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Predicting Future Sources of Mass Toxic Tort Litigation*

Jeffery A. Foran, Bernard D. Goldstein,
John A. Moore & Paul Slovic**

Introduction

U.S. toxic tort litigation has received a great deal of recent attention, particularly regarding issues of admissibility of scientific evidence concerning the strength of causal relationships between exposure and injury.¹ Foster et al.² have offered several recommendations, and other efforts have been initiated to assist courts in improving the resolution of scientific issues.³

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¹ Eliot Marshall, *Supreme Court to Weigh Science*, 259 Science 588 (1993) and Ronald D. Hood, *Some Considerations for the Expert Witness in Cases Involving Birth Defects*, 8 *Reprod. Toxicol.* 269 (1994).

² Kenneth R. Foster, David E. Bernstein & Peter W. Huber, *Science and the Toxic Tort*, 216 Science 1509 (1993).

³ Carnegie Commission on Science, Technology, and Government, *Science and Technology in Judicial Decision Making: Creating Opportunities and Meeting Challenges* (1993) and American Association for the Advancement of Science-American Bar Association, National Conference of Lawyers and Scientists Task Force on Science and Technology in the Courts, *Enhancing the Availability of Reliable and Impartial Scientific and Technical Expertise to the Federal Courts* (A

Multiple litigation on the same form of exposure with many plaintiffs, and often more than one defendant, taxes both state and federal court systems beyond the point where cases can be addressed in a reasonable and timely fashion. For example, courts are burdened by bendectin and silicone breast implant litigation and face over 100,000 remaining asbestos cases. That onslaught of cases is complicated by their being penetrated by complex scientific issues. Thus, early identification of potential sources of such litigation will help courts to predict, prepare for, respond to and manage demands imposed by the next round of equivalent litigation.

Courts can do so in several ways including:

- Consolidating cases and creating coordinated discovery;
- Creating central repositories for information;
- Developing a knowledge base of related scientific issues;
- Creating and using alternatives such as court-appointed experts or independent neutral evaluators; and
- Possibly referring issues to entities equipped to handle legal issues with complex scientific content.

The judicial system is not prepared, however, to determine from individual cases which may be precursors of mass tort litigation; thus the ability to implement appropriate management steps is limited. Therefore, the ILSI Risk Science Institute convened an expert working group⁴ to identify potential sources of future mass litigation and their

Report to the Carnegie Commission on Science, Technology, and Government) (1991). See also, *Which Scientist Do You Believe? Process Alternatives in Technological Controversies*, 6(2) Risk (1995) (a symposium).

⁴ Besides the authors, the group was remarkably diverse: Richard H. Adamson, Vice President, Scientific and Technical Affairs, National Soft Drink Association, holds a Ph.D. in pharmacology. Henry A. Anderson, Environmental and Occupational Disease Epidemiologist, Wisconsin Department of Health and Social Services, holds an M.D. Rosalyn B. Bell recently retired from the Court of Special Appeals of Maryland, at large. Robert L. Brent, Chair, Pediatrics, Jefferson Medical College, is also Director of the Clinical and Experimental Teratology Laboratories at the Alfred I. du Pont Institute Children's Hospital. Christine D. Copple, Industrial Liaison, University of Maryland Biotechnology Institute, holds a Ph.D. in molecular biology. J. Clarence Davies, Director of the Center for Risk Management, Resources for the Future, holds a Ph.D. in American Government. Frederick H. Degnan is a partner in the King & Spalding law firm. James L. Emerson, Director, Scientific & Regulatory Affairs, The Coca-Cola Company, holds a D.V.M. and a Ph.D. Ronald J. Kendall, Head, Department of Environmental Toxicology and Director of the Institute of Wildlife and Environmental Toxicology, Clemson University, holds a Ph.D. in fisheries and wildlife sciences/toxicology. George W. Lucier, Chief, Laboratory of Biochemical Risk Analysis, Nat'l Inst. Environmental Health Sciences, holds a Ph.D. Margaret Mellon directs the program on Agriculture and Biotechnology at the Union of Concerned Scientists and holds a Ph.D. and J.D.

characteristics — with primary emphasis on toxic torts over the next five to ten years. The material presented here and summarized in Table 1 represents the consensus conclusions of that working group.

Table 1
Potential Sources of Mass Toxic Tort Litigation and Their Characteristics

<i>Potential Sources</i>	<i>Characteristics</i>
New technologies that are developed rapidly with influence from economic and political incentives	Signature disease (e.g. mesothelioma)
Technology that improves the ability to detect diminishingly small quantities of potentially harmful substances	Common, familiar, adverse effect with long-term societal stigma such as: cancer, birth/developmental defects, reproductive impairment, mental impairment, genetic disease
Technology that improves the ability to “fingerprint”	Plausible but not necessarily certain link between exposure and adverse effect
Compounds, products, or processes limited by safety/hazard testing	High degree of dread
Compounds, products, or processes that cause environmental damage	Widespread, involuntary exposure
	Victims who elicit sympathy (e.g. young children, pregnant women)
	Compound/product/activity identified on a list of hazards
	Identifiable, opprobrious defendant with “deep pocket”
	Widespread awareness of issue

Potential Sources of Mass Tort Litigation

Potential sources of mass toxic tort litigation are highly diverse. Particularly susceptible to mass tort litigation are new technologies, reinforced by strong economic, political, environmental, legal or other

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incentives to move aggressively toward implementation. The potential for litigation is reinforced where adequate knowledge has not been developed to determine which adverse effects may occur. For example, genetic and other new, untested or poorly tested, and rapidly implemented technologies have the potential for considerable economic, environmental and health benefits. Yet, they may also cause health or environmental harm and be the basis for mass tort litigation. Genetic technologies may also contribute indirectly to the potential for such litigation by strengthening cause/effect linkages through identification of sensitive populations, informing particularly sensitive individuals in exposed populations, encouraging discrimination against sensitive individuals through exclusion from jobs, or disseminating information on individuals' genetic composition.

New or improved capability to detect diminishingly small quantities of toxic substances may also contribute to the potential for mass litigation. As detection technologies improve, awareness of exposure will increase and may contribute directly to that potential, particularly associated with non-threshold acting substances. Individuals who become aware of exposure to these substances may conclude, "I am exposed, therefore I am harmed." Mass litigation may follow despite lack of any demonstrable causal relationship between exposure and adverse effect. Improved capability to "fingerprint" may contribute further to the potential for mass tort litigation where a chemical or contaminated food product to which exposure has occurred can be tied directly to an entity that manufactures the material. The same fingerprinting technology may, however, also allow a chemical, food product, or other material to be identified specifically enough to dismiss an entity as a potential source; thus, eliminating the likelihood that the entity will become involved in mass tort litigation.

Products subject to hazard and safety testing are also potential sources of mass tort litigation. Historical and existing limitations of hazard or safety testing for chemicals, compounds, or products, or the time necessary to acquire scientific information to support or weaken a putative cause/effect relationship may be important contributors to the potential for mass tort litigation. Adverse effects that are missed in hazard or safety testing may result ultimately in mass tort litigation.

Toxic effects may be missed due to differences in species susceptibility or due to the restricted size of screening populations compared with exposed human populations. Remote effects, those that occur many years after exposure or that are of a kind not predicted from the known or expected toxicological or pharmacological effects of the compound (based on structure or on what is known of the chemistry and metabolism of the compound), may also increase the likelihood that an adverse effect will be missed in hazard or safety testing.

Substances such as pesticides that were once managed primarily for human health effects, may now be evaluated and prioritized quite differently and may become sources of mass tort litigation stimulated by ecological damage, reflecting the important influence of social values in identification of future sources of litigation. An emergence of public concern for environmental effects, reflected by existing environmental protection legislation such as the Migratory Bird Treaty Act⁵ or the Endangered Species Act⁶ (that provide vehicles for determination of harm to the environment), may also contribute to the potential for mass tort litigation. Technologies that are rapidly implemented for environmental protection purposes without a complete understanding of their effects on humans or other components of the environment, may also be prime candidates for mass tort litigation.

Characteristics of Potential Sources

Each potential source of toxic tort litigation must either cause some injury or stimulate the perception of injury. Products, compounds or activities that cause widespread, concrete, familiar and recognizable primary medical events are the most likely sources. However, relatively rare events, that allow invocation of exclusionary probabilistic arguments, may also become sources. Primary events include signature diseases (e.g. mesothelioma related to asbestos exposure) with a high degree of scientific certainty, effects with persistent or long-term societal stigma such as cancer or mental retardation, or reproductive

⁵ Codified at 16 U.S.C. § 703 et seq.; c. 128 § 2, 40 Stat. 755 (1918); c. 634 § 3, 49 Stat. 1556 (1936); Pub.L. 93-300 § 1, 88 Stat. 190 (1974); Pub.L. 101-233 § 15, 103 Stat. 1977 (1989).

⁶ Codified at 16 U.S.C. § 1531 et seq.; Pub.L. 93-205 § 2, 87 Stat. 884 (1973); Pub.L. 96-159 § 1, 93 Stat. 1225 (1979); Pub.L. 97-304 § 9(a), 96 Stat. 1426. (1982); Pub.L. 100-478, Title II § 1013(a), 102 Stat. 2315 (1988).

problems or birth defects that transcend generations. Less obvious effects may also result in mass tort suits, particularly where effects are enhanced or influenced by strong social values. For example, a decline in property value may be caused by the transport of hazardous waste along a roadway even though it causes no direct adverse health or environmental effects. In this case, litigation may stem from economic damage caused by the perceived risks associated with the activity.

Actual demonstration of injury is not necessary for any source as long as the perception of injury exists. Conclusive establishment of a specific cause for the injury (firm establishment of a cause/effect relationship) is also not required for a compound, product, or activity to become a source of mass tort litigation. However, some form of plausible causality, although not necessarily scientifically proven link between injury and exposure, will increase the likelihood of mass tort litigation. Establishment of the injury/exposure link may be strengthened where allegations by scientists support the linkage, or where the frequency of occurrence is, or is perceived to be, increasing.

To become a source of mass tort litigation, a compound, product, or activity must not only cause injury or the perception of injury, but must be identifiable and detectable itself as well as identified with a source. Once identified, the likelihood of a compound, product, or activity becoming a source of mass tort litigation may be increased as the degree of dread is increased. The degree of dread may be enhanced by a lack of knowledge of the compound, product, or activity, the degree to which it is deemed to pose involuntary risk or injury, and by effects that are trans-generational or possess long-term societal stigma. Dread may be enhanced further by the appearance of a compound, product, or activity on a list that is widely circulated (e.g. list of known or suspected carcinogens, list of known or suspected reproductive/developmental toxicants, etc.).

Compounds, products or activities that produce or are likely to result in widespread (constant or repetitive) exposure are candidates for mass tort litigation; e.g., products added to components of the food supply or gasoline have such potential. Their potential is increased when parts of the exposed population evoke particular sympathy, e.g., children, pregnant women, the elderly or endangered species.

Finally, mass litigation must have at least one identifiable defendant with resources that appear adequate to support a large award for damages. The potential for litigation is enhanced where that defendant is recognizable, has been previously involved in litigation and is intentionally or unintentionally opprobrious. Widespread awareness of the problem, enhanced by an individual who publicizes it or legislative or scientific interest that raises public consciousness regarding both the effect and potential defendants also increase litigation potential.

Discussion

The ability to predict future sources of mass toxic tort litigation will provide the courts with a powerful tool to improve the effective management of complex cases. Although the accurate prediction of future sources of toxic tort litigation will be difficult, compounds, products, or activities that possess some or all of the characteristics described above are likely to have a greater probability of becoming sources of mass tort litigation.

To enhance courts' ability to predict future sources of toxic tort litigation, we recommend:

- Developing a database to document past instances and characteristics of sources of mass litigation and
- Establishing a monitoring or early warning system to alert courts of an impending landslide of cases.

The early warning system should systematically monitor buildups or trends of litigation associated with similar exposures. Insights gained from the database and this exercise should then be used to determine the potential of "suspicious" cases to develop into mass tort litigation.

Lessons to develop such a system may be drawn from, or find useful analogs in, early warning and monitoring systems as diverse as those for natural disaster prevention or the stock market. Such a system could be useful for forecasting far in advance of a deluge of tort litigation. However, it must be developed and applied cautiously so that it does not encourage litigation by unduly stigmatizing an entity that possesses a set of facilitating characteristics.

The effective use of science in the courts, particularly for determinations of admissibility and causation is limited for two important reasons. First, judges and lawyers are typically not trained as

scientists and should not be expected to assimilate a great deal of complex scientific information. Second, the time lag between the appearance of an alleged injury and exposure to a toxic substance, and the conduct of research that addresses the cause/effect relationship reduces the utility of science in the courts. Many sources of mass tort litigation develop initially as case histories or medical anecdotes. With the accumulation of anecdotes, awareness of a possible problem encourages litigation. Further scientific investigation is usually necessary to better define and understand the problem and to delineate the parameters of any alleged cause/effect relationship. Unfortunately, scientific research that definitively resolves the issue may take several years, during which time the first cases may have already been decided, encouraging mass litigation. The judicial process is now incapable of allowing science to catch up with anecdotal evidence that contributes to tort litigation. In fact, litigation may interfere with gathering or analysis of scientific information where access to data on affected individuals and ecosystems is restricted to scientists directly involved in litigation. Outside scientists without an opportunity to analyze information on, e.g., cause/effect relationships cannot provide the insight that might come from additional research.

Given problems with use of science by courts, the prediction of potential sources of mass tort litigation should provide important management assistance. Also, where a company is aware of characteristics associated with potential sources of mass tort litigation in its products or processes, it may be able to reduce or eliminate those characteristics. That would provide benefits to the company as well as social relief through a reduction in both real or perceived harm and the amount of litigation to be handled by courts.

