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AFFIDAVIT OF DAVID S. EGILMAN, M.D., M.P.H.

STATE OF MASSACHUSETTS)
) SS:
COUNTY OF NORFOLK)

I, David S. Egilman, M.D., M.P.H., being duly sworn, deposes and says:

1. I am a medical doctor and Clinical Associate Professor of Community Medicine at Brown University. I am board certified in Internal Medicine and Preventive-Occupational Medicine. My curriculum vitae sets forth more fully my qualifications. [Attachment A]

2. I received a Bachelor of Science from Brown University in Molecular Biology in 1974. I received a medical degree from Brown University in 1978. I completed a three-year medical residency in Internal Medicine at Strong Memorial Hospital in Rochester, New York, in 1981. I completed a three-year training program in epidemiology, called the National Institutes of Health Epidemiology Training Program, in 1984. As part of this program, I completed a Master's in Public Health at the Harvard School of Public Health. At Harvard, I studied epidemiology, statistics and occupational medicine, industrial hygiene, warnings and occupational and environmental law. I completed a third residency in preventive medicine in 1994.

3. I served two years at the National Institute for Occupational Safety & Health (NIOSH) designing and conducting small and large epidemiologic studies. I was responsible for interpreting and implementing aspects of the OSHA act of 1971.

4. Since 1978, I have published a variety of letters and medical articles on the issues that relate to the manner in which cause-effect determinations are made in medicine (the epistemology of medicine). I have discussed the normal, accepted process of causal determination in medicine in several peer-reviewed articles. In addition, these ideas were accepted for presentation and were presented at the American Public Health Association meetings, in 1984. I have also studied, taught

and published articles on the history of medical ethics and the duty to warn. I have taught and done research on the history of the development of medical and corporate ethics during the 20th century. I have, on two occasions, testified before congressional committees on the issue of medical ethics and corporate responsibility. My testimony concerned the history of informed consent. In addition, I have published two papers on the topic of the history of the development of medical ethics.

5. For the past eight years, I have taught a course at Brown University, called the Development of Medical and Scientific Knowledge in the 20th Century. This course deals specifically with the issues outlined in this report: the history of the development of knowledge of the health effects of asbestos including corporate knowledge, the history of the development of government regulations on occupational and environmental safety, and the history of the development of product warnings.

6. My qualifications and opinions are also based in part on my clinical experience and awareness of the ways that normal physicians in normal medical practice make decisions about causal relationships that affect patients' lives every day. Much of my time is devoted to direct patient care and consulting for corporations. I have served as an expert on asbestos state of the art issues at the request of both plaintiffs and defendants in asbestos litigation.

Summary of Opinions

7. Since 1906 the medical community has recognized that the health effects of asbestos are related to the inhalation of asbestos dust.

8. Since 1932 it has been recognized and that this dust could travel from the workplace to the home via the air.

- Author: Stewart, et al. The Journal of Pathology and Bacteriology, Vol. 35. "On the Occurrence of Clumps of Asbestosis Bodies in the Sputum of Asbestos Workers" 1932 p. 737: "We have encountered 'bodies' in the sputum of persons whose occupation has only entailed their occasional presence in the asbestos factory and in one instance we found them in the lungs, post mortem, in a man who lived close to a factory for many years but who had never been inside it."

9. Since 1930 the medical community has recognized that dust could and would travel from location to location around a work or other space. In 1930, Merewether specifically noted this risk and recommended that dust generating activities be physically separate from workers who did not have exposure from direct contact with asbestos dust or products. In addition he noted that this risk was insidious and thus required a warning, "If there is visible asbestos dust, then the invisible dust is in dangerous concentration."

10. The protective measures necessary to prevent asbestos induced disease did not differ:

- According to the type of disease asbestos might produce: asbestosis, lung cancer, mesothelioma or other malignancy. All of these diseases are potentially fatal. A company that protected its work force against one asbestos induced disease would have protected its work force against all asbestos induced diseases.
- According to gender, race, location, marital or occupational status.

11. The medical community did not/does not require an epidemiologic study of housewives of asbestos exposed workers to determine that such individuals are at risk. In fact, though no such study exists to this day, there is no dispute about the risk of spouses and children from home acquired exposure.

12. Physicians and hygienists concluded by the 1920's that there was risk to spouses from exposure to toxic substances brought home based on the knowledge that the diseases caused by toxic dusts occurred wherever and whenever the toxic dust was inhaled. Inhaling asbestos at work was

never considered more dangerous than similar breathing of contaminated air at home. If dust could be brought home, it was recognized by 1924 that such dust could make home residents ill. Since it was known or knowable to anyone who cared enough to investigate the question that workers who used its products could be covered with dust and there was no known safe exposure level for any asbestos cancer effect, it was known or knowable that use of their product could cause cancer or asbestosis in spouses.

13. Knowledge of home exposures was available specific to asbestos and cancer before 1958. US government-mining policies and historical IH literature indicates that showers were indicated to prevent home exposures from 1924 forward. For instance, showers were standard in most US mines by the 1940's. The purpose of the showers was to prevent carrying toxic dust home. It was understood that this dust could injure children and spouses. These measures if implemented would protect spouses and children from exposure to toxic substances that might be brought home on workmen's close. It was reasonably foreseeable that this could occur from at least 1930.

14. In 1949 Wyers published that housewives had developed asbestosis from exposure to their husband's clothes. This confirmed that the contamination of the home environment by asbestos brought home on clothes was sufficient to produce asbestosis, a disabling, progressive, potentially fatal disease. Also in 1949 the JAMA published an editorial confirming that exposure to asbestos caused cancer.

15. Responsible industries were protecting their own workers and their families from take home exposures to toxic dust in the 1940's and 1950's. For instance, in referring to industrial hygiene practices in the 1950s, Monsanto industrial hygienist Jack Garrett has testified that, "We went down to shoes and socks, underwear and all. We didn't want it [asbestos] at home." [See the deposition of Jack Garrett dated December 16, 1993 taken in *Paul Major, et ux, v. Alco Standard Corp, et al.*,

Case No. 93-CV-315 in the United States District Court Eastern District of Texas, Beaumont Division.]

16. During World War II many shipyards had shower facilities for workers exposed to asbestos. These showers were not put in place because of the need to have a good smelling workforce. They were implemented to prevent workers from bringing toxic dust home.

17. Once it was recognized that asbestos was a toxic dust (and this occurred in the late 1920s), it was known that as a general rule this dust (a toxic dust) should not be brought home to contaminate family members. This information appears over and over in medical and occupational hygiene literature. Had programs been implemented to control toxic dust on the clothing of workers who used their products to prevent asbestosis or cancer, those controls would also have protected their spouses and children from the development of mesothelioma. Whether or not it was known in the medical community at that time that mesothelioma was a specific disease that could occur from asbestos exposure is irrelevant. The timing of the recognition of the association between asbestos and mesothelioma did not change the protective measures that should have been taken to protect workers, product users or family members against any asbestos related disease from asbestos dust on clothing that might have been carried home. Occupational protections implemented to protect against asbestosis or lung cancer would also have protected children against mesothelioma from exposure to dust on their parent's clothes. At all relevant times it was knowable that asbestos exposure could cause fatal disease in anyone anywhere who breathed the dust.

18. From industrial hygiene, occupational medicine and public health perspectives, it was known since 1924 that workers exposed to toxic dust should be provided with change rooms and showers so they would not bring the toxic dust home with them. It has been known by companies

that asbestos was a toxic dust for over 100 years and this has been known in the published medical literature for at least 75 years. From a medical standpoint the key issue was simply whether or not a dust could kill someone if they inhaled it. It didn't matter who the someone was, or how they came in contact with the dust; their job title was irrelevant. The only relevant factor was whether or not they inhaled the dust. It has been known since the early part of the century that people exposed to toxic dust at work should not bring it home because they could potentially injure their spouses and children.

19. Based on my education, training, experience and review of the relevant available medical knowledge regarding asbestos-related disease, the medical knowledge available in 1958 was such that members of the medical profession and Owens-Illinois would have basis upon which to foresee that an insulator using a high temperature asbestos-containing insulation product would be at risk of contracting a fatal disease as a result of working with asbestos. There was information in the medical literature which in 1958 would have indicated that a member of the household of someone working with an asbestos-containing insulation would be at risk of developing a fatal disease as a result of exposure to the dust on a family member's work clothing.

Methodology

1. Review of medical literature.

In order to review medical literature, I conducted computer searches of several different databases including Index Medicus, NIOSHtic, EPA, Cancer Lit, and Silver Platter.

In addition, my staff or I reviewed each issue of Index Medicus from 1910 through 1966 (Index Medicus was computerized from 1964 forward and was reviewed by computer following this.)

I obtained approximately 700-800 medical articles relating to asbestos and asbestos health effects that were published prior to 1964 and reviewed the citations in each of these articles. Based on these, I then read each of these articles. In addition, I relied on previous reviews of the asbestos literature performed by Barry Castleman, published in his book, Asbestos, Medical and Legal Aspects, and a case series books by Peters on asbestos.

2. Review of corporate documents.

I have reviewed corporate documents for approximately 15-20 companies that made and/or used asbestos insulation products. Most of these documents were exhibits in asbestos tort litigation and were supplied as part of the discovery process. In addition, I have visited several corporate document repositories to review corporate documents that are provided as part of the discovery process.

3. Review of depositions.

I have reviewed depositions of many corporate personnel of asbestos mining and manufacturing companies and product users.

4. I have conducted interviews with historical figures and other researchers in asbestos.

These include interviews with Harriet Hardy, Garrett Schepers, Lynn Schall, and Cooper.

I have reviewed and read similar reviews of the analysis of the Asbestos State of the Art written by Castleman, Lilienfeld, Selikoff and Enterline.

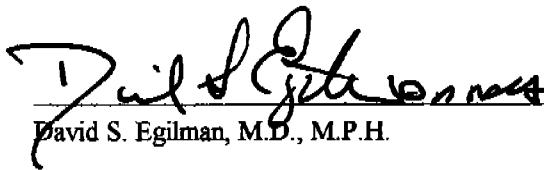
I or others have published most of the opinions expressed in medical journals and I teach a course at Brown University that covers much of this material.

For example, OI was a one of several sponsoring companies that founded the IHF.

Members of the IHF agreed to work in concert to reduce compensation for asbestos and silica compensation claims. They developed TLVs as a litigation defense strategy. Many of the companies that worked in concert with USX suppressed or altered important information concerning the health effects of asbestos. This withheld information or misinformation includes:

1. The suppression of cancer studies performed by Drs. Gardner and Vorwald at the Saranac Laboratories. These studies included mouse and cat experiments, which indicated that asbestos was a carcinogen.
2. The suppression of criticism of the "safe exposure level" from the 1951 paper summarizing Dr. Gardner's findings.
3. The publication of misinformation on the health effects of asbestos by Dr. Kenneth Smith in 1955.
4. The deliberate, manipulation and publication of incorrect information on the relationship between cancer and asbestos exposure in Canadian miners in a 1958 IHF and QAMA study by Truan and Braun.
5. Hemeon 1947 report to IHF including criticism of the TLV that was not published.
6. Misrepresented information to government agencies as part of a lobbying effort to have government agencies weaken cautions that were proposed for asbestos products. This effort was successful and OSHA removed the words "cancer" and "danger" from the proposed label.
7. Incomplete publication of the findings of Dr. Enterline's AIA sponsored state of the art report in 1978.

The suppression and/or adulteration of asbestos medical research (corruption of medical research) allowed the asbestos industry to buttress and influence the minority scientific position that asbestos was not a human carcinogen, caused the delay in the recognition by some that the TLV was unreliable, and misled some insurers about the risks of asbestos product exposure to product users.


David S. Egilman, M.D., M.P.H.

Sworn to and subscribed in my presence this 20 day of July, 2001.


Notary Public
In and For the State of Massachusetts

My Commission Expires:

04/02/04

