

kers; there was a relationship not inconsistent with linearity between mortality from respiratory cancer and cumulative asbestos exposure, except at the highest dose level (about 1000 mppcf-yr); a subdivision of the group with <125 mppcf into three exposure levels did not yield any consistent trend; so a definite relationship for respiratory cancer in exposure <125 mppcf could not be established, nor adequately denied. The authors tentatively suggested a cumulative exposure level of 100-200 mppcf-yr for workers not to be excessive. A serious drawback of Enterline et al's studies is that death before 65 years of age was not taken into account.

McDonald (1973) reported on equivalent average death rates for malignant disease for 9692 workers (87% traced) in chrysotile mines and mills in Quebec. Evidence for increased mortality due to cancer was clearly evident in workers exposed to >400 mppcf-yr; respiratory cancers (only a small minority were mesotheliomas) were not elevated <200 mppcf-yr, and most evidently increased >400 mppcf-yr; death due to all gastrointestinal tumours was also higher >400 mppcf-yr (suggestive trend). The lowest exposure groups had rates lower than the general population. Ghezzi et al (1971) could not find any case of mesothelioma in 90.8% of the total population of an Italian chrysotile mine (Balangero), employed for at least one month.

Recently Howard et al (1975) reevaluated the mortality of cohorts of a Rochdale factory, U.K., particularly paying attention to the effect of a decreasing intensity of asbestos exposure due to technical devices. In workers entering in 1933-1950 there was a decrease of mortality, and more so in those entering after 1950, i.e. the "modern period" (dust sampling was initiated, although in some areas dust levels remained high for at least 6 years after this). In this last category there still appears to be an excess death due to lung cancer (including mesothelioma) after 15 or more years of exposure (5 observed, 1.86 expected, all smokers). Dust levels had fallen in the period from 1953 to 1957 by approximately 50-80 percent throughout the factory, the largest reduction being in areas where levels were highest in 1951. A follow-up of workers entering after 1951 may give more quantitative evidence of the dose-response relationship. Up till now this study once more makes clear that cancer mortality is highly dependent upon intensity of exposure, but quantification is still not possible.

The Am. Water Works Association (1974) used the data of Enterline et al

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