DEPARTMENT OF PREVENTIVE MEDICINE

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December 15, 1975

Dr. Douglas Black
Baie Verte, Nfld.

Dear Doug:

Enclosed please find a copy of my final report on the visit to Baie Verte in September. Let me express my sincere appreciation for the great assistance you afforded us. I appreciated the time you spent with me, the facilities you made available, and the easy access to the medical records.

I would be interested in hearing from you concerning our brief study and its after effects. I understand that Advocate Mines has changed some policies already. It is unfortunate that over the years they have misled yourself, the other physicians, and the workers concerning the health hazards and the precautions taken in their operations.

Thank you again for all your help.

Yours sincerely,

Robert W. Morgan, M.D.

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SURVEY OF ASBESTOS-RELATED HEALTH HAZARDS IN BAIE VERTE, NFLD.

FINAL REPORT

Terms of Reference and Objectives

We visited Baie Verte at the request of the national office of the United Steelworkers of America, to provide an assessment of the hazard to health for workers in the Advocate Mine and its crusher and mill. The union local, the hospital, and its Medical Superintendent, Dr. D. Black, cooperated fully. The mine manager, Mr. J. Coles, on advice from Asbestos, Que. and Denver, Colorado, refused to meet with me or allow me to inspect the mine or mill.

The survey was not designed to measure the prevalence of asbestos-related disease in Baie Verte. Rather, it was designed to see:

1) If any gross cases of asbestosis could now be diagnosed;
2) What precautions should be taken to minimize future dangers;
3) If current health surveillance methods are adequate or should be modified.

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The Survey

I arrived in Baie Verte at noon of September 10, accompanied by a medical student, Mr. D. Sider. Mr. Sider has had previous experience in performing pulmonary function tests among asbestos workers in Scarborough, Ontario. We toured the town and viewed the nearby mine and mill operations from several vantage points. The mine is dominated by a white mountain of tailings, open to the wind, and by equally large heaps of mine waste. During the evening of September 10, we were further briefed by Mr. Martin Saunders and Mr. Gerald Dwyer, who were well-informed, most cooperative, and who later proved to be most adept at organizing the men for our survey.

On the day of our arrival, the company had distributed to the local officials a Management Bulletin outlining the health hazards of asbestos. The information in that bulletin is essentially accurate although one may question some omissions, such as:

1) no mention of laryngeal cancer, a probable hazard;
2) no mention of the need for adequate machinery maintenance to prevent stoppages, spills, etc.;
3) no mention of provision of a two-locker system and showers;
4) no mention of the certainty that some of the current work-force will eventually be afflicted with asbestos-related disease.

On September 11, I visited the hospital and met both Dr. B. Black, the Medical Superintendent, and his administrator. Dr. Black also functions as medical chief-of-staff for the seven physicians. Dr. Black was most cooperative in providing information, space, and access to health records. The hospital is modern, well-equipped, and maintains a high standard of medical records.

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On September 11 and 12, we interviewed, examined, and administered pulmonary function tests to 32 workers selected for long exposure. All had worked for Advocate since the mine opened. For each worker, we also reviewed his medical record and Miners' Medical card containing the results of his annual Miners' Medical Examination. This examination, as specified by the Province of Newfoundland, consists of a chest x-ray and limited physical examination annually, with lung function tests every three years.

For each worker seen, we arranged to have his series of miners' chest x-rays reviewed in St. Johns. For this review, we are indebted to Dr. E. Knowling of the Newfoundland Ministry of Health for locating, assembling, and assisting in review of the many films. Dr. John Paterson of Sunnybrook Hospital, Toronto, flew to St. Johns to review the x-rays. A copy of his report is appended.

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Observations

1) The Physical Environment

a) The Town

Baie Verte citizens are exposed to gross amounts of asbestos fiber from a number of sources. The unstabilized tailings pile (mountain) is open to the wind; mine waste is dumped in the town as gravel; workers carry large amounts of fiber on their persons. One gravel sample from an apartment yard assayed almost 25% asbestos fiber, by weight. There is no program of environmental control of asbestos levels in the town; neither does asbestos appear to be recognized as a health hazard for persons not working in the Advocate mine or mill.

b) The Mine and Mill

The mine, its tailings pile, and waste dumps are situated just north of town. A detailed description is not possible since the Advocate management denied us access to the property. The huge white tailings heap dominates the view. Surrounding hills have the appearance of winter, with trees and ground covered with white asbestos, presumably blown from the tailings heap. The workers maintain that the worst dust levels usually prevail in the area of the crusher, where the environment has not markedly improved since the mine opening. The men wear inadequate masks and are not otherwise protected from the airborne fiber.

We were told that inadequate maintenance will result in frequent breakdowns, producing numerous large-scale spills of asbestos onto the floor and into the air. In the case of spills, face masks are available but are an inadequate type not designed for asbestos workers.

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There are no operative showers available for workers at the end of shift. Neither does the company provide a double locker system so that men may keep street clothes and work clothes separate.

The company monitoring of dust levels is suspect. Values found through a personal sampling tended to be well above provincial standards. The Ministry of Mines makes checks only infrequently, and relies on Advocate's reporting. Workers have won the right to have readings posted, but have no right or responsibility to engage in air-quality monitoring themselves.

2) Health Education

a) The Town

There is no visible program to educate the townspeople regarding the health dangers of asbestos fiber. Such an educational program would include dissemination of facts, instructions on avoiding exposure in play or work (e.g. washing clothes), and emphasis on non-smoking behavior.

b) The Workers

Until the week of our visit, Advocate Mines had persistently denied or minimized the health hazards of asbestos fiber. The four-page memorandum given to Union officials would appear to be the first step in informing the workers of hazards. The document does not, however, mention laryngeal cancer, the cancer risks to families, nor the Company's areas of responsibility in providing a clean environment, at work and elsewhere. Neither does it stress enough the question of personal hygiene, including, presumably, the after-work shower.

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3) Health Surveillance and Medical Care

The local hospital is well-equipped to offer a good quality of medical care to the workers and their families. The medical records appear to be well-kept; this is usually considered evidence of a high standard of medical practice. The physicians, however diligent, are not particularly well-versed in the health effects of asbestos, according to Dr. Black. He, and presumably the physicians under his supervision, consider the Advocate operation "...a model operation, about as clean as you can get." Likewise, Dr. Black considers the health hazards to be distorted and magnified by irresponsible media persons. Dr. Black is also responsible for the Public Health of Baie Verte.

All workers receive an annual "Miners' Medical" as specified by the Newfoundland Ministry of Mines and Energy. At Baie Verte, the hospital is paid an annual fee to perform these examinations, which appear to be done regularly and on time. The annual chest film is also done for that visit, and quality of film and interpretation (in St. Johns) has improved in recent years. Some of the workers feel that their "limited" examination is insufficient; compliance with the Miners' Medical requirements does not satisfy them. Two of the men we examined had lung function tests recorded but repeatedly and vigorously denied previous testing. Since these tests are done by any one of five different nurses and are not heavily relied upon, the gap between the workers' denials and hospital records may represent clerical error. The machine used is not that recommended by the Provincial health officials who have offered funds to replace it.

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There is considerable worker dissatisfaction over communication concerning health records. Men complain that they are frequently called back for repeat x-rays without adequate explanation. They also feel that medical opinions and results are sent to Advocate Mines without the workers' consent.

Some of these men appear to have had films taken at the request of the CBC. Since it is good medical practice to limit radiation exposure by avoiding unnecessary x-rays, I assume the men consented to the additional exposure after a careful explanation. Some of the same men apparently were re-x-rayed at the request of Johns-Manville's head office in Denver, after they heard of the CBC films. These films were not in the hospital, but had been sent directly to Denver.

The follow-up of abnormal chest x-rays is not always vigorous. Of the men we examined, at least two had been recommended for immediate follow-up but had not been recalled over a month later. Part of the problem may have been due to summer vacations and clerical error. There seemed to be a general slowness, however, in arranging for chest consultations. Many of the men we saw had been scheduled to see a visiting chest physician in September; when he cancelled his trip, the Baie Verte physicians saw no urgency to formulate alternate plans.

Dr. Black admits he is in the unfortunate position of having acted, over the years, as a defender of health practices of Advocate Mines. Thus, although he expresses a sincere interest in the workers' health, he stands somewhat discredited by his previous stance. This position may impair his ability, in the future, to communicate effectively with his community on this matter.

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4) Medical Findings

We examined 34 men, aged 30 to 61 years, with an average age of 45.5 years. All were long-term employees of Advocate Mines, most having worked at the mine since it opened in 1963. Only one had worked previously in dust; none had definite prior exposure to mining, milling, or working with asbestos fiber. Ten of the 34 men showed long-standing abnormalities in their chest film, usually related to prior tuberculosis or pneumonia with pleurisy. Previous chest disease, even of moderate severity and chronicity, does not seem to bar a man from being hired by Advocate Mines.

24 of the 34 men reported shortness of breath or persistent cough. The cause of these symptoms is not clear. Undoubtedly, some of the cough and shortness of breath may be related to smoking: only one of the 24 symptomatic men had never smoked, while four had quit more than six months ago. 19 men with cough or shortness of breath are still smoking.

In reviewing the chest x-rays on file in St. Johns, Dr. Paterson found three persons to have films possibly suggestive of very early asbestosis. Only more x-rays over the next few years can confirm this suspicion; there is not enough evidence to suggest intervention or more radical medical investigation of these men. Dr. Knowling is keeping a close watch on these men for any signs of further x-ray change.

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Six of the symptomatic men had abnormalities on clinical examination of the chest; four of the asymptomatic had similar findings. Thus, the presence or absence of symptoms does not necessarily correlate with clinical findings. Only one man showed obvious respiratory distress--he is currently under investigation by the Baie Verte physicians. His lung function tests are grossly abnormal; no other worker seen had marked impairment of the functions tested. A few had a mild decrease in function that is difficult to interpret given the inaccuracies of the Baie Verte testing apparatus.

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Conclusions

1) No workers with frank asbestosis were detected by the survey.
2) Safety precautions in the Advocate Mines operation are inadequate.
3) Environmental monitoring in the mine, mill, and town is inadequate.
4) Sanitary facilities (showers and lockers) and policies are inadequate at Advocate Mines.
5) Health education of the Advocate Mines workers has been neglected.
6) There is a community health hazard from the asbestos contamination of the environment.
7) The residents of Baie Verte are not being informed of the public health hazards posed by the current practices of Advocate Mines.
8) Baie Verte physicians must consider more seriously the possibility of asbestos-related disease.
9) The Baie Verte work force can almost certainly expect, over the next 15 years, to produce a number of cases of asbestosis, an excess (over expected) number of cases of lung cancer, and perhaps a few cases of mesothelioma.
10) There are no obvious plans for the handling of early asbestosis victims in regards to retraining, relocation, etc. at work.
11) Worker participation in environmental monitoring, hazard identification, and corrective action is inadequate.
12) There is confusion regarding the flow of workers' medical information to the employer, with some suspicion that information is sent without a worker's consent.
13) There are communication problems between medical staff and workers in regard to the Miners' Medical physical and x-ray findings.

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Recommendations

1) The mine and mill, including crusher, should employ the best possible technology for minimizing the fiber exposure of the workers. Such a policy also implies adequate equipment maintenance, and clear procedures to be followed in the case of equipment breakdown or spill. Adequate protective gear must be provided and used.
2) The air-quality monitoring should be extended, preferably as a combined company-union-government program to ensure proper sampling, operation of sampling stations, and adequate communication of results. Current standards should be vigorously enforced and every effort made to reduce the amount of fiber in the air.
3) A joint union-management program of worker education should be started without delay to fully inform each worker of the job hazards, the importance of environmental sanitation and monitoring, the role of medical surveillance, and the importance of non-smoking.
4) Showers and an adequate double locker system should be installed and workers paid for clean-up time, with mandatory showers at the end of shift. All work clothes should be provided and laundered at company expense under controlled conditions.
5) The contamination of the environment outside the mine should cease. This means stabilizing the tailings pile, prohibiting dumping of waste in the town, and reduction of fiber emissions from all sources.
6) The town should have an environmental assessment to determine the locations and amount of asbestos in the town due to previous contamination.

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7) A town clean-up campaign may be needed to rid the town of asbestos accumulated through long-term exposure.

8) The townspeople (including children) should be educated in the health hazards of asbestos, instructed in the handling of contaminated material, and advised of the extreme health hazards of smoking in an asbestos-contaminated environment.

9) The physicians of the Baie Verte area should receive special instruction in the health hazards of asbestos.

10) The health surveillance of workers should be extended to include annual pulmonary function testing with a better machine.

11) The hospital should encourage the formation of a consumer group to discuss the problems of communication between the medical staff and the community.

12) The health surveillance of workers should be extended to include periodic chest x-rays of all Baie Verte citizens with more than ten years' residence.

13) All Advocate workers should be registered for a system of life-time health surveillance.

14) There should be active planning for the handling of asbestosis cases as they occur. At the time of first definitive diagnosis, these persons should be removed from all fiber exposure, retrained, and relocated if necessary.

15) There should be vigorous and continuing anti-smoking campaigns in the Baie Verte area, directed at workers and the community. Most of the excess lung cancer risk from asbestos can be eliminated by total avoidance of cigarettes.

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16) The Union should have the right of access to the mine and mill for hygienists, physicians, or other experts it may choose to employ. It should also enjoy the right to conduct air sampling.

17) There should be a program to review, in one year and at appropriate intervals thereafter, progress in abatement of the health hazards. Such a review should be done by an independent person reporting to all parties concerned.

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