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Magazine **Asbestos, cancer, and the law**

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By David Mehegan

Who'll help the victims?



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PLAINTIFF'S EXHIBIT

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ASBESTOS on trial

Billions are at stake in suits by victims of diseases they claim asbestos has caused. But some experts say the link is far from clear.

BY DAVID MEHEGAN

"It's wrong and I'll swear to the day I die," Andrea Kilroy says, "this country has got to compensate people with catastrophic illness. To leave us at the mercy of each administration is inhuman."

Andrea Kilroy of Barnstable is 36. Seven years ago, when she was 29, she was found to have cancer, but it was not until 1978, when she was referred to the Sidney Farber Cancer Institute in Boston, that her condition was diagnosed as mesothelioma. Mesothelioma is an incurable cancer that occurs in the pleura, the membrane encasing the lungs, or in the lining of the abdominal cavity.

It is known today that mesothelioma is an asbestos-related disease. Andrea Kilroy never worked with or near asbestos, but her father, Arthur Kilroy, did. He is 72, and from the late 1930s to 1973 he was a rigger in the Boston Naval Shipyard. He worked sometimes in the holds of ships, where asbestos insulation was removed from or installed on pipes, and he would inhale the fibers, without even being aware of it. Then he would come home, his clothes covered with asbestos fibers, and his family would breathe the dust. For Andrea, the result was catastrophic. Some of the needlelike fibers evidently worked their way through her lungs into the pleura, and by a process that is not understood, by themselves or in concert with some other agent, caused the cancer.

Though mesothelioma is still a rare type of tumor, it has apparently been on the rise lately. Dr. Karen Antmann, a mesothelioma specialist at the Sidney Farber Cancer Institute, says she saw an average of two new cases a year five years ago. Now she sees about twenty cases each year, and more of the patients are spouses or children of asbestos workers. Mesothelioma is painful and uniformly fatal, usually within a year of diagnosis, though long survivals can occur with an aggressive program of chemotherapy, radiotherapy, and surgery, such as the Farber Institute uses.

After the physical suffering, the hardest part of Andrea Kilroy's illness is paying for treatment. "My visits at the



CANCER VICTIM ANDREA KILROY

Farber cost as much as five hundred or a thousand dollars, and hospital stays have run as much as ten, twenty, or thirty thousand dollars," she says. Social Security disability coverage pays 80 percent of the cost, and the state Medicaid program picks up a portion of the rest. But the uncovered costs amount to thousands of dollars.

"The economics are sheer agony," says Kilroy. "If it weren't for my parents, I'd be out on the street. I know many people who have lost their homes, their children have had to leave college. I can't provide for the boys [she has two sons]. I'm just so furious with Johns-Manville — they're dealing with people who are suffering severely."

Andrea Kilroy is furious because last August 26, the Manville Corporation (formerly Johns-Manville) of Colorado, the world's largest asbestos manufacturer, filed for bankruptcy under Chapter 11 of the US bankruptcy code.

Manville is not broke. It is a solvent company with an estimated net worth of \$1.1 billion. But it is groaning under a load of lawsuits filed by an estimated 16,500 individuals who allege that they contracted diseases or suffered injury as

a result of working with asbestos products manufactured by Manville. Before August 26, five hundred new suits were being filed each month, and the company estimated that, if it had not declared bankruptcy, there would have been as many as 50,000 more lawsuits. The potential combined liability of that many suits, the company said, would be more than its net worth.

The long-range effect of the bankruptcy is uncertain. There is no doubt about the short-run effect, however — it stops cold all litigation against Manville, along with UNR Industries and Amatek (two other asbestos firms that have filed for bankruptcy). Though plaintiffs' lawyers made motions to overturn the filing, the court has rejected them. That means Andrea Kilroy and the thousands of other plaintiffs won't get a dime from Manville, at least not for several years. And for some plaintiffs, several years will mean never.

There is an immense body of literature on asbestos and disease, but the study of the link began slowly. Scientific studies appeared as early as 1906, and others, published in 1924, 1935, 1955, and 1963, implicated asbestos in various diseases, principally mesothelioma, lung cancer, and asbestosis (also known as diffuse interstitial fibrosis — a sometimes-fatal scarring of the interior lung tissue promoted by asbestos fibers). Some studies have also found higher incidences of other kinds of cancer — of the pancreas, of the gastrointestinal tract, of the larynx — among asbestos insulation workers, but these findings are less universally accepted among scientists.

The most influential American study was published in 1963 by Drs. Irving J. Selikoff and E. C. Hammond of the Mount Sinai School of Medicine in New York City. Their study of 17,800 asbestos insulation workers who were tracked from World War II found unusually high incidences of several cancers among the workers, especially of lung

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cancer. There were 9.2 cases among asbestos insulators for every case in the unexposed general population.

It took a long time for these studies to have any effect on public policy, partly because not all studies found links between asbestos and disease. The most notorious study exonerating asbestos was the 1946 Fleischer Report, from the Harvard School of Public Health, which indicated that there was no evidence of risk for users of asbestos products, such as shipyard pipefitters. The flaw in that

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study was that the workers were studied only two or three years after exposure began, and it is now known that asbestos-related diseases often do not manifest themselves for twenty to forty years. As recently as 1961, an item in the *Journal of the American Medical Association* reported confidently that "in the American literature there is no evidence that there is a relationship between asbestos and lung cancer."

In 1938 the US Public Health Service recommended an industrial exposure limit of five million particles per cubic foot of air in the workplace. This standard was not formally adopted by the Bureau of Labor Standards until 1964, and then only as a guideline. The present legal limit was set by the Occupational Safety and Health Act of 1970: an eight-hour average of five fibers per cubic centimeter (revised downward to two fibers in 1976), each fiber no longer than five micrometers in length. Whether this standard will prove low enough to eliminate risk remains to be seen, but it is a dramatic improvement over previous, uncontrolled conditions. But for thousands of olders workers and members of their families, it came too late.

Although asbestos — the product name for a family of heat-resistant mineral fibers — began to be used commonly in various products early in this century, it was not until World War II that it became a major natural resource whose use was measured in the millions of tons. It makes superb insulation, and during the war years, in hundreds of shipyards, as many as one and a half million workers were exposed to asbestos used for insulation in new or rebuilt ships. For thousands of those workers, bad ventilation and poor health controls combined with heavy inhalation of fibers to produce terrible cases of disease, many of which did not show up until the 1960s and 1970s.

The thousands of still-living workers employed in government-owned shipyards — such as the Boston Naval Shipyard

— during World War II are prevented by law from suing the government for injuries received in the workplace. As for the private yards, once a worker accepts a workman's compensation settlement, he forfeits the right to sue the employer. Therefore, personal injury lawsuits began to be filed around the country, starting in 1973, in both federal and state courts, against "third parties" — most often the roughly twenty-six manufacturers of asbestos who supplied their products to the workplace without providing the information that the products were hazardous. The suits allege that the companies knew of the hazards as early as World War II but hid the facts.

How the courts will cope with the staggering volume of suits is an open question. Almost twelve hundred asbestos cases are pending in US District Court in Boston, many of them several years old, and more than five hundred others are pending in Massachusetts courts. Until the Manville bankruptcy filing, new federal cases were being filed in Boston at a rate of twenty-five a week, and they still are arriving

at a rate of about five a week. In most cases, the defendant is "Johns-Manville *et al.*," the *et al.* being the twenty-five other companies that might have supplied asbestos to a worker's place of employment.

None of the Massachusetts cases has come to trial. US magistrate Robert DeGiacomo ordered the bankrupt firms severed from the list of defendants named in the complaints so that trials could proceed, but this ruling has been challenged by lawyers representing the unbankrupt firms. Wrangling over the issue continues.

In the Philadelphia Court of Common Pleas, where the number of cases is comparable to Boston's, an attempt was made to grab the bull by the horns and try all the cases. Five judges were appointed to do nothing else. "For ten weeks we went full blast," says Judge Andrew Klein. "We finished fourteen cases. In the meantime, eighty-three new ones came in. If we had no new cases, we would not get through the present caseload in this century."

Meanwhile, Andrea Kilroy and others like her wait and worry.

Most civil suits don't come to trial — they are settled — and this has been true of asbestos litigation as well. As many as half of all suits filed (more than thirty thousand have been filed, against 260 companies) have been settled. But in contrast with most types of civil litigation, out-of-court asbestos settlements have not solved the overall problem.

The asbestos manufacturers were insured against lawsuits, and so they felt reasonably safe. But they had no idea of the number of cases that were to come. Plaintiffs' lawyers began to go to defendants' lawyers and say, "I have a hundred cases here which I'd be happy to settle out of court." The defendants would get out their calculators and figure that settling might cost, say, an

average of \$8000 per case, whereas defending would cost \$20,000 each, even if the defense won them all. But more important in the equation, even one lost case could mean a judgment of \$1 million, \$5 million, or \$10 million. Plaintiffs have won 72 out of 147 trials nationwide so far, and there have been several million-dollar-plus judgments.

So the companies quietly agreed to major block settlements. In December 1980, Raybestos-Manhattan (newly renamed Raymark, Inc.) settled 680 cases out of court with the asbestos law firm of Kreindler & Kreindler for \$15 million. In late October, Owens-Corning Fiberglas Corporation — not an asbestos manufacturer, but one that did make an asbestos product for a time — settled with 140 plaintiffs for a total of \$2.38 million, the latest batch in a series of 400 settlements the company has made to date.

But a surprising thing happened. The more the asbestos companies hacked away at the pile, the bigger it became. Asbestos litigation became a growth industry, and many major law firms around the country today do little else. Manville reported that at the time it filed for bankruptcy, it had settled 3500 claims out of court at an average of \$16,000 each, but the cost of litigation plus settlement had risen to \$40,000 per case and there had been several punitive judgments averaging \$600,000 each. Worse still for the companies, many insurance carriers were refusing to pay for settlements.

This is what makes asbestos litigation unique. In even the largest catastrophes, such as the Kansas City Hyatt Hotel disaster, the number of possible plaintiffs is limited. But asbestos has proved to be a personal injury lawyer's dream — a disaster with a seemingly endless supply of plaintiffs. Manville reported that in settling 3500 cases, it spent more on legal fees (\$24.5 million) than on payments to claimants (\$24 million). And that's only the defense bill.

There are some bothersome questions about all this. Among the most obvious and most important, yet least frequently asked, are these: How many of the thousands and thousands of people suing the asbestos industry are really sick or disabled, and of those who are, how many can really attribute their illness to asbestos? If a lot of the cases are frivolous or questionable, it would mean that the tort system is being cynically exploited to the detriment of the meritorious cases.

The question is difficult to answer. One obvious reason is that only 150 of the 30,000 complaints filed have come to trial. As for the others, plaintiffs' lawyers of course say 90 percent are meritorious, while defendants' lawyers say just the opposite. But one way to approach the question is through scientific and medical circles, and here there is a surprise. The common public perception is that asbestos-related disease is sweeping, or soon will sweep, the country like bubonic plague. Yet many authorities believe the prevalence of asbestos-related disease has been vastly exaggerated.

One such authority is Dr. Edward A. Gaensler, a professor of surgery and physiology at Boston University and a lecturer on medicine at Harvard and Tufts universities. Gaensler established the first lung function laboratory in New England, at Boston City Hospital, in 1950. A specialist in occupational lung diseases, he heads a research project, funded by the National Institutes of Health, that conducts yearly surveys of shipyards and factories in an effort to devise methods for early diagnosis of asbestosis.

If a large number of people were coming down with asbestos-related diseases, Gaensler's team might be expected to be aware of them. But he says asbestosis and mesothelioma are "exceedingly rare" diseases. "I have not seen a new case of asbestosis in two or three years,"

he says. "Ninety percent of the cases referred to this laboratory do not have asbestosis. Asbestosis is a disappearing disease."

Dr. Barry Levine, a lung specialist at Harvard Medical School and Massachusetts General Hospital, agrees: "It's a rare phenomenon to find true asbestotic disease." Of those referred to Levine with possible asbestosis, he says, "most have either pleural plaques [whitish marks on the pleura], which are completely asymptomatic, or they are heavy smokers with obstructive lung disease" (i.e., smokers' diseases).

Dr. William Weiss, director of the Division of Occupational Medicine at the Hahnemann Medical College in Philadelphia, is another authority on lung disease. "I would agree with Gaensler," Weiss says. "Both diseases [mesothelioma

and asbestosis] are quite uncommon. A lot of injustice is being done: A lot of people with no disability are getting money, and other people at the other end of the spectrum who deserve compensation are getting lost in the shuffle."

Not all authorities see it this way, of course. Dr. Irving J. Selikoff does not. Selikoff is a flamboyant 67-year-old professor of environmental medicine at Mount Sinai School of Medicine and director of its Environmental Medicine Laboratory. It was Selikoff's study of 17,800 asbestos insulation workers that really blew the asbestos issue out of the quiet circles of scholarly study and into the public consciousness.

Selikoff is not only a scholar but also a gadfly. He is aggressive, accessible to the press, always good for a snappy quote, and he offers higher estimates of risk for most asbestos-related diseases than other investigators. His work is said to be invaluable to present knowledge of asbestos hazards, but he is regarded by some experts in asbestos diseases as a zealot whose careless public statements about the dangers of asbestos have contributed to pub-



The asbestos fibers inhaled by workers are almost invisible.

lic paranoia. Selikoff, for his part, has implied that several of the authorities mentioned in this article are running dogs of the asbestos industry.

Selikoff and his laboratory

staff go about the country conducting disease screenings in union halls, reporting the results to the workers, the unions, and often to the press. His public remarks about his findings are often vague and ominous. "We're in the midst of a nationwide survey of members of the insulation workers' union who are thirty or more years from the onset of their work," he said in a recent telephone interview. "We've seen about twenty-five hundred so far. Eighty-five percent have abnormal X-rays." Most of the expenses of the screenings are paid by the union locals.

Selikoff's team conducted one such study at the General Dynamics Quincy Shipyard in 1981. The screenings were held at the union hall of Local 5 of the Shipbuilder's Union. It was not a scientific study: No

medical or occupational records, from either company or union, were used. Regardless of their demonstrated exposure to asbestos or lack of it, all workers with more than ten years of service, including retired workers, were screened in the same way. The tests included lung function studies, X-rays, blood tests, and other tests.

At the time, Selikoff went public with preliminary results — that a high percentage of those tested "have shown abnormal chest X-rays, which in-

dicates that they have a high risk of contracting asbestos-related cancer or other diseases. The results of the tests illustrate an immense problem in the shipbuilding industry nationwide." Selikoff takes the position that his results actually understate the extent of disease, "because the sick ones do not come in to be screened."

There are other physicians, less well known than Selikoff, who also incline toward high estimates of asbestos-related disease. Dr. David Christiani, a pulmonary physician at South Braintree's Norfolk County Hospital for Respiratory Care, says that in Norfolk's experience, "in the more heavily exposed trades, those with more than twenty years of occupational exposure, there is about a 50 percent prevalence of fibrosis [asbestosis]." And Norfolk administrator John Bar-mack says, "Something like 50 percent of the sheet metal workers we studied showed signs of asbestos disease."

One of the reasons for this controversy is that diagnosing the major asbestos-related diseases and establishing their causes in individuals is difficult, despite what has been observed in studies of large populations.

Consider mesothelioma. It is known that asbestos is a major causative agent, but the disease also occurs in people with no known exposure to asbestos. Karen Antmann of the Farber Institute wrote in a 1980 *New England Journal of Medicine* article that "asbestos may not be the only causative factor eventually implicated in mesothelioma, since only 7.2 percent of asbestos workers have the disease and approximately half the reported patients have no documented asbestos exposure."

No one is sure of these figures (some investigators find that 80 percent of cases are asbestos-related), because mesothelioma is extremely difficult to diagnose, and there are so few cases that large-scale studies are impossible. More to the point, there is no central, reliable registry of confirmed cases.

It is likewise hard in particular cases to establish asbestos as the cause of lung cancer. It is known that a smoker has a higher risk of lung cancer if he or she works with asbestos — the so-called synergistic effect of tobacco smoke and asbestos — but it is also true that lung cancer is virtually never seen in nonsmokers. One nationally known lung cancer expert, pathologist Dr. Oscar Auerbach of Veterans Hospital in Orange, New Jersey, goes so far as to say, "My studies show that if

you don't smoke, you will not get lung cancer no matter how much asbestos you inhale."

Asbestosis, the third major illness associated with asbestos, can also be hard to diagnose. Since it is not a tumor or a virus- or bacteria-caused ailment, but a reaction of lung tissue to the presence of mineral fibers, it can be diagnosed with 100 percent certainty only by tissue biopsy. In advanced cases, there is usually a combination of signs that together give a reliable diagnosis: dyspnea (shortness of breath), dry rales (crackling sounds in the lungs), impaired lung function, X-ray evidence, clubbing of the fingertips, and a history of exposure to asbestos.

But in milder cases, which are by far the most numerous, the problem is more complicated. A person may have a history of exposure and may have a lung X-ray that shows white lines indicating abnormalities, but may have none of the other signs of asbestosis. And there is widespread dissatisfaction among lung experts about the validity of X-ray evidence of asbestosis — the lines that show on the films look the same in asbestosis as they do in a variety of other illnesses. Barry Levine says, "A person with obstructive lung disease [i.e., a cigarette smoker's disease, such as emphysema] can be read as having an X-ray compatible with asbestosis." And Dr. Raymond Murphy, an occupational lung disease specialist at Boston's Faulkner Hospital, calls X-ray interpretation in cases of slight or early asbestosis "one of the most subjective in radiology."

What is known about these diseases and their relationship to asbestos comes from epidemiological studies — studies of
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Asbestos

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large groups of people over time (the larger the numbers and the longer the time period, the better). But epidemiology does not explain the links between environmental factors and disease: It simply identifies them.

Suppose, for example, one studies two thousand men who worked as asbestos insulators in World War II shipyards. Suppose also that one studies for comparison two thousand men who worked as aircraft assemblers, without exposure to asbestos, over the same period. Such a study will probably show a higher rate of lung cancer, asbestosis, and mesothelioma among the asbestos-exposed workers, though no two such studies will give the same statistical result.

Now suppose a man who worked for thirty years as a pipefitter — working around asbestos insulation — contracts lung cancer at age 65. Suppose he also smoked two packs of cigarettes a day for thirty years. He does not sue the tobacco manufacturer because he knows he bought the butts himself and because no one has ever won such a suit. So he sues Manville *et al.*

There is no question that he has lung cancer. But was his cancer caused by asbestos? The large-scale study is useless in settling the issue. When such a case gets to court, the plaintiff argues that the cancer resulted from asbestos, and the defense argues that it was caused by cigarette smoking. Epidemiologists have a way of calculating probability of causation, but without knowledge of how asbestos and smoke interact to produce cancer, the calculation becomes academic and technical. In court, an expert medical witness will be expected to simplify. Is it likely that a person's condition was "aggravated" by his exposure to asbestos? Is there a "reasonable probability" that his condition was caused by asbestos? Proof is impossible, and expert testimony varies as much as it did in the case of John Hinckley's sanity.

One of the key disputes among scientists and physicians concerns lesions called pleural plaques, sometimes called pleural thickening. Pleural plaques are whitish marks on the parietal, or outside, surface of the pleura. Everyone agrees that they show up on virtually all workers with occupational exposure to asbestos, and sometimes in people, such as secretaries in asbestos factories or wives of asbestos workers who wash their husbands' dusty clothes daily, with secondary exposure.

The question is, what do plaques mean? Some authorities suggest that they indicate exposure to asbestos, and therefore put a person at higher risk of contracting disease. But Gaensler argues that plaques do not *themselves* constitute or lead to disease. "They are a signpost of exposure," he says, "they are not painful, they are not symptomatic, they do not impair function, they have no meaning in prognosis." Dr. Philip Enterline, an epidemiologist at the Graduate School of Public Health at the University of Pittsburgh, says, "There have been many studies of pleural plaques, and they are inconclusive." But some doctors argue that since plaques are abnormal and clearly a response to asbestos, they represent "pleural disease." Drs. Christiani and David Kern of Norfolk County Hospital take this position. "It is an effect, it is a response," Christiani says. Some authorities, notably Irving Selikoff, call pleural thickening "pleural asbestosis."

This is not a small issue, because if pleural thickening constitutes asbestosis, then the number of asbestosis victims — and potential or actual suits — jumps dramatically. Dallas attorney Fred Baron, a prominent plaintiff's advocate who has about seven hundred asbestos cases, says, "We have settled hundreds of claims for people with pleural thickening. I believe they have been injured — it is an insult to their lung that will cause problems later." In fact, many workers who feel fine are suing because they have been told they have plaques and they are worried that if they do not sue now, they will contract a disease later, after the statute of limitations expires.

Whatever plaques mean, there seems to be widespread agreement. Selikoff to the contrary, that they do not constitute asbestosis. Indeed, the carelessness with which the term is being

tossed around has concerned many scientists. Oscar Auerbach says, "What's happening is that a lot of doctors are finding asbestos bodies in the lungs [asbestos fibers engulfed by bodily defense cells called macrophages] and calling it asbestosis. But if the bodies are there without disease, that is not asbestosis. Asbestosis is fibrosis [scarring] around the bronchi [bronchial tubes]."

In response to this problem, a task force composed of recognized authorities in asbestos and disease was empaneled by the National Institute for Occupational Safety and Health to clarify the issue. According to the just-completed report, in order for an illness to be correctly diagnosed as asbestosis, both fibrosis and asbestos bodies must be present inside the lung. Dr. Hans Weill, head of

the pulmonary diseases section at Tulane University Medical School and a member of the task force, says flatly, "There is general agreement, except for the New York group [i.e., Irving Selikoff and his associates], that there is no such thing as pleural asbestosis."

All observers agree that someone with heavy occupational exposure over time to asbestos is at great risk of getting a terrible case of asbestosis. An example is Ricardo Tolentino of Westwood, age 76, who installed and tore out and refitted asbestos linings in ship boilers for thirty years at the Boston Naval Shipyard. Tolentino's lungs today are so badly scarred that he can barely walk without losing his breath.

But there is more dispute about lesser degrees of exposure. There have been estimates that as many as thirty million workers — electricians, pipefitters, coppersmiths, ironworkers, utility repairmen, and others — have had secondary exposure to asbestos between World War II and the enactment of exposure limitations in 1970. Are all these workers doomed to come down with asbestos-related disease? Some have, including Herbert Walsh (not his real name) of Sandwich, an ironworker who developed mesothelioma, though he never worked directly with asbestos. Another is John Reilly (also a pseudonym), who developed asbestosis after thirty years working around asbestos-insulated pipes as a steamfitter with a public utility.

But most authorities think a future plague of asbestos-related disease is unlikely. The fear about such an occurrence can be traced largely to a document usually known to scientists as the "Estimates Document." Released in 1978 by the Occupational Safety and Health Administration (OSHA), the Estimates Document stated that "the expected average number of cancer deaths associated with asbestos per year [in the next thirty to thirty-five years] will be between 58,000 and 78,000," and that asbestos alone will account for 13 to 18 percent of total cancer deaths.

This paper was publicly endorsed by Joseph Califano, then secretary of the Department of Health, Education and Welfare, and it is still widely cited as a source in journalistic reports. Yet within the field of epidemiology, its figures have been rejected as fantastically inflated.

Two distinguished British epidemiologists, Sir Richard Doll and Richard Peto, wrote in a 1981 article in the *Journal of the National Cancer Institute* that "the OSHA paper [as they call the Estimates Document] should not be regarded as a serious contribution to scientific thought. . . . It seems that whoever wrote the OSHA paper did so for political rather than scientific purposes." (The Doll and Peto paper was published as a book, *The Causes of Cancer*, by Oxford University Press in 1981.) Hans Weill of Tulane says more bluntly, "The Estimates Document was a disgrace."

Since the peak of exposure occurred during World War II and since occupational exposure standards have been in effect for twelve years, it is reasonable to expect that there will be some approximate peak of new asbestos-related illnesses, followed by a decline. But when will the peak occur? And how high will the peak be?

Too little is known about dose-response ratios to answer this for sure. Enterline argues that the asbestosis peak has already passed, about ten years ago. But what about asbestos-related cancers? Most sources agree that they are increasing. How far off was the Estimates Document?

Selikoff says there are 8200 asbestos-caused cancer deaths per year now, and that a peak of about 10,000 will occur about 1990. But most other authorities put forth much lower numbers. A 1981 paper published by J. Corbett and Alison McDonald, epidemiologists at Montreal's McGill University,



Shipyard workers pour through the gates of the Bremerton, Washington, Navy yard in 1941.

estimates total annual cancer mortality due to asbestos as 1.5 percent of the 400,000 annual US cancer deaths, or about 4500 cases. Philip Enterline at the University of Pittsburgh puts the number at about 4084. Others have given similar estimates. Enterline concludes, "The role of asbestos in our overall cancer problem has been greatly exaggerated. Elimination of all asbestos from our environment would have an imperceptible effect on the cancer problem."

There is probably more uncertainty and worry about future rates of mesothelioma than about other asbestos-related diseases, mainly because, as British epidemiologist Dr. Margaret Becklake wrote in an article in the *American Review of Respiratory Disease*, "The most disconcerting aspect of the relationship between malignant mesothelioma and asbestos exposure is its documented association with apparently low levels of exposure."

Still, even if only one fiber of asbestos can cause mesothelioma, as some people think, it is clear that one fiber does not necessarily cause it. If that were so, given the millions of workers exposed to at least a few fibers, there would be huge numbers of mesothelioma cases. Indeed, it is thought that virtually all urban dwellers (and many rural dwellers who live near natural deposits) have at least a few asbestos fibers in their lungs.

No one disagrees that the greatest exposure to asbestos, in terms of numbers of workers, occurred during World War II. Given the thirty-to-forty-year latency of mesothelioma, if there were to be an asbestos-related mesothelioma epidemic in the United States, it should have occurred by now: World War II ended thirty-seven years ago.

But it has not. The number of mesotheliomas has risen somewhat, but recent studies cited by Doll and Peto suggest that it remains an extremely rare tumor — there are fewer than 1000 new cases per year, compared with (using 1978 figures) 53,000 colon cancers, 35,000 breast cancers, 21,000 pancreatic cancers, and 100,000 lung cancers. Another research team, Julian Peto, Brian E. Henderson, and Malcolm C. Pike, also give a figure of 1000, and they suggest that the peak, combining occupational and nonoccupational causes, will be about 1400 cases and will occur around 1990. Selikoff's estimate is, as usual, higher: He gives a current annual figure of about 3000 cases.

To say mesothelioma is a rare disease is, of course, cruel comfort to those who suffer from it, and there is no suggestion intended that 1400 cases per year, or 4000 cases, is an acceptable incidence. Still, these figures are far lower than those commonly cited, and they are a tiny fraction of deaths caused by cigarette smoking (140,000 this year and rising every year). Doll and Peto, whose 1981 study was commissioned as a report to the Office of Technology Assessment of the Congress, concede that the trend of asbestos-related cancer deaths is upward, but they also concluded that 30 percent of US cancer deaths are attributable to tobacco, 4 percent

to occupational hazards, and 1 percent to industrial products.

The asbestos companies have argued that the government should take a share of the responsibility for compensating people sickened by asbestos. After all, they say, most of the demonstrated injuries were received in government-owned naval shipyards where working conditions and medical protections were abominable. The companies have organized the Asbestos Compensation Coalition, which advocates a sharing of compensation by industry and government.

Several bills have been filed to get around the court logjam. One bill, to be refiled in the Senate next session by Gary Hart (D-Colorado), would establish a federal commission composed of representatives of government, labor, health, and industry. The commission would establish minimum standards to be applied in determining compensation, standards which would then be applied by special state compensation boards. Both government and the industry would contribute. "Gary's bill," says a Hart

spokesman, "tries to recognize that in many cases, these people were working on government projects in government facilities where the government controlled the environment."

Most plaintiffs' lawyers are vehemently against any system that would sidestep the third-party tort system. Plaintiff's attorney Fred Baron says, "We oppose any system where the federal government has to pick up the tab: The companies and insurance carriers are solvent and capable of paying." Administrator John Barmack of Norfolk County Hospital agrees: "There may be a role for government as a guarantor of benefits, but that role should not relieve the economic burden from the asbestos companies. First, they caused the problem and they covered it up. Second, it sets a dangerous precedent when government picks up the cost of workers' health problems caused by corporations, because you're saying to the corporate decision makers, 'You don't need to be concerned with workers' health, because if you're hit by liability suits, Uncle Sam will come in to bail you out.'"

Whether Barmack and Baron are right or not on the abstract question of equity, the reality is that the Manville, UNR, and Amatex bankruptcies have jammed the court system. Even if two-thirds of the asbestos lawsuits were without merit, that would still leave thousands whose lives have been ruined or threatened by asbestos. Meanwhile, time is passing. It is clear that a joint government-industry compensation system, depending on its cost and its political support (certain to be greater now with the blockages caused by the bankruptcies), would speed up the process by which Andrea Kilroy can get some relief from her agony over what the cost of her illness is doing to her aging parents and her children.

"We need a policy for catastrophic illness," she says. "There's no need in a country like ours for people who are fighting for their lives also to have to worry about paying their bills. I don't care where the funding comes from — the fault for this has to be laid somewhere, but where it's laid isn't the point. We need help." •