

## Appendix 1

### Snapshot - Asbestos and Asbestos-related Diseases

#### Lessons and considerations for Asia

*(Extracted from 2013 Toolkit/ Factsheets)*

##### ***The Problem***

- Asbestos is still widely used in Asian countries, however, basic information about asbestos hazards is widely lacking in the region.
- Only a few countries in Asia have banned the use of asbestos. Even in the few Asian countries that banned asbestos, a range of practical problems remain in particular, the problem of preventing exposure from legacy asbestos, safe removal, disposal and treatment of asbestos waste.
- Based on analysis of PYLL (person years life lost), asbestos causes premature mortality in asbestosis patients during the most productive years of life, which should be considered in Asian countries.
- Asbestos fibers can be released from asbestos-containing products during renovation, demolition and disposal processes. Airborne asbestos fibers released from asbestos-containing materials during these processes need to be regulated and controlled to avoid health risks.
- In Asia, asbestos-cement roofs are widely used, including for residential purposes. More attention should be given to the problem of deterioration of asbestos-cement roofs and how to deal with them in the short- and long-term.
- Dockyard work is known to have had poor dust control in the past and exposed many workers to high levels of asbestos.
- Asbestos has been used in many school buildings in Asian countries, many of which remain today. Schoolchildren, teachers and other workers are potentially exposed. Research into asbestos in schools will help raise awareness among parents, teachers as well as the wider community.

##### ***White spaces and lack of data***

- Prediction of future mesothelioma deaths in Asian countries is far less in number than in Western countries. This is particularly a problem for countries which currently do not report mesothelioma but have recorded or continue to record high consumption of asbestos.
- There is limited information regarding the attributable risk of asbestos exposure (occupational and environmental) in the Asian population.

- Despite the widespread use of asbestos in Asian countries (historically and contemporary), the situation of malignant mesothelioma and other ARDs has been poorly documented.
- A possible relation between exposure to asbestos in drinking water (via corrosive asbestos-cement pipes) was investigated in New York but did not produce positive findings. In Asian countries, the use of asbestos-cement is more recent and widespread and such hypothesis should be kept in mind by researchers.
- Asbestos-related diseases in women have rarely, if ever, been looked into in Asian countries.
- In Asian countries, there is a growing need for comprehensive surveillance programs to elucidate the asbestos exposure situation. These include interviewing and recording exposure histories via occupation or environment, independently or in combination with clinical examinations such as analysis of lung fiber content, pathology and autopsy studies.
- Neighborhood asbestos exposure is another source to cause ARDs, and thus they are should be carefully monitored, especially in countries with high population density.
- Non-occupational exposure to asbestos is difficult to identify and may play a role in cases where occupational exposures have been ruled out. Non-occupational exposure to asbestos should be better recognized as an important cause of malignant mesothelioma.
- Cancer of the small intestine and of the esophagus is not currently recognized as asbestos-related, although the IARC raises a possibility. Asian studies to be conducted on mesothelioma should give attention to it.
- The issue of malignant mesothelioma in women in the context of non-occupational exposure to asbestos is no less important in Asia as in other countries.
- Asbestos removal will eventually become a huge problem in Asia, but very few studies have been conducted on the issue.
- There are several studies on the ARD risks among servicemen in the military, with the navy being the main focus. No similar studies have been done in Asia but are worth consideration. Exposure to asbestos in engine rooms in vessels is a possible theme.
- Shipbuilding and shipwrecking constitute a major source of asbestos exposure in Asia (e.g. Bangladesh), but epidemiological studies are rare if any.
- Environmental exposure to low levels of naturally occurring asbestos (NOA) could be a contributing factor for mesothelioma also in Asia.
- One study estimated that the number of asbestos-related lung cancers is between two-thirds and one death for every mesothelioma death. Asbestos-related lung cancer may have accounted for 2-3% of all lung cancer deaths among males in Great Britain over the last two decades of the 20th century. There is no consensus yet on the ARLC to mesothelioma ratio

or the attributable fraction of asbestos on lung cancer. Asian studies can contribute to the scientific niche.

### ***Lessons to be learned***

- Only a handful of Asian countries introduced total ban of asbestos so far. Based on the experience of Western countries, total asbestos ban is likely to decrease the mortality of mesothelioma decades later. Asian countries offer the opportunity to study the situation before and after banning asbestos.
- Among 55 EU industries, the highest proportion of asbestos exposure was from construction industry followed by personal service, mining, and agriculture. It is pertinent to ask if this trend is applicable to Asian countries, how and why?
- Epidemics of malignant mesothelioma have been well documented in a number of Western countries. This situation is in clear contrast with Asian countries as only a few of them have reported such epidemics. This could be due to the fact that Asian countries have not yet reached the latency time or lack the technologies to identify mesothelioma or a combination of the above. Other explanations may be possible.
- Vermiculite is contaminated with tremolite and has been used in loose-fill attic (space below the roof) insulation in millions of homes in Northern America. Asian countries should identify if and the extent to which vermiculite was used. Also, are there other possible sources of minerals used in Asia that are potentially contaminated with asbestos?
- The characteristics of asbestos-related cancers (mesothelioma and lung cancer) compensated (Industrial Accident Compensation Insurance) in Korea have unique characteristics different from those reported by Western countries. This may or may not serve as a reference source for other Asian countries.
- For Asian countries, the WHO method is one of the representative PCM-based methods which can be considered for adoption as a national standard testing method of airborne asbestos in a work environment. This PCM-based method is inexpensive, time-efficient and suitable for the monitoring of airborne asbestos in work environment and its control.

### ***Possible Solutions***

- Asian countries need to identify their own high-risk occupations which incur asbestos exposure leading to mesothelioma.
- International collaboration in combination with a transfer of core preventive technologies available in developed countries is an effective strategy to eliminate and prepare for asbestos-related diseases in countries which lack the relevant technologies.
- Similar to the studies in done in many European countries, Asian countries should apply statistical models for future projection of mesothelioma in consideration of available data

(type and timeframe). Prediction of future mesothelioma cases will be required in Asian countries because asbestos has been used widely in this region.

- Studies have shown that the asbestos fiber burden predicts survival of pleural mesothelioma patients. Are there similar studies in Asia? Is it warranted?
- Asbestos fiber monitoring using the passive personal sampler is an efficient and cost-effective means to assess workers' exposure to asbestos. Are there data from Asian countries?
- Surveillance programs to monitor ARDs including mesothelioma should target relevant occupations (historical and contemporary). Such schemes are essential to prevent and manage ARD.

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