



Elimination of asbestos-related diseases

POLICY PAPER

The term "asbestos" designates a group of naturally occurring fibrous serpentine or amphibole minerals that have extraordinary tensile strength, conduct heat poorly and are relatively resistant to chemical attack. The principal varieties of asbestos are chrysotile, a serpentine material, and crocidolite, amosite, anthophyllite, tremolite and actinolite, all of which are amphiboles (1). It causes asbestosis - a non-malignant fibrosis of the lungs - as well as lung cancer, mesothelioma and other cancers. (2)

Exposures to asbestos and its impact on public health are substantial

Exposure to asbestos occurs primarily through inhalation of fibres from the air in the working environment, ambient air in contaminated communities and indoor air in housing and buildings containing asbestos. The highest levels of exposure occur during spraying of asbestos, repackaging of asbestos containers, mixing with other raw material and dry cutting of asbestos-containing products with abrasive tools.

Currently about 124 million people in the world are exposed to asbestos¹. Each year about 89,000 people die from asbestos-related diseases: lung cancer - 39,000², mesothelioma - 43,000 (4) and asbestosis - 7,000 (5). These diseases have high fatality rates and do not respond well to medical treatment. Because of the long latency periods attached to these diseases, stopping the use of asbestos will only result in a decrease in the number of asbestos-related deaths after a number of decades. Therefore, even in countries that banned the use of asbestos in the 1990s, the toll of asbestos-related diseases will continue to increase for the interim.

All types of asbestos cause cancer in humans

Exposure to chrysotile, amosite and anthophyllite asbestos and to mixtures containing crocidolite results in an increased risk of lung cancer, as does exposure to minerals containing tremolite and actinolite and to tremolitic material mixed with anthophyllite and small amounts of chrysotile. Cases of mesothelioma have been observed after occupational exposure to crocidolite, amosite, tremolitic material and chrysotile asbestos, as well as among the general population living in the neighbourhood of asbestos

¹ Preliminary estimate calculated from table 21.16, p.1682-1683 in Concha-Barrientos et al., 2004 (3)

² Preliminary estimate calculated from the WHO Global Burden of Diseases Database, 2002

factories and mines and in people living with asbestos workers (6). Cigarette smoking greatly increases the risk of lung cancer from asbestos exposure (7;8).

Exposure to chrysotile asbestos increases the risk of asbestosis, lung cancer and mesothelioma in a dose-dependent manner. The incidence of asbestos-related diseases is related to fibre type, fibre size, fibre dose and industrial processing of the asbestos(2). No threshold has been identified for carcinogenic risks (7).

Asbestos is still widely used

Asbestos has been used in thousands of products for a vast number of applications ranging from roofing shingles to water supply lines to fire blankets to plastic fillers to medical packing and friction materials (e.g. brake linings in automobiles). Currently, chrysotile asbestos is still widely used, with approximately 90% employed in asbestos-cement building materials, the largest users of which are developing countries (9). Other remaining uses are friction materials (7%), textiles and other applications (9). As results of increasing health concerns, the use of asbestos has declined in most countries, but a few countries have maintained and even increased their production and use in recent years (10). World production of asbestos in the period 2000-2005 has been relatively stable, at between 2,050,000 to 2,400,000 metric tonnes (11;12).

Though use of crocidolite and its products as well as the spraying of asbestos have been banned under the ILO Asbestos Convention from 1980, chrysotile asbestos is still widely used in some countries. As of June 2006, 23% of WHO Member States have banned or intend to ban the use of chrysotile asbestos, 41% have not banned asbestos but show no record of trading in asbestos and 36% still use, import and export asbestos and asbestos-containing products(13).

WHO recommendations on prevention of asbestos-related diseases

Elimination of the risks is the best way of preventing occupational diseases. This is also the case of asbestos-related diseases, particularly bearing in mind that no safe threshold for exposure to asbestos has been established. Lung cancer and mesothelioma have been observed in populations exposed to very low levels of asbestos (6;7). Therefore, the most efficient way to eliminate asbestos-related diseases is to cease use of asbestos. Continued use of asbestos cement in the construction industry is a particular concern, because the workforce is large, it is difficult to control exposure, and in-place materials have the potential to deteriorate and pose a risk to those carrying out alterations, maintenance and demolition (7).

There are safer substitutes for asbestos, for example short fibre attapulgite, carbon fibres, non-respirable cellulose fibres, non-biopersistent synthetic vitreous fibres, natural wollastonite and xonotlite, all of which have been evaluated by WHO and have been found to be associated with low health risks from inhalation (14). When it is necessary to work on materials already containing asbestos, such as buildings and asbestos containing waste, it is necessary to take strict preventive measures to avoid exposure to asbestos, such as encapsulation, wet processes, local exhaust ventilation, regular cleaning and use

of personal protective equipment - special respirators, safety goggles, protective gloves and clothing (15).

Therefore, WHO is working with countries and major international actors on elimination of asbestos-related diseases in the following strategic directions:

- to stop use of asbestos
- to take measures to avoid exposure to asbestos during asbestos removal (abatement)
- to provide information about solutions for replacing the asbestos with safer substitutes and developing economic and technological mechanisms to stimulate replacement of asbestos by safer substitutes
- to improve early diagnosis, treatment, social and medical rehabilitation and compensation of asbestos-related diseases and to establish registries of people with past and/or current exposures to asbestos.

WHO strongly recommends planning for and implementation of these measures as part of a comprehensive national approach for elimination of asbestos-related diseases. Such an approach should also include developing national profiles, awareness raising, capacity building, institutional framework, and a national plan of action.

Reference List

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