WITNESS ON STAND

Whereupon,

DR. LEWIS J. RUBIN,

the witness herein, being first duly sworn to testify the truth, the whole truth, and nothing but the truth, was examined and testified as follows:

THE COURT CLERK: State your name and business address for the record.

THE WITNESS: Lewis J. Rubin, University of Maryland Medical System, 10 South Pine Street, Baltimore, Maryland.

DIRECT EXAMINATION

BY MR. IGNATOWSKI:

Q Good morning, Dr. Rubin.

A Good morning.

Q You are a medical doctor?

A Yes.

Q You practice medicine here in Baltimore?

A Yes, I do.

Q Can you tell us where and what your present position is?

A Yes, I am head of pulmonary critical care medicine at the University of Maryland Medical System and Professor of Medicine in Physiology at the University of Maryland School of Medicine.

Q And could you tell us what your responsibilities are in that capacity?

A Yes. I am the senior chest physician at the medical center, and so I am responsible for overseeing, in general, the care of patients with respiratory diseases and critical care medicine at the medical center.

Q And how long have you held that position, Dr. Rubin?

A Almost 11 years.

Q Okay. I think you are the first doctor that talked about pulmonary medicine.

What is pulmonary medicine?

A Pulmonary medicine is the diagnosis and treatment of disorders of the respiratory system, the lungs primarily.

Q Now, you mentioned that you also have a

professorship; is that correct?

A Yes.

Q And in what area is your professorship?

A I have appointments in two departments in the medical school.

My primary appointment is in the Department of Medicine, internal medicine, in which I am head of the Pulmonary Division, which is a part of the Department of Internal Medicine. And then, my secondary appointment is in the Department of Physiology which is one of the basic science departments.

Q What is physiology?

A Physiology is the study of the function of the organs in the body, how they work.

Q Now, what is critical care medicine, Dr. Rubin?

A Critical care medicine is intensive care medicine. It is the management of patients who are severely ill in intensive care units.

Q Does that sometimes go hand in hand with

pulmonary medicine?

A It often does.

Q Are you board certified in critical care medicine?

A Yes.

Q And when was that?

A 1988.

Q I have a copy of your CV, Doctor.

That is your doctor's resume, a curriculum vitae?

A Right.

Q I would like to show you what has been premarked as Dr. Rubin Exhibit Number 1.

(Whereupon, Plaintiffs' Exhibit Number Rubin 1 was marked for identification.)

BY MR. IGNATOWSKI:

Q Is that a fairly current curriculum or resume of yours, Dr. Rubin?

A It is September '95, so it is about nine months old now.

Q Now, are you also board certified in

pulmonary medicine?

A Yes.

Q And how long have you been so certified?

A That was 1980, I believe, so about 16 years.

Q And how about internal medicine?

A Yes, I am board certified in internal medicine and that was 1978.

Q Now, we heard about board certification and the process.

Did you have to go through a process for certification in each of those fields?

A Yes.

Q And do you presently see patients?

A Yes.

Q How much of your professional time now do you spend seeing patients?

A I would say about 70 -- 60 to 75 percent of my time.

Q And what percentage of that time do you spend with patients who have lung-related problems?

A Most of it. Probably about 85, 90 percent.

Q Now, could you explain for the ladies and gentlemen of the jury your educational background and training?

A Sure.

Well, after college I went to medical school in New York at the Albert Einstein College of Medicine, and I graduated in 1975 with a Doctor of Medicine degree.

And then I went to Duke University Medical Center in Durham, North Carolina where I did an internship and residency in internal medicine and served as associate chief resident in internal medicine from 1975 to 1978.

Then I stayed on at Duke and did a fellowship in pulmonary medicine and finished that in 1979, and remained at Duke on the faculty after finishing my training.

Q And Duke is in North Carolina; is that correct?

A Yes.

Q Do you still -- do you have a license to practice in Maryland?

A Yes.

Q And where else do you practice or have a license to practice?

A I don't practice anyplace outside of Maryland, but my original license to practice medicine was in North Carolina, and I keep that license current.

I had a license to practice medicine in Texas because I lived in Texas for a number of years. I have not renewed that.

I have let that license lapse, so my current active licenses are Maryland and North Carolina.

Q Now, are you familiar or have you had any relationship with the North Carolina Industrial Commission?

A Yes. After I finished my training at Duke and joined the faculty at Duke, I served on the Governor's panel in North Carolina for occupational lung diseases, I believe, for about two years, if I am

not mistaken.

Q Is mesothelioma an occupational lung disease, Doctor?

A Yes.

Q Now, during the course of your professional career, have you received any honors or awards?

A Yes.

Q Could you briefly describe them, please.

A Well, I was an Edward Livingston Trudeau Scholar of the American Lung Association nationally.

I received a clinical award from Duke University. I have had awards from the American Heart Association and the American Lung Association.

And I was elected last year to the American Society of Clinical Investigation, which one has to be elected by the membership into that society. And it is limited to 80 scientists per year in all disciplines under the age of 45.

Q Have you ever held office or sat on any committees in any of those organizations?

A Yes, I have sat on a number of committees

for the American Lung Association nationally, including secretary of the pulmonary circulation section.

I sit on the executive committee of the American Heart Association council on cardiopulmonary and critical care and on the scientific sessions committee of the National American Heart Association.

I have been president of the American Lung Association of Maryland and the Maryland Thoracic Society, which is the professional society of chest physicians. And I served on the Board of Governors of the American College of Chest Physicians, which is an international society of specialists in chest diseases.

Q Have you given lectures or taught in the area of pulmonology?

A Yes.

Q Have they been locally, nationally, internationally?

A They have been all those. I teach locally at the medical school obviously, and I give talks at

the -- at most of the hospitals in the Baltimore area.

And I served as visiting professor at a number of universities and medical schools throughout the United States and lectured throughout the world.

Q What is the Maryland Thoracic Society?

A That is the state professional association of specialists in respiratory diseases, which would include pulmonary doctors, anesthesia specialists, all specialists who deal with diseases of the chest.

Q Were you president of that organization at any time?

A Yes, I believe --

Q Was that 1991 to 1993? Does that sound correct?

A That sounds correct.

Q Are you presently involved in any medical research or have you done medical research in the past, Doctor?

A Both. I have been active throughout my career with biomedical research and currently remain very active doing research in lung disease.

Q And what areas or what type of research are you involved in?

A My particular area of interest in research is the circulation of the lungs or how the blood vessels in the lung interface with the air sacs of the lungs, and diseases where interaction creates problems, so the -- how the heart and lungs work together and how certain diseases that affect the lungs can affect the heart, and vice versa. Particularly diseases where the circulation of the lung is impaired.

Q Would that involve in that area the asbestos-related diseases?

A It can and does. It basically can involve any type of lung disease, including asbestos-related diseases.

Q Have you published any articles in the medical and scientific literature?

A Yes. I have published about 70 peer-reviewed papers, about 30 textbook chapters, 100 abstracts and two books.

Q And what areas are the books that you have written; what field of medicine and what areas are they dealing with, Doctor?

A They are cardiopulmonary. They both are books that deal with disorders of the lung circulation, the mechanisms of diseases of the normal and abnormal function of the lung circulation.

And I am working on a third book now of critical care medicine for cardiologists that, again, focuses on intensive care management for heart specialists.

Q You mentioned peer-reviewed literature.

Are you a scientific reviewer for any peer-review articles?

A Yes, I served as a scientific referee for about 25 scientific journals.

Q What does that mean, a scientific referee?

A That means that the editor of that journal would send to me or to other people in the field manuscript, scientific papers that have been submitted for publication to that journal to review the paper

and make a recommendation regarding its acceptability for publication or issues regarding the work that needs to be addressed before it can be considered for publication.

Q Have you done any consulting for the United States Government, Doctor?

A Yes.

Q In what areas, what type?

A I served as a consultant to the United States Attorney General's Office in the early, mid 1980s on occupational lung diseases, particularly asbestos-related diseases.

Q And -- I am sorry.

A I served on a number of committees for the National Institutes of Health on scientific issues, reviewing grants and making recommendations for areas of funding for biomedical research in the areas of lung disease.

Q Have you done any work or consulting for the World Health Organization?

We have heard a little bit about what that

is.

A Yes, I have served as an adviser to the World Health Organization on an epidemic of a lung disease that occurred in Spain a number of years ago, about a decade ago, that was associated with the ingestion of contaminated cooking oil, and so I assisted the World Health Organization in unraveling some of the issues dealing with that.

Q Now, the patients that you see at the University of Maryland as part of your practice, are they only from the Baltimore area?

A No.

Q Are any patients referred to you from various parts of the state and out of state?

A Yes, a good number of my patients come from outside of the Baltimore area.

Some come from other states and on occasion from other countries.

Q Do you have any involvement at the University of Maryland with heart and lung transplant?

A Yes. We have a very active lung transplant program. Right now, one of the most active in the United States for end stage irreversible lung disease. And I was one of the initiators of that program a number of years ago and continue to be quite active with that.

MR. IGNATOWSKI: Your Honor, at this time we would offer Dr. Rubin as an expert in pulmonary internal medicine, critical care medicine, along with the diagnosis and treatment of asbestos-related diseases.

THE COURT: All right, thank you, Mr. Ignatowski.

Mr. McGowan, any cross-examination on that issue?

MR. McGOWAN: No cross on qualifications.

THE COURT: Mr. Williams.

MR. WILLIAMS: Nothing, Your Honor.

THE COURT: Ms. Tostanoski?

MS. TOSTANOSKI: No, Your Honor, nothing.

THE COURT: Very well, Dr. Rubin will be

permitted to testify in the areas offered.

DIRECT EXAMINATION (CONTINUED)

BY MR. IGNATOWSKI:

Q Doctor, as part of your routine practice, do you review and look at chest X-rays of individuals?

A Yes.

Q As part of your routine and practice, do you review and look at CAT scans and CT scans?

A Yes.

Q Various other types of scans used for imaging the lungs and other parts of the body?

A Yes, on a daily basis.

Q Now, Doctor, did I ask you to review the cases of Mr. Keith Grewe and Mr. Jean Vandergucht?

A Yes.

Q And did we provide to you medical records, chest X-rays and other information in each of those cases?

A Yes.

Q Did you also receive in Mr. Vandergucht's case and Mr. Grewe's case information about their

occupational past and their work histories?

A Yes.

Q Was the information that we provided to you sufficient for you to come to certain opinions and determinations in their cases?

A Yes.

MR. IGNATOWSKI: Now, with the Court's permission, may I have Dr. Rubin come down?

I would like to go through some chest X-rays and some other things in both cases, please.

THE COURT: Please.

(Whereupon, the witness left the witness stand.)

(Whereupon, X-rays were presented to the jury via the view box.)

THE COURT: Mr. Ignatowski, would you pull the box back about two feet so that all of the jurors will have an opportunity, as well as all counsel, to review it?

MR. IGNATOWSKI: How is that?

THE COURT: There we go.

Can you all see that, ladies and gentlemen?

THE JURY: Yes.

MR. IGNATOWSKI: Thank you, Your Honor.

BY MR. IGNATOWSKI:

Q Now, Dr. Rubin, you are not Mr. Vandergucht's or Mr. Grewe's treating physician; is that correct?

A That is correct.

Q You have reviewed materials that I requested that you take a look at and come to certain opinions in his case, in those two cases; is that correct?

A Yes.

Q Now, you reviewed the medical records in Mr. Vandergucht's case?

A Yes.

Q And you also reviewed some chest X-rays?

A Yes.

Q I would like to show you first what has been previously marked as Vandergucht Exhibit Number 29-D, and I believe that that is a chest X-ray of Mr. Vandergucht taken in September of 1993; is that

correct?

A Yes.

Q Now --

MR. McGOWAN: '93?

MR. IGNATOWSKI: I am sorry, I apologize. September of 1980, I believe that is correct.

MR. McGOWAN: Yes.

MR. IGNATOWSKI: My mistake. Thank you.

MR. McGOWAN: That is all right.

BY MR. IGNATOWSKI:

Q Doctor, have you in the past also used as part of your practice standard films or films that are not of a particular individual that you use to refer to when you look at another person's chest X-ray?

A Yes.

Q I would like to show you now what has been marked as Rubin, for identification only, as Number 2 and ask you, can you identify that film?

(Whereupon, Plaintiffs' Exhibit Number Rubin 2 was marked for identification.)

A This is a standard film of a normal chest

that comes from the International Labor Office, the ILO, so this is a standardized normal film.

Q Now, Doctor, could you, for the ladies and gentlemen of the jury, just point out or go through the standard chest X-ray and point out what some of the anatomical structures are that we are looking at when you take a look at a particular chest, at this film?

A Sure. The first thing that I would show you is the way that the X-ray is taken.

The X-ray beam is shot from the back and a cassette is put in the front here, so -- many of you probably had an X-ray, but there are two views.

Put your hands up, the cassette is put here, the beam is shot in the back and shot through the front and turn you over on your side and do this way.

Q Basically it would be as if I were standing in this position with my hands up; is that correct?

A Yes, that would be correct. It would be as if we were looking -- if you stood right back there, we would be looking at your chest. This would be your

right side, this would be the left side, okay?

So there are a number of normal structures. The black areas that you see here, those are the lungs, and they are filled with air and so, because they are filled with air, they allow the X-rays to penetrate right through them and they come up as a black part of the film.

So all of the black area is lungs and this is the right lung, this is the left lung.

This in the middle is the heart. It is white because it is filled with water or blood, and that produces some degree of obstruction of the X-ray beam to get through, and so it shows up as white on the X-ray. So this is the normal heart contour right there sitting in the middle of the chest.

These are the ribs here, and they are very white because they are very dense and filled with calcium. And they really obstruct the X-ray beam from getting through it. So we see the normal rib pattern here, and those are pretty much the major structures.

You can see the clavicle, the collarbone up

here, and here and you can see a little bit of shoulder here. The major things that we are focusing on are the lungs and the heart and these few little white areas here which you see are blood vessels in the lung.

Q Now, Doctor, what is an area that is known as the costophrenic angle?

A The costophrenic angle is at the very bottom part of the lung where the lung interfaces with the diaphragm.

The diaphragm is the major muscle that we use to breathe. When we take a breath in, we have this thin muscle right here at the bottom of our chest that constricts and when it constricts, it expands the chest.

You can't really see it, but it is a very thin band right here that interfaces with the lung.

This angle that you see right here is the angle that interfaces the bottom part of the lung and the diaphragm, and below here is the abdominal contents, and the liver is sitting right here. So

this angle here which is a normal sharp angle is a normal costophrenic angle.

Q Now, we have heard a lot during the trial about the pleura.

Where would the pleura be?

A The pleura is the lining of the chest wall and the lung. Normally the pleura is very, very thin, it is paper thin, so you can't really see it on an X-ray. But it would be right here where you see the tip of the lung interposed against the ribs and the chest wall.

That is the normal pleura, and the normal pleura is so thin, there is nothing there to see.

Q Now, are the lungs broken down into different lobes, and is there something between the lobes known as fissures?

A Yes, there are a total of five lobes of the lung, three lobes on the right and two lobes on the left.

The lobes are basically parts of the lung, so there are three parts to the right and two parts to

the left and in between each of those parts is a lining, a layer of the pleura. And that pleura is called a fissure, the part that separates the lobes of the lung.

Normally you can't really see those, again, because the pleura is so thin, you can't really see those fissures normally.

Q Doctor, just so we are clear and so the ladies and gentlemen of the jury are clear, that is a scratch on the X-ray, that is nothing --

A That doesn't belong here. That is an artifact.

Q Now, did you have an opportunity to review Mr. Vandergucht's X-ray, which is VA Vandergucht Number 29-D, and make a determination as to whether there were any abnormalities present on the chest X-ray?

A Yes.

Q And could you tell us what they were and what you found?

A There are a couple of abnormalities. Don't

worry about the difference in how dark this is compared to this.

That is a technique difference and it is a function of how much of the X-ray beam was turned up. But the major abnormalities -- if you look here, here is that costophrenic angle.

And you can see here where it is a nice sharp costophrenic angle and here it is nice and sharp and clearly making an angle that you can see and identify.

You see it really blurred here and here, and this is blunting of the angle. There is no sharp angle here, it is just kind of blunting on both sides.

That is indicative of either fluid in the pleural space or thickening of the pleura right there so that you don't get a nice sharp angle.

There is also a little bit of pleural thickening along the lateral chest wall here.

If you look here, you can see how the lung is right up against the chest wall, whereas, here

there is a little bit of white space between the black line of the lung and the chest wall here and here, so that implies that there is some thickening of the pleura.

That is much thicker than normal what is shown here. There is a little bit of extra white between where the lung ends and the chest wall begins.

Finally, there is an irregularity here as opposed to the nice smooth contour here, and there is a bit of irregularity here which is also suggestive of some thickening or plaque or irregularity of the pleura as the lung interposes with the diaphragm immediately below it.

So there is evidence of several different types of pleural disease in Mr. Vandergucht's chest X-ray.

Q Now, you used a new word, plaque.

What do you mean by plaque?

A A plaque is a localized area, thickening of the pleura.

Q Now, based upon your review of Mr. Vandergucht's medical records and the information we supplied to you about his occupational history, do you have an opinion, again, with reasonable medical certainty as to what caused those changes?

A Yes.

Q And what is that opinion, Doctor?

A I think from the background of the medical history and these X-ray findings, these are changes that are typical of asbestos-induced pleural disease.

Q Now, do those changes typically appear from rib fractures or can they?

A One of them could, but not the whole constellation.

You can get some local pleural thickening from rib fractures, you can get blunting of the costophrenic angle from rib fractures or any number of other things.

You can get a localized diaphragmatic plaque from any number of things, but when you have all three of these together, there is nothing else that can do

that.

Q Now, did you also take a look at another thing that -- this film is called a PA; is that correct?

A Yes.

Q Or an AP?

A This is a PA, posteriorly, anteriorly. The beam goes from the back, so it is PA, posteriorly, anteriorly.

Q Did you also look at films taken the same time, September of 1980?

That is known as an oblique, is that correct, or a lateral?

A It was a lateral.

Q Could you please tell us how a lateral film is taken if I were the one having the chest X-ray taken.

A As I said before, you put your arms up and then the X-ray is shot laterally from the side through, so it goes from side to side.

Using these two different images, we can

construct in our mind a bit of a three-dimensional image of what is going on in an individual patient's chest rather than one dimension or two where we can combine those two and develop more of a three-dimensional idea of what the chest is of.

Q I would like to show you what is premarked as Vandergucht chest X-ray Number 29-E.

Can you identify that film?

A Yes, that is a lateral film taken at the same time that this PA film was taken, so this is the patient, the back, this is the front, the side, so it is as if we are looking at my chest, front, back, X-ray shot from the side.

Q Now, when you looked at the lateral film, which is 29-E, did you find any changes or abnormalities on that?

A Yes.

Q And could you show us where they are, please.

A There are a number of them. Again, you can see here there is -- you get to see these angles, and

we are looking at these angles now from the side. So we are looking at the costophrenic angles here. And you can see that there is considerable blunting of the angle.

This would be the left angle here and this would be the right angle here, so the left -- both angles are blunted, the left actually more than the right, so that is in keeping with the blunting here.

There is -- also you can see some of the thickening. You see here the lung again, which is the black, should be all the way up against the chest wall and it is not.

You can see a space here, and that is, again, indicative of pleural thickening, and then you can actually see the fissures. You see this thin white line here and this thin white line here. Those are the fissures.

Those are the pleural separation between the lobes of the lung, which ordinarily are paper thin and can't be seen, but they are sufficiently thick here that we actually begin to see them.

These fissures here separating the right upper lobe which is here, the right middle lobe which is here and the right lower lobe which is here, so we are seeing thickening of the fissures, again, indicative of some pleural disease.

The lateral chest wall and posterior chest wall thickening and blunting of the angles, we are seeing that in a different view.

That is very common when there is thickening of the fissures to see it best on this view as opposed to this view.

Q Why is that, Doctor?

A Because it is hard to see the fissures on this view. It is easier to locate them on the lateral film.

Here you are seeing a lot of stuff superimposed on each other and here you are separating them.

Q From your review of Mr. Vandergucht's case, do you have an opinion, again, to a reasonable degree of medical certainty as to what the cause was of the

changes in the fissures that you have described?

A Yes.

Q And what is that opinion, Doctor?

A This is all consistent with asbestos-induced pleural disease.

Q Okay.

MR. IGNATOWSKI: Your Honor, I just want to know how to do it procedurally.

I have about five to seven minutes or ten minutes of questions on Mr. Vandergucht and then I am going to show Mr. Grewe's chest X-rays.

THE COURT: Just turn that that way and let Dr. Rubin take the stand and then pick it back up.

MR. IGNATOWSKI: Okay.

THE COURT: Let's keep everything cohesive.

MR. IGNATOWSKI: Your Honor, at this time I would offer what has been previously marked and identified as VA 29-D and 29-E.

MR. McGOWAN: No objection.

THE COURT: 29-D and E will be admitted in evidence.

(Whereupon, Plaintifff's Vandergucht Exhibit Numbers VA 29-D and 29-E were received into evidence.)

(Whereupon, the witness resumed the witness stand.)

(Whereupon, the X-rays were removed from the view box.)

BY MR. IGNATOWSKI:

Q Now, Dr. Rubin, you reviewed and examined the medical records in Mr. Vandergucht's case?

A Yes.

Q And Mr. Vandergucht was ultimately diagnosed with what disease?

A He was diagnosed with a mesothelioma of the peritoneum.

Q And in your opinion, what did the changes that you saw on chest X-ray indicate, if anything, as it relates to a potential or an occupational exposure to asbestos?

A Well, they are evidence of asbestos-induced pleural disease, and they are, therefore, indicative of having had a substantial exposure to asbestos,

respiratory exposure to asbestos, typically occupationally.

Q Now, Mr. Vandergucht, when he was admitted -- he was admitted to the hospital back in 1980?

A Yes.

Q And was he -- was there a workup, a medical workup done of Mr. Vandergucht?

A Yes.

Q And what exactly was done and how was he treated?

A Well, initially he went into the hospital to have what was felt to be a hernia repair, umbilical hernia repair. And at the time of that operation he was found to have a mass, a tumor, a cancer in his abdomen.

And it was not initially clear whether this was a primary tumor of the lining of the abdomen, of the peritoneum, a mesothelioma, or whether it was a spread of a different kind of tumor to the abdomen.

And for that reason, as part of the initial

evaluation for this, they did a rather extensive search looking for where the primary cancer, if there was one, would arise, including looking in his bowel and looking at his kidneys and found no evidence of a cancer arising from anyplace else.

Q And is it correct that ultimately he was confirmed with a peritoneal mesothelioma?

A Yes, ultimately this was confirmed to be a peritoneal mesothelioma, and he was treated for that or attempts to treat that.

Q Have you in the past, Dr. Rubin, treated individuals with peritoneal mesothelioma?

A Yes.

Q And also individuals with pleural mesothelioma?

A Yes.

Q Now, do you in your practice follow patients who are being treated with chemotherapy?

A Yes.

Q And are you familiar with the type of chemotherapy -- first of all, was Mr. Vandergucht

given chemotherapy as a form of treatment?

A Yes, he was given chemotherapy as part of his treatment.

Q And are you familiar with the type and method of treatment of chemotherapy that he was given?

A Yes.

Q Could you please tell us, what is the design -- what is the purpose of giving an individual chemotherapy.

A Chemotherapy is controlled poisoning. The intent with chemotherapy is to give medicines that kill cells, and the intent is to kill the cells that are most rapidly growing, and that is typically cancer cells.

Cancer is uncontrolled growth of cells, so the chemotherapeutic drugs kill cells that are rapidly dividing and rapidly growing. And the hope, therefore, is to kill primarily cancer cells.

But there are other cells in the body that grow as well, so one of the side effects or major side

effects of chemotherapy is that it is not selective in killing cells.

It kills any cells that are growing and some cells that are normal cells get killed as a result as well.

Q And when you say it kills cells that are rapidly growing, in what parts of the body and what part of the body and what types of cells are you talking about?

A For example, the hair follicle cells are rapidly growing as evidence by the fact that we get haircuts every couple of weeks or months.

So one of the very common side effects of chemotherapy is hair loss, because you are killing in part a number of the cells in the scalp that are rapidly growing and turning over and producing hair.

Another common place where we have some degree of rapidly growing cells is in our gastrointestinal tract. And the cells that line the mouth, the esophagus, the food tube, the stomach are fairly rapid turnover cells, and so it is very common

with chemotherapy to kill some of those cells.

So nausea and vomiting, for example, relating to sloughing of those cells from the gastrointestinal tract is a particularly common side effect of chemotherapy.

In some chemotherapy, drugs can be toxic for other parts of the body.

For example, Adriamycin, which is one of the medications that Mr. Vandergucht received, can be toxic to the heart muscle cell and can produce heart muscle damage.

Q From your review of the records, did Mr. Vandergucht respond initially fairly well to the chemotherapy?

A We think we had a relatively limited period of time where he didn't have symptomatic rapid progression associated with the chemotherapy, but chemotherapy is not curative of mesothelioma. You can't cure mesothelioma with chemotherapy.

The whole goal is to sort of slow things down a bit and palliate, make the patient a bit more

comfortable for a bit longer.

Q Now, there is a word that appears in Mr. Vandergucht's medical records, carcinomatosis.

What does carcinomatosis mean?

A Carcinomatosis means that there is cancer spread diffusely in the body or in a certain part of the body, so typically, in a case like Mr. Vandergucht, when we say carcinomatosis, it would mean that there was widespread dissemination of tumor, of cancer throughout the abdominal cavity.

Q Now, did Mr. Vandergucht after -- did there come a time when he stopped with the chemotherapy?

A Yes.

Q And did his condition improve or did it deteriorate?

A No, his condition deteriorated.

Q And in what way and how, Doctor?

A The major manifestation of Mr. Vandergucht's cancer was the accumulation of large amounts of fluid in the abdomen.

That collection is referred to as ascites,

and when cancer develops, it produces accumulations of fluid in closed spaces like the abdomen through a number of mechanisms, but that accumulation of fluid produces a lot of side effects.

First of all, it is heavy weight that is accumulating there and not going anyplace.

It tends to push the lungs up into the chest so you have trouble breathing, and it tends to compress the contents of the abdomen, the bowels and the blood vessels and can produce a good deal of discomfort.

Imagine -- well, it is sort of like being pregnant in the sense of having this large collection in your abdomen that is getting bigger and bigger and that both the discomfort and the shortness of breath and the compression of the contents in the abdomen would be very analogous to pregnancy with the difference being pregnancy lasts nine months and this may or may not last nine months.

Q Now, in Mr. Vandergucht's case, what was done for his ascites?

A Two things were done.

Initially there were attempts to alleviate the ascites by tapping the fluid, putting a needle with a syringe into the abdomen and drawing off the fluid as much as you could, and draining it to produce symptomatic improvement.

But that becomes difficult to do after a while and actually quite dangerous, because in this situation, because of the localized collection of the fluids, it is not all one big fluid collection.

It is kind of pocketed off, and it becomes more and more difficult to get into these pockets of fluid and drain it. So the next step that was done was to create a shunt where they actually put a large tube from the fluid into the vessels, the veins to drain this fluid directly back into his blood circulation to decompress this fluid collection.

Q Is that, in fact, what happened in Mr. Vandergucht's case?

A Yes, he had what is called a LeVeen shunt put in.

Q Is that an aggressive form of treatment, Doctor?

A It is very aggressive. It is invasive. It is not something you just do in the office or at the bedside.

It is a surgical procedure and it is quite risky because you are draining this fluid directly into the blood circulation, so there is a tremendous risk for clotting off, there is a risk of infection.

It is a fairly aggressive approach.

Q Is it a curative or palliative approach?

A It is entirely palliative. The attempt here is entirely to alleviate the discomfort of this accumulation of fluid by allowing it to drain into someplace else.

Q Now, after Mr. Vandergucht had the insertion of the shunt, sometime later in October of 1991 it became blocked or -- is that correct?

A Yes, obstructed.

Q Obstructed. And what problems would that cause or did that cause in Mr. Vandergucht's case?

A Well, it can cause two problems. One is, when it obstructs, the fluid has no place to go, so it re-accumulates. And the second is that, if you have a foreign material sitting now in the vessel with nothing going through it, it is a prime candidate for infection and a very serious infection if it develops.

Q Now, what was Mr. Vandergucht's date of death?

A November 9th, 1981.

Q Do you have an opinion to a reasonable degree of medical certainty as to what the cause of his death was, Dr. Rubin?

A Yes.

Q And what is that opinion?

A The cause of death was a malignant mesothelioma of the peritoneum.

Q Do you have an opinion, again, with reasonable medical certainty, as to what the cause was of his peritoneal malignant mesothelioma?

A Yes.

Q And what is that opinion, Dr. Rubin?

A That the development of his malignant mesothelioma was the result of his occupational asbestos exposure.

Q Doctor, assume that Mr. Vandergucht was a plasterer.

Did you see that in the records?

A Yes.

Q And assume that from 1949 into the '70s off and on he was exposed to asbestos-containing dusts and that off and on for a period of about six months in 1950 he was exposed to dust created by the handling and use of a pipecovering known as Kaylo, Kaylo pipecovering.

Assume that it was manufactured by Owens-Illinois, it was used on jobsites by other pipecoverers in his vicinity and cut and sawed in his vicinity creating asbestos-containing dust which he inhaled.

Assume that the product contained 13 to 25 percent asbestos, amosite and chrysotile and that Mr.

Vandergucht was around off and on when those products were used.

Assuming those facts to be true, do you have an opinion to a reasonable degree of medical certainty as to which, if any, exposures to Kaylo pipecovering were substantial contributing factors in the development of his peritoneal malignant mesothelioma?

A I do.

MR. McGOWAN: Objection.

THE COURT: Overruled.

A Yes.

Q What is that opinion, Dr. Rubin?

A That all of the exposures to asbestos were significant contributing factors to the development of his mesothelioma.

Q Now, further assume, Doctor, that beginning in 1957 for approximately a month and in 1958 for at least 10 months he was exposed to dust created by the use, handling and application of Kaylo pipecovering and Kaylo block, and that those products were used at jobsites when he was there in his vicinity and cut and

sawed around him and creating dust which he inhaled.

Assume, again, that the product contained the same amount of asbestos. Assuming those facts to be true, do you have an opinion as to which, if any, exposures to the Kaylo pipecovering and block would have been substantial contributing factors to the development of his disease?

MS. TOSTANOSKI: Objection.

THE COURT: Overruled.

A Yes.

Q And what would be your opinion, Dr. Rubin?

A Again, any and all of those exposures would be contributing factors to his development of mesothelioma.

Q Is mesothelioma a cumulative dust -- cumulative exposure disease?

A Yes.

Q Would all of the exposures he had on his job contribute as well?

A I believe so.

Q Asbestos exposure?

A Yes.

Q Now, assume, also, for about a month in 1960, off and on for a period of about a month in the period of 1963, for about six months in 1967 and for about three months, again, off and on, in 1970, Mr. Vandergucht was exposed to dust created by the handling, use and application of Kaylo pipecovering and block manufactured by Owens-Corning Fiberglas. And assume that it was used by pipecoverers in the same fashion that I have described and creating dust which, off and on, he inhaled.

Assume that the product contained 15 to 20 percent asbestos, one-half to two-thirds of that was amosite, one-third to one-half chrysotile.

Again, assuming those facts to be true, do you have a reasonable degree of medical certainty as to which, if any, of those exposures to that pipecovering and block was a substantial contributing factor to the development of his disease?

MS. TOSTANOSKI: Objection.

THE COURT: Overruled.

A Yes.

Q What is that opinion, Doctor?

A It would be the same, that all of those exposures were contributing factors to the development of his disease.

Q Dr. Rubin, in your opinion again, with reasonable medical certainty, can all fiber types, crocidolite, amosite, chrysotile, tremolite cause mesothelioma in humans?

A Yes.

Q And if -- would all fiber types or would all of the exposures in Mr. Grewe's case -- strike that question, please.

Would the exposures that I have asked you about in Mr. Vandergucht's case, which, if any, of those would have been contributing factors to the pleural changes that you have described for the ladies and gentlemen of the jury on the chest X-rays?

MS. TOSTANOSKI: Objection.

THE COURT: Overruled.

A I think all of them contributed in concert

to those changes.

Q Okay.

MR. IGNATOWSKI: Your Honor, with the Court's permission, I would like to now move on to Mr. Grewe's case, and I would like to have the doctor come down.

THE COURT: Please.

(Whereupon, the witness left the witness stand.)

(Whereupon, X-rays were presented to the jury via the view box.)

BY MR. IGNATOWSKI:

Q Now, Dr. Rubin, did you also at my request review chest X-rays for Mr. Keith Grewe?

A Yes.

Q And we are going to show one of the chest X-rays and two of the CT scans, but are those the only chest X-rays and CT scans that you reviewed?

A No, I reviewed a rather thick packet of X-rays. I would say probably 50 or more altogether.

Q In Mr. Grewe's case?

A Yes.

Q Did you for your testimony here today select certain chest X-rays and some CT scans to show the jury?

A Yes.

Q I would like to show you first what has been premarked as Grewe Exhibit Number 24-D.

(Whereupon, Plaintiff's Grewe Exhibit Number 24-D was marked for identification.)

BY MR. IGNATOWSKI:

Q That is a chest X-ray taken on February 10th, 1993.

Can you identify this particular film, Dr. Rubin?

A Yes, this is an X-ray that was performed at Arundel Radiology on Mr. Grewe, February 10, 1993, and it is a PA view, again, just like before, back to Ford.

Q Now, this is the standard film that we talked about earlier, that is Rubin 2 for identification only.

And can you show us in Mr. Grewe's film, Grewe Number 24-D, what, if any, abnormalities are present on this chest X-ray?

A I think the major abnormality is pretty obvious, and that is, this is the right lung, this is the left side of the chest that you can see in contrast, and the normal filling of the left side of the chest.

You can see here there is a whole lot of white here and that white is either fluid or mass or both, but it is filling up two-thirds of the left side of the chest, so that there is only the left part of the left upper lobe, part of the left lung that has -- so the major abnormality is something that is very distinctly wrong on the left side of the chest.

And this would either represent either fluid, tumor or both.

Q Now, what effect, if any, Dr. Rubin, would changes like this have on an individual's chest mechanics?

A This individual would be very short of

breath because he is only breathing with one lung and a small percentage of the other, and there is something in the chest that doesn't belong there, so somebody with this chest X-ray would be quite short of breath.

Q Now, did you also look at some CAT scans?

A Yes.

Q And I want to show you now what has been previously marked for identification as Grewe Number 24-E and 24-F.

And can you first tell the ladies and gentlemen of the jury just what a CAT scan is, a CT scan?

A A CT or CAT scan is a computerized axial tomograph.

What it is is a special X-ray where we can put the patient into an X-ray machine, lying down, and take a two-dimensional slice of that patient at various parts of the body, and basically with that can get a whole series rather than just one film, one X-ray in one dimension.

We can get a two-dimensional view at multiple different sections in the body, so we can basically do cuts of the body.

We can -- if we want to scan the chest, we can do cuts at millimeter sections right through the chest and look at those X-ray images, so it is a much more sophisticated type of X-ray than a plain X-ray and gives us a lot more information about what is going on inside the body.

Q And did, in fact, Mr. Grewe have a number of CAT scans done?

A Yes, I believe I saw three all together.

Q And did you at my request make a slide of a particular portion of each of the CAT scans so that we could show them to the jury?

A Yes.

Q Is that something that you customarily do when you teach medical students or when you do teaching?

A Sure.

Q Now, on the CAT scan I see that there are a

number of different panels.

Is that taken at different levels?

A Yes. What you do, as I said, is for each CAT scan we would take X-rays of different cuts, and we would just kind of machine down or basically move the patient through the machine kind of like a doughnut.

The patient moves through the machine and it can take repeated cuts at different levels so we can scan the chest from top to bottom.

If you want to scan the abdomen, you scan from top to bottom.

If we scan the head, we take cuts this way from front to back, and to be able to look at the inside of each organ take very small or large cuts, depending on what we are looking for.

Q Doctor, if you could just give Mr. Shellenberger and I a moment, I want to put up the slide projector.

(Whereupon, pause.)

MR. IGNATOWSKI: Your Honor, at this time I

would offer into evidence what has been previously marked and identified as Grewe Number 24-E and 24-F.

THE COURT: They will be admitted into evidence without objection.

(Whereupon, Plaintiff's Grewe Exhibit Numbers 24-E and 24-F were received into evidence.)

BY MR. IGNATOWSKI:

Q Now, Dr. Rubin, could you please explain, when I get out of the way, what the various structures are.

First of all, this is what has been premarked and now admitted into evidence as Grewe Exhibit Number 24-E, which is a CT scan taken on October 22nd of 1992; is that correct?

A Yes.

Q Okay. Can you tell, just so we can orient everyone, how the patient, how Mr. Grewe is positioned when this CT scan is taken?

A All right. Imagine the patient lying on this table over here with his head over there and his feet here, his right side would be there, his left

side would be there.

He is lying on that table, and what we are doing is we are taking a slice of him about middle of the chest and kind of peering into his chest from here, okay?

So this is his front and this is his back and this is his right, this is his left.

He is lying there and we sliced him, and we are kind of looking -- here is his right lung, here is his heart, here is his left lung.

Q Now, could you describe what the structure is, the darker part on what would be his right?

Is that his right lung that is depicted there?

A Yes, this is his right lung and, again, it is filled with air, so it comes out black, much like a chest X-ray.

You can see a lot of little lines and stuff right here and most of that is normal blood vessels.

This is the major blood vessel coming out of the heart to the lung and this is the major airway or

bronchus with air in it, but this is a right lung and right chest wall here that is, relatively speaking --

Q Now, any changes, any abnormalities on the left side?

A Sure, the contrast is fairly obvious. The left side doesn't appear similar in any fashion to the right. You see only small little areas of lung.

The rest is separated by very large thick lines and there is a lot of white around here. And what that is indicative of is a mass that is involving and probably arising from the pleura or the lining of the lung that is encasing part of the left lung here.

Some of this is probably fluid as well and infiltrating actually into the lung tissue itself on the left, resulting in very little aeration of lung on the left.

Q What effect would that encasement have on the lung in a condition or a situation like this, Doctor?

A It would produce two things.

One is that it would limit the ability of that lung to inflate and, therefore, this patient would have impairment in breathing, lung function breathing and would be short of breath.

And the other is that this sort of thing produces pain because, as the tumor is invading not so much the lung, but the lining of the lung and the chest wall, it will invade into nerves and irritate those nerves and produce chest wall pain.

Q You have treated patients with various and all types of chest diseases, Dr. Rubin?

A Just about every one there is.

Q How painful is the disease pleural malignant mesothelioma, malignant mesothelioma as it relates to other chest diseases?

A It is up there with the most painful conditions across the board that I have ever taken care of, and I would say it is the most painful respiratory condition that I have taken care of.

The pain is very severe, very intense, rarely goes away and usually requires increasing

amounts of heavy narcotics for any degree of management.

It is pretty miserable.

Q Now, Doctor, I would like to show you what has been part of a slide that -- CT scan from May 10th of 1993 which is 24-F.

Now, this is a period of approximately seven months between -- six or seven months between this CT scan and the CT scan in May of 1993?

A About six and a half months.

Q Has there been, from what you can see on the chest X-ray, any progression in the changes?

A Yes. In fact, I picked this particular cut through the chest because it is a fairly similar cut, the same level, similar level to the cut here to be able to compare and contrast, and there are a few things to show.

First, again, you can see, I believe, there is now even less air in the left lung than there was previously, so this is now fully involving most of the left side of the chest, this mass.

This is largely mass, although I think there is a bit of fluid in here as well, but this is largely mass.

This is tumor that is involving the whole left side of the chest.

There are also now beginning some little nodularities that we see in the right side of the chest that are more prominent than just small blood vessels, and these would be very suspicious for spread of a cancer to the other side of the chest.

And this which may be a little tough to see, but I will try to point it out, if you look careful, I think you will notice there are different shades of white or gray.

This is a little whiter and then there is a rim here that is a little more gray.

This is the heart here and that is the dense white, and then there is this gray area here that actually represents fluid in the sac around the heart or the pericardium.

And that fluid in this situation is most

likely to be spread of the tumor from the left chest into the sac surrounding the heart, and we call it pericardial effusion or pericardial fluid.

And that fluid which is less complex than blood gives a little grayer appearance on a CAT scan than something that is blood like in the heart which would give whiter.

So there is pericardial fluid, almost complete involvement of the left chest with this mass, and there is some suggestion of some spread of this cancer now to the right chest.

Q Now, the spread, is that the same thing as what may be in the medical records as metastasis?

A Yes, metastasis just means that it has spread.

Q What effect would the involvement or the fluid around the pericardial sac have on the heart?

A Well, it could and often does limit the ability of the heart to pump, because this fluid prevents the heart from filling normally with blood, because as the heart fills with blood, it hits this

fluid sort of like hitting a stone wall, so the ability of the heart to efficiently pump the normal amount of blood is impaired with fluid accumulation.

Q Now, Doctor, from the medical records, the one in May of 1993 --

A '80?

Q '93, May of 1993.

A Right.

Q Mr. Grewe was admitted to the hospital and there was an attempt at a thoracentesis, but they were unable to tap it because it was so thick?

A Well, they were unable to tap it. What they tried to do is put a needle in here to drain out fluid, much like with Mr. Vandergucht.

They put a needle into his abdomen to drain fluid out, and what they were trying to do is drain fluid here to alleviate some of his symptoms.

They were unable to tap it. I don't know that it is because it was so thick. I suspect because very little of this was fluid and most of it is mass, tumor.

Q Okay.

A You can't tap mass.

MR. IGNATOWSKI: Just give me a moment, Doctor. I have to move these out of the way.

(Whereupon, pause.)

BY MR. IGNATOWSKI:

Q Now, Dr. Rubin, you reviewed the medical records in Mr. Grewe's case as well; is that correct?

A Yes.

Q I am going to show you what is or will be in evidence as Grewe Exhibit 1, which are some notes from Dr. Rostogi and Izzy who is one of Mr. Grewe's treating physicians. This is a medical record dated October 12, 1992.

Is this a time around the time when Mr. Grewe first started to experience some symptoms?

A Yes.

Q It says weight. His weight was listed at that time at 184 pounds?

A Yes.

Q What were his symptoms at that time?

A He says at that time he feels like he has fluid in my left chest when I --

Q I think that is when I walk or move.

A I can't tell what that is.

Q And somewhat short of breath.

A Somewhat short of breath, SOB, short of breath.

Q Are those changes or symptoms consistent with a mesothelioma?

A They are consistent with mesothelioma.

Q And then he was referred to Dr. Benjamin on October 12th to rule out a chest mass?

A Right.

Q What exactly does that mean, Doctor, rule out a chest mass?

A Well, he was found to have the abnormality on his exam and chest X-ray, indicative of what we showed on the earlier X-ray of the left chest, fluid or mass or tumor, so he was referred to Dr. Benjamin to evaluate that process.

Q Was he ultimately or eventually admitted to

the hospital?

A Yes, he was admitted to the hospital and had a thoracoscopic biopsy of the pleura.

Q What exactly is that?

A What that is, the patient goes to the operating room and several holes are put into the chest to allow for the direct visualization and inspection inside the chest of the pleura and the lung. And if there is an abnormality that is seen through one of the holes.

Through one of the holes you have a scope, so you are actually looking inside the chest, and with one of the other holes you have a light source directing where you are looking. And the third hole you can put in biopsy forceps.

And when you are looking and find an abnormality, you are actually cutting with the forceps and take a piece of the abnormality, and that is called a thoracoscopy or procedure where through direct internal visualization you can inspect and sample the pleura or the lung.

Q And at that time -- is that the time when Mr. Grewe was eventually diagnosed with mesothelioma?

A Yes, an abnormality was seen of his biopsy and the biopsy showed mesothelioma.

Q Now, when the procedure is done, are chest tubes inserted?

A Yes, chest tubes are typically inserted after that procedure is done to drain whatever fluid is there and also to re-inflate the lung.

Q Did the chest tubes remain in place for a period of time?

A Depends on the condition. Ideally they remain in place overnight and are pulled the next morning.

If there are substantially more abnormalities of the chest, they may have to stay in longer.

Q Because Mr. Grewe was short of breath, he had a procedure done known as a pleurodesis?

A Yes.

Q What was that procedure?

A The idea of a pleurodesis is to obliterate the space between the visceral and parietal pleura.

The visceral pleura is the lining of the -- the pleural lining of the lung and the parietal pleura is the pleural lining of the chest wall.

And that space between those two, which is normally no space at all, becomes filled with fluid, and as that fluid accumulates, you don't inflate the lung because you round out the lung with fluid.

The idea with pleurodesis is drain the fluid and put something into the chest that scars down that space between the two pleuras preventing the accumulation of fluid, and that is called pleurodesis.

Q Now, did there come a time when Mr. Grewe was hospitalized again sometime after that in about January of 1993?

A Yes.

Q This is one of the discharge summaries from the January 30th of 1993 admission to North Arundel Hospital.

What were the discharge diagnoses, Doctor?

A Mesothelioma, dyspnea on exertion secondary to malignancy.

Dyspnea is shortness of breath and intractable pain, secondary to malignancy.

Q What does that mean, intractable pain, secondary to malignancy?

A It means pain that is essentially unresponsive to treatment.

Q Now, under medications he was given something called MS Contin?

A Yes.

Q 30 milligrams every eight hours?

A Yes.

Q Is that a typical dose of -- that is oral morphine?

A That is oral morphine. Morphine is a narcotic, very potent narcotic. And this is oral morphine, and it is a goodly dose.

Q He was also given Amitriptyline?

A Yes, that is an antidepressant and

medication that helps people sleep at night.

Q Number three, it indicates Lactulose and Senokot for constipation.

Why constipation? Why would this gentleman have constipation?

A Probably the major side effect of morphine and other narcotics is constipation and it is dose related.

The more you are on, the more constipated you get because the narcotics slow down the normal peristalsis, the normal mobility of the GI tract. So the major side effect of these drugs can be constipation and it can be very uncomfortable.

Q They also mention a history of asbestos exposure for Mr. Grewe?

A Yes.

Q It says he was admitted for further evaluation and treatment of progressive dyspnea.

What does that mean?

A Dyspnea is shortness of breath.

Q And chest wall pain, and the symptoms became

so severe that he had to be hospitalized?

A Yes.

Q Now, there is an indication under physical examination of his height that I have yellowed in.

A Yes.

Q What was his weight at that time?

A 174 pounds.

Q So there was a drop in weight from December of -- October of 1992 to January of 1993?

A About 10 pounds, if I am not mistaken.

Q Then it also says under physical exam there was a limitation to chest wall expansion with inspirations, greater expansion on the right than left.

What does that mean and what is it referring to?

A It means when you listen with your stethoscope and you have the patient take a deep breath, you look for symmetry of expansion and expect the lungs and hear breath sounds as the lungs expand on both sides.

And in his case again, consistent with what we see on the X-ray, he takes a nice breath and you hear breath sounds on the right side, but you hear very little on the left side because it is filled with fluid. And so it would be dull and you wouldn't hear anything when you listened with a stethoscope.

Q Now, the second page of that discharge summary indicates the hospital course, and what does it say about Mr. Grewe's ability to walk at that time?

A It said that he was significantly dyspneic, shortness of breath throughout any exercises of just walking down the hallway.

Walking down the hallway he was short of breath.

Q Is that consistent with the types of changes you showed the jury on the CT scan?

A Yes, I would expect somebody with those changes to be quite short of breath.

Q Now, his pain was under control.

What type of medications was he being given

at that time?

A Well, his MS Contin was continued and then he was given morphine Elixir, another form of morphine to supplement the MS Contin as needed.

MS Contin is a relatively long-acting morphine preparation and morphine Elixir would be used for breakthrough pain in between his doses for MS Contin.

Q Then, did there come a time when he was referred to University of Maryland Cancer Center?

A Yes.

Q I want to show you -- did there come a time when he was referred to the University of Maryland Cancer Center sometime in 1993?

A Yes, early 1993.

Q Now, this is a discharge summary when he was admitted, February 15, 1993, and he was discharged on February 20th, 1993.

You are familiar with the University of Maryland Cancer Center, Dr. Rubin?

A I am very familiar with the University of

Maryland Cancer Center.

Q Now, the discharge diagnoses, there is a word here, mucositis, secondary to chemotherapy.

What is that?

A That means -- we were talking earlier about killing cells with chemotherapy and how some of the faster growing cells get killed sort of nonselectively.

Among the fast growing cells, as I mentioned, were some of the mucous membranes in your mouth, your throat and your tongue. And those are mucous cells or mucous membrane cells.

And what happened with Mr. Grewe was that the chemotherapy at that point killed off a fair number of lining cells of his mouth and throat and food tube producing a severe inflammation of the mucous membranes as the cells were sloughed off, leaving a naked underlying tissue exposed to the environment which it is not designed to do, which is a quite unpleasant, uncomfortable, miserable feeling when you have mucositis.

Q Then it refers to right lower lobe pneumonia.

Why would Mr. Grewe, with a mesothelioma in the left chest, develop a right lower lobe pneumonia?

A I think there are probably two mechanisms here. One is that, as a result of this mucositis, he would have tremendous difficulties handling his secretions because it would be exceedingly painful to do any kind of swallowing or clearing your throat because you have sloughed off the mucous membrane.

It is almost like if we took off the first layer of your skin, when you scratch yourself and lose a top layer of skin, you can imagine or you know how tender and painful the layer underneath is.

Well, imagine we have taken off the top layer of your mouth and throat and food tube and imagine how tender and painful that would be.

The same idea. It would be very uncomfortable to swallow or cough or clear your secretions which would result in some of those normal secretions that we have draining down into the lung,

and the right lower lobe would be the ideal place for what we call aspiration and pneumonia.

You would develop infection as a result of your own secretions.

The other mechanism would be that one of the cell lines that gets killed with chemotherapy -- chemotherapy kills cells, and some of the cells would be bone marrow cells because those are very rapidly turning over cells that normally make our blood elements. And the important ones would be the white blood cells.

White blood cells fight infection, so one of the major side effects of chemotherapy is a drop in your white blood cell counts because it is killing cells being formed, not bone marrow. And when white blood cells drop, you are at risk for infection and pneumonia would be very common to get as a drop in the white blood cell.

Q This paragraph, the section I have underlined, that talks about the prior procedures he has had done.

And he was diagnosed with mesothelioma; is that correct?

A Yes.

Q Now, this section says he returned to the University of Maryland Cancer Center on 2-11 and was treated with Edatrexate.

Is that a chemotherapeutic agent?

A Yes.

Q On the date of admission, he called stating he was having severe mouth soreness and was unable to take adequate nutrition and hydration.

Can you get to the point where you are unable to eat or drink?

A Yes, that is typical of severe mucositis to the point that it is impossible to swallow anything.

Q It says he began to complain of right-sided pleuritic chest pain.

Would that have any relationship to his pneumonia?

A Yes, the pneumonia would cause that pain on taking a breath, like pleurisy, like a sharp knife in

your chest.

Q Then it indicates that his shortness of breath worsened; is that correct?

A Yes.

Q Is that consistent with the type of changes that you have shown the jury on his chest X-rays and his CT scans?

A Yes. Well, I think here the shortness of breath worsening is related to an acute event on the right side.

He has the stuff on the left which is the cancer, and now he is developing pneumonia on the right side on top of the cancer.

Q So, in effect, his one good lung, his right-sided lung is now minimized as a result of the pneumonia?

A Compromised.

Q Compromised. It says social history, and again, significant for asbestos exposure as an auto mechanic. And that is part of the social history taken and it also notes that he was a smoker.

A Yes.

Q Dr. Rubin, in your opinion, again, with reasonable medical certainty, is there any relationship whatsoever between cigarette smoking and the disease known as malignant mesothelioma?

A There is none.

Q I would like to show you the second page of that admission, and his appearance now is chronically ill appearing and mildly dyspneic.

And is that, again, mildly short of breath?

A Yes.

Q Again, is there a decrease in the breath sounds?

A Yes.

Q And, again, the increased markings now on the right, they would be consistent with the pneumonia?

A Yes.

Q On page 3 of that admission the discharge medications are Peri-Colace.

Is that, again, for constipation?

A It is a stool softener.

Q The C-e-f-u-r-o-x-i-m-e, I will let you pronounce that?

A Cefuroxime, it is an antibiotic for his pneumonia.

Q And the Acyclovir?

A That is an antivirus antibiotic, because I believe at this point he developed a skin rash which was due to a virus, much like chickenpox.

Again, because of the chemotherapy, he would be at risk for developing all kinds of infections, including a particular virus infection.

So the rash that he developed was a chickenpox-like rash which could actually be quite dangerous, much more so than plain old chickenpox, because of his white blood cell count being suppressed.

And that is why he would be treated with a natural antibiotic for a virus infection which we typically don't do.

Q Doctor, I see the MS Contin, 30 milligrams

and I also see codeine.

Is that a narcotic?

A Codeine is a narcotic.

Q He is also prescribed 30 milligrams for every four to six hours.

Is that in addition to the MS Contin?

A Yes. Again, his MS Contin is a long-acting narcotic every eight hours. And then, for breakthrough pain during that period he can take codeine every four hours if needed.

Q Is that a significant dose of narcotics, Doctor?

A That is a goodly dose of both.

Q Again, is that for palliative purposes?

A It is purely to try to control his pain.

Q Now, I would like to move up to September, and this is from September of 1993 from Dr. Benjamin, and it is partially blocked.

It says, and this is 9-15-93, his weight now is 133 pounds.

A Yes.

Q And that would indicate that between October of '92 and September of '93 he has lost about 51 pounds?

A Yes.

Q How do you account for that weight loss, that type of weight loss, Doctor?

A It is cancer. Cancer produces weight loss a number of ways.

First of all, his appetite is not good often, and second of all, he must have lost a considerable amount of weight when he had that mucositis.

And thirdly, the cancer, because it is rapidly growing cells, sort of steals the nourishment from anyplace else and diverts it for its own use because it needs the nourishment to grow and it is growing uncontrollably.

So people who have cancer tend to lose weight. Cancer is growing, but the rest of their body is being starved.

Q This is, again, from Dr. Benjamin, and I

don't have this on an overhead, ladies and gentlemen, but this is from Dr. Benjamin's notes and it is in July of 1993.

A little bit, two months or so before this time and his current regimen is now 240 milligrams of MS Contin every eight hours.

Is that a significant dose, Doctor?

A That is an industrial dose of narcotics. Those are huge doses.

Q What is the usual -- is there a customary dose that is used when an individual has general surgery or major surgery?

A Well, in general we would use intravenous or subcutaneous injections of morphine and we would use two to five milligrams.

Now, the absorption here, this is oral, so the absorption is different from giving it intravenously, by probably a factor of 10 or so.

This would be 10 times the dose we give somebody coming out of major surgery.

Q In addition, he was given four milligrams of

Dilaudid.

What is Dilaudid?

A Actually eight milligrams, because it is two, four milligram tablets. Dilaudid is probably the most potent narcotic pill that there is.

If you are going to be on a narcotic by mouth, Dilaudid is, I think, the strongest.

Q Now, there is also a note in here that says he is unable to get around better, he can't take a shower and dry off without gasping?

A Without gasping.

Q Is that consistent with advanced pleural mesothelioma, that just the mere taking of a shower can cause gasping?

A That is a terminal state. That is weeks to months.

Q Then, in October of 1993, this is around the time when Mr. Grewe passed away, there is a notation here.

Is that transcoscopy?

A No, that is Transcop, that would be a

scopolamine patch, a medication that is applied as a patch.

Typically it is a little thing that you put behind the ear that is used for a number of conditions. And in this condition it would be used to dry up the secretion to make it easier for him to breathe so that he wouldn't have to try to clear all of the respiratory secretions.

That would dry them up a little bit to make him more comfortable.

Q We heard from Mr. Grewe from his videotape that sometime around the time in September of 1993 he had inserted into his left hip something called a C-a-d-d, pump, a pump for narcotics?

A A Cadd pump.

Q Cadd pump.

What is a Cadd pump?

A Cadd pump is a portable infusion pump, and the idea here is to deliver, continuously, pain medication to control his pain.

It is a portable infusion pump to try to

deliver medicine around the clock as needed.

Q All right.

A Oftentimes you can control it if you need an extra hit of narcotic because you are experiencing pain, and you can press a little button and get a little extra shot if needed.

Q Doctor, I think I am done with the overheads and the slides. If you could just return to the stand, I would appreciate that.

(Whereupon, the witness resumed the witness stand.)

(Whereupon, the X-rays were removed from the view box.)

BY MR. IGNATOWSKI:

Q Dr. Rubin, based upon your review of the records, do you have an opinion to a reasonable degree of medical certainty as to what the cause of death was in Mr. Grewe's case?

A Yes.

Q And what is that opinion?

A Mr. Grewe died as a result of a malignant

mesothelioma of the pleura.

Q Do you have an opinion, again, with reasonable medical certainty, as to what the cause was of his malignant mesothelioma?

A Yes.

Q And what is that opinion, Doctor?

A The cause of the malignant mesothelioma was his occupational exposure to asbestos.

Q Now, assume that Mr. Grewe worked as an automobile mechanic from the mid '50s to 1957 to 1992, and as part of his work that he was exposed to asbestos-containing dust which he inhaled when he performed removal, repair and installation of brake linings and disc pads, and that those products, some of those products were supplied by Ford Motor Company which contained approximately 40 to 60 percent chrysotile asbestos.

And also assume that part of that time his exposure resulted from work sanding, scoring and grinding new Ford brakes and linings and disc pads prior to their installation on the vehicle.

I also want you to assume that he used compressed air sometimes to blow out the brake drum dust debris, some of which was from brake assemblies and some of which were supplied by Ford.

Also assume that his work was sometimes daily on brakes and later performed weekly and it constituted about 20 to 25 percent of his automobile mechanic work.

And I also want you to assume from '57 through the '80s as part of his work and exposure he worked on clutch products, some of which were made by Ford and which contained asbestos.

Assuming those facts to be true, do you have an opinion to a reasonable degree of medical certainty as to which, if any, exposures to products of Ford, supplied by Ford containing the asbestos that I have asked you to assume were substantial contributing factors to the development of his malignant mesothelioma?

MR. WILLIAMS: Objection, Your Honor.

THE COURT: Overruled.

A Yes.

Q And what is that opinion, Dr. Rubin?

A That all of the products that contained asbestos were significant contributing factors to his developing mesothelioma.

Q And would the reasons, the basis for that opinion, Doctor, be that it is a cumulative exposure?

A Yes.

MR. IGNATOWSKI: Thank you, Dr. Rubin. I have no further questions.

Thank you, Your Honor.

THE COURT: Thank you. We will take our second break for today and then we will come back and conclude with Dr. Rubin's examination.

Let's take a recess, Doctor.

Approximately 10 minutes, ladies and gentlemen.

(Whereupon, jury dismissed -- 12:55 p.m.)

THE COURT: All right, we will take our recess.

(Whereupon, a brief recess was taken --

12:55 p.m.)

(Whereupon, after recess -- 1:10 p.m.)

(Whereupon, in open court.)

THE COURT: Please be seated.

Dr. Rubin, please step up, sir.

Bring the jury in, please.

MR. McGOWAN: Your Honor, you have to be off the bench by 2:00, right?

THE COURT: Yes.

Do you anticipate a lengthy cross-examination?

MR. McGOWAN: No, 15 minutes.

MR. WILLIAMS: No, Your Honor.

THE COURT: If you take that long. Give him a Jolly Pop or something.

MR. IGNATOWSKI: I will give him two.

(Whereupon, laughter ensued.)

(Whereupon, discussion off the record.)

MR. IGNATOWSKI: Your Honor, I just forgot to move in these two. There is no objection. It is Rubin 1 for ID -- I mean Rubin 1 which is the CV.

THE COURT: That has already been admitted, and Vandergucht 29-D and E and Grewe 24-E and F.

MR. IGNATOWSKI: This is Grewe 24-D.

THE COURT: 24-D will be admitted.

(Whereupon, Plaintiff's Grewe Exhibit Number 24-D was received into evidence.)

(Whereupon, jury present -- 1:14 p.m.)

(Whereupon, witness present.)

(Whereupon, discussion off the record.)

MR. McGOWAN: May I proceed, Your Honor?

THE COURT: You may.

CROSS-EXAMINATION

BY MR. McGOWAN:

Q Good afternoon, Doctor. My name is Tim McGowan.

Doctor, you reviewed two cases for the plaintiffs' attorneys in this particular case; am I correct?

A Yes.

Q And you charge for your time reviewing the cases?

A Yes.

Q And you also charge for your time today; is that correct?

A Yes.

Q Is that still $350 an hour?

A $250 an hour for reviewing cases and $350 an hour for my time.

Q And you have reviewed and testified on numerous occasions for the Angelos law firm; am I correct?

A Yes.

Q And other plaintiffs' attorneys?

A Yes.

Q Now, let me turn to Mr. Vandergucht's case, because that is the only case I am involved in, so if you want to get your file so you are oriented.

A I got it.

Q You never met Mr. Vandergucht, did you?

A No.

Q Did you ever go back and talk to any of his treating physicians?

A No.

Q Did you ever talk to any of the nurses who actually took care of Mr. Vandergucht when he was sick?

A No.

Q Doctor, the first thing you did this morning is you showed the jury some chest X-rays of Mr. Vandergucht, and I want to talk about that for a minute.

There is a specialty in medicine called radiology; isn't that correct?

A Yes.

Q That is someone who -- basically what they do for a living is they read chest X-rays and CAT scans and things like that?

A Yes.

Q I know you have experience in reading chest X-rays, but you are not a radiologist and you don't hold yourself out as a radiologist; am I correct?

A No.

Q Now, the film you showed the jury of Mr.

Vandergucht, that was a poor quality film, wasn't it?

A I am not sure what you mean by poor quality. It was an interpretable film.

Q Excuse me?

A An interpretable film.

Q Wasn't it, nonetheless, a poor quality film? It was overpenetrated, they used too much radiation and it really didn't come out as well as it should have?

A It is not the prettiest X-ray I have seen, but entirely interpretable.

Q Now, you talked about Mr. Vandergucht having this disease, pleural disease; am I correct?

A Yes.

Q Now, you reviewed his entire medical records, didn't you?

A Yes.

Q Are you aware that you are the only doctor who ever said he had pleural disease in his lifetime?

A I don't recall seeing anybody else mention it.

Q And, Doctor, you showed the jury what was called an ILO film for comparison.

Would you tell the jury what ILO stands for?

A International Labor Office.

Q Office or organization?

A I think initially it was office and then changed to organization.

Q All right. And they sponsor a test for radiologists and pulmonologists to take what is called a B-reader test, don't they?

A Actually they don't.

Q Is it the American College of Radiologists in conjunction with NIOSH and the ILO?

A Actually it is NIOSH, and actually the test is for anybody. You don't have to be a physician to take it.

Q I can even take it?

A You could.

Q It would be absolutely stupid for me to take it, but I could, right, since I have no experience in

reading chest X-rays?

A I don't know if it would be stupid or anything. I think the point is that anybody can take that test.

Q And that test basically tests the reader's ability to see dust diseases like asbestosis and pleural thickening, doesn't it?

A No.

Q It doesn't?

A That is correct.

Q Aren't you tested on that test to actually see if you can categorize asbestosis and pleural thickening?

A No. You are tested on using the ILO classification for all pneumoconioses on that test.

You are not tested on exclusively pleural thickening and asbestos and you are not tested on seeing it.

You are tested on the ILO classification. There is a significant difference.

Q Asbestosis is a form of pneumoconiosis,

isn't it?

A It is one disease of a larger category of pneumoconiosis.

Q On that test there are X-rays with asbestosis and diseases caused by asbestos, aren't there?

A Yes.

Q You took that test; am I correct?

A About 10, 12 years ago.

Q For lack of a better term, you didn't pass the test; is that correct?

A That is correct.

Q All right.

MR. McGOWAN: I am going to ask the doctor to step down.

And may I ask for Mike's assistance?

THE COURT: Sure.

(Whereupon, the witness left the witness stand.)

(Whereupon, the documents were published to the jury via the overhead projector.)

BY MR. McGOWAN:

Q Doctor, you called the things that you saw in Mr. Vandergucht's X-rays pleural disease.

Now, am I correct that a lot of pulmonologists or some pulmonologists, let's put it that way, don't consider it a disease at all?

A I can't speak for all pulmonologists.

I can tell you what he has is a pleural disease, and that is widely accepted in the medical and scientific community.

Q And is it also widely accepted that it causes absolutely no symptoms?

A No. That is incorrect.

Q Doctor, if you go take the medical records and you show the jury anywhere in those medical records that Mr. Vandergucht had some problems related to pleural disease, I won't ask another question today.

MR. IGNATOWSKI: Objection. I don't know if that is a question, Your Honor.

MR. McGOWAN: Well, I will stop --

THE COURT: Overruled.

BY MR. McGOWAN:

Q If you can show the jury anywhere in the medical records that said Mr. Vandergucht had pleural disease that caused him any problems?

A If you can show me anywhere in the medical records that his pleural disease didn't cause him any problems, I don't need to be here.

It is a question of what tests were done that showed there was no disease. No tests were done to prove that he had disease. If you didn't do the test, you can't say he didn't have disease.

There are ample studies that showed this degree of pleural disease is associated with impairment and lung function when it was tested.

It was not tested in this patient, therefore, you can't say he didn't have impairment in lung function.

Q Are you aware that nowhere in the medical records anywhere did it say he ever had pleural disease from the time he went into the hospital until

the time he expired?

A You asked me that already, and I said yes. That doesn't mean he didn't have it.

Q Doctor, you know what a radiologist report is, don't you?

A I think I have seen one in my 25 years.

Q Why don't you tell the jury what a radiologist report is?

A An X-ray report by a radiologist.

Q When Mr. Vandergucht went to Carroll County Hospital, that is where he was, wasn't he?

A Yes.

Q Dr. Steers, the jury saw him already, sent him down for a chest X-ray, didn't he?

A Yes.

Q And this man here, he reviewed this; am I correct?

Dr. Carter, M.D., he is a radiologist?

A Yes, yes.

Q Now, during the review of this case at the request of the attorneys, did you see this medical

record?

A Sure.

Q All right. And this was on what date, Doctor? Is that 11 --

MR. IGNATOWSKI: 10.

Q Is that 10-7-80?

A Correct.

Q This is when he first presented himself with the symptoms for the hernia, didn't he?

A Yes.

Q Now, they took a chest X-ray, correct?

A Yes.

Q And he's read what they found.

Does that indicate to you that that was a chest X-ray first of all?

A Yes.

Q It says the heart, lungs and bony thorax do not demonstrate active disease.

Did you read that before you took the stand today?

A Yes.

Q It says no hilar. And tell the jury where the hilar is in the body.

A Those are the structures coming out of the major blood vessels coming out of the heart, nerves, this area, central area.

Q Pleural, we heard a lot about the pleura, right, that is the same thing as the pleura, the pleural?

A Yes.

Q Mediastinal, that is heart?

A Which is obviously a typographical area.

Q Should be "or", because there are subsequent chest X-rays that have "or".

A Right.

Q Has no hilar, pleural and mediastinal abnormality is noted.

It has normal chest?

A Yes.

Q This radiologist here didn't see what you saw in his chest X-ray, did he?

A Well, I didn't see on this chest X-ray, so I

don't know what I would see on this chest X-ray.

I can only tell you what I saw on the X-ray I reviewed and which I showed.

Q Pleural thickening caused by asbestos doesn't go away, does it?

A I don't know whether it was there or not. I don't know whether the film allowed it to be reviewed or not. I don't know whether this was a PA or lateral or not.

As I showed earlier, you can sometimes not see those changes on a PA, but see it on a lateral. You are asking me to comment on a report and I haven't seen the X-ray.

If the X-ray was here, I would either see something or not, and I would be happy to look at it and tell you what I see and whether I agree with that reading or not.

Q The first X-ray you showed the jury, that was a PA view, wasn't it?

A Yes.

Q You saw pleural thickening on that?

A No.

Q You saw something in the fissures; you saw plaque, didn't you?

A I saw pleural thickening on the fissures on the lateral, not the PA view.

Q Did you see plaque on the PA view?

A I saw lateral thickening and diaphragmatic plaque.

Q Is that caused by asbestos?

A Yes.

Q This doctor here didn't see it, did he?

A He didn't see it on this film.

Q I didn't make an overhead of this, but another chest X-ray of 11-30, does he find any abnormalities?

A No.

Q Okay. Doctor, you spoke about the painful experience someone has with mesothelioma.

Am I correct that not everyone experiences the same thing with respect to mesothelioma in respect to pain?

A The degree of pain, but I have never seen a patient with mesothelioma who didn't have pain.

Q How was Mr. Vandergucht's hospital course? How did he react and what kinds of things was he feeling, if you can tell us in general?

A I can only report from the records.

Q All right.

A If you have records, I will be happy to read them and report them.

Q You can explain some of the medical terms to us.

A Sure.

Q Now, he first started feeling uncomfortable with a hernia back in, I believe, October of 1980; is that correct?

A I guess, September, October.

Q All right. In December he came in for the checkups and the presurgical procedures; isn't that right?

A Yes.

Q Are you familiar with this medical record

from December 4th, 1980?

A Yes.

Q In 1980 is when -- October of 1980 is when he underwent the hernia operation; isn't that right?

A Yes.

Q Over the last two months the patient has been feeling quite well. He has been dieting in the month of September and lost a total of 12 pounds.

He denies any decrease in his appetite, increasing in abdominal girth, abdominal pain.

So as of December 1980 he most likely had -- he definitely had the mesothelioma back then, didn't he?

A Yes.

Q But for some reason it just wasn't causing any pain?

A At that point in time.

Q At that point in time.

Did you review the records all the way through the course of his illness to his death?

A I reviewed all of the records that were made

available to me until his death.

Q By the way, Doctor, these are written by doctors and nurses who are actually taking care of the man, who have actually met the man; is that correct?

A Yes.

Q And have no connection to either plaintiffs' lawyers or to defense lawyers, am I right?

A Correct.

Q Did you see this record, December 10th, 1980, he has no abdominal pain?

A Yes.

Q So based upon your review of this --

A Well --

Q Anything else you want to add?

A Well, yes. He has no abdominal pain. Of course, six months later he is dead, but he does feel somewhat weak, he has lost 15 pounds, represented fluid weight in his belly, ascites.

Yes, so, yes, you can take this out of context, if you want, but in the grand context of things, he is having weight loss, weakness and in six

to eight months he is dead from a metastatic mesothelioma.

Q If you think I am taking anything out of context, Doctor, feel free to read anything you would like or bring any records that you have.

A I would be happy to.

Q When did he die?

A I believe he died October or -- October or November.

Q How about November 9th?

A If you say so.

Q Okay. Now, you also talked this morning about chemotherapy, and a lot of people have very severe reaction to chemotherapy, don't they?

A Yes.

Q Mr. Vandergucht had some bad reaction to chemotherapy, didn't he?

A I think so.

Q How long did that last?

A It is impossible to say. Probably to some extent lasted until the day he died.

Q The effects of chemotherapy lasted until the day he died?

A That is my answer.

Q Doctor, are you aware that the plaintiffs' lawyers are going to get up here and ask this jury to award a lot of money for pain and suffering, aren't you?

A Yes.

Q You were told that before you took the stand today, weren't you?

A Yes.

MR. IGNATOWSKI: Objection, Your Honor, as to --

THE COURT: He said no, so overruled.

MR. McGOWAN: I think he said yes.

THE COURT: Oh, yes, overruled anyhow.

BY MR. McGOWAN:

Q When did he have chemotherapy, Doctor?

A When?

Q Yes, when did he have the chemotherapy?

A I would have to look at my notes.

Q Did you see this record of January 8, 1981?

A Yes.

Q Mr. Vandergucht has been doing quite well at home. Noted a few episodes of vomiting following his chemotherapy, but was otherwise asymptomatic.

So the chemotherapy they gave him to try to slow down the development made him sick, didn't it?

A Yes.

Q I am sure it was very unpleasant, wasn't it?

A Quite unpleasant.

Q This statement here, but otherwise was asymptomatic.

Now, that is just a medical way of saying he had no symptoms; isn't that right?

A That is correct.

Q Is there anything else you want to read on that before I take it down?

A No.

Q Okay. Got a medical record from January 28th, 1981.

Again, how do you pronounce that, Doctor, Cytoxan?

A Cytoxan.

Q That is a chemotherapy drug, isn't it?

A Both of them are, Adriamycin and Cytoxan.

Q He was on these drugs. It reads here, over the last two weeks he has felt great. He feels that he is as strong as he was before he entered the hospital for his initial surgery.

His appetite has been excellent. He has noted no pedal edema.

That is basically no swelling of the feet?

A Correct.

Q Increasing abdominal girth or weight gain. There has been no increase in shortness of breath.

So does it seem like a few weeks after -- well, during the chemotherapy it didn't affect him as bad as it affects most people, or am I reading that wrong?

A You are reading it wrong.

Q All right.

A Let's take the part that you didn't underline. Following his last dose of Adriamycin and Cytoxan, Mr. Vandergucht had two to three episodes of vomiting.

Unlike the last episode, however, he was rather nauseated for the remainder of the week and ate very little.

That is certainly characteristics of those chemotherapy agents.

Q This made him sick for a week at least, didn't it?

A Right.

Q Again, Doctor, anything else you want to read before I take it down?

A I think that will do it.

Q All right. Doctor, when did he finally stop the chemotherapy?

Do you know from your review of the records?

A I don't know off the top of my head. Again, I would have to look at the records.

Q Was it sometime in February after looking at this record?

A You have asked me the question and I have answered it. I would have to look at the record to give you an exact date.

This only says that following his last dose, and I don't know whether that was his total final dose of both chemotherapeutic agents or not. I would have to look at the record.

Q All right. Did he indicate from this record that he was feeling pain in his abdomen?

A Tightness.

Q Tightness, but what is that? But no pain?

A Correct.

Q Doctor, at this time is he on any kind of narcotic or medication?

A Again, without looking at the record, I can't tell you the time course of what medicines he was on at what point in time, but I would be happy to look at the record and answer the question.

Q Let's move to March. This is probably seven

or eight months before he died.

Because, am I correct, Doctor, that he went to the hospital and they discharged him and he would go back and forth?

A I don't understand your question.

Q All right. Am I right that from the time he first became ill that he did not stay in the hospital from that date until the day he died?

A Yes.

Q So he would get sick, they would treat him at the hospital, send him home and he would be doing okay at home and he would come back in for certain treatments.

Isn't that the regular course that this took?

A Yes. Or outpatient visits. A lot of these were outpatient visits. These aren't hospital visits, these are outpatient visits.

Q All right. He is not even in the hospital at this time, is he, when he sees Dr. Heyman?

A No, these are in the office. It says right

there, office visit.

Q March 25th, there has been no nausea, vomiting or abdominal pain.

Does that indicate to you in March of 1981 he was not feeling pain?

A Yes.

Q Anything else you want to read?

A Well, I will point out that the abdominal circumference is 109 centimeters which is approximately 40-some inches of fluid.

And he has a mass, a nodule which is one and a half centimeters which is about this size mass which you can feel in his abdomen.

And they have started him on a diuretic, on a fluid pill to try to reduce the amount of fluid in his abdomen.

Q Given that, they go into the next paragraph and say, despite the absence of treatment, because he was no longer on chemotherapy, March 25, was he?

Mr. Vandergucht's disease seems very indolent at this point.

Again, I didn't know what that word meant.

That means without pain, doesn't it?

A No. Indolent means that it is not moving rapidly and progressively.

Indolent has absolutely nothing to do with pain.

Q When Dr. Steers told the jury it meant without pain, Dr. Steers was wrong?

A I can tell you how I use the term indolent and it has nothing to do with pain. Indolent means not rapidly progressing.

Q Let's move on to April.

Now, Doctor, when the fluid was building up, that would cause him discomfort, wouldn't it, in the stomach?

A It could.

Q All right. When they would actually drain it, it would relieve the pressure and he could breathe better, couldn't he?

A It could.

Q That is why you do those kinds of things,

isn't it?

A Of course.

Q You don't want the man to suffer, do you?

A We would like not to.

Q April 23rd, 1981. He notices shortness of breath only with vigorous exertion.

Denies any pedal edema, he has some very vague transient back discomfort when sitting in one position for any prolonged period of time.

What was causing that, do you know? Any idea?

A I could postulate any number of things, but I don't know for sure.

Q And they also note, again, he has no significant abdominal discomfort, nausea, vomiting, so basically what is happening, he is not feeling that bad at this time?

Is that what this record indicates to you as a doctor?

A Well, could be better, could be worse. That is what it implies to me.

Q I don't mean to suggest that anyone who has cancer has it easy, but some people have it worse than others, don't they, Doctor, depending on the site of the cancer; don't they?

A It is all relative. What you view as being worse could be not worse to me and it is all relative.

Q Let's move ahead to August.

Did you review this record, August 3rd, 1981?

A Yes.

Q Indicates the patient is doing very well and feels quite good and he is tapped.

Does this indicate that he is feeling pain to you in August of '91 -- excuse me, of '81?

A No. Well --

Q Okay.

A The only thing that suggests to me here, has been tapped twice for up to 8 liters, the last was 19 days ago and now he is re-accumulating, feeling pressure and has inability to eat.

It appears to me that there is discomfort here that is prompting his physicians at Hopkins to do something else.

Yes, he feels good, but he is gaining fluid rapidly in his abdomen and is feeling discomfort and has an inability to eat.

Q What they actually did was a month later they put that LeVeen shunt in him, didn't they?

A Absolutely.

Q That was to alleviate the pressure, wasn't it?

A That is the idea.

Q Did you read any nurses' notes from that admission back in September?

A Yes.

Q Did you read this admission note from -- I believe it was the nurse, 9-7, abdomen grossly distended.

Now, explain to the jury what that means in lay terms.

A It means his abdomen was big.

Q And in your opinion that was based upon the fluid buildup, wasn't it?

A That was fluid buildup.

Q But what -- is this the nurse's notes, by the way, Doctor?

A I couldn't tell from this. It says nonphysician notes. That would be a nurse.

Q Would that be the nurse, persons actually taking care of him?

A I don't know who it is. It is RN. It is a nurse.

Q RN, right.

What does it say in the next sentence, though?

Does that say, but does not complain of pain?

A That is correct.

Q Doctor, in the hospital setting the nurses are concerned with pain, aren't they?

A Sure. That is why they would want to give him pain medication if he needed it.

Q In fact, he was on numerous pain medications at this time until the time he died, wasn't he?

A Yes.

Q Do you remember what kind of pain medications he was on or do you need the records?

A I would need the records.

Q All right. Doctor, did you review the records a month before he died?

A I reviewed, again, all of the records that were made available to me.

Q All right. Did you see this record here, I believe, two weeks before he died, October 23rd, 1981?

A I believe so.

Q Did you read this entry by the nurse that -- PT, that means patient, doesn't it?

A Yes.

Q Patient insists he has no pain. Cheerful, active, doing his exercises in bed.

Isn't that what that says?

A Yes.

Q Doesn't say anything about his mental state,

which I am sure was bad, but from a physical standpoint, he was doing okay, wasn't he?

A Doesn't say a lot of things. Doesn't say what medication he was on to keep him cheerful and active and doesn't say that two weeks later he is dead. Doesn't say a lot of things.

It says at this point in time at 4 o'clock on this day he is cheerful and doing exercises in bed and not having pain. That is all it says.

Q But on direct examination you told the jury that it was one of the most excruciating painful diseases.

A That is correct.

Q All right.

A Not every minute of every day.

Across the board it is one of the most excruciating painful diseases I have ever seen.

Q Were you talking about pleural or peritoneal?

A I was talking about mesothelioma.

Q October 27th, 1981, did you review these

notes?

A Yes.

Q Took shower with help of orderly.

Is that right?

A With help of something.

Q Somebody. Says he feels so good.

Does this give any indication of whether or not the narcotics they were giving him were relieving any pain he might have had from the disease?

A That particular note?

Q Yes.

A Doesn't tell me anything. Tells me he felt good. The note ahead of it says that he took Tigan, which is an antinausea medication.

The one after it says medication made him nauseated, so it tells me at this point he had nausea, these two points. This just tells me at that point he felt good.

Doesn't tell me the medications he was taking are helping him feel good or not.

Q Does it talk about any pain that you talked

about this morning, about the worst pain you know; does it say that anywhere in the medical records?

A No.

Q I am not suggesting this is not a horrible experience for him, but you talked about pain this morning and I want to go through the notes.

Doctor, he died -- where did he die? Did he die at home or in the hospital?

A I didn't memorize his records. I would be happy to look at his chart and answer the question.

Q On another note here, and I am almost finished, Doctor.

Mr. Ignatowski asked you about his exposure to Kaylo and things like that, and you said that that was a substantial cause.

Do you have your report that you issued to the lawyers for March 7th, 1996?

A Yes.

Q Now, you were asked then what caused his mesothelioma, and I will read the last paragraph, and tell me if I am reading it right.

Impression: Mr. Vandergucht developed a malignant and peritoneal mesothelioma in the background of a longstanding history of asbestos exposure in the work environment in his capacity as a plasterer.

Plasterer. Do you want to read that? I have got it outlined.

A Yes.

Q That is what you said back on March 7th, wasn't it?

A Yes.

Q Doctor, one last overhead, and then you can sit down.

Have you seen this before?

A Yes.

Q When did you see that? When did you first see that?

A I couldn't tell you.

Q And who did you get that from?

A From Mr. Ignatowski.

Q And this to you, based upon what they

represent to you, was how he got exposed to asbestos; isn't that right?

A This is part of his occupational history.

Q Did you review that back sometime in February of this year?

A You have asked me when I got it. I have already answered it. I don't remember.

Q Sorry about that.

From approximately 1950 to 1975 he worked in and around the Baltimore, Maryland area.

While a member of the Plasterers Local 155 in Baltimore, Maryland, Mr. Vandergucht's asbestos exposure included spray asbestos fireproofing material.

Now, if he was exposed to that, would that be a cause of the mesothelioma that he suffered from?

A Any and all exposure to asbestos that Mr. Vandergucht had.

Those listed here and those not listed here that were occupational were substantial contributing factors to his developing a mesothelioma.

Q Do you know what he was actually exposed to?

A No.

Q The only information you have came through the lawyers; is that right?

A Of the specific exposures?

Q Yes.

A That is correct.

Q You didn't talk to any of the co-workers or things like that?

A I don't need to talk to the co-workers to make a diagnosis.

Q You didn't make a diagnosis in this case; is that right?

A I am making a diagnosis in this case.

Q You actually saw the tissue and all that?

A You don't need to do that to make a diagnosis. If I had to see tissue every time I made a diagnosis, I could work one day a month. Diagnosis does not require seeing tissues.

You can review medical information and make

a diagnosis, a highly acceptable medical practice, sir.

Q You do a lot of that in your practice, sir, don't you?

A I do a lot of that every day in my medical practice.

Q This topping compound, if that contained asbestos, would that be a cause of his mesothelioma?

A Any and all asbestos that he was exposed to in the work environment that was respirable was a significant contributing factor to his mesothelioma.

Q Plaster-type materials, we have here that they contained asbestos and that he worked around those for 45 years.

Do you think that would contribute to his disease?

MR. IGNATOWSKI: Objection.

THE COURT: Overruled. Last question.

A Any and all exposures to asbestos that he had were significant contributing factors.

I am not an expert on how much and what

asbestos is in what type of construction materials.

Q And at the end here it has various other types of insulation materials as well.

In your opinion, they would cause the disease, also, wouldn't they?

A If they had respirable asbestos, yes.

Q Doctor, how about the asbestos that we breathe outside, did that contribute to his disease at all?

A Well, it is possible, but that is considered to be background asbestos. And in the context of relative amounts of asbestos that we breathe in the normal environment and the type of asbestos that this kind of work entails, it is highly unlikely that it was a contributing factor.

Q Okay. So each and every fiber that he breathed outside didn't contribute to the disease?

A That is what you say, but that is not what I said.

Q Okay. You can take your seat, Doctor.

MR. McGOWAN: Your Honor, I am almost

finished.

THE COURT: Thank you.

(Whereupon, the witness resumed the witness stand.)

(Whereupon, the documents were removed from the screen of the overhead projector.)

THE COURT: You have 13 minutes remaining to be continued for the balance of the cross-examination and any redirect, if any is necessary.

MR. McGOWAN: I am almost finished, Your Honor. I am almost finished.

BY MR. McGOWAN:

Q Doctor, the asbestos fibers that Mr. Vandergucht breathed that were somehow trapped in the defense mechanism of his body and were either spit out or excreted or breathed out, they would not have been substantial factors, would they, in the development of his mesothelioma?

A I couldn't answer that question. There is all sorts of pieces to it that make it uninterpretable.

Q Okay.

A What do you mean by defense systems?

Q Well, we have hair in our nose and sometimes we breathe dust in and it gets trapped there and we blow it out.

If asbestos was caught there and blown out, that would not contribute to his disease, would it?

A All right, if you want to be specific about each component of the defense system, I would be happy to address each one.

There is also lymphatics that are part of the defense system and those would contribute. Let's take it one piece at a time.

Those components, those asbestos fibers that end up in his nose hair and he snorts out would not.

Q That is my point.

There are fibers that get caught on this thing called a mucociliary escalator, which the jury has already heard about, and I don't want to spend all day asking about it.

If they got trapped there and spit out, it

would not contribute to the disease, would it?

A Those would not.

Q All right. One last question.

This term substantial contributing factor, did you learn that in medical school?

A I learned a lot of things in medical school.

Q Did you learn that?

A I don't know.

Q It is not a medical term, is it, Doctor?

A I don't know.

Q It is a legal term, isn't it?

You are aware of that from your time in the courtroom, aren't you?

A I know it is a term, substantial contributing factor. I am not a lawyer, I am a physician.

There are substantial contributing factors that are medical, that have medical significance, too.

I have learned in medical school that

smoking causes lung cancer and cigarette smoking is a substantial contributing factor to the development of emphysema and lung cancer. I wasn't taught that by lawyers.

Q Are you aware of the legal definition that Judge Angeletti is going to give this jury in about a week and a half about what substantial contributing factor means?

A No.

MR. McGOWAN: That is all I have. Thank you, Your Honor.

THE COURT: Thank you.

Mr. Williams, any cross-examination?

MR. WILLIAMS: Yes, a few questions.

CROSS-EXAMINATION

BY MR. WILLIAMS:

Q Good afternoon, Doctor.

A Good afternoon.

Q I would like you to focus your attention on the Grewe case, please.

I represent Ford.

You have talked a little earlier about some of the medical records that you reviewed for this case and some of the CT scans and X-rays.

Did you review anything else for the purposes of testifying here today?

A I reviewed -- I had a deposition that I reviewed of Mr. Grewe.

Q Okay. Did you have the entire deposition?

A No, I don't believe I did.

Q Okay. So you had selected pages?

A I believe so.

Q Those were sent to you by the plaintiffs?

A Yes.

Q Okay. Was the purpose of -- strike that.

Did the selected pages of the deposition assist you in understanding what Mr. Grewe's occupational exposure was?

A Yes.

Q Okay. Were you forwarded anything else that helped you understand what his occupational exposure might be?

A I was forwarded a one-page sheet prepared by Mr. Ignatowski's office detailing some of the occupational history.

Q Is that the one-page sheet that has at the top, Mr. Grewe's name?

A Yes.

Q Okay. Were you forwarded anything else other than, I assume, the references in the medical records which you reviewed that shed any light on his occupational history?

A I don't believe so, other than what is enumerated in the medical records.

Q Right, I think I asked you about that in my questions.

A No, I don't believe so.

Q Okay. From the materials that you reviewed, were you able to determine whether Mr. Grewe had any other potential occupational exposure to asbestos other than from his work with brake and clutch products?

MR. IGNATOWSKI: Objection.

THE COURT: Overruled.

A I didn't particularly look for that, but I know that he did other types of work in addition to brake work at other times in his life that theoretically, I suppose, could have exposed him, occupationally, to asbestos.

Q And is that information the information that is reflected in the one-page summary sheet that we talked about just a second ago?

A In part. I don't have the complete records in front of me, but my recollection was that in some of the medical records there was some elaboration of some of his occupational history, and some of that impression may have been called from some of his records as well.

Q I don't want to spend a lot of time on this, but do you have the one-page summary?

A Yes.

Q Could you go ahead and read that to the jury, please.

MR. IGNATOWSKI: Objection, Your Honor.

THE COURT: It is in evidence.

MR. IGNATOWSKI: No.

THE COURT: The one-page summary?

MR. IGNATOWSKI: I don't think it is in evidence in Mr. Grewe's case.

THE COURT: Overruled.

A Before he passed away Mr. Grewe indicated that throughout his career as an automobile service mechanic from approximately 1957 through 1992 and before when he was a teenager he was exposed to asbestos-containing dust from his repair and maintenance of asbestos-containing brake linings, brake pads and clutch linings.

Part of that dust exposure resulted from his work in sanding and scoring the brake shoes and using an air hose to blow out dust from brake drums upon removal.

His brake and clutch work was sometimes daily and later performed weekly.

He estimated that 20 to 25 percent of his work during his career involved servicing brakes. He

first started wearing a dust mask in the 1970s.

Mr. Grewe indicated that beginning in the mid to late 1960s he personally used joint compound while remodeling homes as a side job.

He recalled exposure to asbestos-containing dust when he used, mixed and sanded joint compound. He recalled asbestos-free joint compounds by the late 1970s.

Mr. Grewe also stated that for about a year in the mid 1950s he performed sheet metal work installing new forced hot air furnaces in residences.

He recalled that strips of asbestos cloth approximately six inches by one-quarter inch in various lengths were incorporated into the sheet metal pipe work he installed on top of the furnaces. He neither handled nor cut the asbestos cloth.

Q Thank you. By my next question, I don't mean that this is something that you should have done, but you didn't take any steps on your own to either confirm or deny any of the parts of that summary; is that right?

A That is correct.

Q Okay. Doctor, I believe you had your deposition taken in this case approximately at the end of March.

Does that sound about right?

A Yes.

Q I believe at that time you were asked how many people have you treated with asbestos-related diseases.

Do you remember being asked that question?

A Vaguely.

Q I think your answer was somewhere between 1 and a million.

Are you able to today to limit the range a little bit for us?

A No. I don't keep score cards of numbers of patients that I see with anything, and my recollection of the deposition, despite my reluctance to give hard numbers, which I don't have, which no physician has, major attempts at trying to pin me down, so I gave a range of 10 to the first to 10 to the fifth which is a

reasonable scientific variation, and that is the best I can do.

Q Let me just ask you one more question to attempt to pin you down then.

Have you seen a million patients in your career as a doctor?

A I don't have a score card.

MR. WILLIAMS: Thank you.

Nothing further, Your Honor.

THE COURT: Thank you, Mr. Williams.

Ms. Tostanoski.

MS. TOSTANOSKI: I have nothing, Your Honor.

THE COURT: All right.

Mr. Seegull.

MR. SEEGULL: Nothing, Your Honor.

THE COURT: Mr. Ignatowski, do you have any redirect?

MR. IGNATOWSKI: Yes, just a quick question.

THE COURT: One question?

MR. IGNATOWSKI: One question.

THE COURT: Go ahead.

REDIRECT EXAMINATION

BY MR. IGNATOWSKI:

Q Doctor, I want you to assume that a substantial factor is a factor that has a cause and a real effect in producing the injury.

Would the exposures as I have used that term that we talked about in Mr. Grewe's case and that we talked about in Mr. Vandergucht's case be a cause of the malignant mesothelioma in both of those circumstances?

MS. TOSTANOSKI: Objection.

MR. WILLIAMS: Objection, Your Honor.

MR. McGOWAN: Objection.

THE COURT: Overruled.

A Yes.

MR. IGNATOWSKI: That is all I have.

THE COURT: Thank you.

Mr. McGowan, any recross?

MR. McGOWAN: Kind of a legal question, but

I might as well ask it.

THE COURT: Legal? He said he is not a lawyer.

MR. McGOWAN: Okay.

RECROSS-EXAMINATION

BY MR. McGOWAN:

Q You have been in a courtroom a lot, have you not, Doctor?

MR. IGNATOWSKI: Objection.

THE COURT: Sustained.

A I have been in a bathroom a lot, but I am not a plumber.

(Whereupon, laughter ensued.)

THE COURT: Anything else?

MR. McGOWAN: Not after that remark.

THE COURT: Dr. Rubin, you may be excused. Thank you, sir.

THE WITNESS: Thank you, Your Honor.

(Whereupon, witness excused.)

THE COURT: Members of the jury, we have concluded our court day at this time.

Tomorrow morning -- we will resume tomorrow morning at 9:30, our regular time. Get paid at your regular time, return here at the regular time and we will resume at 9:30.

Please, do not discuss this matter among yourselves or with anyone else. Don't let anyone attempt to discuss it with you.

See you bright and early tomorrow morning. Have a good day.

Thank you, ladies and gentlemen.

(Whereupon, jury dismissed -- 2:00 p.m.)

THE COURT: Everybody have a good day. If you will be in your seat at 9:25, we will resume at 9:30.

Have a good day.

(Thereupon, at 2:01 p.m., the proceeding was adjourned.)

State of Maryland

City of Baltimore

I, Bonnie L. Gahagan, a Notary Public of the State of Maryland, City of Baltimore, do hereby certify that the above-captioned case took place before me at the time and place herein set out.

I further certify that the proceeding was recorded stenographically by me and this transcript is a true record of the proceedings.

I further certify that I am not of counsel to any of the parties, nor an employee of counsel, nor related to any of the parties, nor in any way interested in the outcome of the action.

As witness my hand and seal this 6th day of June, 1996.

Bonnie L. Gahagan

My Commission Expires 10-01-96

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