



E. I. DU PONT DE NEMOURS & COMPANY

P.O. Box 310

ANTIOCH, CALIFORNIA 94509

ANTIOCH WORKS

(Petc-em)

April 14, 1981

RECEIVED

APR 20 1981

Burford W. Culpepper, M.D.

BURFORD W. CULPEPPER, M.D.
ASST. CORPORATE MEDICAL DIRECTOR
WILMINGTON

PLAINTIFF'S
EXHIBIT
DUP-2077

DIFFERING OPINIONS ON INTERPRETATION OF CHEST X-RAYS

The enclosures, I believe, are rather self-explanatory, but I would like to describe our situation with regard to availability of competent radiologists.

There are four boarded radiologists, and only four, who serve the Antioch-Pittsburg Area.

There are many additional well-qualified radiologists in the Bay Area, but none closer than about twenty miles.

The closest local hospital is within about fifteen minutes driving time from the Antioch Works.

My relationship with the four local radiologists has always been excellent.

Three of the four radiologists agree that the fourth, and the senior member of the group, "overreads" according to their criteria.

In 1977, I contracted with the local radiology group to read our chest x-rays. Accidentally, I believe, our chest x-rays were interpreted exclusively by the three who tend to agree in their interpretation and it was not until 1980, and the 1st of 1980 actually, that the senior member happened to read a number of our chest x-rays.

When the senior member reviewed our chest x-rays, I was not dismayed that he concluded there were pleural thickening or pleural plaques on a number of the x-rays. It was disturbing to find that he would say "I don't know" and then use a date a number of years later. Of course, we all know that retrospective review is not possible once identified pleural plaque or pleural thickening is in the eye of the radiologist. It is so much so that that this occurred at the very time that we were upon our intensive review of chest x-rays.

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

DUP 0948358

DU 039280

Page Two
April 14, 1981
Burford Mulpepper, M.D.

I reviewed the chest x-rays of all active Antioch Work's employees and those of pensioners with one member of the radiology group. Unfortunately, Dr. Sakai, the senior member, was not available for this x-ray-by-x-ray review. All four members of the radiology group could not sit in on the review of more than 200 x-rays of individuals "who have had a potential for asbestos exposure, who are over forty years of age and have over ten years service."

Four x-rays showing pleural plaques or pleural thickening had been reported at a much earlier date, but there were four additional individuals who had been singled out by Dr. Sakai as showing pleural plaques or pleural thickening. Shallow oblique chest x-rays were taken of those individuals so identified by Dr. Sakai.

The radiologists and I agreed to repeat twenty-five chest x-rays and to have those x-rays taken off the plant. The reasons for repeating those x-rays will not be discussed in this letter. All of those x-rays were sent to Dr. Allen for his interpretation.

In the second letter from Dr. Sakai, you will note that he would like to review all of these x-rays. He further states, "I disagree with your conclusion, but in the finest tradition of medicine." I think Dr. Sakai understands, the disagreement in interpretation of chest x-rays has not been between him and Dr. Allen, but between Dr. Sakai and the other members of his group. I expect to clarify this point with Dr. Sakai but you might let Dr. Allen read this letter and the other four that refer to contents of this letter, if you wish.

Perhaps when I see you in Atlanta, you will take a few minutes to discuss what our Du Pont experience has been at other locations. Other some of these locations have experienced interesting developments from discrepant radiological interpretations that we have experienced at the Antioch.

Sincerely,

REG

DUP 0948359

DU 039281



E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED

November 18, 1980

ANTIOCH WORKS

P O BOX 310 - ANTIOCH, CALIFORNIA 94509
TELEPHONE (415) 757-1210

MEDICAL DIVISION
AUSTIN E GIVENS M.D. F.A.C.S.
DIPLOMATE AMERICAN BOARD OF SURGERY
DIPLOMATE AMERICAN BOARD OF PREVENTIVE MEDICINE
CERTIFIED IN OCCUPATIONAL MEDICINE

REDACTED

Drs. Sakai, Solomon, Muto and Fish
3580 California Street
San Francisco, CA 94118

Dear Sirs:

I am requesting that a PA film be obtained at my expense on
[REDACTED] Antioch Works Du Pont employee.

My reason for this request stems from an element of uncertainty that must be clarified.

I am forwarding to you copies of all previous chest x-rays taken on
[REDACTED] since his date of employment at Du Pont in 1956. The first x-ray is dated 9-17-56 and its interpretation was made by Dr. Drazin, the second x-ray was taken 11-19-57 and its interpretation was made by Dr. Tucker. Subsequent to those dates x-rays taken between 1962 and 1977 were interpreted by either Dr. Gerlach or me.

As you know, in 1977 I decided that the time had come for all chest x-rays to be interpreted by a Board certified or Board qualified radiologist and as of that year all chest x-rays taken at our Medical unit have been sent to your group for interpretation.

Copies of reports from your group are enclosed and are dated:

4-7-77
5-9-78
7-27-79
10-14-80

An x-ray was also taken at your facility in the Delta Memorial Hospital on 12-15-75. All chest x-rays until the report of 10-14-80 do not describe pleural thickening but a peripheral nodule of calcification in the right chest was described as early as 11-57 and on that date also the statement was made that there "would seem to be a little scarring in the left upper lobe which is also unchanged as compared with the examination made 9-17-56."

In the report of Dr. Carl Muto dated 12-15-77 (this was an x-ray taken at Delta Memorial Hospital), it is noted in the conclusion "chest examination reveals minimal calcification residua of prior granuloma disease on the right." I call your attention again that there is no note regarding pleural thickening at that time and those x-rays were taken by your technician at the Delta Memorial Hospital.

DUP 0948360

DU 039282

Page 2
November 18, 1980

It is of considerable importance to me to determine after a thorough review of all chest x-rays submitted to you if, indeed, the statement made on the report of 10-14-80 is correct in so stating "pleural thickening, R&L, Grade b,2, no change from 1968."

I would appreciate a telephone call from whichever of you in the group reviews this matter and so that we may discuss this in further detail.

Very sincerely yours,

A. E. Givens M.D.

Austin E. Givens, M.D.
Western Regional Medical Supervisor

AEG:als

DUP 0948361

DU 039283



REDACTED

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED

March 11, 1981

ANTIOCH WORKS

P. O. BOX 210 - ANTIOCH, CALIFORNIA 94503
TELEPHONE 415-757-1211

MEDICAL DIVISION

AUSTIN E. GIVENS, M.D., F.A.C.S.
DIPLOMATE AMERICAN BOARD OF SURGERY
DIPLOMATE AMERICAN BOARD OF PREVENTIVE MEDICINE
CERTIFIED IN OCCUPATIONAL MEDICINE

H. Q. Sakai, M.D.
H. H. Solomon, M.D.
C. N. Muto, M.D.
J. H. Fish, M.D.
3580 California St., Suite 101
San Francisco, CA 94118

Dear Quint, Herschel, Carl, John:

On November 18, 1980 I addressed a letter to all of you using the case of a Du Pont employee, one [REDACTED], as an example of the problem that was being created by multiple diverse readings and interpretations concerning Du Pont employee chest x-rays.

On November 19, 1980 I addressed a letter to all of you expressing my realization that it is well known that different radiologists may interpret the same x-rays with some degree of variant conclusions. It has also been demonstrated that the same radiologist interpreting x-rays of the same body part and of the same individual might at different times respond with seemingly different conclusions. The reasons for all of this are not unknown to all of us.

My letter of November 19, 1980 described in some detail the dilemma created when, for example, chest x-rays that were interpreted annually by others in your group would be interpreted by one other of the four in your association as showing "pleural thickening, no change from" and the date referred to encompassed dates that to others of your group had not reported "pleural thickening".

As you know, I asked if we could arrive at some more constant reading response by asking just one of you to read our chest x-rays. This request was made with the full realization that the same radiologist may give variable responses to the same x-rays when viewed at a different time. We can understand completely why that proposal was refused and are not arguing any opposition to your decision.

Some 25 of our active employees in whom the interpretations were significantly discrepant when read by different members of your group were rexrayed at another location and submitted to review by our consultant radiologist in the east. All of these 25 PA chest x-rays were submitted without the radiologist having any knowledge as to why these chest x-rays had been taken.

BETTER THINGS FOR BETTER LIVING THROUGH CHEMISTRY

DUP 0948362

DU 039284

We have satisfied the compliance regulations in accordance with Cal-OSHA criteria with regard to the 8 Du Pont employees fulfilling the reporting requirements by the concurrence of reports from your group and our consulting radiologist.

I spoke with Herschel, he and I agree that there is absolutely no reason that we cannot develop some sort of concurrence that will allow all four of you to maintain your individuality but, likewise, will allow us to operate a plant without finding at every turn that we are exposing the Company to violation citations and employee litigation.

I would propose, and I submit for the consideration of the four of you that since in virtually no instance of the cases referred to, was the issue of interstitial lung disease the discrepant factor but rather the matter of pleural changes, that we do the following:

- Agree if we can that the criteria established by Sargent et al, in Pleural Plaques: A Signpost of Asbestos Dust Inhalation and which is widely used as a "guideline" throughout industry including Du Pont be used as the general aspect of our mutual understanding.
- It must be clearly understood that unless PA chest x-rays are acceptable as being of satisfactory diagnostic quality that they will be repeated.
- It is also our intention when PA chest x-rays are questionably positive for pleural thickening or pleural plaques that shallow oblique x-rays will be taken of those individuals.

In my letter of November 19, 1980 I stated, "since there are four of you in the group, I felt that it would be better for me to put this all in a letter as it would be difficult for me to meet with each of the four of you to discuss our Du Pont program." Some weeks ago I was called by Carl who asked if the only reason that I had requested that each of you initial the letter and return it was so that I would be sure that each of you was informed of our position and I assured Carl that that was the case. I think if you read the letter over there is nothing that could possibly cause any problem. I trust that each of you did read the letter though I have never received an initialed copy of the letter. That would be the only way that I could be assured that we are all at least equally informed and it is a common practice, but if for some reason your group felt that there was a suggestive element of risk on your part, please give me a call and let me know that all of you have read the letter.

Again I think it would be very businesslike if all of you could initial this letter after you have read it, not indicating that you necessarily agree with my proposal but at least letting me know that you have read what is a very earnest proposal on my part and the part of Du Pont to continue a satisfactory working arrangement with your group and with Delta Memorial Hospital.

cc: D. M. Bass

Very sincerely yours,
Austin E. Givens, M.D.

DUP 0948363

H. Q. SAKAI, M. D.,
H. H. SOLOMON, M. D., AND
C. N. MUTO, M. D., INC.
J. H. FISH, M. D.
RADIOLOGISTS
3580 CALIFORNIA STREET - SUITE 101
SAN FRANCISCO, CALIFORNIA 94118
(415) 922-1058

March 16, 1981

Austin E. Givens, M.D.
E. I. Du Pont De Nemours and Company
Antioch Works
P. O. Box 310
Antioch, California 94509

Dear Austin;

We have been remiss in not responding to your letters. As senior member of our group and the radiologist who is the cause of your concern, I sincerely regret and apologize for not responding earlier and for the awful foul-up that ensued at Delta Memorial Hospital.

What has transpired between us and you and your company has been a shattering experience and a cause of much personal anguish. A little sensitivity on our part and most of it might have been prevented. In an attempt to protect my ego, much of the conversations you have had with my partners had not been transmitted to me nor were their significance appreciated.

I am not surprised that your radiology consultant did not concur with my readings of pleural thickening. Nevertheless, I am steadfast and confident of my readings and believe that the future will vindicate me. I do suggest that you return the films to the same radiologist and ask him specifically if he can see pleural thickening. Better yet, you might send those films to Nick Sargent at USC accompanied by our readings.

My readings are based on my personal experience of having read most of the chest films for Johns Manville Company (over 20 years) and for the entire California potentially-exposed employee population of P.G.&E. (past seven years). Prior to 1978, I did not read for the presence of pleural thickening as closely as I do now. However, in 1978 I reviewed the Johns Manville chest films that covered more than 20 years and learned to recognize the very early pleural abnormalities.

DUP 0948364

DU 039286

March 16, 1981

That review has been an invaluable learning experience and the basis for my current readings. I have never been afraid to 'march to the beat of a different drummer' and perhaps unconsciously seek that beat. As proof that I can also conform is that I was Northern California's first certified 'B' Reader and that the three internationally recognized professors of radiology were among those who took the examination with me and did not pass (source: Nicholas Sargent).

In January of this year, I spoke to Nick Sargent of my experience and the problem I have caused. We reviewed several cases and agreed that pleural thickening was present in those cases although most radiologists would choose to ignore or overlook it. He, however, cautioned against my dogmatic approach and suggested a more temporizing report that would advise a follow-up in 2-3 years.

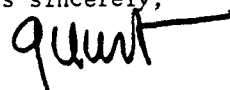
The new (1981) NIOSH Roentgen Interpretation Report form takes cognizance of the other causes of pleural thickening and specifically asks, 'Any pleural abnormalities consistent with pneumoconiosis, Yes or No?' Anopos Nicholas Sargent's advice, I have modified our report forms for P.G.&E. and Bethlehem Steel to include an equivocal category for both pleural thickening and pleural plaques. This has been satisfactory and permits the attending physician greater discretion in the management of the cases.

Thank you for the Sargent report of 'Pleural Plaques...'. I am sure Sargent himself will agree as more information has become available, his report requires revisions: e.g., the presence of visceral pleural thickening is more prevalent than previously thought; that pleural thickening may appear symmetrical, but more commonly occurs asymmetrically on the left early after exposure; that because of earlier pick-up of pleural thickenings, abnormalities develop sooner than 20 years after exposure; and that the prevalence of interstitial opacities is much less than previously thought because of earlier pick-up of pleural abnormalities.

All of us have read, fully understand and accept the proposals brought forth by you in your letter of November 19, 1980. I am sorry that we had not formally replied as you have requested.

You have been absolutely fair, open, and patient with us. I thank you for it.

Yours sincerely,



H. Quintus Sakai, M.D.

HQS:es

DUP 0948365

DU 039287

LOS MEDANOS COMMUNITY HOSPITAL DISTRICT

2311 LOVERIDGE ROAD
PITTSBURG, CALIFORNIA 94565

Telephone (415) 432-2200

March 19, 1981

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Austin Givens, M. D.
DuPont de Nemours E.I. and Co.
Antioch Works
Box 310
Antioch, California 94509

Dear Austin:

My last letter to you was hastily written and did no more than fleetingly touch few bases. I take this opportunity to explore the wide gulf of misunderstanding that separates us.

As you know, the chest x-ray survey is a crude surveillance tool (and many have questioned its usefulness). Its value in asbestos exposure epidemiology is, of course, its high specificity. Its low sensitivity is related to the alleged delayed appearance of abnormal findings, the intensity of necessary asbestos exposure, and the strong dependence on the astuteness of the reader.

In the belief that the sensitivity of the chest survey for asbestos exposure could be increased by earlier detection of pleural abnormalities, I made a study in 1978 of Johns-Manville Company's employees. I collected those cases that had obvious advanced pleural abnormalities and worked backwards to identify the early changes; most of those cases went back 20 years and some, over 30 years. Not only did I learn to recognize the repetitive pattern of early pleural abnormalities, but to my surprise, contrary to what has been reported, I learned that these pleural abnormalities developed sooner than 20 years following exposure, that visceral pleurae were frequently involved, and that interstitial opacities were usually late developments. That experience and that gained from reviewing over 25,000 chest films of P.G. & E. employees over the past seven years now firmly serve as the foundation of all my current readings.

JOE L. SMITH.

Take the case of [REDACTED] (the only case available to me now - we still had the copies). My colleagues, (and I suspect, your eastern radiologist consultant) read those films as showing no pleural abnormalities. However, a careful scrutiny of those films reveals:

1. Faint bands along the inferior margins of the posterior seventh and eighth ribs. Some may call them "companion shadows", but these are too wide and they show a real, progressive growth from 1968 to 1980, i.e., maximum width growth of 6 to 8.5 mm. (right 7th rib) and 5 to 6.5 mm. (left 7th rib).

DUP 0948366

DU 039288

REDACTED

2. Triangular symmetrical shadows about the axillary portions of the upper lung fields (these are not the type of shadows referred to by Nicholas Sargent when he talks about the axillary margins being free of pleural abnormalities). Their visibility increase from 1968 to 1980. They represent en face view of thickened visceral pleural about the interlobular fissures.
3. Contour abnormality of the left hemidiaphragm. I purposely avoided reporting on this on the original report.

In summary, [REDACTED] has abnormal opacities along the inferior margins of the 7th and 8th ribs that enlarge over the years and has progressive thickening of the visceral pleurae. The inferior margins of the 7th and 8th ribs are favorite sites of the parietal pleural plaques and recent reports confirm my study findings that visceral pleural thickening is more common than previously thought. In this particular case, the pleural changes are subtle but that which are almost monotonously repeated on other exposed cases from Johns-Manville and P.G. & E.

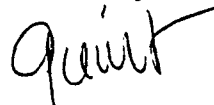
Radiologists have continued to overlook or have chosen to ignore pleural abnormalities because of their former clinical insignificance. I have generated such an interest on this subject that I have been invited to give lectures on it. A month does not go by when I am referred a case where an excellent radiologist has completely ignored or has failed to recognize obvious pleural plaques.

The ultimate purpose of the chest survey is to improve or maintain the health and well-being of the employees. An increase in the sensitivity of the survey cannot but be to better serve your company and its employees.

I am comfortable with, and confident of my readings and yet not complacent. My experience with pleural abnormalities continues to grow and will doubtless undergo further evolution.

I request that you extend me the courtesy of reviewing in toto all those cases that your consultant could not agree with my findings. I promise to send you a detailed analysis of each case. A dialogue with your consultant would be in the finest tradition of medicine.

Yours sincerely,



H. QUINTUS SAKAI, M.D.

HQS:kn

DUP 0948367

DU 039289