For the Record

A Challenge to Our "Damned Lies" from the Centers for Disease Control and Prevention

Editor's Introduction

In "Lies, damned lies & 400,000 Smoking-Related Deaths" (*Regulation*, Vol. 21, No. 4), Robert A. Levy and Rosalind B. Marimont argued that the Centers for Disease Control and Prevention (CDC) has misused statistics to exaggerate greatly the dangers of smoking. Syndicated columnist Jeff Jacoby recommended the *Regulation* article "as a corrective to the hysteria of the anti-tobacco crusade," as *The Indianapolis Star* put it. CDC quickly sent newspapers (but not *Regulation*) a letter rebutting the Levy-Marimont article. Because we would gladly have published CDC's letter, we reprint it here, followed by Dr. Levy and Ms. Marimont's reply.

From the Centers for Disease Control and Prevention

We would like to take this opportunity to clarify the method by which CDC estimates smoking-related deaths.

First, Levy and Marimont claim that the government counts as a smoking-related death all smokers who die from a certain disease, even if they had other risk factors for that disease. This is not true. For each disease, CDC attributes only a percentage of the deaths as being due to smoking, based on the best medical science. For example, for heart disease, CDC estimates that the proportion of deaths due to smoking is only 16 percent for persons age 65 and older. For lung cancer, in which the authors acknowledge smoking to be a "high risk factor," CDC considers only 83 percent of the deaths as being smoking-related.

The authors also stress that other risk factors must be statistically controlled for if the impact of a single factor like smoking is to be reliably determined. We agree and conducted a careful analysis to examine that very issue. Our findings concluded that controlling for other risk factors changed the proportion of deaths attributed to lung cancer by only one to two percent, and the proportion of deaths from heart disease by less than one percent—hardly the huge impact alleged by the authors.

The authors also claim that many of the deaths from tobacco are not premature deaths. However, studies that have followed smokers and non-smokers for many years have found that smokers are three times more likely to die between the ages of 45 and 64 and two times more likely to die between the ages of 65 and 84 than those who have never smoked. Although a certain proportion of smoking-related deaths occur among older Americans, the fact is that 33 percent of non-smokers live to age 85, compared with only 12 percent of smokers.

Finally, the authors say that smoking-related deaths estimated by CDC are not real deaths, but "computer-generated phantom deaths" using non-representative populations to calculate risk. In 1989, the State of Oregon asked physicians to report on

We welcome notes about current regulatory topics, letters that challenge or expand upon material we have published, and replies from authors. The writer's name, affiliation, address, and telephone number should be included. We cannot publish all the letters we receive, and we may reject any letter at our discretion. We may edit letters for length, clarity, and conformity to our editorial style.

death certificates whether tobacco use contributed to the death. Between 1989 and 1996, physicians reported that tobacco contributed to 20 percent of Oregon deaths, the exact percentage of deaths attributed to smoking over the same time period using cdc's method. The cdc estimate and the Oregon death certificate data differed in their cumulative estimates of the number of smoking-attributable deaths for the eight years by only 61 deaths—a difference of about one tenth of one percent. This real-life experience provides strong evidence that the statistical methods used by cdc provide an accurate calculation of the real deaths occurring daily in the United States that are caused by tobacco use.

Cigarette smoking and other tobacco use is the single most-studied health risk factor in the history of medicine. Scientific facts support our estimate that each year more than 400,000 deaths in this country are prematurely caused by smoking-related diseases.

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and Prevention

From Levy and Marimont

dr. eriksen evidently believes that mere repetition can transform fallacy into fact. In his response to "Lies, Damned Lies, & 400,000 Smoking-Related Deaths" he offers another incantation of the official line from the Centers for Disease Control and Prevention: "Scientific facts support our estimate that each year more than 400,000 deaths in this country are prematurely caused by smoking-related diseases." Put bluntly, Dr. Eriksen's claim is still erroneous, no matter how many times it's repeated.

At the outset, consider what Dr. Eriksen does not say. He does not say that "smoking" causes premature deaths. Rather, they are caused by "smoking-related diseases"—a subtle enlargement that covers not just people who died because they smoked, but also people who died from, say, a heart attack, whether or not they smoked. Was that distinction intended to mislead? We do not know. But we surely know that every tobacco-related pronouncement coming from cdc must be meticulously parsed.

In our article we demonstrated that cdc ignores National Cancer Institute guidelines when it designates diseases as smoking-related. By improperly including diseases that have no significant relationship with smoking, cdc overstates its death count by 65 percent. Dr. Eriksen offers not a single word to rebut that criticism. On that count alone, even if we were to accept each other objection he raises, cdc's estimate of the destructive impact of cigarettes is simply not credible.

Dr. Eriksen rejects our contention that cdc counts as a smoking-related death all smokers who die from a certain disease even if they had other risk factors for that disease. "For each disease," he says, "cdc attributes only a percentage of the deaths as being due to smoking, based on the best medical science." Let's examine what the agency calls "the best medical science," and how cdc determines the percentage of deaths due to smoking.

cdc does not suggest—nor did we accuse cdc of suggesting—that smoking causes every death from a smoking-related disease. Dr. Eriksen notes, for example, that "for heart

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>
> —Eriksen, CDC

disease, CDC estimates that the proportion of deaths due to smoking is only 16 percent for persons age 65 and older." What he conveniently omits is that the percentages used to determine smoking-attributed mortality—16 percent in his example—are based on risk ratios that relate the incidence of various diseases among smokers to the incidence among nonsmokers. CDC concedes that those ratios are not controlled for confounding variables.

In determining risk ratios for smoking, the government assumes, as we wrote, that "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," his death is associated with smoking alone. To be sure, when the ratios are converted to attributable percentages, the resultant death count includes only the excess above the background rate in the nonsmoking population. Still, the entire excess is presumed to be smoking-related. Yet many of the persons counted would have died from the same disease because of other risk factors, even if they had not smoked.

Next, Dr. Eriksen dissents over what constitutes a "premature" death. Using CDC's own data, we showed—indeed, it is the central thrust of our article—that young people do not die of tobacco-related diseases. Cigarettes do not kill anyone below the age of 35. Roughly 255,000 of the so-called smoking-related deaths—nearly 60 percent of the total—occurred at age 70 or above. And 72,000 deaths—almost 17 percent of the total—occurred at 85 or above. Notably, Dr. Eriksen does not dispute those numbers. Nor could he, since they were extracted from a report that his agency provided. Instead, he volunteers these statistics: "Smokers are three times more likely to die between the ages of 45 and 64 and two times more

likely to die between the ages of 65 and 84 than those who have never smoked."

No one denies that smokers have a higher mortality rate than nonsmokers. The question is how much of the difference is due to smoking, and how much to such confounding factors as low income, less exercise, more alcohol consumed, poorer nutrition, and greater exposure to other carcinogens and infections. Dr.

When Eriksen proclaims that a checked box on a death certificate corresponds to a death caused by tobacco, he reminds us yet again that CDC's attributable deaths are no more than a statistical artifact.

—Levy and Marimont

Eriksen says that "controlling for other risk factors" has a trivial effect on the death count. Regrettably, he does not refer to any peer-reviewed studies that reach that conclusion, nor does he indicate what other risk factors were controlled for. The Battelle report, prepared for CDC but not peer reviewed, did not control for diet, exercise, income, or occupational exposure. By comparison, the Sterling study, which we cite, was published in the American Journal of Epidemiology; it found that smoking-attributable death counts declined by 55 percent after simultaneous adjustments for alcohol consumption and income.

Finally, Dr. Eriksen takes exception to our charge that CDC's estimates include "computer-generated phantom deaths, not real deaths." His rejoinder: "In 1989, the State of Oregon asked physicians to report on death certificates whether tobacco use contributed to the death." Those reports, boasts Dr. Eriksen, corroborate CDC's estimate of deaths "attributed to smoking." In fact, Dr. Eriksen's

attempted explanation proves our point, not his.

First, Oregon physicians—constantly bombarded by anti-smoking missives—whose opinions were substantiated neither by autopsies nor by other rigorous evidence, can hardly be characterized as a reliable scientific source. Second, to ask doctors whether one factor—tobacco use—"contributed to the death," is to commit the very error that we criticize. Nearly all diseases have multiple causes. By urging that one cause be affirmed and all others ignored, the state of Oregon—its findings now adopted by CDC—has elicited statistics on causation that can most charitably be described as irrelevant.

On one hand, Oregon physicians report that "tobacco contributed" to 20 percent of deaths; on the other hand, CDC reports that 20 percent of deaths are "attributed to smoking." Those two statements are vastly different—notwithstanding Dr. Eriksen's insistence that they are equivalent. Clearly, there are many more deaths to which tobacco contributed than there are deaths attributable to smoking. That's why the same calculations that yield 400,000 smoking-related deaths suggest that over 500,000 people die annually from insufficient exercise, over 600,000 die from poor nutrition, and on and on—double-counting and triple-counting without any regard for reality. When Dr. Eriksen proclaims that a checked box on a death certificate corresponds to a death caused by tobacco, he reminds us yet again that CDC's attributable deaths are no more than a statistical artifact.

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