



INTEROFFICE
MEMORANDUM

Date May 10, 1974

Subject Meeting Report

"Chemicals and Cancer"

To File

(Location, Organization, or Department)

From C. E. Blades

Piscataway

(Location, Organization, or Department)

National Safety Council Symposium
"Chemicals and Cancer"
Rochester, N.Y. -- May 8, 1974

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RESEARCH & DEVELOPMENT

MAY 15 1974

W. M. SMITH

There were 8 speakers:

- 3 from NCI
- 1 from NIOSH
- 1 from OSHA
- 1 from DOT
- 1 from Nat. C. T. R.
- 1 from Dow

The conference was overweighted with government agencies. The attitude was one of justification of a "get tough with industry" The Dow man, while receiving the loudest acclaim, was a lone voice. The most aggressive individual was a

Dr. Joseph Wagoner
Director, Div. of Field Studies and Clinical Investigations
NIOSH

He had a large number of slides taken in chemical plants concerned with production of β -naphthylamine, benzidine, bis-chloromethyl ether and vinyl chloride polymerization. It was evident he had a presentation of the most damaging cases and practices to illustrate the real hazards discovered in inspection tours. He pointed out that U. S. action was some 10 years behind other countries in Europe. Whereas Hoerger of Dow had pointed out that most of the 14 carcinogens did not have epidemiological verification in man, Wagoner concentrated his guns on those cases where such verification was available. The evidence was damaging and clearly pointed out that extremely bad industrial hygiene practices have existed as late as 1970-71. (e.g. workers standing in bins containing β -naphthylamine and loading drums with shovels)

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e.g. #2 Mixing and transfer of benzedine slurry in open systems with much splashing and aerosol formation.

e.g. #3 Vinyl chloride polymerization vessels with open hatches and workers inserting cleaning or rinsing hoses.

e.g. #4 PVC bagging without dust masks.

In the question and answer period, one speaker responded that PVC and other plastics had caused cancer when implanted under the skin.

These people do not buy the risk and economic impact argument. They speak of voluntary and involuntary risks--to ride in a car is voluntary--to work in a factory with carcinogens is involuntary. When involuntary risks should be lower order than in voluntary cases.

One man from NCI, Herman Kraybill, will send to me data on levels at which TDA is being fed in the experiments now underway.

If understood correctly, one speaker claims that the following are now before OSHA relative to listing as carcinogens or for regulations and workplace standards:

Toluene
TDI
TCE
Carbon Monoxide
Lead

Guarino of NCI claims that the cyanoacrylate ester and cancer report is found in a book by Hueper and Conway, published in 1964 by C. C. Thomas. Tumors were benign.

Kraybill recommended a French publication as a good source for listed carcinogens, IARC Monographs.

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Highlights from Talks

A. Anthony Guarino, Ph.D. Pharmacology
Chief, Laboratory of Toxicology, NCI

Guarino is oriented toward pharmacology and drug therapy.
His comments included:

1. Minimum of 50% of cancer deaths in U.S. arise from environmental causes. This is a conservative estimate. Some people say as high as 90% arise from environmental causes.
2. There is some evidence that physical exertion increases susceptibility to air borne carcinogens. Also individuals who are subjected to frequent drug therapy may be sensitized.
3. Kidney and liver are prime target organs because these are detoxification centers and receive a larger portion of the blood in a given time interval.
4. Key to animal expts.

Probable Incidence

No. of Animals

10%
1%
0.1%
0.0001%

30
300
3000
 3×10^6

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5. Latent periods for cancer induction

Agent	Aver. Time <u>(years)</u>	Min. Time <u>(years)</u>
Arsenic	25	4
Tar	22	1
Creosote Oil	25	15
X-radiation	7	1
Asbestos	18	15

6. Recommends an in-house toxicological study group. Provides personal contact and an effective communicator of hazards to workers results.

B. Emmett Barkely, NCI
Head, Environmental Control Section,
Biohazards and Environmental Control
Bldg. 41, Bethesda, Md.

Spoke on establishment of guidelines to researchers in cancer. Concept of "zero exposure" or "zero tolerance" needs to be approached as a goal.

The NCI is developing Carcinogen Safety Monographs which will be available on request. Not now available. Labelling policy-- "Cancer Suspect Agent" on all suspected compounds.

Min. space velocity for hoods set at 85 cu. feet/min.

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C. Herman Kraybill, NCI
Scientific Coordinator for Environmental Carcinogenesis

Kraybill in private conversation claimed he had access to, and would be willing to tell us, the experimental levels of TDA being fed to animals in the on-going chronic feeding study. I will request this data from him.

D. Gordon Rousseau, D.O.T.

Explained the concern of the department with shipping regulations for air, water, highway, and rail systems.

The intent is to move slowly and develop regulations based on facts rather than hearsay. Concern appears to be with risk of accidental spills and the effect of such on the environment. Pointed out that when contained, this is not considered an occupational exposure.

Question and Answer Period

When should one be concerned about carcinogenesis?

Conduct tests when:

1. Have large production levels
2. The product is widely distributed in the population
3. Structure is related to known carcinogens
4. Toxicology suggests concern

E. Fred Hoerger, Dow, Ph.D. (Purdue)
Operations Mgr. Health and Environmental Research, Midland

Concentrated on some unnecessary aspects of OSHA Permanent Standard for 14 carcinogens.

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1. Some compounds listed--for which there is an inadequate body of data. There is little or no concern for dosage or the route of administration (e.g. Ethylenamine, α -Naphthylamine, Cl-Me Me ether). The above have a 15 year history with no known human cancer problems.
2. The level limitations have no relation to known facts. A threshold limit has been ignored.
3. Unrealistic signs.
4. Exposure limitations are unrelated to practical needs or prevailing conditions.
5. Equating of rules to plant and laboratories is unrealistic.
6. Worker reactions to requirement to wear space units was not considered.

Note: Angiosarcomas probably result from conditions prevailing some 15 years ago. Improvements over years have reached significantly improved working conditions. These could be safe.

F. Morris Cranmer, NCTR
Director, Nat'l Center for Toxicological Research

He says that 90% of 1974 cancers will arise from exposure to chemicals--mechanism is unknown.

Cranmer attempted to justify the concept that a single molecule of a carcinogen could cause cancer through an appropriate collision with nucleoprotein e.g. spoke about a "time to tumors" concept. Shorter times occur as the dosage goes up.

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G. Joseph Wagoner, NIOSH

Wagoner appeared prepared to contradict the Dow presentation. He is a dynamic individual capable of drawing attention to severe infractions of common sense safety precautions by marginal operators as justification for industry-wide regulatory control. He concentrated his discussion on the known human carcinogens 8-naphthylamine, benzidine, bis-chloromethyl ether and vinyl chloride. He had photographs showing evidence of serious exposure to the above carcinogens as late as 1970-72.

A statement was made that industry and agricultural technology were the main contributors to environmental causes of cancer.

The NIOSH budget has tripled in 1974.

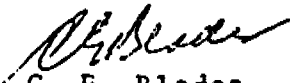
H. John Kearny, OSHA
Regional Director

Kearny outlined basis for and work rules pertaining to 14 carcinogens.

He also alluded to the following as under study and evaluation:

Carbon monoxide
Trichlorethylene
Lead
Toluene diisocyanate
Toluene
and others

Medical surveillance tests for workers are in preparation and will be available from OSHA.


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CEB/k

cc: W. M. Smith, Trexlertown
H. L. Watson, Valley Forge

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