A celebratory tribute to world-renowned statistician Jerome Cornfield

Features

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This month, Statistics in Medicine honours the centennial of the birth of Jerome Cornfield.

October 30, 2012 will mark the 100th anniversary of the birth of Jerome Cornfield. Statistics in Medicine Co-Editor Joel Greenhouse writes for 'Statistics Views' about this celebration of the birth of a great and influential statistician and scientist of the twentieth century.

Between 1950 and his death in 1979, Jerry Cornfield made many original contributions to biostatistics, epidemiology and clinical trials, and was at the forefront of many of the major issues in public health of the time. These included topics such as the safety of the Salk polio vaccine, the relationship between smoking and lung cancer, the identification of risk factors for heart disease, the conduct of multi-site randomized clinical trials, and the assessment of low-dose carcinogenic effects of food additives.

His statistical and scientific outlook significantly influenced several generations of biostatisticians and epidemiologists. The centennial of his birth is an opportunity to recall Cornfield's seminal contributions to statistics and epidemiology, to acknowledge his legacy to the biostatistical sciences, and to introduce him and his work to a new generation of public health and statistical scientists.

During the 1950s, Cornfield was engaged in the scientific debate surrounding the nature of evidence for a causal relationship between smoking and lung cancer. In this special issue of Statistics in Medicine in honor of Cornfield (Volume 31, Issue 24) we are pleased to reprint a little known paper Cornfield wrote in 1959 entitled “Principles of Research” in which he presents a compelling perspective on the nature of proof and causation in medicine. As it appeared in a subject matter journal we suspect that very few statisticians or epidemiologists have seen this quintessential Cornfield paper. We asked several contemporary statisticians, Peter Armitage, David Cox, Mitch Gail, Sander Greenland, Don Rubin and Jan P Vandenbroucke, to comment on this paper and reflect on how it has held up over time. The short answer is quite well.

When Jerry joined the National Heart Institute in 1960, he became increasingly involved in issues related to the design, analysis and practice of clinical trials. His contributions in these areas are much better known, having appeared in more mainstream statistics and epidemiology journals. The next three invited papers in the Special Issue are written by three individuals who share the common experience of having worked for Jerry as research associates. These papers focus on his contributions to the theory and practice of clinical trials. I explore the evolution of Jerry's Bayesian outlook motivated by theoretical and practical issues in the analysis of sequential trials. Next, Janet Wittes describes Jerry's early involvement in two large NIH sponsored multi-site clinical trials, and shares some personal memories of her work with him. Finally, Susan Ellenberg draws a direct link between many of the issues in the practice of clinical trials that Jerry identified and wrote about in the 1960s and 1970s that continue to be the foci of statistical research today.

Note from Publisher: Selected articles from this Special Issue have been given free access for a limited period. Do not miss this opportunity to read them here!