

**THE CRISIS IN U.S. AND INTERNATIONAL  
CANCER POLICY**

Samuel S. Epstein, Nicholas A. Ashford, Brent Blackwelder,  
Barry Castleman, Gary Cohen, Edward Goldsmith,  
Anthony Mazzocchi, and Quentin D. Young

The incidence of cancer in the United States and other major industrialized nations has escalated to epidemic proportions over recent decades, and greater increases are expected. While smoking is the single largest cause of cancer, the incidence of childhood cancers and a wide range of predominantly non-smoking-related cancers in men and women has increased greatly. This modern epidemic does not reflect lack of resources of the U.S. cancer establishment, the National Cancer Institute and American Cancer Society; the NCI budget has increased 20-fold since passage of the 1971 National Cancer Act, while funding for research and public information on primary prevention remains minimal. The cancer establishment bears major responsibility for the cancer epidemic, due to its overwhelming fixation on damage control—screening, diagnosis, treatment, and related molecular research—and indifference to preventing a wide range of avoidable causes of cancer, other than faulty lifestyle, particularly smoking. This mindset is based on a discredited 1981 report by a prominent pro-industry epidemiologist, guesstimating that environmental and occupational exposures were responsible for only 5 percent of cancer mortality, even though a prior chemical industry report admitted that 20 percent was occupational in origin. This report still dominates public policy, despite overwhelming contrary scientific evidence on avoidable causes of cancer from involuntary exposures to a wide range of environmental carcinogens. Since 1998, the ACS has been planning to gain control of national cancer policy, now under federal authority. These plans, developed behind closed doors and under conditions of nontransparency, with recent well-intentioned but mistaken bipartisan Congressional support, pose a major and poorly reversible threat to cancer prevention and to winning the losing war against cancer.

## LOSING THE WINNABLE WAR AGAINST CANCER

Pressured by leading representatives of the cancer establishment, the National Cancer Institute (NCI) and the American Cancer Society (ACS), the U.S. Congress passed the National Cancer Act in 1971. The act launched the National Cancer Program, under the direction of the NCI, to attack and eradicate cancer and “to disseminate cancer information to the public.” President Nixon enthusiastically embraced the act, and increased the NCI’s budget from \$149 to \$223 million. Since then, the NCI’s budget has increased nearly 20-fold, to \$4.2 billion in 2002, with \$4.6 billion authorized for 2003 (Table 1). In spite of these massively increased allocations, we are losing the winnable war against cancer.

*Escalating Incidence of Cancer*

Over recent decades, the incidence of cancer in the United States has escalated to epidemic proportions (1), now striking nearly one in two men (44 percent) and more than one in three women (38 percent). This increase translates into approximately 56 percent more cancer in men and 22 percent more cancer in women over the course of a single generation (2). As admitted by recent NCI and ACS estimates, the incidence of cancer will increase still further, doubling by 2050, with grave inflationary consequences (3).

From 1973 to 1999, based on the latest available data (1), the overall incidence of cancer rates at all sites, adjusted to reflect the aging population, increased approximately 24 percent (Table 2). Although the overall incidence of lung cancer increased 30 percent, it decreased 6 percent in men and increased 143 percent in

Table 1

Growth of the National Cancer Institute budget from 1970 to 2002

Year	Budget, billions of dollars	Percent increase over previous period <sup>a</sup>
1970	0.149	
1971	0.223	49.7
1979	0.94	321.5
1992	1.8	91.5
1998	2.6	44.4
2002	4.2	61.5
2003	4.6 (authorized)	9.5

<sup>a</sup>1,800 percent (18-fold) increase from 1971 to 2002.

women, reflecting major changes in smoking practices, apart from the well-recognized risks of passive smoking. Unquestionably, smoking remains the single most important cause of cancer. Particularly striking, however, was the increase of predominantly non-smoking-related cancers, notably: malignant melanoma, 156 percent; liver cancer, 104 percent; non-Hodgkin's lymphoma, 87 percent; thyroid cancer, 71 percent; testicular cancer, 67 percent; postmenopausal breast cancer, 54 percent; brain cancer, 28 percent; and acute myeloid leukemia, 16 percent. Childhood cancers (age 0 to 14 years) increased 26 percent overall: acute lymphocytic leukemia, 62 percent; brain, 50 percent; bone and joint, 40 percent; and kidney, 14 percent. Childhood cancers remain the number one killer of children other than accidents. The median age for the diagnosis of cancer is now 67 for adults and 6 for children.

During recent years, the incidence of lung cancer in men has decreased still more sharply, while that of non-smoking-related cancers has continued its steady increase (1). From 1992 to 1999, increasing rates included: thyroid cancer, 22 percent; malignant melanoma, 18 percent; acute myeloid leukemia, 13 percent; and postmenopausal breast cancer, 7 percent (Table 3). Childhood cancers increased 7 percent overall: bone and joint, 20 percent; leukemia, 18 percent; acute lymphocytic leukemia, 16 percent; and kidney 14 percent.

These increasing U.S. cancer rates, particularly of non-smoking-related cancers, are also reflected in other major industrialized nations (4).

#### *Misleading Assurances by the NCI and ACS*

Despite the escalating incidence of overall and site-specific cancer rates from 1973 to 1999, and despite massively increased resources, the NCI and ACS have continued to make empty claims about major progress in the war against cancer.

In 1984, reacting to growing concerns about increasing cancer mortality rates, blamed on lack of funding and Congressional support, the NCI launched the "Cancer Prevention Awareness Program," claiming that this would halve the 1980 overall cancer mortality rate of 160 per 100,000 to 84 per 100,000 by 2000. This was followed by a 1986 NCI document, *Cancer Control Objectives*, which similarly claimed that the overall mortality rate of 167 per 100,000 would be halved by 2000. In fact, this rate has remained unchanged, other than a minor reduction due to the decrease in lung cancer resulting from reduced smoking by men.

On March 1998, at a heavily promoted Washington, D.C., press briefing, the NCI and ACS released their *Report Card* announcing a recent "reversal of an almost 20-year trend of increasing cancer cases, and deaths" (5). "These numbers are the first proof that we are on the right track," enthused then NCI director Dr. Richard Klausner. Media coverage was extensive and uncritical. The next day, a *New York Times* headline supportively announced "a sharp reversal of the incidence [of cancer, and that] the nation may have reached a turning point" in

Table 2

Age-adjusted incidence rates (all races), 1973–1999

Primary site	1973	1999	Percent change
Oropharynx	13.1	10.3	-21.4
Esophagus	3.9	4.9	25.6
Stomach	13.1	8.4	-35.9
Colorectal	57.8	54.3	-6.1
Liver	2.7	5.5	103.7
Pancreas	12.3	10.7	-13.0
Larynx	5.1	4.1	-19.6
Lung	49.0	63.5	29.6
Male	85.9	81.1	-5.6
Females	20.9	50.7	142.6
Breast (all ages)	98.5	139.1	41.2
Under 50 years	39.1	43.0	10.0
Over 50 years	254.0	390.8	53.9
Cervix	17.2	8.0	-53.5
Uterus	31.7	25.1	-20.8
Ovary (all ages)	16.5	17.0	3.0
Under 65 years	11.5	11.1	-3.5
Over 65 years	50.4	57.8	14.7
Testis	3.3	5.5	66.7
Kidney	7.9	11.1	40.5
Bladder	18.1	21.2	17.1
Prostate	85.3	174.8	104.9
Brain	5.3	6.8	28.3
Thyroid	4.2	7.2	71.4
Malignant melanoma	6.8	17.4	155.9
Hodgkin's disease	3.4	2.8	-17.6
Non-Hodgkin's lymphoma	10.2	19.1	87.3
Multiple myeloma	4.6	5.0	8.7
Leukemias	12.5	11.2	-10.4
Acute myeloid	3.1	3.6	16.1
Childhood (0–14 years) <sup>a</sup>			
All sites	11.5	14.5	26.0
Bone and joint	0.5	0.6	20.0
Brain	2.3	3.4	50.2
Hodgkin's disease	0.7	0.4	-32.7
Kidney	0.7	0.8	14.2
Leukemias	3.3	4.7	44.5
Acute lymphocytic	2.2	3.6	61.7
Non-Hodgkin's lymphoma	1.0	0.8	-21.7

Table 2

(Cont'd.)

Primary site	1973	1999	Percent change
All sites, excluding lung	336.0	412.6	22.8
Males	362.6	474.7	30.9
Females	328.6	371.6	13.1
All sites	385.0	476.1	23.7
Males	448.5	555.8	23.9
Females	349.5	422.3	20.8

<sup>a</sup>Based on 1975–1999 data.

the war against cancer (6). The news could not have come at a better time for cancer researchers. Just as Congress began working on the 1999 biomedical budget, a group of experts announced that the U.S. had “turned the corner” in the war on cancer (6).

In fact, the “reversal” in the overall incidence of cancer from 1992 to 1998 was manipulated and minimal (about 7 percent). The decline was largely due to the reduction of lung cancer in men following their decreased smoking. Furthermore, any true decline would have been considerably less had incidence, as well as mortality, rates been more appropriately age-adjusted to the age distribution of the current population, rather than that of the 1970 population as misleadingly calculated by the NCI, with its relatively higher representation of younger age groups (7). Even the reduction of prostate cancer is highly questionable, as the *Report Card* authors admitted: “The decreased incidence rates [of prostate cancer] may be the result of decreased utilization of PSA screening tests” (5). The incidence of “prostate cancer” decreased approximately 20 percent (from 196 to 155 per 100,000) from 1992 to 1998. Moreover, the incidence rates for many non-smoking-related cancers continued to escalate sharply (Table 3) and to outweigh the decline in the incidence of lung cancer in men (1, 8).

Ignoring these criticisms, the cancer establishment persisted in making empty promises about winning the cancer war. The NCI’s *Cancer Progress Report* for 2001 claimed that rates of new cancers and deaths were falling overall, while admitting that these declines largely reflected a reduction in smoking-related deaths in men (9). However, the report again ignored the sharply increased incidence rates, both overall and for a wide range of non-smoking-related cancers, from 1973 to 1999. As a leading critic on the politics and finance of science recently commented, “The good news about cancer must be emphasized and, if need be, manufactured, to keep up public spirits and support . . . for more money . . . without public interference in the use of the money” (10).

Table 3

Age-adjusted incidence rates (all races), 1992–1999

Primary site	1992	1999	Percent change
Oropharynx	12.2	10.3	-15.6
Esophagus	4.6	4.9	6.5
Stomach	9.2	8.4	-8.7
Colorectal	58	54.3	-6.4
Liver	4.0	5.5	37.5
Pancreas	10.7	10.7	0.0
Larynx	5.0	4.1	-18.0
Lung	69.6	63.5	-8.8
Male	97.4	81.1	-16.7
Females	49.9	50.7	1.6
Breast (all ages)	132	139.1	5.4
Under 50 years	43.4	43	-0.9
Over 50 years	363.9	390.8	7.4
Cervix	10.0	8.0	-20.0
Uterus	24.8	25.1	1.2
Ovary (all ages)	17.6	17.0	-3.4
Under 65 years	11.8	11.1	-5.9
Over 65 years	58.0	57.8	-0.3
Testis	5.2	5.5	5.8
Kidney	10.7	11.1	3.7
Bladder	21.2	21.2	0.0
Prostate	235.9	174.8	-25.9
Brain	7.0	6.8	-2.9
Thyroid	5.9	7.2	22.0
Malignant melanoma	14.8	17.4	17.6
Hodgkin's disease	2.9	2.8	-3.4
Non-Hodgkin's lymphoma	18.6	19.1	2.7
Multiple myeloma	5.9	5.0	-15.3
Leukemias	12.8	11.2	-12.5
Acute myeloid	3.2	3.6	12.5
Childhood (0–14 years) <sup>a</sup>			
All sites	13.5	14.5	7.4
Bone and joint	0.5	0.6	20.0
Brain	3.2	3.4	6.2
Hodgkin's disease	0.5	0.4	-20.0
Kidney	0.7	0.8	14.3
Leukemias	4.0	4.7	17.5
Acute lymphocytic	3.1	3.6	16.1
Non-Hodgkin's lymphoma	0.8	0.8	0.0

Table 3

(Cont'd.)

Primary site	1992	1999	Percent change
All sites, excluding lung	441.6	412.6	-6.6
Males	558.1	474.7	-14.9
Females	367.5	371.6	1.1
All sites	511.2	476.1	-6.9
Males	655.5	555.8	-15.2
Females	417.4	422.3	1.2

In May 2002, in a stunning reversal, the NCI and ACS suddenly abandoned their long-standing promises about winning the war against cancer. In their "Annual Report to the Nation," they admitted that *the incidence of cancer is expected to double by 2050 due to the aging population* (3). They made no reference, however, to the sharply increasing incidence, over the last three decades, of cancers in younger age groups, such as childhood and testicular cancers (Table 2).

#### MINIMAL RESEARCH ON PRIMARY PREVENTION

The research policies and priorities of the cancer establishment remain dominated by professional mindsets fixated on damage control (screening, diagnosis, and treatment) and molecular research. High priority for screening, or "secondary prevention," persists in spite of long-standing challenges (which have finally received headline coverage; see 11) to its questionable effectiveness for cancers such as prostate, lung, premenopausal breast cancers, and childhood neuroblastoma. Minimal emphasis on (and even indifference to) primary prevention remains, particularly research on avoidable causes of cancer other than those attributed to smoking and other lifestyle factors. This is in striking contrast to the cancer establishment's high priority for "secondary prevention," defined as screening, diagnosis, and "chemoprevention" by the use of vitamins or drugs such as tamoxifen, in generally futile attempts to reduce the effects of prior carcinogenic exposures. For the ACS, this indifference to primary prevention even includes hostility (see Appendix I; appendixes begin on p. 697).

Compounding these problems of professional mindsets are poorly recognized institutionalized conflicts of interest, particularly for the ACS. For decades, powerful groups of interlocking corporate interests, with the highly profitable cancer drug industry at their hub, have dominated the losing war against cancer. In a surprisingly frank statement, Dr. Samuel Broder, NCI director from 1989 to 1995, stated the obvious: "The NCI has become what amounts to a government

pharmaceutical company” (quoted in 12). Broder resigned from the NCI to become chief scientific officer of Ivax, subsequently moving to become chief medical officer of Celera Genomics; both companies are major manufacturers of cancer drugs. By linking their interests with those of major cancer drug companies, both the NCI and ACS have directed their priorities away from research on primary prevention toward a virtually exclusionary emphasis on damage control (see 13 for an extensive range of primary scientific and policy citations).

The cancer establishment has long insisted that faulty lifestyle, particularly smoking, inactivity, and fatty diet—excluding any recognition of contamination of animal fat with carcinogenic pesticides—is the predominant cause of cancer. This exclusionary or predominant lifestyle emphasis, also known as “blaming the victim,” has been strongly reinforced by U.S. and international reliance on a biased and inept report on U.S. cancer mortality by U.K. epidemiologists Dr. Richard Doll and his protégé Richard Peto, published in 1981 (14). Over the last three decades, Doll’s track record on primary prevention reveals strong pro-industry bias and conflicts of interest (see Appendix II). In the absence of cited scientific data, Doll and Peto *guesstimated* that lifestyle factors are responsible for some 95 percent of all cancer mortality. This left a balance of 5 percent, which they arbitrarily assigned to occupation, pollution, and “industrial products,” a belief to which they remain largely fixated. Strangely excluded from their guesstimates was any consideration of mortality of people over the age of 65 and African Americans—just those groups disproportionately affected by cancer—and any consideration of cancer incidence. Also excluded was any recognition of the substantial evidence that exposures to a wide range of carcinogenic occupational products and processes are, besides smoking, major causes of lung cancer (13). There is also clear evidence of additive or synergistic interactions between carcinogenic occupational exposures and smoking. Nevertheless, the NCI and ACS continue to direct minimal research and emphasis to occupational and environmental causes of cancer, despite substantial data relating these factors to the escalating incidence of overall and site-specific cancers.

The cancer establishment’s continued trivialization of the major impact of occupational cancer is particularly egregious. Based on National Institute of Occupational Safety and Health surveys, some 11 million men and 4 million women are involuntarily exposed to a wide range of occupational carcinogens, representing the single largest cause of avoidable cancer. A 1979 confidential report by consultants to the chemical industry trade association (the American Industrial Health Council) admitted that exposures to occupational carcinogens were responsible for at least 20 percent of all cancers and that they posed a “public health catastrophe” (15). Although this report was widely leaked, Doll and Peto ignored it. A more recent limited and conservative estimate concluded that occupational exposures are responsible for 10 percent of cancer mortality, about 55,000 avoidable annual deaths in the United States (16). Poorly recognized is the increased incidence of mesotheliomas, uniquely induced by asbestos,

doubling and quadrupling in white and African-American men, respectively, from 1977 to 1999 (1). Additionally, paternal and maternal exposures to occupational carcinogens have been implicated as significant causes of childhood cancer, the overall incidence of which has increased by 26 percent since passage of the 1971 National Cancer Act (Table 2). Furthermore, lower-level exposures to occupational carcinogens such as asbestos and benzene often extend from the industrial plants into local communities and, to a lesser extent, to the entire U.S. population.

The cancer establishment ignores or rejects the basic fundamental of the widely accepted *precautionary principle*. For example, it has failed to undertake research based on nationwide community concerns about clusters of adult and childhood cancers in the vicinity of nuclear power plants, petrochemical industries, and Superfund hazardous waste sites—areas disproportionately and discriminatorily located in low-socioeconomic African-American and other ethnic communities. Worse still, despite the increased availability of data on air and water pollutants from large chemical industries and hazardous waste sites, following the Environmental Protection Agency's creation of the National Toxic Release Inventory in 1987, and the more detailed and user-friendly right-to-know exposure data at the state level, particularly in Massachusetts and New Jersey (17), both the NCI and ACS remain silent on or even dismissive of such concerns. And the NCI's silence persists despite substantial data incriminating avoidable undisclosed exposures of the population at large to ionizing radiation and industrial carcinogens, particularly persistent organic pollutants, that contaminate the entire environment: air, water, soil, the workplace, and consumer products such as food, household products, cosmetics, and toiletries. Such exposures have been incriminated, to varying degrees, in the escalating incidence of overall and site-specific cancers over recent decades.

Blatant examples of the NCI's dismissiveness include the assertion by then NCI director Dr. Richard Klausner at Rep. Nancy Pelosi's (D-CA) town hall meeting on July 26, 1996, that "low level (therapeutic) ionizing radiation does not demonstrate an increased risk." This was contrary to the conclusions of two NCI staffers involved in the U.S. Scoliosis Control Study that the relatively low cumulative breast dose was responsible for 70 percent excess breast cancer mortality (18). Furthermore, a hearing by the U.S. Senate Permanent Subcommittee on Investigations on September 16, 1998, revealed that the NCI had suppressed the results of its iodine-131 "Thyroid Cancer Study" for more than a decade, a delay resulting in several hundred deaths.

The NCI's minimal priorities on primary prevention research are further exemplified by its dismissal or trivialization of the significance of evidence derived from valid carcinogenicity tests in rodents; the ACS is even more dismissive. An illustration of this is a September 1992 statement by Dr. Richard Adamson, past director of the NCI's Division of Cancer Epidemiology, that trivialized the risks posed by food contaminated with pesticides such as Alar, shown to be carcinogenic in validated rodent tests (13, p. 495). Further illustrative

is senior NCI staffer Dr. Leslie Ford's dismissal (19) in June 1995 of well-documented evidence on the potent hepatocarcinogenicity in rats (with formation of irreversible DNA adducts) of tamoxifen, a drug used in breast cancer chemoprevention trials in healthy women (20). Ford dismissed this evidence, of which women are still uninformed, as "premature," claiming that carcinogenic effects were seen only at "high doses," although these doses were similar to those used in the trial. She further attempted to discredit this evidence on the remarkable grounds that no women in the trial had developed liver cancer over the preceding few years. The same logic would exculpate most unequivocal carcinogens, such as asbestos, benzene, and vinyl chloride, which rarely, if ever, induce cancer with such brief latency.

The relation of environmental factors to risks of breast cancer is supported by a 1995 report on immigrants from high-risk nations such as the United States and Canada to low-risk nations such as Japan, and also the reverse migration (21). Slowly but surely, the immigrants, no matter at what age they moved from their country of origin, assumed breast cancer risks similar to those experienced by native-born women. More striking confirmation comes from a 2000 report on a large-scale study of identical twins in Sweden, Denmark, and Finland: "The overwhelming contribution to the causation of cancer in the population of [90,000] twins that we studied was the environment" (22). A recent study stresses the critical significance of these findings: "Thus the conclusion from twin studies is consistent with the conclusion from migrant studies: *the majority, probably the large majority, of important cancers in western populations are due to environmental rather than genetic factors.* Overly enthusiastic expectations regarding genetic research for disease prevention have the potential to distort research priorities for spending and health" (23, emphasis added).

We should also note that most carcinogens also induce other chronic toxic effects, notably genetic, endocrine-disruptive reproductive, hematological, and immunological effects, for which no incidence trend data comparable to those for cancer are available. Cancer, in effect, likely represents a quantifiable paradigm of a wide range of adverse public health effects resulting from run-away industrial technologies.

#### MINIMAL FUNDING OF PRIMARY PREVENTION

The cancer establishment grossly exaggerates its alleged allocations for research and advocacy on primary prevention, while trivializing the role of industrial carcinogens as avoidable causes of cancer.

##### *The National Cancer Institute*

The NCI claimed that \$350 million (17 percent) of its approximately \$2 billion 1992 budget was allocated to primary prevention. However, primary prevention

expenditures (based on published independent estimates, unchallenged by the NCI) were less than \$50 million (2.5 percent), of which \$19 million (0.9 percent) was allocated to occupational cancer (24). Only \$15 million (0.03 percent) of the \$4.2 billion 2002 budget is allocated to intramural occupational research. These trivial allocations strikingly illustrate the NCI's past and current reckless neglect of primary cancer prevention.

The NCI leadership has used manipulation and semantics to mislead and confuse Congress about its claimed allocations for primary cancer prevention. The institute massively exaggerates such allocations by including unrelated "secondary prevention" screening, diagnosis, and chemoprevention by the use of dietary "nutraceuticals" or drugs such as tamoxifen in questionable efforts to reduce susceptibility to prior carcinogenic exposures. Not surprising was the reaction by Rep. David Obey (D-WI) at hearings before a House Subcommittee of the Committee on Appropriations on March 16, 1992: "A number of scientists have suggested that cancer prevention receives an even smaller percentage of the budget than what NCI considers primary prevention." This skepticism is further detailed in later exchanges between Rep. Obey and Dr. Klausner. Rep. Obey's questions and Dr. Klausner's responses of May 1, 1998, are summarized below, followed by my comments on Klausner's responses (13).

*Question:* "Provide a breakdown of NCI's cancer prevention funding by categories—where prevention is the primary purpose of the grant."

*Answer:* "Funding for primary prevention in 1997 was over \$480 million, almost 50 percent [of which] was directed towards environmental exposures, 19 percent was directed towards nutrition research, 14 percent involved smoking, and 2 percent was related to occupational exposures. . . . Opportunities in cancer prevention are emerging and we anticipate fully to take advantage of these opportunities."

*Comment:* The claimed \$480 million primary prevention expenditures, approximately 20 percent of the budget, are inconsistent with the NCI's February 1997 budget for "research dollars by various cancers," listing an allocation of \$249 million for "cancer prevention and control." Furthermore, no information was provided on the alleged 50 percent expenditure on "environmental exposures." The 19 percent for nutrition research was allocated to chemoprevention, in attempts to protect against avoidable exposures to environmental carcinogens, and to the "protective effects" of low-fat, high fruit and vegetable diets, while ignoring evidence on the role of dietary contamination with carcinogenic pesticides. As disturbing was the less than 2 percent allocated to occupation, the single most important cause of avoidable carcinogenic exposures. The balance of 15 percent of the alleged \$480 million primary prevention expenditures was unaccounted for. In response to a later request for information from the House Committee on Government Reform and Oversight, Klausner responded by simply doubling this figure to approximately \$1 billion.

*Question:* “Other than tobacco and exposure to sunlight, do you think that the general public has been adequately informed about avoidable causes of cancer?”

*Answer:* “The NCI and other organizations including the ACS . . . have worked for years to inform the public about lifestyle choices that could increase or decrease the risks of cancer—through NCI’s Cancer Information Services—and through distribution of millions of publications. In addition, when testing shows that chemicals cause cancer, NCI and other agencies including the National Toxicology Program (NTP) and the International Agency for Research on Cancer (IARC) publicize the test results.”

*Comment:* This response illustrates the NCI’s fixation on personal responsibility for cancer prevention. The NCI still takes no responsibility for public dissemination of scientific information on avoidable risks from involuntary and unknowing exposures to a wide range of carcinogenic chemicals, including those identified and systematized by the IARC and, on a more limited basis, by the NTP. And senior NCI scientists are on record as denigrating the human relevance of carcinogenicity test data. Furthermore, the NCI has rarely, if ever, testified before Congress on the validity of published evidence on avoidable carcinogenic exposures, nor has it provided such information to regulatory agencies.

*Question:* “Should the NCI develop a registry of avoidable carcinogens and make this information widely available to the public?”

*Answer:* “Such information is already available from NCI’s Cancer Information Service—and also from IARC and the NTP.”

*Comment:* The IARC and the NTP have not developed such registries, nor is it their mission.

*Question:* “During the hearing, you stated that NCI could effectively spend \$5 billion by 2003. Provide a budget mechanism table that shows how you would allocate this level of spending in 2003, compared to 1998.”

*Answer:* “NCI envisions a three-pronged approach:

1. Sustain at full measure the proved research programs that have enabled us to come this far.
2. Seize ‘extraordinary opportunities’ to further progress brought about by our previous successes. Our goals in these areas are: Cancer genetics; pre-clinical models of cancer; and imaging technologies, defining the signatures of cancer cells.
3. Create and sustain mechanisms that will enable us to rapidly translate our findings from the laboratory into practical applications that will benefit everyone.”

*Comment:* This response is as broad in generalization as it is sparse in detail.

The most revealing evidence of the NCI's highly restricted policies on primary prevention is detailed in its *Cancer Progress Report* of 2001 (9). The report compares past "progress with the cancer-related targets set forth in the Department of Health and Human Services Objectives for the first decade of the 21st century." The report states that "behavioral factors," detailed in nineteen pages, are responsible for as much as 75 percent of all cancer deaths in the United States, while recognizing that "certain chemicals in the environment are known to cause cancer." However, these carcinogenic chemicals, summarily dealt with in three pages, are restricted to secondhand smoke; benzene in the air, particularly from smoking and occupational exposures; and radon in the home.

An even more limited comprehension (or greater neglect) of prevention is revealed in the "Highlights" of the NCI's *Cancer Facts* of May 2001, which begins "Cancer prevention is a major component and current priority—to reduce suffering and death from cancer. Research in the areas of diet and nutrition, tobacco cessation, chemoprevention, and early detection and screening are the NCI's major cancer prevention programs" (25). No mention is made of environmental and occupational carcinogens.

#### *The American Cancer Society*

In 1998, the ACS claimed that it funded nineteen large research grants on "Environmental Carcinogenesis," at a cost of \$2.6 million—0.4 percent of its \$678 million revenues, apart from \$873 million assets. However, the great majority of these grants were in molecular biology; only three, funded for a total of \$330,000 (less than 0.1 percent of revenues), reasonably qualified as environmental cancer research. The ACS also claimed that it funded 92 "Prevention" grants, with \$23 million. Again, these largely dealt with molecular biology, with \$2.4 million allocated to tobacco and diet, excluding any consideration of contamination with carcinogenic (besides other toxic) pesticides. A recent report has confirmed that concentrations of toxic and carcinogenic pesticide residues, including DDT, are three times higher in conventional foods than in organic foods (26). The ACS is even more dismissive than the NCI in its understanding of and priorities on primary cancer prevention. In *Cancer Facts and Figures 2002*, the ACS blandly reassures readers that cancer risks from dietary pesticides, hazardous waste sites, ionizing radiation from "closely controlled" nuclear plants, and nonionizing radiation are all at such low levels as to be "negligible" (27).

In striking contrast to the ACS's indifference to cancer prevention, in February 2002, the Canadian Cancer Society unequivocally affirmed the precautionary principle "to develop our cancer prevention and risk reduction messages" (28). However, in its September 2001 "Discussion Document," the Canadian government effectively rejected this principle, as recently criticized by the Canadian Environmental Law Association, in favor of a cost-benefit and scientific risk-based framework (29).

The Canadian Cancer Society has also joined with the Sierra Club of Canada in demanding a ban on the “cosmetic” use of carcinogenic pesticides for the home, garden, lawn, and recreational facilities (30). The Minister of Health, Anne MacLellan, promptly rejected this demand, claiming that “there is no evidence to support such a case. Pesticides are registered only if their risks have been determined to be acceptable when used according to instructions” (31). Note that such pesticide uses are being withdrawn in the United States, in part because of requirements of the 1996 Food Quality Protection Act and, in considerable part, because Canada has no U.S.-type legal liability deterrents.

#### FAILURE OF OUTREACH AND ADVOCACY ON PRIMARY PREVENTION

Both the NCI and ACS have instant access to the highly receptive media, close contacts with Congress, and powerful public relations operations. Fully using these outreach resources, the cancer establishment issues a prodigious ongoing stream of information, press releases, databases, and public educational materials—the latter including the Comprehensive Public Cancer Database System, dealing with screening, diagnosis, clinical research, and the latest claimed advances in treatment. In sharp contrast, the cancer establishment makes little or no effort to warn the public of well-documented risks, based on experimental or epidemiological evidence, from involuntary exposure to a wide range of industrial carcinogens, including those in consumer products—food, cosmetics, toiletries, and household products. As importantly, the cancer establishment has also failed to warn of potential carcinogenic risks on the basis of incomplete or suggestive, although not definitive, evidence and has failed to direct high priority to research and advocacy on such risks. Such failure is a blatant disregard of the fundamental principles of public health and of the scientific basis of the precautionary principle.

The cancer establishment has shown reckless failure to warn the public, the media, Congress, and regulatory agencies of *experimental* evidence on a wide range of avoidable risk factors or causes of cancer, including (13):

- High concentrations of multiple residues of carcinogenic pesticides in non-organic fruits and vegetables (26), of particular significance in the diets of infants and young children.
- Irradiation of meat, with 300,000 times the ionizing radiation (or more) of a chest X-ray, inducing the formation of unique radiolytic products and increased benzene levels that pose carcinogenic and genotoxic risks and causing major vitamin depletion (32).
- The fluoridation of drinking water, of highly questionable effectiveness in preventing dental caries in children, despite evidence that oral

administration of fluoride induces a dose-related incidence of bone cancer in male rats.

- The use of raloxifene (Evista) by women for the prevention of osteoporosis and alleged prevention of breast cancer, despite Eli Lilly's own unpublicized experimental evidence that the drug induces ovarian cancer in mice and rats at about one-third of the recommended therapeutic dose. This is seriously compounded by Lilly's admission, unpublicized in its full-page newspaper advertisements and elsewhere, that the "clinical relevance of these tumor findings is unknown" (33).
- The use of tamoxifen, strongly promoted by the NCI and ACS, in breast cancer chemoprevention trials in healthy women, despite evidence that its effectiveness is highly questionable and that the drug is a potent liver carcinogen in rats (20), in addition to the absence of informed consent regarding this grave danger.
- Employment of some one million U.S. women in industries that expose them to more than 50 carcinogens incriminated as causes of breast cancer in rodent tests or in epidemiological studies.
- The overprescribed use of Ritalin for "attention deficit disorders" in children, despite evidence that it induces liver cancer and rare aggressive hepatoblastomas in mice at doses similar to the "therapeutic" (34) and in the absence of informed parental consent.
- The presence in mainstream industry cosmetics and toiletries of a wide range of frank carcinogenic ingredients, such as phenyl-*p*-phenylenediamine, diethanolamine, and hydroquinone. These products also contain "hidden" carcinogens from precursors such as diazolidinyl urea and quaternium 15, which break down to release formaldehyde; polyethylene glycol, which is contaminated with two carcinogens, ethylene oxide and 1,4-dioxane; and diethanolamine, which, apart from evidence of its carcinogenicity following skin application to mice, interacts with nitrites to form the potent carcinogen nitrosodiethanolamine. Such exposures to multiple carcinogens is of particular concern in view of the virtual lifelong use of such ingredients in common cosmetics and personal care products, their application to large areas of skin, and the concomitant presence of detergents in these products, notably sodium lauryl sulfate, which facilitate skin absorption.
- The use of the highly potent and volatile 1,4-dichlorobenzene as a room and toilet deodorizer and moth repellent.

The cancer establishment has shown reckless failure to warn the public, the media, Congress, and regulatory agencies, particularly the Food and Drug Administration, Occupational Safety and Health Administration, and Environmental Protection Agency, of *epidemiological* evidence on a wide range of avoidable and involuntary risk factors or causes of cancer, including (13):

- Exposure of the entire U.S. population, to varying degrees, to a wide range of industrial carcinogens, particularly dioxin, PCBs, and agricultural pesticides, which have polluted the entire environment: air, water, and food.
- Extensive use of the herbicide atrazine in the United States, while banned in most European nations. This is the most common pollutant in rainwater, snow runoff, groundwater, and drinking water. A series of epidemiological studies over the last decade have incriminated atrazine as a cause of non-Hodgkin's and Hodgkin's lymphoma and ovarian cancer. And atrazine has also been shown to induce breast cancer in rodents, associated with endocrine-disruptive effects (35). Against this background of the NCI's silence is a 2002 news story (36) and a research paper describing how atrazine induces multiple sex-organ abnormalities in frogs at levels as low as 0.1 parts per billion in water (37). Humans have now become "canaries" for frogs!
- Highly suggestive epidemiological evidence for a relationship between fluoridation of drinking water with industrial fluorosilicate wastes (contaminated with carcinogenic heavy metals) and bone cancer in young men. Fluoride is added to the water supply of about 60 percent of the U.S. population, in contrast to only 2 percent of the European population, which has much lower rates of dental caries (13).
- The commonplace recycling of toxic wastes, including heavy metals, dioxins, and radionuclides, into common plant food and farm fertilizers. These wastes bioaccumulate in soil and contaminate food, water, and air (38).
- Excess blood levels of the natural insulin-like growth factor one (IGF-1), strongly associated with major excess occurrences of breast, colon, and prostate cancers. Unlabeled milk and other dairy products from cows injected with Monsanto's genetically engineered growth hormone (rBGH) are contaminated with high levels of IGF-1, and their consumption thus poses increased risks of these cancers (39).
- High levels of estradiol and other natural and synthetic sex hormones in U.S. meat from cattle implanted with sex hormones to increase carcass weight, posing risks of breast and other hormonal cancers. Other risks include endocrine-disruptive effects, approximately 10,000 times more potent than those associated with pesticides such as DDT, and hormonal contamination of water by runoff from feedlots.
- The relationships (with varying degrees of strength) between breast cancer and avoidable carcinogenic exposures such as prolonged use of estrogen and progesterone hormone replacement therapy, as now aggressively and misleadingly promoted on national television and in full-page advertisements in major national newspapers; premenopausal mammography; proximity of residence to Superfund sites; and exposure of some one million women to occupational carcinogens, particularly methylene chloride, benzene, ethylene oxide, and phenylenediamine dyes.
- The relationship between hormone replacement therapy and ovarian cancer.

- The relationship between perineal dusting with talcum powder by premenopausal women and ovarian cancer.
- The relationship between non-Hodgkin's lymphoma, multiple myeloma, and bladder and breast cancers and prolonged use by some 20 million women of permanent and semi-permanent black or dark brown hair dyes.
- The relationship between non-Hodgkin's lymphoma and exposure to herbicides, particularly, 2,4-D, in male agricultural workers.
- Exposure of some 11 million men and 4 million women to industrial chemicals and radiation, well recognized as causes of occupational cancer.
- The relationship between paternal and maternal exposure to occupational carcinogens and childhood cancers.
- The relationship between frequent consumption of nitrite-dyed hot dogs and childhood leukemia and brain cancer.
- The strong associations between childhood cancers, particularly brain cancer, non-Hodgkin's lymphoma, and leukemia, and domestic exposure to pesticides from uses in the home, including pet flea collars and lawn and garden pesticides. Another major exposure is commonplace use in schools.
- The relationship between the widely prescribed use of lindane for treatment of lice and scabies and childhood brain cancer.
- The suggestive relationship between childhood cancer and radioactive emissions from 103 aging nuclear power plants. Notorious among these is the Indian Point complex, with its worst safety rating and its location in a densely populated region (within a 50-mile radius encompassing 7 percent of the U.S. population). Findings of high and increasing levels of radioactive strontium-90 in baby teeth support this evidence (40).
- The suggestive relationship between malignant melanoma and the use of sunscreens (particularly in children) that fail to block UV radiation.

In spite of these widely ranging examples, the NCI and ACS have never attempted to develop a systematic reader-friendly, comprehensive registry of avoidable carcinogenic exposures and make it available to the public. This silence effectively denies U.S. citizens their fundamental democratic right to know about avoidable causes of a wide range of cancers, which could empower them to reduce their own risks of disease and death.

The NCI also fails to provide federal and state agencies with the scientific carcinogenicity data on which regulatory decisions are based, claiming that this is not their responsibility. Regulatory agencies are charged with a wide range of other responsibilities, but they lack the authority and the wealth of scientific and educational resources specifically directed to cancer, which are heavily invested in the cancer establishment. Moreover, the NCI and ACS have failed to provide such data to Congress as a basis for developing appropriate legislation and regulatory authority (41).

The NCI's silence is also largely responsible for the faulty science on the basis of which regulatory decisions are becoming increasingly subverted by special interests. A battery of industry-funded think tanks, notably the Cato, Hudson, and International Life Sciences Institutes, support industries responsible for avoidable carcinogenic exposures; they claim that particular carcinogens do not pose a significant hazard. Also responsible are indentured academics and academic think tanks, notably the Harvard Center for Risk Analysis, whose past director, Dr. John Graham, is now the administrator of the Office of Information and Regulatory Affairs of the Office of Management and Budget. These no-hazard claims are based on a complex of "risk management" models, "risk-benefit analysis," and highly questionable "risk assessment" of individual carcinogens that ignore additive or possibly synergistic interactions with other carcinogenic exposures. These claims are also based on the spurious insistence upon uncovering common mechanisms of action before data from carcinogenicity tests can be extrapolated to humans. Guidelines developed by Dr. Graham and incorporated in the December 2000 "Data Quality Act" effectively challenge and sharply limit the regulation of carcinogens, as well as a wide range of other public health hazards.

The NCI's silence on primary cancer prevention is in frank violation of the 1971 National Cancer Act's specific charge "to disseminate cancer information to the public." This silence is also in flagrant denial of the 1988 Amendments to the National Cancer Program (Title 42, Section 285A), which call for "an expanded and intensified research program for the prevention of cancer caused by occupational or environmental exposure to carcinogens."

The ACS's silence on primary prevention is in striking contrast to claims for advocacy, as emphasized in its *Cancer Facts and Figures 2002*: "Cancer is a political, as well as medical, social, psychological, and economic issue. Every day, legislators make decisions that impact the lives of millions of Americans who have been touched by cancer. To affect those decisions positively, the Society has identified advocacy as part of its mission and as one of its top corporate priorities and works nationwide to promote beneficial policies, laws, and regulations for those affected by cancer" (27).

Finally, the cancer establishment's massive funding of a nationwide network of research institutes and hospitals virtually ensures the silence of their epidemiologists and other scientists on primary prevention. These constraints were strikingly exemplified in a recent widely publicized television program, "Kids and Chemicals," on the relationship between chemical exposures and childhood cancer and other diseases (42). The program featured progressive and well-qualified experts, some funded by the NCI, who expressed strong concerns while stressing the alleged inadequacy of current information. One expert stated, "We suspect that children who are exposed to pesticides are at greater risk of childhood cancer than other children. But mostly we don't know." Another maintained, "We have a very serious lack of information of how to go about preventing these diseases, because we haven't had enough information." For these

reasons, the experts called for the National Children's Study over the next 20 years, at a cost of \$50 million annually. This proposal trivializes the available information on avoidable causes of childhood cancer, of which the public has an overdue and undeniable right to know. Such information should have been made widely available over the last two decades so that the escalating incidence of childhood cancer could have been curbed. Moreover, no mention whatsoever was made in the TV program of the primary responsibility of the NCI, whose funding is more than adequate to undertake further needed research on avoidable causes of childhood cancer.

#### SURRENDER OF CANCER POLICY TO SPECIAL INTERESTS

On February 27, 2002, Sen. Dianne Feinstein (D-CA) introduced the National Cancer Act of 2002 (S. 1976). Cosponsored by thirty bipartisan senators, including majority leader Tom Daschle (D-SD), the bill is a new version of the 1971 act that launched the National Cancer Program. The bill adds \$1.4 billion to the \$4.6 billion 2003 budget authorized by President Bush, with extra funds coming from the new federal cigarette tax increase, and adds a further 50 percent annual increase to \$7 billion by 2007, reaching a grand total of \$14 billion. Feinstein said her goal is to "form our new battle plan to fight cancer." The legislation has been referred to the Committee on Health, Education, Labor, and Pensions, chaired by Sen. Edward M. Kennedy (D-MA).

The Senate bill establishes a national network of twenty "translation" centers to combine basic and clinical research and commercialize promising findings. The bill also mandates insurance coverage for cancer screening, smoking cessation, genetic testing, and quality care standards.

Regrettably, this well-intentioned bill will not achieve its objectives, as it unwittingly surrenders the National Cancer Program to special interests while virtually ignoring primary prevention. The legislation has been strongly criticized by survivor coalitions, headed by the Cancer Leadership Council, and also by the American Society for Clinical Oncology (ASCO). Of major concern, bill S. 1976 shifts control of cancer policy from the public to the private sector (from the federal NCI to the "nonprofit" ACS) and creates confusing duplication and overlapping responsibilities.

More disturbing is the bill's background. Meeting secretly behind closed doors in September 1998, the ACS created, funded, and promoted the National Dialogue on Cancer (NDC). This was cochaired by former President George Bush and Barbara Bush, with Senator Feinstein as vice-chair and former governors Tom Ridge of Pennsylvania and Tommy Thompson of Wisconsin as "collaborating partners" (43). Included also were a hundred representatives from survivor groups and the giant cancer drug industry. The NDC leadership then, without informing its NDC participants, unilaterally spun off its own

Legislative Committee, cochaired by Dr. John Seffrin, CEO of the ACS, and Dr. Vincent DeVita, former NCI director, to advise Congress on the proposed new National Cancer Act.

The ACS track record raises grave concerns about special interests and conflicts of interest, in sharp opposition to the public interest (Appendix I). Dr. John Durant, former ASCO executive, president (awarded the 2002 ASCO Presidential U.S. Cancer Fighter of the Year award), charged: "It has always seemed to me that this was an issue of control by the ACS over the cancer agenda. They are protecting their own fundraising capacity" from competition by survivor groups (quoted in 43). These conflicts of interest extend to the personal. The NDC Legislative Committee cochair, Dr. DeVita, is board chair of CancerSource.com, a Web site promoting the ACS *Consumers' Guide to Cancer Drugs*; other Legislative Committee members also serve on the board. These members have thus developed their own special interests in a publicly funded forum.

An increasing proportion of ACS revenues come from the pharmaceutical, cancer drug, mammography film and machine, and biotechnology industries. This is reflected in generous ACS allocations for research on highly profitable patented cancer drugs and aggressive promotion of premenopausal mammography. In striking contrast, less than 0.1 percent of revenues are allocated to environmental, occupational, and other avoidable causes of cancer. Not surprisingly, and unambiguously, the authoritative U.S. charity watchdog, the *Chronicle of Philanthropy*, warned against the transfer of money from the public purse to private hands: "The ACS is more interested in accumulating wealth than saving lives" (quoted in 44, p. 566).

More seriously, ACS policies on primary cancer prevention extend from a decades-long track record of indifference to frank hostility, compounded by pro-industry bias (Appendix I). This even extends to the tobacco industry. Shandwick International, representing R. J. Reynolds, and Edelman Worldwide, representing Brown & Williamson Tobacco Company, have been major public relations firms for the NDC Legislative Committee in rewriting the National Cancer Act (45).

The highly politicized and nontransparent agenda of the ACS is troubling. This is further exemplified by its direct governmental lobbying. Equally troubling are questionably legal donations to Democratic and Republican governors' associations: "We wanted to look like players and be players," an ACS representative admitted (quoted in 44, p. 568).

The ACS has clearly disqualified itself from any future leadership role in the National Cancer Program, which should remain under NCI control. Furthermore, *Feinstein's \$14 billion five-year funding proposal should be amended and specifically redirected from generously funded damage control (screening, diagnosis, and treatment) and related basic research to primary cancer prevention. This could then be funded with \$2.8 billion annually over the next five years.*

Additional funding for prevention should be provided by the private sector. Individual petrochemical and radionuclear industries should be held directly liable for direct and indirect costs relating to research and advocacy on their suspect or known carcinogens. This includes rodent testing, monitoring, epidemiology, surveillance, and full disclosure of all relevant information to the public, the media, federal and state regulatory agencies, and Congress.

As stressed by the statement “Losing the War against Cancer,” released on February 4, 1992 (see Appendix III), the long overdue new funding for prevention from both the public and private sectors “will require careful monitoring and oversight [of the NCI] to prevent misleading retention of old unrelated programs, particularly ‘secondary prevention,’ under the new guises of primary prevention.” This precaution is critical in view of the NCI’s track record of budgetary manipulation, as illustrated in the 1988 exchanges between Rep. Obey and former NCI director Klausner quoted earlier.

If more funding for clinical and basic research on cancer treatment could be justified, this could be made available from the private sector by reinstating the “reasonable pricing” clause from agreements between the NCI and the cancer drug industry that were intended to protect against exorbitant profiteering from the sale of drugs developed with taxpayers’ dollars (46). These agreements were struck in 1995 at the insistence of former director of the National Institutes of Health, Harold Varmus, a past major recipient of NCI funds for basic cancer research. Unprotected by these restraints, the NCI paid for the research and development and for subsequent expensive clinical trials on the cancer drug Taxol. The NCI then gave Bristol-Myers Squibb the exclusive right to market and sell Taxol at the exorbitant price of approximately \$5.00 per milligram, more than twenty times the manufacturing price. Taxol has been a blockbuster for the industry, posting sales of more than \$3 billion since its approval in 1992. *So, the taxpayers pay twice*: first with their tax dollars for NCI drug research, and second by buying cancer drugs from the industry at grossly inflated prices. This is the rule rather than the exception for drugs developed by the NCI, a rule that should be revoked as soon as feasible.

#### HOW TO WIN THE LOSING WAR

The policies and priorities of the U.S. cancer establishment have remained unchanged for decades, despite periodic challenges from the independent scientific community, activist groups, and labor. Preeminent among these challenges was a Washington, D.C., press conference held on February 4, 1992, when a group of sixty-eight scientists, including leading national experts in cancer prevention and public health, released the statement “Losing the War against Cancer” (Appendix III). These experts included past directors of three federal agencies: Dr. Eula Bingham, former Assistant Secretary of Labor, Occupational Safety and Health Administration; the late Dr. David Rall, former Assistant Surgeon

General, U.S. Public Health Service, and director of the National Institute of Environmental Health Sciences; and Dr. Anthony Robbins, past director of the National Institute for Occupational Safety and Health.

Expressing strong concerns over the failure of the “War against Cancer,” the statement emphasized that “this failure is evidenced by the escalating incidence of cancer to epidemic proportions over recent decades” and expressed “further concerns that the generously funded cancer establishment, the NCI and ACS, have misled and confused the public and Congress by repeated claims that we are winning the war against cancer. In fact, the cancer establishment has continually minimized the evidence for increasing cancer rates which it has largely attributed to smoking and dietary fat, while discounting or ignoring the causal role of avoidable exposures to industrial carcinogens in air, food, water, and the workplace.”

The 1992 statement proposed a comprehensive series of reforms as general guidelines for redefining the mission and priorities of the NCI. These were largely directed to correcting the overwhelming imbalance in priorities and funding between research and advocacy on primary cancer prevention and on damage control (screening, diagnosis, and treatment), besides molecular biology. However, none of these recommended reforms were considered, let alone implemented.

More than a decade later, and commemorating the 30th anniversary of President Nixon’s inauguration of the “War against Cancer,” we more urgently warn of its continuing failure. Notwithstanding an approximate twenty-fold increase of the NCI’s budget over the last three decades (Table 1) and prior insistence about winning the cancer war, the NCI and ACS have admitted that *the incidence of cancer is expected to increase dramatically due to the aging population, doubling by 2050* (3). Conspicuous by its absence is any recognition of the increasing incidence of cancer in childhood and younger age groups or that most cancers at all ages reflect prior avoidable carcinogenic exposures and could thus be prevented. Equally disturbing is the increasing and powerful influence of the ACS, in view of its frank hostility to cancer prevention and its conflicts of interest (Appendix I). The ACS’s influence will, effectively and perhaps irreversibly, consolidate special agenda interests and corporate influence over future national cancer policy.

For these reasons, we urge the critical need to mobilize broad Congressional and public recognition of this national crisis and to develop urgent corrective public policy reforms. While active support by independent experts in cancer prevention and public health remains critical, at this late stage the cancer war can most realistically and effectively be waged at a grassroots level. The essential basis for such a strategy is three-fold:

1. Self-interest. The incidence of cancers, particularly non-smoking-related cancers, has escalated to epidemic proportions over recent decades, now striking nearly one in two men and more than one in three women in their

lifetimes; few families remain unaffected. So, any scientifically documented practical basis for reducing avoidable risks of cancer caused by involuntary exposures to industrial carcinogens in the environment is likely to receive widespread national support.

2. Insistence on citizens' inalienable democratic right to know. An overwhelming body of critical public health information about a wide range of involuntary and avoidable carcinogenic exposures still remains buried in industry and government files or in the relatively inaccessible scientific literature. This effectively deprives citizens of their ability to take personal action to reduce their own risks of cancer and to take political action, at the local, state, and national levels, in efforts to ensure Congressional response.
3. Insistence on environmental justice. Cancer disproportionately affects disadvantaged socioeconomic and ethnic population subgroups.

The successful implementation of such strategies would decrease the incidence of cancer and save lives. It would also pose poorly defensible challenges to both the NCI and ACS for their long-standing minimal priorities for research and advocacy on primary prevention. Citizen-based strategies would also challenge the near total failure of the cancer establishment to inform citizens, as well as Congress and regulatory agencies, of well-documented scientific evidence of involuntary exposures to a wide range of industrial carcinogens; for the ACS, this failure even extends to hostility to such primary prevention. Recognition of ACS policies would thus fully justify a national economic boycott and diversion of charitable funding to citizen activist groups dedicated to cancer prevention.

Public disclosure of the decades-long track record of the ACS on primary prevention, including conflicts of interest with the giant cancer drug industry, ties to the tobacco industry, and nontransparency, would also challenge the fundamental basis of the recent Senate initiative (S. 1976) to shift substantial control of future cancer research and policy to the ACS. Clearly, hearings on this initiative by the Senate Committee on Health, Education, Labor, and Pensions are critical and overdue. These hearings should focus on the disturbing background to S. 1976, to the continuing minimalist policies and priorities on primary prevention by the NCI and ACS, and to the special agenda interests of the ACS. Essential to the credibility of such hearings is testimony from the wide range of independent scientific experts and citizen activist groups who have endorsed this document (the list of endorsers begins on p. 695). This could well lead to recognition of the essential need to redirect national and international policies to ensure maximal emphasis on primary prevention and to correct the overwhelming imbalance in priorities and resources between primary prevention and damage control. This redirection of public policy should be immediate and not held hostage to alleged inadequacies of information, the need for "conclusive science," and long-term future research, as recently advocated (42).

We further emphasize that *our public policy concerns are truly global*. The policies of U.S. cancer institutions and associations, with their minimal priorities and allocations for research and advocacy on primary prevention, remain the gold standard for the policies of Europe and other industrialized nations and, even more critically, for those of “lesser developed” countries. Continuing reliance by the NCI and ACS on the discredited claim by Doll that “occupation, pollution, and industrial products” are trivial causes of cancer (14) poses a serious global threat; this claim has recently been supported in a widely publicized book by an unqualified author (47). Doll’s guesstimates encourage the reckless and poorly regulated rush by powerful national and multinational corporations to industrialize impoverished Third World and other developing countries.

Particularly egregious is Canada’s continued export of virtually all the asbestos it mines, 97 percent of all asbestos mined worldwide, to Asia and other developing nations. Canada is the world’s largest asbestos exporter and has exerted powerful influence to protect asbestos from being condemned by the World Health Organization, International Program on Chemical Safety, and International Labor Organization (48). Asiatic workers are dying because of Canada’s claims about the safety of the “controlled use” of asbestos and its unwillingness to close its Quebec mines. The Canadian government persists in this fatal trade, despite the recent World Trade Organization ruling in favor of national bans of asbestos imports (48).

*Whether against cancer or terrorism, war is best fought by preemptive strategies based on prevention rather than based reactively on damage control. As importantly, the war against cancer must be waged by leadership accountable to the public interest and not to special agenda private interests.*

#### SUMMARY

Since passage of the 1971 National Cancer Act, the overall incidence of cancer has escalated to epidemic proportions, now striking nearly one in two men and more than one in three women in their lifetimes. While smoking is the single largest cause of cancer, the incidence of lung and other smoking-related cancers in men has declined sharply. In striking contrast, there has been a major increase in the incidence of predominantly non-smoking-related cancers in men and women and in the incidence of childhood cancers.

Nevertheless, the National Cancer Institute and American Cancer Society, the cancer establishment, have given misleading assurances of major progress in the war against cancer. These culminated in their 1998 *Report Card* claiming a recent “reversal of an almost 20-year trend of increasing cancer cases.” In fact, the “reversal” was minimal and artifactual. In May 2002, the NCI and ACS finally admitted that *the incidence of cancer is expected to double by 2050*.

The escalating incidence of cancer does not reflect lack of resources. Since 1971, the NCI’s budget has increased almost twenty-fold, reaching \$4.2 billion by

2002, while annual ACS revenues are approximately \$800 million. The cancer establishment's mindset remains fixated on damage control (screening, diagnosis, and treatment) and basic molecular research. This is coupled with an indifference to preventing avoidable causes of cancer, other than faulty lifestyle—smoking, inactivity, and fatty diet. This exclusionary claim remains based on a scientifically discredited 1981 report by British epidemiologists Richard Doll and Richard Peto, who guesstimated that lifestyle factors are responsible for 95 percent of all cancers, with the 5 percent balance arbitrarily assigned to environmental and occupational causes. For the ACS, this indifference to primary prevention includes a long track record of hostility, compounded by conflicts of interest with the giant cancer drug and other industries. Not surprisingly, the *Chronicle of Philanthropy*, the nation's leading charity watchdog, has charged that the ACS is "more interested in accumulating wealth than in saving lives."

The cancer establishment's funding for primary prevention research is trivial. While the NCI has made wildly varying estimates for prevention research—up to 50 percent of its budget—independent estimates are closer to 2.5 percent; the NCI's current intramural research funding on occupational cancer is only \$15 million. The ACS's "Environmental Research" funding is less than 0.1 percent of revenues.

The cancer establishment conducts minimal research on avoidable exposures to a wide range of occupational and environmental industrial carcinogens, including nationwide cancer clusters in the vicinity of nuclear power plants, petrochemical industries, and Superfund hazardous waste sites that are disproportionately located in ethnic and low-socioeconomic communities, and exposures to ionizing radiation and persistent organic pollutants contaminating the entire environment: air, water, soil, the workplace, and consumer products. Besides conducting minimal research, the cancer establishment fails to warn the public, media, Congress, and regulatory agencies of avoidable exposures to a wide range of carcinogens identified in rodent tests. These include commonly prescribed drugs such as Ritalin and Evista; carcinogenic ingredients in cosmetics and personal care and household products; residues of carcinogenic pesticides in non-organic fruit and vegetables; the commonplace recycling of industrial wastes, containing a wide range of carcinogens, into common plant food and farm fertilizers; and exposure of one million women working in industries to more than 50 carcinogens incriminated as causes of breast cancer in rodents, in some instances reinforced by epidemiological evidence.

The cancer establishment also fails to warn of epidemiological evidence on a wide range of avoidable causes of cancer. These include exposure of the entire population to a wide range of industrial carcinogens that have permeated the entire environment—air, water, and food; exposures to carcinogenic pesticides from use in the home, garden, schools, recreational facilities, and agriculture; causes of childhood cancer such as parental occupational exposure to carcinogens during pregnancy, consumption of hot dogs contaminated with nitrosodiethanolamine

from the use of nitrite coloring agents, and use of lindane for treatment of childhood scabies and lice; and risks of ovarian cancer from perineal dusting with talc.

The cancer establishment's failure to warn of disease and death from avoidable exposures to industrial carcinogens is in striking contrast to its stream of press releases, briefings, and media reports claiming the latest advances in screening and treatment. This silence flagrantly violates the 1988 Amendments to the National Cancer Program, calling for "an expanded and intensified research program for the prevention of cancer caused by occupational or environmental exposure to carcinogens."

In February 2002, Sen. Dianne Feinstein introduced the 2002 National Cancer Act. This legislation has been referred to the Senate Committee on Health, chaired by Sen. Edward Kennedy. The bill authorizes \$14 billion in funding over a five-year period to establish a new version of the 1971 National Cancer Act and shifts major control of cancer policy from the public (NCI) to the private (ACS) sector, creating confusing duplication and conflicting responsibilities.

The background of the Senate bill is disturbing, having been developed by the ACS under conditions of nontransparency and behind closed doors. This is more disturbing in view of the ACS's highly politicized agenda, including possibly illegal donations to political parties. Clearly, hearings on the bill are critical. Feinstein's \$14 billion five-year funding proposal should be amended and redirected from generously funded damage control (screening, diagnosis, and treatment) and related basic research to primary prevention. This could then be funded with \$2.8 billion annually over the next five years. Congressional hearings should also focus critically on the continuing minimalist policies on primary prevention by the NCI and ACS and on the special agenda interests of the ACS. Essential to the credibility of such hearings would be testimony from independent scientific experts and representatives of activist citizen groups.

Control of the National Cancer Program must remain in the public sector. National cancer policies are now threatened more than ever before by the intransigent indifference of the cancer establishment to primary prevention. This silence reflects a denial of citizens' democratic right to know and a rejection of basic environmental justice and the Precautionary Principle. Citizen activist groups nationwide, supported by independent scientists, must be mobilized if the losing war against cancer is ever to be won.

Most carcinogens induce other toxic effects, including genetic, endocrine-disruptive, and immunological effects. Cancer thus represents a quantifiable paradigm of a wide range of adverse health effects resulting from run-away industrial technologies.

These public policy concerns are truly global. Current U.S. policies of indifference to primary cancer prevention and fixation on damage control remain based on the discredited 1981 assertions of Doll and Peto. U.S. policies are the gold standard for major industrialized nations and even more so for "lesser developed"

nations, which are particularly vulnerable to the reckless rush toward unregulated industrialization.

*Whether against cancer or terrorism, war is best fought by preemptive strategies based on prevention rather than based reactively on damage control. As importantly, the war against cancer needs to be waged by leadership accountable to the public interest and not to special agenda interests.*

**Note added in proof**

Since 1994, strong direct and indirect industry pressures, conflicts of interest, and procedural nontransparency have seriously jeopardized the independence and integrity of the World Health Organization's International Agency for Research on Cancer (IARC) programs for the evaluation of human carcinogenic risks. "Evidence for carcinogenicity provided by results of experimental bioassays have been disregarded on the basis of unproven mechanistic hypotheses,—very serious consequences for public health may follow" (63).

*Endorsers\**

Margie Aliprandi, National Director, Cancer Prevention Coalition Offices, Salt Lake City, Utah.

Winfield J. Abbe, Ph.D., Cancer Prevention Activist, Athens, Ga.

Kenny Ausubel, President, Bioneers, and Collective Heritage Institute, Santa Fe, N.M.

Rosalie Bertell, Ph.D., President, International Institute of Concern for Public Health, Toronto.

Judy Brady, Greenaction, and Toxic Links Coalition, San Francisco.

James Brophy, Adjunct Lecturer, University of Windsor, Ontario.

Irwin Bross, Ph.D., President, Biomedical Metatechnology, Inc., Buffalo, N.Y.; Former Director, Biostatistics, Roswell Park Memorial Institute, Buffalo.

Chris Busby, Ph.D., M.R.S.C., Scientific Secretary, European Committee on Radiation Risks; Member, U.K. Government Committee on Radiation Risk for Internal Emitters, and U.K. Ministry of Defense Oversight Committee on Depleted Uranium.

Leopoldo Caltagirone, Ph.D., Chair, Division of Biological Control, Berkeley, Calif.

Liane Casten, Publisher, Chicago Media Watch, Chicago.

Richard Clapp, Ph.D., Professor of Public Health, Boston University School of Public Health, Boston; Member, Governing Board (Massachusetts) Alliance for a Healthy Tomorrow.

Paul Connett, Ph.D., Professor of Chemistry, St. Lawrence University, New York; President, Fluoride Action Network.

Joe Crozier, Environmental Activist, Mississauga, Ontario.

Donald Dahlsten, Ph.D., Professor of Entomology, University of California, Berkeley.

Alexandra Delinick, M.D., Past General Secretary, International Medical Homeopathic League.

\*As of May 24, 2002.

- Tewelde Egziabher, General Manager, Environmental Protection Authority, Federal Democratic Republic of Ethiopia, Addis Ababa.
- Lynn Ehrle, M.Ed., Senior Research Fellow, Cancer Prevention Coalition, Chicago; Vice President, Cancer Alliance of Michigan.
- Anwar Fazal, Chair, World Alliance for Breastfeeding Action; Senior Regional Advisor, Urban Governance Initiative and United Nations Development Programme, Kuala Lumpur, Malaysia; Right Livelihood Award Laureate; Former President, International Organization of Consumers Unions.
- Dr. Juan Garcés, Activist Lawyer and Political Scientist; Right Livelihood Award Laureate; Former Political Advisor to President Salvador Allende of Chile.
- Ken Geiser, Ph.D., Professor of Work Environment, and Director, Lowell Center for Sustainable Production, University of Massachusetts, Lowell.
- Fernanda Giannasi, Coordinator, Virtual Citizen Ban Asbestos Network for Latin America, Brazil.
- Jay Gould, Ph.D., Founder, Radiation and Public Health Project, New York.
- Claus Hancke, M.D., Director, Institute for Orthomolecular Medicine, Lyngby, Denmark.
- Lennart Hardell, M.D., Ph.D., Professor of Epidemiology, University Hospital, Umea, Sweden.
- David A. Hircock, B. Pharm., Environmental Activists, Chester Springs, Pa.
- Mae-Wan Ho, Ph.D., Director, Institute for Science in Society, London; Consultant, Third World Network.
- James Huff, Ph.D., National Institute of Environmental Health Sciences, Research Triangle Park, N.C.
- Mohamed Idris, Chair, Consumers' Association, Penang, Malaysia; Co-director, Third World Network, Penang; Right Livelihood Award Laureate.
- Olle Johansson, M.D., Professor, Department of Neuroscience, Karolinska Institute, Stockholm.
- T. K. Joshi, M.B.B.S., M.S., M.Sc., Project Director, Health and Family Welfare, Delhi Government; National Consultant to the World Health Organization.
- Margaret Keith, Adjunct Lecturer, University of Windsor, Ontario.
- Marc Lappé, Ph.D., Director, Center for Ethics and Toxic Substances, Gualala, Calif.
- Lynn Lawson, Chair, MCS (Multiple Chemical Sensitivity): Health and Environment, Chicago.
- Marvin Legator, Ph.D., Professor of Preventive Medicine, University of Texas, Galveston.
- Rodney Leonard, Director, Community Nutrition Institute, Washington, D.C.
- Charles Levenstein, Ph.D., Professor of Work Environment, University of Massachusetts, Lowell; Editor, *New Solutions: Journal of Occupational and Environmental Health Policy*.
- William Lijinsky, Ph.D., Former Director, Chemical Carcinogenesis, Frederick Cancer Research Center, Frederick, Md.
- Alison Linnecar, Coordinator, International Baby Food Action Network (IBFAN-GIFA); Right Livelihood Award Laureate.
- Helen Lynn, Health Coordinator, Women's Environmental Network, London.
- Elizabeth May, Director, Sierra Club of Canada, Ottawa.
- Yalem Mekonnen, M.D., Professor of Human Physiology, Addis Ababa University, Ethiopia.
- Gail Merrill, Environmental Activist, New Canaan, Conn.

- Vicki Meyer, Ph.D., Faculty, Women's Health, DePaul University, Chicago; Founder, International Organization to Reclaim Menopause.
- Franklin Mirer, Ph.D., Director, Health and Safety, International United Auto Workers, Detroit.
- Vicente Navarro, M.D., Professor of Health and Public Policy, The Johns Hopkins University, Baltimore; Professor of Political and Social Sciences, Universitat Pompeu Fabra, Spain; Editor-in-Chief, *International Journal of Health Services*.
- Elizabeth O'Nan, Director, Protect All Children's Environment, Marion, N.C.
- Peter Orris, M.D., M.P.H., Professor of Occupational Medicine, University of Illinois Medical School, Chicago; Professor of Internal and Preventive Medicine, Rush Medical College, Chicago; Professor of Preventive Medicine, Northwestern University Feinberg School of Medicine, Chicago.
- Horst Martin Rechelbacher, Environmental Activist; President, Horst Martin Rechelbacher Foundation; Founder, Aveda Corporation, Osceola, Wis.
- Peter Rosset, Ph.D., Co-director, Food First/Institute for Food and Development Policy, Oakland, Calif.; Right Livelihood Award Laureate.
- Marjorie Roswell, Environmental Activist, Baltimore, Md.
- Robert Sass, Ph.D., Professor of Occupational Health and Safety, University of Saskatchewan, Saskatoon, Canada, and Former Director, Occupational Health and Safety, Saskatoon.
- Ruth Shearer, Ph.D., Consultant Toxicologist, Issaquah, Wash.
- Janette Sherman, M.D., Consultant Toxicologist, Alexandria, Va.; Research Associate, Radiation and Public Health Project, New York.
- John Spratt, M.D., Professor of Surgery, James Graham Brown Breast Cancer Center, University of Louisville, Louisville, Ky.
- Diane Takvorian, Executive Director, Environmental Health Coalition, San Diego, Calif.
- Milton Terris, M.D., M.P.H., Editor, *Journal of Public Health Policy*; Past President, American Public Health Association.
- Lorenzo Tomatis, M.D., Collegium Ramazzini, Trieste, Italy; Past Director, International Agency for Research on Cancer, World Health Organization; National Institute of Environmental Health Sciences, Research Triangle Park, N.C.
- Stephen Tvedten, T.I.P.M., C.E.I., Director, Institute of Pest Management, Inc., Marne, Mich.
- Jakob von Uexkull, President, Right Livelihood Award Foundation, Stockholm.
- Barbara Wilkie, Environmental Health Network of California, Larkspur.
- George M. Woodwell, Ph.D., Director, Woods Hole Research Center, Woods Hole, Mass.

#### APPENDIX I: THE AMERICAN CANCER SOCIETY'S TRACK RECORD ON CANCER PREVENTION<sup>1</sup>

- In 1971, when studies unequivocally proved that diethylstilbestrol (DES) caused vaginal cancers in teenaged daughters of women taking the drug during pregnancy, the ACS refused an invitation to testify at Congressional hearings

<sup>1</sup> Information here is mainly from Epstein (13).

requiring the Food and Drug Administration (FDA) to ban use of DES as an animal feed additive.

- In 1977 and 1978, the ACS opposed regulations proposed for hair coloring products containing dyes known to cause breast and liver cancer in rodents, despite clear evidence of human risk.

- In 1977, the ACS called for a Congressional moratorium on the FDA's proposed ban on saccharin and even advocated its use by nursing mothers and babies in "moderation," despite clear-cut evidence of its carcinogenicity in rodents.

- In 1978, Tony Mazzocchi, then senior representative of the Oil, Chemical and Atomic Workers International Union, stated at a Washington, D.C., roundtable meeting between public interest groups and high-ranking ACS officials, "Occupational safety standards have received no support from the ACS."

- In 1978, Rep. Paul Rogers censured the ACS for doing "too little, too late" in failing to support the Clean Air Act.

- In 1982, the ACS adopted a highly restrictive cancer policy that insisted on unequivocal epidemiological evidence of carcinogenicity before taking any position on public health hazards. Accordingly, the ACS still trivializes or rejects evidence of carcinogenicity in experimental animals and has actively campaigned against laws (e.g., the 1958 Delaney Law) that ban deliberate addition to food of any amount of any additive shown to cause cancer in either animals or humans.

- In 1983, the ACS refused to join a coalition of the March of Dimes, American Heart Association, and American Lung Association to support the Clean Air Act.

- In 1984, the ACS created October National Breast Cancer Awareness Month, funded and promoted by Zeneca, an offshoot of the U.K. Imperial Chemical Industry, a major manufacturer of petrochemical products. The ACS leads women to believe that mammography is their best hope against breast cancer. A recent ACS advertisement promised that "early detection results in a cure nearly 100 percent of the time." Responding to questions from a journalist, an ACS communications director admitted, "The ad is based on a study. When you make an advertisement, you just say what you can to get women in the door. You exaggerate a point. . . . Mammography today is a lucrative [and] highly competitive business." There are close and intimate associations between the ACS and this giant "business," mammography film and machine industries, which constitute clear conflicts of interest. Even more seriously, Awareness Month publications and advertisements studiously avoid any reference to the wealth of information on avoidable causes and prevention of breast cancer.

- In 1992, the ACS supported a statement by the Chlorine Institute defending the continued global use of organochlorine pesticides, despite clear evidence of their persistence and carcinogenicity. The ACS's vice president Clark Heath, M.D., dismissed evidence of this risk as "preliminary and mostly based on weak and indirect associations."

- In 1992, the ACS, in conjunction with the NCI, launched the breast cancer “chemoprevention” program aimed at recruiting 16,000 healthy women at supposedly “high risk” into a five-year clinical trial with the highly profitable drug tamoxifen, manufactured by Zeneca. Evidence of the claimed effectiveness of tamoxifen is, at best, arguable. Furthermore, promoters trivialize evidence of the drug’s life-threatening adverse effects on healthy women. More seriously, information that tamoxifen poses grave risks of liver cancer, as it is a highly potent liver carcinogen in rats (in which it also induces irreversible DNA adducts) remains suppressed.

- In 1993, just before PBS aired the *Frontline* special “In Our Children’s Food,” the ACS came out in support of the pesticide industry. In a damage-control memorandum sent to some 48 regional divisions, the ACS trivialized pesticides as a cause of childhood cancer and reassured the public that food contaminated with residues of carcinogenic pesticides is safe, even for babies. When the media and concerned citizens called local ACS chapters, they received reassurances: “The primary health hazards of pesticides are from direct contact with the chemicals at potentially high doses, for example, farm workers who apply the chemicals and work in the fields after the pesticides have been applied, and people living near aerially sprayed fields. . . . The American Cancer Society believes that the benefits of a balanced diet rich in fruits and vegetables far outweigh the largely theoretical risks posed by occasional, very low pesticide residue levels in foods.”

- In February 1994, the ACS published a study designed to reassure women on the safety of dark permanent hair dyes and trivialize risks of fatal and nonfatal cancers as documented in over six prior reports. However, the ACS study was based on a group of some 1,100 women with an initial age of 56 who were followed for seven years only. The ACS concluded that “women using permanent hair dyes are not generally at increased risk of fatal cancer.” However, for women over 63, risks of cancer are increased up to 20-fold for non-Hodgkin’s lymphoma and multiple myeloma, 34-fold for bladder cancer, and 8-fold for breast cancer. As designed, the ACS study would have missed the great majority of these cancers and ruled out dark hair dyes as important risks of avoidable cancers.

- In September 1996, the ACS, together with patient and physician organizations, filed a “citizens’ petition” to pressure the FDA to ease restrictions on access to silicone gel breast implants. What the ACS did not disclose was that several industry rodent studies had shown the gel in these implants to induce cancer and that these implants were also contaminated with other potent carcinogens, such as ethylene oxide and crystalline silica.

- In 1998, the ACS allocated \$330,000, less than 0.1 percent of its \$678 million revenues, to research on environmental carcinogenesis, while claiming allocations of \$2.6 million, 0.4 percent of its revenues.

- In May 1999, the ACS issued a statement trivializing cancer risks from consumption of genetically engineered, rBGH/BST milk containing high levels

of the growth factor IGF-1. This reassurance was in striking contrast to substantial published scientific evidence that elevated blood levels of IGF-1 are strongly associated with excess risks of breast, colon, and prostate cancers.

- In January 2000, *Cancer Letter* revealed that the ACS has clear ties to the tobacco industry. Shandwick International, representing R. J. Reynolds Holdings, and Edelman, representing Brown & Williamson Tobacco Company, have been major public relations firms for the ACS in its attempts to rewrite the 1971 National Cancer Act and in conducting voter education programs in the past-presidential campaign.

- In 2002, the “Environmental Cancer Risk Section” of the ACS *Cancer Facts and Figures 2002* dismissively states that carcinogenic exposures from dietary pesticides, “toxic wastes in dump sites,” ionizing radiation from “closely controlled” nuclear power plants, and nonionizing radiation are all “at such low levels that risks are negligible.”

#### APPENDIX II: RICHARD DOLL’S TRACK RECORD ON CANCER PREVENTION

Sir Richard Doll is still generally considered the most influential and authoritative cancer epidemiologist worldwide. In 1954, together with Dr. Bradford Hill, Doll warned that, besides smoking, exposure to nickel, asbestos, gas-production tars, and radioactivity were major causes of cancer (13). In 1955, he published a landmark report warning of high cancer rates in asbestos workers (49). In 1967, in the prestigious Rock Carling Fellowship lecture, Doll further warned that an “immense” number of substances were known to cause cancer and that prevention of cancer was a better strategy than cure (50). In the late 1960s Doll could have been considered a radical.

Over subsequent decades, however, Doll drastically changed his views and gradually emerged as a major defender of corporate industry interests. This role has been reinforced by his key influence in prestigious U.K. governmental and nongovernmental committees and charities, particularly the Imperial Cancer Research Fund. In these overlapping roles, Doll has trivialized or dismissed industrial and occupational factors as causes of cancer, which he predominantly attributes to faulty lifestyle, particularly smoking. Furthermore, as the leading spokesman for U.K. charities, Doll has insisted that they should focus exclusively on scientific research and not become involved in prevention research and education (13).

- In 1976, despite well-documented concerns about the risks of fluoridating drinking water with industrial wastes (13), Doll declared that it was “unethical” not to do so (51).

- In 1981, in his report on causes of cancer in the United States (14), Doll claimed that occupation was responsible for 4 percent of cancer mortality rather

than 20 percent, as previously admitted by consultants to the American Industrial Health Council of the Chemical Manufacturers' Association (15).

- In 1982, as a long-standing consultant to Turner & Newall, the leading U.K. asbestos corporation, Doll gave a speech to workers at one of its largest plants (52); this speech was in response to a TV exposé that forced the government to reduce occupational exposure limits to an allegedly low level (1 fiber/cc). Doll reassured the workers that the new exposure limit would reduce their lifetime risk of dying from cancer to “a pretty outside chance” of 1 in 40 (2.5 percent). This, however, is an extremely high risk. Doll has also declined to testify on behalf of dying plaintiffs or their bereaved families in civil litigation against asbestos industries. Furthermore, Doll has filed a misleading sworn statement in U.S. courts on behalf of Turner & Newall (52).

- In 1983, in support of U.S. and U.K. petrochemical companies, Doll claimed that lead in petroleum-vehicle exhaust was not correlated with increased lead levels in blood and learning disabilities in children (53). Doll's research has been generously funded by General Motors.

- In 1985, the U.K. Society for the Prevention of Asbestos and Industrial Disease criticized Doll for manipulating scientific information in order to assure us that only one in 100,000 people working in an office containing undamaged asbestos risk asbestos-related disease and death (54).

- In 1985, in a letter to the judge of an Australian Royal Commission that was investigating claims of veterans who had developed cancer following exposure to the herbicide Agent Orange in Vietnam, Doll expressed strong support for the defense claims of its major manufacturer, Monsanto. He stated that “TCDD [dioxin], which has been postulated to be a dangerous contaminant of the herbicide, is at the most, only weakly and inconsistently carcinogenic in animal experiments” (55). In fact, dioxin is the most potent tested carcinogen, apart from confirmatory epidemiological evidence. Doll's defense, resulting in denial of the veterans' claims, was publicized by Monsanto in full-page advertisements in major newspapers worldwide.

- In 1987, Doll dismissed evidence of childhood leukemia clusters near 15 U.K. nuclear power plants (56). Faced with evidence of a 21 percent excess of lymphoid leukemia in children and young adults living within ten miles of these plants, Doll advanced the novel hypothesis that the “over clean” homes of nuclear plant workers rendered their children susceptible to unidentified leukemia viruses (57).

- In 1988, Doll claimed that the excess mortality from leukemia and multiple myeloma among servicemen exposed to radiation from atom bomb tests was a “statistical quirk” (58). (In the London *Times* of January 29, 1988, Doll is reported as saying that the statistical difference was curious.)

- In 1988, in a review on behalf of the U.S. Chemical Manufacturers' Association, Doll claimed there was no significant evidence for an association between occupational exposure to vinyl chloride and brain cancer (59). However, this claim

was based on an aggregation of several studies, some of which provided evidence of a statistically significant association.

- In 1992, in a letter to a major U.K. newspaper, Doll exhorted the public to trust industry and scientists and to ignore warnings by the “large and powerful anti-science mafia” of risks from dietary residues of carcinogenic pesticides (60).

- In January 2000, Doll admitted in a deposition to donations by the chemical industry to Green College, Oxford, where he had been the presidential “Warden” (61). He also admitted that the largest “charitable” donation (£50,000) came from Turner & Newall, the leading U.K. asbestos multinational, “in recognition of all the work I had done for them.”

Doll’s persisting dominance in U.K. cancer policy is exemplified by a 1999 letter from the Ministry of Health stating that, based on Doll’s 1981 report (14), “Relatively little of the cancer burden (5–10 percent) is attributed to occupational, environmental or consumer exposure to specific chemicals” (62).

#### APPENDIX III: 1992 STATEMENT “LOSING THE WAR AGAINST CANCER”

The following reforms were proposed by a group of 68 leading scientists, mainly experts in cancer prevention and public health, at a Washington, D.C., press conference on February 4, 1992. These proposals were offered as general guidelines rather than as a specific blueprints.

1. The NCI must urgently accord prevention similar emphasis, in terms of budgetary and personnel resources, as all its other programs combined, including screening, diagnosis, treatment and basic research. This major shift in direction should be initiated in the near future and phased into completion within five years or so. This shift will require careful monitoring and oversight to prevent misleading retention of old unrelated programs, particularly secondary prevention, under new guises of primary prevention.

2. A high priority for the primary cancer prevention program should be a large-scale and ongoing national campaign to inform and educate citizens, the media, regulatory agencies, Congress, the Presidency and a wide range of involved industries, that much cancer is avoidable and due to past exposures to chemical and physical carcinogens in air, water, food and the workplace, besides lifestyle factors, particularly smoking. It should, however, be noted that a wide range of occupational exposures and urban air pollution have also been incriminated as causes of lung cancer. Accordingly, the educational campaign should stress the critical importance of identifying and preventing carcinogenic exposures and eliminating or reducing them to the very lowest levels attainable within the earliest practically possible time.

3. The NCI should develop systematic programs for the qualitative and quantitative characterization of carcinogens in air, water, food and the workplace, with particular emphasis on those that are avoidable. Such information

should be made available to the general public, and particularly to sub-populations at high risk, by an explicit and ongoing “right-to-know” educational campaign, such as the specific labeling of food and other consumer products with the identity and levels of all carcinogenic ingredients or contaminants. While taking a lead in this program, the NCI should work cooperatively with federal and state regulatory and health agencies and authorities, industry, public health and other professional societies, labor, and community-based citizen groups.

4. The NCI should cooperate with NIEHS, NIOSH and other NIH institutes, in investigating and publicizing other chronic toxic effects induced by carcinogens, including reproductive, neurological, haematological and immunological diseases, besides cancer.

5. The NCI should cooperate with NIOSH, and other federal institutions including CDC, to develop large scale programs for monitoring, surveillance and warning of occupational, ethnic, and other sub-population groups at high risk of cancer due to known past exposures to chemical or physical carcinogens.

6. In close cooperation with key regulatory agencies and industry, the NCI should initiate large-scale research programs to develop non-carcinogenic products and processes as alternatives to those currently based on chemical and physical carcinogens. This program should also include research on the development of economic incentives for the reduction or phase-out of the use of industrial carcinogens, coupled with economic disincentives for their continued use, especially when appropriate non-carcinogenic alternatives are available.

7. The NCI should provide scientific expertise to Congress, federal and state regulatory and health agencies and authorities, and industry on the fundamental scientific principles of carcinogenesis including: the validity of extrapolation to humans of data from valid animal carcinogenicity tests; the invalidity of using insensitive or otherwise questionable epidemiological data to negate the significance of valid animal carcinogenicity tests; and the scientific invalidity of efforts to set “safe levels” or “thresholds” for exposure to individual chemical and physical carcinogens. The NCI should stress that the key to cancer prevention is reducing or avoiding exposure to carcinogens, rather than accepting and attempting to “manage” such risks. Current administration policies are, however, based on highly questionable mathematical procedures of quantitative risk assessment applied to exposures to individual carcinogens, while concomitant exposures to other carcinogens in air, water, food and the workplace are ignored or discounted.

8. The NCI should provide Congress and regulatory agencies with scientific expertise necessary to the development of legislation and regulation of carcinogens. Illustrative of such need is the administration’s revocation in 1988 of the 1958 Delaney amendment to the Federal Food, Drug and Cosmetic Act, banning the deliberate addition to foods of any level of carcinogen. This critical law was revoked in spite of the overwhelming endorsement of its scientific validity by a succession of expert committees over the past three decades. Disturbingly, the NCI has failed to provide

scientific evidence challenging the validity of this revocation, including its likely impact on future cancer rates.

9. The limited programs on routine carcinogenicity testing, now under the authority of the NTP [National Toxicology Program], should be expanded and expedited with the more active and direct involvement of the NCI. (On a cautionary note, it should be emphasized that this program, which is clearly the direct responsibility of the NCI, was transferred to the NTP in 1978 because of mismanagement and disinterest of the NCI.) Under-utilized federal resources, particularly national laboratories, should also be involved in carcinogenicity testing programs. The cost of carcinogenicity testing of profitable, and potentially profitable, chemicals should be borne by the industries concerned, and not by NTP and the NCI, and ultimately the taxpayer.

10. The NCI should undertake large-scale intramural and extramural research programs to characterize known carcinogenic exposures, both industrial and lifestyle, for avoidability or elimination within defined early periods.

11. The NCI should substantially expand its intramural and extramural programs on epidemiology research and develop large-scale programs on sensitive human monitoring techniques, including genetic and quantitative analysis of body burdens of carcinogens, and focus them specifically on cancer cause and prevention. The NCI should also take a key role in the design, conduct and interpretation of epidemiological investigations of cancer by federal and state regulatory and health agencies and authorities.

12. The NCI should develop large-scale training programs for young scientists in all areas relating to cancer cause and prevention.

13. Continued funding by the NCI of its Comprehensive Cancer Centers should be made contingent on their developing strong community out-reach programs on cancer cause and prevention, as opposed to their present and almost exclusive preoccupation with diagnosis and treatment. Centers should also establish tumor registries focused on identifying environmental and occupational carcinogens, and on the surveillance of occupational and other populations at high risk of cancer.

14. With Congressional oversight and advice from the NIH Office of Scientific Integrity, the NCI should take early action to disclose information on any interlocking financial interests between its Panel, Advisory Board, advisory committees and others in the cancer establishment, and major pharmaceutical companies involved in cancer drugs and therapy, and other industries. The NCI should also take the necessary precautions to prevent any such future conflicts.

15. The three-member National Cancer Advisory Panel (NCAP) should be replaced by an executive committee recruited from advisory committees, conforming to standard requirements of the Federal Advisory Committee Act for openness and balanced representation. Half of all appointees to NCI advisory committees should be recruited from scientists with credentials and record of active involvement in cancer cause and prevention. Appointments should also be granted to representatives of citizens', ethnic and women's groups concerned with cancer prevention.

The 1992 statement concluded, “There is no conceivable likelihood that such reforms will be implemented without legislative action. . . . Compliance of the NCI should then be assured by detailed and ongoing Congressional oversight and, most critically, by House and Senate Appropriation committees. However, only strong support by the independent scientific and public health communities, together with concerned grassroots citizen groups, will convince Congress and Presidential candidates of the critical and immediate need for such drastic action.”

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Direct reprint requests and further endorsements to:

Dr. Samuel S. Epstein  
 University of Illinois School of Public Health  
 2121 West Taylor Street  
 Chicago, IL 60612

e-mail: epstein@uic.edu