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INDUSTRIAL HYGIENE FOUNDATION OF AMERICA, INC.

MELLON INSTITUTE 4400 FIFTH AVENUE

PITTSBURGH 12, 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, Morawether, Kennaway and Kennaway, Doll, and others). According to Hasper, 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 Sherbrooke 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

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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 Montclair 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.