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The Politics of Cancer

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THE POLITICS OF CANCER.* By *Samuel S. Epstein.* San Francisco: Sierra Club Books. 1978. Pp. 583. $12.50.

> If one thousand people died every day of cholera, swine flu, or food poisoning, an epidemic of major proportions would be at hand and the entire country would mobilize against it. Yet cancer claims that many lives daily, often in prolonged and agonizing pain, and most people believe they can do nothing about it. . . .
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> But cancer has distinct, identifiable causes. . . . It can largely be prevented, but this requires more than just scientific effort or individual action. The control and prevention of cancer will require a concerted national effort. This book is offered as a contribution to that essentially political process. [P. 1]

With these opening words, Dr. Epstein sets forth the themes of *The Politics of Cancer.* Cancer is largely a man-made (read, industry-made) epidemic, and thus can be prevented by man. But the public does not know that cancer is preventable, industry resists reform and manipulates facts and fears, and the epidemic continues. Because much of the battle against that epidemic is being fought in legal forums, its saga, and therefore this book, is of special concern to lawyers.

The Politics of Cancer has three major parts. Part I, "The Science of Cancer," explains the basic scientific methods of determining whether a substance is carcinogenic. One method is epidemiological study, the statistical search for "characteristics common to those contracting" cancer (p. 38). Such studies have the advantage of being "as close as we can reasonably get to performing actual experiments on humans" (p. 38), but it is difficult to gather data on enough victims of a particular type of cancer to draw meaningful conclusions. A single type of cancer strikes only a small proportion of the population, and a long period usually separates contact with the carcinogen and the onset of the disease. Another difficulty with this method is "sorting out the relevant from the irrelevant" (p. 41). Sometimes there are synergistic effects between two factors, and at other times a harmless factor merely coincides with a carcinogen. The asbestos industry, for example, has argued that epidemiological studies show only that smoking and contact with asbestos together, but not that contact with asbestos alone, cause cancer.

The second method of determining carcinogenicity is to test the suspect substance on animals. This method has the advantage of enabling researchers to use precise controls. Its major

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difficulty is that researchers must jump from a conclusion of carcinogenicity in animals to one of carcinogenicity in humans. This "species-to-species extrapolation" (p. 57) has been repeatedly challenged by industry, but Epstein avers, with citations, that "[t]his inference rests on over half a century of intensive scientific investigation into the biology and chemistry of carcinogenesis and carcinogens in many organisms, including humans" (p. 57). A second difficulty with animal tests is that many people misunderstand the reasons for giving animals large doses. "The superficial absurdity of a rat consuming the human equivalent of about a thousand cans of diet soda per day . . . has been exploited by industry, misinterpreted by the press, and misunderstood by the lay public, which has come to believe that anything given in large enough doses will cause cancer in animals. This simply is not true" (pp. 64-65). Epstein explains that high doses are needed because "(1) . . . some carcinogens are much less potent than others and (2) . . . animal experiments, no matter how well planned, must make use of finite animal resources" (p. 65). These difficulties do not mean that inferring carcinogenicity from animal studies is improper, but they do make it impossible to predict from animal data a safe level of human contact. If a substance is carcinogenic, the only level known to be safe is no contact at all.

In Part II, "The Science and Politics of Cancer," Epstein details twelve "case studies" of various carcinogens. These studies compose the heart of the book not only because they consume over half the textual pages, but also because the more general discussions in Parts I and III draw heavily on them. Each study recites how the basic scientific evidence of carcinogenicity was obtained, how industry attempted to suppress or rebut that evidence, and how the government responded to the pressures of workers, consumers, industry, or public-interest groups. Epstein investigates four carcinogens that exist primarily in the workplace: asbestos, vinyl chloride (a major chemical in the production of plastics), benzene (used to manufacture tires and many other products), and bischloromethylether (used in water purification and nuclear fuel fabrication). He also examines five carcinogens that appear in consumer products: tobacco, red dyes #2 and #40, saccharin, acrylonitrile (found in plastic bottles) and female sex hormones (used in contraceptives, for gynecological problems, and as an additive to animal feed). Finally, he reviews three carcinogens present in the general environment: aldrin/

dieldrin and chlordane/heptachlor (both pesticides) and nitrosamines (an extensive group of chemicals found in air, food, and water).

A typical case study is that of vinyl chloride. Epstein briefly explains how polyvinyl chloride (PVC) is made from vinyl chloride, a process that leaves some unreacted vinyl chloride in the polyvinyl-chloride resin. Those tens of thousands of workers who subsequently handle the plastics can be exposed to this trapped vinyl chloride as the PVC is heated or dissolved. Epstein traces the industry's reaction to evidence that vinyl chloride might be carcinogenic. In 1970, an Italian researcher reported, at an international cancer congress, that rats exposed to vinyl chloride developed a wide range of cancers. Disturbed by the report, a consortium of European chemical companies financed a further study by another Italian researcher who confirmed the earlier results and showed vinyl chloride to be a potent carcinogen. In January 1973, the major trade association for the United States chemical industry learned of the study's results, but only after agreeing not to disclose them without the consortium's consent. During that year, the association participated in proceedings with both the National Institute of Occupational Safety and Health (NIOSH) and the Food and Drug Administration (FDA) about the safety of vinyl chloride, but it never disclosed the Italian results to either agency. Not until 1974, when B.F. Goodrich announced the cancer-induced deaths of three of its PVC workers, did the association reveal, on the same day as the Goodrich announcement, the findings of the Italian study, now eighteen months old.

As the danger became apparent, the Occupational Safety and Health Administration (OSHA) reduced the permissible concentration of vinyl chloride in the workplace from 500 parts per million to 50 parts per million, and later to 1 part per million. The chemical industry continued to distort data on the carcinogenicity of vinyl chloride (p. 104). It also protested that the OSHA standards were prohibitively expensive, and it commissioned studies, which predicted increased costs of up to ninety billion dollars, to support its claims. OSHA refused to back down, and within a year the companies had, with only minimal difficulties, complied with the standard. This kind of distortion by affected industries is, regrettably, typical of that found in each of Epstein's case studies, although in many cases industry enjoys more success in obtaining lax standards.

In Part III, "The Politics of Cancer," Epstein describes the major organizations that shape cancer policy. He first works through the tangled thicket of relationships among the innumerable government agencies: the major research agencies (the National Cancer Institute, the National Institutes of Health, NIOSH, the National Institute for Environmental Health Sciences, the National Center for Toxicological Research, the Energy Research and Development Administration, the Council on Environmental Quality) and the major regulatory agencies (OSHA, the Environmental Protection Agency (EPA), the Consumer Product Safety Commission, the Department of Agriculture, the FDA, the Federal Trade Commission, and the Bureau of Mines). He analyzes some of the agencies' budgets, describes their conflicting goals and procedures, lists major agency regulations, and sketches possible reforms (some of which are described below).

In the next chapter, Epstein unabashedly criticizes industry for "fail[ing] to adequately comprehend the magnitude of health and safety problems entailed in the manufacture and handling of hazardous, particularly toxic or carcinogenic, chemicals" (p. 389). Drawing generalizations from the case studies of Part II, Epstein summarizes the industrial "strategies" used to support the status quo: By controlling information and propagandizing the public, industry discounts the hazards of its products and shifts the blame from the chemicals to "hypersusceptible" victims (p. 395). Industry attempts to influence policy through lobbying and to exhaust the agencies through protracted legal actions and by insisting on impossible precision in carcinogenesis tests. Finally, if it finds regulations too strict, industry threatens to move overseas or to southern states, where standards are more lenient.

Epstein closes the chapter with briefer descriptions of labor's efforts to secure healthier working conditions, the public-interest movement's efforts to prod government to regulate carcinogens more strictly, and the often admirable American Cancer Society's indifference, if not hostility "to regulatory needs . . . in the general environment and workplace" (p. 426). He concludes with a chapter entitled "What You Can Do to Prevent Cancer."

Of the many innovative ideas in *The Politics of Cancer,* four themes have particularly interesting policy overtones. First, Epstein calls for a reorganization of the diverse government agencies and programs. For example, he proposes that the National Cancer Institute be insulated from direct presidential influence by restoring it to the administrative control of the National Insti-

tutes of Health, and he suggests that the political visibility of NIOSH (whose work Epstein praises) be increased by allowing it to report directly to the Secretary of Health, Education, and Welfare (HEW). The Carter administration is already attempting to coordinate the agencies better by forming an Interagency Regulatory Liaison Group representing the EPA, the OSHA, the FDA, and the Consumer Product Safety Commission and by establishing the EPA Toxic Substances Strategy Committee, which reports directly to the President. Epstein applauds such attempts, and he urges even greater coordination among agencies.

A second idea of Epstein's addresses a more specific disadvantage of inefficient regulatory procedures. Whenever an agency proposes to regulate an alleged carcinogen, major battles are fought over what constitutes adequate proof of carcinogenicity. If the agencies could all endorse a set of general scientific principles, the regulatory process would be more efficient. Epstein vividly depicts the wasted effort of duplicate hearings by recounting the EPA proceedings to ban the pesticides aldrin/dieldrin and, later, chlordane/heptachlor. In the first action, the EPA counsel formulated nine general principles of cancer research, including the principles that a chemical's capacity to induce benign or malignant tumors should suffice to characterize it as a carcinogen; that the concept of a safe "threshold" exposure level has no practical significance; and that a carcinogenic agent can be identified by animal tests or properly conducted epidemiological studies. According to Epstein, the administrative law judge and the reviewing EPA administrator implicitly incorporated those nine principles in the decision to suspend aldrin/dieldrin. Nevertheless, when the hearings on chlordane/heptachlor began, the principles again became "the salient point of contention" (p. 267). Such repetitious debates over basic scientific principles in every individual hearing waste time and money. If generally-agreed-upon principles were developed (perhaps through agency rule-making, although Epstein suggests no specific procedure), individual hearings could concentrate on, and presumably determine more quickly, the carcinogenicity of the chemical in question.

Third, Epstein proposes that government and private researchers more strongly emphasize the prevention of cancer. Traditional research has searched primarily for cures, but Epstein, pointing to the very modest increase in survival rates that research has achieved, contends that "there has been little overall improvement in our ability to treat and cure most cancers" (p. 328). Researchers could better spend their energy, Epstein there-

fore suggests, in trying to prevent cancer in the first place: research into the causes of cancer, through animal tests and epidemiological studies, would further the ability to eliminate the many carcinogens that man places in the environment.

Fourth, Epstein devotes an entire chapter to outlining how industry can improve its production of and response to research and data. Most benefit and risk data come from industry, and those data are often flawed. Academic researchers hired by industry as consultants are often biased, and industry will emphasize favorable results even from poorly conducted studies while ignoring unfavorable conclusions from better studies. If tests on animals suggest a chemical is a carcinogen, industry claims that only tests on humans are meaningful, yet industry loudly proclaims negative carcinogenic findings from animal tests.

The answer lies not, says Epstein, in having industry build more elaborate carcinogenic testing facilities. Nor will the agencies' current practice of formalizing guidelines and inspections, improving audits and licensing, and increasing fines for manipulating or suppressing data alleviate the inherent conflict of interest industry confronts when made to test the carcinogenicity of its products. Rather, Congress should set a buffer between the researcher and the manufacturer. A disinterested advisory group, Epstein believes, should receive requests from manufacturers for testing a chemical and should distribute research contracts through competitive bids. After the study, the advisory group should comment on the quality of the research and forward its recommendations to the appropriate agency. Not only would the public and industry benefit from improved research, but, argues Epstein, industry would be protected from legal liability if the tests did not predict a product's carcinogenicity.

The Politics of Cancer is an important book because it brings together the scientific, political, and social ramifications of the many types of cancers. It suffers, perhaps inevitably in so great a task, from an inconsistent tone, one which ranges from that of a detached scientist explaining the value and limitations of animal tests, through that of an academic decrying the distortion of data and the misunderstanding of legitimate inference, to that of an advocate castigating industry for hammering the public with propaganda and the President for weighing political expediency against 300,000 deaths annually from tobacco. Perhaps the book's most disturbing characteristic is its treatment of industry as a monolithic whole (as indicated by its use of the singular form "industry" to mean "private business" or "manufacturing com-

panies"). Epstein's documentary evidence against many manufacturing firms is convincing, but perhaps would be more compelling if he did not assume that all industry acts in recalcitrant unison to oppose cancer prevention.

Epstein, who is a medical doctor and a Professor of Occupational and Environmental Medicine at the School of Public Health of the University of Illinois at the Medical Center, Chicago, is strongest in explaining medical research: his most detailed references in the thirty-eight pages of endnotes are from medical literature. As an experienced member of advisory commissions and panels, Epstein also documents well the government's struggle to cope with technical and scientific material. Thus, despite any flaws, Dr. Epstein's book will surely be a welcome and important influence on the politics of cancer.