

USE OF MULTIPLE CAUSE MORTALITY DATA IN EPIDEMIOLOGIC ANALYSES:
STANDARD U.S. RATE AND PROPORTION FILES DEVELOPED BY NIOSH/NCI

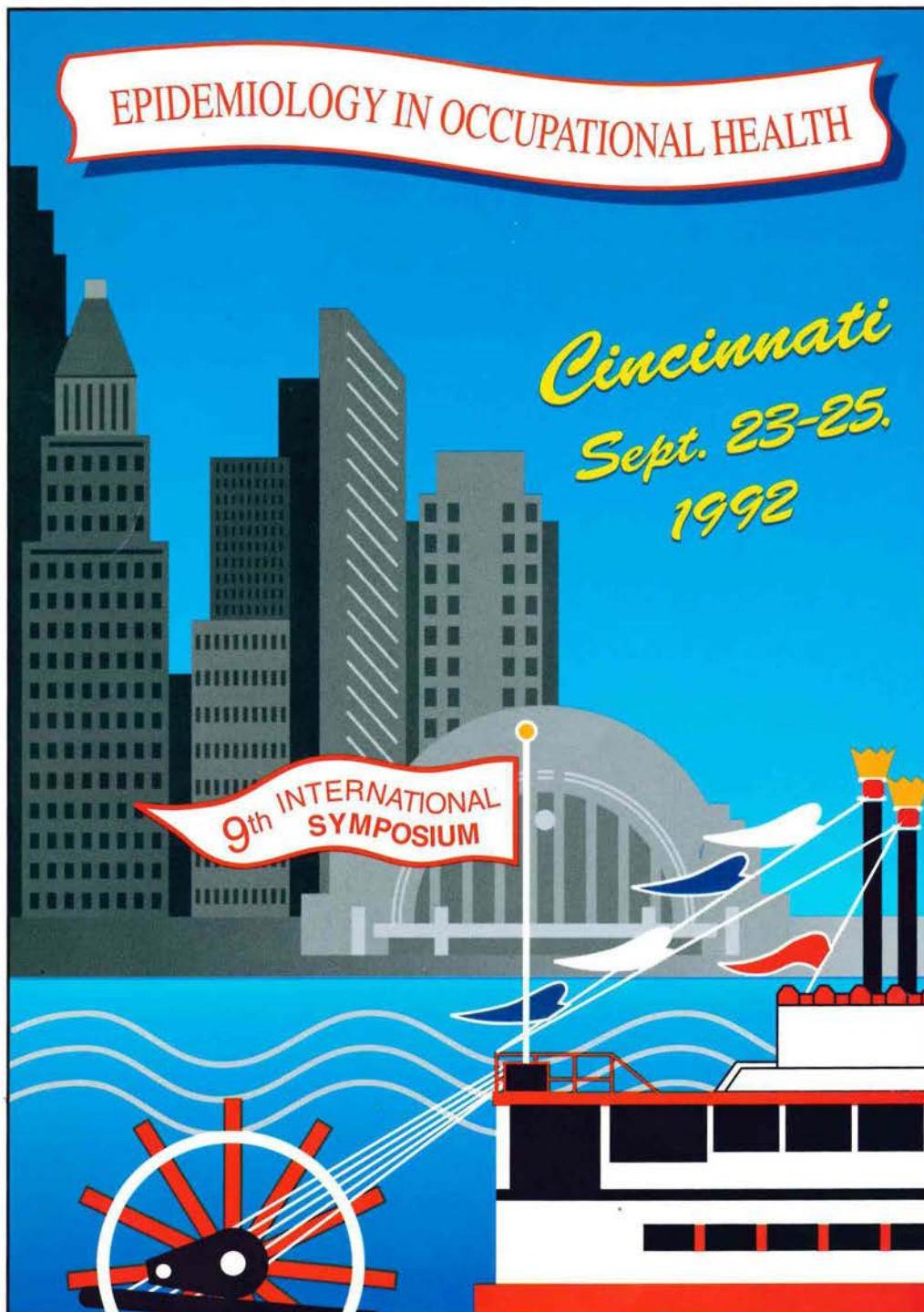
K. STEENLAND, S. NOWLIN, B. RYAN, S. ADAMS

Kyle STEENLAND, Sue NOWLIN, Brent RYAN, Steve ADAMS: NIOSH, 4676 Columbia Parkway, R-13, Cincinnati, OH 45226, USA.

We have created U.S. mortality rates (age, sex, race, and calendar-time specific) and proportions using multiple cause-of-death data, for the years 1960-1989. Multiple cause-of-death data include the usual underlying cause-of-death from the death certificate, but also contributory causes and other significant conditions. U.S. multiple cause rates and proportions enable the user to calculate expected occurrences of disease on the death certificates of a cohort under study. There are an average of 2.66 causes/contributory conditions listed on U.S. death certificates, increasing over time from 2.54 in the 1960's to 2.76 in the 1980's. The ratio of multiple cause listings to underlying cause listings varies by disease, from low ratios for cancers to high ratios for diseases such as diabetes, arthritis, prostate disease, hypertension, pneumoconiosis, and renal disease. Use of these data is illustrated via an analysis of renal disease and arthritis among granite cutters, and of diabetes in a cohort of workers exposed to dioxin (outcomes of a priori interest). Multiple cause analysis (but not underlying cause analysis) revealed significant excesses of renal disease (PMR 2.12, 34 observed) and arthritis (PMR 2.01, 17 observed) among 991 granite cutters. For 5172 workers exposed to dioxin, neither multiple cause nor underlying cause analysis indicated any excess of diabetes. Good candidates for multiple cause analysis are diseases which are of long duration, not necessarily fatal, yet serious enough to be listed on the death certificate.

Scientific Committee on Epidemiology
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