In Memoriam

Leonard T. Kurland (1921–2001)

Dr. Leonard T. Kurland, Emeritus Consultant and Professor of Epidemiology at the Mayo Clinic in Rochester, Minn., died suddenly at his home on December 4, 2001, at the age of 79. Dr. Kurland (Len) was born in Baltimore, Md., in 1921, the youngest of 10 children of Russian immigrant parents. He was the founder of the Rochester Epidemiology Project (medical records-linkage system) and was considered by many the ‘Father of Neuroepidemiology’. His education and training were of the highest quality: Bachelor of Arts degree from the Johns Hopkins University, Doctor of Medicine degree from the University of Maryland, Master of Public Health degree from Harvard University, and Doctor of Public Health degree from the Johns Hopkins University. In addition, he completed fellowships at prestigious institutions throughout the country: at the Neurological Institute of Columbia University in New York, at the Mayo Clinic in Rochester, Minn., and at the Armed Forces Institute of Pathology in Washington, D.C.

Following this training, he was appointed first Chief of the Epidemiology Branch of the National Institute of Neurological Diseases and Blindness (now National Institute of Neurological Disorders and Stroke), National Institutes of Health, where he initiated a program of research on multiple sclerosis. He carried out the first population surveys and case-control studies of multiple sclerosis in the United States and Canada, and was largely responsible for what we know about the geographic distribution of this disease. He was recognized for his contributions to the epidemiology of multiple sclerosis with the Charcot Award from the International Federation of Multiple Sclerosis Societies in 1983.

Dr. Kurland also planned and organized the first systematic epidemiologic study which led to the description of amyotrophic lateral sclerosis among the indigenous Chamorro population of Guam and the Mariana Islands in the Western Pacific. With Mayo Clinic neurologist Dr. Donald W. Mulder, he also described a new disease in the Guamanian population, which was referred to as ‘parkin-

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0251-5350/02/0215-0262\$18.50/0

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sonism-dementia complex'. Although he led research which rekindled interest in the familial form of amyotrophic lateral sclerosis, his primary etiologic hypothesis related to a dietary toxin [2-amino-3 (methylamino)-propanoic acid] in the cycad seed. This neurotoxic hypothesis is the basis for considerable current research on the etiology of amyotrophic lateral sclerosis, Parkinson's disease, and Alzheimer's disease. This work was recognized with a Certificate of Commendation from the Guam Legislature and an Award for Distinguished Service on Behalf of Medicine and Humanity from the US House of Representatives.

In 1964, Dr. Kurland succeeded Dr. Joseph Berkson as Chair of the Department of Medical Statistics and Epidemiology (now the Department of Health Sciences Research) at the Mayo Clinic in Rochester, Minn. At Mayo, he made his greatest contribution to clinical and preventive medicine: he established a medical records-linkage system as a resource for epidemiologic studies in the population of Rochester and Olmsted County, Minn. He applied for and received funding to implement his vision of the Rochester Epidemiology Project, which has been continuously supported by the National Institutes of Health for more than 30 years. This grant, in turn, has supported the development of numerous research programs focused on specific disorders. These included his own program projects on neuroepidemiology and on Alzheimer's disease, in addition to more recent major initiatives by others on the epidemiology of stroke, epilepsy, Parkinson's disease, coronary heart disease, diabetes, osteoporosis, and prostate disease.

At the Mayo Clinic, Dr. Kurland organized a program for visiting scientists in epidemiology. As a result, many doctoral and master's degree candidates, distinguished foreign visitors, and ranking scientists came to Mayo to utilize the record system for research. This has included formal graduate degree dissertations, as well as a host of individual research projects carried out by fellows, residents, and medical students at Mayo. These studies led to more than 1,000 publications on the incidence, etiology, and outcomes of almost every major disease among the residents of Rochester and Olmsted County.

Dr. Kurland made major contributions to the evaluation of the long-term safety of medications such as anti-convulsants, antihypertensive drugs, and diethylstilbestrol. In addition, he was involved in the controversy regarding the safety of influenza vaccine, and especially the vaccine for the swine flu variant. Dr. Kurland was a member of the committee, which on December 16, 1976, recommended a moratorium on the use of the swine flu

vaccine. However, he noted several flaws in the report by the Centers for Disease Control on the association of swine flu vaccine with Guillain-Barré syndrome. He subsequently found no increase in Guillain-Barré syndrome among 1.7 million military recipients of the swine flu vaccine, compared with incidence rates in Rochester, and pointed out that the Centers for Disease Control study lacked adequate quality control. Dr. Kurland also showed that there was no significant association of the vaccine with the risk of subsequent rheumatoid arthritis, multiple sclerosis or polymyositis. As a result of this work, he recommended criteria for determining whether subsequent illnesses were due to vaccine or to chance. More recently, Dr. Kurland conducted a series of studies of long-term outcomes among women who underwent silicone breast implants in collaboration with a Mayo epidemiologist, Dr. Sherine Gabriel. These studies demonstrated no increased risk of rheumatologic conditions, but showed that there is considerable morbidity associated with the surgical procedure itself.

Dr. Kurland served the United States government by providing his counsel and expertise to many national committees, including the Armed Forces Epidemiology Board, the Scientific Advisory Board of the US Air Force, and the Congressional Office of Technical Assessment. He was also chair of the Scientific Advisory Committee on Environmental Hazards (Agent Orange and nuclear radiation) for the Veterans Administration. His interest in potential environmental hazards has been a life-long focus. It was his team, investigating multiple sclerosis in Japan in 1958 (with Professor McAlpine of London), that discovered methyl mercury as the cause of the epidemic of 'Minamata disease'. This recognition of the tragic consequences of pollution in Minamata Bay had a major impact on controlling industrial pollution in Japan.

Dr. Kurland has been the mentor of a large number of medical and public health students, residents, and senior physicians. Indeed, he was named the 'Father of Neuroepidemiology' by the Pan American Society of Neuroepidemiology because he contributed to the training of virtually the entire senior rank and many of the junior neuroepidemiologists in the Americas. Dr. Kurland was the author or co-author of over 500 publications, which indicates his long and productive career of innovative research in epidemiology. His role as a leader in epidemiologic research was recognized by his election to honorary fellowship in the American College of Epidemiology, while his contribution to neurology was acknowledged by honorary fellowship in the American Neurological Association. Dr. Kurland's contribution to medicine in general

was recognized in 1996 by the James D. Bruce Memorial Award from the American College of Physicians. In recent years, he received the Mayo Distinguished Alumnus Award, the Harvard Alumnus Merit Award, and the Gold Key Award from the Maryland Medical Alumni Association.

On a personal note, I knew Len for almost 20 years. My first encounter with him was in the early 1980s when Len was involved with teaching the first course on neuroepidemiology in Europe (San Miniato, Italy). During my early years in the USA, I collaborated with Len on a number of projects concerning the epidemiology of epilepsy. At that time, I was working at the National Institute of Neurological and Communicative Disorders and Stroke in Bethesda, Md., under the mentoring of Dr. Bruce S. Schoenberg, one of Len's trainees. I have always admired Len's ability to participate in the ongoing scientific debates and his contribution to resolving controversies. Len always attempted to provide a different point of view on putative risk factors or disease associations by designing

studies based on the Rochester Epidemiology Project records-linkage system. By using prospectively collected data (as part of historical cohort studies), he was able to confirm or to challenge epidemiologic associations coming from traditional case-control studies in which data collection was based on an interview. An elegant example of this activity was his work on the role of head trauma as a risk factor for chronic diseases such as Alzheimer's disease or amyotrophic lateral sclerosis.

Dr. Kurland was one of the key figures in the development of neuroepidemiology in North America and the world during the second half of the last century. Not only was he a pioneer in applying epidemiologic methods to neurologic diseases, but he also trained and influenced a generation of investigators both in America and worldwide. Dr. Kurland will be missed; however, his scientific influence will last.

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