Editorial: The Environmental Time Bomb . . .
That Never Went Off

In November, 1975, the monthly figures based on a 10 percent sample of all death certificates reported to the National Center for Health Statistics were added up for the first seven months of the year, and released to the press. These figures showed an apparent 5.2 percent increase in cancer mortality rates compared to the same period the year before. If true, the information would indeed be startling, since the cancer death rate has been increasing at less than one percent a year. Furthermore, when broken down by site, the trend over the past years shows that cancer mortality would be declining, but for the increase in lung cancer deaths, directly related to cigarette smoking. Concern intensified when the Metropolitan Life Insurance Co. issued figures that appeared to corroborate the sharp upward rise of cancer mortality in 1975. The result was frightening headlines and sensational news articles; a cancer scare was underway.

These figures were given added impact by the instant interpretations placed on them to support one or another supposition on the causes of cancer. Thus, the November, 1975 headlines were prompted by an inquiry from a member of Congress to the Director of the National Cancer Institute, as to whether the sudden “increase” was due to “the growing use of an exposure to chemicals in our daily life.” It was in search of support for this hypothesis that an aide to the Congressman decided to add up the monthly mortality figures of the National Center for Health Statistics, and release them to the press.

However, a strange thing happened. The cancer statistics for early 1976 showed a decrease of cancer mortality in the monthly reports of the NCHS, compared to 1975. And the October, 1976 Statistical Bulletin of the Metropolitan Life Insurance Co. declared: “Cancer Mortality Declines in First Six Months of 1976.” These 1976 statistics, however, produced no headlines.

It is highly unlikely that the impact of carcinogens in the environment could be eliminated from one year to the next. Surely, all the food additives could not have been miraculously removed from our diet since Metropolitan reported that among their policy holders, death rates from cancer of the digestive system decreased by nine percent. The effect of the environment on cancer is not instantaneous; 10-30 years are usually required from exposure to cancer incidence and/or mortality.

For a clear analysis of what really occurred, we are indebted to Dr. Leonard Chiaze and his colleagues at the National Cancer Institute who provided a sober and scientific exposition in JAMA, entitled “The Cancer Mortality Scare: Problems of Estimation Using Monthly Data” (JAMA 236:2310-2312, 1976). Their analysis shows that
the abnormally high figure reported in 1975 was probably related to an unusually high mortality from influenza in early 1975 coupled with low rates during the same months in 1974. The true increase in 1975 compared to 1974 was about 0.7 percent, compared to a 0.2 percent average annual increase in the years 1968-1974.

But even more important, the authors caution that early reports of the National Center for Health Statistics cannot be used as a basis for extrapolating the annual trend. A warning to that effect is now contained in the monthly reports. Furthermore, the raw death rate figures are not standardized for age, race and sex. To show how important this is, Dr. Chiazze’s study points out that “nearly all of the increase in the total cancer death rate from 1968 to 1974 was accounted for by the aging of the population.” Also, the provisional estimates do not reveal changes in mortality for individual cancer sites. Such data are essential for proper analysis “since considering only changes in total cancer mortality obscures many important trends such as the rapid rise in lung cancer mortality and the steady decline in stomach mortality.”

The authors conclude that: “Any attempt to monitor trends in overall cancer mortality by analyzing these provisional monthly estimates is a misuse of the Monthly Vital Statistics Report. Large changes should raise our index of suspicion and provide leads for further exploration.”

Fortunately, at the time of the sensational November, 1975 reports, the Epidemiology Department of the American Cancer Society reviewed the situation and announced that in all probability the age-adjusted figures would show no such extraordinary increase. It was further pointed out that a bias may have been introduced by the influenza figures in 1975 compared with 1974.

Hasty judgments are a disservice to the serious study of environmental cancer. It is a sad commentary that the improbable trends of higher cancer deaths released in 1975 received such wide publicity, while the most destructive known carcinogen—that is of course, cigarette smoking—does not get proper emphasis.

Instant analysis is easier, but Dr. Chiazze’s report clearly shows the merit of thorough epidemiologic study.