

HEALTH

LUNG CANCER IN ASBESTOS MINERS

TABLE 15.—Number and Percentage Distribution of Smokers and Nonsmokers by Exposure Category

Exposure Category	Number		
	Smokers	Nonsmokers	Unknown
I.....	1,553	674	4
II.....	1,691	632	7
III.....	1,625	236	6
Unknown.....	4	1	6
Total.....	4,873	1,543	29
Average exposure category.....	2.0	1.9	2.3

Man-Years

Exposure Category	Percentage Distribution		
	Smokers	Nonsmokers	Unknown
I.....	32.8	37.4	20.9
II.....	35.3	33.7	33.9
III.....	33.8	26.1	45.9
Unknown.....	0.1	0.1	0.9
Total.....	100%	100%	100%

larger, the smokers had worked about 2.3 years less on the average than the nonsmokers. With longer exposure and greater age, one would expect the nonsmoking group to show a higher rate if lung cancer were due to asbestos. Table 15 shows that the average exposure category was almost the same for the two groups. Therefore, this variable seems to be of no importance in accounting for this difference.

The result of this additional analysis is that none of these factors appears to lessen the effect of Table 12.

Comparison of the Cohort Experience with that of the Province of Quebec, Dominion of Canada, and the United States.—In order to make a comparison of the experience among asbestos miners with that of the general population of the Province of Quebec, statistics were gathered, as stated earlier, in the office of the Division of

Demography in the Provincial Ministry of Health. The data on total deaths, deaths from all forms of cancer, and deaths from cancer of the lung were obtained by sex and by county for the years 1950 through 1955. In addition, all death certificates which specified primary cancer of the lung, and all those which indicated lung cancer but did not specify the origin, were examined for the years 1952 through 1955.

Table 16 gives a tabulation of the number of deaths from lung cancer in the Province and in the cohort for the years 1950 through 1955, and shows the annual rate per 100,000 in these segments. It will be noted from the table that the mortality rate for the "proved" cases in the cohort is only slightly higher than the rate for the Province. When the "suspected" cases are included in the calculation, the rate for the cohort rises to 33.8 per 100,000, which is about 50% higher than the rate for the Province. This, it will be recalled from the previous discussion of the effect of the "suspected" cases on the results, approaches but does not exceed the significant level.

One further interesting observation from Table 16 is the rather marked increase in the total number of cases for the Province between 1950 and 1955. It is assumed that at least part of this increase is due to improved recognition and reporting of lung cancer during the interval. For this reason, the years 1954 and 1955 were thought to be more nearly representative of actual conditions. Even so, it is quite likely that the general population is not studied for lung cancer with the same diligence with which

TABLE 16.—Comparison of Cohort with Province of Quebec

	Number of Persons	Lung Cancer Deaths						Annual Rate per 100,000
		1950	1951	1952	1953	1954	1955	
Province	1,198,000 *	196	220	245	303	303	357	22.8
Cohort	3,923 †	2	3	6	3	1	3	33.8
Total		198	223	251	306	304	360	23.2
Province (excluding asbestos workers)	1,192,000	192	218	245	300	302	354	22.5

In the Province figures, it has been assumed all male lung cancer deaths are for men of 20+ years.

* Approximate midpoint of the enumerated population for 1951, and the estimated population for 1954 (Support, 194, de la Demographie).

† Number alive in cohort at beginning of 1952.