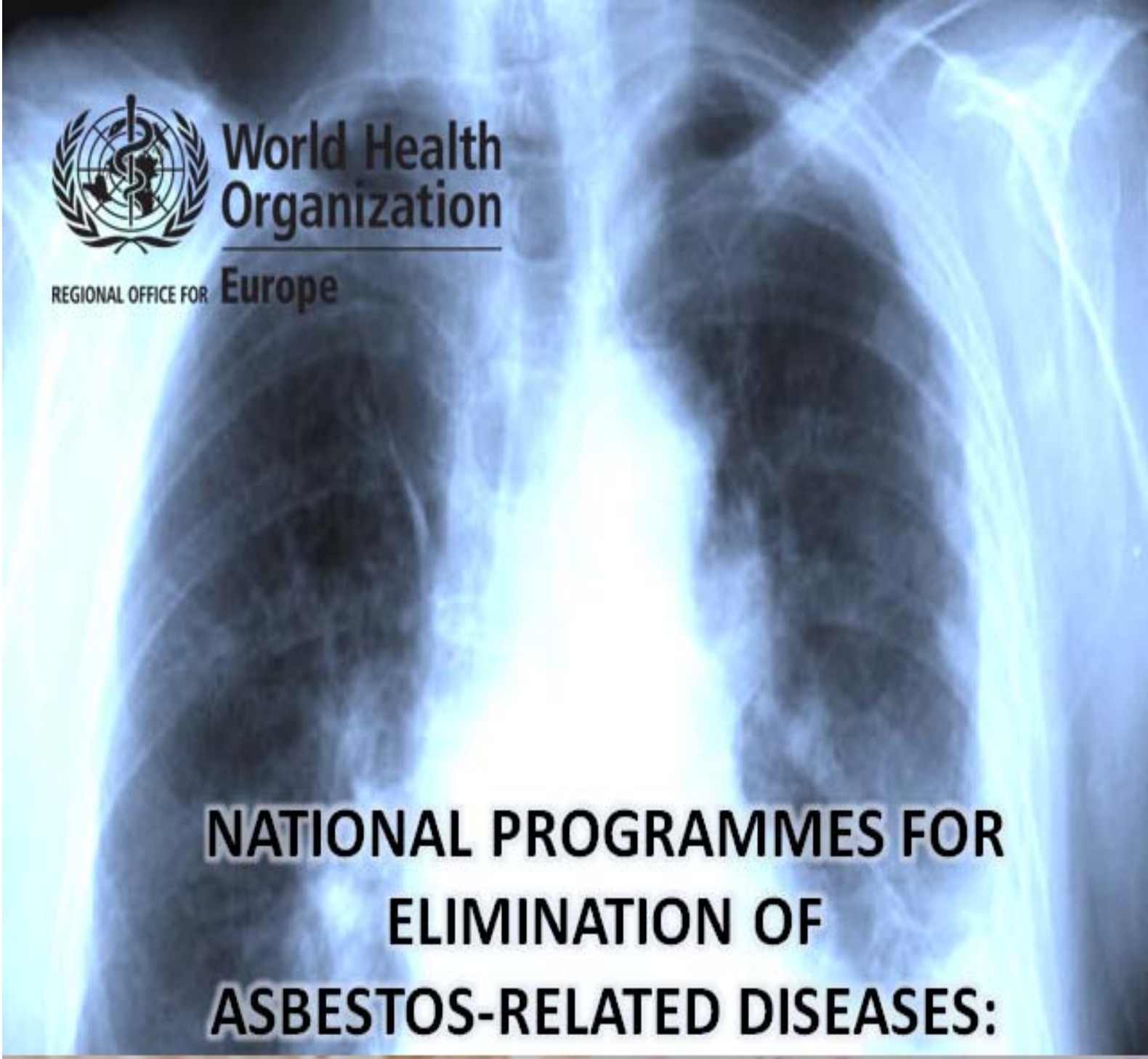

World Health Organization

REGIONAL OFFICE FOR Europe

NATIONAL PROGRAMMES FOR ELIMINATION OF ASBESTOS-RELATED DISEASES: REVIEW AND ASSESSMENT

07-08 June 2011, Bonn

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ABSTRACT

The WHO European Centre for Environment and Health (Bonn) convened a meeting of representatives of the selected Member States and international experts for cooperative implementation of the Parma commitment regarding asbestos control in June 2011. A short survey carried out by the WHO before the meeting showed that, out of 53 Member States of the WHO European Region, more than 30 countries banned all types of asbestos as of 2011. Country situations of asbestos control policies were presented according to the format provided by the WHO. In the EU member states, use of all forms of asbestos was banned in the 1990's and early 2000's. Participants recognized that the awareness of asbestos hazards and policies on asbestos control were weak in the newly independent states of the former Soviet Union and the South-Eastern European countries, in contrast to the EU member states. The viewpoints of patients, workers and medical professionals on the international asbestos control policies were discussed. The meeting made conclusions and recommendations for the development of the national programmes for elimination of asbestos-related diseases which include further steps and milestones of cooperative implementation of the Parma commitments regarding asbestos policy development. The useful information for the policy-makers of the Member States presented at the meeting by the WHO temporary advisors, e.g., scientific evidence on the causal association between the chrysotile asbestos and asbestos-related diseases, the recommendations of WHO and ILO for elimination of asbestos-related diseases, and review of safer substitutes for asbestos materials, are enclosed as Annexes in this meeting report.

Keywords

ASBESTOS - ADVERSE EFFECTS
ASBESTOS, SERPENTINE - ADVERSE EFFECTS
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Introduction

Background

In 2010, the Fifth Ministerial Conference on Environment and Health adopted the Parma Declaration on Environment and Health which includes a commitment by the Member States of the WHO European Region to "develop by 2015 national programmes for the elimination of asbestos-related diseases in collaboration with WHO and ILO." The WHO's research branch, the International Agency for Research on Cancer (IARC) reconfirmed its previous classification of all forms of asbestos including chrysotile asbestos as "carcinogenic to humans" (Group 1) causing mesothelioma and cancers of lung, larynx and ovaries. In order to assist countries in the elimination of asbestos-related diseases WHO and ILO prepared the "Outline for the Development of National Programmes for Elimination of Asbestos-Related Diseases". This document sets up the strategic directions for preparing national profiles, policies and programmes. With the financial support of German Federal Ministry of Environment, Nature Conservation, and Nuclear Safety, the WHO European Centre for Environment and Health (Bonn) convened a meeting of representatives of the selected Member States and international experts on asbestos issue for cooperative implementation of the Parma Declaration regarding asbestos control policy in June 2011. Upon the request of WHO, the ministries of health of the Member States in Southeast Europe and newly independent states nominated their representatives who have a good understanding of the relevant government policies, the population's exposure to asbestos, and the burden of asbestos-related diseases in the country. The participants were requested to respond to a WHO survey in the country, and to present a summary report on national asbestos-related policies at the meeting. A total of 41 participants of the meeting included 21 nominated representatives from 19 countries, 12 WHO temporary advisors, and representatives from the ILO and IARC as well as organizations representing stakeholders.[1]

The meeting was opened by Srdan Matic, Coordinator of Environment and Health of WHO Regional Office for Europe. He emphasized the importance of the meeting in addressing one of the most important public health challenges in Europe with a clear mandate by the Parma Declaration. Alexander Nies of German Federal Ministry of Environment, Nature Conservation, and Nuclear Safety, welcomed the participants and called for effective international cooperation to deal with the enormous environmental health problems related to asbestos hazards in Europe. He reminded the meeting of the ongoing tragedy with enormous human and economic costs caused by asbestos in Germany as a lesson for other countries in the Region. Jorma Rantanen was elected as chairperson, and Barry Castleman and Elena Vasilyeva as rapporteurs of the meeting. The first draft meeting report was prepared by the rapporteurs and edited by WHO Secretariat. The meeting participants were asked to make comments on the second and third draft meeting reports. All comments and suggestions collected from the participants were addressed properly in the preparation of this meeting report by the WHO Secretariat.[2]

[1] The WHO selected temporary advisors after checking the declaration of interests and clearing real or perceived conflicts of interest related to any commercial interests involving asbestos industry. The individual or NGO activities advocating for patients with asbestos-related diseases were not considered to constitute conflicts of interest. The Russian Federation expressed their disagreement with WHO choice of some experts who participated, after the closure of the meeting.

[2] The views expressed in this report reflect discussions at the meeting, and do not necessarily represent the decisions or the stated policy of the World Health Organization.

Scope and purpose

The scope of meeting was a review of the situations in selected Member States in terms of the production, trade, use, exposure, and effects of asbestos, and the formulation of the next steps for improving awareness, legislation, policies, programmes, and institutional capacity to protect public health from asbestos hazards.

The aims of the meeting were:
- to raise awareness on the state-of-the-art scientific evidence of health risks posed by the chrysotile form of asbestos;
- to review the country situations regarding national programmes on asbestos; and
- to assess the priority needs of process and contents for the development of national programmes on the elimination of asbestos-related diseases.

Discussions

Country situations of asbestos policy

A short survey carried out by the WHO before the meeting showed that, out of 53 Member States, more than 30 countries in the WHO European Region banned all types of asbestos as of 2011. The nominated participants of the Member States in Southeast Europe and newly independent states presented their assessment focusing on the following four aspects.[3]

- How asbestos issues were recognized, and responded to?
- What are the morbidity, mortality, health cost, and economic burdens?
- What are the trends of burdens and policy actions in the coming years and decades?
- What are the lessons and recommendations on the most effective and efficient policy options?

South-eastern European countries

Albania
Since 1994 the usage of asbestos in some areas has been regulated by decision of Ministers Council 1994 “Prohibition of the use of asbestos as thermal insulation material in all types of buildings for residential and public use”. However, there is no law on asbestos. Asbestos-containing materials are not forbidden. An environmental NGO in Tirana, Association for New Environmental Policies (ANEP), estimated the amount of asbestos to be around 188 thousand tons but there are no official data.

Croatia
All forms of asbestos including chrystotile are banned in Croatia in 2006 by the “List of poisons whose production, transport and use is prohibited (Official Gazette 29/05)”. An asbestos-containing construction product factory near Split was closed by this law 2005. However, 8 000 tons of asbestos were illegally disposed in open area within the factory for 2 years, and the issue of unsafe and inadequate removal of asbestos endangered health of the 300 000 residents in Split. Act on mandatory health surveillance of workers professionally exposed to asbestos (Official Gazette 79/07) and Act on compensation of workers professionally exposed to asbestos

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(Official Gazette 79/07) enabled all occupationally exposed employees to submit a claim to the Committee established by the Government (Official Gazette 90/07). There are significant differences in establishing diagnosis of ARDs between different radiologists and pulmonologists from different hospitals in Croatia. There are also problems in addressing claims of ARDs of workers with asbestos exposure. Until the end 2010, 987 claims submitted but only 38% (n=376) were reviewed by the Medical Committee with 48% (n=181) of claims approved positively. There are not enough data concerning labour hygiene and industrial safety measures related to asbestos.

Montenegro
Asbestos was imported to Montenegro until 2003. In the last 4 years, regulations on asbestos use were introduced. During the reconstruction of Porto Montenegro, 600 tons and 550 tons of the asbestos waste were removed. Similarly, 550 tons of asbestos waste were removed from a factory of electrolysis. The asbestos waste was exported because Montenegro does not have adequate landfill for hazardous waste. The customs law concerning asbestos-containing materials is being harmonized with EU directives. Decision on the Control List for Export, Import and Transit of Goods (Official Gazette 10/2011) stipulates that the export and transit of waste asbestos (dust and fibres) require a license of the Agency for Environmental Protection. Waste Management Law (Official Gazette 80/2005) prohibits the importation of asbestos waste. Among ARDs, 6 asbestosis cases were reported to occupational disease registry, and 37 mesothelioma cases were reported to the national cancer registry in 2009.

Serbia
Asbestos issues in Serbia were recognized during late 1980's related to occupational exposure (e.g., mines, asbestos processing factories) and environmental exposure (e.g., neighbourhood around mines, asbestos processing factories, and "asbestos village"). After 2003 the Serbian Government (Ministry of Environment and Ministry of Economy) proposed to the Parliament the ratification of the ILO Asbestos Convention No. 162. In 2003-2009, raising awareness compaigns on asbestos adverse health effects were carried out with aims to facilitate elimination of asbestos use and to prevent asbestos-related ill health. The Rule on Disposal of Waste Containing Asbestos was adopted in 2010. There is still an automobile factory producing asbestos-containing brake pads. The international efforts to eliminate ARDs and pressures from the civil society will provide a significant motive for the government to develop and implement a national programme on the asbestos issue. The nominated participant concluded that public awareness of asbestos hazards must be raised to a higher level.

The former Yugoslav Republic of Macedonia
Although there is no industry neither manufacture using asbestos since mid 1990s, there are about eight cases of mesothelioma per year. The rulebook for minimal requirements for safety and health of workers at risks related to occupational exposure to asbestos (Official Gazette 50/2009) is in accordance with the EU regulations on safety measures to prevent ARDs. Transportation, packing and marking, treatment, processing, deposition and removal of asbestos waste is in accordance with the Law for waste management (Official Gazette 68/2004 and 71/2004), and Rulebook for management of asbestos waste and asbestos-containing products waste (Official Gazette 89/2006). However, there are no dedicated sites for asbestos debris.

Turkey
According to the Ministry of Health, there were 1 320 cases of mesothelioma in 2005–2009. Environmental exposure to asbestos (e.g., tremolite and chrysotile) from local soil is responsible for a high incidence of ARDs in several rural areas. Interior and exterior of houses are plastered with asbestos-containing "white soil". There are several places in the country where there are

asbestos, asbestos-containing materials, and asbestos contaminated ground surfaces (including harbours). On the 31st of December 2010 use of asbestos was completely banned by the Statement of Environmental Management Directorate, although partial ban was adopted already in 2002. Although a programme for the recovery of contaminated sites and transfer of residents to safer place do exist, the awareness of the public, health professionals and policy-makers is low about the impact of asbestos at industrial facilities.

Newly independent states of the former Soviet Union

Armenia

Prior to the dissolution of the USSR, asbestos was widely used in building materials and products (slate, partition plates, pipes, ventilation, electric heaters, etc.). In 2009-2010, about 200 tons of chrysotile asbestos were imported. Roofing slates used in the rural areas mostly contain asbestos. Old pipes and slabs used for heating purposes also often contain asbestos. With the introduction of gas and electricity as well as new roofing materials such as roof tile, use asbestos as a building material dropped dramatically. However, despite the decline of new use of asbestos in the construction, the existing asbestos materials and the waste remain a problem. The Government Decree of 2005 completely banned the use of chemicals covered by the Rotterdam Convention. This means that import and use of chrysotile asbestos is still allowed. ARDs have not been registered in the country.

Azerbaijan

Asbestos has never been mined, an asbestos slates facility was closed down 20 years ago. By law asbestos-containing materials are considered hazardous, and asbestos waste should be be buried at special sites by law. There are two sites for asbestos waste. No ARDs have been registered.

Belarus

There are two enterprises that use asbestos with 650-700 workers. On average, 12 000 tons of chrysotile asbestos is imported each year. Although the national cancer register existed since 1990, no ARDs have been registered. A screening investigation is being planned to evaluate the working conditions and health status of the employees at these facilities. The Ministry of Health is working on an expert assessment of national documents characterizing the legislation on occupational health and safety in the use of asbestos, asbestos consumption and imports, estimated the number of workers in high-risk exposure to asbestos and asbestos dust assessment of individuals, working conditions and health workers with professional contact with asbestos dust (including malignant ARDs). Collection and analysis of materials is ongoing and will be completed in 2013.

Georgia

Asbestos-containing construction materials have not been produced in the country since 1992. However, demands for building material containing asbestos were high in recent years due to the development of building industry for reconstruction and dismantling of old buildings as well as for new constructions. A total of 4374 tons of imported asbestos was consumed in the year 2010-2011. Special measures and control are not provided to the workers handling asbestos-contained material. According to the National Cancer Centre of Georgia, there have been 28 cases of mesothelioma in 2000-2010. Because the connection between asbestos exposure and ARDs hasn't been studied, there is no information concerning the magnitude of ARDs in the country. National legislations related to asbestos include the Decree № 133/N of the Minister of Labour, Health and Social Affairs of Georgia: "On Production, Use and Ban of Export-Import of Hazardous Chemical Substances on the Territory of Georgia" (2001) and Sanitary Rules and

Norms (SanPiN): Hygiene requirements for working with asbestos and materials substitute of asbestos (2004); Hygiene requirements for industry of building materials (2004). There is no regulation concerning the utilization and safe disposal of asbestos-contained materials and residue. There is a great need to develop national programme for elimination of ARDs. The following steps would be considered: creation of intersectional group in connection with the exposure of diseases caused by asbestos and defining of elimination policy; identification of the sources of asbestos exposition; conduction of epidemiological studies of asbestos occupational exposure on workers; selection of appropriate compensation mechanisms and creation of appropriate infrastructure on social protection; implementation of modern exposure assessment at the workplace; and improvement of the regulation related to asbestos.

Kazakhstan
Asbestos has been mined, exported and consumed for more than 40 years. Fourteen cases of asbestosis has been registered. There are no ongoing activities to ban production and use of asbestos.

Kyrgyzstan
In 2010, a total amount of 6 686 tons of chrysotile asbestos was used. In 2009, the imported amount from Russia was 7 242 tons. In 2008, an amount of 10 529 tons of chrysotile asbestos was imported (3 134 tons from Russia, 7 395 tons from Kazakhstan). The amount of import has decreased since 2006. There are 204 employees in a factory producing asbestos-cement slates. Since 2009, the production of asbestos-cement pipes was stopped. No occupational diseases were diagnosed at the mandatory periodical examinations as of 2000. Norms are defined according to the overall bulk mass of dust. There are no official statistics on ARDs or mesothelioma cases. Sanitary Rules and Norms specify hygienic requirements for enterprises that produce building materials, for individual manufactures, for working conditions and organization of the work process, preventive measures and environmental protection as well as for the control of their compliance. For instance, hygienic requirements to building materials producers (SanPiN 2.2.3.005-03) address asbestos and artificial mineral fibres, e.g., mineral wool, glass fibre, glass wool, basalt, silica-containing fibres. The employers have the responsibility for assuring compliance with sanitary rules, for developing and implementing measures to control and prevent the exposure of workers to asbestos factors along with the maintenance of laboratory control. There is a factory producing asbestos-cement pipes

Russian Federation
The Russian Federation has been the largest producer and consumer of chrysotile asbestos in the world from 1886 until 2009. In former USSR countries, only chrysotile asbestos was used in civil applications. Asbestos-cement products accounted for more than 80% of all asbestos products. In non-industrial applications, predominantly asbestos-cement roofing materials were used. Amphiboles (anthophylite and crocidolite) were produced from 1947 until 1994 in small amounts (about 40,000 tons for entire history of production) at two deposits in Sverdlovsk region. According to a Russian study quoted by Dr Evegeny Kovalevskiy, one of the Russian delegates at the meeting, one study showed that mesothelioma incidence rates vary from: 4.3 per million a year (Asbest- chrysotile) and 7.1 per million a year (Sysertsky–anthophylite), to 27.1 per million a year (Novoasbest-crocidolite). Chrysotile-containing materials allowed for use in the Russian Federation are according to ”List of asbestos-cement products recommended for use (2.1.2/2.2.1.1009–00 State Standard)” and “Asbestos products recommended for production and use at transport, equipment, industrial and common life commodities (Letter no. 1100/3232-1-110)” of Chief Hygienist of the Russian Federation. Safety measures in use of these materials are determined by State Sanitary Regulations “Use of asbestos and asbestos-containing materials (2.2.3.757 – 99 State Sanitary Regulations)”. In 2007, the Ministry of Health and Social

Development of the Russian Federation issued an order to develop a project of National Programme for Elimination of Asbestos-Related Diseases for the period of 2008 - 2017. The Russian participants proposed to gather informational resources needed for the development of a national asbestos profile as a first step. Sufficient work should be done on estimation of: total number of persons exposed from occupational, non-occupational and environmental sources; preparation of formal register of industries where exposure exists and industries with largest numbers of workers potentially exposed; and register of industries with high risk of exposure and estimated total number of workers at high risk. The content of these registers must include information on exposure levels typical for every occupational and non-occupational group and industry branch in order to avoid under-rating or over-rating the asbestos related diseases risks. We need more information for some types of industries such as ship building and maintenance, chemical industry, metallurgy, several areas in construction industry, etc. The Russian delegate mentioned that asbestos-cement materials and other asbestos-containing construction materials when used with ordinary precautions without intensive destruction can not release asbestos fibres into the environment, and that uncontrolled demolition and repair of friable asbestos and man-made mineral fibre (MMMF) materials can be an important source of occupational and non-occupational exposure to mineral fibres. Further work and selection of priority directions of actions would be possible only after realization of fundamental for further activities phase – preparatory phase according to ILO/WHO "Outline for the Development of National Programmes for Elimination of Asbestos Related Diseases".

Turkmenistan

In 2010 asbestos was imported in the amount of 3 170 tons and also 2 360 tons of asbestos – containing materials. There are some small private facilities that produce slants (using asbestos imported from the Urals). Asbestos scrap is used to isolate pipes in the oil industry. Occupational diseases related to asbestos have not been registered.

Ukraine

Chrysotile asbestos is imported from the Russian Federation and Kazakhstan. In the 1950s the usage of amphibole asbestos was stopped but there is no direct ban. There is an overall decrease in the usage of asbestos: in 2005, 115 000 tons, and in 2010, 55 000 tons. The majority of asbestos is used for asbestos-cements for roofing. In the construction of residential and public buildings, fragile and dusty asbestos-based materials never had wide distribution. Sputtering asbestos does not apply in civil construction. The maximum permissible concentration of dust containing asbestos in the air of the working area for materials containing more than 10% asbestos is 2 mg/m^3, and that for materials containing asbestos less than 10% is 4 mg/m^3. There are 163 570 people that actually have contact with materials containing asbestos. The national cancer registry has been in operation since 1988. In the past 25 years there have been 35 cases of ARDs – 19 of them were asbestosis. Two cases of occupational lung cancer were identified in asbestos workers of thermal power stations. Mesothelioma of the pleura and mediastinum in relation to asbestos exposure is not reported. New national sanitary rules for the safe use of asbestos will include an official ban of amphibole asbestos, limiting the scope of chrysotile asbestos, assessing asbestos concentrations in the working area with gravimetric method on evaluation method in terms of the number of fibres. There is a need to raise awareness of high hazard of asbestos and to build capacity of medical professionals for sensitive and specific diagnosis of asbestos-related diseases. National programme for elimination of ARDs will include study of risk of various types of natural and synthetic fibres and materials containing them, and comprehensive preventive assessment of possible alternatives to chrysotile asbestos-containing materials in various industries.

Uzbekistan
There are deposits of chrysotile and amphibole asbestos but they are not mined. There are three big and a few small facilities that produce construction materials. Asbestos is imported from the Russian Federation, China, and Kazakhstan. There are Sanitary Norms and Rules covering the production, use, transportation and waste management of asbestos-containing materials: "Work health and environmental protection during production and use of asbestos containing products (SanPiN № 0233-07)"; "List of asbestos-cement materials and designs approved for use and the scope of its application in the construction (SanPiN № 0168-04)"; and "Sanitary regulations and norms of collection, transportation and disposal of asbestos containing wastes (SanPiN № 0158-04)". There are no ARDs registered. About 1 000 – 1 100 lung cancer cases are registered annually, but the connection to asbestos has not been investigated.

Viewpoints of the key stakeholders

Dr Helen Clayson of Asbestos Victims Support Groups UK Forum, Ms Fiona Murie of Building and Wood Workers' International, and Dr David Sherson of International Commission on Occupational Health presented the viewpoints and current activities of ARD patients, trade unions, and occupational health specialists.

Asbestos-related diseases victims

Deaths from asbestos-related diseases are among the most painful processes for the patients and their families. The support groups for patients with asbestos-related diseases have been founded since 1970's and their number is increasing around the world. They support victims and potential victims of asbestos-related diseases by providing information and education, and campaign for the global ban on asbestos to prevent the future victims. They are not-for-profit and independent from the asbestos industry or any entities working for the asbestos industry or against asbestos victims in any way. In order to make the voice of the victims heard by the policy-makers at the national and international levels, the support groups work with national and international networks of community-based social movement addressing asbestos. They have a pivotal role in raising awareness and urging political commitments. A global survey is being performed to produce a database of organizations and activities of victims and their supporters around the world. The experiences and viewpoint of victims should be considered in the development of national programmes and actions for elimination of asbestos-related disease.

Trade unions representing construction workers

In order to prevent exposure of construction workers to asbestos, the occupational exposure to asbestos and asbestos-containing materials should be banned. When workers are assigned to the demolition or renovation works of old buildings containing asbestos or having potential hazards of asbestos exposure, workers should be provided with training and personal protection equipments for full protection from asbestos fibres. The trade unions of construction workers strongly support inclusion of chrysotile asbestos in the Rotterdam Convention PIC list. The use of chrysotile asbestos must be banned globally, while the employment in the existing chrysotile industry should be protected by shifting of manufacturing into asbestos substitutes.

The International Commission on Occupational Health (ICOH)

ICOH's Scientific Committee on Respiratory Disorders (ICOH-SCRD) recommends the elimination of asbestos use in order to prevent asbestos-related diseases. It suggests that all countries, if not already done so, should develop and implement activities leading to total asbestos bans. To monitor progress towards the elimination of asbestos-related diseases at the

national level, ICOH-SCRD encourages countries to compile a national asbestos profile including information on asbestos use and exposed workers as recommended by WHO and ILO. ICOH Working Group on the elimination of asbestos-related diseases advises ICOH Board on activities for the recommendation of the global ban of asbestos in order to achieve elimination of asbestos-related diseases. The Working Group will produce guidelines on occupational health aspects of elimination of asbestos-related diseases. This document will be reviewed by ICOH Board at the ICOH Congress in Cancun, Mexico, March 2012.

Priorities of process and contents of national programme

Following the structure of the outline of national programme prepared by WHO and ILO, the participants discussed in three working groups on strategic actions, institutional framework and principal partners, and programme implementation.

The Russian Federation and Ukraine have already prepared drafts of their national programmes for future adoption by the government. The former Yugoslav Republic of Macedonia is planning to draft its national programme. Montenegro and Albania are going to prepare their national profile as a starting point. For the newly independent states, the hazards of chrysotile asbestos in not well known even among the medical professionals. In these countries, national programme should include activities for awareness-raising as a priority. It was suggested to hold a united Central-Asian workshop on the ways for developing a national profile. Similar cooperative work could be organized for the countries of south-eastern Europe. The following data are recommended by WHO and ILO to be included in the national asbestos profiles.

- Current regulations on the different forms of asbestos
- Import and consumption of asbestos per year (total and per major uses and forms)
- Import of asbestos-containing materials
- Domestic production of asbestos (if applicable)
- Domestic production of asbestos-containing materials
- Estimated total number of workers exposed to asbestos in the country
- Full list of industries where exposure to asbestos is present
- Industries with high risk of exposure and estimated total number of workers at high risk
- Estimate of the burden of diseases related deaths attributable to asbestos exposure
- Prevalence of asbestosis – national data, a breakdown
- Incidence of lung cancer among workers exposed to asbestos
- Incidence of mesothelioma
- Estimates on the percentage of house stock and vehicle fleet containing asbestos
- Total number of workers eligible for compensation for asbestos-related diseases
- National enforceable occupational exposure limits for chrysotile asbestos
- The system for inspection and enforcement of the exposure limits
- Estimated economic losses due to asbestos-related diseases
- Major studies on epidemiology of asbestos-related diseases in the country
- Estimate of the burden of diseases related deaths attributable to asbestos exposure

For middle and low-income countries, the change from an old asbestos-dependent technology to another without asbestos will need financial as well as technical supports from international community. To minimize the socioeconomic impacts of technology shift, it is important to take into account the specific and complex economical situation in each country of the region. The

experience of countries that have successfully banned the use of asbestos and turned to alternative technology should be shared between the Member States in the Region.

Health risk assessments of asbestos at the national level and active surveillance of ARDs are essential to raise awareness of the public and to motivate the countries to change to non-asbestos technologies and materials. In many countries where the use asbestos was banned earlier than other countries, the tragic stories of ARD victims supported by the patient advocacy groups were the key trigger for the policy-makers to take strong actions. Learning from such lessons, development of national programmes should involve the support groups for ARD victims and their networks as well as the social partners. In all countries the highest national burden of ARD is observed among construction workers. Special attention should be given to the inspection of workplace conditions as well as the prevention, diagnosis, treatment, registering and compensation of ARDs. The national programmes could also consider funding mechanisms to motivate the safe removal of asbestos in existing buildings.

Conclusions and recommendations

The meeting made the following conclusions and recommendations after open discussion.

1. ***The IARC Monographs Programme repeatedly evaluated the evidence on the carcinogenicity of all types of asbestos,*** including chrysotile, and always concluded that asbestos is a human carcinogen (Group 1). The WHO/IPCS EHC 203 on chrysotile came to the same conclusion.[4,5] Asbestos causes mesothelioma and cancers of the lung, larynx and ovaries. Due to world-wide exposures in the past and present in numerous countries, the global burden of ARDs is very high.[6] There is, however, evidence on substantial under-reporting which would suggest even higher numbers of persons with ARDs. In many countries with reliable health statistics, the incidences of mesothelioma deaths from the asbestos exposures in the past are continuously increasing due to long latency period. In three decades after bans and comprehensive national programmes against all types of asbestos introduced in some countries (e.g., Finland), there is a decreasing trend of asbestos-related lung cancer in recent years. These historical phenomena call for urgent actions for elimination and prevention of further exposures and good secondary and tertiary preventions for the health care and compensation of patients with ARDs.

2. ***Data and registration systems for occupational diseases in general and for ARDs in particular*** are in many countries non-existent or weakly developed. Such systems should be available for every country. Guidance from WHO and ILO is needed for establishment of appropriate systems for registration and statistics of occupational diseases in general and ARDs in particular.

[4] The Lancet Oncology, Volume 10, Issue 5, Pages 453 - 454, May 2009.
[5] IPCS. Chrysotile asbestos. Environmental health criteria 203. International Programme on Chemical Safety, Geneva. 1998. For WHO website on asbestos-related diseases for more information, see http://www.who.int/occupational_health/topics/asbestos_documents/en/index.html
[6] The global burden of disease attributable to asbestos has been estimated to amount to 107,000 deaths and 1,523,000 DALYs for the three mentioned diseases in 2004. Among these, 41,000 deaths and 370,000 DALYs were due to asbestos-caused lung cancer, and 7,000 deaths and 380,000 DALYs to asbestosis. The remaining 59,000 deaths and 773,000 DALYs were attributed to malignant mesothelioma (Annette Prüss-Ustün, arolyn Vickers, Pascal Haefliger, and Roberto Bertollini1.Knowns and unknowns on burden of disease due to chemicals: a systematic review. Environmental Health;2011:10. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3037292/#B14)

3. ***The ability of practicing physicians and health care system in general in identification, diagnosis and management of ARDs*** is not sufficient in many countries. Training courses for improving health personnel's knowledge on ARDs are recommended. A minimum element on asbestos related diseases should be included into the basic medical curricula and in the programmes of continuing medical education.

4. ***A wide variety of less hazardous substitutes of asbestos for various uses is available*** for reasonable or no additional cost and in many cases with better technical and practical feasibility. Such alternatives should be more effectively informed to the potential users and appropriate guidelines for their use should be produced. Before taking into use the substitutes should be adequately assessed for their health and environmental impact.[7]

5. Several international and national bodies and the EU supported financially or through loans the building of infrastructures, apartments, public buildings and production facilities in many countries which may use asbestos in insulation or as a component of construction materials or in numerous technical uses. ***The international financing bodies should condition their financial support and loans*** by requirement of asbestos-free investments in the projects supported by such bodies. We welcome the Good Practice Note of the World Bank Groups.[8]

6. ***Special social and caring support services for ARD patients*** have been effectively organized by grassroots organisations in some countries. Such grassroots level support should be encouraged, valued and made available for all ARD patients in every country. Government authorities, national charities, regional bodies and international agencies should work closely with these groups and provide financial and practical assistance where possible.

7. Among 53 member states of the WHO European Region, ***more than 30 European Countries have banned for use all types of asbestos*** through legislation. Some countries have prohibited only the amphiboles or specific individual fibre types. Around twenty countries have not banned the use of chrysotile. A few countries do not have any legislation on asbestos. ***Regulation of asbestos by every country is recommended according to the ILO Convention No. 162 and the ILO Conference 2006 Resolution.***

8. Even in the countries which have banned the use of all new asbestos a ***large body of asbestos and asbestos-containing materials do still exist*** in the facilities, structures, industrial settings, buildings, vehicles and in many other locations. Many countries have emphasised the importance of making risk-based decisions about whether asbestos currently in buildings should be removed (with attendant risks to those doing this work, and possibly others) or managed by safe methods of retention (in which the potential release of fibres is minimised). It is important to protect carefully workers' health in the demolition and other works from a potential exposure to existing asbestos. Adequate measures should also be instituted for protection of the health of population and environment in the handling and disposal of asbestos waste and asbestos containing materials. ***There should be systematic surveys of the existing asbestos in various settings, and***

[7] Some participants pointed out that some substitutes such as refraction ceramic fibres are not completely safe material although they are safer than asbestos. Concerns were also expressed about the socioeconomic impacts of sudden asbestos ban on the employment and quality of life of the workers in asbestos industries. Phasing out the asbestos mining and processing towards global ban of asbestos use, combined with the conversion of asbestos industry to the asbestos-substitute industry was considered to be a realistic approach to the step-by-step elimination of asbestos exposure. This is the process sometimes referred to as 'just transition'.

[8] World Bank Group. Good Practice Note: Asbestos: Occupational and Community Health Issues. May 2009 (http://siteresources.worldbank.org/EXTPOPS/Resources/AsbestosGuidanceNoteFinal.pdf)

proper labelling, information and guidance should be provided for appropriate behaviour and actions in such environments.

9. The Meeting recognized that throughout the Region there is still a ***need for raising awareness and for training on asbestos hazards,*** health effects, prevention and management. Such information and training should be provided for all relevant stakeholders, employers, workers, occupational safety and health experts, educators, policy makers and decision-makers, public at large and the media.

10. The Member States committed at the 5th Ministerial Conference on Environment and Health, Parma, Italy, to developing National Programmes for Elimination of Asbestos Related Diseases by 2015. The WHO and the ILO have drawn up a guideline for preparation of such Programme. ***The Countries are encouraged to undertake immediate actions for preparing the national programmes for ARDs with WHO/ILO supports***.

11. The meeting agreed on the following ***steps in development of the National programmes*** for elimination of ARDs:

- Preparation of national asbestos profiles is the first step;
- WHO will provide technical supports to the Member States for collection of key information needed for national and regional asbestos profiles in 2012;
- WHO will convene annual meeting of national focal points on asbestos policy to monitor the progress in developing the national asbestos profile and national programme; and
- WHO will collaborate with ILO to provide technical and policy supports through international meetings and national workshops.

12. The overall implementation of the Parma Declaration will be **reported to the 2016 Ministerial Conference on Environment and Health** including the development of the national programmes for elimination of ARDs. A roadmap to the 2016 Ministerial Conference will include the following milestones of asbestos policy development at national and international levels.

- Milestone 1: Burden of asbestos-related diseases in Europe (2012)
- Milestone 2: National asbestos profiles (2013)
- Milestone 3: Regional asbestos profile (2014)
- Milestone 4: National programmes & action plans (2015)
- Milestone 5: Report to the Sixth Ministerial Conference on Environment and Health (2016)

Annex 1: Summary of country situations presented by temporary advisors[9]

Bulgaria

The availability and the exploitation of natural deposits of anthophylite – tremolite asbestos as well as the significant production and use of asbestos product during the last 3-4 decades of the past century are the main problems. The presence of natural asbestos admixture (anthophylite) in cultivated soil layer in Eastern Rhodopes and Belasitza is linked to the endemic cases for pleural asbestosis (986 cases). More than 5 000 tones of chrysotile have been imported. Asbestos exposure monitoring was introduced in 1977. It was performed by specialized laboratories at the regional structures of the Ministry of Health and the National Centre for Public Health Protection, which was the methodological advisor of the national network. Medical monitoring of asbestos exposed workers is implemented since 1973 at the Centre for Occupational Diseases. The diagnosis of asbestos induced lung diseases is made at specialized diagnostic commissions for occupational lung diseases. In the period from 2001 to 2008, national programme for gradual reduction and phasing out the use of asbestos was implemented. The measures stipulated in the Programme set the basis for improvement and its harmonization with the EU of the Bulgarian legislation concerning the use of asbestos, the protection of workers from hazards related to work with asbestos as well as the prevention and reduction of environmental pollution by asbestos. Although Bulgaria banned the import, production and use of all asbestos fibres and types of asbestos-containing products as of 1st of January, 2005, there is a trend of increase in the newly diagnosed cases of malignant pleural mesothelioma over the last 20 years (Annex Table 1). The prevailing number of them come from regions with occupational use of asbestos, which suggest a possible relationship between their increasing number and occupational asbestos exposure.

Annex Table 1. Number of newly diagnosed cases of mesothelioma in Bulgaria in 1991-2008

	1991	1992	1993	1997	2006	2007	2008
Total number of new cases	6	9	14	16	28	47	39

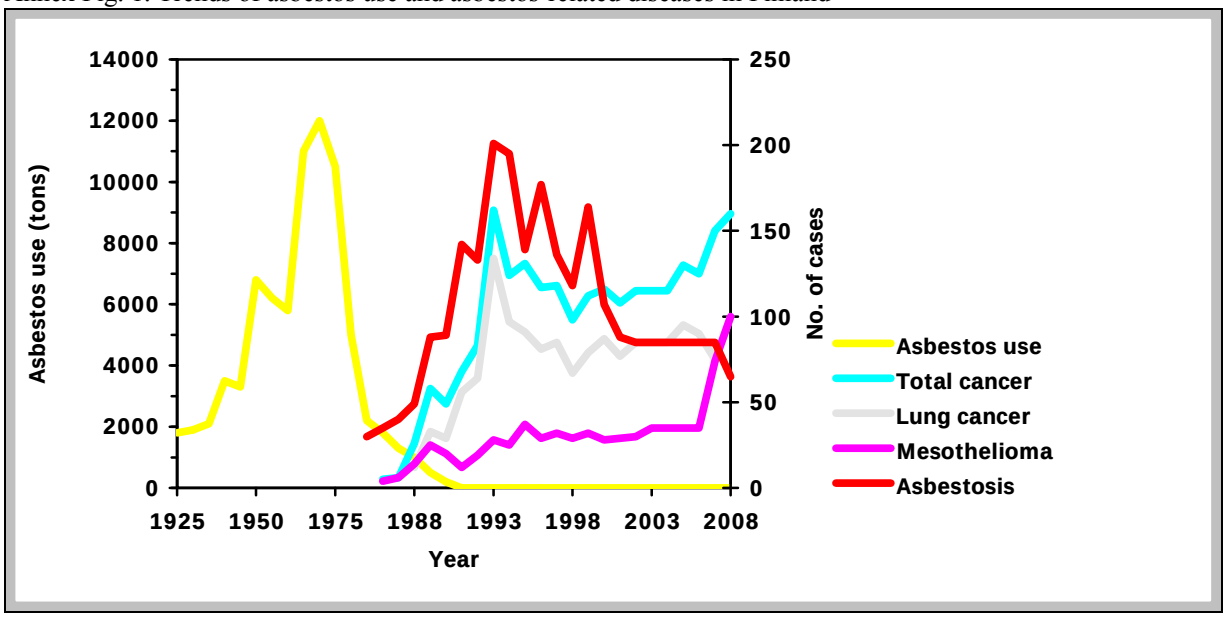
Finland

Regulatory and technical measures of the National Asbestos Programme of 1988-1992 banned production, import, export, selling, transferring, storing, or dumping of all types of asbestos through a nation-wide elimination and substitution programme. Stringent rules and licensing of removal and demolition work with careful precautions have been in place along with training and education programmes for workers and employers. Labelling was enforced for asbestos and waste handling was allowed only to licensed workers. For those workers dealing with asbestos-containing materials for demolition, exposure limit standard was lowered to TLV to 0.1 f/cm^3. Ban of asbestos effectively eliminated new exposure. However, asbestos ban did not eliminate exposure to the existing asbestos in old buildings. Additional enforcement actions were needed such as programmes to protect demolition workers and to detect asbestos-related diseases among the retired workers. The relationship between asbestos consumption and asbestos-related diseases was analyzed starting from 1925. All asbestos-related diseases were increasing in the 1980s even though the asbestos use was declining since 1970s. Phasing out and ultimate ban of asbestos use in 1988-1992 resulted in the decreasing incidence of lung cancer and asbestosis in

[9] The temporary advisors were invited by the WHO among the experts on asbestos situations in the country. Although some temporary advisors were nominated by the ministry of health, the review and assessments in this Annex should not be considered the official statement of the Member States or WHO.

the 1990s. However, the incidence of mesothelioma is still increasing reflecting its longer latent period. Lessons learned from Finnish experience are that the national programmes for elimination of asbestos-related diseases should cover at least 50 years following asbestos ban. A compensation fund of 100 million Finnish marks for the affected workers has been founded. The patients with suspected asbestos-related diseases are on the fast track of treatment and compensation considering the rapid progress of the disease leading to death. A wide campaign is supported by the Institute for Social Health together with the trade unions. In Finland, there were no economic barriers against replacing asbestos-containing materials with safer substitutes.

Annex Fig. 1. Trends of asbestos use and asbestos-related diseases in Finland



France

In France, asbestos was widely used in the 20th century with the peak annual use of 17 000 tons in 1973. However, all types of asbestos was banned for use in 1997. There are two systems for the compensation of people suffering from asbestos-related diseases: FCAATA for the workers at early retirement due to ARDs, and FIVA for the asbestos victims of environmental and occupational exposure including workers' families. It is predicted that 50 000 to 100 000 deaths will be caused by asbestos in 2005-2030 in France. As of 2009, FIVA paid 359 million EURO to 6 650 claimants. The total amount of cumulated cost of compensation reached 2.4 billion EURO (Annex Table 2). On average, 125 000 EURO is paid to each mesothelioma case, and 19 000 EURO to each asbestosis case. Lessons for other countries are to apply the precautionary principle and use substitutes of asbestos as early as possible.

Annex Table 2. Economic costs of asbestos-related diseases paid by FIVA in France

Diseases	Total cumulated cost as of 2008 [€]	Expenses in 2009 [€]	Total cumulated cost in 2009 [€]
Minor illness	609 637 000	88 543 000	698 180 000
Asbestosis	81 513 000	14 763 000	96 275 000
Lung cancer	732 720 000	165 494 000	898 214 000
Mesothelioma	501 547000	78 962 000	580 508 000
Other diseases	112 382 000	11 687 000	124 068 000
Total	2 037 797 000	359 447 000	2 397 243 000

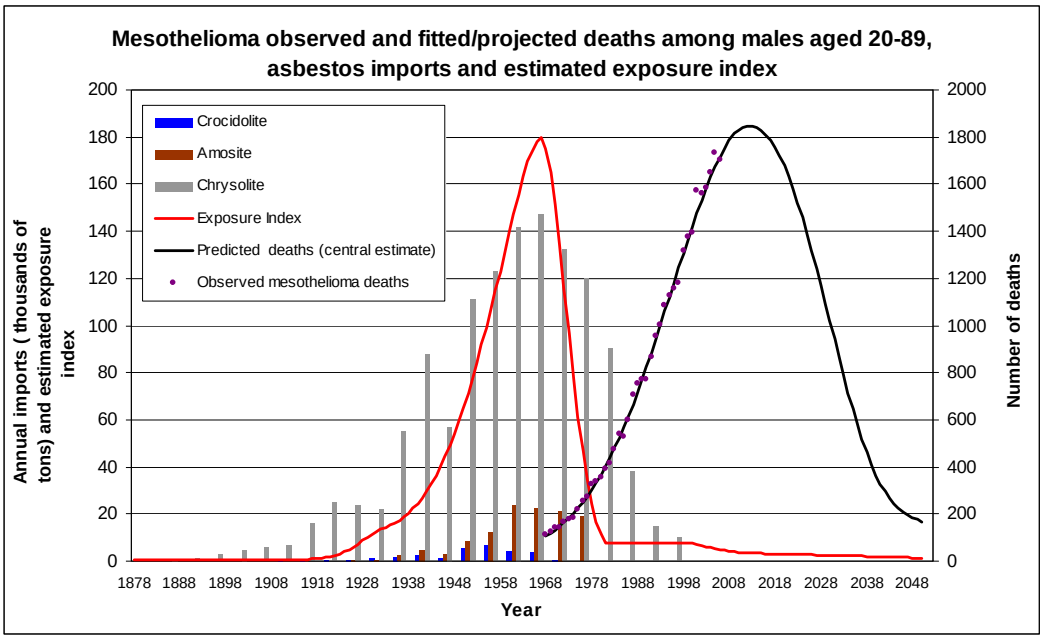
Germany

Asbestosis was first diagnosed in 1900, and recognized as occupational disease since 1936. Lung cancer with pre-existing asbestosis was also recognized as occupational disease since 1943. Asbestos fibres were announced as carcinogenic substance in 1970, and asbestos spraying was banned in 1979. It was only 1993 when all types of asbestos were banned (except diaphragms for electrolysis). It took almost 50 years from the first medical recognition of carcinogenicity to the national ban. The human and economic costs of delayed asbestos ban are severe. For instance, the German Statutory Accident Insurance recognised 3 826 new cases and 112 deaths of asbestosis, 3 736 new cases and 513 deaths of lung cancer, and 1 386 new cases and 747 deaths of mesothelioma in 2009. About 1 500 persons die per year due to former occupational contact with asbestos. Compensation costs of social statutory insurance for ARDs was 54 million US dollars (41.22 million EUR) in 2008. Compensation costs for the whole period from 1987-2008 was 5.84 billion US dollars (4.46 billion EUR). Total cumulative cost for ARDs in German economy is estimated to be 20 billion US dollars (15.26 billion EUR). According to the presentation of temporary advisor, the delay of asbestos ban was influenced by the lobby of the asbestos-related industries. It is important to eliminate any undue influence of asbestos-related industries in the making of national and international policies for elimination of ARDs.

Great Britain[10]

The first cases of ARDs were registered in 1898, and the causality between asbestos exposure and respiratory diseases was officially recognized since 1907. The number of mesothelioma cases has been rapidly increasing since 1981. Legislation was introduced banning amphibole asbestos in 1992 and chrysotile asbestos in 1999. Annex Fig. 2 shows the long-term trends of asbestos exposure and mesothelioma deaths in Great Britain.

Annex Fig. 2 Long-term trends of asbestos exposure and mesothelioma deaths in UK



Indeed, the recent trend is much worse than predicted before. For example, 2 250 and 2 321 deaths from mesothelioma occurred in 2008 and 2009, respectively, which is much higher than predicted in Annex Fig. 4. In general, the number of deaths from lung cancer is similar to that from mesothelioma. More than 4 000 deaths occur due to ARDs annually in recent years. There

[10] Northern Ireland has its own health and safety regulator and was represented in this meeting. The figures presented in this section do not include those for Northern Ireland.

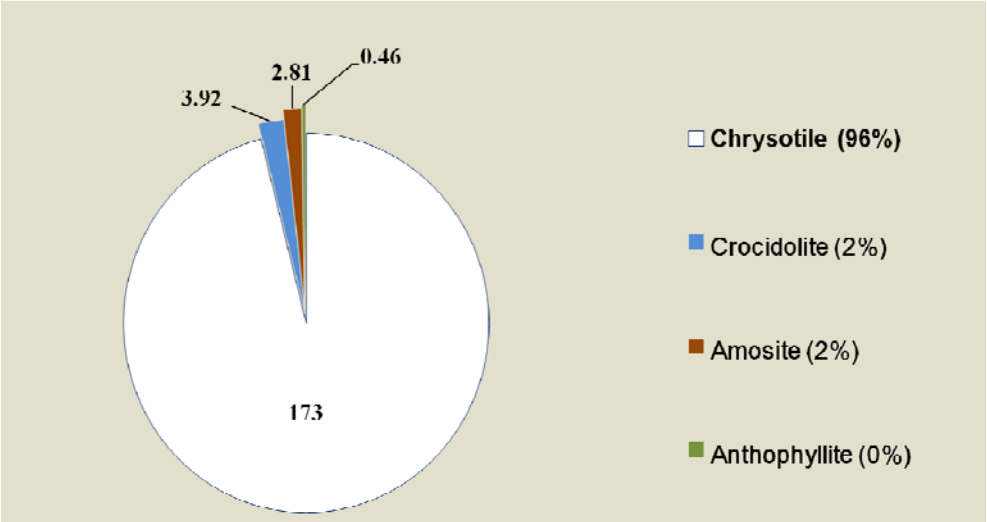
were 400 compensated cases of pleural thickening in 2008. The reason why the trend is worse than expected might be due to the increasing proportion of deaths from construction and buildings trades' workers affected by the vast quantities of asbestos already in situ in a huge number of public and domestic buildings in Great Britain. It is governmental policy of Great Britain that a risk assessment is necessary in deciding about the management of asbestos already present in buildings so that a proper balance is achieved between its removal and safe retention/management.

Annex 2: Summary of scientific evidence and global trends presented by WHO temporary advisors

Scientific evidence

The term "asbestos" designates a group of naturally-occurring fibrous serpentine or amphibole minerals. The principal varieties of asbestos are chrysotile, a serpentine material, and crocidolite, amosite, anthophylite, tremolite and actinolite, which are amphiboles. The US Geological Survey data show that 96% of asbestos in the market was chrysotile form of asbestos in 1900-2003 (Annex Figure 3). Since early 1990s, chrysotile asbestos is the only form of asbestos produced for trade and consumption.[11]

Annex Fig. 3. World production of asbestos, by type, during 1900 – 2003 (unit: million tons)



Experts of the IARC Monograph Working Group first reviewed all published scientific evidence on the carcinogenicity of all forms of asbestos in 1973, and concluded that there was sufficient

[11] After the meeting, the Russian Federation requested to include the following text in the meeting report:
In most developed countries that were the largest consumers of asbestos in the 20th century extensive use of amphiboles (up to 20% of all asbestos used) in most dangerous friable insulation materials existed. Even after stop of amphiboles use "…Friable chrysotile- and/or amphibole-containing materials in building construction have been phased out in many countries. It should be noted, however, that there are large quantities of these materials still in place in buildings, which will continue to give rise to exposure to both chrysotile and the amphiboles during maintenance, removal or demolition…" (ECH 203)[11]. Another sufficient source of amphiboles and other natural mineral fibres exposure in many countries (such as USA, China, Turkey, Italy, Cyprus, Austria, Greece, Russian Federation, Australia, etc.) is natural environmental exposure (fibres release from rocks and soils)[11,11 etc.]. Also we can mention another positions of EHC 203 useful for understanding of real picture: "…It should be recognized that although the **epidemiological studies of chrysotile-exposed workers have been primarily limited to the mining and milling, and manufacturing sector**, there is evidence, based on the historical pattern of **disease associated with exposure to mixed fibre types in western countries**, that risks are likely to be greater among workers in construction and possibly other user industries…" **"...Cohort studies** of populations of workers **using only or predominantly chrysotile-containing products** in applications such as construction **have not been identified**. Some **relevant information is available**, however, **from population-based analyses of primarily mesothelioma** in application **workers exposed** generally **to mixed fibre types**…" "…Past uncontrolled mixed exposure to chrysotile and amphiboles has caused considerable disease and mortality in Europe and North America. Moreover, historical experience to mixed fibre types in European countries has clearly indicated that a larger proportion of mesotheliomas occurs in the construction trades than in production. Far larger quantities of chrysotile than of other types of asbestos were used in most construction applications. Epidemiological studies contribute to our understanding of the health effects of chrysotile conducted to date and reviewed in this monograph have been on populations mainly in the mining or manufacturing sectors and not in construction or other user industries. This should be borne in mind when considering potential risks associated with exposure to chrysotile…"

evidence for their carcinogenicity in humans and in cancer bioassays. The IARC Monographs WGs in 1977 and 1987 confirmed this evaluation. In 1998, the Inter-Organization Programme for the Sound Management of Chemicals (IOMC), a consortium of UNEP, ILO, FAO, WHO, UNIDO, UNITAR, and OECD, published Environmental Health Criteria No. 203, answering to the specific questions related to chrysotile asbestos (Annex Box 1).

Annex Box 1. Key conclusions of Environmental Health Criteria No. 203, "Chrysotile Asbestos" (1998)

- Exposure to chrysotile asbestos poses increased risks for asbestosis, lung cancer and mesothelioma in a dose-dependent manner. No threshold has been identified for carcinogenic risks.
- Where safer substitute materials for chrysotile are available, they should be considered for use.
- Some asbestos-containing products pose particular concern and chrysotile use in these circumstances is not recommended. These uses include friable products with high exposure potential. Construction materials are of particular concern for several reasons. The construction industry workforce is large and measures to control asbestos are difficult to institute. In-place building materials may also pose risk to those carrying out alterations, maintenance and demolition. Minerals in place have the potential to deteriorate and create exposures.
- Control measures, including engineering controls and work practices, should be used in circumstances where occupational exposure to chrysotile can occur. Data from industries where control technologies have been applied have demonstrated the feasibility of controlling exposure to levels generally below 0,5 fibres/ml. Personal protective equipment can further reduce individual exposure where engineering controls and work practices prove insufficient.
- Asbestos exposure and cigarette smoking have been shown to interact to increase greatly the risk of lung cancer. Those who have been exposed to asbestos can substantially reduce their lung cancer risk by avoiding smoking.

The WHO Workshop on Mechanisms of Fibre Carcinogenesis and Assessment of Chrysotile Asbestos Substitutes, 2005, evaluated the safety of substitutes for chrysotile asbestos, upon request from the Intergovernmental Negotiating Committee (INC) for the Rotterdam Convention. It provided results of hazard assessments in four categories (e.g., high, medium, low, indeterminate) for 12 chrysotile substitutes identified by the INC for priority assessment by WHO, 2 substances from a second list provided by the INC to be assessed if resources allow, and one further substance for which data was submitted in response to WHO's public "call for data" for the workshop. Among the reviewed substitutes, several were considered to have "low" hazards.[12]

In 2009, the IARC working group re-confirmed that there is sufficient evidence in humans for the carcinogenicity of all forms of asbestos (chrysotile, crocidolite, amosite, tremolite, actinolite and anthophyllite). All forms of asbestos cause mesothelioma and cancers of the lung, larynx and ovary. The detailed conclusion is published in Volume 100c of IARC Monograph on metals, arsenic and fibres.

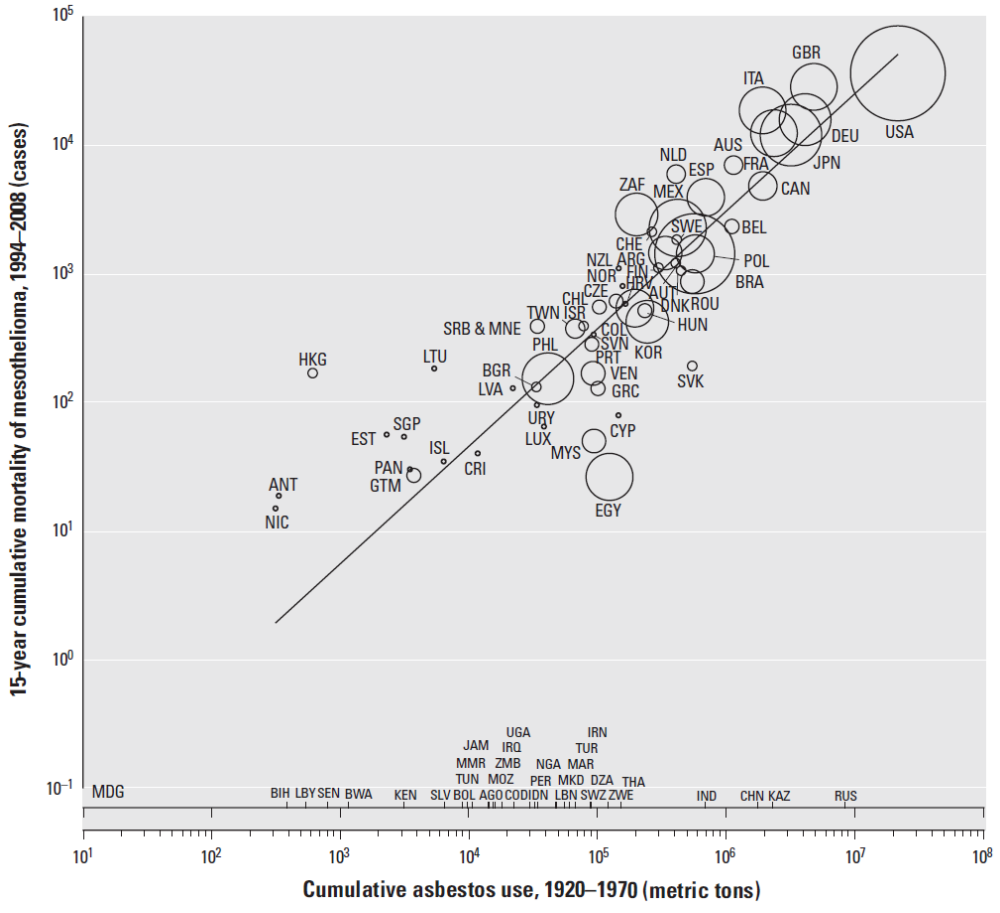
[12] After the meeting, the Russian Federation requested to include the following text in the meeting report:
WHO Workshop on Mechanisms of Fibre Carcinogenesis and Assessment of Chrysotile Asbestos Substitutes considered the mode(s) of action of fibre carcinogenesis and the developments in the field after the IARC 1996 report, but did not produce a formal assessment of the state of the art. The workshop established a framework for hazard assessment based on: epidemiologic data (whether data are sufficient to determine carcinogenicity); in vivo animal data (whether there is an indication of carcinogenicity or lung fibrosis); mechanistic information (whether critical indictors of carcinogenicity exist, e.g. positive results for genotoxicity in *in vitro* tests); **and physico-chemical and biopersistence data as determinants of dose at the target site and possible indicators of carcinogenic potential**. But safety of asbestos substitutes in comparison with chrysotile asbestos was neither discussed nor confirmed at the meeting. Also in the Summary Consensus Report it was clearly stated, that " … **noting that substitutes may be used in a variety of applications with different exposure potential, either alone or in combination with other substances, the workshop did not embark on risk assessment, but rather, limited its work to assessing the hazard** …".
Practically for all evaluated materials cancerogenic hazard was recognized (its levels were different, but its presence was confirmed). For some substitutes there was insufficient information to come to any conclusion on hazard and in such cases the workshop categorized the hazard as indeterminate (a category which is not comparable to the other groupings).

In conclusion, the scientific evidence has only strengthened over time and there is currently overwhelming evidence that chrysotile asbestos and all other forms of asbestos fibres are causally associated with an increased risk of mesothelioma and lung cancer. IARC experts agreed that there is sufficient evidence that laryngeal and ovarian cancers are also associated with asbestos exposure. Although there are variations in the potency between the different forms and size of asbestos fibres, the fundamental conclusion was that *the epidemiologic evidence indicates that all forms and sizes of commercial asbestos fibres are carcinogenic to humans.*

Global burden of asbestos-related diseases and responses of the Member States

The cost of eliminating the results of the usage of asbestos in Western Europe and USA is approximately 280 billion dollars. Annually, 107 000 deaths are due to asbestos-related cancers around the world according to WHO study of global burden of disease. Annex Fig. 4 shows the correlation between the cumulative asbestos consumption (1920-1970) and the cumulative mortality due to mesothelioma (1994-2008).

Annex Fig. 4. Correlation between cumulative 15-yr mesothelioma mortality in 1994-2008 and cumulative use of asbestos in 1920-1970[13]



Because the latent period of mesothelioma has been estimated to be approximately 40 years on average, there will be an increasing trend of this fatal cancer in the coming decades, even though asbestos is banned in more than 50 countries around the world. Out of 53 Member States of WHO European Region, the following 33 countries have banned all types of asbestos including

[13] Environmental Health Perspectives, Volume 119, Issue 4, Pages 514 - 518, April 2011

chrysotile through legislation as of January 2011: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Latvia, Lithuania, Luxembourg, Malta, The Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, and United Kingdom. Globally, over 55 countries have banned all types of asbestos, and this number is increasing because more countries are adopting national asbestos ban policy as the most effective approach to the elimination of ARDs following ILO and WHO recommendations.

Annex 3: Summary of recommendations of WHO and ILO

The continuing use of chrysotile asbestos in the developing countries and newly independent states of European region is a great concern for WHO and ILO. It is estimated that there are 125 million people in the world who are professionally exposed to chrysotile asbestos. Eighteen million of them are in Europe, particularly in the former USSR states, and central Europe. WHO calculated that, as of 2008, the direct economical impact of asbestos-related lung cancer and mesothelioma is 2.4 billion US dollars, which is three times higher than the total economic value of international trade in asbestos (802 million US dollars). WHO considered the conclusions of IOMC (Annex Box 2), and made recommendations for elimination of asbestos-related diseases as Box 2.

Annex Box 2. Summary of WHO recommendations for elimination of asbestos-related diseases

- Elimination of the exposure
  - Stopping the use of asbestos is the most effective preventive measure
  - Provide information about safer substitutes
  - Develop economic and technological mechanisms to stimulate substitution
- Asbestos abatement
  - Avoid exposure during asbestos removal
  - Develop regulatory and workplace control measures for asbestos abatement
- Medical surveillance
  - Improve early diagnosis, treatment, rehabilitation, palliative care, where appropriate, and compensation of asbestos-related diseases
  - establish registries of people with current and past exposures

The ILO is using all its available means of action to prevent occupational health risks posed by harmful exposures to asbestos through wide international co-operation and effective tripartite actions at national and enterprise levels aiming at the elimination of asbestos-related diseases. Among them, the promotion of the ratification and application of ILO's Conventions on occupational cancer (No. 139), working environment (No. 148), safety in the use of asbestos (No.162), and safety in the use of chemicals at work (No.170) are specifically targeted. They provide a solid background for worker protection against exposure to asbestos by prescribing comprehensive preventive measures at national and enterprise levels. Other ILO means of action include sharing knowledge and experience, enhancing labour inspections, direct technical assistance to countries and technical co-operation. This task is being pursued in the context of the wider implementation of the ILO 2003 Global Strategy on Occupational Safety and Health and the recommendation of the 13th Session of the Joint ILO/WHO Committee on Occupational Health (December 2003) to eliminate silica- and asbestos-related diseases.

Annex 4: Review of substitutes for asbestos construction products by a WHO temporary advisor[14]

Abstract

Bans on asbestos have been followed by the complete substitution of asbestos products that used to be used, in countries around the world. Information has been gathered for the World Bank and the WHO on the products available to replace asbestos-cement construction materials and other asbestos products. The product research includes information on providers of alternative products and substitute synthetic and natural fibres. The substitute construction products consist of fibre-cements made with polymeric and plant fibres, as well as wholly different product compositions that serve the same functions as asbestos-cement sheets, pipes, and water storage tanks. Increased costs for producing fibre-cement sheets from polymeric fibres (polyvinyl alcohol or polypropylene) combined with cellulose are 10-15%. Some of the substitute products can be made with locally available materials and labour, using simple, portable equipment in remote locations. Appropriate adjustment of import duties that favour asbestos in some countries can be adjusted to favour asbestos substitution. Long-term operating costs for properly maintaining and renovating structures made with asbestos, not to mention the constant health threat to workers and building occupants, favour constructing the next generation of infrastructure with an increasing array of safer substitute materials.

Introduction

At least 90 percent of all asbestos used worldwide is in construction materials, asbestos-cement sheet (including corrugated roofing panels), pipe, and water storage tanks. In moving to ban asbestos, Thai authorities have found that non-asbestos roof tiles cost only 10 percent more than asbestos and increase the cost of building a town house by only US$65, less than one percent of the total construction cost (1). The volume of scrap asbestos building waste from demolished structures in Japan will exceed 1 million tons/year for the first quarter of this century (2). Brazilian economists calculate that the initial price advantage of asbestos construction materials is more than offset by the added cost of hazardous waste disposal at the end of the product life-cycle, under regulations now in effect in Brazil (3).

Construction materials are of particular concern, because of the large number of workers in construction trades, the difficulty of instituting control measures, and the continuing threat posed by in-place materials that eventually require alterations, repair, and disposal.(4) Very high levels of airborne asbestos have been recorded where power tools were used to cut A-C products. Renovations and repairs in buildings containing A-C materials can also endanger building occupants (5).

The airborne concentrations of asbestos that construction workers experience, using power tools to cut asbestos-cement (A-C) pipe and sheet, can be extremely high, as high as 250 fibres/cc (6). This contrasts with daily average occupational exposure limits of 0.1 f/cc in many countries and a short-term peak exposure limit in the US of 1.0 f/cc. The demolition of A-C wall panels and other structural elements can cause very high exposures for workers and building

[14] The draft of this review was prepared by Dr Barry Castleman as a background document of the meeting. The WHO Secretariat was requested by several participants from southeast Europe and newly independent states to provide the Member States with evidence-based policy options in phasing out asbestos construction products. In response, the paper updated by the author on the availability and safety of asbestos substitute materials is enclosed as an Annex of the meeting report. In no event, this paper shall be considered an official paper endorsed by the WHO. The responsibility for the interpretation and use of the material lies with the reader. The views expressed by the author do not necessarily represent the decisions or the stated policy of the WHO.

occupants, while causing long-term contamination in buildings and surrounding areas. Maintenance work on A-C pipes entails danger for utility workers throughout the service life of the pipes. The use of high-speed disc cutters created exposures averaging 92 f/cc for workers repairing underground A-C pipes (7). The World Trade Organization, in supporting the right of France to ban asbestos, rejected the claim that "controlled use" of asbestos-containing construction materials is a realistic expectation (8).

There are dangers throughout the life cycle of asbestos used in construction materials (5):

> "From the industrial hygiene viewpoint, asbestos creates a chain of exposure from the time it is mined until it returns to the earth at the landfill or an unauthorized disposal site. At each link in the chain, occupational and community exposures co-exist. Workers in the mines are exposed to the fibres while extracting the ore; their families breathe fibres bought home on their work clothes. Workers in the mills and factories process the fibre and manufacture products with it; their families are also secondarily exposed. Communities around the mines, mills and factories are contaminated with their wastes; children play on tailings piles and in contaminated schoolyards; transportation of fibre and products contaminates roads and right-of-ways. Tradesmen who install, repair and remove asbestos-containing materials are exposed in the course of their work, as are bystanders in the absence of proper controls. Disposal of asbestos wastes from any step in this sequence not only exposes the workers handling the wastes but also local residents when fibres become airborne due to insufficient covering and erosion control. Finally, the cycle is often repeated when discarded material is scavenged and re-used in the absence of measures to remove asbestos-containing materials from the waste stream and dispose of them properly."

Global Efforts to Eliminate Asbestos related Diseases

Every year, more countries ban asbestos, while in other countries, an expanding industry is building new asbestos factories. Over 50 countries have banned asbestos products. Yet most of the people in the world still live in countries where asbestos products continue to be used, under conditions not subject to vigilant government regulation. Global asbestos use stopped dropping and has remained little changed since 2000. In the mostly Asian countries that use so much asbestos today, workers are widely unaware of the dangers of asbestos, government regulation is minimal, and the asbestos business remains most profitable where costs for prevention and compensation are minimal.

Since 2006, major initiatives on asbestos have been undertaken by the International Labour Organization (ILO), the World Health Organization (WHO), and the World Bank Group (WBG). WHO echoed ILO in 2006 in urging a global ban on asbestos, concluding that, "the most efficient way to eliminate asbestos-related diseases is to stop the use of all types of asbestos." (9) WHO and ILO are now working with individual countries to develop national plans to eliminate asbestos use and minimize the hazards from in-place asbestos. As many as 5-10 million people are expected to die from asbestos-related diseases. (10)

The World Bank Group has increasingly tried to avoid the use of asbestos in infrastructure projects and disaster relief. In 2007, the WBG issued *General Environmental Health and Safety Guidelines*, specifying that the use of asbestos-containing materials should be avoided in new construction and infrastructure renovation (11). The World Bank then issued a guidance note in 2009, *Good Practice Note: Asbestos: Occupational and Community Health Issues* (5). The guidance note goes into more detail than the 2007 EHS Guidelines on the subject of avoiding problems from asbestos in construction materials.

We next consider the alternatives to asbestos-cement construction materials.

Substitutes I: Substitute Fibres in Fibre-Cement Products

The International Agency for Research on Cancer (IARC) has evaluated the carcinogenic potential of substitutes for chrysotile asbestos. The materials used as substitutes for asbestos in fibre-cement sheet and pipe are polyvinyl alcohol (PVA), cellulose, and polypropylene fibres (PP). Combinations of PVA-cellulose and PP-cellulose have been used in fibre-cement sheets, and cellulose has been used in non-pressure pipes used for sewerage, etc. The IARC working group concluded:

Cellulose: "Most cellulose fibres are non-respirable; for these, the hazard is low. For respirable fibres, the available data do not allow the evaluation of hazard; the hazard is thus indeterminate." (12)

Polyvinyl alcohol: "PVA fibres, as manufactured, are above the respirable limit, and most of them are not inhalable. The only study on lung cancer risk in workers exposed to PVA fibres did not show positive results. PVA is not genotoxic… The fibres are mostly in the range of 10-16 microns in diameter." (13)

Polypropylene: "It seems that polypropylene fibres are able to induce lung changes characterized by increased cellularity and early bronchiolitis. These changes seem to be reversible after some months. No fibrosis was observed in animal experiments." (13)

The manufacturer of the fibre-cement made with polypropylene fibres in Brazil, the only country where this technology currently operates, says that the product is made from non-respirable fibres: "Our PP fibres have 10 mm length by 12 micron diameter. Cellulose fibres are long fibres type 'pinnus radiata' refined under wet conditions. After refining, this cellulose has an average length 1.3 mm by 35 micron diameter." (14) The manufacturer of PVA-cellulose-cement in South Africa reports that PVA fibre diameters are 15-25 microns, and cellulose fibre diameters are 20-30 microns. (15)

Authors of a report to the UK Health and Safety Executive which was in turn passed on to the European Commission, considered the risks of chrysotile and substitute fibrous materials (16):

> "We conclude that chrysotile asbestos is intrinsically more hazardous than p-aramid, PVA, or cellulose fibres, and that its continued use in asbestos-cement and friction materials is not justifiable in the face of available technically adequate substitutes."

So it appears that, in the substitution of asbestos in fibre-cement products, the substitutes, except for perhaps a minor fraction of cellulose, are so large as to not be breathed into the lungs. This is also appears to be true of the polyacrylonitrile fibres being introduced in fibre-cement in Brazil, whose manufacturer says the diameters are in the 15-20 micron range (17).

Substitutes II: Alternative Sheet and Pipe Products

The World Bank guidance note includes an appendix listing the types of alternative construction materials that can be used instead of A-C pipes and sheets. Substitutes for these materials are not limited to products that simply replace asbestos in a cement matrix with other materials (e.g., polyvinyl alcohol fibres and cellulose in fibre-cement roofing sheet). There are also a number of wholly different construction products that can replace asbestos products. Substitutes for asbestos-cement products are included in the following table from the World Bank guidance note on asbestos.

Annex Table 3. Products that can substitute asbestos

Asbestos Product	**Substitute Products**
Asbestos-Cement Corrugated Roofing Sheet	Fibre-cement roofing using: synthetic fibres (polyvinyl alcohol, polypropylene) and vegetable/cellulose fibres (softwood kraft pulp, bamboo, sisal, coir, rattan shavings and tobacco stalks, etc.); with optional silica fume, flyash, or rice husk ash.

	Microconcrete tiles Galvanized metal sheets Clay tiles Vegetable fibres in asphalt Slate Coated metal tiles Aluminium roof tiles Extruded PVC roofing sheets Recycled polypropylene and high-density polyethylene and crushed stone Plastic coated aluminum Plastic coated galvanized steel.
Asbestos-Cement Flat Sheet (ceilings, facades, partitions)	Fibre-cement using vegetable/cellulose fibres (see above), wastepaper, optionally synthetic fibres Gypsum ceiling boards Polystyrene ceilings, cornices, and partitions Façade applications in polystyrene structural walls (coated with plaster) Aluminium cladding Brick Galvanized frame with plaster-board or calcium silicate board facing Softwood frame with plasterboard or calcium silicate board facing.
Asbestos-Cement Pipe	*High Pressure:* Cast iron and ductile iron pipe High-density polyethylene pipe Polyvinyl chloride pipe Steel-reinforced concrete pipe (large sizes) Glass-reinforced polyester pipe *Low Pressure:* Cellulose-cement pipe Cellulose/PVA fibre-cement pipe Clay pipe Glass-reinforced polyester pipe Steel-reinforced concrete pipe (large diameter drainage)
Asbestos-Cement Water Storage Tanks	Cellulose-cement Polyethylene Fibreglass Steel Galvanized iron PVA-cellulose fibre-cement
Asbestos-Cement Rainwater Gutters; Open Drains (Mining Industry)	Galvanized iron Aluminium Hand-moulded cellulose-cement PVC

The World Bank guidance note advises against the use of asbestos-cement materials in disaster relief (5). Contact information for manufacturers of substitute products is available on the world wide web (18).

Cost and Performance Issues

Fibre-cement sheets made with PVA-cellulose and polypropylene-cellulose cost 10-12% more to manufacture than asbestos-cement sheets, according to manufacturers who have converted from asbestos (5, 15, 16). A Brazilian manufacturer converted an asbestos-cement manufacturing plant to produce fibre-cement sheets using polyacrylonitrile fibres and cellulose in October of 2009, and it is claimed that the cost will be less than for the other polymeric fibre compositions but 5-10% more than for asbestos-cement (17).

Micro-concrete tiles are cheaper than asbestos-cement to produce, and can be made in a basic workshop near the building site with locally available small contractors and materials (sand, gravel, and cement), lowering transport costs. Parry microconcrete roofing tiles are used in many developing countries, using locally available materials and labour. This is a technology that can't compete in advertising with other commercial types of roofing but could become more widespread if promoted by governments. These tiles have been used in remote locations and in tsunami reconstruction (19).

Many of the alternative products in the World Bank note's table above cost more than asbestos-cement products. But the increase in the overall cost of building construction that such products represent is to some degree offset by the obviation of special measures in installation/maintenance/demolition, the lack of a continuing hazard to building workers and occupants, and reduced costs of waste removal and disposal (5). Insurance against increased operating costs and liabilities is also less with non-asbestos building materials, as increasing awareness of workers and the public leads to increasing safety requirements for airborne asbestos dust and asbestos waste disposal.

Non-asbestos fibre-cement panels are lighter, less brittle, and have improved nailability over asbestos-cement sheets. Compared with asbestos-cement pipes, iron pipes can be transported with less difficulty and breakage, take greater compression loading, and last longer (5).

Problems in Repair, Renovation and Maintenance of Asbestos-Cement Building Products

The presence of asbestos-cement structures in buildings creates the responsibility to manage the structures in accordance with internationally recognized standards and best practices. Though such measures are not yet required everywhere asbestos-cement products are used, it can be anticipated that they will increasingly be adopted in many parts of the world over the life cycles of these structures.

The following operations cause dust release from asbestos-cement products: cutting, drilling, breaking, sanding, grinding, filing, dismantling. The ASTM E-2394 Standard Practice for Maintenance and Repair of Installed Asbestos Cement Products specifically prohibits cutting with high-speed power saws, grinding with high-speed abrasive wheels, burnishing with high-speed wire brushes, cleaning with compressed air, and high-speed water blasting. Re-use and recycling of A-C products removed during maintenance and repair are also prohibited by the standard. Pieces of asbestos-cement products should not be dropped or thrown to the ground but should be lowered while wet in a controlled manner (20).

Removal of dust and debris from surfaces should always be done with wet rags, sponges, or paper towels. Household or shop vacuum cleaners should never be used for asbestos waste, only vacuum cleaners with high-efficiency particulate air (HEPA) filters can trap asbestos fibres. Prior to starting a maintenance, renovation, or repair, a HEPA-filtered vacuum should be used to remove visible dust from an asbestos-cement surface that has been deteriorated by weathering or debris from physical damage. The HEPA filter device should only be used after other methods of removing dust and debris have been used as much as possible. The workers should be trained in operating the HEPA filtered vacuum, including cleaning and maintenance of the unit. Opening the unit to change the bag or filter must be done by a worker wearing a respirator and protective clothing in a location where the surrounding area will not be contaminated; the used bags and filter must be disposed of as contaminated waste.

The use of hand tools is preferred over power tools. Where power tools must be used, they should be operated at the slowest possible speed. Wetting should be done wherever possible in using power tools. If vacuum-assisted power tools are used, they must be cleaned and maintained by qualified individuals. Employers are advised to rely on exposure monitoring when deciding on appropriate use of power tools, with or without dust collection attachments. Personnel performing the work and taking the air samples should wear respiratory protection and

protective clothing. Unless gross contamination dictates the use of a decontamination shower, wet-wiping and "double-suiting" is adequate to prevent carrying fibres and debris out of the work area. (20).

The minimum level of respiratory protection, if used, is the half-mask negative-pressure respirator with en elastomeric facepiece and P100 cartridges. These are the equivalent of a HEPA-filtered cartridge. Paper or cloth dust masks, surgical masks and "filtering facepieces" shall not be used. If respirators are provided, the employer should have a programme of fit-testing, training, cleaning and maintenance, and medical surveillance for affected workers (20).

The waste stream consists of a mixture of dust and debris, and the ASTM E2394 advises the following techniques for the disposal of removed material (20):
Wet the removed pieces of the asbestos-cement products and any non-asbestos-containing materials that are contaminated with residue of asbestos-cement products, with soapy water. Wrap broken pieces with wet paper towels to cover any sharp edges. Place all the pieces in a 150 μm minimum thickness labelled disposal bag. Fill the bag no further than the point where the unfilled portion can be twisted, folded back on itself and taped to seal it ("gooseneck" taping). Gently press the air out of the bag before sealing it, taking care to direct the expelled air away from the breathing zone of any worker. If the removed material contains sharp edges, place the bag in a second bag ("double-bagging") or in a rigid drum. Dust and debris generated by the work can be disposed of in the same bag(s) as intact pieces of removed material. If no intact pieces are removed, as with drilling, sanding and grinding operations, the dust and debris generated and associated cleaning supplies (such as paper towels) can be disposed of in lighter-weight sealable plastic bags as long as they are properly labelled. For outdoor work, intact pieces of removed material that fall on the ground should be picked up and disposed of. Visible dust and debris should be wetted and picked up with the dirt it is laying on or has become partially buried in—do not attempt to pick this material out of the dirt. The contaminated dirt should be wetted and placed in disposal bags, leaving a surface visibly free of dust and debris.

For outdoor work in remote areas, such as along a water or wastewater distribution system, the bags of waste may be buried at the site next to the pipe, providing that precautions are taken against the waste being dug up and re-used, and measures taken to avoid disturbing the waste during future excavations. If a section of pipe is removed, crushing it to reduce the volume of waste buried or disposed of at a landfill is prohibited. Filling an intact section of pipe with waste and sealing the ends to create a container for disposal may be considered as a means of reducing the volume of waste to be buried or transported to a landfill.

Bags and other containers used for disposal of asbestos-containing materials shall be prominently labelled with the following:

DANGER
CONTAINS ASBESTOS FIBRES
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

or equivalent wording in the language(s) spoken by the workers.

As a control measure, coating or encapsulating the surface of A-C products such as roofing and siding is discouraged. Adhesion of the coating or encapsulant requires proper surface preparation, which usually involves sanding that would create dust. Also, when the coating or encapsulant peels off, it will take asbestos fibres with it, creating a contaminated site and waste stream.

Implementation of these work practices requires appropriate training and supervision as well as a regulatory infrastructure for enforcement, which are detailed in ASTM E2394 (20).

Conclusion

It is a challenge to public health workers to reach across national borders in the countries where asbestos use continues to be high. Governments and non-governmental organizations have demonstrated that much can be done by sharing medical, hygiene, legal, technological, and political expertise around the world. The new initiatives of WHO, ILO, and World Bank Group offer hope that further reductions in global asbestos use can be achieved through international cooperation. Asia, Africa, and Latin America are well placed to learn from the mistakes already made and well documented -- without tragically repeating them. The widespread availability of safer substitute materials is a demonstrated fact in 2012, and this offers hope that action can be taken to save millions of lives through the rapid application of available technology.

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Annex 5: Programme of the meeting

WORLD HEALTH ORGANIZATION
REGIONAL OFFICE FOR EUROPE

WELTGESUNDHEITSORGANISATION
REGIONALBÜRO FÜR EUROPA

ORGANISATION MONDIALE DE LA SANTÉ
BUREAU RÉGIONAL DE L'EUROPE

ВСЕМИРНАЯ ОРГАНИЗАЦИЯ ЗДРАВООХРАНЕНИЯ
ЕВРОПЕЙСКОЕ РЕГИОНАЛЬНОЕ БЮРО

National programmes for elimination of asbestos-related diseases: review and assessment
Bonn, Germany
7-8 June 2011

EUDHP1003944/10.3/4

3 June 2011
Original: English

Provisional programme

Tuesday, 7 June 2011

08:15–09:00 Registration

Opening and introduction chaired by Srdan Matic

09:00–09:30 Welcoming remarks *Alexander Nies, Germany*

Introduction of participants

Election of chairperson and rapporteur

Adoption of agenda and programme

Briefing on background, purpose and expected outcome *Rokho Kim, WHO*

Scientific evidence, recommendations, and situations

This session will review the scientific evidence summarized by IARC in 2009, official recommendations of the UN agencies, and results of a recent study quantifying the global magnitude of health impacts of asbestos.

09:30–09:50 Scientific evidence on public health risk from chrysotile form of asbestos

Kurt Straif, IARC

The evidence review and conclusions of IARC working group on chrysotile asbestos will be summarized.

09:50-10:10 WHO/ILO recommendations on elimination of asbestos-related disease

Rokho Kim, WHO

Wiking Husberg, ILO

The policy statement and recommendations of WHO and ILO will be presented. Ivan Ivanov will be connected online from Geneva.

10:10-10:30 Global magnitude of reported and unreported asbestos-related diseases

Eun-Kee Park, Japan

Using the relationship between asbestos consumption and ARD incidence in the countries, the global magnitude of ARD will be estimated focusing

on mesothelioma.

10:30–11:00 *Coffee break*

Viewpoints of the key stakeholders – organizations representing patients, workers, and doctors

The representatives of organizations representing ARD patients, construction workers, and occupational physicians who are the major stakeholders in asbestos policies.

11:00–11:45 Panel discussion moderated by Sascha Gabizon

- *Helen Clayson, Asbestos Victims Support Groups UK Forum, UK*

  Will present experiences of ARD victims, along with the results of global survey on ARD victims support groups.

- *Fiona Murie, Building and Wood Worker's International*

  Will present viewpoints and activities of the trade unions representing construction workers who used to be exposed to asbestos most heavily

- *David Sherson, International Commission on Occupational Health*

  Will present viewpoints and activities of the Scientific Committee of ICOH on ARD.

Review of national programmes for elimination of asbestos-related diseases - country reports

In the following three panel sessions, participants will exchange experiences, good practices and lessons. The discussion will focus on the following topics:

- *How asbestos issues were recognized, and responded to?*
- *What are the morbidity, mortality, health cost, and economic burdens?*
- *What are the trends of burdens and policy actions in the coming years and decades?*
- *What are the lessons and recommendations on the most effective and efficient policy options?*

At the start of each panel session, the moderator will spend 5-10 minutes making a brief introduction of the topic and the panellists. Then, each panellist will spend 5-10 minutes to present the facts and opinions on the above topics, and to summarize the country situation with the SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis. At the end of each session, the floor will be provided an opportunity to ask questions to the panel.

11:45-13:00 Panel discussion on the experiences of dealing with public health issues on asbestos in countries where asbestos is already banned, moderated by Barry Castleman

- *Radka Lukanova, Bulgaria*
- *Jorma Rantanen, Finland*
- *Guillaume Bourdel, France*
- *Helmut Klein, Germany*
- *John Osman, United Kingdom of Great Britain and Northern Ireland*

13:00–14:00 Lunch

14:00-15:00 Panel discussion on the situation in the South-East European countries,

moderated by Igor Nedelkovski

- *Arben Luzati, Albania*
- *Goranka Petrovic, Croatia*
- *Ana Misurovic, Montenegro*
- *Aleksandar Milovanovic, Serbia*
- *Jordan Minov, The former Yugoslav Republic of Macedonia*
- *Tahir Soydal and Engin Tutkun, Turkey*

15:00–15:30 *Coffee break*

15:30–16:30 Panel discussion on the situation in the newly independent states, moderated by Elena Vasilyeva

- *Soso Hovhannisyan, Armenia*
- *Teymur Teymurov, Azerbaijan*
- *Ryhor Kasiachenka, Belarus*
- *Inga Gvineria, Georgia*
- *Nurkan Sadvakasov, Kazakhstan*

16:30–17:30 Panel discussion on the situation in the newly independent states, moderated by Jorma Rantanen

- *Ainash Sharshenova, Kyrgyzstan*
- *Evgeny Kovalevskiy, Russian Federation*
- *Begenchmyrad Jepbarov, Turkmenistan*
- *Sviatoslav Protas, Ukraine*
- *Komil Mukhamedov, Uzbekistan*

Assessment of national and regional situations

WHO consultants will summarize the state-of-the-art knowledge on the substitutes for asbestos construction products, and report the results of a WHO survey on asbestos policy in the Region.

17:30-18:00 Substitutes for asbestos construction products, and report on public health response to asbestos in the European region

Barry Castleman and Elena Vasilyeva

19:30 Optional social dinner

Wednesday, 8 June 2011

How to develop and implement national programmes for elimination of asbestos-related diseases

In the Parma Declaration, the Member States of WHO/Europe committed to the development and implementation of national programmes by 2015. Following the technical and policy guidance of WHO and ILO, the participants will discuss in three working groups the contents, process, milestones, and timelines to fulfill this commitment, reflecting on the lessons and recommendations on policy options, and the situation analysis of the first day. After lunch, working groups will report conclusions and recommendations to the plenary.

09:00–09:20 Guidance on the development of national programme for elimination of asbestos-related diseases, and tasks of the Working Groups

Rokho Kim, WHO and Wiking Husberg, ILO

09:20–12:30 Three working groups (*coffee break during 10:45-11:15*)

- group A on *strategic actions* (item III of WHO/ILO model national programme)
- group B on *institutional framework and principal partners, and programme implementation* (items IV & VI of WHO/ILO model national programme)
- group C on *knowledge management, monitoring and evaluation* (items V & VII of WHO/ILO model national programme)

Working Groups will set the priorities, milestones and timelines for developing and adjusting the national programmes following the WHO/ILO Model National Programme downloadable in different languages at:

http://whqlibdoc.who.int/hq/2007/WHO_SDE_PHE_07.02_eng.pdf

http://whqlibdoc.who.int/hq/2007/WHO_SDE_PHE_07.02_fre.pdf

http://whqlibdoc.who.int/hq/2007/WHO_SDE_PHE_07.02_rus.pdf

http://whqlibdoc.who.int/hq/2007/WHO_SDE_PHE_07.02_spa.pdf

12:30–13:30 Lunch

13:30–14:30 Report of the working groups

Conclusion and recommendations

The participants will summarize the discussions, conclusions, and recommendations of the meeting, and agree upon the next steps in 2012-2013 for following up on the asbestos-related commitments in the Parma Declaration.

14:30–15:30 Plenary discussion on the next steps of international cooperation for elimination of asbestos-related diseases in the WHO European Region, with special focus on the countries where asbestos is not banned yet

15:30–16:00 Conclusion and recommendations

Closing

Annex 6: List of participants

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ЕВРОПЕЙСКОЕ РЕГИОНАЛЬНОЕ БЮРО

National programmes to eliminate asbestos-related diseases: review and assessment
Bonn, Germany
7-8 June 2011

EUDHP1003944/10.3/5

25 October 2012

Final list of participants

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The WHO Regional Office for Europe

The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

Member States

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Armenia
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Tajikistan
The former Yugoslav Republic of Macedonia
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Turkmenistan
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Original: English

The WHO European Centre for Environment and Health (Bonn) convened a meeting of representatives of the selected Member States and international experts for cooperative implementation of the Parma commitment regarding asbestos control in June 2011. A short survey carried out by the WHO before the meeting showed that, out of 53 Member States of the WHO European Region, more than 30 countries banned all types of asbestos as of 2011. Country situations of asbestos control policies were presented according to the format provided by the WHO. In the EU member states, use of all forms of asbestos was banned in the 1990's and early 2000's. Participants recognized that the awareness of asbestos hazards and policies on asbestos control were weak in the newly independent states of the former Soviet Union and the South-Eastern European countries, in contrast to the EU member states. The viewpoints of patients, workers and medical professionals on the international asbestos control policies were discussed. The meeting made conclusions and recommendations for the development of the national programmes for elimination of asbestos-related diseases which include further steps and milestones of cooperative implementation of the Parma commitments regarding asbestos policy development. The useful information for the policy-makers of the Member States presented at the meeting by the WHO temporary advisors, e.g., scientific evidence on the causal association between the chrysotile asbestos and asbestos-related diseases, the recommendations of WHO and ILO for elimination of asbestos-related diseases, and review of safer substitutes for asbestos materials, are enclosed as Annexes in this meeting report.

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Regional Office for Europe

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