

LIES, DAMNED LIES, & 400,000 SMOKING-RELATED DEATHS

by Robert A. Levy and Rosalind B. Marimont

TRUTH WAS AN EARLY VICTIM in the battle against tobacco. The big lie, repeated ad nauseam in anti-tobacco circles, is that smoking causes more than 400,000 premature deaths each year in the United States. That mantra is the principal justification for all manner of tobacco regulations and legislation, not to mention lawsuits by dozens of states for Medicaid recovery, class actions by seventy-five to eighty union health funds, similar litigation by thirty-five Blue Cross plans, twenty-four class suits by smokers who are not yet ill, sixty class actions by allegedly ill smokers, five hundred suits for damages from secondhand smoke, and health-related litigation by twelve cities and counties—an explosion of adjudication never before experienced in this country or elsewhere.

The war on smoking started with a kernel of truth—that cigarettes are a high risk factor for lung cancer—but has grown into a monster of deceit and greed, eroding the credibility of government and subverting the rule of law. Junk science has replaced honest science and propaganda parades as fact. Our legislators and judges, in need of dispassionate analysis, are instead smothered by an avalanche of statistics—tendentious, inadequately documented, and unchecked by even rudimentary notions of objectivity. Meanwhile, Americans are indoctrinated by health “professionals” bent on imposing their lifestyle choices on the rest of us and brainwashed by politicians eager to tap the deep pockets of a pariah industry.

The aim of this paper is to dissect the granddaddy of all tobacco lies—that smoking causes 400,000 deaths each year. To set the stage, let’s look at two of the many exaggerations, misstatements, and outright fabrications that have dominated the tobacco debate from the outset.

THIRD-RATE THINKING ABOUT SECONDHAND SMOKE

“Passive Smoking Does Cause Lung Cancer, Do Not Let Them Fool You,” states the headline of a March 1998 press release from the World Health Organization. The release begins by noting that WHO had been accused of suppressing its own study because it “failed to scientifically prove that

there is an association between passive smoking . . . and a number of diseases, lung cancer in particular.” Not true, insisted WHO. Smokers themselves are not the only ones who suffer health problems because of their habit; secondhand smoke can be fatal as well.

The press release went on to report that WHO researchers found “an estimated 16 percent increased risk of lung cancer among nonsmoking spouses of smokers. For workplace exposure the estimated increase in risk was 17 percent.” Remarkably, the very next line warned: “Due to small sample size, neither increased risk was statistically significant.” Contrast that conclusion with the hype in the headline: “Passive Smoking Does Cause Lung Cancer.” Spoken often enough, the lie becomes its own evidence.

The full study would not see the light of day for seven more months, until October 1998, when it was finally published in the *Journal of the National Cancer Institute*. News reports omitted any mention of statistical insignificance. Instead, they again trumpeted relative risks of 1.16 and 1.17, corresponding to 16 and 17 percent increases, as if those ratios were meaningful. Somehow lost in WHO’s media blitz was the National Cancer Institute’s own guideline: “Relative risks of less than 2 [that is, a 100 percent increase] are considered small. . . . Such increases may be due to chance, statistical bias, or effects of confounding factors that are sometimes not evident.” To put the WHO results in their proper perspective, note that the relative risk of lung cancer for persons who drink whole milk is 2.4. That is, the increased risk of contracting lung cancer from whole milk is 140 percent—more than eight times the 17 percent increase from secondhand smoke.

What should have mattered most to government officials, the health community and concerned parents is the following pronouncement from the WHO study: After examining 650 lung cancer patients and 1,500 healthy adults in seven European countries, WHO concluded that the “results indicate no association between childhood exposure to environmental tobacco smoke and lung cancer risk.”

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EPA'S JUNK SCIENCE

Another example of anti-tobacco misinformation is the landmark 1993 report in which the Environmental Protection Agency declared that environmental tobacco smoke (ETS) is a dangerous carcinogen that kills three thousand Americans yearly. Five years later, in July 1998, federal judge William L. Osteen lambasted the EPA for "cherry picking" the data, excluding studies that "demonstrated no association between ETS and cancer," and withholding "significant portions of its findings and reasoning in striving to confirm its *a priori* hypothesis." Both "the record and EPA's explanation," concluded the court, "make it clear that using standard methodology, EPA could not produce statistically significant results." A more damning assessment is difficult to imagine, but here are the court's conclusions at greater length, in its own words.

EPA publicly committed to a conclusion before research had begun; excluded industry [input thereby] violating the [Radon Research] Act's procedural requirements; adjusted established procedure and scientific norms to validate the Agency's public conclusion, and aggressively utilized the Act's authority to disseminate findings to establish a *de facto* regulatory scheme intended to restrict Plaintiff's products and to influence public opinion. In conducting the ETS Risk Assessment, EPA disregarded information and made findings on selective information; did not disseminate significant epidemiologic information; deviated from its Risk Assessment Guidelines; failed to disclose important findings and reasoning; and left significant questions without answers. EPA's conduct left substantial holes in the administrative record. While so doing, EPA produced limited evidence, then claimed the weight of the Agency's research evidence demonstrated ETS causes Cancer. [*Flue-Cured Tobacco Coop. Stabilization Corp. v. United States Environmental Protection Agency*, 4 F. Supp. 2d 435, 465-66 (M.D.N.C. 1998)]

Hundreds of states, cities, and counties have banned indoor smoking—many in reaction to the EPA report. California even prohibits smoking in bars. According to Matthew L. Myers, general counsel of the Campaign for Tobacco-Free Kids, "the release of the original risk assessment gave an enormous boost to efforts to restrict smoking." Now that the study has been thoroughly debunked, one would think that many of the bans would be lifted. Don't hold your breath. When science is adulterated and debased for political ends, the culprits are unlikely to reverse course merely because they have been unmasked.

In reaction to the federal court's criticism EPA administrator Carol M. Browner said, "It's so widely accepted that secondhand smoke causes very real problems for kids and adults. Protecting people from the health hazards of secondhand smoke should be a national imperative." Like *Alice in Wonderland*, sentence first, evidence afterward. Browner reiterates: "We believe the health threats . . . from breathing secondhand smoke are very real." Never mind science; it is

Browner's beliefs that control. The research can be suitably tailored.

For the EPA to alter results, disregard evidence, and adjust its procedures and standards to satisfy agency prejudices is unacceptable behavior, even to a first-year science student. Those criticisms are about honesty, carefulness, and rigor—the very essence of science.

CLASSIFYING DISEASES AS SMOKING-RELATED

With that record of distortion, it should come as no surprise that anti-tobacco crusaders misrepresent the number of deaths due to smoking. Start by considering the diseases that are incorrectly classified as smoking-related. The Centers for Disease Control and Prevention (CDC) prepares and distributes information on smoking-attributable mortality, morbidity and economic costs (SAMMEC). In its *Morbidity and Mortality Weekly Report* for 27 August 1993, the CDC states that 418,690 Americans died in 1990 of various diseases that they contracted because, according to the government, they smoked.

Diseases are categorized as smoking-related if the risk of death for smokers exceeds that for nonsmokers. In the jargon of epidemiology, a relative risk that is greater than 1 indicates a connection between exposure (smoking) and effect (death). Recall, however, the National Cancer Institute's guideline: "Relative risks of less than two are considered small. . . . Such increases may be due to chance, statistical bias, or effects of confounding factors that are sometimes not evident." And the *Federal Reference Manual on Scientific Evidence* confirms that the threshold test for legal significance is a relative risk of two or higher. At any ratio below two, the results are insufficiently reliable to conclude that a particular agent (e.g., tobacco) caused a particular disease.

What would happen if the SAMMEC data were to exclude deaths from those diseases that had a relative risk of less than two for current or former smokers? Table 1 (at the end of this article) shows that 163,071 deaths reported by CDC were from diseases that should not have been included in the report. Add to that another 1,362 deaths from burn injuries—unless one believes that Philip Morris is responsible when a smoker falls asleep with a lit cigarette. That is a total of 164,433 misreported deaths out of 418,690. When the report is properly limited to diseases that have a significant relationship with smoking, the death total declines to 254,257. Thus, on this count alone, SAMMEC overstates the number of deaths by 65 percent.

CALCULATING EXCESS DEATHS

But there is more. Writing on "Risk Attribution and Tobacco-Related Deaths" in the 1993 *American Journal of Epidemiology*, T. D. Sterling, W. L. Rosenbaum, and J. J. Weinkam expose another overstatement—exceeding 65 percent—that flows from using the American Cancer Society's Cancer Prevention Survey (CPS) as a baseline against which excess deaths are computed. Here is how one government agency, the Office of Technology Assessment (OTA), calculates the number of deaths caused by smoking:

The OTA first determines the death rate for persons who were part of the CPS sample and never smoked. Next, that rate is applied to the total U.S. population in order to estimate the number of Americans who would have died if no one ever smoked. Finally, the hypothetical number of deaths for assumed never-smokers is subtracted from the actual number of U.S. deaths, and the difference is ascribed to smoking. That approach seems reasonable if one important condition is satisfied: The CPS sample must be roughly the same as the overall U.S. population with respect to those factors, other than smoking, that could be associated with the death rate. But as Sterling, Rosenbaum, and Weinkam point out, nothing could be further from the truth.

The American Cancer Society bases its CPS study on a million men and women volunteers, drawn from the ranks of the Society's members, friends, and acquaintances. The persons who participate are more affluent than average, overwhelmingly white, married, college graduates, who generally do not have hazardous jobs. Each of those characteristics tends to reduce the death rate of the CPS sample which, as a result, enjoys an average life expectancy that is substantially longer than the typical American enjoys.

Because OTA starts with an atypically low death rate for never-smokers in the CPS sample, then applies that rate to the whole population, its baseline for determining excess deaths is grossly underestimated. By comparing actual deaths with a baseline that is far too low, OTA creates the illusion that a large number of deaths are due to smoking.

That same illusion pervades the statistics released by the U.S. Surgeon General, who in his 1989 report estimated that 335,600 deaths were caused by smoking. When Sterling, Rosenbaum, and Weinkam recalculated the Surgeon General's numbers, replacing the distorted CPS sample with a more representative baseline from large surveys conducted by the National Center for Health Statistics, they found that the number of smoking-related deaths declined to 203,200. Thus, the Surgeon General's report overstated the number of deaths by more than 65 percent simply by choosing the wrong standard of comparison.

Sterling and his coauthors report that not only is the death rate considerably lower for the CPS sample than for the entire U.S. but, astonishingly, even smokers in the CPS sample have a lower death rate than the national average for both smokers and nonsmokers. As a result, if OTA were to have used the CPS death rate for smokers, applied that rate to the total population, then subtracted the actual number of deaths for all Americans, it would have found that smoking saves 277,621 lives each year. The authors caution, of course, that their calculation is sheer nonsense, not a medical miracle. Those "lives would be saved only if the U.S. population would die with the death rate of smokers in the affluent CPS sample."

Unhappily, the death rate for Americans is considerably higher than that for the CPS sample. Nearly as disturbing, researchers like Sterling, Rosenbaum, and Weinkam identified that statistical predicament many years ago; yet the government persists in publishing data on smoking-related deaths

that are known to be greatly inflated.

CONTROLLING FOR CONFOUNDING VARIABLES

Even if actual deaths were compared against an appropriate baseline for nonsmokers, the excess deaths could not properly be attributed to smoking alone. It cannot be assumed that the only difference between smokers and nonsmokers is that the former smoke. The two groups are dissimilar in many other respects, some of which affect their propensity to contract diseases that have been identified as smoking-related. For instance, smokers have higher rates of alcoholism, exercise less on average, eat fewer green vegetables, are more likely to be exposed to workplace carcinogens, and are poorer than nonsmokers. Each of those factors can be a "cause" of death from a so-called smoking-related disease; and each must be statistically controlled for if the impact of a single factor, like smoking, is to be reliably determined.

Sterling, Rosenbaum, and Weinkam found that adjusting their calculations for just two lifestyle differences—in income and alcohol consumption—between smokers and nonsmokers had the effect of reducing the Surgeon General's smoking-related death count still further, from 203,200 to 150,000. That means the combined effect of using a proper standard of comparison coupled with controls for income and alcohol was to lower the Surgeon General's estimate 55 percent—from 335,600 to 150,000. Thus, the original estimate was a disquieting 124 percent too high, even without adjustments for important variables like occupation, exercise, and nutritional habits.

What if smokers got plenty of exercise and had healthy diets while nonsmokers were couch potatoes who consumed buckets of fast food? Naturally, there are some smokers and nonsmokers who satisfy those criteria. Dr. William E. Wecker, a consulting statistician who has testified for the tobacco industry, scanned the CPS database and found thousands of smokers with relatively low risk factors and thousands of never-smokers with high risk factors. Comparing the mortality rates of the two groups, Dr. Wecker discovered that the smokers were "healthier and die less often by a factor of three than the never-smokers." Obviously, other risk factors matter, and any study that ignores them is utterly worthless.

Yet, if a smoker who is obese; has a family history of high cholesterol, diabetes, and heart problems; and never exercises dies of a heart attack, the government attributes his death to smoking alone. That procedure, if applied to the other causal factors identified in the CPS study, would produce more than twice as many "attributed" deaths as there are actual deaths, according to Dr. Wecker. For example, the same calculations that yield 400,000 smoking-related deaths suggest that 504,000 people die each year because they engage in little or no exercise. Employing an identical formula, bad nutritional habits can be shown to account for 649,000 excess deaths annually. That is nearly 1.6 million deaths from only three causes—without considering alcoholism, accidents, poverty, etc.—out of 2.3 million deaths in 1995 from all causes combined. And on it goes—computer-generated phantom deaths, not real deaths—constrained

neither by accepted statistical methods, by common sense, nor by the number of people who die each year.

ADJUSTING FOR AGE AT DEATH

Next and last, we turn to a different sort of deceit—one pertaining not to the number of smoking-related deaths but rather to the misperception that those deaths are somehow associated with kids and young adults. For purposes of this discussion, we will work with the far-fetched statistics published by CDC—an annual average from 1990 through 1994 of 427,743 deaths attributable to tobacco. Is the problem as serious as it sounds?

At first blush, it would seem that more than 400,000 annual deaths is an extremely serious problem. But suppose that all of the people died at age ninety-nine. Surely then, the seriousness of the problem would be tempered by the fact that the decedents would have died soon from some other cause in any event. That is not far from the truth: while tobacco does not kill people at an average age of ninety-nine, it does kill people at an average age of roughly seventy-two—far closer to ninety-nine than to childhood or even young adulthood. Indeed, according to a 1991 RAND study, smoking “reduces the life expectancy of a twenty-year-old by about 4.3 years”—not a trivial concern to be sure, but not the horror that is sometimes portrayed.

Consider Table 2, which shows the number of deaths and age at death for various causes of death: The three nonsmoking categories total nearly 97,000 deaths—probably not much different than the correctly calculated number of smoking-related deaths—but the average age at death is only thirty-nine. As contrasted with a seventy-two-year life expectancy for smokers, each of those nonsmoking deaths snuffs out thirty-three years of life—our most productive years, from both an economic and child-rearing perspective.

Perhaps that is why the Carter Center’s “Closing the Gap” project at Emory University examined “years of potential life lost” (YPLL) for selected diseases, to identify those causes of death that were of greatest severity and consequence. The results were reported by R.W. Amler and D.L. Eddins, “Cross-Sectional Analysis: Precursors of Premature Death in the United States,” in the 1987 *American Journal of Preventive Medicine*. First, the authors determined for each disease the annual number of deaths by age group. Second, they multiplied for each age group the number of deaths times the average number of years remaining before customary retirement at age sixty-five. Then they computed YPLL by summing the products for each disease across age groups.

Thus, if smoking were deemed to have killed, say, fifty thousand people from age sixty through sixty-four, a total of 150,000 years of life were lost in that age group—i.e., fifty thousand lives times an average of three years remaining to age sixty-five. YPLL for smoking would be the accumulation of lost years for all age groups up to sixty-five.

Amler and Eddins identified nine major precursors of preventable deaths. Measured by YPLL, tobacco was about halfway down the list—ranked four out of nine in terms of years lost—not “the number one killer in America” as

alarmists have exclaimed. Table 3 shows the four most destructive causes of death, based on 1980 YPLL statistics. Bear in mind that the starting point for the YPLL calculation is the number of deaths, which for tobacco is grossly magnified for all of the reasons discussed above.

According to Amler and Eddins, even if we were to look at medical treatment—measured by days of hospital care—nonalcohol-related injuries impose a 58 percent greater burden than tobacco, and nutrition-related diseases are more burdensome as well.

Another statistic that more accurately reflects the real health repercussions of smoking is the age distribution of the 427,743 deaths that CDC mistakenly traces to tobacco. No doubt most readers will be surprised to learn that—aside from burn victims and pediatric diseases—*tobacco does not kill a single person below the age of 35*.

Each year from 1990 through 1994, as shown in Table 4, only 1,910 tobacco-related deaths—less than half of 1 percent of the total—were persons below age thirty-five. Of those, 319 were burn victims and the rest were infants whose parents smoked. But the relationship between parental smoking and pediatric diseases carries a risk ratio of less than 2, and thus is statistically insignificant. Unless better evidence is produced, those deaths should not be associated with smoking.

On the other hand, the National Center for Health Statistics reports that more than twenty-one thousand persons below age thirty-five died from motor vehicle accidents in 1992, more than eleven thousand died from suicide, and nearly seventeen thousand died from homicide. Over half of those deaths were connected with alcohol or drug abuse. That should put smoking-related deaths in a somewhat different light.

Most revealing of all, almost 255,000 of the smoking-related deaths—nearly 60 percent of the total—occurred at age seventy or above. More than 192,000 deaths—nearly 45 percent of the total—occurred at age seventy-five or higher. And roughly 72,000 deaths—almost 17 percent of the total—occurred at the age of 85 or above. Still, the public health community disingenuously refers to “premature” deaths from smoking, as if there is no upper age limit to the computation.

The vast overestimate of the dangers of smoking has had disastrous results for the health of young people. Risky behavior does not exist in a vacuum; people compare uncertainties and apportion their time, effort, and money according to the perceived severity of the risk. Each year, alcohol and drug abuse kills tens of thousands of people under the age of thirty-five. Yet according to a 1995 survey by the U.S. Department of Health and Human Services, high school seniors thought smoking a pack a day was more dangerous than daily consumption of four to five alcoholic beverages or using barbiturates. And the CDC reports that the number of pregnant women who drank frequently quadrupled between 1991 and 1995—notwithstanding that fetal alcohol syndrome is the largest cause of preventable mental retardation, occurring in one out of every one thousand births.

Can anyone doubt that the drumbeat of antismoking propaganda from the White House and the health establishment has

deluded Americans into thinking that tobacco is the real danger to our children? In truth, alcohol and drug abuse poses an immensely greater risk and antismoking zealots bear a heavy burden for their duplicity.

CONCLUSION

The unvarnished fact is that children do not die of tobacco-related diseases, correctly determined. If they smoke heavily during their teens, they may die of lung cancer in their old age, fifty or sixty years later, assuming lung cancer is still a threat then.

Meanwhile, do not expect consistency or even common sense from public officials. Alcoholism contributes to crime, violence, spousal abuse, and child neglect. Children are dying by the thousands in accidents, suicides, and homicides. But states go to war against nicotine—which is not an intoxicant, has no causal connection with crime, and poses little danger to young adults or family members.

The campaign against cigarettes is not entirely dishonest. After all, a seasoning of truth makes the lie more digestible. Evidence does suggest that cigarettes substantially increase the risk of lung cancer, bronchitis, and emphysema. The relationship between smoking and other diseases is not nearly so clear, however; and the scare-mongering that has passed for science is

appalling. Not only is tobacco far less pernicious than Americans are led to believe, but its destructive effect is amplified by all manner of statistical legerdemain—counting diseases that should not be counted, using the wrong sample as a standard of comparison, and failing to control for obvious confounding variables.

To be blunt, there is no credible evidence that 400,000 deaths per year—or any number remotely close to 400,000—are caused by tobacco. Nor has that estimate been adjusted for the positive effects of smoking—less obesity, colitis, depression, Alzheimer's disease, Parkinson's disease and, for some women, a lower incidence of breast cancer. The actual damage from smoking is neither known nor knowable with precision. Responsible statisticians agree that it is impossible to attribute causation to a single variable, like tobacco, when there are multiple causal factors that are correlated with one another. The damage from cigarettes is far less than it is made out to be.

Most important, the government should stop lying and stop pretending that smoking-related deaths are anything but a statistical artifact. The unifying bond of all science is that truth is its aim. When that goal yields to politics, tainting science in order to advance predetermined ends, we are all at risk. Sadly, that is exactly what has transpired as our public officials fabricate evidence to promote their crusade against big tobacco.

Table 1

Disease Category	Relative Risk	Deaths from Smoking
Cancer of pancreas	1.1 - 1.8	2,931*
Cancer of cervix	1.9	647*
Cancer of bladder	1.9	2,348*
Cancer of kidney, other urinary	1.2 - 1.4	353
Hypertension	1.2 - 1.9	5,450
Ischemic heart disease (age 35-64)	1.4 - 1.8	15,535*
Ischemic heart disease (age 65+)	1.3 - 1.6	64,789
Other heart disease	1.2 - 1.9	35,314
Cerebrovascular disease (age 35-64)	1.4	2,681*
Cerebrovascular disease (age 65+)	1.0 - 1.9	14,610
Atherosclerosis	1.3	1,267*
Aortic aneurysm	1.3	448*
Other arterial disease	1.3	372*
Pneumonia and influenza	1.4 - 1.6	10,552*
Other respiratory diseases	1.4 - 1.6	1,063*
Pediatric diseases	1.5 - 1.8	1,711
Sub-total		160,071
Environmental tobacco smoke	1.2	3,000
Total		163,071

* Number of deaths for this category assumes population deaths distributed between current and former smokers in same proportion as in Cancer Prevention Survey CPS-II, provided by the American Cancer Society.

Table 2

Cause of Death	Number of Deaths per Year	Mean Age at Death
Smoking-attributed	427,743	72
Motor vehicle accidents	40,982	39
Suicide	30,484	45
Homicide	25,488	32

Source: Centers for Disease Control and Prevention

Table 3

Cause	Deaths	YPLL
Alcohol-related	99,247	1,795,458
Gaps in primary care*	132,593	1,771,133
Injuries (excluding alcohol-related)	64,169	1,755,720
Tobacco-related	338,022	1,497,161

* Inadequate access, screening and preventive interventions.

Table 4

U.S. Smoking-Attributable Mortality by Cause and Age of Death
1990-1994 Annual Average

Age at Death	Pediatric Diseases	Burn Victims	All Other Diseases	Total
Under 1	1,591	19	0	1,610
1 - 34	0	300	0	300
35 - 49	0	221	21,773	21,994
50 - 69	0	286	148,936	149,222
70 - 74	0	96	62,154	62,250
75 - 84	0	133	120,537	120,670
85 +	0	45	71,652	71,697
Totals	1,591	1,100	425,052	427,743

Source: Private communication from the Centers for Disease Control and Prevention