

TABLE 21.—*Number of Deaths and Death Rates per 100,000 by Age Groups for the Adult Male Population of the United States**

Age Group	Population	Cases	Rate per 100,000
20-44	24,544,000	883	3.6
45-54	8,065,000	2,979	36.9
55-64	6,340,000	6,254	98.6
65+	5,670,000	6,483	114.3
Total	44,619,000	16,599	37.2

* Data from "Vital Statistics of the United States," Vol. 1 and 2, 1952.

asbestos miners in this study. It is therefore obvious that there are no important differences between the rates for asbestos miners and those for the general population of Quebec and the Dominion of Canada.

Since it is probable that figures for the United States are more complete and, therefore, possibly more comparable to the data for the miners, age-specific rates were computed from "Vital Statistics of the United States," Volumes I and II, for 1952. These rates have been tabulated in Table 21.

It is apparent that these rates compare favorably with those for the asbestos miners as shown in Table 8. Still other rates for the United States were obtained from the American Cancer Society, and for males, these were 25.3 per 100,000 in 1953, and 28.0 per 100,000 in 1955. They are not identical with the rate calculated from the figures of the office of Vital Statistics, but this is possibly because the American Cancer Society rates are for males of all ages. Nevertheless, they, too, compare favorably with the rates of 25 (or 34 for total cases) obtaining among the asbestos miners.

Turning for a moment to a comparison between the asbestos miners and persons who are exposed to asbestos in one form or another (as distinguished from the general population groups just discussed, who have no exposure) an interesting observation can be developed by deduction. Hueper⁵⁸ has stated that there are about 35,000 persons exposed in the United States, and we have found that the Canadian mines employ about 8000. Elsewhere, it has been estimated that the workers in England who have exposure total between 3000 and 5000. With workers in Africa, Denmark, Nor-

way, and other countries, at least 50,000 persons must be exposed throughout the world, and it can be assumed that this number has been fairly constant in the 20 years since 1935 when the first case of asbestosis with lung cancer was reported. At least 1,000,000 man-years of exposure has thus been accumulated, and this figure can be divided by the approximately 150 cases of lung cancer with asbestosis reported during the 20-year period. This gives a rate of 15 per 100,000, which is at least indicative that any lung cancer rate which can be calculated for workers exposed to asbestos dust is not much greater than that for the unexposed population.

Comparison Between Eight Counties Adjacent to the Asbestos-Producing Areas and Eight Selected Counties.—To compare lung cancer mortality rates in the counties surrounding the asbestos-producing areas with another group of counties in which no asbestos miners are likely to reside, the rates were computed on the basis of figures for the years 1950 through 1955. The eight counties selected for comparison were Argenteuil, Chateaugay, Montmagny, Portneuf, Richlieu, Riviere-du-Loup, St. Hyacinthe, and Terrebonne, mainly because they represent a wide geographic distribution throughout the Province. The counties selected because of their proximity to the asbestos mines include Arthabaska, Beauce, Drummond, Frontenac, Megantic, Richmond, Sherbrooke, and Wolfe. Table 22 shows the number of lung cancer deaths for the years 1950 through 1955 for each of these counties, and a mortality rate, based on the adult male population in 1952. To emphasize the comparison, Megantic County has been shown separately, as has the Province of Quebec and also the Province with the eight "asbestos-producing" counties subtracted. Because of its unique lung cancer death rate, Montreal et Isle de Jesus has also been listed in order to provide further comparison.

It is apparent from the table that the lung cancer death rate for the eight counties