

FILE NAME: Industrial Hygiene Foundation (IHF)

DATE: 1941-1957

DOC#: IHF040

DOCUMENT DESCRIPTION: Proposal and Memos in Response to an Epidemiological Study of Lung Cancer in Asbestos Workers for the Quebec Asbestos Mining Association

COPY

INDUSTRIAL HYGIENE FOUNDATION OF AMERICA, INC.

MELLON INSTITUTE, 4400 FIFTH AVENUE

PITTSBURGH 13, PA.

March 16, 1956

Memorandum on
PROPOSED EPIDEMIOLOGICAL STUDY
OF LUNG CANCER IN ASBESTOS WORKERS
for the
QUEBEC ASBESTOS MINING ASSOCIATION

INTRODUCTION

Reports of the occurrence of cancer of the lung in patients with asbestosis have been accumulating since about 1935 (Lynch and Smith, Angrist, Desmeules et al, Cartier, Gloyne, Merewether, Kennaway and Kennaway, Doll, and others). According to Hueper, such cases now total about a hundred. Many of the above authors refer to "asbestosis cancer" of the lung, and claim to show a definite relationship between the two conditions. Up to the present time, all attempts at correlation appear to have been limited to lung cancer with asbestosis, although a connection between cancer and mere exposure to asbestos has been inferred. Published reports, together with the occurrence of some fifteen cases in the towns of Thetford Mines and Asbestos, led the industry to consult the Industrial Hygiene Foundation regarding the possibility of a study having

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as its objective to prove or disprove, if possible,

1. Whether there is a relationship between asbestosis and lung cancer, and
2. Whether a relationship exists between exposure to asbestos and lung cancer.

It is believed that persons having any considerable exposure to asbestos should be included in any study because, eventually, claims of lung cancer in this group will undoubtedly be made.

SOURCES OF INFORMATION

During the week of February 20, 1956, a preliminary survey of potential sources of information was made with the help of Dr. Kenneth W. Smith, Medical Director of Johns-Manville Corporation; Dr. Paul Cartier, Director of the Thetford Industrial Clinic; and Mr. Ivan Sabourin, General Counsel for the Quebec Asbestos Mining Association. Conferences with representatives of the Health Department of the city of Montreal, the Deputy Minister of Health for the Province of Quebec, representatives of the Canadian Cancer Society, leading clinicians in the field, and many others indicated that considerable data relating to the general population of the Province can be obtained for purposes of comparison with the population group under study. Morbidity data, although limited, is potentially available from such sources as the hospitals in Montreal and Quebec city and some of the 13 cancer detection centers in the Province. Mortality figures, also subject to certain limitations, are available through the Ministry of Health's Vital Statistics Department, headed by Dr. Paul Parrot.

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Simultaneously, the various categories of information relating to the asbestos workers were explored with Dr. Cartier at Thetford Mines and Dr. Granger at Asbestos. From these conferences, it was apparent that extensive and detailed information is obtainable with respect to this group:

1. Medical data, including serial x-ray examinations of the chest, extend over a period of about 20 years.
2. In Asbestos, it will be possible to obtain, through insurance company records, information on the diagnoses and causes of death among the insured workers.
3. Hospitals in Sherbrook and Arthabaska serve most of the people in Asbestos, and records in these institutions should be obtainable.
4. Finally, autopsy findings exist on most of the cases of lung cancer from the Thetford Mines area.

PROPOSAL

Obviously, several possibilities exist for a comparative statistical study between the asbestos workers and either the general population of the Province of Quebec or segments of that population having similar cultural and ethnic characteristics. Careful consideration of the sources

and kind of available information and of its probable reliability in consultation with biostatisticians has led to the conclusion that a study of this problem is feasible and should result in statistically valid deductions. The details of procedure, including the decision as to which data should be utilized and in which order the available information should be studied, must await more detailed investigation. However, it would appear from a review of copious notes assembled at the time of the preliminary survey that a reasonable starting point would be an intra-industry study, selecting a group which entered the asbestos industry from 10 to 20 years ago. Such a cohort of workers could then be followed according to their subsequent exposure to asbestos as well as to the subsequent development of asbestosis. The precise incidence of lung cancer in the cohort would be determined by detailed study of the experience of these various groups as reflected in insurance company records and careful analysis of the medical and x-ray examinations. This method would approximate as nearly as possible the controlled conditions of an actual experiment, and information derived therefrom should be of prime importance.

The next logical procedure would be a comparison of the experience among asbestos workers as determined by the previous phase and among the general population of the Province of Quebec or a suitable segment thereof. Our preliminary observations would strongly indicate that this phase would also be both feasible and meaningful. It would involve detailed study of morbidity data at hospitals in Megantic and Richmond counties,

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in Arthabaska county and in Montreal and Quebec city. It would also require careful investigation of the mortality rates developed in the office of Dr. Parrot. Extensive individual checking of hospital records and death certificates and thorough follow-up of individual cases would be necessary.

The third and ultimate phase of the study would be a comparison of data relating to morbidity and mortality as developed in the first two stages for the asbestos workers and the general population of Quebec with similar statistics for the Dominion of Canada and for the United States. It is not anticipated that the statistics for Canada and the United States would be developed during the study since they are available through the public health services of both countries. The most recent published figures would be used and, if necessary, could be supplemented by figures in possession of the respective national cancer societies.

The cost of the proposed study will be \$20,000 (U. S. currency) including all travel expenses and the cost of preparing and printing the report.

JOHNS-MANVILLE CORPORATION

TWENTY TWO EAST FORTIETH STREET

NEW YORK 10, N.Y.

EXECUTIVE OFFICES

R. DOM F. Leclercq, Managing Director
Industrial Hygiene Foundation of America, Inc.
1470 1st Avenue
Pittsburgh 13, Pennsylvania

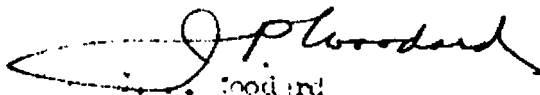
Dear Mr. Leclercq:

In the recent, 1946, issue (Vol. 12, No. 8) of the Industrial Hygiene Abstract, there is an article, Item No. 682, entitled "Asbestosis and Pulmonary Fibrosis," which appears to be of interest to us.

It was a pamphlet written in French, but translated into English and published in the British Journal of Industrial Medicine.

I wonder if you could supply me with three copies of this article or tell me how I might go about getting them.

Yours very truly,


J. P. Woodard
Director of Personnel Policies

October 6, 1941.

Mr. Vandiver Brown, General Counsel,
Johns-Manville Corporation
22 E. 40th St.,
New York, N. Y.

Dear Mr. Brown:

This is a "memorandum" following up our recent conversation regarding the possibilities of a mail campaign for new members for Industrial Hygiene Foundation.

The day before I saw you I had a long discussion on this subject with the McGraw-Hill people. This reputable organization offers a direct mail service as one of its activities and maintains accurate lists in connection with the publishing of its numerous journals in different lines of industry.

David F. Beard, Sales Manager of the company's direct mail division suggests we utilize one of their best lists which is composed of 1,000 presidents of industrial concerns employing more than 1,000 persons. He recommended this as a test mailing and strongly advised us to have the letters go out on the stationery and over the signature of the president of one of our member companies which commands the respect of industry generally and whose president is well known and well regarded. In looking over our membership list Mr. Beard suggested that Mr. Lewis H. Brown would be an ideal choice.

The plan would work like this: We would draft a letter to submit to Mr. Brown for his approval and for any revisions he might care to make and obtain permission to send this letter out on his company's stationery and over his signature. We would buy the 1,000 letterheads and envelopes from your company and McGraw-Hill would have the letters signed by one of their expert penmen who duplicates signatures accurately. If agreeable, Mr. Brown's secretary could furnish us with a list of those presidents which he addresses by first name so that if any of these appear on the McGraw-Hill list a modification can be made in the salutation. Mr. Brown's secretary could turn over the replies to us and we could handle the resulting correspondence from here, explaining that they had been referred to us by Mr. Brown.

There is nothing new or revolutionary about this procedure. The McGraw-Hill people are using this technique regularly. I believe I showed you such a letter on the stationery and over the signature of the president of a large rubber company. As a matter of fact you may recall that we have used this plan from time to time on a smaller scale with trustees of the Foundation signing letters we prepared and sending them on their own stationery. This is simply approaching the subject on a larger scale than would be possible without outside assistance. There are many indications that the time is ripe for a vigorous push for new members. As a matter of fact, we had hoped to get some promotional measures started earlier in the year but the project was delayed by the legal procedure of changing our name. (There would have been no point in making a big membership push under the old name when a change was pending.)

October 6, 1911.

Now, of course, if the Foundation were a commercial enterprise or a controversial organization, we would not consider such a request. But the facts are that this Foundation, a combined scientific research and service institution for protecting the health of workers, is probably one of the most far-sighted, constructive and progressive undertakings which industry has ever launched. As has been pointed out many times, this Foundation represents the type of industrial leadership and voluntary action which makes the American system work and which removes the cause for governmental edicts and policemen. Because of this, we are hopeful that Mr. Brown will make the contribution of lending his name in an effort to bring this Foundation and its work to the forceful attention of top industrial management so that it may derive the support it deserves.

It is not likely that I will be in New York in the near future, hence this memo. We would like to get action on the proposal so as to start this mailing in advance of our annual meeting, November 12-13. On the other hand, if you care to have me present the project to Mr. Brown personally, I will be glad to make a special trip to do so. Your assistance will be very much appreciated.

Sincerely yours,



John F. McMahon
Executive Secretary

JFM:B

Lever Brothers Company (former member)

We can point to no specific instance in which we could be of service to this company but assume that they could benefit from access to our files of general information on hygiene, medicine and toxicology, as well as the publications and the meetings. We have had correspondence on general subjects with Dr. John J. Poutas, Medical Director.

Minnesota Mining & Manufacturing Company

In December 1952, Dr. C. M. King, Treasurer, requested the Transactions of our meeting, and stated that they were particularly interested in the advisability of maintaining a medical director in their employ. He received complete information from Dr. Walmer but nothing further was heard from them. In 1944, Mr. E. C. Schleh, Manager of Personnel Research, had requested Medical Series Bulletin No. 4 entitled "Sick Absenteeism in Industry. Its Extent, Its Causes and Control". Prior inquiries dealt with absenteeism.

Olin Industries, Inc.

In April 1954, this company, through Mr. Richard S. Reed, requested information on problems of the older worker and statistics relating age to accidents. In July, 1953, Mr. Fletcher wrote to J. M. Olin, President, inviting them to membership. No reply to this invitation was received.

Richfield Oil Corporation

The "annual meeting" issue of the Industrial Hygiene Digest was sent to Dr. Leach, Assistant Medical Director, in January 1953. No other correspondence. Our wide experience with other oil companies including an extensive industrial hygiene survey for Standard Oil of New Jersey, a complete medical survey for Sun Oil, and some studies for the American Petroleum Institute, should be of interest to Richfield.

There has been no correspondence between the Foundation and:

Borg-Warner Corporation
Illinois Central Railroad
Union Oil Company of California

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August 23, 1957

Mr. Hugh M. Jackson, Manager
Industrial Health Program
Johns-Manville Corporation
22 East 40th Street
New York 16, New York

Dear Hugh:

Thank you for your letter of August 19 regarding the September meeting of the ATL.

As a matter of fact, having completed the literature search, it is apparent to us that the possibility of an association between lung cancer and asbestosis is much more likely to exist in asbestos factories than in mining operations. For example, of 99 cases which had been reported up to 1955, at least 80 appear to have occurred in asbestos workers other than miners. A number were women, and the occupations given were: weaver, carder, mattress maker, lagger, bagger, pipe coverer, spinner, etc.

Two specific articles which mention the type of exposure and the job is that by Doll (1) and that by Iselbacher, et al. (2). Seventeen cases studied by Gloyne and 31 reported by Merewether, as well as three mentioned by Harrison and one each by Careton and Owen occurred in England. If my information is correct, there is no mining of asbestos in England, and these must all have been workers in textile or similar jobs. In this country, the ten cases reported were apparently all in textile workers. The first case, reported in 1935 by Lynch and Smith was a weaver in an asbestos factory for 21 years. Iselbacher's cases involved a contractor's helper engaged in cutting and sawing asbestos board and sorter in an asbestos mill.

Mr. Hugh M. Jackson

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August 23, 1957

The QAMA study is in the final stages which are, of course, the slowest. All of the statistical analysis has been completed, and the report is 99% written. What remains is mainly minor revisions, typing the manuscript and proofing. It should go to the print shop by the end of this month.

I hope this supplies you with what you need for the meeting. If there is anything further, please let me know and I will try to get it to you in time.

Sincerely yours,

Daniel C. Braun, M.D.
Medical Director

DCB:la

Enclosure

References

1. Doll, R.: Mortality from Lung Cancer in Asbestos Workers.
Brit. J. Indust. Med. 12, 81-86, 1955.
2. Isselbacher, K. J.; Klaus, H.; and Hardy, H. L.: Asbestosis and
Bronchogenic Carcinoma. Am. J. Med. 15, 721-732, November
1953.
3. Doll, R.: Bronchial Carcinoma: Incidence and Aetiology (Milroy
Lectures, abridged) Brit. M. J., 2, 521-527, Sept. 5, 1953;
585-590, Sept. 12, 1953.

W C L
L F
J F M
Aba...
September 23, 1948

Mr. J.P. Woodard,
Director of Personnel Policies
Johns-Manville Corporation
22 East 40th St.
New York 16, N.Y.

Dear Mr. Woodard:

We have made a copy of the French article "Asbestosis and Pulmonary Tuberculosis" as it appears in the British Journal of Industrial Medicine for April, 1948. You will note that this is an abstract of the French article but is longer than the abstract which we published in the Industrial Hygiene Digest.

We have been unable to locate the full name and address of the French publication. It is simply identified as Sem. Hop. Paris. I suggest that you can probably secure this article through G.E. Stechert & Co., 31 E. 10th St., New York, N.Y. Another source for foreign publications is the H.W. Wilson Co., 950 University Ave., New York, N.Y.

Finally, in case you wish to write to the British Journal of Industrial Medicine, their address is: British Medical Assoc., Tavistock Square, W.C. 1, London, England.

Very truly yours


John F. McMahon
Managing Director

JFM:d

Some Remarks on Asbestosis. (Quelques considerations sur l'amiantose.)
Rousseau, L. (1947). Sem. Hop., Paris, 23, 1811.

Experimental Asbestosis. Pathognomonic Value of the "Asbestos Body."
(Amiantose experimentale. Valeur pathognomonique du "Corps d'Amiante.")
Giroux, M. (1947). Sem. Hop., Paris, 23, 1814.

Asbestosis and Pulmonary Tuberculosis. (Amiantose et tuberculose pulmonaire.)
Desmeules, R., Giroux, M. and Richard, P. (1947). Sem. Hop., Paris, 23,
1818.

Asbestosis and Cancer of the Lung. (Amiantose et cancers pulmonaires.)
Desmeules, R., Rousseau, L., Giroux, M. and Sirois, A. (1947). Sem. Hop.,
Paris, 23, 1820.

These four papers come from Quebec, Canada, where several workers in the asbestos mines have been studied. The Quebec school disagrees with the statements of Gardner that pneumoconiosis due to asbestosis is not an important factor in the production and progress of pulmonary tuberculosis, and that the presence of asbestos bodies in the sputum has no value in the diagnosis of asbestosis. Rousseau gives brief descriptions of four patients, some of whom are also reported in the following papers. One had worked in the asbestos industry for 18 years, and experienced respiratory symptoms only during the last three. He complained of cough and an asthma-like dyspnea. Asbestos bodies were found in his sputum, but no tubercle bacilli. Radiography is said to have shown a ground-glass appearance in his lungs (unfortunately the illustration is too poor to demonstrate this.) This is the only case seen at this hospital in which it has been possible to make a diagnosis of asbestosis during life. Another patient, who had been exposed to asbestos dust for 25 years and who died from some unrelated cause, showed no clinical or radiological signs of any abnormality in his lungs during life.

Giroux exposed guinea-pigs, rabbits, and a dog to crude asbestos dust in a chamber daily for several months. The rabbits, killed after periods of from three to 12-1/2 months, had no asbestosis and no asbestos bodies. The dog showed no lesions after 10 months' exposure: only the guinea-pigs showed lesions in the lungs and asbestos bodies. In these animals he traces the stages of formation of asbestos bodies: fibres reaching the alveoli are rapidly covered by phagocytic cells;

movement of the fibres results in microscopic bleeding from damaged alveolar walls; the haemoglobin from the liberated red cells is taken up by the phagocytes which already enclose the asbestos fibres. Subcutaneous or intratesticular injections into guinea-pigs of suspensions of asbestos in olive oil resulted in the production of granulomatous lesions but no asbestos bodies. When, however, the suspension was injected into an area into which 1 ml. of blood had been injected immediately before, asbestos bodies were found after a month. He considers that the presence of asbestos bodies in sputum has significance, since it implies tissue damage in the lungs.

Desmeules, Giroux, and Richard report a patient, aged 44 years, in whose family there was no history of tuberculosis. He had worked as a bagger of asbestos for 20 years: after 10 years he began to experience dyspnea on effort, accompanied by cough and expectoration. He became more severely ill some nine months before his death, which was due to tuberculosis and asbestosis. The authors argue that the asbestosis preceded and paved the way for the tuberculosis, but admit that they have no proof of this. (The association of tuberculosis and asbestosis is generally admitted in Britain but is doubtful in the United States.)

Desmeules, Rousseau, Giroux, and Sirois record brief details of two patients who had asbestosis and cancer of the lung. (The claim that carcinoma of the lung with asbestosis has been recorded before in only one case cannot be allowed. Nor will there be general agreement with the statement that silicosis is admitted to play an important part in the pathogenesis of pulmonary carcinoma.)

--- Taken directly from British Journal of
Industrial Medicine, Vol. 5, No. 2,
p. 100 (April, 1948).