Predicted rate of asbestos linked disease has not materialized: experts say risk estimates were not realistic

"The huge number of asbestos-related cancer cases once forecast by the [US] government and its advisors have not materialized, and experts say the dire predictions of the 1970's were overblown", reports the Journal of the National Cancer Institute in its April 15th edition.

In 1978, Joseph Califano, secretary of the U.S. Department of Health Education and Welfare (HEW) predicted, based on estimates provided by Dr. Irving Selikoff and others, that about 17% of all cancers in the future would be caused by asbestos — an annual total of between 58,000 and 75,000 asbestos-related cancer deaths were anticipated.

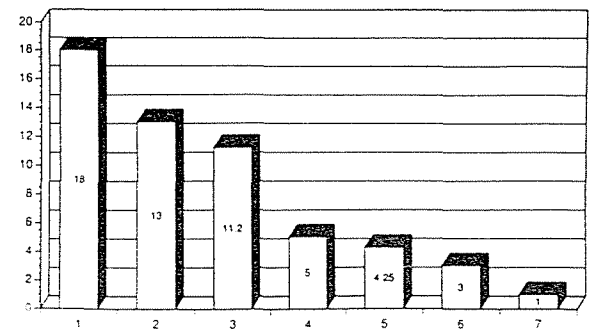
Scientists have believed for more than a decade that these projections were much too high. At a 1981 conference, cancer epidemiologists rejected the government estimates believing that they were more than 10 times too high. More recent evidence shows that the actual figure is even lower than this. A study conducted by P.E. Enterline of the University of Pittsburgh concludes that only 1% of cancers are related to past asbestos exposure — almost 20 times less than the original HEW estimates.

Marvin Schneiderman, Ph.D, one of the authors of a report upon which the 1978 estimates were based, now believes that the overestimation resulted from applying Selikoff's data on heavily exposed workers to a much larger population whose exposures were generally much briefer. *"We made the inappropriate assumption that short-term exposures were just as carcinogenic and deadly as long-term exposures."* Schneiderman said: *"Now it looks as if you have to have fairly continuous exposure to cause the worst effects."*

EPA'S ESTIMATES OF CANCER CASES AVOIDED BY ASBESTOS BAN IN THE FUTURE PERIOD OF 13-15 YEARS

Type of products	1986	1988	1989
Vinyl-asbestos floor tiles	468	0	0
Friction products	386	282	99.4 - 143.7
Asbestos-cement pipes	82	6	2.1 - 4.4
Asbestos-cement plates	31	0.9	0.7 - 1.5
Gaskets	0	14	6.7 - 42.5
Other	33	12.9	39.1 - 9.9
Total	1 000	315.8	148 - 202

ESTIMATES OF PERCENTAGE OF LUNG CANCER DEATHS RELATED TO ASBESTOS IN THE USA



1. National Cancer Institute (Estimates Paper) [75,000 cancer deaths/year]
2. National Cancer Institute (Estimates Paper) [58,000 cancer deaths/year]
3. I. Selikoff (OSHA Hearings, June 1978) [50,000 cancer deaths/year]
4. Nicholson et al. (Brenbury Report No. 9, Cold Spring Harbor Laboratory, 1981) [10,000 deaths/year]
5. Nicholson et al. (Brenbury Report No. 9, Cold Spring Harbor Laboratory, 1981) [8,500 deaths/year]
6. Hogan and Hoel (Risk Analysis, Vol. 1, pp. 67-76, 1981)
7. Enterline (Brenbury Report No. 9, Cold Spring Harbor Laboratory, 1981)

FLAWED EPA ESTIMATES LED TO BAN RULING

HEW was not alone in overestimating asbestos-related cancer rates. The EPA based its 1986 ruling to ban and phase out almost all uses of asbestos on estimates, which purported that eliminating asbestos would 'save' more than one thousand lives over 15 years. In 1988, this figure was revised to 315.8 cases of cancer, and again in 1989 to 148-202.

In light of the ruling by the U.S. Court of Appeals, which overturned the EPA's asbestos ban, serious doubts remain as to the accuracy of even the latest revised risk estimates. There are two principal reasons why these estimates are being questioned. Firstly, they fail to take into account the carcinogenicity of substitutes, and secondly, many experts are concerned that the risk estimates are based on faulty assumptions. Among the skeptics is Philip Enterline, Ph.D., of the University of Pittsburgh School of Public Health who recalls his incredulous reaction to inflated estimates of future asbestos-related cancers. *"If it were true,"* Dr. Enterline said, *"it would have been the best news I've ever heard. If we could eliminate 17%*

(see EXPERTS on page 6)

If you have any comments, suggestions or ideas for future stories or special reports, we would be delighted to hear from you. If you would like to be on our mailing list, you can reach us at: The Asbestos Institute, c/o Editor, 1130 Sherbrooke Street West, Suite 410, Montréal, Québec, Canada H3A 2M8, telephone: (514) 844-3956, fax: (514) 844-1381. This newsletter is also published in French.

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EXPERTS...

of all cancers just like that, it would be marvelous. But it was too good to be true."

In its final rule, the EPA attributed almost 200 projected cases of cancer to exposure to friction materials. With respect to friction materials, the Court of Appeals noted that the EPA had *"failed to evaluate the toxicity of likely brake substitutes."* It mentioned specifically that the EPA had *"overlooked credible contentions that substitute products might actually increase fatalities."*

Scientists are also beginning to question how the EPA determined that almost 200 people would develop cancer due to asbestos in friction materials. Professor F. Valic, consultant to the WHO's International Programme on Chemical Safety (IPCS), believes that the basic premise, which extrapolated incidents of mortality in industry workers exposed to amphiboles or to amphiboles and chrysotile to a general population which comes into contact with very low levels of chrysotile fibres, is seriously flawed.

In a recent paper presented at the *International Colloquium on Dust Measurement Techniques and Strategy*, Prof. Valic goes on to say that *"these [EPA's] risk assessments were obtained using a geometric mean of risks derived from 11 studies in different industries of which the friction materials industry is only one."* The report goes on to cite a number of highly reputable studies, which found little or no excess lung cancer amongst brake industry workers. On the basis of this and other credible evidence, an IPCS/WHO working group concluded that *"provided good work practices are followed and no amphibole fibres are used, detectable risks in vehicle maintenance and repair workers are not expected."* ◆

RCFs....

In the mid-1980's, researchers found that rats injected with RCFs developed lung fibrosis, lung cancer and mesothelioma. Then in 1988, a team of toxicologists headed by Richard Mast, chief toxicologist at the Carborundum Co., began a study in which rats and hamsters inhaled aerosolized RCFs. The research team found that animals that inhaled RCFs developed far more lung tumors than control animals did. In addition, mesothelioma rates were higher than those of most forms of asbestos fibres.

Discussions centered around the generalizability of the data, the existence of a threshold level of exposure necessary to produce disease and the potential for regulatory responses by the EPA.

In general, there was agreement that the overall risk to the population is low because RCFs are used in industrial equipment rather than in public buildings or homes, and therefore few people outside the industry are exposed to dangerous levels of them.

EPA scientist Jim Willis nonetheless believes that *"there are a fair number of workers who manufacture and use RCFs. We've determined that RCFs present or will present a significant [cancer] risk."* A decision from EPA on how it plans to proceed is expected within a few months. ◆

U.S. to standardize risk assessment procedures

According to inside sources, the White House is expected to issue an executive order designed to standardize risk assessment procedures. The new review procedure, under the auspices of the Office of Science and Technology Policy (OSTP), would require regulatory agencies to base their health and safety assessments on realistic estimations of risk — as opposed to worst case hazards.

"Science is subordinated in the decision-making process", according to Thorne Auchter, director of the Institute for Regulatory Policy and former OSHA administrator. *"This (new order) would let scientists have their day in the regulatory process."*

Auchter also believes that contrary to prevailing criticism, the regulatory process is manipulated less by 'big business' interests than by federal regulators and policy makers. *"An effort to standardize the risk assessment process would eliminate the opportunity for some* 'manipulation'," he said.

Given that those sectors currently being regulated did not undergo the same risk assessment review procedure, the new executive order would provide a process in which agencies could be petitioned by the public to revise risk assessment and risk management decisions on the basis of new scientific information. ◆

Source: *Occupational Safety & Health Reporter*, 6-3-92

On a sad note...

It is with great sorrow that we announce the death of Jean-Pierre Chevalier-Bultel, the Institute's Director of Research and Development and International Relations. Mr. Chevelier-Bultel, who has been with The Asbestos Institute since 1986, is survived by his wife Françoise and three children.

Our deepest sympathy goes out to his family and friends.

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