

Workshop Presentation

9.1 EPIDEMIOLOGICAL TRENDS FOR ASBESTOS-RELATED CANCERS

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Occupational exposure to asbestos constitutes a major health hazard in all industrialized countries of the world. In 1996, the production and use of asbestos totalled about 2,4 million tons. The largest producers were Russia, Canada, China, Brazil and Zimbabwe. Canada dominates the world trade with its annual export of about 500 000 tons. Over 70% of the world asbestos production is used in Eastern Europe and Asia. The highest per capita consumption occurs in Russia (3.4 kg/capita/year) whereas less than 0.1 kg/capita/year is still used in Western Europe or North America. In Western countries the use of asbestos products peaked in the 1970's. Asbestos cement makes up 85% of all commercial applications and other major uses include friction materials, floor tiles, gaskets, insulation boards and textiles. After South Africa had stopped its production of crocidolite and amosite in the 1990's, the current use consists solely of chrysotile. In all EU countries the import, manufacture, marketing and use of asbestos should be prohibited by the year 2005. National bans with minor exceptions have been implemented already in 15 countries worldwide.

The industrial use of asbestos is closely related to the subsequent health effects. In the total population of 800 million inhabitants, about 10 000 mesotheliomas and 20 000 asbestos-induced lung cancers can be estimated to occur annually in Western Europe, North America and Australia. The incidence has been expected to reach its maximum around 2010-2020. About half of all mesothelioma cases will occur in construction and shipbuilding workers; despite higher risks, less than 5% have been registered from the primary asbestos industry. In the most affected age groups, mesothelioma may account for about 1% of all deaths. A clear linear relationship exists between the national mesothelioma incidence and the preceding consumption of asbestos. Accordingly, the average use of 3 kg per capita will induce about 15 mesothelioma cases/million people, i.e., each 200 tons of produced asbestos will be responsible for one death from pleural or peritoneal mesothelioma. In Russia, the extensive use of asbestos would predict a high mesothelioma incidence but the smaller use of commercial amphiboles and the lesser level of tremolite impurities in the Russian chrysotile could reduce the risk, particularly if the lower lifetime expectancy of the population were taken into account. Similarly to Eastern Europe, no reliable incidence data are available for the developing countries in Asia, Africa or South America.