmann.

9 Q Do you know where he went?

10 A He's in Providence, Rhode Island.

11 Q Do you know what he's doing there?

12 A Not exactly. He's doing something at the
13 medical school there.

14 Q Do you know why he left?

15 A He was interested in doing something differ-
16 ent.

17 Q Something different than what, working at
18 the clinic?

19 A Right.

20 Q Or occupational medicine?

21 A No. What he was doing at the clinic,
22 although I don't think he's doing as much occupa-
23 tional medicine work right now.

24 Q What was he doing at the clinic? In other

URL 11842

1 words, what was the relationship between the two of
2 you?

3 A Seeing some patients. Involved in some
4 research, but mostly we saw some patients.

5 Q Were you equals, or was there one --

6 A We were equals.

7 Q You came in October of 1984. Is that cor-
8 rect?

9 A Yes.

10 Q To the clinic, I mean.

11 A Yes.

12 Q And then he left in 1985?

13 A Yes.

14 Q How long after you came did he leave?

15 A He left in June, so eight months.

16 Q And you were the only physician then?

17 A Yes.

18 Q You said there were other responsibilities
19 with regard to supervising interns. Is that right?

20 A I did, yes. I did some teaching of both
21 students and residents in occupational medicine at
22 the clinic. I also did instruction in outpatient
23 settings at the university.

24 Q Your teaching of students at the clinic,

URL 11843

1 what did that involve?

2 A Mostly the preceptor type situation, one-on-
3 one teaching. Students or residents would spend a
4 month at the clinic in a rotation, mostly observing.
5 Doing some direct evaluations themselves, but mostly
6 observation.

7 Q This would be the medical school, as part of
8 the course of teaching their students, they would
9 have the student go out into the community and work
10 with doctors. Is that right?

11 A Yes, yes.

12 Q Describe, then, your work with residents.

13 A It's been on two levels. Mostly, in family
14 medicine department at the university in their out-
15 patient program, quite similar to what I was doing in
16 Detroit: supervision, doing a monthly seminar on, in
17 this case, occupational medicine. There has been
18 inpatient supervision in the internal medicine
19 department as well.

20 Q You had your own patients in the internal
21 medicine department at the University of Cincinnati?

22 A No.

23 Q All right. Just explain for me the last
24 part, then.

URL 11844

1 A It was as an attending for a month, and this
2 was at the Veterans Administration Hospital, and
3 would supervise the residents in their care of their
4 internal medicine patients that are hospitalized.

5 Q You were an attending physician?

6 A Yes, yes.

7 Q At Veterans Hospital?

8 A Yes.

9 Q How often would you do that?

10 A I've done that once a year.

11 Q How long would that occur?

12 A A month.

13 Q Would that be full time during the day?

14 A No. It's about two hours a day, although,
15 of course, I'm available for consultation, but I'm
16 there two hours a day.

17 Q Were you doing this on a for-pay basis?

18 A Yes.

19 Q And while you were there, you would be
20 supervising residents?

21 A Yes.

22 Q Was that your primary responsibility, or
23 your primary responsibility was treating patients?

24 A At the VA?

URL 11845

1 Q Yes, sir.

2 A The primary is to supervise. I mean, ultimately the patients are under my care as a fully-
3 licensed physician, but in a resident program a lot
4 of the responsibility is given to the residents and
5 it is a supervisory type relationship.
6

7 Q When you would come in this once a month,
8 those wouldn't be --

9 A Well, that's once a year.

10 Q I'm sorry.

11 A For an entire month.

12 Q I'm sorry. Once a year for that month,
13 would those per se be your patients in the sense that
14 you didn't place them in the Veterans Hospital, did
15 you?

16 A No, I didn't. But they would come through
17 the emergency room or the clinics there at the VA.
18 They would come to the particular team that I was
19 supervisor. I would be the attending physician, and
20 they officially would be my patients during that
21 time.

22 Q Were you working in the internal medicine
23 department or the emergency room, where, in the VA?

24 A This would be in the internal medicine

URL 11846

1 department.

2 Q This was in an inpatient or an outpatient?

3 A Inpatient.

4 Q What types of cases would you see?

5 A Typical inpatient internal medicine, myo-
6 cardial infarctions, shock, respiratory failure,
7 cancer, hypertension, diabetes; you name it.

8 Q You have also down in your curriculum vitae
9 the fact that you were an assistant professor at the
10 University of Cincinnati family medicine department.
11 What was involved with that?

12 A That's the supervision of outpatient resi-
13 dents that I talked about and doing the monthly
14 seminars.

15 Q Would you physically go to the University of
16 Cincinnati?

17 A Yes, I would.

18 Q Do they have a family medicine clinic there?

19 A Yes, they do.

20 Q And that's where you would be doing this?

21 A Yes.

22 Q How much time would this involve? How fre-
23 quently would you do it?

24 A This was an afternoon a week.

URL 11847

1 Q Are you still doing that?

2 A Yes.

3 Q When you were at this clinic and doing this
4 supervision, did you have an emphasis on occupational
5 medicine, or was your responsibility general family
6 practice?

7 A It was somewhat of a mix. The outpatient
8 department is a family medicine department, and
9 mostly it was a consultation, observation of, care of
10 general medical family problems. The seminars I
11 would give would be occupational medicine, and by the
12 nature of my speciality, you know, I would see that
13 each resident knew what each of their patients did,
14 and I had some understanding of preventive or possi-
15 ble things to be looking for.

16 Q That was steady one afternoon a week
17 throughout the year?

18 A Yes, yes.

19 Q I asked you, you're still doing this. Is
20 that right?

21 A Yes.

22 Q What is your title now when you do that?

23 A I'm assistant professor. Adjunct assistant
24 professor, I think, is the --

JPL 11848

1 Q All right. The adjunct means that you're
2 coming in. You're not --

3 A I'm not full time. That's right.

4 Q How many physicians are doing that in the
5 family medicine department, do you know?

6 A No.

7 Q I presume you're not the only one doing
8 that.

9 A No. There are probably five to ten. The
10 majority are full-time faculty, but several of us
11 come in an afternoon or so a week.

12 Q Do you have any idea of how many full-time
13 faculty there are in the family medicine department?

14 A No.

15 Q How many at the clinic?

16 A When I'm there, there will be two others
17 when I'm there.

18 Q Full-time faculty?

19 A That are precepting, doing the same thing
20 I'm doing, yes.

21 Q I'm sorry. I don't understand. Yes, there
22 are full-time faculty there working with the resi-
23 dents while you are also doing that?

24 A That's right.

1 Q You also have down on your curriculum vitae
2 that you are a clinical instructor at the University
3 of Cincinnati. What does that involve?

4 A I guess the only thing we haven't talked
5 about -- well, that's the internal medicine depart-
6 ment. We haven't talked about my relationship to the
7 Environmental and Occupational Health Division.

8 Q I understand, but I'm going to get to that.

9 A Okay.

10 Q But above that on the CV is something about
11 the clinical.

12 A That's my job description. That has me
13 rounding at the VA Hospital and has me supervising or
14 doing preceptors for medical students and internal
15 medicine residents in my office.

16 Q Are you still doing both of those?

17 A Yes.

18 Q That is, having responsibility for -- is it
19 students or residents at the VA?

20 A Both. Well, at the VA there's -- yes. The
21 team consists of mostly residents, and I think there
22 are two students now on the team.

23 Q When you do your work at the VA?

24 A Yes.

JUL 11 1950

1 Q Then you also have both coming here?

2 A Yes, yes.

3 Q When I say "here," I'm talking about your
4 office now.

5 A That's correct.

6 Q Then describe for me, please, your relation-
7 ship to the Environmental and Occupational Health
8 Division of Kettering Laboratory.

9 A Much the same as it is with the medicine
10 department. I have had residents in that program
11 under me in an outpatient setting in a preceptor type
12 situation. I've done some lecturing in that depart-
13 ment, seminars as well.

14 Q Well, when you say in an outpatient set-
15 ting --

16 A That's in my offices. Residents will spend
17 a month with me in the offices.

18 Q The Environmental and Occupational Health
19 Division of Kettering Laboratory, is that a, for want
20 of a better word, public health school?

21 A Well, it's not a public health school, but
22 it's quite close. I mean, if you ask what's the
23 difference, I'm not sure what the difference is. I
24 know it's not an accredited public health school, but

1 they have industrial hygiene, toxicology, occupa-
2 tional medicine program.

3 Q Well, okay. Pardon me for interrupting, but
4 I'm just trying to get it clear in my own mind what's
5 going on. You and I both know in Michigan they have
6 the medical school and they have the public health
7 school.

8 A Right.

9 Q And down here the situation is the same.
10 You're getting in students from the medical school
11 and also Kettering Laboratory. Is that right?

12 A That's correct.

13 Q So the type of relationship you have with
14 the students and the residents at the University of
15 Cincinnati in the internal medicine department, that
16 type of relationship you also have with students
17 coming from Kettering Labs?

18 A Yes.

19 Q How many a month come from Kettering Lab to
20 work with you?

21 A It's probably been, since I've been here,
22 less than ten overall.

23 Q How long do they stay here?

24 A A month.

1 Q With you?

2 A Yes.

3 Q And they work a full day with you?

4 A Generally.

5 Q Do you receive compensation for the fact
6 that they come here?

7 A No.

8 Q This is the service that you do as part of
9 the medical community?

10 A Yes. I guess the remuneration for myself is
11 contact with students, stimulation, keeping up with
12 events and, you know, research and medical litera-
13 ture, and so on.

14 Q What about with the medical school? Do you
15 receive any remuneration for having them come into
16 your offices?

17 A No. I am paid for going to the family
18 medicine department. I do get paid for that.

19 Q Is that on a salary basis? Do you receive a
20 salary as an adjunct professor?

21 A No. It's a per hour basis.

22 Q Your title is assistant professor with
23 regard to your responsibilities at Kettering Labora-
24 tory. Is that the same thing they classify you as,

1 an adjunct professor?

2 A Well, although I don't get paid, so that
3 means I'm not an adjunct.

4 Q What do you call yourself, or what do they
5 call you?

6 A I think that's where the clinical comes in.
7 Clinical means you don't get paid.

8 Q Your CV identifies yourself as an assistant
9 professor in connection with the Kettering Labora-
10 tory. Is that incorrect, then?

11 A Well, I guess it should say clinical assis-
12 tant professor. Believe me, I remain confused as to
13 all the different nuances as to what each title
14 means.

15 Q Well, you and me both. But in any event,
16 you don't get paid, so they don't give you the full
17 title?

18 A Right.

19 Q Finally, let's talk about the entry on your
20 resume with regard to your acting as a consultant to
21 the National Cancer Institute. Describe that for me,
22 please.

23 A Yes. From September of '84 to June of '86 I
24 served as a consultant with several other occupa-

JEL 11854

1 tional physicians with NCI, National Cancer Insti-
2 tute. We were all involved with advising the
3 Institute as to how to go about identifying, control-
4 ling and developing preventive strategies with
5 respect to occupational cancers. .

6 Q What is the Central Clinical Research
7 Network? Do you see that?

8 A Yes. That's what we sort of called our-
9 selves as part of it.

10 Q The letters that you wrote to the editor in,
11 for example, Journal of American Medical Association
12 on asbestos-related diseases, you wrote that with a
13 bunch of other people, didn't you?

14 A Yes.

15 Q Are they part of this Central Clinical
16 Research?

17 A Yes. Many of us were, yes.

18 Q How many people were part of the Central
19 Clinical Research Network?

20 A There may have been 14 or 15 clinics, groups
21 seeing, evaluating and treating patients with possi-
22 ble occupational diseases, and that meant there were
23 maybe 20 of us altogether.

24 Q How did the clinics get together?

JRL 11855

1 A I wasn't involved with that, so I'm not sure
2 how the process got started. Many of us are part of
3 the American Public Health Association, and I think
4 that perhaps, you know, the occupational health
5 section of the association is how we came to meet
6 each other.

7 Q I'm sorry. I still don't have a real clear
8 understanding about what type of consulting work you
9 did for the NCI.

10 A Well, it was very preliminary work on how to
11 identify occupational cancers; how to design programs
12 to prevent; doing a lot of stuff with asbestos in
13 terms of how to identify cohorts, groups of asbestos
14 exposed individuals; what could we design in terms of
15 prevention and/or treatment that would prevent the
16 development of occupational cancers.

17 My view, in fact, was that it was similar to
18 the work that was done 25 years ago with the develop-
19 ment of the cancer treatment centers, to what was
20 initiated by the NCI in the '60s. I'm not sure that
21 everyone shared that view, but that was sort of my
22 conception of what we were about.

23 Q Were you working on a grant to this group?

24 A Yes.

1 Q What was the description contained in the
2 grant as to what the group was supposed to do, if you
3 can recall?

4 A Pretty much what I've said.

5 Q The grant came from the NCI?

6 A Yes.

7 Q And it was specifically granted to the
8 Central Clinical Research Network?

9 A Yes.

10 Q What did you provide back in response to the
11 money that you received?

12 A Development of questionnaires, some prelimi-
13 nary papers with respect to how to design RFPs,
14 request for grant proposals. I think generally those
15 were the things provided.

16 Q Did you do an actual report, final report?

17 A I don't think there was an actual final
18 report, because Graham-Ruddman came along then and
19 stopped the program sort of in its -- not even in
20 midstream; just as we were getting started. The
21 general cutbacks in all the departments eliminated
22 this program.

23 Q Did you produce anything in connection with
24 this grant?

UPL 11857

1 A Other than what I've talked about?

2 Q Well, let's back up. I'm not quite sure
3 what you've talked about. Did you sit down and
4 actually do a pencil-to-paper for anything?

5 A Yes.

6 Q What?

7 A These questionnaires and these initial pro-
8 posals for RFPs. And, again, it wasn't done entirely
9 by myself. We had committees that were involved with
10 different aspects of developing these programs.

11 Q The questionnaires, were they derived from
12 the work that you had done on your master's thesis?

13 A To some extent. Others have done the same
14 sort of thing, so it was not a question of totally
15 designing a questionnaire but pulling from the vari-
16 ous bits and pieces that all of us had been develop-
17 ing.

18 Q So all of you had your own questionnaires
19 that you gave to patients or people out there?

20 A Right.

21 Q And then you just synthesized these to come
22 up with one that you thought was good?

23 A That's correct.

24 Q I don't understand the RFP work that you

1 were talking about. You got a grant and you used
2 that money to make more requests for grants?

3 A Well, in any program to prevent something
4 like occupational cancer, there is preparatory work
5 as to, you know, what are the questions, what do we
6 need to decide, what are the general issues, and
7 that's basically what we were involved with.

8 The next stage would be to actually develop
9 programs, trials, and there would have to be requests
10 for proposals, requests for grants to do that, and
11 the NCI was asking for our help in how to develop
12 such proposals.

13 Q How much money was the grant?

14 A I don't recall. I think the Occupational
15 Health Center got about 25,000.

16 Q The Cincinnati Health?

17 A Yes.

18 Q You don't recall what the total amount of
19 the grant was?

20 A No, I don't.

21 Q Do you have copies of the -- what do you
22 call them -- RFPs?

23 A That's what they're called, and I don't
24 think I do. I have copies of some of the statements

UPL 11859

1 of principles and purpose of the work we did, that
2 brought us together, but any of the work that we did,
3 I don't think I have copies of those.

4 Q That would be at the Occupational Health
5 Center here in Cincinnati?

6 A No. I think that's with the NCI.

7 Q If you can bear with me for a second, these
8 RFPs were what, again? What were they proposing that
9 the NCI do?

10 A They were going to be RFPs from the NCI.

11 Q All right.

12 A And were going to be used to identify
13 groups, cohorts of individuals at risk for occupa-
14 tional cancer, and then mechanisms for prevention of
15 all types.

16 Q That sounds like epidemiology work, doesn't
17 it, identifying cohorts of people?

18 A Yes. In many ways, yes.

19 Q Was the proposal that you clinics would get
20 involved in that type of work?

21 A We were hoping to, yes.

22 Q Was this spanning all occupational cancers,
23 or are you focusing on asbestos or a particular type?

24 A Well, there was nothing in it to limit which

JRL 11860

1 occupational cancers, but asbestos looked to us to be
2 something to get started with.

3 Q Are you still continuing today in your
4 responsibilities with the family medicine department
5 in Cincinnati?

6 A Yes.

7 Q And the work at the VA?

8 A Yes.

9 Q And the work with the Kettering Laboratory
10 residents?

11 A Yes.

12 Q Or students. What are they, residents,
13 students, or both?

14 A Both.

15 Q Are those MDs coming out of that program at
16 Kettering, or are they others?

17 A They've already received their -- oh, you
18 mean the people?

19 Q Yes.

20 A The students are not physicians. They're
21 more, they've been hygienists. The residents have,
22 you know, finished medical school.

23 Q And then they decide to go through this
24 Kettering program?

1 A Yes.

2 Q Have you been involved in any lecturing or
3 anything at the Kettering Laboratory program?

4 A Yes.

5 Q Other than what you've done here in your
6 office?

7 A Yes. I've given some seminars for the occu-
8 pational medicine residents.

9 Q What were the subjects of the seminars?

10 A One of them had to do with criteria for
11 asbestos diagnosis, and the others have been inter-
12 esting case discussions.

13 Q Interesting cases?

14 A Cases, yes.

15 Q I don't understand what you mean by seminar.
16 Now, was this a continuing program where they would
17 meet once a week for an hour or something, or was it
18 just a one-shot lecture?

19 A This is a continuing program. I did not
20 have responsibility for the vast majority of them,
21 but would attend many of them and made several
22 presentations.

23 Q And these you've already described?

24 A Yes.

URL 11862

1 Q In the course of this, have you had any
2 contact with the faculty at Kettering Laboratory?

3 A Yes.

4 Q Who have you worked with?

5 A Grace LeMasters, Jim Lockey, probably the
6 most.

7 Q Grace LeMasters?

8 A Yes.

9 Q I understand you've terminated your rela-
10 tionship with the Greater Cincinnati Occupational
11 Health Center.

12 A Yes.

13 Q When did that occur?

14 A September '87.

15 Q Would you describe your activities now after
16 that point in time?

17 A Primarily private practice, although the
18 teaching responsibilities have continued.

19 Q Private practice in what?

20 A Occupational, internal medicine.

21 Q Why did you leave the Greater Cincinnati
22 Occupational Health Center?

23 A We had differences about primary care, that
24 is, the treatment of individuals for their problems.

1 They were interested more in evaluations, primarily.

2 Q What were you interested in?

3 A Doing both. I felt that it was important to
4 offer treatment as well as just doing evaluations.

5 Q Did the quality of your work have anything
6 to do with the severance of the relationship?

7 A I don't believe so.

8 Q Do you think, in the opinion of the clinic,
9 that's true?

10 A I don't believe so.

11 Q Did the board of trustees ask you to leave?

12 A Yes, they did.

13 Q This came after an audit of some of the
14 files of the clinic. Is that right?

15 A We had been through a fairly long discussion
16 about primary care issues, and, yes, they were con-
17 cerned by the amount of primary care that was being
18 done. I, frankly, didn't realize that they felt so
19 deeply about it, but I feel pretty deeply about it as
20 well, that primary care is important.

21 Q I don't understand what you mean by primary
22 care. Perhaps you can describe that for me.

23 A Treatment of people's problems.

24 Q Were they concerned about the quality of the

UPL 11864

1 care or diagnoses that you were rendering?

2 A I don't believe so.

3 Q It was the University of Cincinnati that did
4 the audit, or people from there?

5 A Well, there was a nurse that was through,
6 and actually I think she works for the City, the
7 health department, and she was involved with auditing
8 charts, yes.

9 Q Was there anybody else?

10 A There was a physician with the occupational
11 medicine department that came and discussed cases.

12 Q That was Channing Meyers?

13 A Yes.

14 Q What opinions did he express?

15 A It was sort of your general type chart
16 discussion, going over cases. Sometimes we agreed;
17 sometimes we disagreed.

18 Q Did he express criticisms to you?

19 A On occasion, yes.

20 Q What was the nature of those criticisms?

21 A Well, we disagreed on many occasions as to
22 what diagnostic criteria were useful in making deci-
23 sions.

24 Q He disagreed with some of the diagnoses that

URL 11865

1 you rendered?

2 A Yes.

3 Q Do you know whether he made any recommenda-
4 tions to the board of trustees of the clinic?

5 A I don't know.

6 Q You have no knowledge about that one way or
7 the other?

8 A I don't.

9 Q You've done consulting work with attorneys
10 since you've been here in Cincinnati. Is that right?

11 A Yes.

12 Q You were doing that up in Detroit, too. Is
13 that right?

14 A Yes.

15 Q You've told me before that you've done over
16 a hundred workers' compensation cases when you were
17 in Detroit.

18 A Probably.

19 Q Is that number accurate?

20 A I think so.

21 Q All of these were on the claimant's side?

22 A I think the vast majority were, yes.

23 Q The work that you've done down here in
24 Cincinnati, those are primarily on the plaintiff's

UCL 11866

1 side. Is that right?

2 A Yes.

3 Q You understand the plaintiff being the
4 person who claims he's injured?

5 A Right. I mean, that sort of stands to
6 reason in someone doing primary care. If I'm going
7 to be diagnosing a problem, then they're the ones who
8 are going to go on to seek legal assistance if they
9 feel they need it.

10 Q Well, whether or not it stands to reason,
11 you've also worked with attorneys who send patients
12 to you. You are not their primary treating physi-
13 cian?

14 A That's true.

15 Q Again, that work that you've been doing has
16 been for the plaintiff's side. Is that right?

17 A Yes, I think so. That's the definite minor-
18 ity of all of the patients I see, but, yes, that's
19 true.

20 Q And then that happens that you have attor-
21 neys sending patients to you to be evaluated. Is
22 that right?

23 A Yes.

24 Q The plaintiffs' attorneys in this case,

URL 11867

1 Murray and Murray, have done that sort of thing with
2 you, haven't they?

3 A Yes, they have.

4 Q You did not see Mr. Wallace or Mr. Dendinger
5 in this particular case, though, have you?

6 A No, I haven't.

7 Q You were involved with seeing patients
8 arising out of this Celanese factory in Columbus?

9 A I have, yes.

10 Q Have you had any other cases where the
11 attorneys from Murray and Murray have been involved?

12 A Yes, there have been a couple of others.

13 Q What were those cases about? Without giving
14 names, I just want to know the diseases.

15 A Yes. Scleroderma, and I think some hyper-
16 sensitive lung disease.

17 Q The Celanese cases, were you a primary care
18 physician? Did you see the people before you knew
19 the attorneys were involved?

20 A No.

21 Q These people came to you; they were sent by
22 the attorneys?

23 A That's right.

24 Q And the other cases that were involved with

1 Murray and Murray, was that the same situation?

2 A Yes.

3 Q What percentage of your practice now or
4 since the time that you left the Greater Cincinnati
5 Occupational Health Clinic is involved with consult-
6 ing with attorneys on cases that are sent to you?

7 A Basically about the same; about five
8 percent, I think.

9 Q That's five percent of time or five percent
10 of the money that you're making?

11 A Probably yes to both.

12 Q When you were with the Greater Cincinnati
13 Occupational Health Clinic, how much time was spent
14 in consulting with attorneys and consulting with
15 patients with regard to medical legal claims?

16 A I set aside an afternoon a week for deposi-
17 tions, and that didn't occur, that was not every
18 week. Probably two or three afternoons a month were
19 spent like that.

20 Q The money that you made from that type of
21 work, did that go to the clinic or did that come to
22 you?

23 A That went to the clinic.

24 Q Was that type of work involved at all with

1 the differences between you and the clinic?

2 A I don't think so. I think the issue, again,
3 was primarily one of ongoing treatment, of primary
4 care type medical problems.

5 Q If you could, can you explain that for me a
6 little bit more? What were the differences? You
7 wanted to treat these people after they came to you?

8 A Yes.

9 Q And the clinic didn't want you to?

10 A Right.

11 Q Did the differences that you had with Dr.
12 Meyers with regard to the accuracy of diagnoses have
13 anything to do with the severance of the relation-
14 ship?

15 A I don't think so.

16 Q Do you think the clinic thought so?

17 A I don't think so.

18 Q Do you know who was involved with the deci-
19 sion to ask you to leave?

20 A Well, I think it was primarily Dan Radford.

21 Q Dan Radford?

22 A Yes.

23 Q Who was he?

24 A He's the executive secretary of the AFL-CIO

UPL 11870

1 and chairman of the board.

2 Q Was he on the board of trustees for the
3 clinic?

4 A Yes. He's the chairman of the board, the
5 chairman of that medical board.

6 (Recess taken.)

7 Q Doctor, are you currently getting any refer-
8 rals of people to you from the unions, or has that
9 stopped after you left the clinic?

10 A No, I continue to get some referrals.

11 Q From the unions that were sponsoring the
12 clinic before?

13 A Yes.

14 Q How many people would that be, approxi-
15 mately? Is that a large number of people, or has the
16 number dwindled?

17 A It's still the bulk of my new patients.

18 Q How many would that be?

19 A I really don't know. I probably am still
20 getting about three to five new patients a week as
21 part of an evaluation, and three or four are from a
22 union, but I guess 75, 80 percent.

23 Q What union is that?

24 A There are several: the machinists, the

URL 11871

1 building trades, asbestos workers, transit workers,
2 postal. I guess those are the main ones.

3 Q When you say evaluations, these are evalua-
4 tions of people that have physical complaints, or do
5 they come to you just for a regular checkup?

6 A There's some of all. Some are involved, you
7 know, are concerned about some exposures and wanting
8 some screening. Some have injuries. Some have ill-
9 nesses that they're not sure of the cause. Some just
10 want treatment of a problem.

11 Q Are you currently involved in working with
12 patients on or in connection with lawsuits either as
13 a primary treating physician or as a consulting
14 physician?

15 A I guess I'm not sure what you mean.

16 Q Let me back up with that. It's a poor
17 question. As I understand it, you have two ways to
18 get involved with testifying in connection with a
19 lawsuit that may be brought by one of your patients.
20 One is to see the patient and evaluate him after he
21 has been diagnosed as having some disease, and you
22 can testify at trial about your opinion. And my
23 understanding is the other way is that you see the
24 patient just because he is brought to you to be

JPL 11872

1 evaluated. You are treating him for a particular
2 condition or diagnose the original condition, and
3 then you get involved in a lawsuit that way. Is that
4 accurate?

5 A Yes, I think that's right.

6 Q In either of those or even apart from that,
7 without you ever having seen the patient, if you were
8 just asked to testify in a particular matter in a
9 lawsuit, how many matters are you currently involved
10 in like that, like those three types of involvements?

11 A I'm not sure I could tell you, because I
12 know, by the nature of the business, many of the
13 patients have either work comp or third-part law-
14 suits, and, frankly, I don't even know who does or
15 how many or whatever.

16 Q There comes a point in time when you're
17 contacted by an attorney in connection with those.
18 Is that right?

19 A Yes.

20 Q How many contacts, approximately, have you
21 had since you left the clinic? And by contacts I
22 mean from attorneys.

23 A My schedule of depositions has been about
24 the same. I try and save a half a day a week to do

JAL 11/8/73

1 that, and most weeks there is one. Again, maybe two
2 to three of them is what it usually works out to be.

3 Q Two to three weeks a month or two to three
4 depositions?

5 A Two to three depositions a month.

6 Q Can you give me some sense about how many
7 cases you've been involved in since you left the
8 clinic?

9 A Well, four months last year, four months
10 this year. 20, 25.

11 Q You've indicated that's approximately the
12 same rate as when you were at the clinic. Is that
13 right?

14 A I believe so, yes.

15 Q I'm trying to get some sense now about when
16 you were at the clinic what your involvement was
17 with --

18 A Again, about the same. Two to three times a
19 month there would be a deposition, I think.

20 Q How many times have you testified in trial
21 since you've come to Cincinnati?

22 A I think four times.

23 Q The Scott case was one. That was an asbes-
24 tos case.

UPL 11874

1 A Yes.

2 Q What were the others?

3 A There was another asbestos case. There was
4 a case involving asbestos exposure to inmates.

5 Q When you say inmates, that's a prison?

6 A Prison, yes, in Kentucky. The people
7 weren't sick but were concerned about exposures. And
8 a third involved a postal worker, I think, who was
9 being disciplined for lost time as a result of an
10 injury.

11 Q This was a traumatic injury?

12 A Yes.

13 Q The inmate case was, what, a fear of cancer
14 type of thing?

15 A Well, I wasn't testifying even about that,
16 but what I felt was, you know, appropriate hygiene
17 and what the risks of disease were per se.

18 Q The Scott case was a pleural plaque minimal
19 asbestos case. Is that right?

20 A I believe so, yes.

21 Q What was the other asbestos case? What was
22 the claimed injury?

23 A The asbestosis. I think there was both
24 plaque and interstitial fibrosis.

URL 11875

1 Q Can I ask you to -- yes, I obviously can ask
2 you. Can you give me some sense about how many
3 depositions you've given since you came to Cincin-
4 nati?

5 A Well, I've been here four years or nearly
6 four years. I suppose it's 25 to 30 a year times
7 four.

8 Q So we're talking between 100 and 120 deposi-
9 tions?

10 A Yes.

11 Q Just for my records, what are you charging
12 these days?

13 A 250 an hour.

14 Q That's for testifying at trial and deposi-
15 tion?

16 A Yes.

17 Q Do you have a different rate for evaluating
18 cases for lawyers?

19 A That generally depends upon -- yes. It's
20 not a straight fee. It depends upon the -- I utilize
21 the fees that I normally charge individuals.

22 Q What are those?

23 A A limited visit is \$30. Intermediate --
24 actually for a new patient, limited is \$40. An

UPL 11076

1 intermediate is 80. A comprehensive is 120. If
2 there's pulmonary function, there's charges for that.
3 If there's chest X ray, there's charges for that.

4 Q When you have this limited, intermediate and
5 comprehensive, does that correlate to any period of
6 time?

7 A Yes. Generally comprehensive is an hour.

8 Q So it's about \$80 an hour?

9 A 120. Comprehensive is 120.

10 Q Getting back, if I can, to your curriculum
11 vitae for a moment, you have down there publications.
12 The first one is listed as Occupational Disease Sur-
13 veillance for the City of Detroit. You indicated
14 that's the thesis you did for your master's program.
15 Is that right?

16 A Basically, yes.

17 Q And that was printed in the Proceedings of
18 the Society for Prospective Medicine. You were
19 invited to submit that?

20 A Yes.

21 Q How big is the Society for Prospective Medi-
22 cine?

23 A I don't know.

24 Q Do you know where it's headquartered?

UPL 11877

1 A I think Washington, D.C.

2 Q The Proceedings, that's not a regular jour-
3 nal, is it?

4 A Well, the Society has a yearly convention,
5 and the proceedings of the convention get published
6 in this journal.

7 Q But the Proceedings don't have a subscrip-
8 tion to that journal other than becoming a member of
9 the Society?

10 A I think you're right.

11 Q Do you know whether or not, for example, if
12 I go down to the University of Cincinnati medical
13 school library they will have a copy of the Proceed-
14 ings?

15 A I don't know. I haven't looked for it
16 there.

17 Q You don't know what the distribution is of
18 that?

19 A I don't.

20 Q Do you know whether that was subject to any
21 sort of peer review process before it was published?

22 A I don't know. There was probably some peer
23 review process of some sort prior to the invitation
24 to make the presentation, but after that I don't

JAL 11/17/79

1 think so. I think what was presented got published.

2 Q You made an oral presentation at the meet-
3 ing?

4 A Yes. We submitted printed material, but,
5 yes, mainly oral presentation.

6 Q In connection with that, then, as part of
7 the proceedings, the speech that you gave was then
8 printed in the Proceedings?

9 A Yes.

10 Q How many other people gave presentations
11 like that at the meeting that you attended?

12 A I don't know.

13 Q How did you come to have this presentation
14 made, do you know?

15 A No, I don't; no, I don't.

16 Q You don't know whether one of your profes-
17 sors suggested that to someone or --

18 A Well, no. It was through the health depart-
19 ment for the city, and that's basically -- well, my
20 thesis was the basis for two other people, also, who
21 worked and contributed to the presentation which was
22 the published. So there's two other names on the
23 article.

24 Q Those were people at the City of Detroit?

QRL 11879

1 A Health department, yes.

2 Q Were they listed as the primary authors, or
3 were you?

4 A I was the primary author.

5 Q The next listing on your CV is for Long-term
6 Health Effects Following Isocyanate Exposure, to be
7 found in the Journal of Occupational Medicine. I
8 think we've established before that's a letter to the
9 editor. Is that right?

10 A Yes.

11 Q And your next entry, the Journal of American
12 Medical Association for September 13, 1985, entitled
13 Asbestos Related Disease, that also is a letter to
14 the editor. Is that right?

15 A Yes.

16 Q You mentioned when we began that you had one
17 article that had been accepted by a publication.
18 What was the topic of that article again?

19 A Oligospermia and Methylene Chloride Expo-
20 sure.

21 Q That's in Reproductive Toxicology? That's
22 the name of journal?

23 A Yes.

24 Q Was that a peer review?

JPL 11880

1 A Yes.

2 Q And you have one that has been submitted.

3 Is that right?

4 A Yes.

5 Q What is the topic of that again, please?

6 A Central nervous system effects of methylene
7 chloride.

8 Q Have you submitted any others that are pend-
9 ing?

10 A No.

11 Q Have you had any that are rejected?

12 A Well, both of these have taken some time.

13 Q Have they been rejected by other journals?

14 A Yes.

15 Q Have you submitted any others besides these
16 particular two involving methylene chloride --

17 A No.

18 Q -- that were submitted for publication?

19 A No.

20 Q The topic of both of these papers that you
21 have written, did that information arise out of your
22 involvement with a lawsuit?

23 A No.

24 Q How did your interest in methylene chloride

UPL 11881

1 arise?

2 A I saw about a hundred people with exposure
3 to methylene chloride.

4 Q This is the Budd Company situation?

5 A Yes.

6 Q All right. And there is litigation arising
7 out of that. Is that right?

8 A There is litigation, yes.

9 Q You're involved as, I guess, a treating
10 physician in that?

11 A Yes, although I don't think I've had any
12 depositions.

13 Q It's coming, believe me.

14 Now, you have listed current research. One
15 is asbestos prevalence in exposed workers. That's in
16 connection with the people that you saw at the
17 clinic. Is that right?

18 A Yes, and continue to see.

19 Q When you talk about current research, am I
20 correct in presuming that what you're really talking
21 about is observations that you make in the course of
22 your evaluation and treating of these people?

23 A Well, more than that. I'm continually in
24 the process of trying to, you know, develop data,

URL 11882

1 process it so that I can report what I'm finding. So
2 it's more than just I'm seeing, but an interest in
3 collecting that and making it in presentable form.

4 Q What data are you collecting on asbestos
5 prevalence in exposed workers?

6 A Particularly a facility where there's a
7 mixture of several different exposures, and seeing if
8 there's some synergism between asbestos and other
9 materials.

10 Q What would be the other materials?

11 A Some tars; pitches in particular.

12 Q This would be the Celotex facility?

13 A Yes.

14 Q Are they roofing materials?

15 A Yes.

16 Q Bladder cancer screening. What kind of
17 research are you doing on that?

18 A Not much at the moment. I did some initial
19 surveillance work and have not done much on that
20 recently.

21 Q Okay. If I can back up for a second, the
22 asbestos prevalence research that you're doing,
23 you're also involved in lawsuits from time to time
24 involving asbestosis. Is that right?

URL 11883

1 A Yes.

2 Q Were you involved in any lawsuits involving
3 bladder cancer?

4 A I don't believe so.

5 Q What kind of screening was that that you
6 were doing?

7 A Basically cytology and urine analysis
8 screening.

9 Q What chemicals were you looking for?

10 A Individuals exposed to some of the dyes.

11 Q Was that involving a particular company here
12 in town?

13 A No.

14 Q The research you were doing on skin cancer
15 prevalence in sun, tar, pitch, arsenical and PCP
16 exposed workers --

17 A Yes.

18 Q -- what is the PCP?

19 A The pentachlorophenols that are used as an
20 herbicide.

21 Q What kind of research were you doing there?

22 A Basically review and examination of individ-
23 uals that have either some of those exposures, all or
24 none, and looking for rates of skin cancer.

JRL 11884

1 Q Then the next one you have down is central
2 nervous system effects of methylene chloride. That
3 came out of the Budd population?

4 A Yes.

5 Q And metals and chronic renal disease
6 research that you were doing, what did that involve?

7 A Individuals with exposures to a variety of
8 metals, looking at specific metals that correlate
9 with markers of renal disease.

10 Q What metals would we be talking about?

11 A Several. Nickel, cadmium, lead, titanium.

12 Q These would be from people that you would
13 see in your practice?

14 A Yes.

15 Q Would they be particular jobs that they
16 would be doing or particular occupations that they
17 had?

18 A Mostly machinists, but there's a scattering
19 of others.

20 Q And, finally, you have oligospermia --

21 A Yes.

22 Q -- and methylene chloride. Again, that's
23 involving the Budd population?

24 A Yes.

JRL 11885

1 Q All of these research areas arose out of
2 your practice as an occupational physician screening
3 and evaluating workers. Is that right?

4 A Yes.

5 Q When we're talking about research, we're not
6 talking about animal experimentation, are we?

7 A No.

8 Q Are we talking at all about formalized
9 epidemiological studies?

10 A Well, with the one with skin cancer, yes.

11 Q Is that currently pending?

12 A That's still ongoing, yes.

13 Q Are you working with anybody else in that?

14 A Yes. Grace LeMasters is the epidemiologist
15 on that case.

16 Q What's the relationship between you and her?

17 A Well, she's the principal investigator.

18 Q And you're just gathering information for
19 her?

20 A Yes.

21 Q Other than that, there are no formalized
22 epidemiologic studies that you've structured?

23 A Not in the sense of prospective. I would
24 like to give credence to these through epidemiologic

URL 11886

1 measures, case controls, and so on. But in terms of
2 prospective or retrospective studies, that's the only
3 one.

4 Q When you say you would like to give cred-
5 ence, you are not currently doing either prospective
6 or retrospective epidemiologic?

7 A Right. My work has been, it's mostly cross-
8 sectional stuff.

9 Q Well, by cross-sectional stuff, what you're
10 talking about is you're looking at the files that you
11 have on your individual patients and developing
12 these. Is that correct?

13 A That's right, yes.

14 Q Have you made any research proposals to any
15 schools or any government agencies?

16 A Not recently, no.

17 Q Well, have you made any in the past other
18 than what you've indicated in connection with the
19 NCI?

20 A Yes. I had made some to March of Dimes,
21 looking at reproductive effects in hospital workers.

22 Q That was in connection with your work in
23 Detroit?

24 A Yes.

URL 11887

1 Q That wasn't accepted?

2 A It was not.

3 Q In connection with your deposition here
4 today, Doctor, have you reviewed any materials?

5 A Yes.

6 Q Describe for me briefly, if you would, what
7 types of things you've looked at.

8 A Medical records on Herman Dendinger and Fred
9 Wallace, including some work records, depositions
10 that they've given, and I've reviewed some of my
11 literature on vinyl chloride.

12 Q When you say you reviewed your literature on
13 vinyl chloride, you're talking about medical journals
14 and texts and things?

15 A Yes.

16 Q Have you reviewed any materials that have
17 been supplied to you by plaintiffs' counsel?

18 A Yes.

19 Q These are medical journals and articles and
20 things. Is that right?

21 A Yes.

22 Q Which is the larger in bulk? Did he supply
23 you with more stuff, or did you get your own stuff to
24 a greater extent?

JPL 11888

1 A At this point I'm not sure. I'm looking at
2 two inches here of literature, and I know I had quite
3 a bit.

4 Q Prior to being consulted in this case?

5 A Yes.

6 Q How about prior to being involved in the
7 Columbus case? How much material did you have on
8 vinyl chloride?

9 A Quite a bit.

10 Q And you gathered additional information
11 after that time?

12 A Yes.

13 Q At the time that you were -- well, let me
14 back up just a second. I was going to say at the
15 time you were asked to be involved in the Columbus
16 case. Do I recall your testimony correctly that you
17 were asked to become involve in the Columbus case?

18 A I'm not sure that I have been. I was asked
19 to see some individuals that worked at the Celanese
20 facility.

21 Q These people had been making complaints of
22 ailments and things before, and then they were sent
23 to see you. Is that right?

24 A Yes.

UPL 11889

1 Q You just didn't happen to see them in the
2 normal course of seeing them on a regular basis?

3 A No.

4 Q At or about the time that you saw these
5 people on a consulting basis, were you collecting
6 material on vinyl chloride from the medical litera-
7 ture?

8 A No. I'd had the files before then. Yes,
9 I've collected additional stuff since then, but I had
10 a considerable amount before.

11 Q Have you talked with anybody in preparation
12 for your deposition here today about the topic of
13 vinyl chloride and the types of cancer it can cause?

14 A Specifically in preparation for this deposi-
15 tion?

16 Q Yes. And I'm talking about other than
17 discussions with the attorney for the plaintiffs.

18 A Well, I've had discussions with Channing
19 Meyer before his death on vinyl chloride. I don't
20 think I specifically talked about these individuals.
21 Since I was asked if I would review this material, I
22 don't think I specifically talked to anybody.

23 Q When you had these discussions with Channing
24 Meyer, what was involved? What was said, to the best

U/RL 11890

1 of your recollection?

2 A I think just general discussions about vinyl
3 chloride, its nature, what each of us knew about the
4 literature, epidemiology, and so on.

5 Q Were there any disagreements with regard to
6 your opinions?

7 A I don't think so. I mean, generally I don't
8 think we ever really disagreed in theory about what
9 certain exposures in chemicals could do or be or what
10 have you. There were disagreements occasionally on
11 did symptoms, signs, meet criteria for cause and
12 effect. But I think in theory, I don't think there
13 was much disagreement.

14 Q So his disagreements with you arose more out
15 of the diagnostic criteria and whether those were met
16 for a particular disease?

17 A Yes, and that by no means was all. It was
18 just on some occasions.

19 Q How about anyone else? Besides Dr. Meyer,
20 either in preparation for this deposition or involv-
21 ing any preparation for testifying in either this or
22 the Columbus case involving vinyl chloride, did you
23 have discussions with other medical people?

24 A I don't think I have in the last several

URL 11891

1 months.

2 Q Have you consulted any medical texts in
3 connection with your preparation for this deposition
4 here or in connection with the Columbus case?

5 A Well, I know I have been back through the
6 literature. I think, in fact, the -- well, clearly
7 there's no single source. I'm sure I've looked at
8 Rohm's textbook, but mostly I think it's been litera-
9 ture.

10 Q How did you go about doing your research
11 through the literature?

12 A Well, I usually review the files that I have
13 to start when I'm looking at a fresh topic.

14 Q If I can stop you there for just a second.
15 I presume when you say your files, you keep your own
16 files on medical articles. Is that right?

17 A Yes. Then I go to the medical index, Index
18 Medicus, and look at most recent articles and then
19 work backwards from there, especially when there has
20 been a gap in terms of most recent review of the
21 literature.

22 Q Did you do any computer research?

23 A I don't think I did on this situation.

24 Q Do you have access to computer research here

URL 11892

1 in your office?

2 A No, but I can call up NIOSH quite easily and
3 ask them to do one. I can do one in the family
4 medicine department at the university and will
5 frequently use that as well.

6 Q NIOSH provides that as a service to people?

7 A Yes.

8 Q You pay them a fee, and they go through and
9 do it?

10 A Yes. Usually I don't have to pay them a
11 fee.

12 Q Did you keep any notes during your review of
13 the literature?

14 A No.

15 Q At this time is there any way to segregate
16 what you had in your files prior to the time that you
17 became involved in the Columbus case or this case and
18 what you have reviewed?

19 A I don't think so.

20 Q Where did you get your articles once you
21 determined which ones you wanted to see?

22 A You mean which journals?

23 Q Well, no, physically. I mean, did you go to
24 the University of Cincinnati library?

UPL 11893

1 A Usually, yes, that's where I go.

2 Q Doctor, you're licensed both in Michigan and
3 Ohio. Is that right?

4 A Yes.

5 Q And you're board certified in internal medi-
6 cine and preventative medicine. Is that right?

7 A Yes. It's the occupational division of
8 preventative medicine.

9 Q Did you pass both boards on the first go-
10 round?

11 A Occupational medicine, yes. I took internal
12 medicine twice.

13 Q You flunked the first time?

14 A Yes.

15 Q Do you have to wait a period of time before
16 you can take it again?

17 A There's one test a year. I took it before I
18 had finished my first three years of internal medi-
19 cine residency, taking it again after I had completed
20 it during my chief medical year.

21 Q Have you taken any other boards that you
22 have not passed?

23 A No.

24 Q Have you taken any other certification exam-

URL 11894

1 inations that you have not passed?

2 A No.

3 Q Have you ever had privileges denied or
4 revoked at any hospitals?

5 A No.

6 Q Have you ever had any privileges restricted?

7 A No.

8 Q Have you had any problems in the past with
9 any substance abuse?

10 A No.

11 Q A lawsuit was brought against the Greater
12 Cincinnati Occupational Health Clinic, is that right,
13 at some point?

14 A Yes.

15 Q Tell me about that.

16 A A foundry, Dayton-Walther, sued the clinic,
17 and it basically was dismissed at all levels and most
18 recently has been dismissed at the Supreme Court
19 level.

20 Q What was the basis of the claims in that
21 lawsuit?

22 A The claims were silicosis.

23 Q What were claims against the clinic by
24 Dayton-Walther?

URL 11895

1 A That an incorrect diagnosis was made. I
2 think they also claimed that there was some, I don't
3 think they used the word conspiracy, but something
4 along that line.

5 Q Okay. I don't quite understand that.

6 A Well, I didn't pay much attention to the
7 entire process, so I'm not sure I understand, either.

8 Q That was filed here in Cincinnati?

9 A Yes.

10 Q In state court or federal court?

11 A State, I think.

12 Q Were you ever deposed in connection with
13 that?

14 A No.

15 Q Those were your diagnoses of silicosis?

16 A Yes.

17 Q Were there ever any other lawsuits brought
18 against the clinic as a result of your activities?

19 A No.

20 Q Any lawsuits against you personally?

21 A No.

22 Q Can you describe for me, please, whether or
23 not you have any medical texts in your office here
24 that serve as your own quick consulting library, if

UPL 11896

1 you would?

2 A Yes.

3 Q Do you have some?

4 A Yes.

5 Q What types of texts do you have?

6 A I have an internal medicine text, a toxicol-
7 ogy text, a hygiene, industrial hygiene, text, a text
8 of biological monitoring, the AMA's Guide to Perma-
9 nent Partial Impairment Ratings. I can run back and
10 look. I think there's a pulmonary text too.

(150) 11 Q Do you have Paddy's here?
tt

12 A No, I don't.

13 Q Do you ever use that?

14 A Yes.

15 Q You use that where, at the University of
16 Cincinnati?

17 A Yes.

18 Q Do you have any tests that you regularly
19 used at the clinic that stayed at the clinic?

20 A No.

21 Q Do you understand what I'm saying?

22 A No. Those were all mine. I said occupa-
23 tional medicine, didn't I? A Rohm textbook, I also
24 have that.

URL 11897

1 Q I'm not sure you said that.

2 A No.

3 Yes, all of the textbooks were mine.

4 Q Do you have the Zins textbook on occupa-
5 tional medicine?

6 A Yes, but not here.

7 Q Where is that?

8 A I think it's at my home.

9 Q Do you have any other texts at home that you
10 use?

11 A Not much.

12 Q What is the toxicology textbook?

13 A ^c Kasserette and ^{DU} ^e Duwells.

14 Q And the industrial hygiene text?

15 A I think it's the NIOSH industrial hygiene,
16 the white text.

17 Q What is the pulmonary text that you have?

18 A The orange one. I forget the author of it.

19 Q Where do you go to when you want to know
20 whether a chemical causes cancer?

21 A And I'm not already familiar with it, you
22 mean?

23 Q Yes, sir.

24 A Well, several sources. One would be Medical

URL 11898

(FSD)

1 Index or Index Medicus. Another would be R-text, the
2 Registry of Toxic Effects of Chemicals. Those would
3 both be starting points.

4 Q By starting points, the Index Medicus indi-
5 cates medical articles. Is that right?

6 A Yes. There's a number of -- it also
7 includes toxicology as well and not necessarily
8 health effects on humans.

9 Q I understand that. But I guess what I'm
10 asking is, do you ever go to something as a starting
11 point, an encyclopedia or that type of text, to give
12 you a summary of the literature that's out there?

13 A Well, occasionally I'll go to the Chemical
14 Index, but I find the Index Medicus generally most
15 suitable.

16 Q Then what do you do after you go there?

17 A Pull out articles, read articles, look at
18 their references, and basically that opens up the
19 whole field of literature.

20 Q That involves looking up the articles, then?

21 A Yes.

22 Q Do you physically do that, or do you order
23 copies?

24 A Usually I do it myself.

UPL 11899

1 Q How often do you do this? It involves some
2 time, doesn't it?

3 A Yes. I spend, oh, a couple hours a week.

4 Q Do you have any oncology texts here?

5 A No.

6 Q Any of your -- well, let me see, your occu-
7 pational medicine texts will involve carcinogenesis,
8 won't they?

9 A Yes.

10 Q What do you consider to be an authoritative
11 text in the area of occupational medicine?

12 A Well, I use several, really. I don't think
13 any single source by itself meets all those criteria.

14 Q Which would you use?

15 A Well, I think I've mentioned some of them.

16 Q Rohm's?

17 A Rohm's. Zins'. Then I like the NIOSH book-
18 let. I think that's a fairly good one. I guess
19 there's a couple others, but I can't remember editors
20 at this point.

21 Q What about industrial hygiene texts? Would
22 you consider any of those to be authoritative?

23 A Well, again, I mean, I guess it's hard to
24 beat Paddy's, it's so all-inclusive. But, again,

1 that's certainly not the only text that's available.

2 Q What about epidemiology? Where would you go
3 to get an authoritative text on epidemiology?

4 A I think that's an area that's perhaps weak-
5 est of all of these in any single text. Mostly, you
6 know, the texts are describing methodologies, and you
7 really need to review several different methodologies
8 to get what you need sometimes.

9 Q How extensive is your knowledge of epidemi-
10 ology? You mentioned your two or three courses in
11 your public health training. Have you had any train-
12 ing in epidemiology since then?

13 A No, other than, you know, review of litera-
14 ture and conferences, and so on.

15 Q In your opinion, are there universities or
16 public health schools that are stronger in epidemiol-
17 ogy than others? Research, I'm talking about now.

18 A I think probably most of the 14 or so public
19 health schools are fairly comparable. You know, I
20 wouldn't say they're all the same for sure, but don't
21 ask me to rate one or the other.

22 Q All right. Would Harvard rank up there?

23 A I think that's the -- the Harvard, Michigan,
24 the research triangle, Alabama. There are a number.

1 Q Next let me ask you about national experts
2 in some of these areas. In epidemiology who would
3 you recognize as a recognized authority?

4 A Well, I guess I go with, stick close to
5 where I am when I need some advice. So I really
6 don't think of them, well, this is the person to
7 answer all questions. But, you know, Ula Bingham or
8 Grace LeMasters are people that I'll ask.

9 Q Well, I understand that they're right here
10 and they're accessible to you. Are there others in
11 the country that you would recognize in the field of
12 epidemiology?

13 A Yes. I'm not sure I would, you know -- not
14 many names come to hand immediately. With asbestos
15 you recognize Selikoff, of course; Ian Higgans at
16 Michigan. Again, there are a number of people.

17 Q What about internationally? Does any name
18 come to mind?

19 A Well, certainly Doll has an international
20 reputation.

21 Q You're familiar with his reputation?

22 A Yes.

23 Q What about Richard Monson? Have you ever
24 heard of him?

JPL 11902

1 A Monson?

2 Q Yes, at Harvard School of public Health.

3 A Actually, no.

4 Q You've heard of the Harvard School of Public
5 Health?

6 A Oh, yes.

7 Q That has a pretty good reputation?

8 A Yes.

9 Q Now moving to the area of occupational medi-
10 cine, who would you view as being a recognized
11 authority in that area?

12 A Depending upon the particular area, there
13 might be several different people.

14 Q Give me some ideas of names.

15 A Again, asbestos, Selikoff is obvious.

16 Q Well, Selikoff is more of an epidemiologist,
17 isn't he?

18 A Yes, although he's specifically concentrated
19 on asbestos and occupational disease. Just about,
20 you know, the most of the heads of NIOSH, for exam-
21 ple, would fall into that category. Many of the
22 individuals at the clinics, part of the network that
23 I have belonged to I would look to for advice.

24 Q Well, again, we have to understand that I'm

QRL 11903

1 asking about not necessarily just the people you were
2 going to for advice.

3 A But I think they would also be recognized.

4 Q Are there people that you wouldn't go to for
5 advice but that you nevertheless recognize as being
6 national experts in the eyes of the medical community
7 in the area of occupational --

8 A Probably not. But I mean, I'm allowed to
9 disagree with them any time I want, I suppose.

10 Q Toxicology, do you view that as being dif-
11 ferent than occupational medicine?

12 A Yes.

13 Q What types of authorities do you recognize
14 in toxicology?

15 A I don't know as many people in toxicology,
16 and the practice has generally been to utilize people
17 that are close.

18 Q Again, for your own information?

19 A Yes.

20 Q Are there names that are appearing in the
21 literature that you recognize as authorities that are
22 not close to you physically? I mean here in proxim-
23 ity.

24 A There are a few. I, frankly, don't recog-

URL 11904

1 nize a lot of names.

2 Q What about experts in the field of carcino-
3 genesis, if I can classify that in that way? I'm not
4 sure that that's a unique medical speciality, but you
5 understand what I'm talking about, experts in the
6 cause of cancer?

7 A Yes, I understand what you're saying.

8 Q Do you have any that spring to mind?

9 A Not offhand. Again, I'll utilize people
10 that are in close proximity, but I don't necessarily
11 recognize names.

12 Q In your practice at the clinic and your
13 practice here, can you give me some percentage of the
14 cases that you have consulted with that involve
15 cancer as opposed to dust diseases and other things?

16 A Well, the vast majority of the individuals I
17 see have lung problems or back problems, and that's
18 probably 80 percent and perhaps evenly divided. And
19 then the remaining 20 percent is a mix, and neuro-
20 logic is probably the third highest. Then the
21 remaining would be a mix of heart, liver, kidney
22 cancer. So we're down about, you know, a portion of
23 ten or 15 percent, five percent cancer perhaps.

24 Q You expressed an interest in your CV with

URL 11905

1 regard to skin cancer. Have you treated people with
2 skin cancer?

3 A No. I've seen people with it, and I refer
4 to a dermatologist.

5 Q All right. Well, perhaps my question was
6 bad, then. Have you evaluated people that have had
7 skin cancer?

8 A Yes.

9 Q And that's within this five percent?

10 A Yes.

11 Q Have you treated people with cancer?

12 A Not directly. Several of my patients have
13 cancer. I refer to an oncologist. I will, of
14 course, follow along but will rely on their choice of
15 chemotherapy and mode of therapy.

16 Q You say several. I presume that means two
17 or three. What is the number?

18 A Since I've been in Cincinnati how many
19 patients have I had with cancer?

20 Q Yes, sir.

21 A At least ten.

22 Q Do you recall what kind of cancers were
23 involved?

24 A Lung, laryngeal, breast, oral, colon,

LH 11906

1 kidney, skin.

2 Q That's seven right there.

3 A Yes. I mean, these are different types, not
4 just individuals, so quite a few.

5 Q I understand. Have you had any experience
6 with vinyl chloride or polyvinyl chloride exposures
7 other than those people that you saw in connection
8 with the Columbus case and this case?

9 A Yes.

10 Q Describe that for me, then.

11 A Individuals working with some of the resins,
12 the PVC resins, outside of these situations; individ-
13 uals with vinyl chloride exposure outside of these.

14 Q Well, what were they doing? What kind of
15 exposures?

16 A One was working a press. In fact, there
17 were several individuals who were press operators
18 handling the green resin. Another was a design engi-
19 neer working with design of a facility using vinyl
20 chloride.

21 Q He was designing a facility?

22 A He was involved with, yes. Well, I guess
23 not design. He wasn't the architect, but was a
24 mechanic. But more of a technical, skilled, than

JUL 11 1907

1 simply a maintenance mechanic.

2 Q This was an operating facility?

3 A Yes.

4 Q His exposure was to what?

5 A Vinyl chloride.

6 Q What was his complaint?

7 A He had oral cancer.

8 Q When you say oral, that's in the mouth?

9 A Yes.

10 Q Where was he working?

11 A I think these were in Kentucky.

12 Q And the press operators, what were they
13 doing?

14 A They were involved in the manufacturing of
15 seat coverings, floor panels.

16 Q What were their complaints?

17 A They had problems with some respiratory
18 complaints, but primarily hand and finger problems.

19 Q What kind of hand and finger problems?

20 A There was some arthritic problems, also some
21 circulatory problems.

22 Q This wasn't acroosteolysis?

23 A I don't think it was, and I don't think it
24 was scleroderma, either, but in some cases there was

URL 11908

1 some hint of at least perhaps earlier problems. But
2 I didn't diagnose scleroderma or the osteolysis on
3 either one of them.

4 Q That has been your extent, then, with
5 involvement with polyvinyl chloride or vinyl chlo-
6 ride?

7 A I think so, yes.

8 Q What were you doing, evaluating these people
9 or treating them?

10 A Both.

11 Q Were you involved in any lawsuits arising
12 out of these cases?

13 A Well, the one with the oral cancer was
14 awarded a workers' compensation claim. There was no
15 lawsuit. And I don't think the others had any --
16 well, I wasn't involved if there were any lawsuits or
17 work comp claims.

18 Q You saw these when you were down here in
19 Cincinnati?

20 A Some were in Detroit; some were here.

21 Q The Kentucky case was down here?

22 A Yes.

23 MR. BUNDA: Doctor, if we could, I would
24 like to ask you some questions about the -- well,

UHL 11909

1 let me stop for a second. Let's go off the
2 record.

3 (Discussion off the record.)

4 Q I would like to talk to you now about the
5 types of information that appears in a published form
6 with regard to medicine. You have medical texts. Is
7 that right?

8 A Yes.

9 Q What is that information used for in the
10 general practice of medicine, if you understand my
11 question?

12 A Sort of general knowledge bases. They are
13 generally organized into chapters by organ system,
14 and then within each chapter or division of organs
15 will be a division by disease, disease process. So
16 they're basic information. Some may be more -- if
17 it's medicine, it's primarily on treatment sugges-
18 tions, a diagnosis. If it's toxicology, it's more
19 review of what's known about a specific material.

20 Q It's an overview of the information avail-
21 able?

22 A That's right.

23 Q Have you ever heard the term "case report"?

24 A Oh, yes.

URL 11910

1 Q What is that?

2 A Well, case report is reporting of an indi-
3 vidual or group of individuals without direct claim,
4 if it's by itself, of proof of cause and effect, but
5 interesting situations, and quite useful in all areas
6 of medicine, including occupational medicine. Some
7 of the earliest observations are called that, for
8 example, before you've had time to make comparisons
9 to cohort prospective studies.

10 Q When you say useful, useful for what?

11 A Alerting individuals to possible new
12 diseases, new relationships, or, in some setting
13 where there might be animal data about cause and
14 effect, similar situations in humans where there
15 hasn't been a full epi. study.

16 Q Would I be correct in saying that case
17 reports are not used for establishing cause and
18 effect?

19 A By themselves. You know, in some settings,
20 if that's all the information that's available for
21 humans, that might be enough. If there's lots of
22 bacterial and laboratory data, for example.

23 Q They can be used for triggering hypotheses?

24 A Oh, definitely that.

JAL 1911

1 Q That's their primary role?

2 A Yes. Take, for example, formaldehyde where
3 there is bacterial evidence for carcinogenicity,
4 laboratory evidence and the human epidemiology is
5 still ongoing. There are case reports of the nasal-
6 pharyngeal cancers, and that's being utilized as a
7 basis for making some additional standard settings,
8 monitoring, and so on.

9 Q Well, if we can stay away from --

10 A That's what I'm talking about in terms of
11 not only then are they useful for hypotheses gene-
12 rated, but definitely that they are useful for that.

13 Q Well, if we can stay away from the standard
14 setting, because you will and I will agree there are
15 political implications in setting standards. You
16 have a factor of safety you want to maintain. You
17 know, safety for the population is designed. It's
18 not purely an issue of cause and effect in a stan-
19 dard. Would you agree with something like that?

20 A Well, I agree that there are political
21 considerations. I don't think that safety is a
22 political consideration, but you're right, standard
23 setting does involve more than just straight science.

24 Q Well, I didn't mean to imply that standards

URL 11912

1 were purely political, but it has that element to
2 them. Correct?

3 A Yes.

4 Q What I'm trying to establish is some sort of
5 hierarchy in the medical literature for providing
6 information that you as a doctor or others in the
7 medical profession will use and rely upon in estab-
8 lishing cause and effect. Okay?

9 A That's fine.

10 Q Case reports are something that you can
11 refer to in that hierarchy. Is that right?

12 A Yes.

13 Q If you have epidemiologic literature or
14 animal or laboratory information available to you,
15 that is of a higher degree of quality than case
16 reports. Is that right?

17 A Yes.

18 Q What would be next on that hierarchy of
19 information that you would look to as being valuable
20 to you or to the medical profession in general?

21 A Well, perhaps taking case reports and estab-
22 lishing a control group, and either using, in most
23 situations, a standard mortality or morbidity ratios,
24 SMRs, you might be able to take those case reports

URL 11913

1 and do a PMR, a proportionate morbidity/mortality,
2 based upon the total exposed group or possibly
3 exposed group or work force or what have you. You
4 might be able to do either a prospective or, you
5 know, historical retrospective, what have you, of a
6 group, of a cohort, again based upon those case
7 records.

8 Q So you're taking a bunch of case reports,
9 conglomerating them together and then --

10 A And following them through time or going
11 backwards in time. And all of those would strengthen
12 and upgrade the simple case reporting.

13 Q So now you're shading into the area of
14 epidemiology. Is that right?

15 A Well, and in the broadest sense, case
16 reports are epidemiologic, for that matter, as well.
17 Theirs perhaps were just scratching the surface in
18 some of the simplest forms that can be done.

19 Q You're using them in a broad sense, though?

20 A That's right.

21 Q What is epidemiology?

22 A It's the study of disease as it exists in a
23 population.

24 Q What do epidemiologists do, to your under-

UPL 11914

1 standing?

2 A Okay. Study that disease and its relation-
3 ship to the population as a whole. Like I say, case
4 reports fall under an epidemiologic job and exper-
5 tise.

6 Then the other things that I described,
7 designing studies as to how would you either seek to
8 prove causality or disprove it with respect to some
9 case reports, or even when there are no case reports,
10 where there's animal data, how would you go about
11 designing a study to prove or disprove a relation-
12 ship.

13 Q Epidemiologists don't work with case reports
14 per se, though. They attempt to design their own
15 studies if they have the ability to do so. Is that
16 right?

17 A Yes.

18 Q Okay. When you say designing a study, am I
19 correct in understanding that epidemiologists, when
20 they do a study, they look at large groups of people.
21 Is that right?

22 A Okay. That's certainly part of the thing
23 that they do, yes.

24 Q And in looking at these large groups of

URL 11915

1 people, they try and determine whether there is a
2 difference between two groups of people depending on
3 various factors. Is that too broad?

4 A No. That's fine.

5 Q And if I can make this more concrete, you
6 have one group of people that is exactly alike, theo-
7 retically, to the other group of people except for
8 one particular factor?

9 A That would be the ideal setting, yes.

10 Q And they attempt to determine whether that
11 particular factor has any bearing on the health of
12 those people, then. Is that right?

13 A That's right, or any other measure that
14 you're seeking to look for, yes.

15 Q One of the reasons they use this is because
16 you can't do experiments on human beings. Is that
17 right?

18 A That's right.

19 Q What are animal experiments?

20 A It can be of a variety of different types,
21 both acute and chronic toxicity experiments: dosing
22 animals with a specific substance, giving different
23 doses to different amounts of animals; looking for
24 grossly observable effects, death, abnormal neuro-

UPL 11916

1 logic behavior, respiratory function; looking for
2 microscopic abnormalities, again, with those
3 responses.

4 There are more chronic types of animal
5 experiments: give longer term exposures, probably
6 less exposures, again looking for differences based
7 upon the amount, duration, extent, intensity, what
8 have you, of exposure; look for cancers; any one of a
9 number of different things.

10 Q Science uses animals because, again, you
11 can't use humans to experiment on?

12 A That's right. And you can far better con-
13 trol for the variety of different factors that are
14 involved.

15 Q And that information is taken and there is
16 some analysis done in an attempt to extrapolate that
17 information in animals to the use with humans?

18 A Yes.

19 Q There are problems with doing that, aren't
20 there?

21 A The whole field of, yes, occupational medi-
22 cine, epidemiology has great difficulties because of
23 controlling for different factors, and so on.

24 (Discussion off the record.)

JRL 11917

1 Q Is there any other type of medical litera-
2 ture that you look to for information?

3 A Well, we haven't talked about bacterial
4 studies.

5 Q What are those?

6 A Well, these would be some of the easiest,
7 simplest, first type of studies of toxicity, seeing
8 the effect upon bacterial systems of various chemi-
9 cals. Particularly genetic mutations are the easiest
10 sample with these kinds of testing.

11 Q You're talking about things like the AIDS
12 test now?

13 A That's the historic test, yes.

14 Q Anything else?

15 A Well, certainly hygiene is important in
16 terms of the mechanisms of generation of fumes, dust,
17 particulates. Mechanisms of measurements are also
18 important.

19 Q Okay. I'm thinking more in the area of
20 cause-and-effect relationships now.

21 A Okay. Yes. There are a number of things
22 you can do with statistics, too, but I think we've
23 talked mostly about cause and effect.

24 Q When you say -- I'm sorry. I didn't mean to

Ames (F.D.)

URL 11918

1 interrupt you. Are you finished?

2 A Yes.

3 Q When you say statistics, you're talking
4 about biostatistics?

5 A Yes.

6 Q And that is a category of epidemiology?

7 A Well, I don't think either field would agree
8 to that. Biostatistics has to do with how do you
9 take data and analyze it to show causation, relation-
10 ships that didn't just happen by chance, and there's
11 obviously quite a science involved with that as to
12 what particular test and testing procedures to use.

13 Q You said you had some training in your
14 master's program in biostatistics. Is that right?

15 A Yes.

16 Q How many courses did you have?

17 A Three or four.

18 Q Did I ask you how many occupational medicine
19 courses you had in the program?

20 A No.

21 Q I'm asking you now.

22 A I'm not sure. Yes, I'm really not sure,
23 because that format was probably -- I hate to say
24 least structured, but there would be seminars on each

URL 11919

1 weekend that we were there, and there would be
2 usually a stack, two-inch stack, of articles that
3 were handed out, and within each of the different
4 sections specific diseases would be dealt with, so
5 that's really hard to say how many different occupa-
6 tional medicine courses there were.

7 Q What about toxicology courses? How many did
8 you have?

9 A Three or four.

10 Q These courses, how long did they last? I
11 mean, my understanding was you had a weekend a month,
12 right?

13 A Yes. And so they would last three to six
14 months. They were basically -- I think the equiv-
15 alent in toxicology would be three or four semesters
16 of a course a semester, and that was what they based
17 the courses on. But since they would stretch out, we
18 weren't really in semesters. It's hard to, you know,
19 tell you how long they lasted.

20 Q Each course went three to six months?

21 A Yes.

22 Q And you met one weekend a month?

23 A Yes.

24 Q Within that weekend, how much time was

URL 11920

1 devoted to each course?

2 A Well, it was three days, so we would go
3 eight hours each day and we'd generally have two to
4 three hours each day on the courses that we were on.

5 Q Two to three hours each day? •

6 A (Nodding.)

7 Q Is that right?

8 A Yes.

9 Q And you would spend three days?

10 A Yes.

11 Q So that would be six to nine hours a month?

12 A In formal course work, yes.

13 Q On one particular subject?

14 A In one, yes, when we were taking epidemiol-
15 ogy courses. Actually, I think there was an epi.
16 course almost the whole time.

17 Q Then you would keep that same focus of study
18 for three to six months?

19 A Yes.

20 Q How many courses in all did you have?

21 A I don't know. I mean, there were courses in
22 administrative law, biostatistics, toxicology, indus-
23 trial hygiene, occupational medicine, epidemiology.
24 There was some computer time, and I think that was

URL 11921

1 mixed into one of the other -- that was maybe part of
2 biostatistics or epidemiology.

3 Q How many courses did you have in industrial
4 hygiene?

5 A I took three or four. Basically, most of
6 these are pretty much equally divided.

7 Q Those courses in industrial hygiene, do you
8 remember what any of them were? Was one testing?

9 A I think we had a ventilation course. There
10 was the testing, sampling course, and I don't know
11 whether it was called beginner's, beginning --

12 Q You received instruction in threshold limit
13 values, then?

14 A Yes.

15 Q So you're familiar with the American Confer-
16 ence of Governmental Industrial Hygienists?

17 A Yes.

18 Q They issue the threshold limit values?

19 A Yes.

20 Q They're here in Cincinnati, right?

21 A Yes.

22 Q Do you subscribe to the theory of threshold
23 limit values?

24 A I guess I don't understand. They're here.

1 They're real.

2 Q Okay. There is a dose to which you can be
3 exposed and there's no effect?

4 A Okay. Now, that's not implied. I mean, the
5 ACGIH will not tell you that if you're under a stan-
6 dard you're either safe or what have you. If you're
7 asking about safe levels with respect to disease, I
8 think there are safe levels. If you're asking about
9 safe levels with respect to cancer, I think that's
10 another story.

11 Q Well, we'll get to that story in a little
12 bit.

13 A All right.

14 Q With regard to developing scientific infôr-
15 mation regarding cause and effect between a chemical
16 and its effect on humans or animals, can you describe
17 for me how, when you are faced with a chemical and
18 you don't know what it does, and when I'm speaking
19 about "you," I'm speaking about the medical profes-
20 sion in general, what happens? How do they gather
21 information then?

22 A Well, there could be several levels. One is
23 monitoring of individuals with exposures.

24 Q What will that tell you?

URL 11923

1 A You can develop symptoms, characteristics,
2 look for dose response. You know, do people with
3 more symptoms have more exposures, those with less
4 symptoms have less exposure?

5 Q Historically, that has been a way of deter-
6 mining whether chemicals cause an effect on humans.
7 Is that right?

8 A Yes.

9 Q Epidemiology, Doctor, animal experimenta-
10 tion, these are all fairly recent developments?

11 A That's right. Now, of course, all of those
12 are involved with some of those initial evaluations,
13 but, yes, the sciences have developed to utilizing
14 laboratory animal data, bacterial systems, the study
15 of the physical chemical properties of chemicals, how
16 do they behave, what's their metabolism, a variety of
17 different ways.

18 Q When you have this observed cause and effect
19 on people actually subject to the exposures, what
20 type of information do you need to determine whether
21 there is the cause and effect relationship? Do you
22 have to look at the dose?

23 A Yes. I mean, a lot of times you don't have
24 all the data, you don't have dose, and that's partic-

URL 11924

1 ularly true in occupational medicine. Doses, you
2 know, weren't available in a specific setting. If
3 you were to design something, then you would want to
4 be able to measure dose if you were going to test it
5 out.

6 Q You would also want to look to the repro-
7 ducibility of that? You want a consistency in a
8 reaction. Is that right?

9 A That's right, yes.

10 Q You want to look at other causes of a
11 particular effect and try to rule those out, right?

12 A That's right.

13 Q Animal experiments are another way to give
14 you information. Is that right?

15 A Yes.

16 Q That is a tool that has been developed by
17 science to determine cause and effect in humans. Is
18 that right?

19 A Yes.

20 Q Looking at animal experiments, you can more
21 closely control factors such as dose, outside causes
22 of a particular effect and things like that. Is that
23 right?

24 A Yes. And you can do it over shorter periods

1 of time. You can give higher doses and then make
2 your extrapolations based upon that, yes.

3 Q You also have problems because you have to
4 decide whether the animal will react in the same way
5 that a human will. Is that right?

6 A That's right.

7 Q You have to decide whether the dose given to
8 the animal is somehow proportionate to how a human
9 being will react?

10 A That's right.

11 Q And you want to make sure that the animals
12 are not, or the effect that you see in the animals is
13 not due to some other cause particular to the animal?
14 I mean spontaneous cancers peculiar to that type of
15 animal.

16 A That's right.

17 Q And you want to make sure that the effect
18 seen in the animals is reproducible. Is that right?

19 A Yes.

20 Q Now, in epidemiology that's another tool
21 that has been developed by science to determine cause
22 and effect. Correct?

23 A Yes.

24 Q Would you agree with me that epidemiology is

URL 11926

1 not too able to determine cause and effect but can
2 only establish association? Have you ever heard that
3 before?

4 A Well, I've heard that, yes. I'm not sure I
5 necessarily agree with that, but I guess in the
6 strictest sense, epidemiology does not study what
7 happens at the tissue level. It is just looking at
8 events that are occurring. So that, I think, is a
9 basis of a statement, for the statement it looks for
10 associations. However, there comes a point that
11 associations become real enough that that, in fact,
12 is proof enough.

13 Q Do you know where that point lies, in gene-
14 ral?

15 A You mean how --

16 Q How you can go from an association to say
17 that epidemiology actually establishes cause and
18 effect.

19 A I don't think there's any one set, ironclad
20 rule that says if you have A, B or C, then that's
21 sufficient.

22 Q Have you ever heard of a term referring to
23 the power of an epidemiologic study?

24 A Yes.

JUL 11 1967

1 Q What is your understanding of that?

2 A Well, that has to do with sample size, how
3 many people or individuals or whatever are being
4 studied. It has to do with how common, prevalent a
5 particular disease process is, and then the charac-
6 teristics of that, what you're looking for. If you
7 have small numbers of participants and a common
8 disease, the power would be relatively low. If you
9 have a large number and a common disease, well, the
10 power goes up, and as simile for rare diseases, you
11 can get by with smaller numbers in a group with rare
12 disease for the same sort of reasoning. And power is
13 how we describe that.

14 Q So when you're referring to an epidemiologic
15 study with a high degree of power, you're talking
16 about ones that you can place a great deal of reli-
17 ance on?

18 A That's right. And the converse is, too, if
19 you have a lower power study, and it particularly has
20 to do with studies that don't show relationships, if
21 you have a lower power study that shows a relation-
22 ship, that speaks to the strength, because the
23 chances of showing that were fairly low. A high
24 power study means that a negative study, a study that

UHL 11928

1 Q Specifically focusing on the salivary gland,
2 do any of these, leaving aside vinyl chloride, but do
3 any of these others, are they recognized specifically
4 as attacking the salivary gland or the parotid gland?
5 I'm using those terms equivalently.

6 A That's fine.

7 Q Is that your understanding?

8 A Yes. Well, probably cigarettes and alcohol.
9 Some associations with other chemicals, but I don't
10 think they're as strong.

11 Q Are there salivary gland cancers that arise
12 that people don't know what the cause is?

13 A Yes.

14 Q What percentage or proportion of that?

15 A Those are the majority.

16 Q You're in occupational medicine. Do you
17 have an idea about approximately what proportion of
18 cancers are occupationally related?

19 A Someplace between ten and 20 percent, I
20 would say.

21 Q Where did you get this information?

22 A Through a review of the published litera-
23 ture. You know, the low end, I think, is five
24 percent, and I think Doll will talk about five per-

UPL 11938

1 cent. The high end is about 20 percent, and it gets
2 someplace in between there, although I think Doll is
3 conservative.

4 Q You're talking about Doll and Peto's study?

5 A Yes.

6 Q That's the one they did for the National
7 Cancer Institute?

8 A Yes.

9 Q Which one is the 20 percent?

10 A Well, several. I don't recall the authors
11 for those that have suggested it.

12 Q That was the President's Advisory Board?

13 A That's one.

14 Q The one that Doll says is trash?

15 A I don't know that he said it was trash. If
16 you say so, all right.

17 Q Well, you're not familiar with that, in
18 other words. Is that right?

19 A I'm not familiar with Doll's comments on it,
20 no.

21 Q You're not familiar with the study itself
22 that says 20 percent, either, are you?

23 A Not that, no.

24 Q So you would agree with me that at least 80

URL 11940

1 percent of the cancers have or are thought to have
2 origin other than arising from the workplace?

3 A Yes, at this point. We may be proved wrong
4 in the future, but data today will tell us that, yes.

5 Q Can you describe for me your knowledge about
6 cancer? What is cancer?

7 A Well, cancer has to do with altered genetics
8 such that the cell no longer behaves normally and
9 will spread, divide in a bizarre and unusual fashion,
10 essentially disrupting normal physiology to the
11 extent that life is not possible. It implies that
12 the cancer will spread past the site of origin to a
13 site some distance from that original site.

14 Q What is the word used for that?

15 A Metastatic disease; metastasis.

16 Q What causes the cell to do this?

17 A Well, probably several stages, several
18 steps. We know a fair amount, although still the
19 precise mechanisms aren't well worked out, but what
20 likely happens is several different events change, a
21 change in the DNA, the basic genetic code, such that
22 the cell affected no longer either makes proteins,
23 enzymes or goes about body growth repair normally,
24 then followed by additional changes in other portions

JUL 11 1941

1 of the genetic code, the DNA, so that the either
2 control, regulation of that particular area, that
3 particular gene, no longer occurs appropriately,
4 allowing for additional and more rapid growth.

5 We're basically talking about likely several
6 different steps involved with clones of cells growing
7 at first not necessarily malignant but abnormal,
8 becoming progressively more abnormal until they
9 attain malignant status, that is, the ability to
10 spread beyond the local source.

11 Q We're talking about the loss of a control
12 mechanism in the cell for reproduction. Isn't that
13 right?

14 A That certainly occurs, yes.

15 Q When you say there's a DNA alteration, do
16 you know why that occurs in cancer?

17 A In some cases it's quite clear what happens.
18 A chemical, because of its reactivity, makes what's
19 called an adduct. It attaches to the DNA permanently
20 in such a fashion that that cell and all the other
21 cells that come after it don't behave properly or
22 normally. In other instances, it's not clear. Some
23 situations, pieces get added, deleted, but it's not
24 clear, the process.

JRL 11942

1 Q You're familiar with research on altered
2 genes?

3 A Yes.

4 Q There are a lot of theories going around
5 about carcinogenesis. Is that right?

6 A Yes.

7 Q And research is going on at this time?

8 A Yes.

9 Q But it's not exactly established how that
10 occurs in all instances?

11 A No.

12 Q Do you know the phraseology or the terms
13 "promoters" and "initiators"?

14 A Yes.

15 Q Describe for me your understanding of those.

16 A Well, that's basically what I was doing. An
17 initiator is that chemical that will start the ball
18 rolling, so to speak, has ability to attach to the
19 DNA, change the DNA, form a DNA adduct in such a way
20 that they have a permanent change.

21 The promoter has to do with a chemical or a
22 substance that will make alterations at some other
23 part that will enhance the growth, development of
24 this initiated cell or cellae.

URL 11943

1 Q Do you know how vinyl chloride acts as a
2 carcinogen?

3 A Probably in both of -- many of the initia-
4 tors are also promoters. Either vinyl chloride
5 through its metabolism forms this epoxide that's
6 quite reactive, retrofilally attaching to DNA, chang-
7 ing it, forming adducts. This is fairly typical of
8 many of the carcinogenic materials.

9 Q You say it forms an epoxide?

10 A Yes.

11 Q So what you're talking about is the vinyl
12 chloride is metabolized. Is that right?

13 A Yes.

14 Q Vinyl chloride is not a carcinogen, but it's
15 processed by the body to form a carcinogen. Is that
16 correct?

17 A Yes. That may be a real shade of difference
18 there, but that's right. It's probably a metabolite
19 that causes the problem.

20 Q The metabolite has been found to be formed
21 in the liver. Is that right?

22 A Well, anyplace where there's cytochromes.
23 And the liver is not the only site. The liver is the
24 primary site for metabolism, and most of the cyto-

1 chromes are there, but the process, the ability to
2 metabolize materials, exists elsewhere in the body,
3 too.

4 Q Have you heard the term "metabolic pathway"?

5 A Metabolic pathway, yes.

6 Q What is that?

7 A It speaks to what we've just been talking
8 about, that is, the steps and the changes that occur
9 in a specific substance, chemical, that either
10 renders them active or inactive. Life makes many
11 different things, proteins, enzymes, and there's a
12 metabolic pathway that starts with building blocks
13 and makes those. Or, with respect to synthesized
14 chemicals, proteins in the body, or exogenous chemi-
15 cals, outside the body, they get integrated through a
16 pathway.

17 Q It refers to a mechanism through which an
18 outside chemical comes into the body and arrives at a
19 certain part of the body where it does harm.

20 A That also may be included, yes. It has more
21 to do with pharmacodynamics. The pathway specifi-
22 cally has to do with what -- has to do with its
23 degradation or anabolic process.

24 Q If I can back up for just a second, the fact

UPL 11945

1 that, for example, sunlight is known to be a cause of
2 cancer, skin cancer specifically, you know that to be
3 true. Is that right?

4 A Yes.

5 Q The fact that sun causes cancer of the skin
6 does not necessarily mean that sun can cause lung
7 cancer. Is that right?

8 A That's right.

9 Q And that's because you have these metabolic
10 pathways, and there's no explanation for how the sun
11 could cause any changes in the lung, because the
12 lung's inside the body. Is that right?

13 A Yes, although I'm not sure I understand the
14 metabolic pathway, what you're driving at in terms of
15 that. The sunlight does not reach the lungs. It's
16 stopped by the skin. The energy is absorbed by the
17 skin, so --

18 Q There's some pathway between what happens on
19 the skin once it's exposed to the sunlight and the
20 effects of the sunlight, the chemical changes that
21 occur and the eventual development of cancer. That's
22 what I'm getting at.

23 A All right. I wouldn't call that a metabolic
24 pathway.

1 Q Well, there's some relationship between
2 what's known to be a cause of cancer and the place
3 where the cancer arises. Is that right?

4 A That's right. Energy is absorbed and the
5 energy from sunlight, ultraviolet radiation, produces
6 genetic DNA alterations in some of the skin cells,
7 and that's what occurs.

8 Q You'd agree with me that the fact that
9 something is known to be a cause or suspected to be a
10 cause of cancer in one particular part of the body
11 doesn't mean that that particular substance will
12 cause cancer in any part of the body?

13 A No. You have to be able to demonstrate that
14 that substance can get to -- I mean, that would be
15 vital. The substance or the metabolic product or
16 some such has to reach an area for that to be a
17 primary site for cancer.

18 Q A more specific example, there is knowledge
19 that vinyl chloride can cause angiosarcoma of the
20 liver. Is that right?

21 A Yes.

22 Q That doesn't necessarily mean that vinyl
23 chloride is known to cause skin cancer?

24 A That's right.

JRL 11947

1 Q Let's talk now about the effect that dose
2 has on the formation of cancer. What are your
3 thoughts on that?

4 A That's a difficult area. From a statistical
5 point you can talk about dose having an effect upon
6 the prevalence, the amount of cancer that occurs in a
7 population. The higher the dose, the more cases
8 you're going to develop. But by the very nature of a
9 carcinogenic material, it's very difficult to find a
10 dose that doesn't cause some problem, i.e., poten-
11 tially cancer. We know that the body has the ability
12 to repair potentially carcinogenic events. In other
13 words, a DNA adduct gets made that the body is able
14 to cut out. But in terms of threshold dosage, for
15 example, I don't think that we can talk about safe
16 doses, safe exposures for materials that are carcino-
17 genic.

18 Q Why do you say that?

19 A Because of what I've just talked about. In
20 other words, if something is carcinogenic, it means
21 by definition that it has the ability to alter DNA
22 and, therefore, that ability can occur at almost any
23 dose. Thus, you can't really talk about safe levels.

24 Q Why do you say that ability can occur at

1 almost any dose?

2 A Because all that it takes is one molecule at
3 the right site to cause a problem. Now, statisti-
4 cally you can talk about the more molecules you have,
5 the more likely you're going to cause that. That's
6 absolutely true. But we know that one molecule can
7 produce the problem.

8 Q Theoretically, you're talking about?

9 A That's right.

10 Q That is, as a practical matter it doesn't
11 work that way. Is that right?

12 A Well, with many substances -- we can show
13 that single asbestos fibers are sufficient to produce
14 mesotheliomas, and that's probably the easiest exam-
15 ple, because it's very difficult to give a person one
16 molecule of a substance. But you can give them one
17 fiber in a laboratory setting.

18 Q Well, all of us are exposed to sunlight and
19 all of us don't have skin cancer.

20 A That's right.

21 Q Correct?

22 A That's right.

23 Q All of us are exposed to vinyl chloride, for
24 that matter, and all of us don't have cancer of the

UPL 11949

1 liver. Correct?

2 A You'd have to go some to prove how much
3 we're all exposed to vinyl chloride.

4 Q Well, would you accept the theorem that all
5 of us are at least exposed to a molecule of vinyl
6 chloride?

7 A That may be so, yes.

8 Q So there are at least the defenses in the
9 body to fight off exposures like this?

10 A That's right.

11 Q So it's not necessarily going to happen that
12 you get cancer just because you're exposed to a
13 molecule of a carcinogen?

14 A Right, yes. I didn't mean to imply by
15 anything that I said that that was the case.

16 Q And, in fact, the U.S. Government -- again,
17 we're getting into areas of policy -- but permits
18 exposures to known carcinogens at levels which the
19 scientific community, or at least the government,
20 believes are acceptable.

21 A That's right. You know, cases at about one
22 in a million have been ruled -- you know, exposures
23 that cause, one in a million have been ruled to be
24 safe, basically.

DRL 11950

1 Q What do you know about the exposures that
2 Mr. Wallace and Mr. Dendinger had in the factory?
3 I'm talking now about materials other than vinyl
4 chloride or polyvinyl chloride.

5 A There were some solvents of the ketone type,
6 methyl ethyl ketone, MIBK, methyl isobutyl ketone,
7 some tetrahydrofurans, I believe, some toluene,
8 perhaps some trichloroethylene, some dyes. I don't
9 know the specific names of those.

10 Q Now, did you analyze these exposures in your
11 considerations of cause, potential causes, of their
12 cancers?

13 A Yes, I've taken them into account.

14 Q What about MEK? Is this known to cause any
15 cancers of the mouth and throat or the colon cancers?

16 A Not known to be.

17 Q Not known to you to be?

18 A That's right. And I don't think to the
19 medical community.

20 Q What about the MIBK?

21 A Yes.

22 Q What about that?

23 A I don't think so for that, either.

24 Q For either type of cancer?

DRL 11851

1 A That's right.

2 Q What about THF?

3 A Not known to be.

4 Q What about toluene?

5 A Toluene may be a promoter.

6 Q But in your opinion, it's not an initiator?

7 A I don't think it's an initiator, that's
8 right.

9 Q What about the relationship between those?
10 You can have initiation and never have it grow into a
11 cancer. Isn't that true?

12 A That's part of the theory. I don't think
13 the answer's in on that. But in the one sense I
14 think the answer's no. It may be a very benign,
15 slow-growing type of cancer. On the other hand, that
16 may be, you know, the initiation may produce the
17 benign growth, for example, although, to my point of
18 view, to be an initiator of cancer really has to be
19 something more than something benign, but depending
20 upon which particular theory you're holding as to how
21 you would answer whether a cancer can develop without
22 a promoter. And, of course, many initiators are pro-
23 moters themselves.

24 Q I'm not sure I got an answer to my question.

1 My question is if vinyl chloride, in your opinion, is
2 an initiator and you get another chemical as a pro-
3 moter, an initiator can change the DNA characteristic
4 in the cell. Is that right?

5 A Yes.

6 Q That cell can die if it doesn't reproduce.
7 Is that right?

8 A That's right.

9 Q And that's the job of promoters, is to
10 promote the reproduction of those cells. Is that
11 right?

12 A Well, all right. I mean, it's not quite
13 that simple. If, in fact, the initiated cell dies,
14 then no promoter is going to bring it back. Okay?

15 Q That's right.

16 A So the scenario would be that an initiator
17 causes abnormalities that in theory ultimately would
18 lead to a cancer. The promoter brings that cancer
19 forward in time.

20 Q And if you don't have a promoter, then you
21 don't have the cancer growing?

22 A Or maybe it's growing more slowly and isn't
23 going to develop for some time, a longer time down
24 the road.

1 Q Or it may never develop?

2 A Or possibly that individual could die from
3 something else first, right.

4 Q So if you have toluene, which is a promoter,
5 the toluene could have been promoting the cancers in
6 these gentlemen?

7 A That's possible.

8 Q Have you sorted out in your own mind the
9 relationship between these two?

10 A I think so. I'm interested in more informa-
11 tion as to how much toluene and so on was involved.

12 Q Well, let me suggest that at times the
13 toluene exposure was in excess of the threshold limit
14 values. In your opinion, would the toluene have been
15 a substantial contributing factor to the cancers that
16 arose in one or both of these gentlemen?

17 A It depends upon how much, how often that was
18 occurring.

19 Q Well, explain that for me. How much would
20 be enough?

21 A Well, was this once that it was over the
22 TLV? Was this every day, constantly, eight hours a
23 day, five days a week, it was over the TLV? All of
24 those things. I mean, the more of the exposure, the

JHL 11954

1 more likely that it became important in terms of
2 promotion.

3 Q Well, tell me how much exposure would be
4 significant and enough for you to decide in your own
5 mind that it was a substantial contributing cause to
6 the cancers.

7 A I think that if there was constant exposure
8 to a hundred parts per million, for example, of
9 toluene, you know, eight hours a day, five days a
10 week, through most of these particular men's employ-
11 ment, that would be an important role.

12 Q What if it was less than that in terms of
13 the length of time? How about a couple of years'
14 exposure?

15 A That also could be possibly important. It
16 would depend upon which years, what else was going on
17 at the time, and so on.

18 Q You don't have that information yet. Is
19 that right?

20 A No.

21 Q That's information that you would need
22 before you make a decision?

23 A Yes.

24 Q Have you been provided with information

URL 11955

1 concerning exposures in the factory?

2 A No.

3 Q Have you been provided with information
4 concerning exposures to vinyl chloride?

5 A Not specific measurements. I have general
6 knowledge of the types of exposures that would occur
7 in this type of situation, but I have not seen
8 specific numbers.

9 Q Tell me your general knowledge about types
10 of exposures like this.

11 A Generally, conservative would be one to five
12 parts per million generally with peak exposures prob-
13 ably occurring daily, peak exposures of 25 to 100
14 parts per million, although both of these individuals
15 remarked that they could smell vinyl chloride, which
16 would mean probably considerably higher exposures.
17 You know, the ability to detect vinyl chloride, some
18 say, can be done as low as 400 parts per million, but
19 many think it's much higher than that.

20 Q In your experience, has anybody in a fabri-
21 cating situation documented that they could smell
22 vinyl chloride and it actually was vinyl chloride?

23 A This is the most descriptive detection that
24 I've seen.

UPL 11958

1 Q Have you expressed an opinion as to whether,
2 in fact, they were smelling vinyl chloride as opposed
3 to something else?

4 A All I have is their description of it, so I
5 can't say.

6 Q What about if you were supplied with infor-
7 mation that an industrial hygienist from the State of
8 Ohio received that information, checked it out and
9 concluded that they were smelling the ketones or
10 something else? Would that have any bearing on your
11 analysis?

12 A Yes.

13 MR. DELLI BOVI: I'm going to object. You
14 can go ahead and answer.

15 Q Okay. What effect would that information
16 have?

17 A If a hygienist had made an evaluation, that
18 would certainly speak to the opinion at the time of
19 the evaluation. These gentlemen are dead, so it's
20 hard to question.

21 Q It's hard to ask them what they smelled?

22 A Yes. All we have is their description that
23 they smelled this sweet type odor.

24 Q If you had your choice between the analytic

JRL 11957

1 measurement done by the State and by Chrysler versus
2 their opinion, which would you place more emphasis
3 upon?

4 A It would depend upon the timing of that. I
5 mean, if they're smelling this and saying "I'm smell-
6 ing vinyl chloride" and someone is there measuring
7 and says, "No, it's this," then it's much more on
8 what's being measured. If it's a historical thing,
9 "We used to smell this all the time; we haven't
10 smelled it in a while," and measurements are done
11 then and say, "Yes, you're right; you're not smelling
12 vinyl chloride," then the historical observation
13 would have more credence.

14 (Recess taken.)

15 Q Doctor, we were talking about exposure
16 levels in the Sandusky Chrysler Plastic Products
17 plant. You have not seen those figures. Is that
18 right?

19 A That's right.

20 Q If, in fact, the exposure levels were below
21 the level of .5 parts per million, would that have a
22 bearing on your opinion?

23 MR. DELLI BOVI: Objection. You can answer.

24 A If someone can demonstrate, yes, that expo-

JPL 11958

1 sures throughout the whole period were never above
2 .5, yes, that way.

3 Q How would that affect your opinion?

4 A Well, that would mean there would be essen-
5 tially little or no exposures to vinyl chloride.

6 Q And that would affect your opinion about
7 whether these cancers were caused by vinyl chloride,
8 then. Is that right?

9 A Yes.

10 Q You would have to change your opinion and
11 conclude that they were not caused. Is that right?

12 A It would be much less likely, yes.

13 Q We weren't finished going through some of
14 the other exposures. You thought there was some
15 trichloroethylene there.

16 A It seems likely, yes.

17 Q What about the effect of that exposure?
18 Would that have any effect on the cancers?

19 A Possibly. There's some evidence that
20 trichloroethylene is carcinogenic.

21 Q If there was exposure to that chemical at
22 the plant, in your opinion, would that have played a
23 contributing role to the cancers in these gentlemen?

24 A It's possible.

JPL 11558

1 Q What about the dyes? There were numerous
2 dyes used in the ink room where both of these gentle-
3 men had exposures. Have you analyzed any role that
4 these dyes may have played in the cancers?

5 A I don't know which ones they were. Dyes,
6 you know, bladder cancer's associated with some dyes
7 for sure. So it would be valuable to get information
8 about that, about those dyes.

9 Q Don't you need that information before you
10 can form a conclusion as to the cause of the cancers?

11 A Well, except that the vinyl chloride is
12 fairly striking here and that sticks out in terms of
13 causality.

14 Q But you haven't ruled out any other possi-
15 ble -- these particular possible causes?

16 A For completeness I should get the informa-
17 tion about the dyes, yes.

18 Q What about their exposures to other sub-
19 stances and materials in jobs other than at Chrysler?
20 Have you analyzed that?

21 A Yes, I have some job descriptions of other
22 employment.

23 Q Have you found any exposures in those jobs
24 that are of significance to you?

UPL 11960

1 A I don't think so. No, I don't think so.

2 Q What about their lifestyles? Anything other
3 than their occupations? Have you analyzed that for
4 both of these gentlemen?

5 A Yes.

6 Q Have you found anything there that, in your
7 opinion, would be a factor for contributing to the
8 cancers?

9 A I don't think so. Neither one of them. Mr.
10 Wallace was not a smoker. Mr. Dendinger smoked a
11 pipe, claimed not to inhale it. So both have very
12 little smoking history. Alcohol is not a problem.
13 Diet looked like there's nothing special there,
14 either. So I don't think there's anything socially
15 that's involved.

16 Q Well, let's stop for a second, if we could.
17 The discussion of diet is in particular connection
18 with the colon cancer. Is that right?

19 A Yes.

20 Q Isn't it also a fact that there is not a
21 full knowledge by the medical community about what
22 particular factor in diet causes the cancer?

23 A That's right.

24 Q So the fact that Mr. Dendinger ate like the

URL 11961

1 rest of us or, if I can back up on that, the fact
2 that Mr. Dendinger had a diet and it's not entirely
3 clear what that diet is, how can you rule that out as
4 a cause of the colon cancer?

5 A It basically means that the risk of diet is
6 probably awash with the background; in other words,
7 that there's nothing that sticks out. Fibers seemed
8 fairly normal, nonexcessive fat, you know, meat diet.
9 So there's nothing that sticks out in it, and you're
10 left with, well, there's some hint that diet may be
11 involved, but given other exposures that we do know
12 about, my opinion would then be more for the vinyl
13 chloride.

14 Q Well, let's get into the meat of it here. I
15 am correct, am I not, that in both the colon cancer
16 involved in this case and the parotid gland cancer
17 involved with Mr. Wallace, neither one of those
18 cancers had any particular characteristic which is
19 known by the medical community to be associated with
20 vinyl chloride caused cancer?

21 Do you understand the question?

22 A By cell type you're referring to it?

23 Q Yes, sir. Or by any other characteristic.

24 A Well, there's several pieces of information

UPL 11962

1 shows no relationships, may, in fact, have more
2 weight to it.

3 Q Or conversely, a low power study that sho^ws
4 relationships, if it has a lower power, that implies
5 that that relationship that is seen could be due to
6 chance alone?

7 A Well, not truly, because you've already
8 taken into account the chance association through the
9 use of your statistics. So if you have a lower power
10 study that shows a positive relationship cause and
11 effect, statistically you've already gone through the
12 calculations to show that this was not likely to be
13 by chance. And in fact, if it's a lower power study,
14 that lends more weight to it because your chances,
15 your predictive chances of finding an association
16 were really low when you started, and if you found
17 one, that makes it perhaps stronger.

18 Q Would you describe for me your understanding
19 of the different types of epidemiologic studies?

20 A Well, why don't you name -- I mean, there's
21 a list a mile long of different names. I think we've
22 talked about a number of them.

23 Q Well, maybe you can give me yours that you
24 recall, and then we'll work from there.

1 A All right. Well, we talk about case
2 studies, would be a simple study, a case control.

3 Q You view a case study as an epidemiologic
4 study?

5 A It falls under the purview of epidemiology,
6 yes, case control, nested case control.

7 Q Well, wait a second. What is a case con-
8 trol?

9 A Well, that would be a study where you have
10 found individuals -- you look at a disease, for exam-
11 ple, and you find individuals who match those with
12 the disease in all characteristics except for that
13 disease, and then you look for a particular factor or
14 factors to see if there's a relationship.

15 And you can design that in any one of a
16 number of different ways. You can either do it
17 cross-sectionally. You can follow a group through
18 time. You can go backwards in time and follow them
19 up to the present. You can do that in a number of
20 different ways.

21 We've mentioned the PMR, SMR studies, pros-
22 pective studies.

23 Q Well, what's a proportionate mortality
24 study?

1 A It's where you take a group of individuals,
2 and you compare the disease rates in that group based
3 upon exposures in that group. By definition, then,
4 the total of the diseases, the total percentage of
5 diseases, has to total a hundred percent. And it may
6 not have all the strength of an SMR study, but
7 frequently it's easier or shorter and less expensive
8 to do.

9 Q What are some of the weaknesses of a study
10 like that?

11 A Well, you frequently have a smaller size
12 group. You can't necessarily control for some out-
13 side factors, other community exposures, for example,
14 or if it's in a similar community, perhaps some
15 ethnic peculiarities. So there can be several weak-
16 nesses.

17 Q Within that type of a study, the numbers
18 have to add up to a hundred percent. Is that right?

19 A That's right.

20 Q And if some of those, the categories within
21 that factor, are less than what is expected by the
22 standardized rate, then that necessarily means that
23 other factors are going to be at a higher than
24 expected rate?

JUL 1981

1 A That's right. And that may or may not
2 reflect what you're looking for.

3 Q What is a standardized mortality rate?

4 A Well, that's probably the next step past the
5 PMR. In other words, you take disease rates, death
6 rates, what have you, in a specific group, specific
7 exposure, and you compare them to a larger popula-
8 tion, either the U.S. as a whole or a community, a
9 city, country, state, death rates, disease rates that
10 you know in the larger population, and then you make
11 your comparison to that group.

12 Q You do that with the proportionate mortality
13 study, too?

14 A Well, proportionate, right, but it's in the
15 particular group. The control group is the group
16 itself, as opposed to in the standardized. The
17 control group is a group not exposed, not being
18 studied in this particular process.

19 Q Any other groups?

20 A Of epidemiologic studies?

21 Q Yes, sir.

22 A Well, numerous variations of the above.

23 Q And in those variations they all have an
24 effect on the accuracy or the strength of the data

1 that you get. Is that right?

2 A Yes.

3 Q Can you rank them in terms of some of those
4 that we've mentioned with regard to how important or
5 how significant you consider the data to be once they
6 come?

7 A Well, a lot of it depends upon the data
8 itself so that I could say in general, with all
9 things being equal, you know, your prospective study
10 is probably the strongest and best, and case control
11 or case reports are probably the weakest. But all
12 things aren't equal, and so that ranking can change
13 based upon the data itself.

14 Q Are you saying that what the results are
15 from the particular studies determines how you view
16 the accuracy of the information?

17 A No. No, but it's the data that you have
18 that forms -- that you have to form the basis of the
19 study, not the outcome. For example, if you do a
20 prospective study but don't have specific data, for
21 example, don't have industrial hygiene measures,
22 can't get them, or patients are lost to follow-up,
23 you know, then that prospective study isn't as valua-
24 ble. That's what I'm driving at.

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1 Q What you're saying is within each one of
2 these categories you have to meet specific criteria
3 to establish whether or not that's a good prospective
4 study or a bad prospective study. You have to catch
5 all the follow-up. You have to determine that the
6 exposures, for example, are closely defined. Is that
7 what you're talking about?

8 A Yes. And I'm not trying to, you know, say
9 they're good or bad. Sometimes you can't get it.
10 That's all I'm saying.

11 Q But those are variables that you have to
12 look inside within each study?

13 A Yes.

14 Q But as a general matter your prospective
15 study would be the one that you would like to, that
16 you generally would rely on if you had a difference
17 between that or you had to choose between that and a
18 proportionate mortality study. Is that right?

19 A Yes.

20 Q And then between a proportionate mortality
21 study and a case study, you would prefer to have the
22 proportionate mortality study and you would rely on
23 that more than the case study. Is that right?

24 A Right, yes.

1 Q Have you ever heard the term "background
2 rate" before?

3 A Yes.

4 Q What is that?

5 A Well, that generally refers to the rate of a
6 process disease, death that's occurring in the gene-
7 ral community, a situation where you assume no expo-
8 sures or equal exposures, something, some variable of
9 that.

10 Q There are causes of disease, or specifically
11 with regard to cancer, that we don't know about.
12 They occur either spontaneously or they're common to
13 the population. Is that right?

14 A Well, there's always a cause, but we don't
15 know what it is, yes.

16 Q You try and distinguish those from the
17 cancers that are caused by a particular chemical or
18 exposures when you do an epidemiological study. Is
19 that right?

20 A Yes.

21 Q Is that what we are referring to when we
22 talk about a standard mortality rate?

23 A Yes.

24 Q And those things are taken from a nationwide

1 study sometimes?

2 A Some group, yes. They can either be nation,
3 state, city, county.

4 Q With regard to cancer, those figures are
5 available nationwide from, what is it, the American
6 Cancer Society. Is that right?

7 A Yes. There are several reporting systems
8 that will generate that data for you, yes.

9 Q Do you know what that information is for
10 Erie County, Ohio?

11 A For Erie County, Ohio?

12 Q Yes, sir.

13 A No, I don't.

14 Q Can I talk to you for a second now about
15 your knowledge of cancer in general. Can you give me
16 some idea of the most prevalent cancers among males
17 in the United States?

18 A Lung, probably the most common; is the most
19 common.

20 Q A lot of that is ascribed to cigarette
21 smoking. Is that right?

22 A Yes.

23 Q Ones below that, then, what is the next most
24 common?

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1 A I think colorectal, although prostate is
2 about the same, I think.

3 Q Colorectal is a very common form of cancer
4 in males. Is that right?

5 A Yes.

6 Q What about cancer in the salivary glands?
7 Where does that fall?

8 A Pretty low.

9 Q In terms of frequency you're talking about
10 now?

11 A Yes. It's low in frequency.

12 Q Would you tell me your understanding con-
13 cerning what the medical community knows about the
14 cause of colon cancer?

15 A Yes. There's some feeling that diet is
16 involved, asbestos, some chemical associated other
17 than asbestos.

18 Q What chemicals?

19 A Some of the polycyclic aromatic hydrocarbons,
20 some tars and pitches, acrylonitrile, some familial
21 forms of cancer.

22 Q You're talking now about genetics, right?

23 A Genetics, yes, some association of cancer
24 with a disease like ulcerative colitis. That's prob-

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