

recognizes, however, that these statistics involve counts of smoking habits or of experimental exposures to cigarette smoke or its constituents in connection with verifiable facts such as deaths, diseases, symptoms, physiological effects or autopsy findings. Further, the Committee understands that these studies do not stand alone as the evidence against cigarette smoking. There is a convergence of evidence from many sources—statistical, laboratory, clinical—which allows one to conclude that cigarette smoking is an important health hazard. The Committee also realizes that statistical methods are the only way to sort out the effects of a particular agent such as cigarette smoke which is applied to the body over a period of years, during which many constitutional and environmental factors are operating. For this reason, one must obtain information on large numbers of persons to rule out chance events that might be considered significant in observations on a few individuals. It is obvious in such a hazard as cigarette smoking that one cannot see the direct connection between an agent and an event as one does, for example, with automobile accidents, injuries from firearms, or certain quick-acting poisons.

(a) *Conflicting Evidence*

Some witnesses, all but one appearing at the request of the tobacco industry, drew attention to deficiencies in some studies or to possible alternative explanations of relationships between cigarette smoking and disease—for example, constitutional differences between smokers and non-smokers which might account for differences in smoking habits as well as in disease incidence. As would be expected in any thorough review of the subject consideration was given to such matters before conclusions were reached in major studies.

There was considerable discussion about whether the diagnosis of lung cancer had improved to such an extent over the past thirty or forty years that increases in disease attributed to increases in cigarette smoking were really due to improved diagnosis. However, improved diagnosis could not explain the ratio of male to female lung cancer death rates rising from two to six between 1931 and 1967 in Canada since improvements in diagnosis should have applied to men and women equally. Further, improved diagnosis could not account for the continuing increases in lung cancer rates in recent years during which the level of diagnostic accuracy has been consistently high.

It was suggested by some witnesses that errors in completion of death certificates—for example naming a lung tumour as primary cancer of the lung when it really had spread from another site such as the kidney—were not uncommon. For example, Dr. Victor B. Buhler, Pathologist, St. Joseph Hospital,